ASERCOM/EPEE comments on the 2nd interim report of the professional refrigeration review study – detailed paper

ABSTRACT

ASERCOM and EPEE have brought together a Joint Industry Expert Group (JIEG) for the revision of ecodesign requirements under ENTR Lot 1 (professional refrigeration), to assess the second interim professional refrigeration report from the Commission, based on a significant number of condensing units and process chillers performance data.

We compiled a large, comprehensive, and substantial technical database – based on the input from *ASERCOM*'s and EPEE's members, and have prepared an alternative proposal that considers economic and regulatory uncertainty, without creating loopholes. This paper aims to address our main concerns and suggestions, based on findings from this technical work.

Chapter I: position on condensing units.

1. Deep granularity is required when analysing the impact on energy efficiency of regulatory measures, such as the F-gas Regulation(2024/573), and the potential impact of the PFAS Restriction proposal if adopted as proposed by the Dossier submitters.

- High performing condensing units that are equipped with GWP>150 refrigerants could be eliminated from the market due to the F-gas Regulation (2024/573), and potentially the PFAS Restriction proposal, if adopted as proposed by the Dossier submitters. While there is no certainty that the PFAS proposal would effectively lead to full bans, it is necessary to consider its potential impact as it is related to efficiency of products.
- As it seems for now, the only long-term viable solutions are GWP<150 new and alternative refrigerants, which have their respective technical, efficiency, and safety challenges.
- There is a high risk that even a small increase of MEPS will drive the market to bespoke solutions, like non-regulated alternative installations.
- At the minimum a clause must be set to allow a review to cater to the revised F-gas Regulation (2024/573) or potentially PFAS under REACH if the proposal goes through as proposed (refrigerants and components).

Depending on the type of product, we are especially concerned that, due to restriction in refrigerant choices, current MEPS may be difficult or even unfeasible to meet, without a significant increase in product costs. Proposing overly ambitious MEPS could drive customers to bespoke installations if a potential PFAS Restriction proposal, as proposed by the Dossier submitters, is adopted.

Moreover, the proposed REACH restriction on PFAS by the Dossier submitters includes fluoropolymers. Proposed restrictions would directly impact on the design of components and electronics and consequently the availability of equipment and spare parts. Possible restrictions on PFAS will force manufacturers to invest a lot of effort and time into qualifying alternative materials, if any can be found, thereby hampering efforts to increase energy efficiency of products.

2. The product population studied must be representative as a basis for drafting a new regulation. The minimum energy performance standards (MEPS) proposal and improvement options need to be assessed only against GWP<150 new and alternative refrigerant equipment in the future.

The *ASERCOM*/EPEE investigation covering 3,453 units across all LT and MT classes shows a dramatic elimination rate considering that units with GWP>150 will be out of the market by 2028. If only GWP<150 alternative refrigerants will be available in 2028, the product options to decide on new MEPS will be drastically reduced and some capacity classes will not have any marketable units (*see our graph page 24*).

To determine new MEPS in such a special situation – call it *force majeure* from the Ecodesign perspective – is not possible in the sense of classical Ecodesign methodology. It is hazardous to base the MEPS calculation on incomplete and incoherent data. This special situation calls for common sense and a balance between industrial risk and resources available to redesign a majority of platforms. A more balanced approach would keep existing MEPS or allow only a small increase in MEPS, in recognition of the threat of a potential drastic refrigerant choice limitation.

3. We urge the Commission to lower its proposed MEPS on a limited population of low-temperature condensing units (from 8kW to 20kW, representing less than 5% of the market).

Due to the revised F-gas Regulation (2024/573)[1] recently adopted (GWP>150 ban in 2030), in combination with the potential future PFAS restrictions, several high GWP refrigerants (due to the GWP>150 ban in 2030) can no longer be used. It will be especially difficult for the bigger low-temperature units to reach the proposed MEPS using alternative refrigerants. The Commission therefore proposed to consider using the following exemption in the F-gas Regulation (2024/573) (Article 11.2):

> 2. The prohibition set out in paragraph 1, first subparagraph, shall not apply to equipment for which it has been established, pursuant to ecodesign requirements adopted under Directive 2009/125/EC, that its lifecycle CO_2 equivalent emissions would be lower than those of equivalent equipment which meets those relevant ecodesign requirements.

There seems to be a misunderstanding about how this exemption applies. **It cannot be used as an exemption from complying with MEPS.** It is an exemption for the refrigerant choice limits set in the F-gas Regulation (2024/573) and applies in this case to refrigerants exceeding GWP150, on the condition that the lifecycle CO_2 equivalent emissions are lower than that of equivalent equipment that meets the MEPS. Relying on refrigerants with a high GWP when quota is severely declining is not an innovative solution for industry.

The fact remains that the MEPS are simply too high for condensing units running on some alternative refrigerants. Thus, the suggestion to investigate the possibility to use the exemption in Article 11.2 of the revised F-gas Regulation (2024/573) for condensing units in the ENTR Lot 1 dossier is not a solution.

The answer is clear: industry requires a long term and predictable framework to invest and deliver long term energy efficient solutions to the market. With additional consideration of the energy efficiency first principle and the different Ecodesign rules, ***ASERCOM*/EPEE would like to ask the following:**

- ➔ **De-facto, the low-temperature units above 8kW are already challenged by the existing MEPS. We urge the Commission to lower MEPS on larger low-temperature condensing units (from 8kW to 20kW, representing less than 5% of the market) to ensure certain alternative refrigerants remain feasible. Please see our proposal under point 5 (*see page 5*).**

Indirectly banning those systems with alternative refrigerants by setting MEPS too high would be detrimental to the EU market and also leave very few refrigerant options that are technically feasible today to comply simultaneously with the revised F-gas Regulation (2024/573) and if the potential future PFAS restriction as proposed by the Dossier submitters is adopted.

4. The current application of SEPR and COP should be maintained with one tier increase of MEPS, with an optional application of SEPR for 1-2kW LT units and 3-5kW MT units.

Changeover to new refrigerants results in complete re-design of the products in all product ranges, and the same is true for the underlying components. This is a tremendous effort and needs sufficient time and resources. A single tier approach would guide industry in the most efficient manner to maximise energy efficiency in an uncertain market space.

Industrial stakeholders proposed in the consultation forum to extend the SEPR ruling optionally into lower capacities – MT from 5kW down to 3kW and LT from 2kW down to 1kW. This gives the opportunity for installers to select a better SEPR efficiency unit when outdoor placement is foreseen. The SEPR limit for these two groups could in principle be the same as for the next higher capacity, but it seems to be very challenging for the LT units. LT units for low GWP refrigerants are already challenged and a level of 1,53 SEPR is proposed (*see page 5*).

[1] Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU) No 517/2014.

The consultants' proposal for a mandatory SEPR for all units is unrealistic or even technically wrong (an average value to convert from COP to SEPR cannot be used as the value depends on the unit itself), and damaging (around 600 units in our population are not released/approved for all SEPR ambient temperature points). The condensing units currently under COP are not necessarily designed or released for SEPR outdoor conditions.

This uniform SEPR proposal impacts 1318 of the tested 3453 units, or 38%. Manufacturers will need to retest, or even redesign, any unit that they want to sell on the EU market after 1.1.2026.

If the Commission introduces a SEPR ruling for the very small sizes of condensing units, then there must be a new rating standard to cover indoor placements by using load profiles similar to the rating standard for household refrigerators (EN 62552). We propose a standardisation mandate for a future category of condensing units with load profiles for units placed indoors.

5. Industry proposal: retaining a single tier of MEPS and <u>waiting until 2028</u> at the earliest to apply it, to allow industry – including the SMEs – to develop new and efficient GWP<150 alternative refrigerant platforms.

Within *ASERCOM*/EPEE, we have performed an analysis to indicate how many units would be eliminated by each individual increase in MEPS. The data is based on more than 10 international manufacturers' inputs providing information necessary to apply the proposed regulation (cooling capacity, COP or SEPR, refrigerant, etc.), and the analysis has been performed on an anonymised data set (3453 units below GWP<2500). Moreover, we calculated these following elimination based on our units pool, that we detail further in this subsection.

- ⇨ F-gas GWP<150: 53% of total units eliminated;
- ⇨ Referring only to refrigerants, if potentially PFAS under REACH is adopted as proposed by the Dossier submitters: 95% of total units eliminated.

In light of all uncertainties, we propose a limited adequate average increase of MEPS in eight product categories, in addition to an opening for an optional SEPR. This approach will not create any loopholes and allows space for incentives for higher efficiency products (be it under green taxonomy with special depreciations or within incentive schemes for complete systems).

Below, please find the in-depth analysis of the condensing unit market (which is based on data delivered from condensing unit manufacturers).

	# of Units in DB	% of LT or MT total	% total	# of Units in DB > 150 GWP - F-gas impact	% of LT or MT total	% total	% Elimination per capacity class	# of Units in DB - PFAS under REACH impact	% of LT or MT total	% total	% Elimi-nation
LT1: 0,1 kW≤ P_A ≤ 0,4 kW	66	7,0%	1,9%	30	3,2%	0,9%	45,5%	37	3,9%	1,1%	56,1%
LT2: 0,4 kW< P_A ≤ 2 kW	342	36,2%	9,9%	247	26,2%	7,2%	72,2%	316	33,5%	9,2%	92,4%
LT3: 2 kW < P_A ≤ 8 kW	383	40,6%	11,1%	308	32,6%	8,9%	80,4%	376	39,8%	10,9%	98,2%
LT4: 8 kW < P_A ≤ 20 kW	153	16,2%	4,4%	131	13,9%	3,8%	85,6%	148	15,7%	4,3%	96,7%
LT TOTAL	**944**	**100,0%**	**27,3%**	**716**	**75,8%**	**20,7%**	75,8%	**877**	**92,9%**	**25,4%**	92,9%
MT1: 0,2 kW≤ P_A ≤ 1kW	203	8,1%	5,9%	151	6,0%	4,4%	74,4%	161	6,4%	4,7%	79,3%
MT2: 1 kW< P_A ≤ 5 kW	707	28,2%	20,5%	609	24,3%	17,6%	86,1%	684	27,3%	19,8%	96,7%
MT3: 5 kW < P_A ≤ 20 kW	1.237	49,3%	35,8%	43	1,7%	1,2%	3,5%	1.219	48,6%	35,3%	98,5%
MT4: 20 kW < P_A ≤ 50 kW	362	14,4%	10,5%	321	12,8%	9,3%	88,7%	355	14,1%	10,3%	98,1%
MT TOTAL	**2.509**	**100,0%**	**72,7%**	**1.124**	**44,8%**	**32,6%**	44,8%	**2.419**	**96,4%**	**70,1%**	96,4%
TOTAL	**3.453**			**1.840**		53,3%	**53,3%**	**3.296**		95,5%	**95,5%**

One of the main reasons to propose a simpler regulatory approach with one tier, in 2028, is the impact on the condensing unit population from the F-gas Regulation (2024/573) and the potential impact of the proposed PFAS restrictions under REACH. The table above illustrates the elimination impact of those two regulatory files.

- ➔ We kindly ask the consultants to review the interim report data on sales and stocks of condensing units, because it does not appear in line with the product offering of main market suppliers.

Based on current *ASERCOM*/EPEE data collection, there is no demonstrated correlation between higher cooling capacity and higher energy efficiency for higher capacity condensing units (*see graphs in the appendix I, page 19 for MT SEPR 5-50kW, and page 25 for LT SEPR 2-20kW*).

Higher capacity units already use more variable speed and improvement potential might be less promising.

We propose to stick to a single SEPR value for MT 3-50 kW (proposed increased MEPS at 2,80) and for LT 1-20kW (proposed MEPS at 1,53) as it seems doubtful to increase MEPS in these LT capacity levels. For the larger LT units, the proposed MEPS are based on GWP<150 alternative refrigerant (*see graphs from page 21 to page 26*).

This approach will also prevent alternatives with unknown efficiency from outside of the condensing unit definition from making an inroad to market. The larger capacity units can easily be replaced with unregulated bespoke solutions at potential lower cost and overall lower efficiency.

