Ist die Verschärfung der F-gase Verordnung das Ende der Wärmepumpe?

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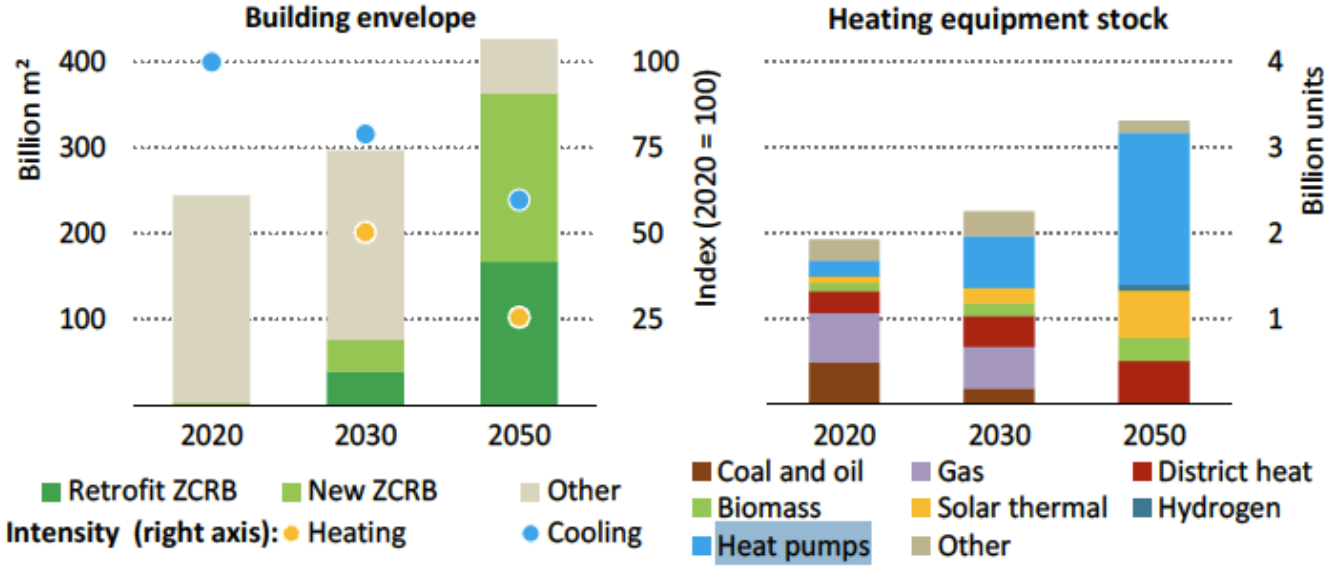
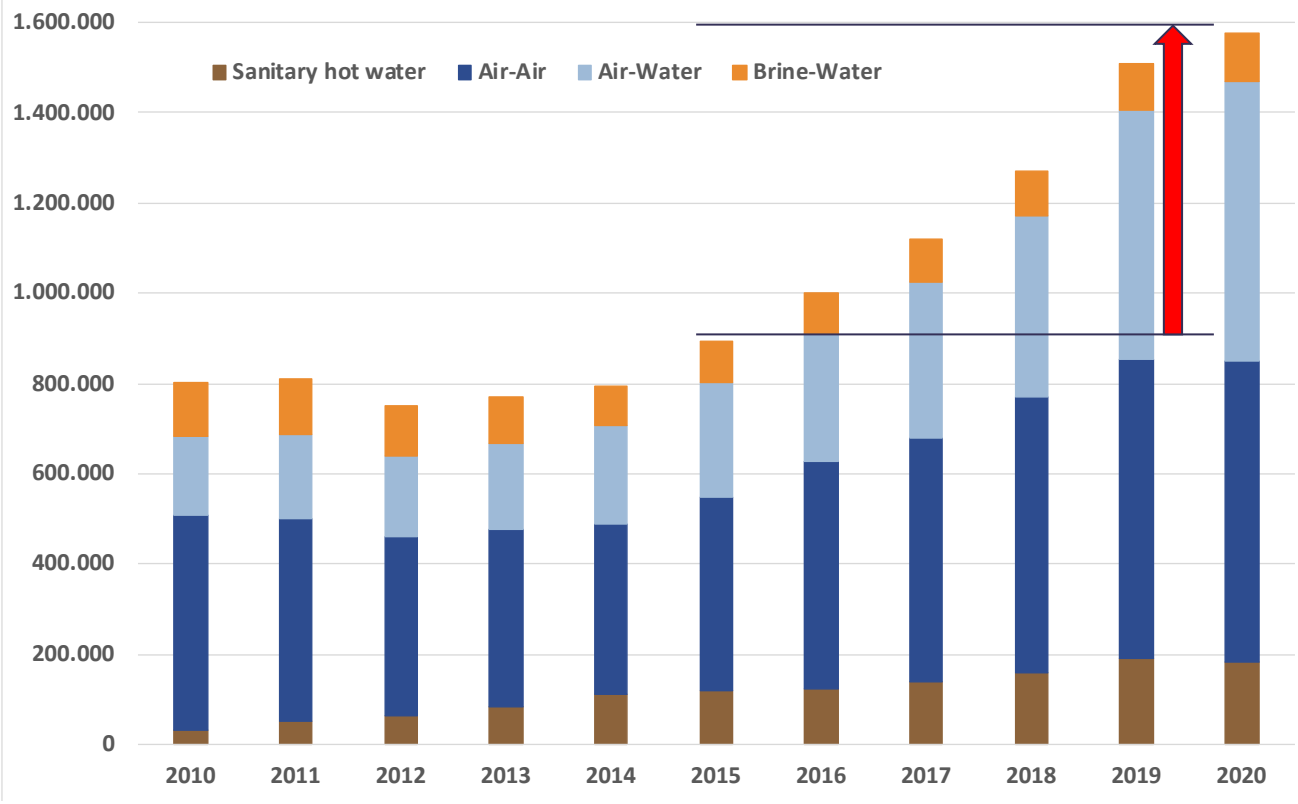
World-wide policy recognition for heat pumps...

