

The EPTEC logo is displayed in a stylized, green, italicized font with horizontal lines through the letters. It is positioned in the upper left quadrant of the image, overlaid on a semi-transparent white box.

EPTEC

...one of Norway's leading contractors for cooling and heat pumping systems based on environmentally friendly refrigerants, complex projects and tailor-made solutions...

The EPTEC logo is printed on the back of a black hoodie. The logo is white with green horizontal lines through the letters, matching the logo in the top left.

EPTEC

- *Tilstandskontroll*
- *Service og vedlikehold*
- *Reservedeler*
- *Teknisk rådgivning*

The EPTEC logo is displayed in a stylized, green, italicized font with horizontal lines through the letters. It is positioned in the upper left quadrant of the image, overlaid on a semi-transparent white rectangular area.

EPTEC

***The safe choice for the future:
Chillers with natural refrigerants***

The EPTEC logo is printed on the back of a black hoodie. The logo is white with green horizontal lines through the letters, matching the logo in the top left. The hoodie is worn by a person with curly hair, seen from behind, standing in a technical facility.

EPTEC

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What is a «safe» refrigerant?

R1234ze, R1234yf, R134A,
R410A, R513A, R125,
R143a, R1224yd, R1233zd,
and more..

All synthetic refrigerants, all
affected by F-gas and possible
PFAS regulations

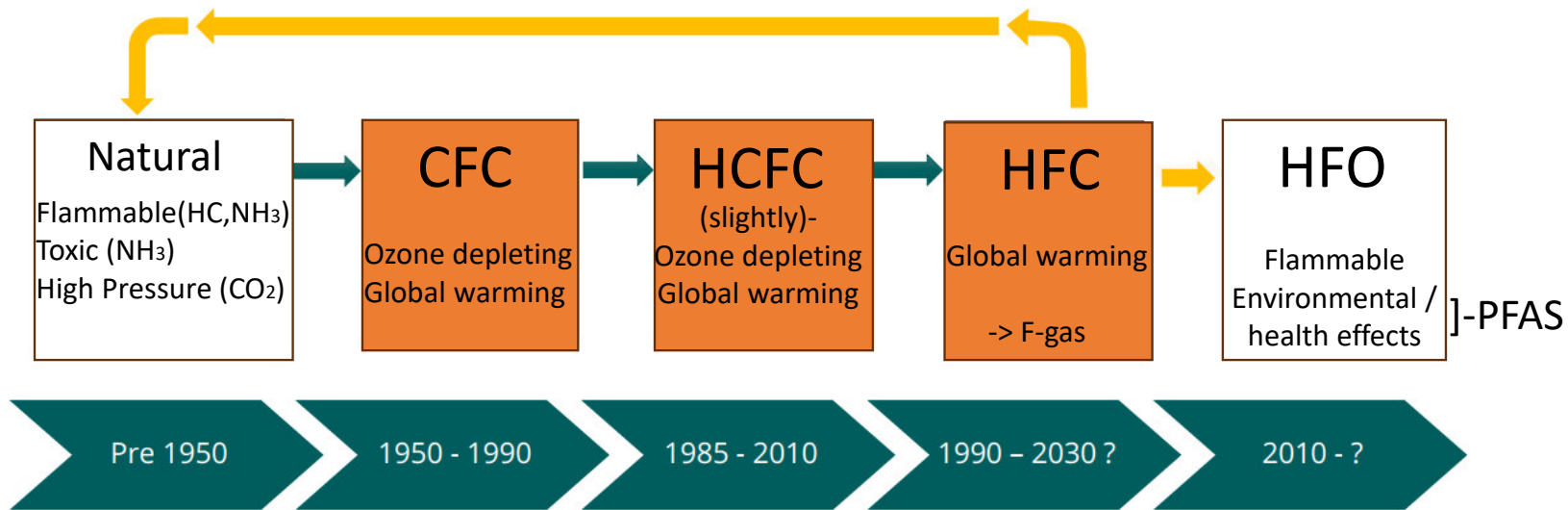


R290 – propane | R717 – Ammonia |
R744 – CO2

All natural refrigerants, all have
easily managable safety aspects to
consider



Refrigerants through the years



Refrigerants and global warming

- Many refrigerants have large Global Warming Potentials (GWP)

- Proper management and refrigerant choices can be defined as among the single most impactful solution available.

