

The EU's proposed revised F-gas Regulation:

Achieving Clarity for Successful Implementation.

Scope : Definitions, Bans , Quota, Parts, Labelling

May 2023

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Introduction

- In view of the Trilogues, the industry would like to bring to your attention a number of issues which we believe need to be addressed to make a clear and implementable regulation for all.
- The industry would like to provide information on:
 - Definitions overlap
 - Product bans
 - Quota mechanism
 - Parts
 - Labelling

I. Definitions Overlap

Definitions of “refrigeration”, “air conditioning” & “heat pump” are overlapping. Since they are used in connection to product bans it will cause confusion about whether a ban applies, and from when.

Definitions included in the Council proposal:

Air conditioning	Heat pump	Refrigeration
means the process of treating air to meet the requirements of a conditioned space by controlling its temperature, humidity, cleanliness or distribution	means equipment capable of using ambient heat and/or waste heat from air, water or ground sources to provide heat or cooling and is based on the interconnection of one or more components forming a closed cooling circuit in which a refrigerant circulates to extract and release heat	means the process of maintaining or lowering the temperature of a product, substance, system or other items below ambient temperature

a. Examples

COLD ROOM APPLICATION

This product would fall under all 3 definitions



AND

AND

Air conditioning = treating air to meet the requirements of a conditioned space by controlling temperature, humidity, cleanliness or distribution

Heat pump = capable of using ambient heat and/or waste heat from air, water or ground sources to provide heat or cooling and is based on the interconnection of one or more components forming a closed cooling circuit in which a refrigerant circulates to extract and release heat

Refrigeration = the process of maintaining or lowering the temperature of a product, substance, system or other items below ambient temperature

Chiller in beer brewery, winery industry processes

Chiller sometimes works in cooling, sometimes in heating mode

This application would fall under 2 definitions.

It would fall under “refrigeration when cooling “below” ambient temperature, but not when cooling above ambient temperature or in case of heating.



AND

Heat pump = equipment capable of using ambient heat and/or waste heat from air, water or ground sources to provide heat or cooling and is based on the interconnection of one or more components forming a closed cooling circuit in which a refrigerant circulates to extract and release heat

Refrigeration : the process of maintaining or lowering the temperature of a product, substance, system or other items below ambient temperature

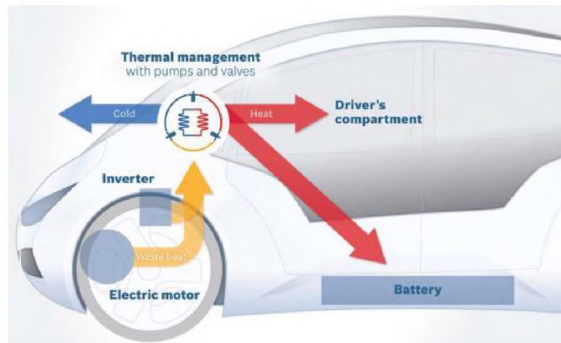
But only when cooling “below” ambient temperature?

HEAT PUMP = a technology definition, not a product!

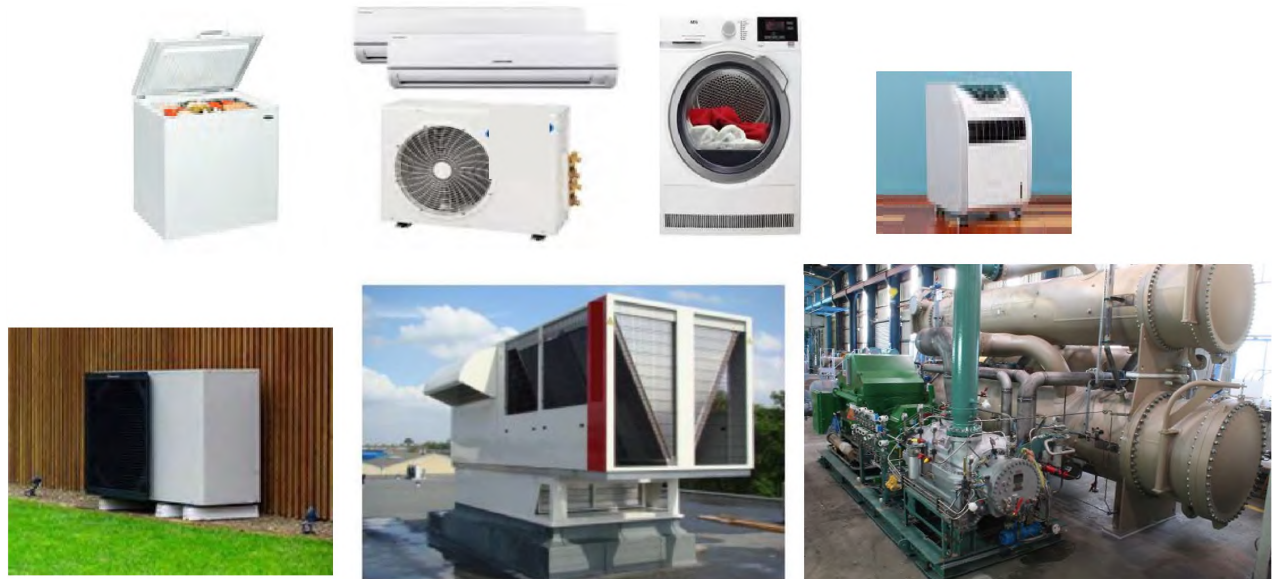
Heat pump technology is used in many applications

In the Council definition, “heat pump” is a technology description.
In this sense, all products are “heat pumps”, even your fridge at home.

MOBILE applications



STATIONARY applications



Possible solution:
refer to categories of existing F-gas portal

b. categories in EU F gas portal reporting forms

Categories = current F gas regulation reporting

Definitions are suggestions based on Ecodesign Directives and EN standards

Stationary equipment : categories based on “intended use”

Comfort cooling or heating

means equipment using a refrigerant cycle **intended** to:

- provide thermal comfort to occupants of a space by controlling its temperature
- and /or change the temperature level of an external supply of drinking or sanitary water



Refrigeration

means equipment using a refrigerant cycle **intended** to :

- store, display or dispense products at a controlled temperature condition



Process cooling or heating

means equipment using a refrigerant cycle **intended** to :

- control the required temperature for the manufacturing of products



Heat pump tumble dryers



Any other purposes

Example: heat pump washing machine, heat pump dishwasher, air compressors, air dryers



“intended use” = a known concept in EU legislation

See EU commission Blue Guide 2022 : [Publications Office \(europa.eu\)](https://publications.office.europa.eu)

- **The manufacturer (or importer) has to provide information for which use the product is intended**

“Intended use means the use for which a product is intended in accordance with the information provided by the manufacturer (or importer) placing it on the market, or the ordinary use as determined by the design and construction of the product.”