Our proposed MEPS are shown in the table below:

Operating temperature	Rated capacity P_A	Applicable ratio	Current MEPS value (GWP≥150) (1.7.2018)	Current MEPS with 10% bonus (GWP<150) (1.7.2018)	Proposed MEPS value by VHK consultants (two tiers: 2026 & 2028)		Current proposed MEPS value from JIEG (1.7.2028)
					2026	2028	
Medium temperature	0,2kW ≤ P_A ≤ 1kW	COP	1,40	1,26			**1,60**
	1kW < P_A ≤ 5kW	COP	1,60	1,44			**1,75**
	3kW < P_A ≤ 5kW	SEPR optional			3<C<30kW: **2,09 (low); 2,92 (high)** Average: **2,50**	3<C<30kW: **2,46 (low); 3,41 (high)** Average: **2,93**	**2,80**
	5kW < P_A ≤ 20kW	SEPR	2,55	2,30			**2,80**
	20kW < P_A ≤ 50kW	SEPR	2,65	2,39	30≥C≤50kW: **2,92**	30≥C≤50kW: **3,43**	**2,80**
Low temperature	0,1kW ≤ P_A ≤ 0,4kW	COP	0,80	0,72			**0,90**
	0,4kW < P_A ≤ 2kW	COP	0,95	0,86			**1,00**
	1kW < P_A ≤ 2kW	SEPR optional			1<C<10kW: **1,18 (low); 1,37 (high)** Average: **1,28**	1<C<10kW: **1,40 (low); 1,62 (high)** Average: **1,51**	**1,53**
	2kW < P_A ≤ 8kW	SEPR	1,60	1,44			**1,53**
	8kW < P_A ≤ 20kW	SEPR	1,70	1,53	10≥C≤20kW: **1,37**	10≥C≤20kW: **1,62**	**1,53**

ASERCOM/EPEE has calculated elimination rates based on our proposed increase of MEPS (we observe that the proposed optional SEPR is not considered in the table below since it would be double counted). Considering the different challenges between refrigerants (F-gas and potential future PFAS under REACH revisions), and the need to ensure energy efficiency, this proposal is a pragmatic and still very ambitious compromise.

Considering the combination of all three legislative challenges, the table below shows eliminations due to our proposal of increased MEPS only (first three data columns), followed by the additional impact from the F-gas Regulation (2024/573) (GWP<150), followed by the potential PFAS under REACH impact – only GWP<150 alternative refrigerants remain. Overall, it shows an extremely high "elimination rate" taking into account the three combined legislations (Ecodesign, F-gas and potentially PFAS under REACH as proposed by the Dossier submitters).

ASERCOM / EPEE proposal impact	# of Units in DB	MEPS	Eliminated	% Elimination per capacity class	On top # of Units in DB MEPS impact > 150 GWP - F-gas impact	% Elimination per capacity class	On top # of Units in DB MEPS impact - PFAS under REACH impact	% Elimination per capacity class
LT1: 0,1 kW≤ P_A ≤ 0,4 kW	66	0,90	30	45,5%	12	63,6%	12	63,6%
LT2: 0,4 kW< P_A ≤ 2 kW	342	1,00	93	27,2%	190	82,7%	223	92,4%
LT3: 2 kW < P_A ≤ 8 kW	383	1,53	11	2,9%	292	79,1%	360	96,9%
LT4: 8 kW < P_A ≤ 20 kW	153	1,53	2	1,3%	129	85,6%	146	96,7%
LT TOTAL	**944**		**136**	14,4%	**623**	80,4%	**741**	92,9%
MT1: 0,2 kW≤ P_A ≤ 1kW	203	1,60	84	41,4%	74	77,8%	84	82,8%
MT2: 1 kW< P_A ≤ 5 kW	707	1,75	96	13,6%	520	87,1%	591	97,2%
MT3: 5 kW < P_A ≤ 20 kW	1.237	2,80	149	12,0%	913	85,9%	1.072	98,7%
MT4: 20 kW < P_A ≤ 50 kW	362	2,80	33	9,1%	299	91,7%	326	99,2%
MT TOTAL	**2.509**		**362**	14,4%	**1.806**	86,4%	**2.073**	97,1%
TOTAL	**3.453**			14,4%		84,8%		95,9%

THE *ASERCOM*/EPEE PROPOSAL WILL GUIDE MANUFACTURERS TO FOCUS A ON LONG-TERM DEVELOPMENT OF UNITS WITH GWP<150 ALTERNATIVE REFRIGERANTS, without destroying existing sales too dramatically – which would result in manufacturers (especially SMEs) pulling out of the market.

Another reason to propose a single tier in 2028 is to rank at an equal level the numerous industries within the sector impacted by these regulatory files. This is a result of observed discrepancies between manufacturers during the data compilation on condensing units within our expert group. Indeed, some of them cannot achieve high efficiency levels today and it would jeopardise their production capacities. All in all, the industry needs time to transit to low GWP solutions, and 2028 is an adequate date.

Furthermore, a 2028 tier prevents unregulated alternatives from making inroads to the condensing unit market.

***ASERCOM*/EPEE IS SHOWING A FULL GRANULARITY OF ANALYSIS IN A TRANSPARENT MANNER**. In case of need, we are happy to answer any further questions concerning our data.

Please find the detailed graphs in Appendix I (*see from page 15*), to illustrate our position.

6. Condensing units should not be covered by an energy label – but the joint system efficiency of the condensing unit connected to the evaporator side (i.e. display case) must be promoted in a more transparent way.

The energy label is proposed to be introduced to enable the sector to profit more easily from public procurement and financial incentives for the 2 highest classes (currently B and C) in accordance with – amongst others – the Taxonomy Regulation.

The energy efficiency of a condensing unit can only be evaluated when the unit has been connected to the evaporator side. The system has to be considered in its totality in order to achieve highest energy efficiency.

During the Consultation Forum, a simple approach was discussed. It was postulated that an installer can match an A-class unit with an A-class display case in order to create the highest energy efficient solution. However, matching a condensing unit with a display case must be based on capacity and temperature conditions. Only then a realistic and improved system of energy efficiency can be reached. A “better labelled” type of condensing unit might even mislead installers and result in a negative system impact, i.e. worse final energy efficiency. Please see also the examples of incentives only available for full systems.

Energy labelling is focusing on plug and play consumer products with easy comparability and wide choice, and immediate delivery/availability everywhere in the EU. Not all condensing units are available everywhere in the EU. Additionally, not all refrigerants approved for the units are used by the installers. They choose the best suited refrigerant for operation of the complete unit based on its individual application and the climate conditions in its area. A search in the EPREL database does not indicate the unit or all refrigerants approved can be bought at a distributor in the country of the end-user or installer searching the EPREL database.

The additional effort of the manufacturers behind the energy label is disproportionate, especially for SMEs, and will not achieve the desired results. Most condensing units are approved for up to 10 different refrigerants. It would require entering 10 differently named condensing units into EPREL (inflating the ERP systems of manufacturers), including 10 different labels into the packed condensing unit (waste of resources) and relying on the installer to apply the right label on site (lack of control for the manufacturer). Market surveillance under an energy label will become even more difficult and scarce than today and will allow space for potential mistakes, such as using a wrong label, even if not on purpose.

- **Please consider the application, control, installation, and availability of a condensing unit.**

Generally speaking, the burdens of the act should be justified by moving the market to become more energy efficient in practice. However, the label does not make a better system and will not be used by distributors or installers!

The nature of condensing units is that they offer a variety of uses, many of which are well outside the narrow path of the energy label. This unpredictability of uses does not support the labelling objective of making the most efficient cooling choice as part of the EU Green Deal. Distributors and installers will always need to evaluate details for the entire system – in that sense the 'simple' energy label is superfluous. It will not result in any real improvement in the market or for the use-phase.

In fact, an A-rated condensing unit may perform worse than a C-rated product, depending on the actual use case. Energy labels across products must be comparable; to work for HVACR applications, technical parameters – such as condensing temperature, evaporating temperature, cooling capacity, required humidity for the cooled products – on energy labels must be clearly defined.
For existing energy labeling regulations, like for heat pumps, these factors have been clearly defined, making the energy label useful to compare products.

For condensing units the variety of uses plus the unknown evaporator side does not allow the same comparison. Thus, an energy label would not be used at all to make the best combination of components, as the same condensing unit can operate differently based on the combination with other components, and result in different efficiencies. It could even be possible to select a theoretically less efficient condensing unit with a very good evaporator to end up with the best efficiency. Thus, the label on the condensing unit would truly mislead these combination possibilities. The practice of choosing a condensing unit is driven by a process with advanced software to choose the best combination to achieve one complete system, and should not be driven by a single misleading label.

Please find on these links the publicly available software of three member companies of *ASERCOM/*EPEE: Bitzer, Copeland, and Danfoss. Please find in Appendix II examples of calculation, and further links to software, to illustrate the rationale.

In addition, a variety of refrigerants can be used, requiring a different label on the condensing unit, but still not supporting the installer to make the right technical choice.

We then conclude that the proposed energy label is not a suitable measure compared to the already available advanced selection tools and will mislead consumers/installers about final energy efficiency without adding value to their choice of refrigeration equipment. In all likelihood, users will simply disregard the label.

In a perspective of strengthening our ask and diversifying our argumentation, *ASERCOM*/EPEE met with representatives of the distribution sector. Distributors play an important role in the process as they increasingly choose the best suited components (evaporating side, condensing unit, control) for installer requests and therefore constantly optimise the energy efficiency of the final system.

From the distributor side, four main arguments have been stated, and we would like to bring them to your attention:

➔ **The application**. A condensing unit in a food store can be used to hold a temperature for a specific type of chilled product. But depending on the food, the energy consumption will be different. For instance, a condensing unit will use less energy to store vegetables than raw meat. And if it uses more energy for meat products, it will be less energy efficient.

There are many different aspects to the use of condensing units for cooling:

Refrigeration point:	Cold storage rooms for standard cooling and deep freezing; Vertical and horizontal chilled and frozen storage cabinets; Vertical and horizontal chilled and frozen display cabinets; Blast cabinets.
Chilled goods:	Beverages (+6 to +14°C); Fruits and vegetables (+6 to +10°C); Dairy (+4 to +6°C); Fresh meat and fish (0 to +2°C); Packed sausages (+2 to +4°C); Waste (0 to +2°C); Frozen food.
Method of storage:	Cooling down or keeping the temperature of the goods stable; Short term (1 day) or long term (6 month) storage; to consider humidity, as vegetables lose water and become unsaleable if they lose 5% of their water content.

As it needs different conditions in one store, the applications change and it is even less of a value to initiate an energy label for condensing units. This is also true for medical storage locations, supply chains, and so on.

➔ **The control**. Controlling methods (e.g. condensing unit) have an immense influence on the energy consumption of condensing unit applications. Practically, we have to mention among others:

- Thermostatic mechanical versus electronic expansion valves (only with the latter small superheating <5K after the evaporator and defrosting on demand are possible);
- Room temperature control via simple mechanical thermostats compared to sophisticated multiple temperature sensor control (mechanical or electronic controllers);
- Optional electronic condensing or evaporating pressure control for better chilled goods preservation;
- Defrost with electrical heaters controlled mechanically by timers or electronically by smart demand control.

There is a huge difference in energy consumption when these controls are applied or not applied to a condensing unit/evaporator system. Therefore, it does not make sense to apply an energy label on condensing units.

➔ **The installation**. As stated above, a condensing unit is not a complete system. A condensing unit can be installed with more than one evaporator and the total installation would have a very different energy efficiency. That could possibly shift the market to solutions that are not covered by Ecodesign rules, thus undermining the goals of Ecodesign.

Refrigeration contractors considering energy efficiency look at a complete system. Thus, it would not only mislead end-users, but also installers.

Possible variations in installations:

Condensing units with external condensers;
Evaporators with different air flow and fin spaces (from 2.4 to 16 mm);
Direct or indirect cold air distribution (via air tubes);
Use of shut up defrosting hoods;
Single or multi evaporator installation;
Combination of cold rooms and chilled cabinets to one condensing unit.

➔ **The availability**. An installer selecting the best condensing unit will also consider availability. Indeed, when cooling is required, it is mostly needed for replacement on short notice, and not later. Thus, the condensing unit chosen will most likely be the one that fits but also the one that is immediately available. With the F-gas Regulation (2024/573) entering into force, and the potential PFAS restriction, the availability of refrigerant will be jeopardised, thus making the replacement of a suitable condensing unit even more difficult in a limited portfolio of options for the installer.

Lastly, distributors estimate that the public authorities business market for using condensing units represents around 10% of the total market – an element to take into consideration when thinking of the Green Public Procurement. GPP rules for an incomplete product through an energy label are gravely misleading and will not result in higher energy efficiency.

To sum up, an energy label is unnecessary and would be largely disregarded, resulting in wasted resources.

Chapter II: position on process chillers.

First of all, *ASERCOM*/EPEE welcome the decision of the Commission to limit the scope to 2MW in line with Regulation (EU) 2016/2281.