IEA report: net zero by 2050 (2021)



By 2050, over 85% of buildings are zero-carbon-ready, reducing average useful heating intensity by 75%, with heat pumps meeting over half of heating needs

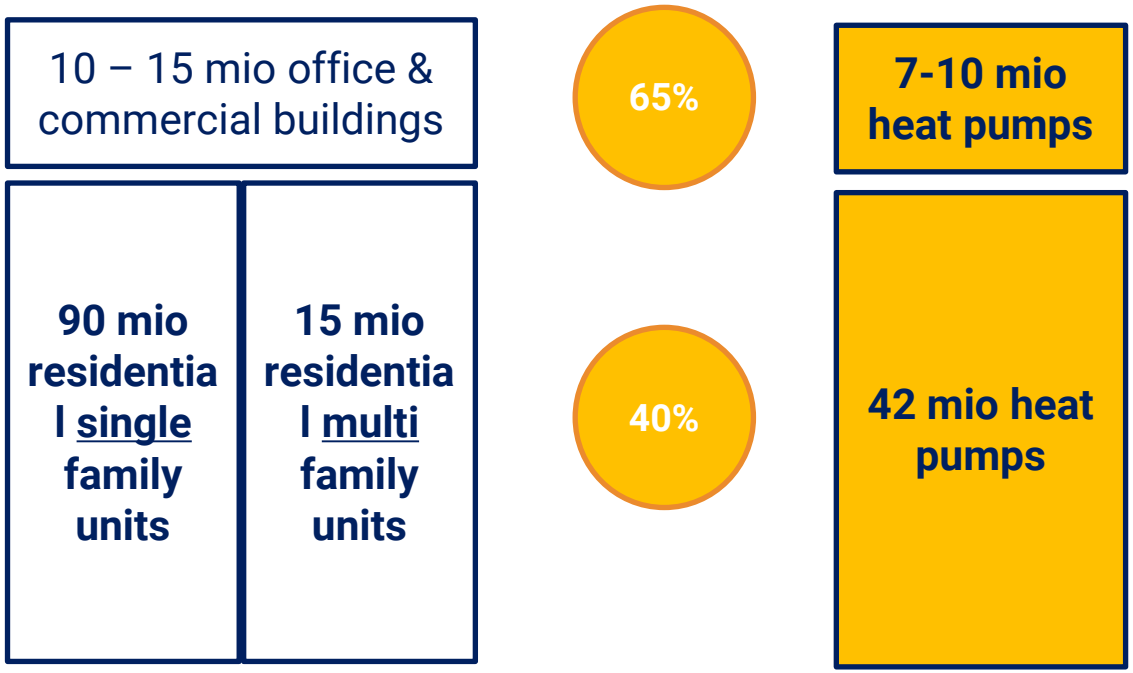
Market growth '10 – '20 | HP stock^{2020}: 14.8 mill. installed