“As far as market surveillance activities are concerned, market surveillance authorities are required to check the conformity of a product:

- in accordance with its intended purpose (as defined by the manufacturer) and*
- under the conditions of use which can be reasonably foreseen (77), that is when such use could result from lawful and readily predictable human behaviour.*

The consequence for manufacturers is that they have to consider the conditions of use which can be reasonably foreseen prior to placing a product on the market.”

- **A manufacturer may declare several intended uses for one product**
 - Example: a chiller can be used for “comfort cooling or heating”, for “refrigeration” or for “process cooling or heating”

Example of multiple intended use: Chillers



Note : This means the parliament proposed bans on several types of chillers overlap with the other product bans. Most chillers are “self contained”, some chillers are “split” type (eg chiller with remote condenser)

Comfort cooling & heating

e.g. hotels, offices, hospitals, district heating and/or cooling



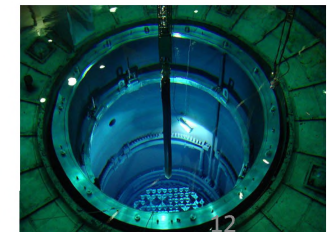
Refrigeration

Cold storage warehouses, datacentres



Process cooling & heating

Food processing, nuclear power plants, greenhouses, ice rinks



Council proposal versus F-gas portal categories

Stationary equipment			
Comfort cooling or heating (16) Self contained room air conditioning and heat pumps (18) Stationary split air conditioning and split heat pumps	Refrigeration (10) Domestic refrigerators and freezers (11) Refrigerators and freezers for commercial use (self contained equipment) (12) Any stationary self contained refrigeration equipment (13) Stationary refrigeration equipment that contains, or whose functioning relies upon, except equipment intended for applications designed to cool products to temperatures below -50°C (15) Multipack centralized refrigeration systems for commercial use with a rated capacity of 40kW or more	Process cooling or heating Not in ban 10 Not in ban 11 included in bans "12" and "13"? Not assessed in impact assessment? Nuclear power plants asked for exemptions, other sectors not yet aware of the impact ? <u>Industry proposal : exempt process chillers</u> Not in ban 15	Heat pump tumble dryers Not clear: included in ban (16) ?? Any other purposes

II. Unclear product bans

Ban 12 & 16: Self-contained RACHP

Impact assessment:

Prohibit placing on the market and installation of **small hermetic RAC_o systems** (e.g. cream and ice cream makers, slushed ice makers, cooled trolleys, water coolers, juice makers, milk coolers (attached to coffee machines), beer and wine coolers, heat pump tumble driers etc. with F-gases (i.e. Annex I) from 1 January 2025.



This category ended up in 2 different product bans in Annex IV

Product ban 12 – refrigeration

“any stationary self-contained refrigeration equipment”

Product ban 16 (17) – self contained room air conditioners and heat pumps

a. Ban 12: Self-contained refrigeration

unintended collateral damage

ISSUE with Ban 12: intention was “small”, but the way it is formulated it includes even up to megawatt capacities. It is impossible to modify such a large range by 1st January 2025

Example : chillers



Product ban 12 – refrigeration

“any stationary self-contained refrigeration equipment”

- “hermetic” was replaced by “self-contained”
- no definition of “small”

Impact assessment:

Prohibit placing on the market and installation of **small hermetic RAC₇₀ systems**

(e.g. cream and ice cream makers, slushed ice makers, cooled trolleys, water coolers, juice makers, milk coolers (attached to coffee machines), beer and wine coolers, heat pump tumble driers etc., with F-gases (i.e. Annex I) from 1 January 2025.

SMALL Industry proposal: ≤ 6kW Other option: “household” = scope of Low Voltage Directive	 Milk cooler attached to coffee machine	 Household ice cube maker	 Household ice cream maker
LARGE Industry proposal: > 6 kW Other Option : scope = Machinery Directive	 industrial milk cooler	 industrial ice cube maker	 industrial ice cream machine

Proposal industry for ban 12:
Distinguish between $\leq 6\text{kW}$ and $>6\text{kW}$
Exempt chillers intended for process cooling & heating

Joint industry proposal for products intended for refrigeration use:

(12)

(a) self-contained equipment for stationary refrigeration with a rated capacity up to 6 kW that contains fluorinated greenhouse gases with GWP of 150 or more.

Date of prohibition: **1 January 2025**

(b) Other self-contained equipment for stationary refrigeration except process chillers that contains fluorinated greenhouse gases with GWP of 150 or more.

Date of prohibition: **1 January 2028**

Rated capacity : according to the relevant Ecodesign Directive

b. 16 (17): Self-contained AC & heat pumps

Impact assessment: intention was “small hermetic” RACHP but the way it is formulated is unclear, especially 16(b).

Council proposal

16(b) :

Plug-in room and other self-contained air-conditioning and heat pumps (including all heat pumps in monobloc construction) with a maximum rated capacity of 50kW



Unclear

How to read “Plug-in room and other self contained AC and HP”?

Scope is plug-in units?

How to read “(including all heat pumps in monobloc construction)”?

The monobloc HP is just an example; are other types also included?

Why 50 kW ?

This is not small.

What is “plug in” ? A plug is attached ? Or it is “Plug and play”= moveable between rooms by enduser?

What is “monobloc” ? This is not the same as self contained.

In scope



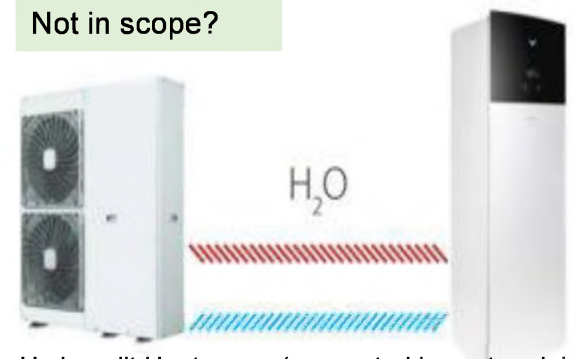
Portable (moveable) heat pump
= self contained
= monobloc
= has a plug
= moveable between rooms by the enduser

In scope or not in scope?



Plug in heat pump water heaters
= self contained
= monobloc
= has a plug
Not moveable between rooms by the enduser

Not in scope?



Hydrosplit Heat pump (connected by water piping)
= self contained (refrigerant circuit fully outdoors)
Not monobloc
No plug
Not moveable between rooms by enduser



In scope or not in scope?