1. ***ASERCOM*/EPEE question whether sufficient data has been incorporated into VHK's calculations.**

No data from main manufacturers (EPEE members) has been submitted and, additionally, we are unclear about the extent of specific data used (capacities, heat sink water or air, compressor types, variable versus fixed capacity units, refrigerants chosen etc.).

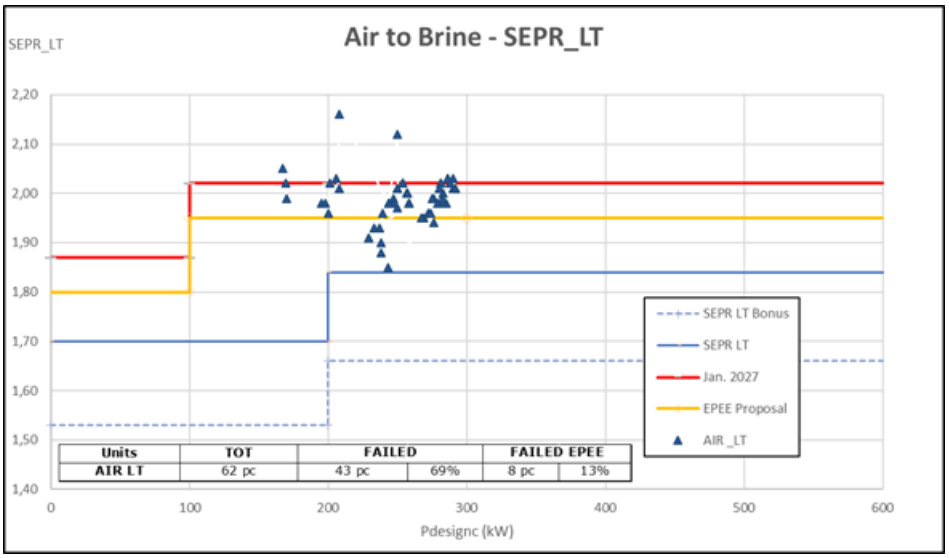
2. **The consultants propose overly ambitious MEPS (column: EC proposal SEPR**min**).**

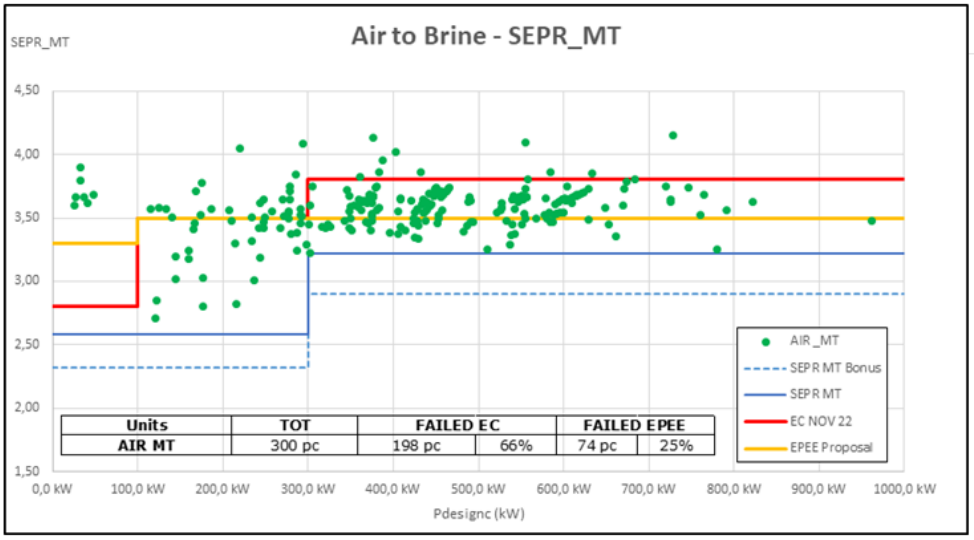
	Process chillers	CAPACITY range		Current SEPRmin	EC proposal SEPRmin	Change
Medium operating temperature	Air / Water	0	≤ 300 kW	2,32		
	Air / Water	0	≤ 100 kW	2,32	2,8	**21%**
	Air / Water	100 kW	< 300 kW	2,32	3,5	**51%**
	Air / Water	> 300 kW	**≤ 2000 kW**	2,90	3,8	**31%**
Low operating temperature	Air / Water	0	≤ 200 kW	1,53	1,87	**22%**
	Air / Water	> 200 kW	**≤ 2000 kW**	1,66	2,02	**22%**
Medium operating temperature	Water- Brine / Water	0	≤ 300 kW	2,96	4	**35%**
	Water- Brine / Water	> 300 kW	**≤ 2000 kW**	3,93	5	**27%**
Low operating temperature	Water- Brine / Water	0	≤ 200 kW	1,88	2,5	**33%**
	Water- Brine / Water	> 200 kW	**≤ 2000 kW**	2,18	2,9	**33%**

ASERCOM/EPEE view the proposed MEPS (the changes are calculated based on the current MEPS with applied GWP bonus) as too ambitious and unattainable.

Our own research on 483 process chillers (marketed by *ASERCOM*/EPEE member companies) showed that 61% of total chillers, 69% of low temperature air/brine chillers and 66% of air-cooled MT chillers would be eliminated from the market if the EC proposal is applied.

The water/brine MT sector shows a 34% failure rate, while the water/brine LT units are almost completely removed from the market with 82% failure. The details of this investigation are shown in the graphs below.




Air to Brine - SEPR_MT
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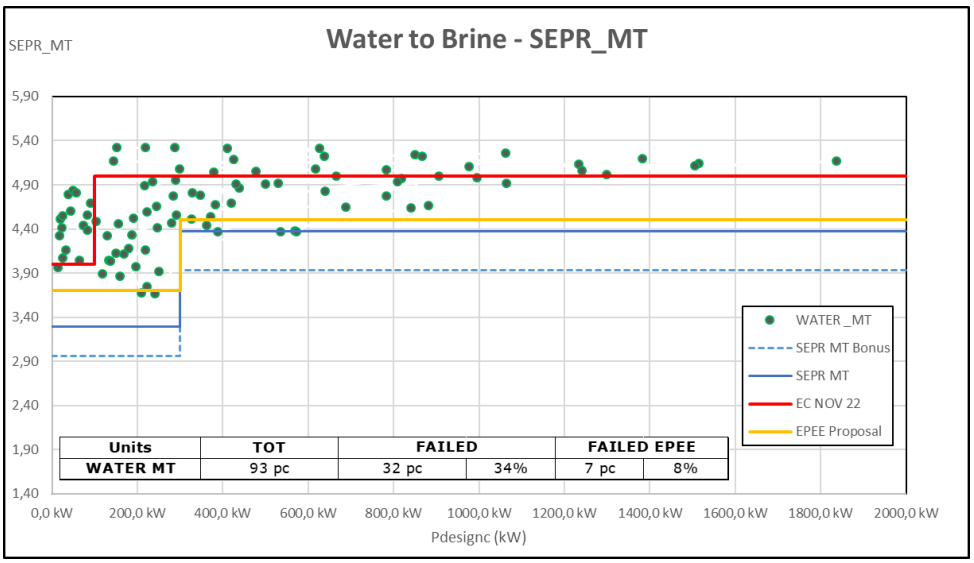
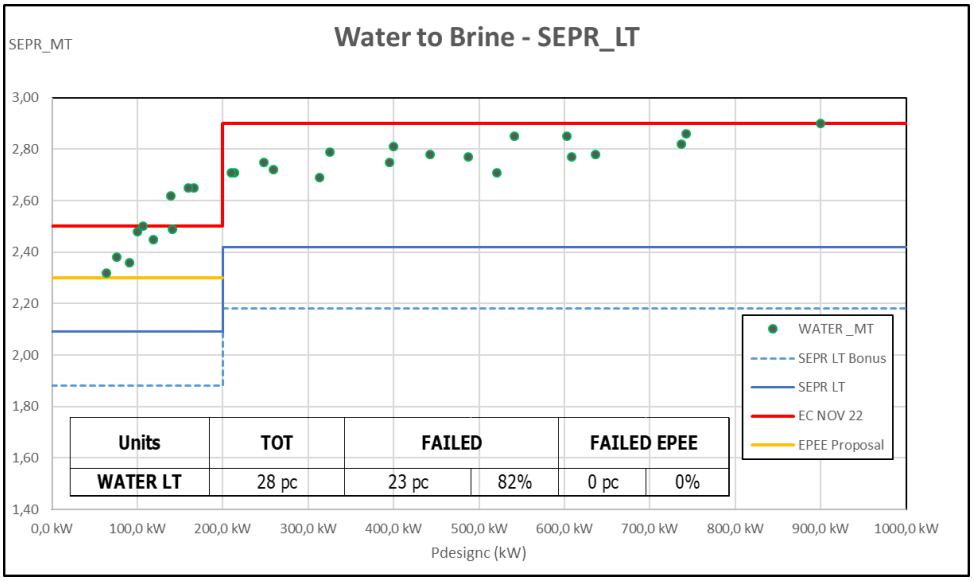
200,0 kW
300,0 kW
400,0 kW
500,0 kW
600,0 kW
700,0 kW
800,0 kW
900,0 kW
1000,0 kW
Pdesignc (kW)
AIR _MT
SEPR MT Bonus
SEPR MT
EC NOV 22
EPEE Proposal
Units | TOT | FAILED EC | | FAILED EPEE | |
AIR MT | 300 pc | 198 pc | 66% | 74 pc | 25%


Water to Brine - SEPR_MT
SEPR_MT
5,90
5,40
4,90
4,40
3,90
3,40
2,90
2,40
1,90
1,40
0,0 kW
200,0 kW
400,0 kW
600,0 kW
800,0 kW
1000,0 kW
1200,0 kW
1400,0 kW
1600,0 kW
1800,0 kW
2000,0 kW
Pdesignc (kW)
WATER _MT
SEPR MT Bonus
SEPR MT
EC NOV 22
EPEE Proposal
Units | TOT | FAILED | | FAILED EPEE | |
WATER MT | 93 pc | 32 pc | 34% | 7 pc | 8%


Water to Brine - SEPR_LT
SEPR_MT
3,00
2,80
2,60
2,40
2,20
2,00
1,80
1,60
1,40
0,0 kW
100,0 kW
200,0 kW
300,0 kW
400,0 kW
500,0 kW
600,0 kW
700,0 kW
800,0 kW
900,0 kW
1000,0 kW
Pdesignc (kW)
WATER _MT
SEPR LT Bonus
SEPR LT
EC NOV 22
EPEE Proposal
Units | TOT | FAILED | | FAILED EPEE | |
WATER LT | 28 pc | 23 pc | 82% | 0 pc | 0%

For water-based LT chillers, the current EC proposal brings the market to a halt. This is evident for units >200 kW where almost all units fail. An internal study showed a market size of not much more than 100 units/year in the EU. In addition, these units are usually highly customised to the needs of the application. Therefore, we propose excluding water-based LT chillers >200kW from the Ecodesign scope.

Technical issues (e.g. compressor efficiency, shell, and tube vs plate heat exchangers) create physical limitations for setting MEPS on SEPR for low-temperature to the water-based low-temperature chillers ≤200kW, where we recommend a maximum value of 2,3.

2.1 A new proposal of MEPS.

We propose the changes in red compared to the consultant's proposal, as you can see below.

	Process chillers	CAPACITY range		Curr SEPRmin	SEPRmin EC	SEPRmin EPEE	Change
Medium operating temperature	Air / Water	0	≤ 300 kW	2,32			
	Air / Water	**0**	**≤ 100 kW**	**2,32**	**2,80**	**3,3**	**42%**
	Air / Water	**100 kW**	**< 300 kW**	**2,32**	**3,50**	**3,5**	**51%**
	Air / Water	**> 300 kW**	**≤ 2000 kW**	**2,90**	**3,80**	**3,5**	**21%**
Low operating temperature	**Air / Water**	**0**	**≤ 200 kW**	**1,53**	**1,87**	**1,8**	**18%**
	Air / Water	**> 200 kW**	**≤ 2000 kW**	**1,66**	**2,02**	**1,95**	**18%**
Medium operating temperature	**Water- Brine / Water**	**0**	**≤ 300 kW**	**2,96**	**4,00**	**3,7**	**25%**
	Water- Brine / Water	**> 300 kW**	**≤ 2000 kW**	**3,93**	**5,00**	**4,5**	**14%**
Low operating temperature	**Water- Brine / Water**	**0**	**≤ 200 kW**	**1,88**	**2,50**	**2,3**	**22%**
	Water- Brine / Water	**> 200 kW**	**≤ 2000 kW**	**2,18**	**2,90**		

You can find below a table showing the differences of elimination, taking into account the Commission's proposal and our own.

