

Chillventa Specialist Forums 2024

Chillventa Fachforen 2024

**CONNECTING
EXPERTS.**

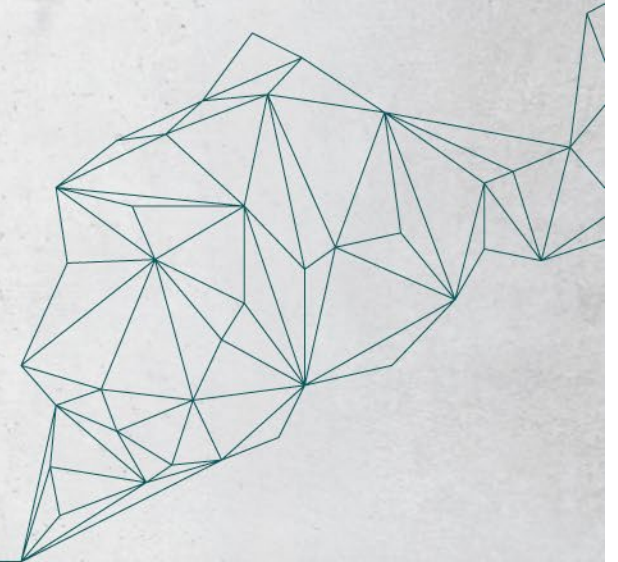


An evolving heat exchanger portfolio for R-290

Matteo Todescato



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Summary

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- **Effect of EU Regulations** on the transition to new refrigerants
- Alfa Laval **SE range** addressing the new market requirements
- **Alfa Laval portfolio** for residential, commercial and industrial applications



Matteo Todescato

Alfa Laval

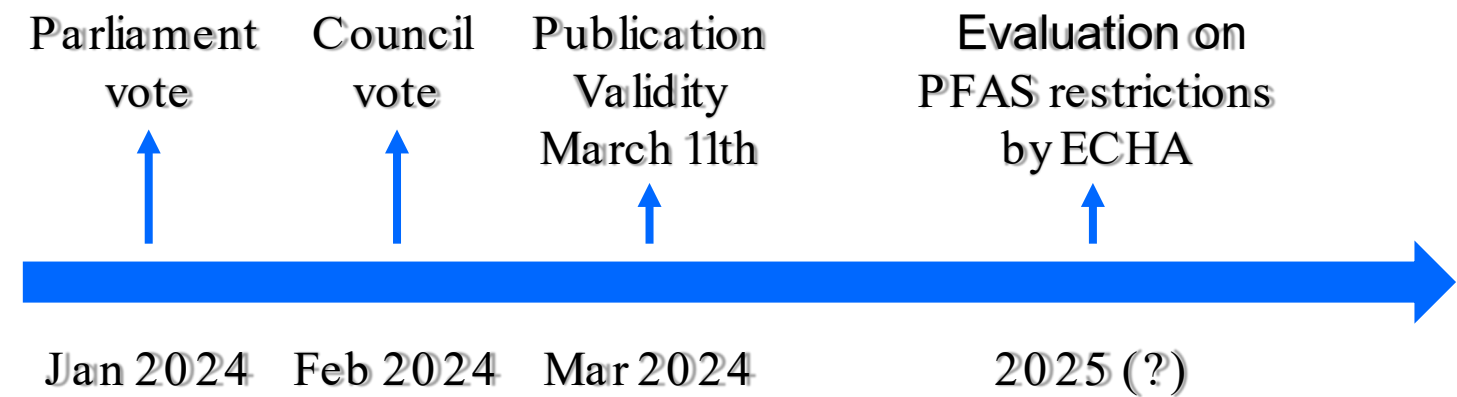


Application and Product Specialist
Braze and Fusion Bonded Heat Exchangers

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New F-gas

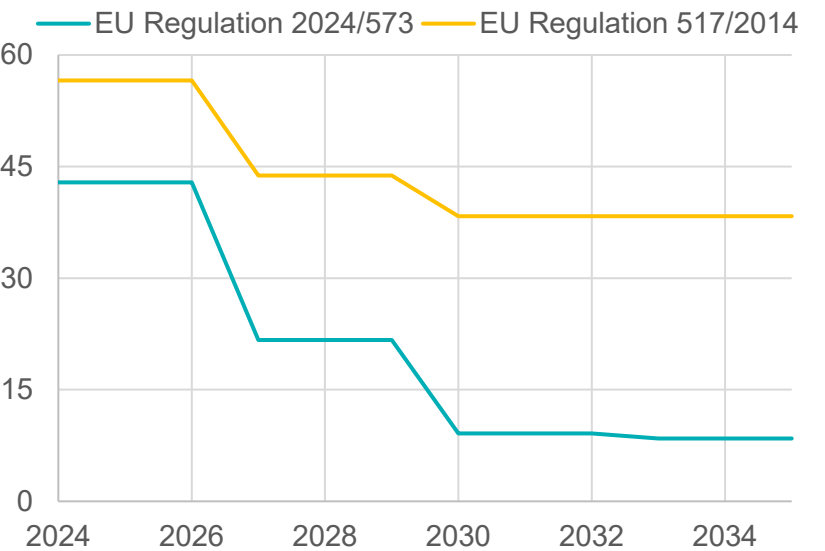
Bans, timeline and CO₂ quota



Unit type	kW	2027	2028	2029	2030	2031	2032	2033	2034	2035
<u>Monoblock reversible units:</u> Hydronic HP, Rooftop, A/ A	< 12	GWP < 150					Natural Only			
	12-50	GWP < 150								
	> 50				GWP < 150					
<u>Split units:</u> RAC & VRF systems	< 12			GWP < 150						Nat.
	> 12			GWP < 750				GWP < 150		
<u>Monoblock cooling only units:</u> Chillers	< 12	GWP < 150					Natural Only			
	> 12	GWP < 750								

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HFC Quota phase-down [Mton CO₂ eq.]