Double duct air conditioner
= self contained
= monobloc
= has a plug
Not moveable between rooms by the enduser

Not in scope? Or did Council intend to have this in scope?



Minichiller
= Self contained
= Monobloc
No plug
Not moveable between rooms by enduser

Why 50 kW? This is not “small”

Product ban 16 (17)

- ☐ hermetic was replaced by “self contained”
- ☐ no definition of “small” in Commission proposal, 50 kW in Council proposal

Impact assessment :

Prohibit placing on the market and installation of **small hermetic RAC₇₀ systems**

(e.g. cream and ice cream makers, slushed ice makers, cooled trolleys, water coolers, juice makers, milk coolers (attached to coffee machines), beer and wine coolers, **heat pump tumble driers etc.**, with F-gases (i.e. Annex I) from **1 January 2025**.

SMALL

Industry proposal: $\leq 12\text{kW}$

Other option:
“household” = scope
of Low Voltage
Directive

LARGE

Industry proposal $> 12\text{ kW}$

Other Option: scope =
Machinery Directive

Heat pump tumble driers



Household tumble dryer



Industrial tumble dryer /
washing machine



Heat pump for comfort cooling & heating



Residential heat pump



Rooftop heat pump (commercial, industrial)



Industry proposal

- define small as $\leq 12\text{kW}$
- define “plug in moveable between rooms by end user” as separate category
- Scope 16 (17)b: “self contained hydronic heat pump designed for outdoor installations” (instead of “monobloc”)

Joint industry proposal: 17) Stationary self-contained air conditioning and heat pump equipment:

(a) Plug in self-contained air conditioning & heat pump equipment moveable between rooms by the end user that contain fluorinated greenhouse gases with GWP of 150 or more;

Date of prohibition: 1 January 2025

(b) Stationary self-contained hydronic air conditioning and stationary self-contained hydronic heat pump equipment designed for outdoor installations below or equal to 12 kW* that contain fluorinated greenhouse gases with GWP of 150 or more except when needed to meet safety requirements;

Date of prohibition: 1 January 2029

** rated capacity as defined in the relevant Ecodesign regulations*

(c) Other stationary self-contained air conditioning and heat pump equipment that contain fluorinated greenhouse gases with GWP of 750 or more, except when needed to meet safety requirements.

Date of prohibition: 1 January 2030

III. Scope for more ambition

a. Refrigeration bans 13 (14) & 15: Stationary Refrigeration (not self-contained)

Industry Proposal: more ambitious than Council & Commission proposal

Joint industry proposal :

(14) Stationary refrigeration equipment other than equipment **covered in provisions 12 and 15 and except process chillers**, that contains, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more.

Date of prohibition: 1 January ~~2024~~ **2028**

Joint industry proposal :

(15)(b) Multipack centralised refrigeration systems ~~for commercial use~~ with a rated capacity of 40 kW or more that contain, or whose functioning relies upon, fluorinated greenhouse gases, with GWP of 150 or more, **except process chillers**, ~~except in the primary refrigerant circuit of cascade systems where fluorinated greenhouse gases with a GWP of less than 1500 may be used.~~

Date of prohibition: 1 January ~~2022~~ **2025**

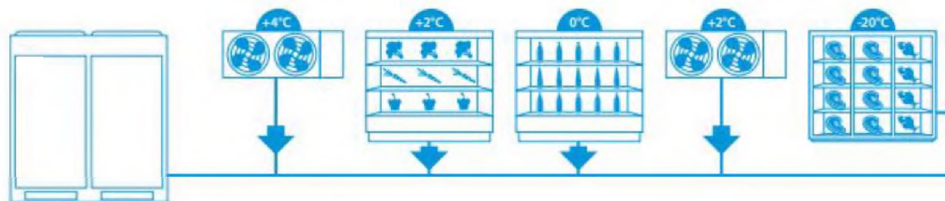
(15)(c) Multipack centralised refrigeration systems that contain or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more **except process chillers**.

Date of prohibition: 1 January **2028**

Examples of products where GWP150 limit would be acceptable

Multipacks > 40 kW for
non-commercial use

Refrigeration condensing
units
(non multipack)



Multipacks < 40 kW



IV. Concerns on split AC/HP bans

a. Ban 18b) Split air-to-air systems of a rated capacity $\leq 12\text{kW}$

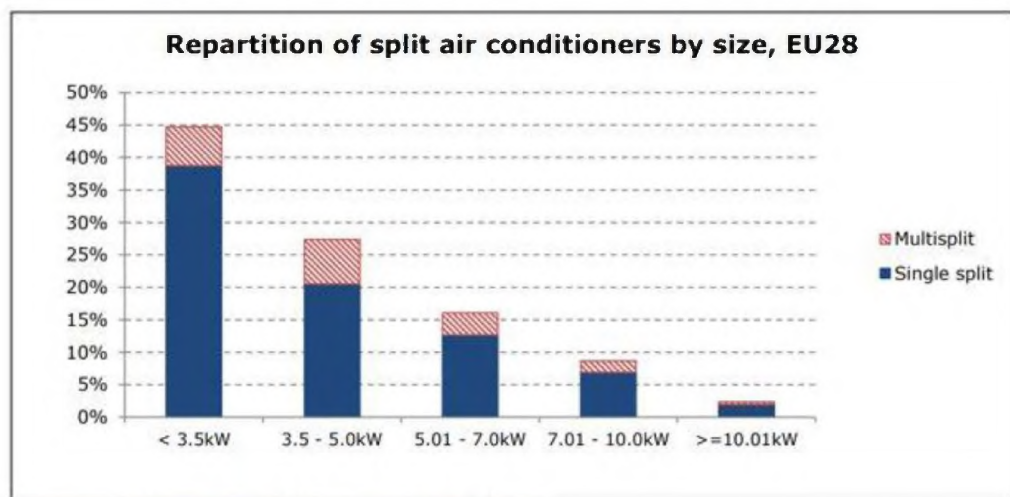


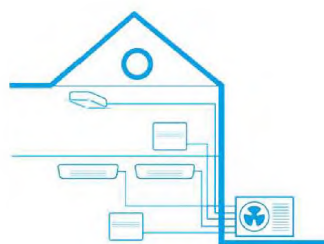
Figure 7: Split sales distribution by size, source BSRIA.

type	<7kW	>7kW&12kW
single split	70%	8%
multisplit	20%	2%

Multi split is a very appreciated technology in EU-27 as it is energy efficient, easy to install, space saving and affordable heat pump solution for housing without floor heating/radiators, and offering new combined services such as cooling, heating and domestic hot water with heat recovery.