Units	TOT	FAILED EC		FAILED EPEE	
TOTAL	**483**	**296**	**61%**	**89**	**18%**
WATER	121	55	45%	7	6%
WATER LT	28	23	82%	0	0%
WATER MT	93	32	34%	7	8%
AIR	362	241	67%	82	23%
AIR LT	62	43	69%	8	13%
AIR MT	300	198	66%	74	25%
WATER LT <200kW	10	6	60%	0	0%
WATER LT >200kW	18	17	94%	0	0%
T exc WLT > 200 kW	**465**	**279**	**60%**	**89**	**19%**

Based on our new proposal with the water-brine to water low-temperature chillers above 200kW excluded, our set of MEPS would **reduce the overall elimination of chillers from the market from 60% to 19%!**

2.2 Laboratory process chillers should be exempted from the scope. A definition of laboratory process chillers is proposed.

We would like to highlight that chillers applied as thermostats in laboratory appliances, especially for indoor use, should be excluded from these proposed MEPS. Indeed, chillers applied as thermostats or for other laboratory issues are used to keep the temperature at a precise and constant level, but do not aim at cooling these spaces. Moreover, they are used in a wide temperature range, from deep frozen to +60°C. The requirements in terms of efficiency should not be the same as for process chillers. Please find below a clarification on chillers used as laboratory appliances.

To better understand our request, we would like to propose the following definition for a laboratory process chiller.

First of all, to give some introductory elements, a process chiller is a thermal device that removes heat generated by a given process. This cooling equipment repeatedly conducts chilled liquid through one or more closed-loops to allow a drop in rising process temperatures. The current Regulation (EU) 2015/1095 defines "cooling only products" and not the laboratory process chillers (fluid conditioners) that are providing both heating and cooling and therefore can be equipped also with a heating element. They are designed for precision temperature stability required to meet the application requirements rather than the removal of heat only. They can cover a wide range of working temperatures, approximately between -100°C to 200°C, rather than the regulation range of -25°C to 7°C. In some cases, besides the temperature, the flow rate and the pressure of the liquid are regulated as well to stimulate load profiles in special applications.

Also the SEPR approach does not make sense to apply to a product that is primarily intended to be used in a controlled environment. Laboratory chillers are usually relatively low in capacity (typically less than 25 kW) compared to the 300kW or even higher capacity, represented in the scope of present regulation.

We propose the following definition in order to exempt laboratory process chillers in the next update of the regulation:

"***Laboratory process chillers*** *(fluid conditioners) are intended to be used indoors and are capable of providing precise and stable temperature control of a liquid used to maintain the temperature of samples, equipment, or processes to specific temperature set points within very tight tolerances (e.g. 0.1 K or even less) or performing dynamic temperature profiles (e.g. 10 K/min) for sample tests with an accurate temperature control covering a very wide range of temperatures (from -100 °C to 200 °C). In some cases, in addition, flow rate and pressure are also regulated.* ***Laboratory process chillers*** *integrate at least one compressor, one evaporator and may or may not include at least one heating element; it may or may not integrate the condenser, the coolant circuit hardware, and other ancillary equipment. Laboratory thermostats* are *equipped with an integrated pump to supply an external coolant/heating circuit with the liquid from the integrated tank".*

Three examples of laboratory chillers:

Example of a laboratory thermostat:

3. *ASERCOM*/EPEE recognise the positivity of heat recovery and propose to start a standardisation task.

Heat recovery is an untapped potential and fits perfectly with other targets from the Commission, regarding emissions reduction and energy savings. It also offers interesting innovative aspects yet to be explored. Heat recovery can apply at certain applications in the ENTR Lot 1 and especially larger condensing units and process chillers could offer good contributions to CO_2 emission reductions. However, the setting of MEPS are not trivial as conditions on the warm side of the system may need to be changed to gain the highest benefit. In that sense experts should start looking into this – and likely with a view to the ongoing work in ENER Lot 21.

4. *ASERCOM*/EPEE recommend limiting the scope of spare parts supply.

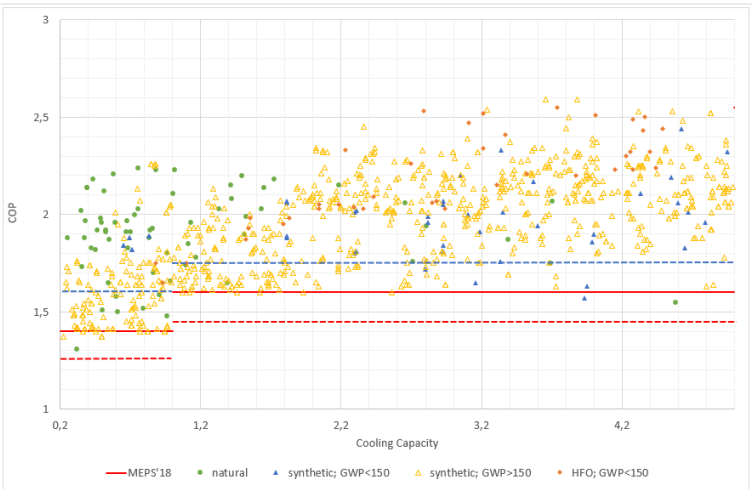
Spare parts supply should be limited to units <70 kW and to the following components: compressors; heat exchangers; thermostats and sensors; printed circuit boards; fan motors; electrical valves; and integrated circulators.

APPENDIX I – ASERCOM/EPEE's proposal for condensing units MEPS, illustrated.

1. MT COP 0,2 – 5 kW

The blue line in the six graphs represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,2kW to 1kW, we propose 1,60.
From 1kW to 5kW, we propose 1,75.

Considering all units in the MT COP 0,2-5 kW category



The blue line in the six graphs represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,2kW to 1kW, we propose 1,60.
From 1kW to 5kW, we propose 1,75.

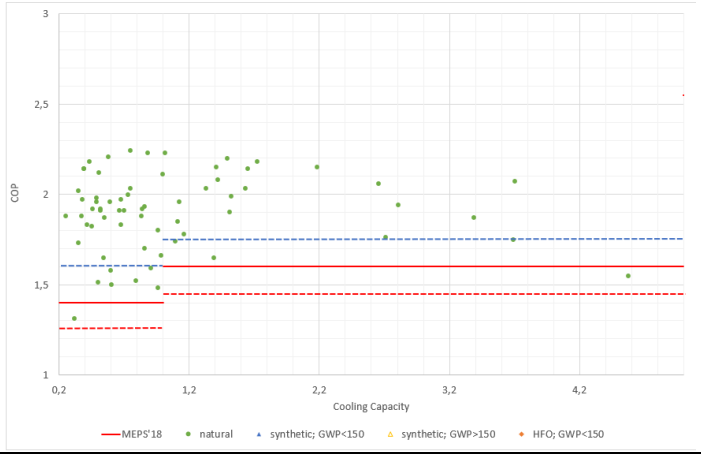
Considering all units, below 750 GWP, in the MT COP 0,2-5 kW category

The blue line in the six graphs represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,2kW to 1kW, we propose 1,60.
From 1kW to 5kW, we propose 1,75.

Considering all units, below 150 GWP, in the MT COP 0,2-5 kW category

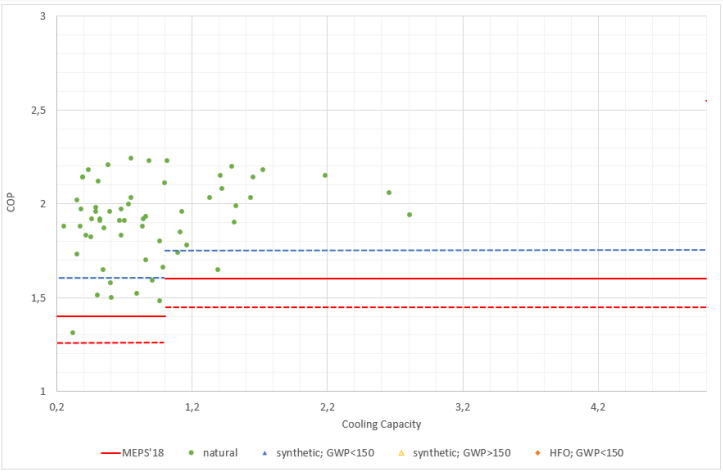
The blue line in the six graphs represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,2kW to 1kW, we propose 1,60.
From 1kW to 5kW, we propose 1,75.

Considering only alternative refrigerants (CO_2 and Propane) in the MT COP 0,2-5 kW category



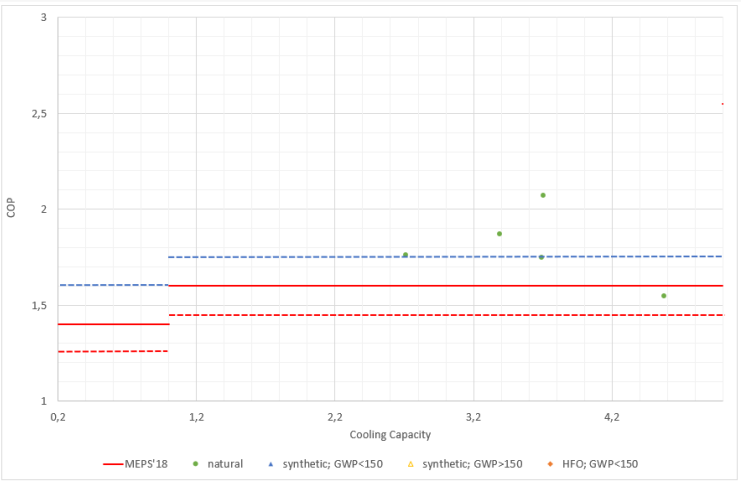
The blue line in the six graphs represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,2kW to 1kW, we propose 1,60.
From 1kW to 5kW, we propose 1,75.

Considering only R290 (propane) in the MT COP 0,2-5 kW category



The blue line in the six graphs represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,2kW to 1kW, we propose 1,60.
From 1kW to 5kW, we propose 1,75.

Considering only R744 (CO_2) in the MT COP 0,2-5 kW category



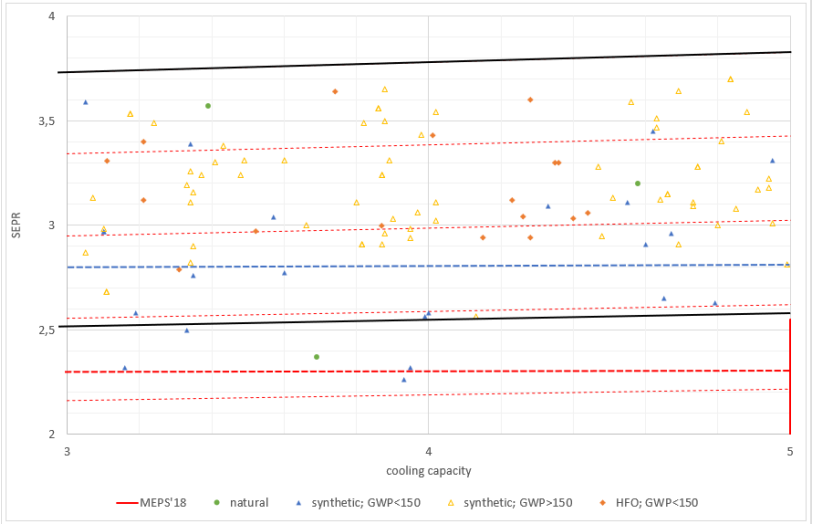
2. Optional MT SEPR 3-5 kW

The blue line represents our proposal, the dashed red line represents the option with the bonus and the black one is VHK proposal.
From 3kW to 5kW, we propose 2,80.

Considering all units in the optional MT SEPR 3-5kW category

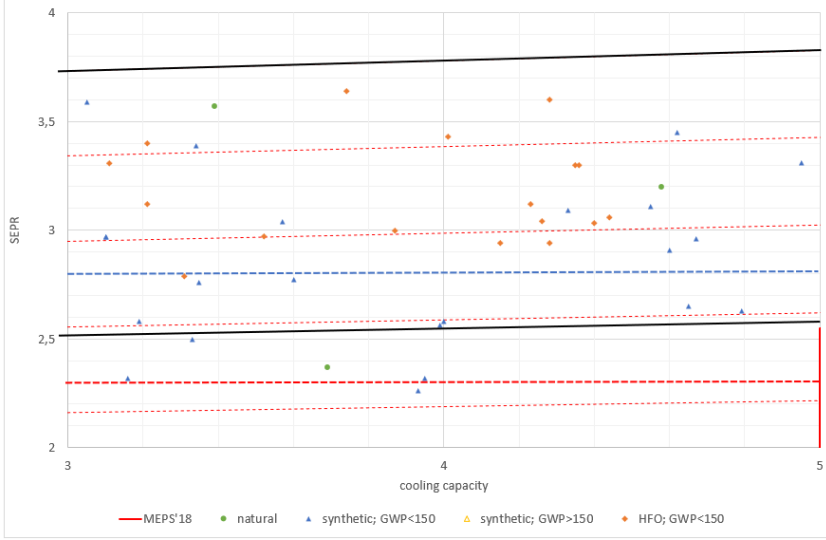
The blue line represents our proposal, the dashed red line represents the option with the bonus and the black one is VHK proposal.
From 3kW to 5kW, we propose 2,80.