* Gigatons CO2 Equivalent Reduced / Sequestered (2020–2050)

◆ SOLUTION	◆ SECTOR(S)	▼ SCENARIO 1*	◆ SCENARIO 2*
1. Reduced Food Waste	Food, Agriculture, and Land Use / Land Sinks	88.50	102.20
2. Plant-Rich Diets	Food, Agriculture, and Land Use / Land Sinks	78.33	103.11
3. Family Planning and Education	Health and Education	68.90	68.90
4. Refrigerant Management	Industry / Buildings	57.15	57.15
5. Tropical Forest Restoration	Land Sinks	54.45	85.14
6. Onshore Wind Turbines	Electricity	46.95	143.56
7. Alternative Refrigerants	Industry / Buildings	42.73	48.75
8. Utility-Scale Solar Photovoltaics	Electricity	40.83	111.59
9. Clean Cooking	Buildings	31.38	76.34
10. Distributed Solar Photovoltaics	Electricity	26.65	64.86
Silvopasture	Land Sinks	26.58	42.31
Methane Leak Management	Other Energy	25.83	31.29
Peatland Protection and Rewetting	Food, Agriculture, and Land Use / Land Sinks	25.40	40.27

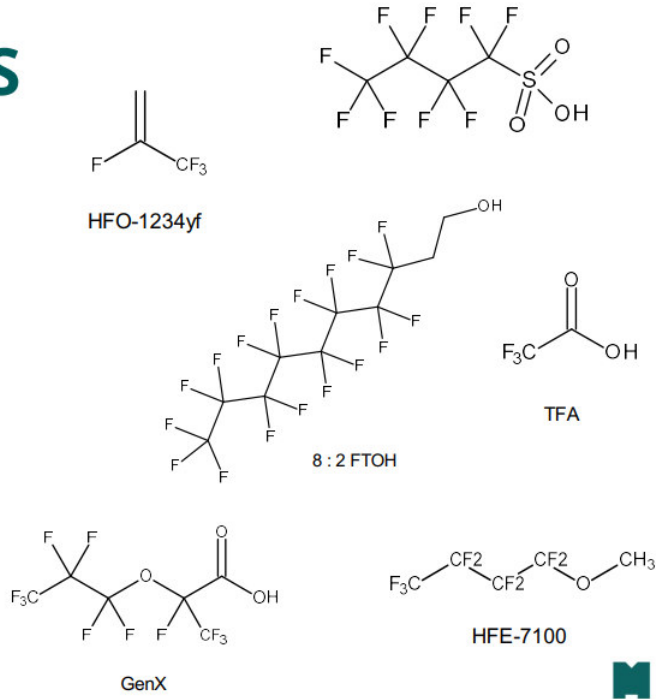
Source: Project Drawdown, <https://drawdown.org/solutions/table-of-solutions>