Single split air-to-air



Multi split air-to-air



Multi functional split: combination of air-to-air AND air-to-water

Product bans: joint industry proposal

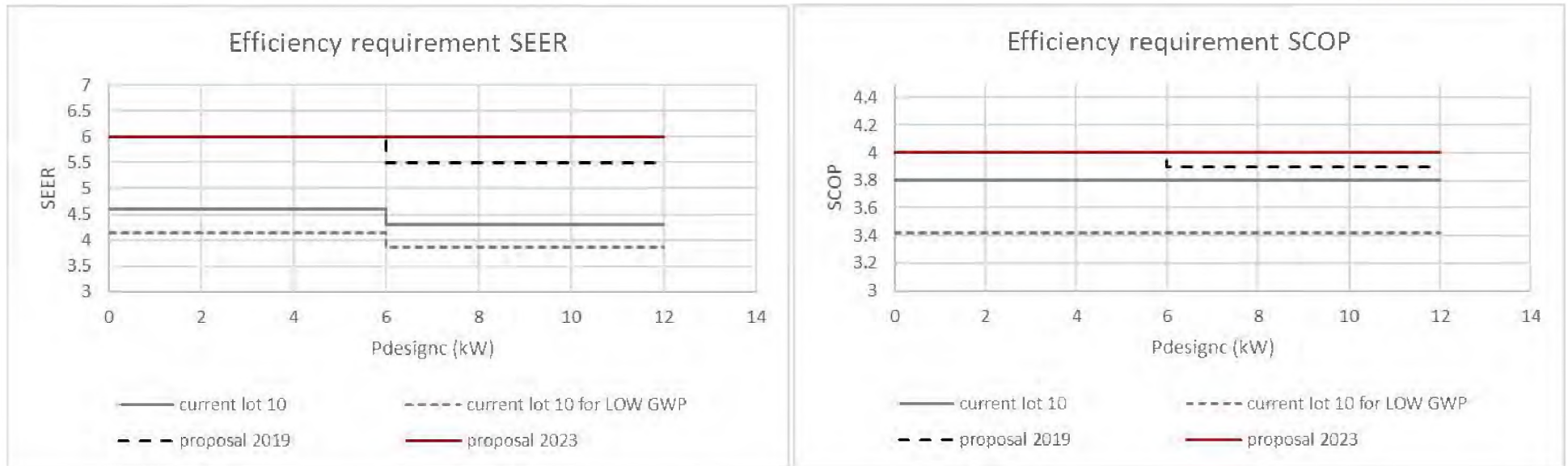


- Industries submitted comments that the GIZ report is not correct to claim that up to 12kW with propane would be feasible.
<https://epeglobal.org/wp-content/uploads/2021/12/EPEE-JBCE-JRAIA-position-paper-on-EC-split-air-conditioning-report-17-February-2021.pdf>
- The GIZ report did not analyze multi splits. Nor did the EU commission impact assessment.
- The Commission, the Parliament & the Council propose a 12kW limit (with different dates), including exemptions when needed to meet safety requirements
- Exemptions could apply in 30% to 40% of the cases, in some countries even 50% (because even single splits <6 kW with propane cannot be installed everywhere).

□ Industry proposed a GWP150 limit for single split up to 6kW with exemption for safety.

- With this scope, the need for exemptions will be lowered

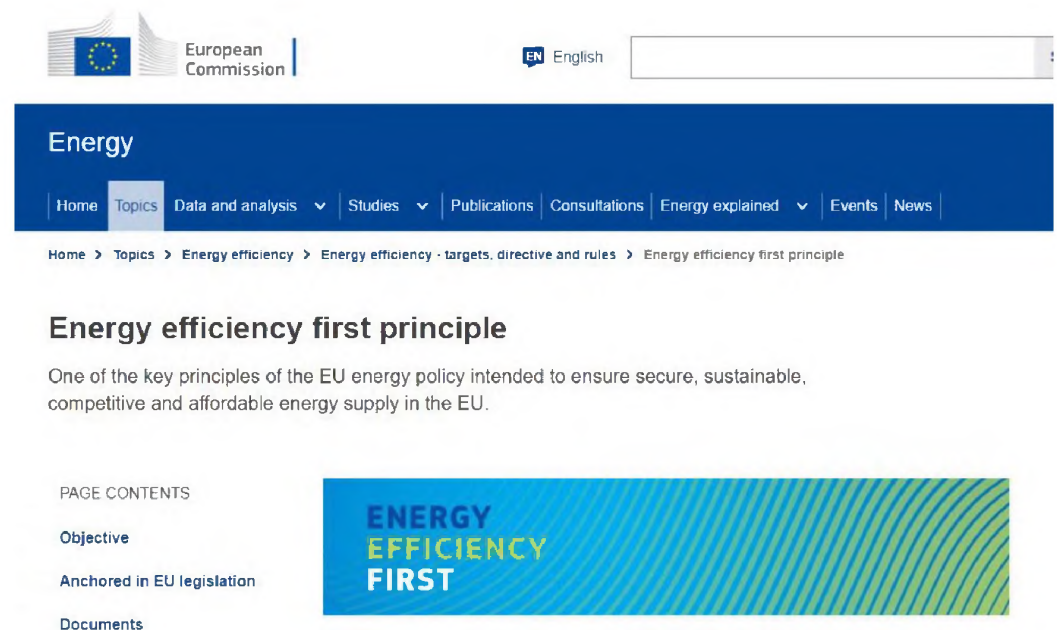
Lot 10 Proposals and Current Requirements



- The current Lot 10 minimum efficiency requirements are compared with the proposed requirements (red line).
- The study considered that R32 would be the main refrigerant.
- The study revealed that efficiency requirements could be lifted, and the bonus could be removed based on the study.
- Today, we observe that the study could not have anticipated the current situation, and hence a new assessment will be required in view of changes in F-gas and PFAS.

Points raised by industry in view of Ecodesign Lot 10 Revision

- ✓ Refrigerant choices are restricted.
- ✓ Ecodesign did not study that effect.
- ✓ More study is needed to assess whether current MEPS are feasible or not.
- ✓ Up to 6kW, we see the requirements feasible for single splits.
- ✓ For the multisplit systems (0-12kW) and single split above 6 to 12kW, there is a conflict between the three legislations (F-gas, PFAS and Ecodesign Lot 10).
- ✓ Energy efficiency should prevail.