Considering all units, below 750 GWP, in the optional MT SEPR 3-5kW category



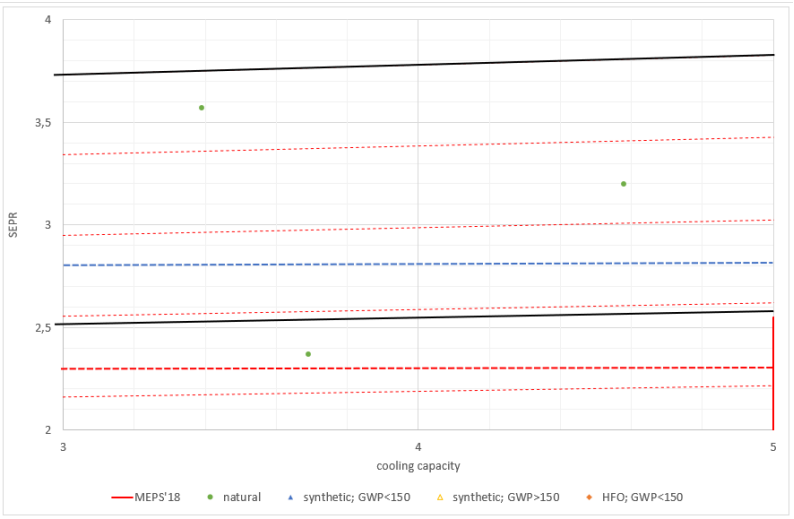
The blue line represents our proposal, the dashed red line represents the option with the bonus and the black one is VHK proposal.
From 3kW to 5kW, we propose 2,80.

Considering all units, below 150 GWP, in the optional MT SEPR 3-5kW category



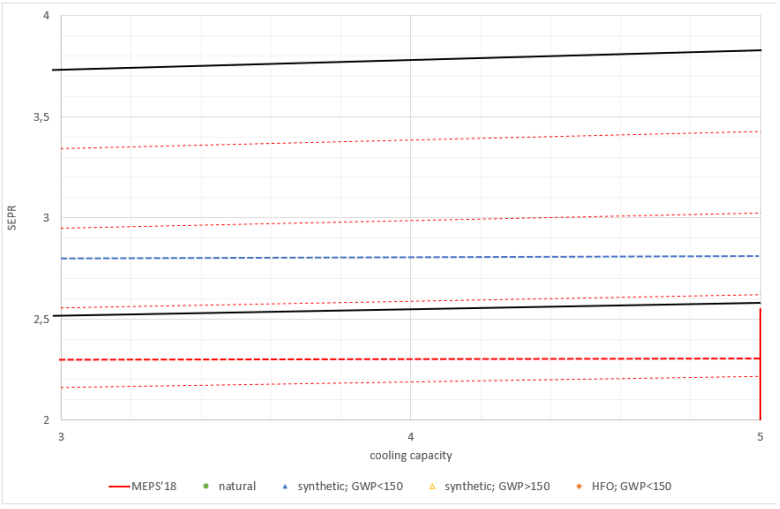
The blue line represents our proposal, the dashed red line represents the option with the bonus and the black one is VHK proposal.
From 3kW to 5kW, we propose 2,80.

Considering only alternative refrigerants (CO_2 and Propane) in the optional MT SEPR 3-5kW category



The blue line represents our proposal, the dashed red line represents the option with the bonus and the black one is VHK proposal.
From 3kW to 5kW, we propose 2,80.

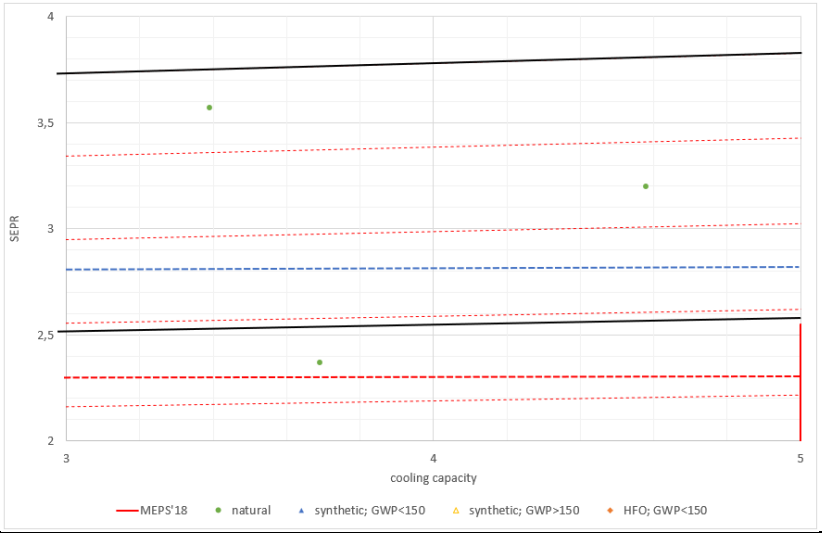
Considering only R290 (propane) in the optional MT SEPR 3-5kW category



There is **no propane units** in this category, **but only CO_2** ones.

The blue line represents our proposal, the dashed red line represents the option with the bonus and the black one is VHK proposal.
From 3kW to 5kW, we propose 2,80.

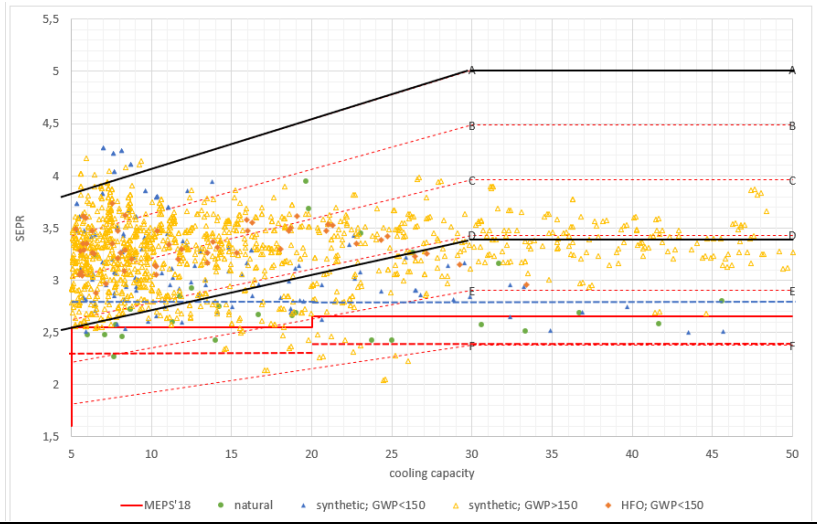
Considering only R744 (CO_2) in the optional MT SEPR 3-5kW category



3. MT SEPR 5-50 kW

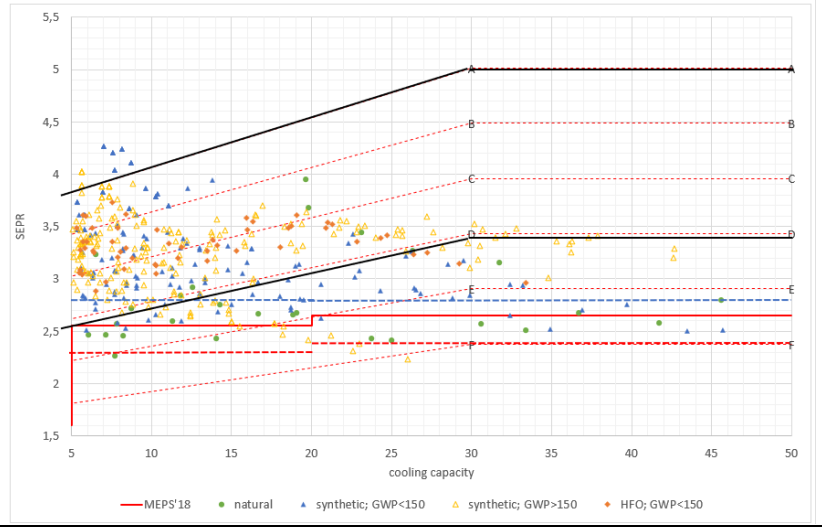
The blue line represents our proposal, the red line represents the current MEPS. The dashed red line represents the current MEPS with bonus, and the black one is VHK's proposal.
From 5kW to 20kW, we propose 2,80.
From 20kW to 50kW, we propose 2,80.

Considering all units in the MT SEPR 5-50kW category



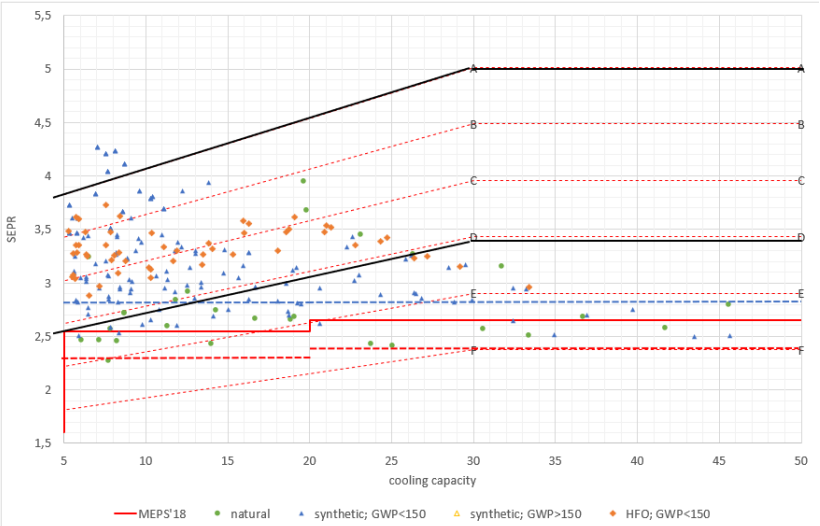
The blue line represents our proposal, the red line represents the current MEPS. The dashed red line represents the current MEPS with bonus, and the black one is VHK's proposal.
From 5kW to 20kW, we propose 2,80.
From 20kW to 50kW, we propose 2,80.

Considering all units, below 750 GWP, in the MT SEPR 5-50kW category



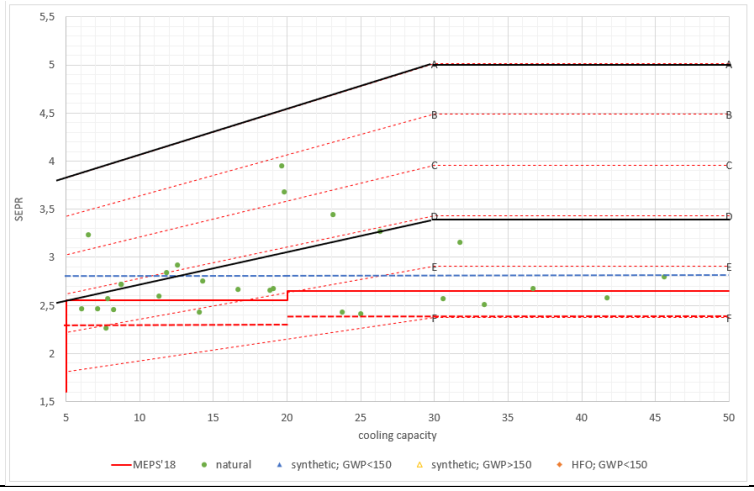
The blue line represents our proposal, the red line represents the current MEPS. The dashed red line represents the current MEPS with bonus, and the black one is VHK's proposal.
From 5kW to 20kW, we propose 2,80.
From 20kW to 50kW, we propose 2,80.