EU-28 building stock:
115 – 120 mill. buildings

YoY	1%	-7%	3%	3%	13%	12%	12%	13%	19%	6%

EU Energy systems integration strategy



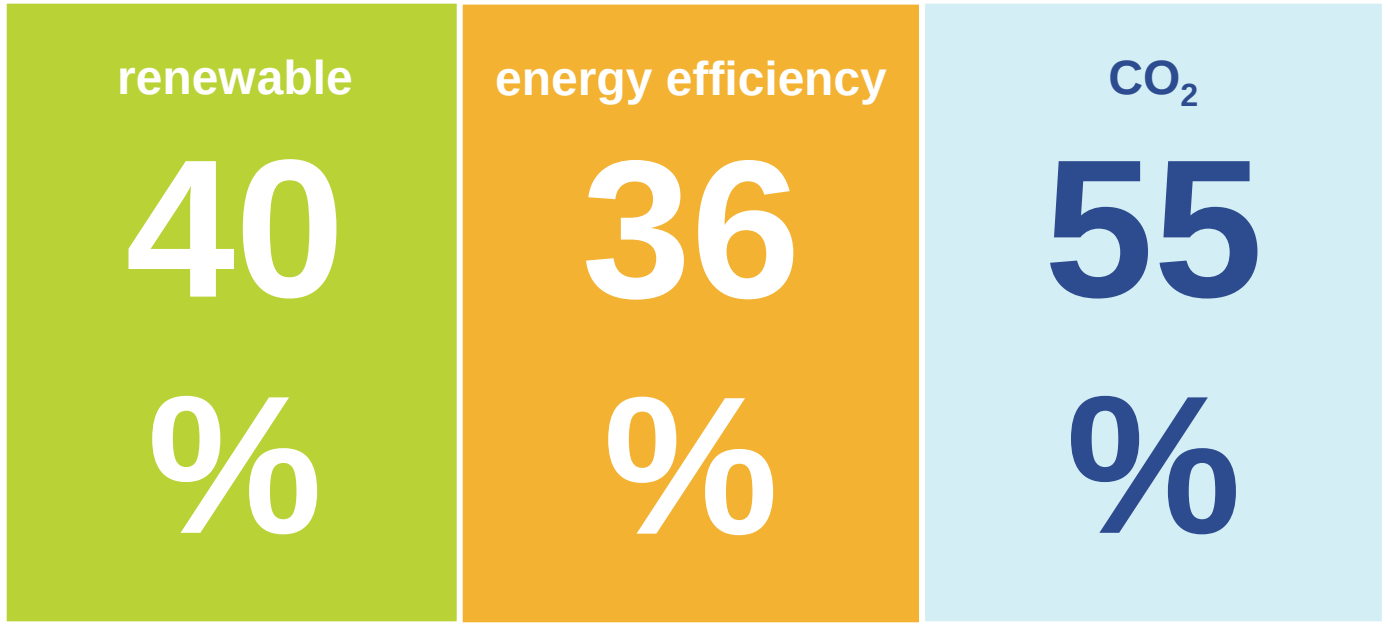
todays HP stock