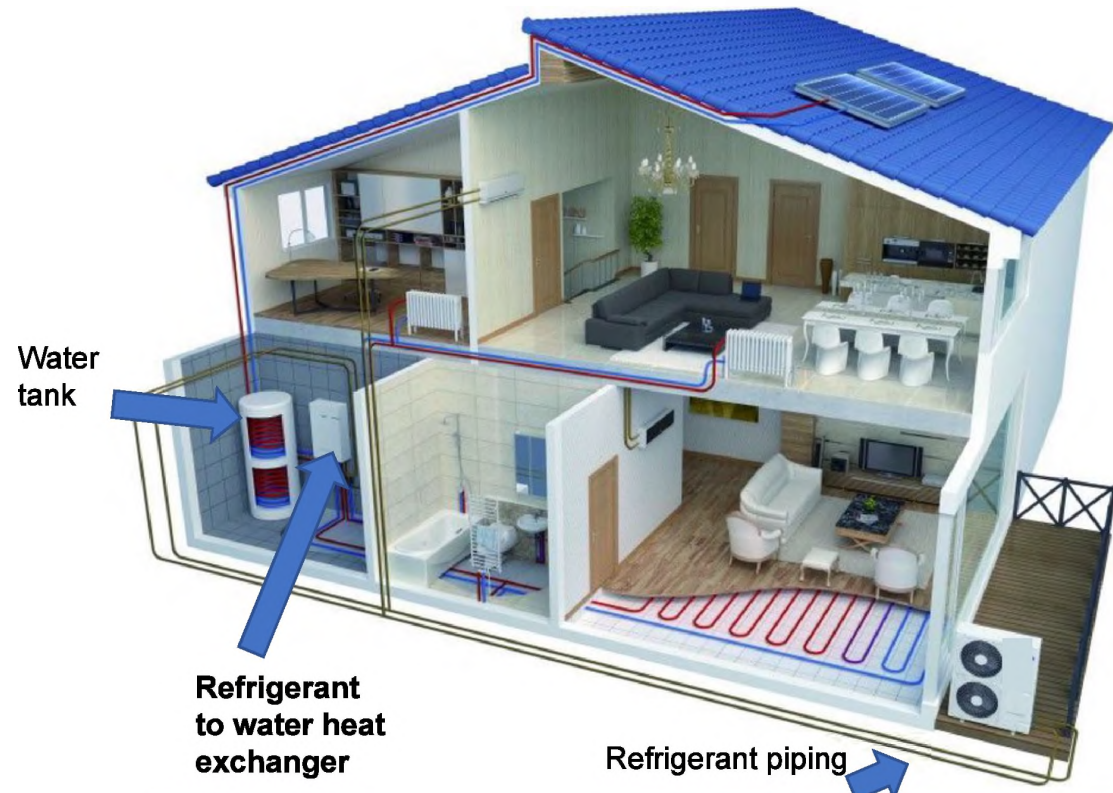
The screenshot shows the European Commission website for the 'Energy Efficiency First' principle. The header includes the European Commission logo, a language selector set to 'English', and a search bar. The main navigation bar is blue with links for Home, Topics, Data and analysis, Studies, Publications, Consultations, Energy explained, Events, and News. Below this is a breadcrumb trail: Home > Topics > Energy efficiency > Energy efficiency - targets, directive and rules > Energy efficiency first principle. The main heading is 'Energy efficiency first principle', followed by a subtext: 'One of the key principles of the EU energy policy intended to ensure secure, sustainable, competitive and affordable energy supply in the EU.' On the left, under 'PAGE CONTENTS', are links for 'Objective', 'Anchored in EU legislation', and 'Documents'. On the right is a large blue and green graphic with the text 'ENERGY EFFICIENCY FIRST'.

b. Ban 18 ba) split air to water ac & hp ≤ 12 kW

Council proposal:

ba) Split air-to-water systems of a rated capacity of up to and including 12 kW containing, or whose functioning relies upon, fluorinated greenhouse gases listed in Annex I with GWP of 150 or more, except when required to meet safety requirements;
1 Jan 2027

Similar to air-to-air heat pumps, exemptions for safety will also be necessary. The indoor unit is typically in a much smaller technical room. No impact assessment was done for such units.



The indoor heat exchanger unit is typically in a small room. Even more challenging to use R290 in comparison to an air-to-air system. Ventilated room is not always an option.

c. Ban 18d: Split systems of a rated capacity >12kW

VRF systems:

The outdoor unit is connected to several indoor units, with a refrigerant pipe network connected on-site.

The area where each unit is installed is only proportional to a fraction of the total system capacity.

The smaller the rooms, the smaller the charge allowed in the system.

Currently these systems are shifting to R32 (with additional safety measures)

However R410A systems are currently still required as there are delays in adapting some national building codes, example: Austria, France



Ban 18d: EU COM IA and EP Parliament report recognise that a GWP750 is to be maintained for this equipment.



Multi split (VRF) systems

In multi-split systems, a single outdoor unit feeds two or more indoor units. This type of system is mainly used in commercial buildings, especially office buildings. VRF (Variable Refrigerant Flow) systems are a sub-category of multi-split air conditioning systems and are distinguished from regular multi-split systems by their ability to modulate the refrigerant flow in response to the system demand. The outdoor unit can adjust the refrigerant flow in response to the demand from each indoor unit. In some configurations, these systems can have independent cooling or heating functionality for each indoor unit thus simultaneously heat and cool separate indoor spaces.

Multi split systems, in particular VRF systems, which came in relevant quantities onto the EU market in 2003, show significantly higher refrigerant charges than single split and moveable units and their capacity is typically >12 kW (can range up to 300 kW).

The typical refrigerant has been R410A for many years and the range of charge size is between 5 and 50 kg (specific HFC refrigerant charges tend from around 0.3 kg/kW cooling capacity upwards). Due to these higher refrigerant charges, the selection of alternatives to R410A is progressing slowly but recently updated safety standards are addressing flammability issues for this type of systems.

The following alternatives are available today:

R32 has been introduced in multi split systems since ca. 2015 in the EU and is today used in the capacity range of up to ca. 20 kW (small and medium capacities). A mini-VRF system running on R32 was presented by LG in early 2020. For larger capacities of multi-split systems, R410A is still the refrigerant of choice. A European manufacturer started their own refrigerant recycling and reclamation programme to be able to ensure availability of this refrigerant for servicing needs throughout the next years.

⁷¹ <https://www.blauer-engineering.com/products/electric-devices/stationary-air-conditioners/midea-split-type-room-air-conditioner-all-easy-air/> (last accessed: 29.07.2020)

⁷² https://www.linkedin.com/posts/unido_energy-efficient-and-climate-friendly-split-activity-6834063115918360578-v_jj

Microsoft Word - FGREval_FINAL Annexes (europa.eu)

In addition, so called hybrid VRF systems were introduced from ca. 2015 onwards. They represent indirect systems where the refrigerant is circulating between the outdoor unit and a "hydro unit" while water is circulating inside the building. In this way, the refrigerant charge is significantly reduced. Hybrid VRF systems are offered with R410A and R32.