Considering all units below 150 GWP, in the MT SEPR 5-50kW category



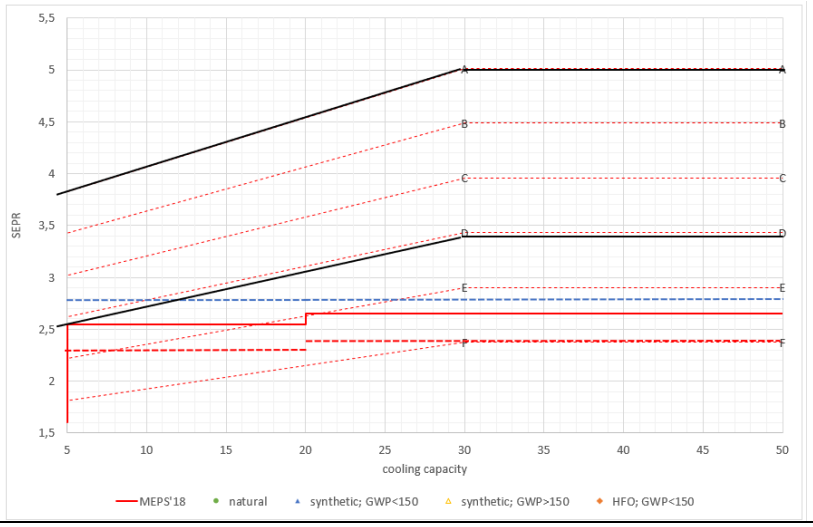
The blue line represents our proposal, the red line represents the current MEPS. The dashed red line represents the current MEPS with bonus, and the black one is VHK's proposal.
From 5kW to 20kW, we propose 2,80.
From 20kW to 50kW, we propose 2,80.

Considering only alternative refrigerants (CO_2 and Propane) in the MT SEPR 5-50kW category



The blue line represents our proposal, the red line represents the current MEPS. The dashed red line represents the current MEPS with bonus, and the black one is VHK's proposal.
From 5kW to 20kW, we propose 2,80.
From 20kW to 50kW, we propose 2,80.

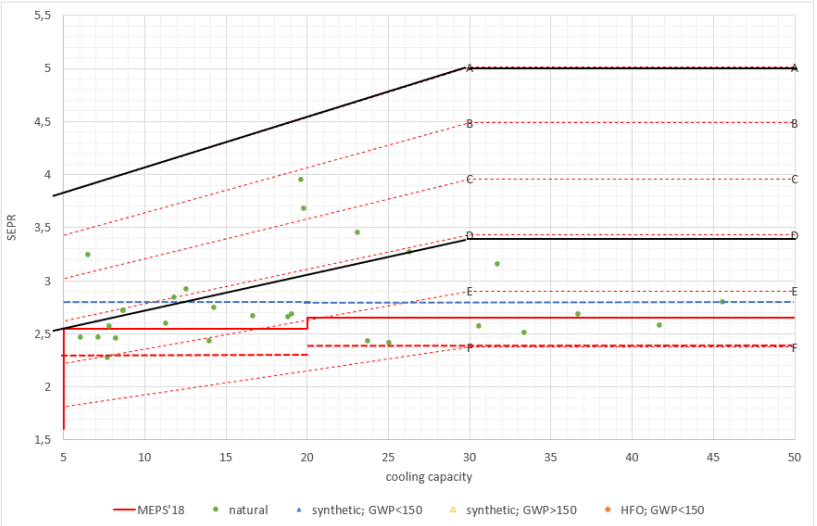
Considering only R290 (propane) in the MT SEPR 5-50kW category



There is **no propane units** in this category, **but only CO_2** ones.

The blue line represents our proposal, the red line represents the current MEPS. The dashed red line represents the current MEPS with bonus, and the black one is VHK's proposal.
From 5kW to 20kW, we propose 2,80.
From 20kW to 50kW, we propose 2,80.

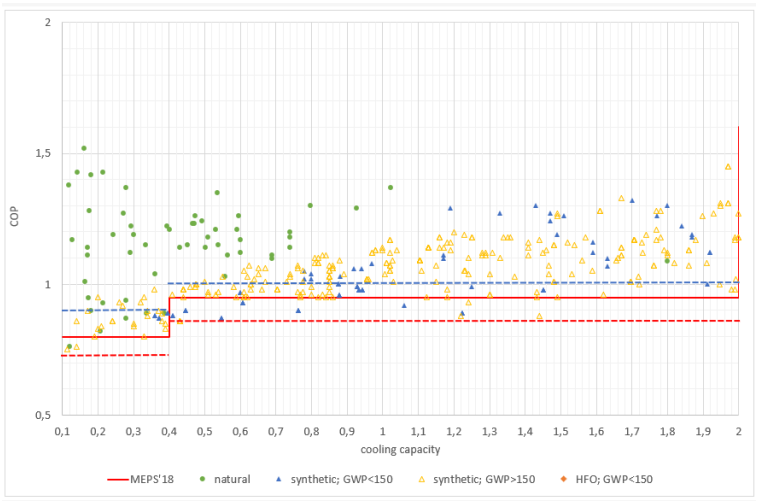
Considering only R744 (CO_2) in the MT SEPR 5-50kW category



4. LT COP 0.1-2 kW

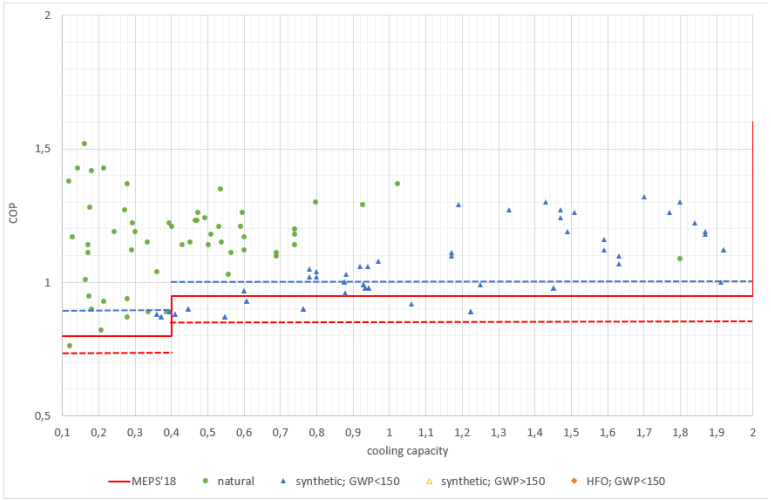
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,1 to 0,4kW, we propose 0,90.
From 0,4kW to 2kW, we propose 1,00.

Considering all units in the LT COP 0,1-2kW category



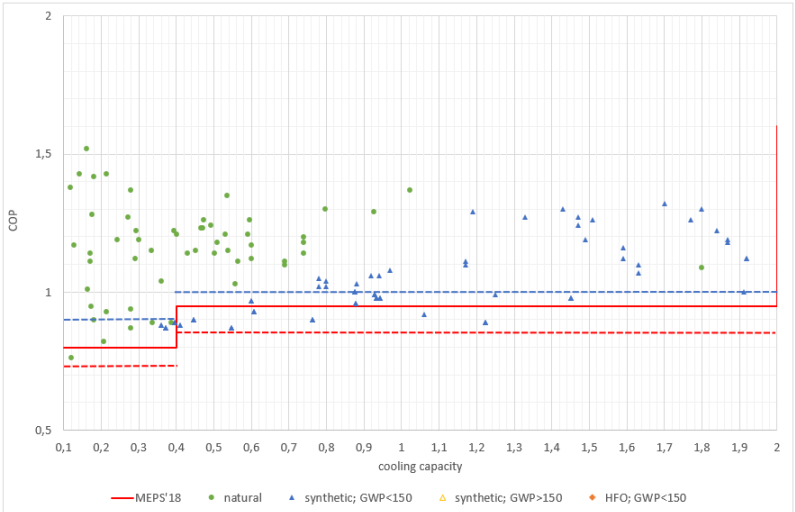
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,1 to 0,4kW, we propose 0,90.
From 0,4kW to 2kW, we propose 1,00.

Considering all units, below 750 GWP, in the LT COP 0,1-2kW category



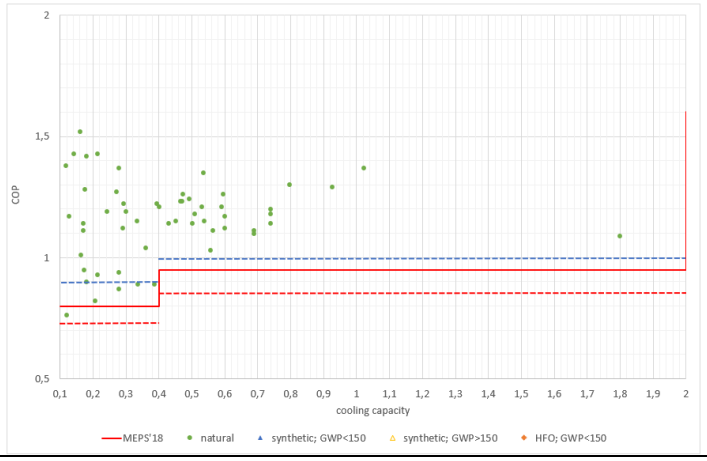
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,1 to 0,4kW, we propose 0,90.
From 0,4kW to 2kW, we propose 1,00.

Considering all units, below 150 GWP, in the LT COP 0,1-2kW category



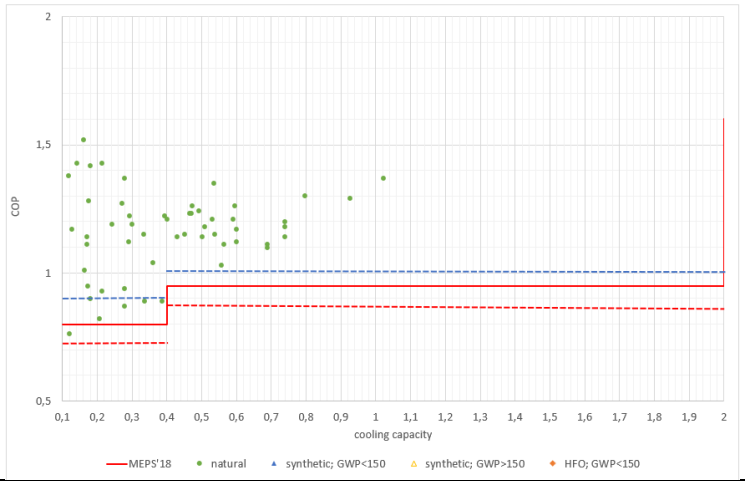
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,1 to 0,4kW, we propose 0,90.
From 0,4kW to 2kW, we propose 1,00.

Considering only alternative refrigerants (CO_2 and Propane) in the LT COP 0,1-2kW category



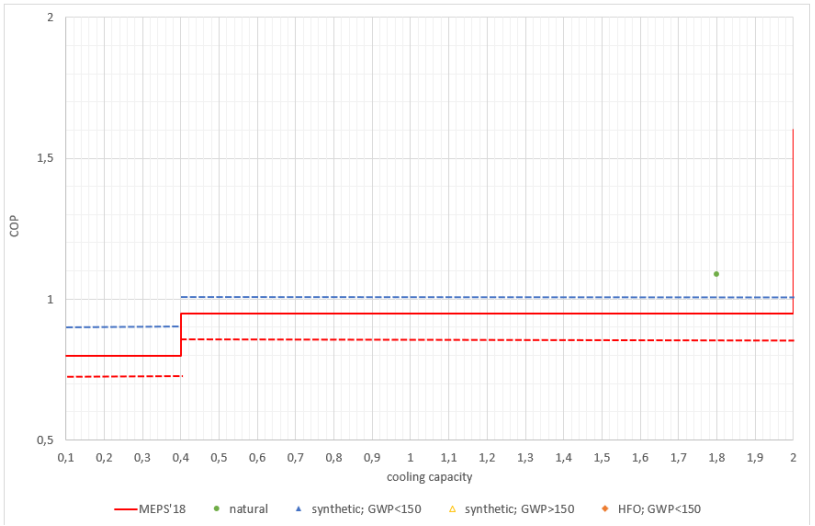
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,1 to 0,4kW, we propose 0,90.
From 0,4kW to 2kW, we propose 1,00.

Considering only R290 (propane) in the LT COP 0,1-2kW category



The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus).
From 0,1 to 0,4kW, we propose 0,90.
From 0,4kW to 2kW, we propose 1,00.