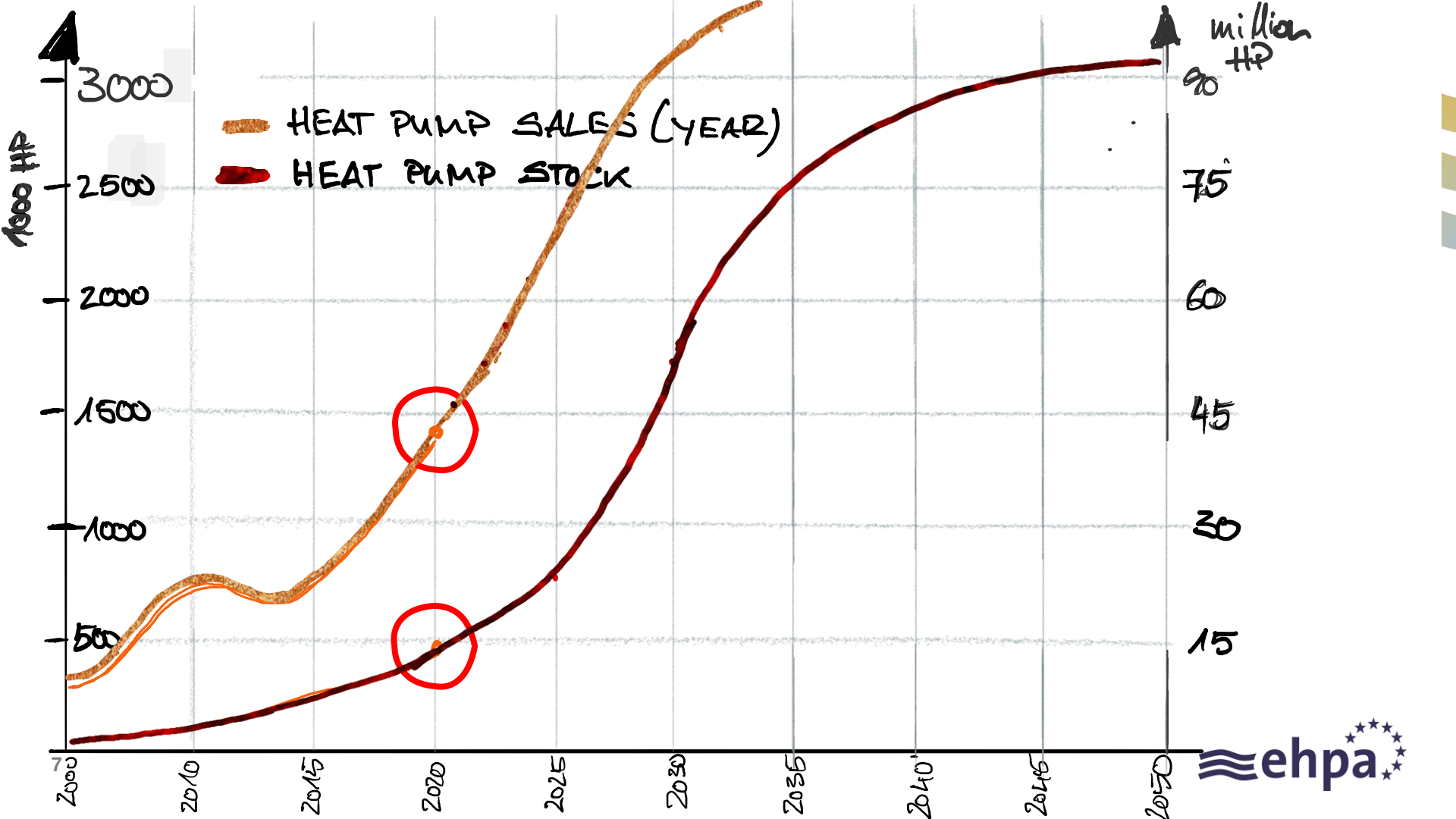
x 4

+ industry approx. 200 TWh = 0,1 mio

Europe is discussing a new set of targets for 2030

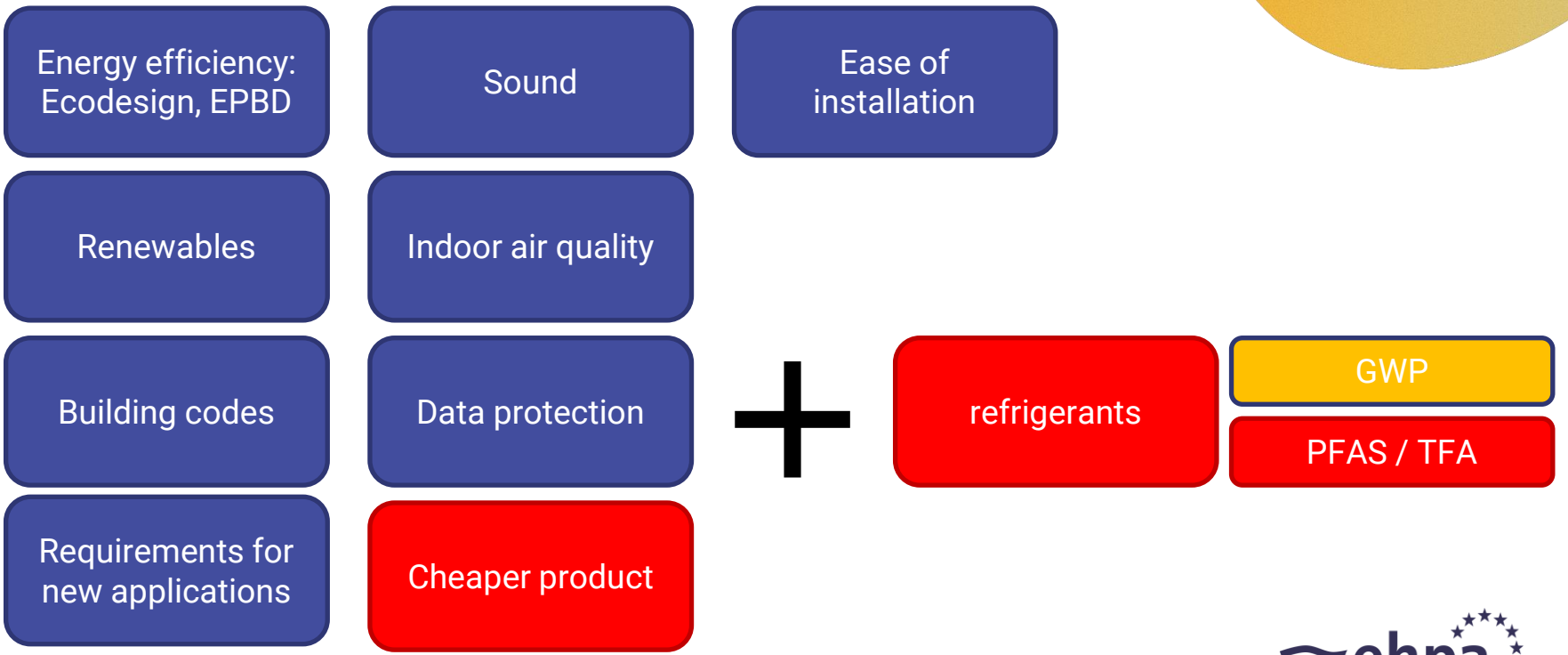
Heat pumps use renewable energy from air / water / soil, waste energy treated similarly




1000 HP
3000
2500
2000
1500
1000
500
HEAT PUMP SALES (YEAR)
HEAT PUMP STOCK
million HP
90
75
60
45
30
15
2000
2010
2015
2020
2025
2030
2035
2040
2045
2050