The potential of R466A is being discussed, however, major manufacturers (e.g. Panasonic) indicated that issues such as corrosion inhibit the use in their products. Furthermore, R454A or R455A might be suitable alternatives but are currently not used in any product on the market.

A9.4 Prohibition of F-gases (Annex I) in stationary AC and heat pumps

The prohibition relates to stationary air conditioning equipment and heat pumps (heating and cooling mode)

- of a rated capacity of up to 12 kW that contain, or whose functioning relies upon fluorinated greenhouse gases with a GWP of 150 or more from 1 January 2025 and
- of a rated capacity of more than 12 kW that contain, or whose functioning relies upon fluorinated greenhouse gases with a GWP of 750 or more from 1 January 2025.

Current technology trends towards low-GWP alternatives can be seen in all AC and heat pump applications and already resulted in the introduction of A2L and A3 refrigerants (such as R32, R454C, R290) in a wide range of air conditioning and heat pump products and ahead of the prohibition spelled out in Annex III(15) of the current regulation^{86,99}. At the same time, research on charge-size minimisation for flammable refrigerants is progressing fast. In addition, both small and larger single-split air conditioning systems and heat pumps offer great potential for further GWP reductions. However, due to larger charge sizes, safety concerns are more limiting for the larger equipment types (i.e. larger than 12kW) at this moment in time, so that the introduction of low-GWP alternatives will likely need more time. Given the expected growth rates of the heat pump sector, which is currently driven mainly by the promotion of more energy efficient heating, the choice of refrigerant is also fundamentally relevant to reduce emissions from the anticipated and desirable growth in this sector. Safety standards are being revised to allow for easier use of low-GWP alternatives including flammables at higher charges and are expected to be updated in the near term (i.e. 2022) according to information from experts involved in the standardisation working groups. The metrics for this prohibition are based on capacity (kW) to align with other relevant regulations (e.g. eco-design regulation), and the prohibition would refer to placing on the market as well as installation of such equipment from 2025. This date would give sufficient time for further technological refinement and progress on updating the relevant standards in line with technology. For perspective, R32 was introduced in this sector in a timeframe of 4 years from near zero to close to 90 %, even without a prohibition deadline.

An exemption would be included to allow for continued use of HFCs where standards and codes do not currently allow for the use of A3 refrigerants, i.e. hydrocarbons. Equipment for this purpose would need to carry special labelling and evidence such as technical documentation needs to be kept and provided upon request to Member State authorities. This

⁸⁶ EU COM 2020: The availability of refrigerants for new split air conditioning systems that can replace fluorinated greenhouse gases or result in a lower climate impact.

https://ec.europa.eu/clima/sites/clima/files/news/docs/c_2020_6637_en.pdf

⁹⁹ Announcement by Midea to introduce R290 in split air conditioning units in the EU in 2021 at the Green Cooling Summit 2021, 26 May 2021.

Joint industry proposal:

(18) Stationary split air-conditioning and split heat pump equipment:

(a) **Stationary** single split **air to air** systems **and fixed double duct appliances** containing less than 3kg of fluorinated greenhouse gases listed in Annex I, that contains, or whose functioning relies upon, fluorinated greenhouse gases listed in Annex I with GWP of 750 or more;

Date of prohibition: 1 January 2025

(b) **Stationary** single split **air to air** systems of a rated capacity up to and including ~~12~~ **6 kW*** **and fixed double duct appliances of a rated capacity up to and including 3.5 kW*** containing, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 150 or more, except when needed to meet safety ~~standards~~ **requirements**;

Date of prohibition: 1 January ~~2027~~ **2030**

** rated capacity as defined in the relevant ecodesign regulations*

(c) **Other stationary** split systems ~~of a rated capacity of more than 12 kW~~ containing, or whose functioning relies upon, fluorinated greenhouse gases with GWP of 750 or more, except when needed to meet safety ~~standards~~ **requirements**.

Date of prohibition: 1 January ~~2027~~ **2029**

V. Quota mechanism

a. Gaps in impact assessment

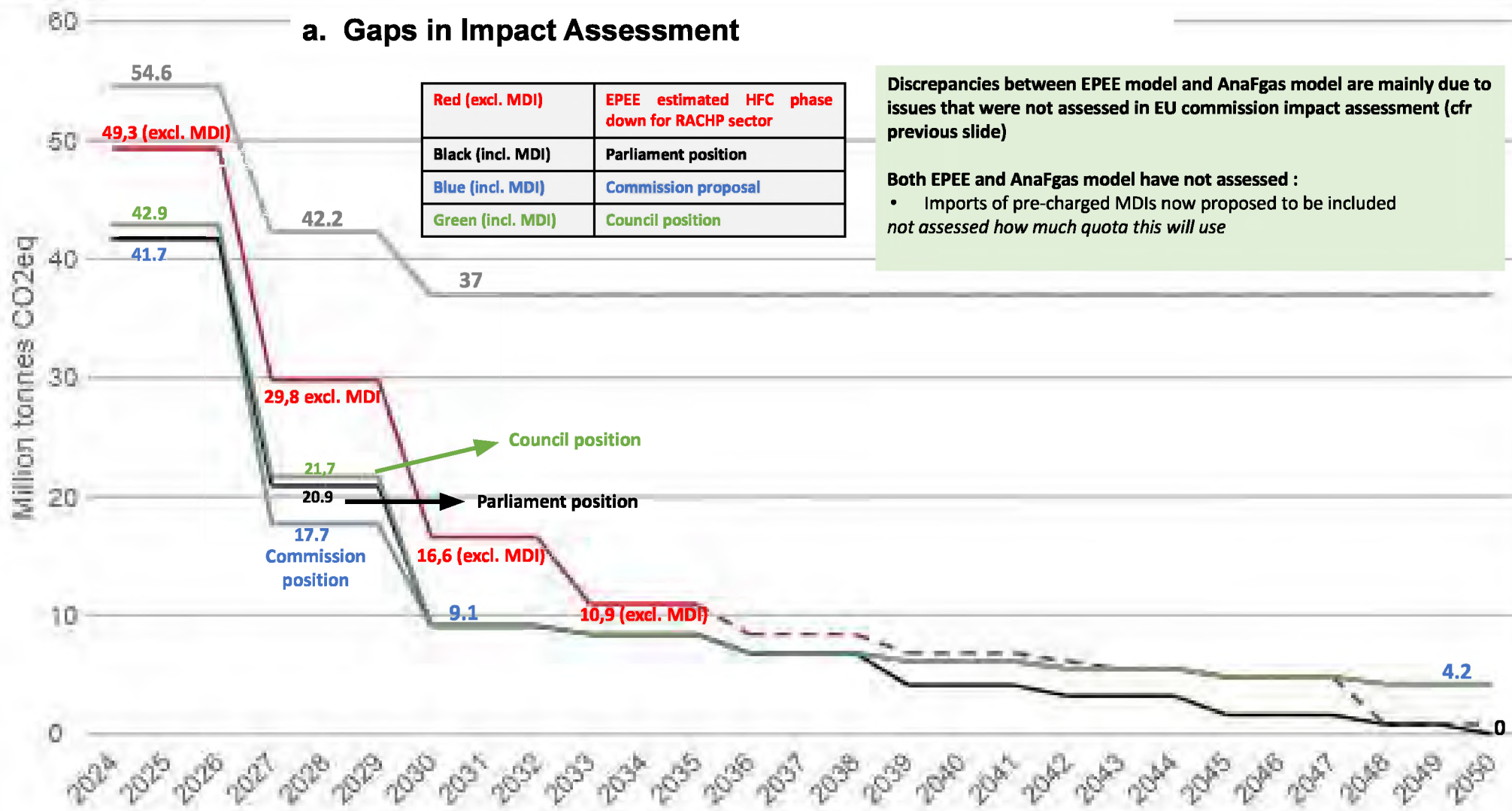
Not assessed in EU commission impact assessment:

- Required exemptions for safety
not assessed in how many cases they would apply
- Quota needs for products manufactured in EU for export market
not assessed in how many cases the IPR procedure cannot be used
- Quota authorization buffer: not possible for EU based factories
Impact of Green Deal Industrial Plan not assessed
 - AnaFgas model errors due to “extrapolation” bias
not sufficiently granular
 - Imports of pre-charged MDIs now included
not assessed how much impact this will use

Main reasons for the difference
between the AnaFgas model and
the EPEE model

Not assessed in AnaFgas nor in
the EPEE model

a. Gaps in Impact Assessment



b. “REPowerEU break”: how would this work in practice?

We appreciate that Parliament and Council understood the concerns of the heat pump sector, both suggesting to allow the Commission to add more quota if needed.

However, how would this work in practice? Even a delegated act takes time.

How will the Commission assess the future needs and how much time it will take to add more quota?

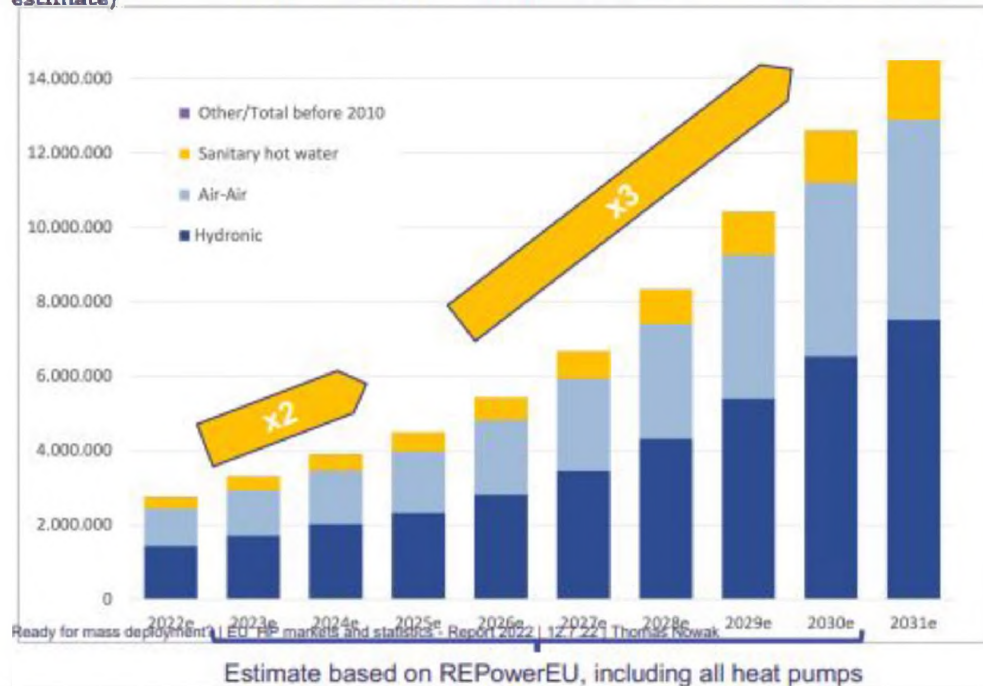
Note: refrigerant prices are NOT a good indicator for this, because this would be a too late signal.

A whole supply chain is affected, which require planning several years ahead. A “stop and go” scenario is not workable.

How will the progress be monitored as the current F gas portal only traces the “imports of precharged equipment”, not the placing of the market of equipment produced INSIDE the EU?

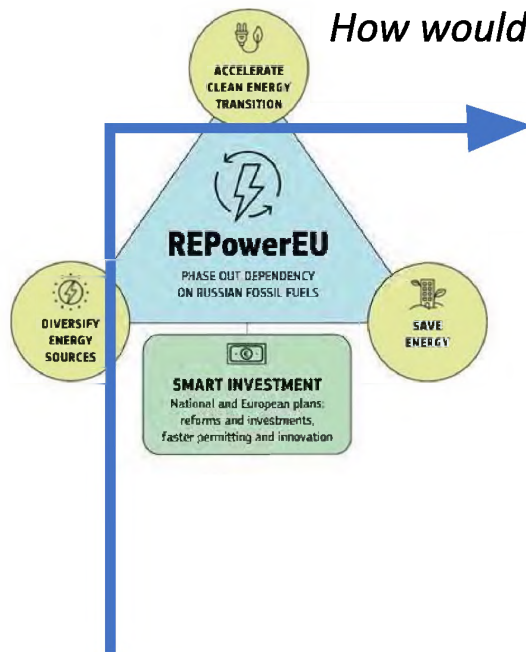
The growth trajectory – a REPowerEU perspective

annual sales based on REPowerEU targets (10 mill. hydronic units by 2025 / 30 mill. by 2030 - own estimate)