Considering only R744 (CO_2) in the LT COP 0,1-2kW category



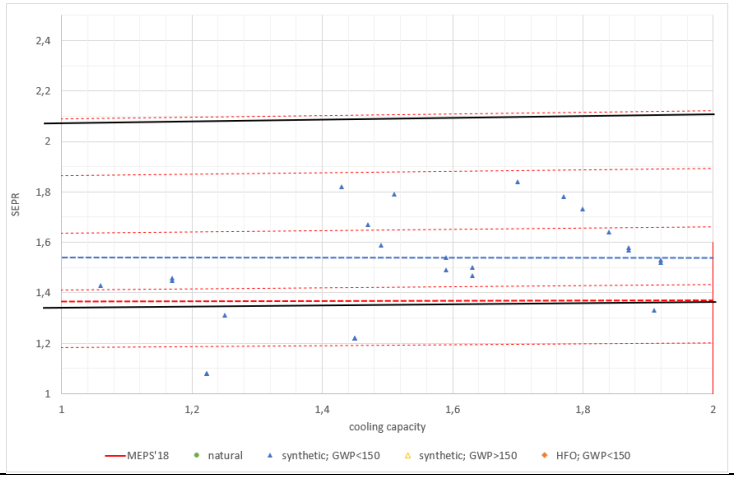
5. Optional LT SEPR 1-2 kW

The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus), and the black one is VHK's proposal. From 1kW to 2kW, we propose 1,53.

Considering all units in the optional LT SEPR 1-2kW category

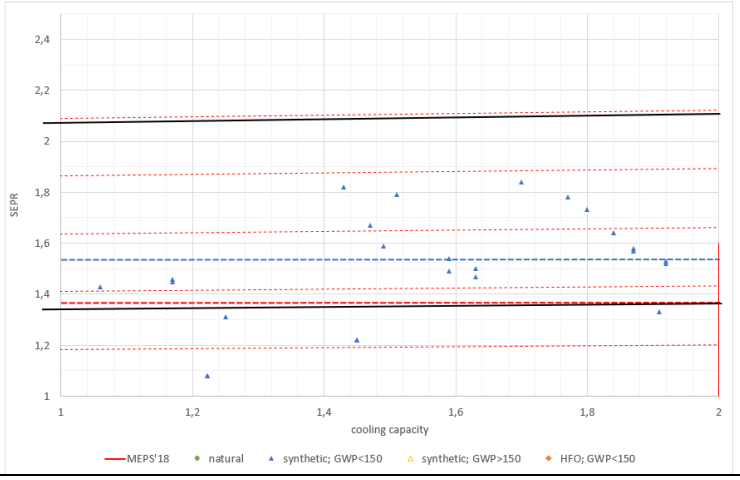
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus), and the black one is VHK's proposal. From 1kW to 2kW, we propose 1,53.

Considering all units, below 750 GWP, in the optional LT SEPR 1-2kW category



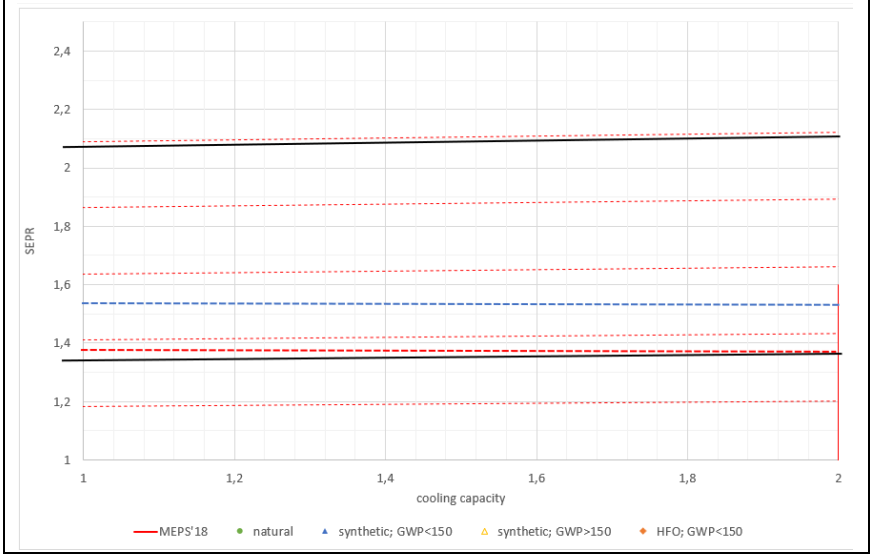
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus), and the black one is VHK's proposal. From 1kW to 2kW, we propose 1,53.

Considering all units, below 150 GWP, in the optional LT SEPR 1-2kW category



The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the current MEPS with bonus), and the black one is VHK's proposal. From 1kW to 2kW, we propose 1,53.

Considering only alternative refrigerants (CO_2 and Propane) in the optional LT SEPR 1-2kW category

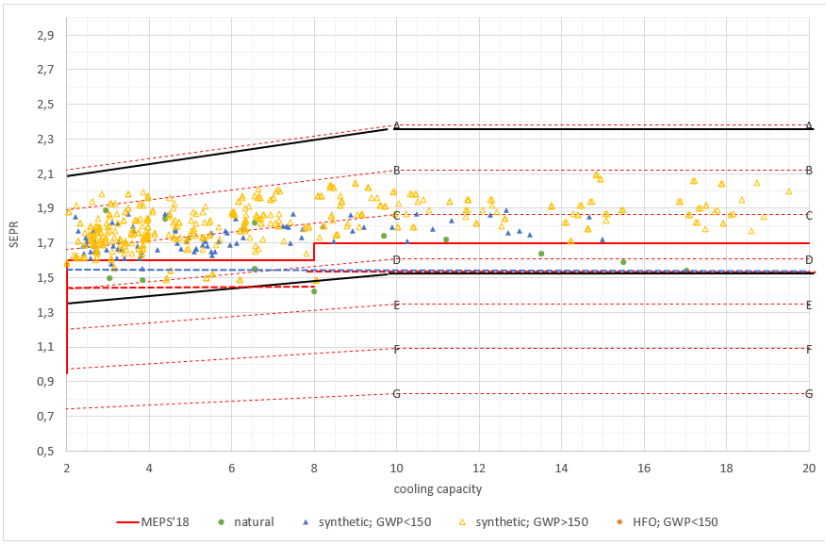


Please note that the paper does not show the graphs for R290 (propane) and R744 (CO_2) for the optional LT SEPR 1-2 kW category, as no units would be available. You can see this absence on the graph above, representing alternative refrigerants (CO_2 and Propane).

6. LT SEPR 2-20 kW

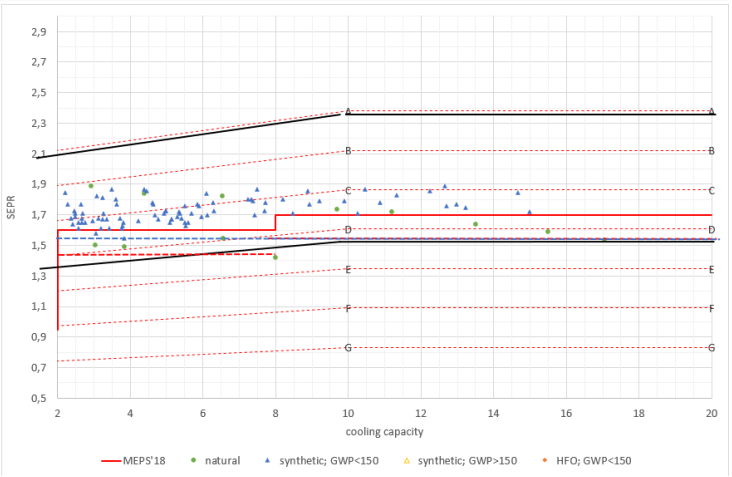
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the currents MEPS with bonus), and the black one is VHK's proposal.
From 2kW to 8kW, we propose 1,53.
From 8kW to 20kW, we propose 1,53.

Considering all units in the LT SEPR 2-20 kW category



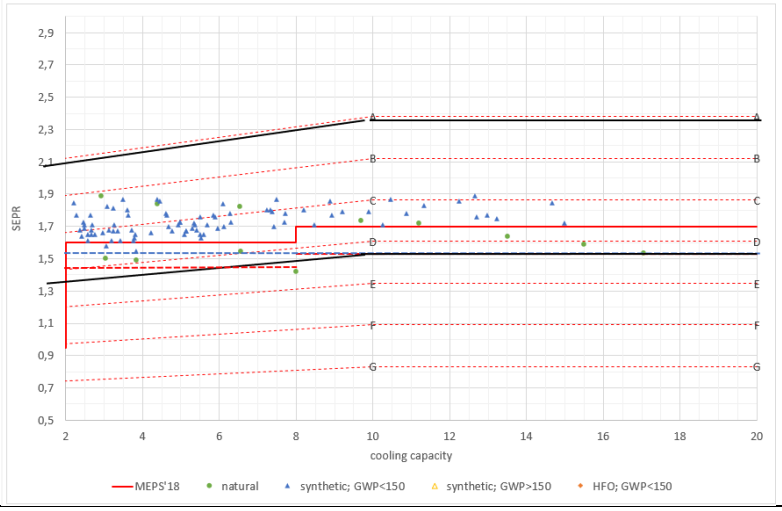
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the currents MEPS with bonus), and the black one is VHK's proposal.
From 2kW to 8kW, we propose 1,53.
From 8kW to 20kW, we propose 1,53.

Considering all units, below 750 GWP, in the LT SEPR 2-20 kW category



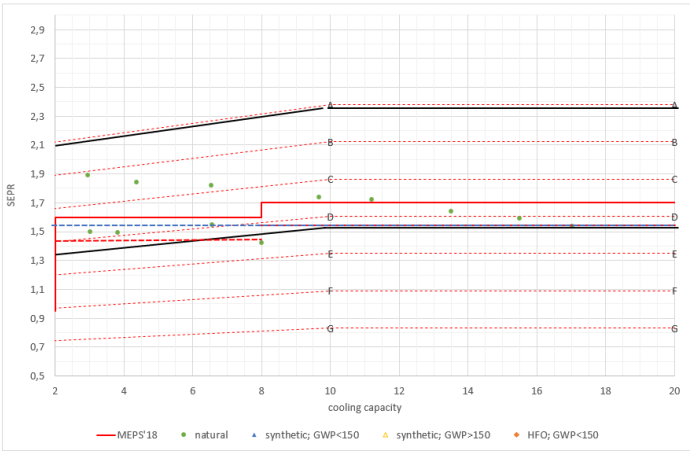
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the currents MEPS with bonus), and the black one is VHK's proposal.
From 2kW to 8kW, we propose 1,53.
From 8kW to 20kW, we propose 1,53.

Considering all units, below 150 GWP, in the LT SEPR 2-20 kW category



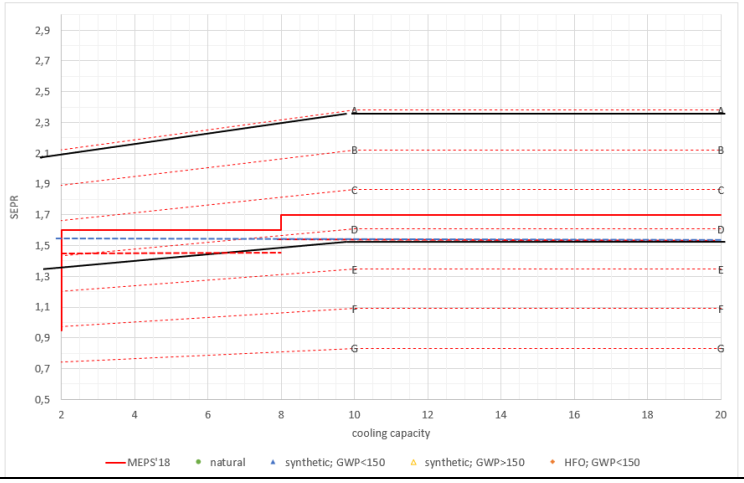
The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the currents MEPS with bonus), and the black one is VHK's proposal.
From 2kW to 8kW, we propose 1,53.
From 8kW to 20kW, we propose 1,53.

Considering only alternative refrigerants (CO_2 and Propane) in the LT SEPR 2-20 kW category



The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the currents MEPS with bonus), and the black one is VHK's proposal.
From 2kW to 8kW, we propose 1,53.
From 8kW to 20kW, we propose 1,53.