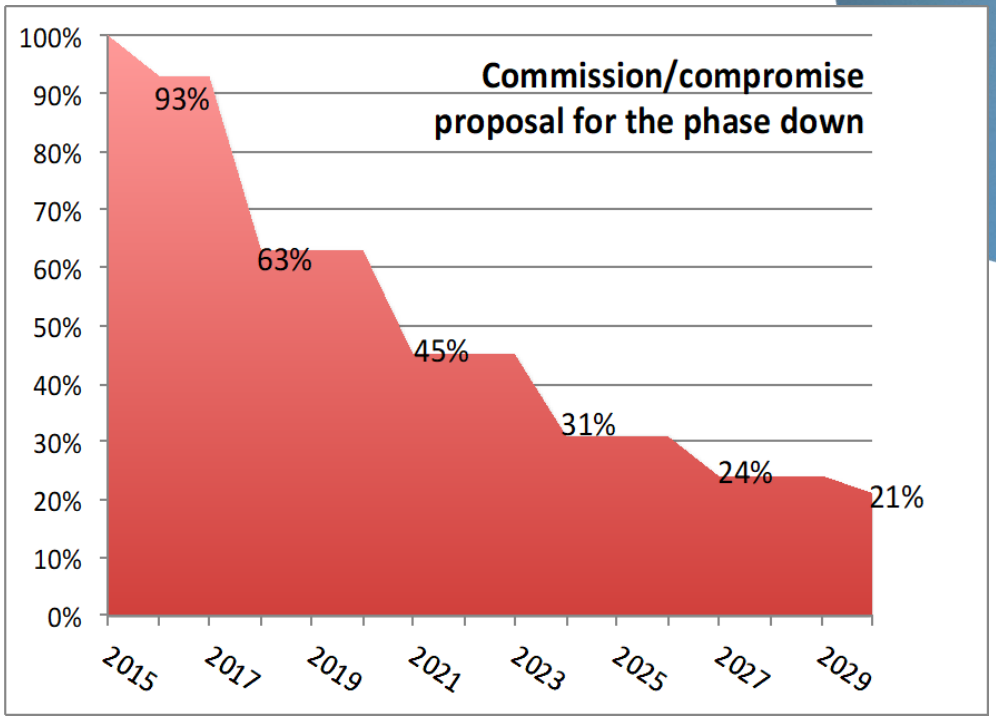
… meets a very regulated sector

Market requirements influencing heat pump R&D



Current F-gas regulation (2014/517/EU) in force: 1.1.2015

- Industry committed
- Search and implementation of alternatives is ongoing
- Fast move towards refrigerants with GWP < 700



Justification for review of F-gas regulation

- Fit for the **Green Deal**: Steeper phase down and new F-Gas prohibitions (including in some split AC)
- Streamline with **Montreal Protocol**: Phase down steps after 2030 and no thresholds for ‘quota need’ and reporting
- Better implementation and enforcement: Enabling better customs control and include skills on low-GWP alternatives in certification of technicians
- Simplifications and clarifications

Polyfluoroalkyl substances in a nutshell | PFAS

- Health concerns about the use of PFAS
- 2020: call for evidence on the use of per- and polyfluoroalkyl substances (PFAS) by DE, NL, NO, SE, DK
- All HFOs and (almost) all HFCs are in scope
- Aim: joint REACH restriction proposal
- If successful: the restrictions on the use of PFAS will be introduced

- Restriction (=possible ban) of all products containing PFAS

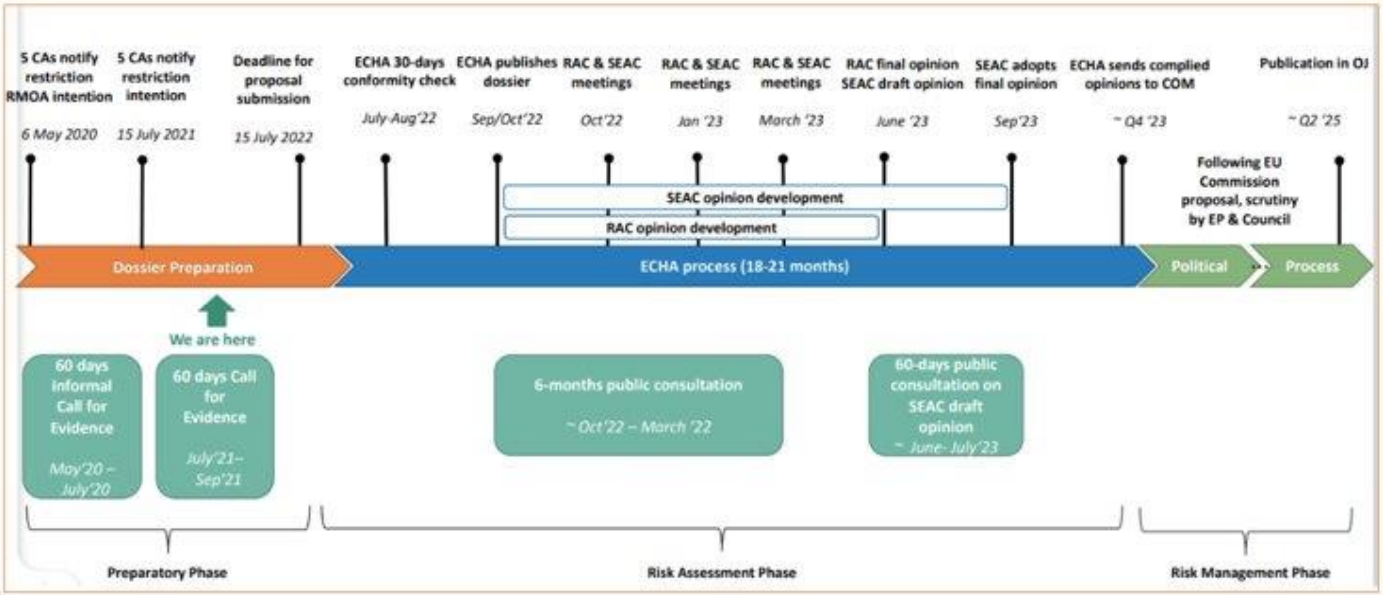
- Possible derogations **for socio-economic reasons**