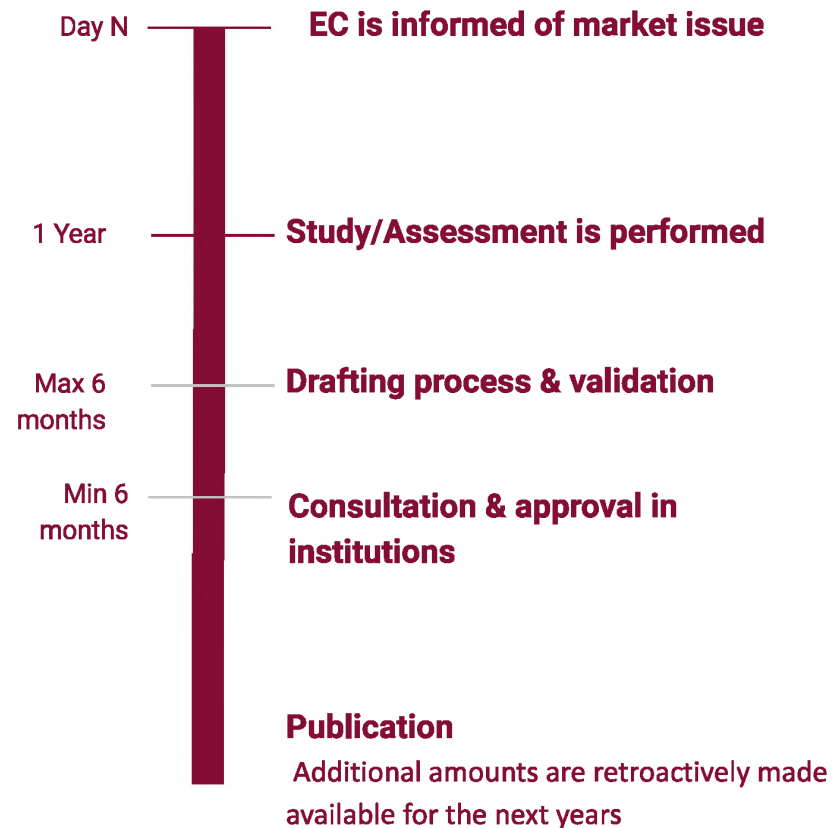
- 30 million hydronic heat pumps to be installed by 2030 → more than 10000 heat pumps installed every day in EU27 until 2024
- On Day N, heat pumps are installed → insufficient refrigerant on the market → less installations/less maintenance → market enters into refrigerant scarcity and equipment scarcity
- On **day N + min 2 years** market is informed, economic operators can now restart planning
- On **day N+ 3 years**: market enters new 'normalised' situation

Article 16.4: “REPowerEU break”= the false good idea



How would the ‘emergency’ measure (not) work?

–Does not work in practice, does not address market issues quickly enough
–Will place the market in a ‘circle’ of non-economically driven and incorrect information

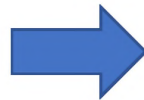


VI. Concern on “parts”

Council suggestion

1. The placing on the market of products and equipment, including parts thereof, listed in Annex IV, with an exemption for military equipment, shall be prohibited from the date specified in that Annex, differentiating, where applicable, according to the type or global warming potential of the gas contained.

By way of derogation from the first subparagraph, the placing on the market of parts of equipment required for repairs and servicing of existing equipment shall be allowed provided that the repair or servicing does not result in an increase in the capacity of the equipment or an increase in the amount of fluorinated gases contained in the equipment or of the fluorinated gases used.



We appreciate the concerns of Parliament and Council on the Commission “ban of parts thereof”. Making a derogation for repairs and servicing makes sense.

However there are also situations where parts are needed to extend or relocate an existing system, where a replacement of a new system would be disproportionate.

Examples in the next slides.



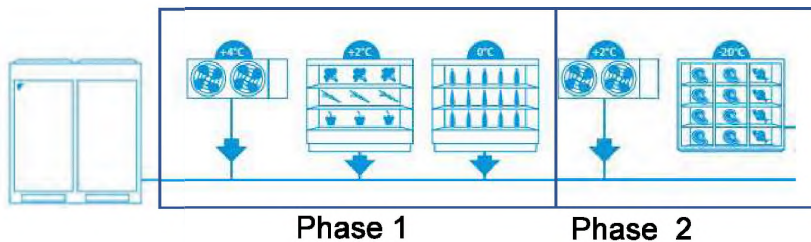
Upgrading of existing system

Example 1: multi split and VRF systems (comfort cooling & heating): adding more indoor units to an already existing outdoor unit.

- Due to longer refrigerant piping lengths, the outdoor unit may need some “topping up” of refrigerant. However total charge is not more than the maximum allowed charge of the outdoor unit. (overcharging from the start is not an alternative option)



Example 2: adding more refrigerated display cases to an existing condensing unit □ Due to longer refrigerant piping lengths, the outdoor unit may need some “topping up” of refrigerant.

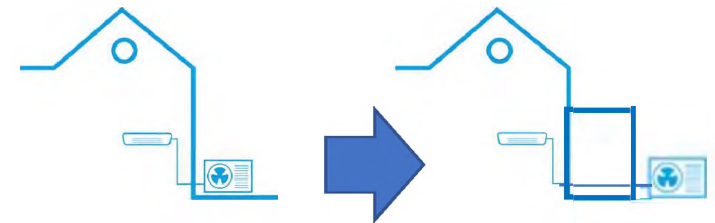


Relocation of existing system

Example 3: moving an indoor unit or outdoor unit to another location in the same building, eg due to renovation of the building.

Similar for refrigerated display cases, relocate due to refurbishment of the shop floor. Or replace one display case with another larger one..

If the distance between indoor & outdoor becomes longer, some refrigerant amount may need to be added.



For info: To avoid such obsolescence situations, the switchgear sector flagged similar concerns, which resulted in following Council proposal in 13a

“Where the extension of existing electrical equipment is necessary, one or more addition cells with F gases with the same GWP as the existing cells, may be added if a technology using F gases with a lower GWP would entail the replacement of the entire electrical equipment”

VII. Labelling

Commission introduces new labelling requirements □ similar to existing F-gas regulation a transition time would need to be foreseen

Example :

- products containing HFOs (F gases Annex II) □ need to be labelled for the first time
- Products containing blends of HFC with HFO and/or non-fluorinated refrigerants □ the GWP changes so new labels to be foreseen

Concluding remarks

- **In conclusion, we hope that the granularity and clarity that we have provided will assist you in drafting a more accurate, precise regulation.**
- **We are all supporting the decarbonization of heating and cooling in buildings, but this must be done in a carefully thought through step-by-step approach.**
- **As part of an industry alliance, we are looking to the EU decision makers to bring about a sensible practical and implementable regulation, which ultimately delivers on its objectives.**