Refrigerant restrictions - PFAS



PFAS

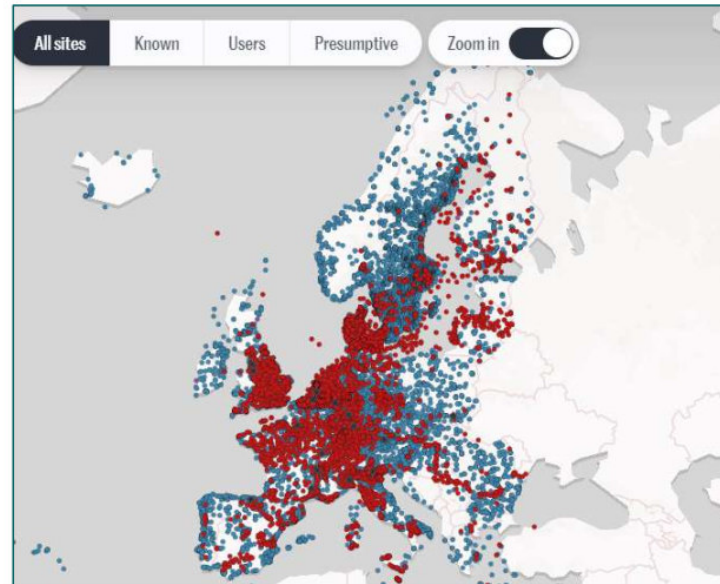


Refrigerant restrictions - PFAS



Le Monde | NEWS | INTERNATIONAL | WAR IN UKRAINE | ENVIRONMENT | FRANCE | OPINION | FRENCH

'Forever pollution': Explore the map of Europe's PFAS contamination



- 17 000 områder forurenset med PFAS
- 21 000 områder med antatt PFAS forurensning



PFAS and F-gas

Forbud mot PFAS

Norge har sammen med Sverige, Danmark, Nederland og Tyskland utarbeidet et forslag om å forby hele gruppen av per- og polyfluorerte stoffer (PFAS-er).



Veileder

Nye forbud for f-gasser

Bruken av f-gasser skal fases ned og myndighetene har innført avgifter, importkontroll og strenge regler for nytt utstyr og bruk av f-gasser.



The safe choice – natural refrigerants

Ammonia (R717)

- +ODP=0
- +GWP=0
- +High efficiency
- +Inexpensive
- +Widely available

- Mildly flammable
- Toxic (but very easily detected)



GEA Grasso BluAir
520-1250kW

Propane (R290)

- +ODP=0
- +GWP=3
- +Non toxic
- +High efficiency
- +Inexpensive
- +Widely available

- Flammable



Enerblue Silver
300-825kW

CO2 (R744)

- +ODP=0
- +GWP=1
- +Non flammable
- +Non toxic
- +Inexpensive
- +Widely available

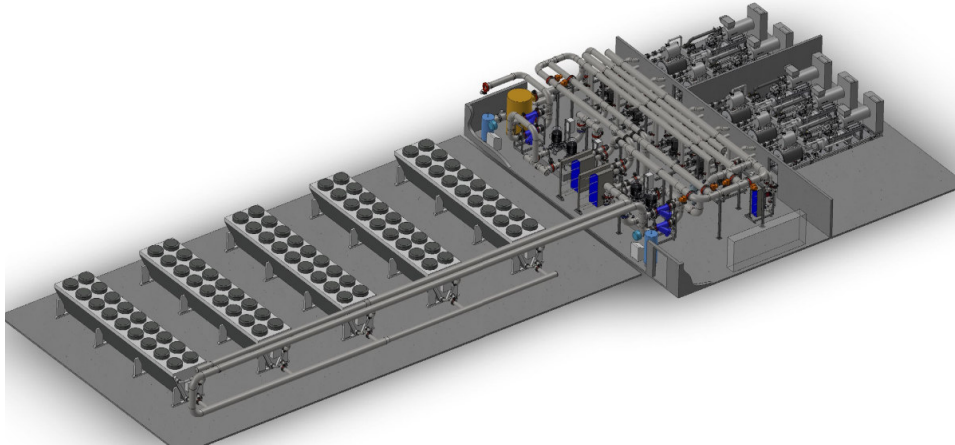
- High pressure
- Can require certain conditions for efficiency

Not applicable for datacenter cooling applications

All challenges are easily handled by a professional and knowledgeable contractor

Projects

Morrow batteries, Arendal



8 MW Chilled water 8/16°C
5 GEA Blue Astrum NH3/Ammonia Chillers
5 KELVION Drycoolers
Free cooling

Radiumhospitalet, Oslo



3 x BluGenium 1200 - 800 kW/unit.
5 x BluGenium 450 - 375-400 kW/unit



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