PFAS under REACH: Institutional milestones

May 2020	DE, NL, NO, SE, DK published call for evidence on use of per- and polyfluoroalkyl substances (PFAS). Aim: joint REACH restriction proposal
July 2021	NO, NL, DE, SE & DK registered intention to restrict PFAS under REACH
17 October 2021	Deadline for online stakeholder consultation
15 July 2022	Deadline for restriction submission to ECHA
Until Q4 2023	ECHA process followed by EC proposal
2025	Possible entry into force of amendment of the Annex XV

PFAS under REACH: Institutional milestones
Source: CEFIC

- Indicative regulatory time of the REACH restriction process



Consequences for the industry

F-gas

- Pressure on using even lower GWP fluids will continue
  ➔ HFO, HC, Ammonia, CO2, blends
- **new GWP values in IPCC report**
- Building codes, safety requirements & standards need review
- Bans?

PFAS

- Implementing PFAS restrictions leads to a ban of certain HFOs
  - limits growth potential for heat pumps
  - additional stress on industry
- Exceptions?

What are we doing?

4x todays HP by 2030

- Re-focus the narrative on **industrial & economic impacts:** Decarbonisation justifies a **scope beyond the refrigerant**”
  - Ensure refrigerant supply to maintain multiple HP benefits
  - HP essential part of the decarbonization strategy (system integration)
  - Benefits of HPs and need to quadruple deployment by 2030
- **Importance of availability** of suitable refrigerants for all applications
  - **Technology development path** for refrigerants in 2030 & 2050
  - Acceptable **phase-down figures** until & beyond 2030
  - Acceptable **bans on very specific products**
- **Look for alternatives to bans:** Reporting, labelling, training

What are we asking for in detail

- Export of pre-charged equipment to be out of quota
- EU legislation should be improved on **leakage prevention & recovery**
- **Certification & training** of installers should apply to all refrigerants (which role for industry & policy-makers)
- Customs checks, data sharing against illegal trade and market surveillance should be strengthened at national level
- Policies should recognize commitment of and investments made by industry
- Policies must acknowledge the time needed for adaptation
- Policies should be based on realistic & granular data ➔ still missing

Data backed argumentation

- Technology development pathway 2030 – 2050
  - Which refrigerant for which application?
  - What charge?
  - How many units?

Modelling needed!

- **Data on refrigerants used and lost** needs to improve

Studies needed!

«leakage control is not only a manufacturers responsibility but will always be perceived as the manufacturers problem»

Conclusions:

- Pressure on heat pump industry will continue
- Ongoing shift to low GWP refrigerants reduces options
- No single solution refrigerant for all applications (at least today)
- Exemption needed from PFAS
- Industry working on improved monitoring, containment and recycling

Thank you

For questions,
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