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230125.EP.FGRR-Refrigeration

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ATMOSphere

HFC and HFO are not needed anymore for new equipment as there are plenty of alternatives. There is already competition among NATRef developers. This is PFAS free too. All traditional chemical companies just followed the same dirty path. We should better consider GWP at 20 years rather than 100 y. This would show that the HFO are not that good. The number of shops relying on NR refrigeration has gone from 10.000 in 2015 to around 60.000 today. Many of the "alternative" companies are EU companies, currently expanding outside EU.

Dimitrios Salavouras commercial and industrial refrigeration

90% in Greece is NR. Currently many successful applications and should be accelerating. Problem of illegal trading that may increase if there is a ban. NH3 is the major industrial ref and CO2 is progressing. Bans should be faster. Bans are also important to incentivise technician training.

David Radler (AUT) PBS(X) company on Mob Ref System

MobRef in 290 for vans already in place and developing. There is a path for alternatives. Other regulation may also impact the market for refrigerants (with F).

K Mund (Convector GMBH)

Had problems due to stopping compressor due to lack of regulatory framework. Now several bus makers are using their CO2 MAC. Many customers (or potential ones) do not see the interest of this technology. Need support from the policy side to facilitate the uptake of this technology. In the context of Electric vehicle, NR are the best and more flexible solution.

A. Syplakow (Mirai Intex)

Working in ultra low temperature (-50 - -80°C). They use AIR as refrigerant. Many applications and currently developing. (gas condensation). Also available for Ref transport.

Discussion

Bas Eickhout on Illegal Trade. -> Atmo : going NR would eliminate Illegal Trade. Safety is a key element in developing alternatives. Lowering the charge is a way to do it. Currently also there are shortages in components as there is a huge uncertainty on the future of both technologies. Cost of some alt tech is still higher but should be going down soon. How many companies are in which sectors to use alt. -> Pharma sector is making quick move but cool storage too

No risks of creating a monopoly as there are old technologies and there are many actors working on it. There are also market opportunities as the EU is clearly the leader and only CHN is also working on it.

Question on the global picture on ref transport and cold chain. -> there are many solutions available. Certification is done in all sectors. There are solutions available for all mobile (train, bus, cars, trailers/trucks...). Those equipment are used for long periods and we need to include it into the reflection.

EEB insist on the coming context that the use of GHG will be banned and this changes totally the perspective of the TEWI assessment.

Innovation should drive bans and being incentivised.

Need clarity for the market and how fast are we going to do that. This may be the last revision as we should move to a phase out in 2050.

230131.EP.FGRR.HP

ATMOSphere (Marc Chasserot)

Together with Clzan Cooling Coalition. HP are old technologies. HFC/HFO are no more needed and there are many NR available and more efficient.

Each chemical refrigerant caused environment issues and the HFO are linked to PFAS issues. And the GWP in AR6 are even higher than before.

Bans are needed and the industry showed the possibility to adapt to a new context very fast.

REPowerEU do not imply delays of FGRR.

There are many unused quotas showing there is no crucial need for more HFC/HFO. Training is ongoing now.

Manufacturer of compressors are starting NR lines and MAC is also moving toward it with E-vehicle.

Monoblocs (Van Der Hoff)

Several plants (triple aqua) for HP based on CO2. technology is simple and accessible. They also help other industrial partners to move to NR.

HP associations are moving slowly but the industry is moving faster. So ambition is happening.

Split Systems (Colbourne)

Study on the feasibility of using NR in HP. They considered technical aspects, not production or strategical aspects.

They compared 7 technologies and quantified parameters. Safety standards are limiting the qty of Refrigerant and they checked the adequation. They also looked at the Eco Design constraints.

They looked at emissions in a wide scale, including the material needed. Cost of retooling

The findings are that NR are all feasible nowadays, within the safety standards. Even some very specific uses may be addressed. Construction material are almost the same or lower (costs) than HFO. Emissions are also higher in fluor technologies. Costs of safety requirements are stable. Costs of quotas will increase, balancing also in favour of NR.

District Heating (Hoffmann)

District Heating (DH) on ammonia. Growing demand on alternative technologies and interest in recovering and recycling heat. Many customers are not very used to HP and NR. Legislation could ease the penetration of those technologies.

Carbon neutrality will require better techs, climate neutral electricity (at least 30%). Many solutions are available.

Training is not a big issue as there will always be a need even for HFO equipment.

Viessman (Kolb)

We are in a transition away from fossil fuel, and from fluor. It is in transition to future proof technologies. An ambitious REPowerEU is in phase with FGRR. REACH and PFAS is reinforcing but not sync. They foresee 10 million HP (hydronic) needed for modernizing the existing buildings. Safety has been addressed for decades and there is a huge need to decarbonize the building stocks by only replacing the heating units, not the full installation. They ask consistency, strong F-Gas Regulation.

3 wishes : 1 support the version, benchmark and ANN IV should go beyond the limit of 150 CO2eq. 2. Clear sunset of HFC to give a perspective. 3. REPowerEU should not water down ANN VII.

Q/A

- Uncertainty in the supply chain. -> The supply chain struggles currently on the chips mainly, not for refrigerant

- Does the F-Gas Regulation creating a monopoly for NR. -> NO as this reflects also the turn that many companies are moving away from FR to NR
- Why is FR using more material than NR and what influence may the price of quota have ? -> Thermal properties of FR are worst than NR. Narrow and shorter pipes are needed for NR. Then the price of FR will increase soon.
- Why ammonia rather than FR -> because it is efficient for HP.
- Safety is not an issue as it is also applicable to other technologies.

Need to be ambitious and reward the innovator by having quick ban dates rather than accommodating the one that are complaining of the changes.

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