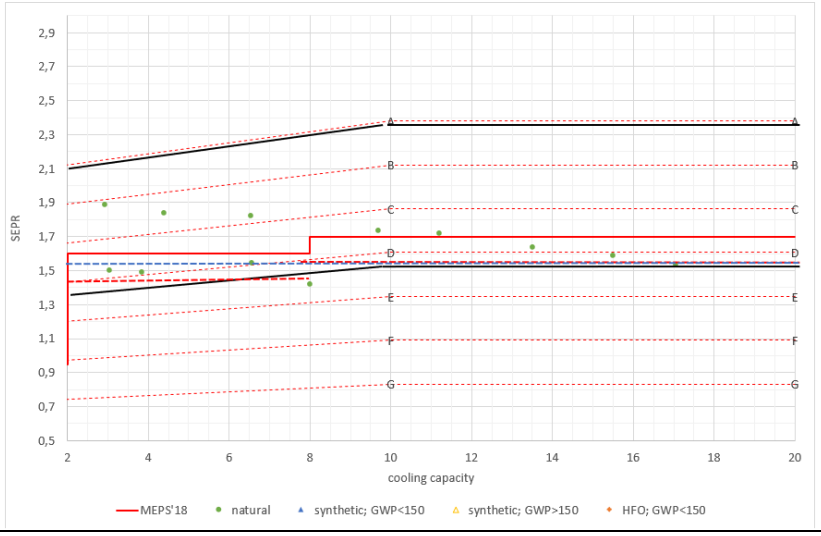
Considering only R290 (propane) in the LT SEPR 2-20 kW category



There is **no propane units** in this category, **but only CO_2** ones.

The blue line represents our proposal, compared to the red line which represents the current MEPS (the dashed red line represents the currents MEPS with bonus), and the black one is VHK's proposal.
From 2kW to 8kW, we propose 1,53.
From 8kW to 20kW, we propose 1,53.

Considering only R744 (CO_2) in the LT SEPR 2-20 kW category



APPENDIX II – Calculations and visualisation of the scenarios on choosing a condensing unit, highlighting the ineffectiveness of an energy label.

Links:

- For Condensing units:

Copeland: https://selectonline.emersonclimate.eu/SelectOnline/main
Danfoss: https://www.danfoss.com/en/service-and-support/downloads/dcs/coolselector-2/#tab-overview
Bitzer: https://www.bitzer.de/websoftware/calculate/LH/?tab=results

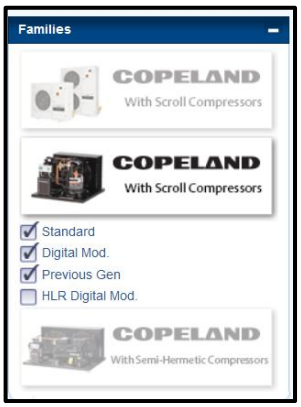
- For evaporators:

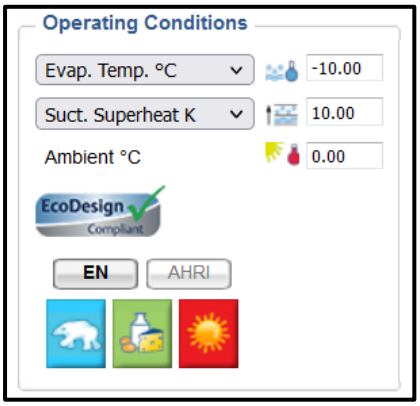
Kelvion: https://selectrt.kelvion.com/selector/product_detail/
Walter Roller: https://www.walterroller.de/easyselect https://app.walterroller.de/
Lennox: https://friga-bohn.lennoxemea.com/en/software/

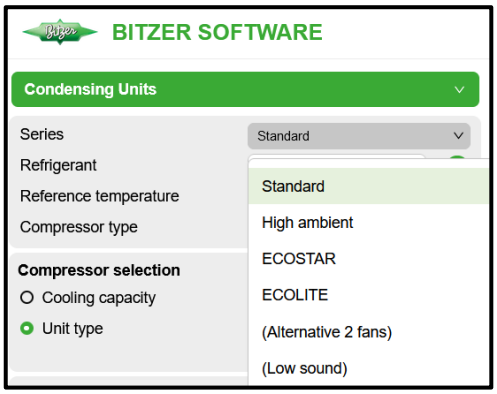
Input chosen into condensing unit selection software:
Selection of

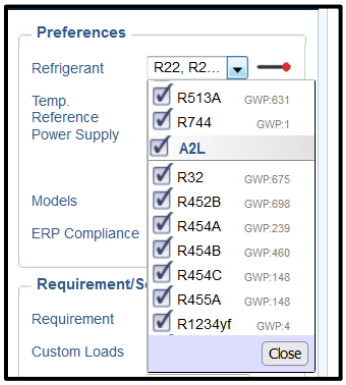
Product range;
Compressor type;
Refrigerant;
Power supply;
Temperature reference;
Operating conditions (EN, AHRI, others).

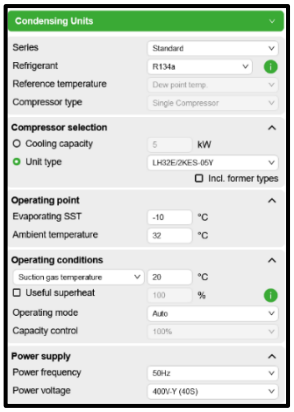
Input choices condensing unit:



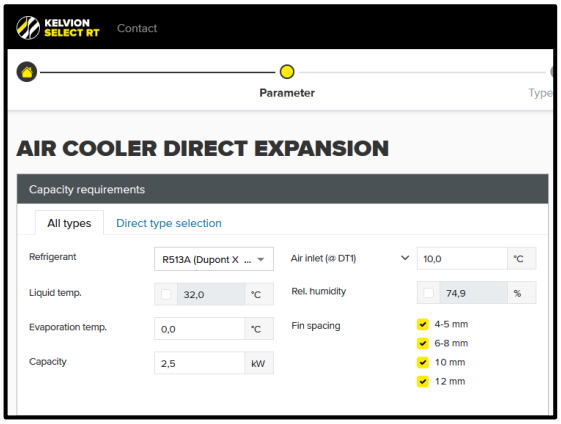


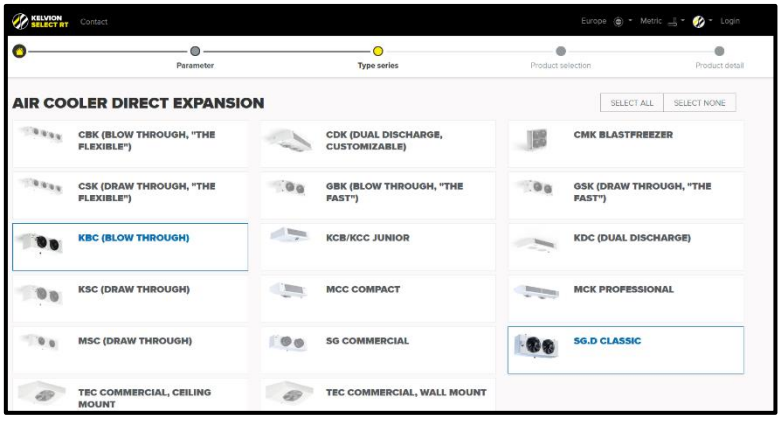




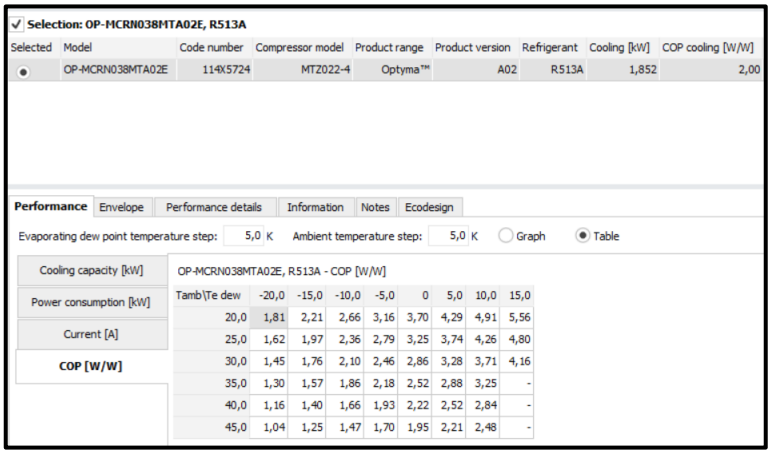


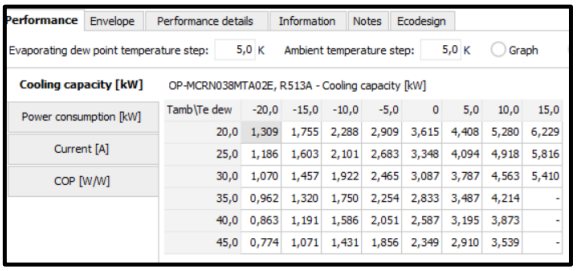
Input choices evaporator:

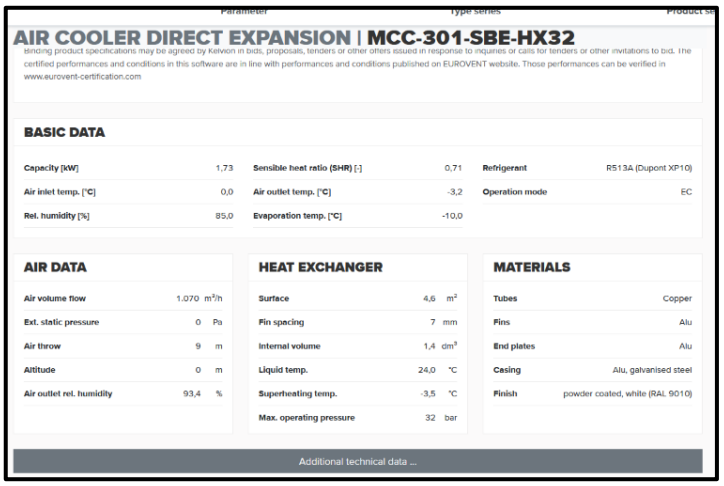


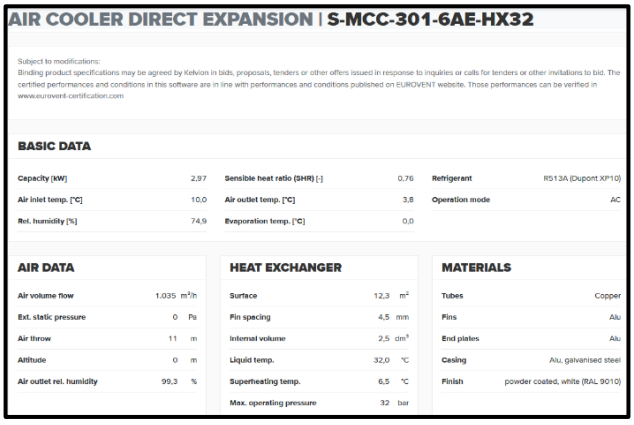


EXAMPLE: Danfoss CU









Case	Beverage	Fresh meat
CU	Danfoss: OP-MCRN038MTA	
Refrigerant	R513A	
Evaporating temp.	0°C	-10°C
Room temp	10°C	0°C
T amb	35°C	35°C
Capacity	2,8 kW	1,75 kW
COP	2,52	1,86
Evaporator	Kelvion	
Evaporator	S-MCC-301-6AEHX32	MCC-301-SBE HX32
Surface	12,3 m²	4,6 m²
Finspace	4,6 mm	7 mm
Airflow	1035 m³/h	1070 m³/h

Comment: The same CU with different application 50% higher capacity and COP. Yet the evaporator surface must be tripled to reach this (from 4.6 to 12.3 m²)!

ASERCOM
ASSOCIATION OF EUROPEAN REFRIGERATION COMPONENT MANUFACTURERS

EPEE
The voice of the heating, cooling and refrigeration industry

ABOUT *ASERCOM*

ASERCOM, the Association of European Component Manufacturers is the platform for dealing with scientific and technical topics and their challenges, promoting standards for performance rating, methods of testing and product safety, focusing on improved environmental protection, serving the refrigeration and air conditioning industry and its customers. It is the aim of *ASERCOM* to be the platform for dealing with scientific and technical topics and their challenges, promoting standards for performance rating, methods of testing and product safety, focusing on improved environmental protection, serving the refrigeration and air conditioning industry and its customers. *ASERCOM* addresses top issues and communicates relevant opinions of its members to the industry, the public, governmental bodies and non-governmental organisations. https://www.asercom.org/

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EPEE represents the refrigeration, air-conditioning and heat pump industry in Europe. Founded in the year 2000, EPEE's membership is composed of over 50 member companies as well as national and international associations. With manufacturing sites and research and development facilities across the EU, which innovate for the global market, EPEE member companies realise a turnover of over 30 billion Euros, employ more than 200,000 people in Europe and create indirect employment through a vast network of small and medium-sized enterprises, such as contractors who install, service and maintain equipment. Please visit our website for further information: https://www.epeeglobal.org.