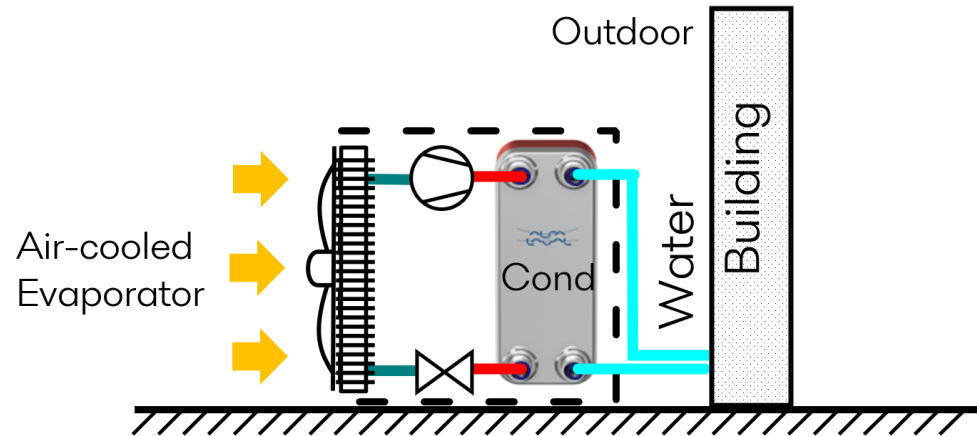
- R-410A, R-134a accepted
- GWP<750 ; R-32 accepted
- GWP<150 ; R-454C, R-1234ze, R-513 accept.
- Nat. Only ; CO₂, R-290 (Split excl.), NH₃

R-290 installations

Residential- Indoor vs outdoor

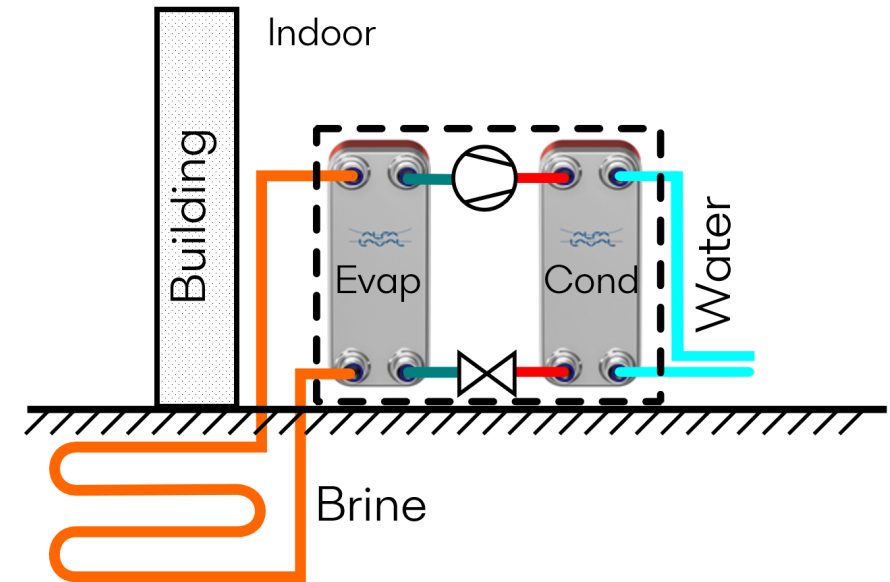
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Air-to-Water Heat Pumps (Outdoor installations)



- **No ref charge limitation** for residential range (5-20 kW)
- Main-stream solution: standard heat exchanger configuration (single wall) + safety features
- Mechanical ventilation needed above 5 kg

Ground Source HPs and Water -to-Water HPs (Indoor Installations)



- No regulations up to **152 g per circuit** (7-8 kW)
- Extra safety features required above 152 g
- Mechanical ventilation needed above 1kg

New Alfa Laval SE series

CHILLVENTA

- Specially developed for Hydrocarbons (R-290) 
- Combining the highest level of **Safety** and optimized thermal **Efficiency**

SE43



- For res. A/ W HP (4-20 kW) and small chillers (20-40 kW)
- Res. Outdoor – Safer solution
- Res. Indoor – Possible fit

Available now

SE65



- For res. GSHP (4-20 kW) and small chillers (20-60 kW)
- Res. Indoor
- Res. Premium efficiency

Available after H1 2025

SE74



- For Chillers (40-100 kW)
- Ideal for modular 80 kW heating or cooling opt.

Available now

SE240



- For Chillers (100-250 kW)
- Ideal for modular 160 kW heating or cooling opt.

Available H1 2025

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SE43



- For res. A/ W HP (4-20 kW) and small chillers (20-40 kW)
- Res. Outdoor – Safer solution
- Res. Indoor – Possible fit

Available now

Key features vs legacy model (ACH43):

- **Same format**
→ Quick system implementation
- **-40 % ref hold -up volume** at same HTA
→ Suitable for minimum charge applications
- Improved **heating performance**
→ Up to 1K reduction in condensing temperature
- Same **cooling performance**

New Alfa Laval SE series

CHILLVENTA

- Specially developed for Hydrocarbons (R-290) 
- Combining the highest level of **Safety** and optimized thermal **Efficiency**

SE240



- For Chillers (100 -250 kW)
- Ideal for modular 160 kW heating or cooling opt.

Available in 2025

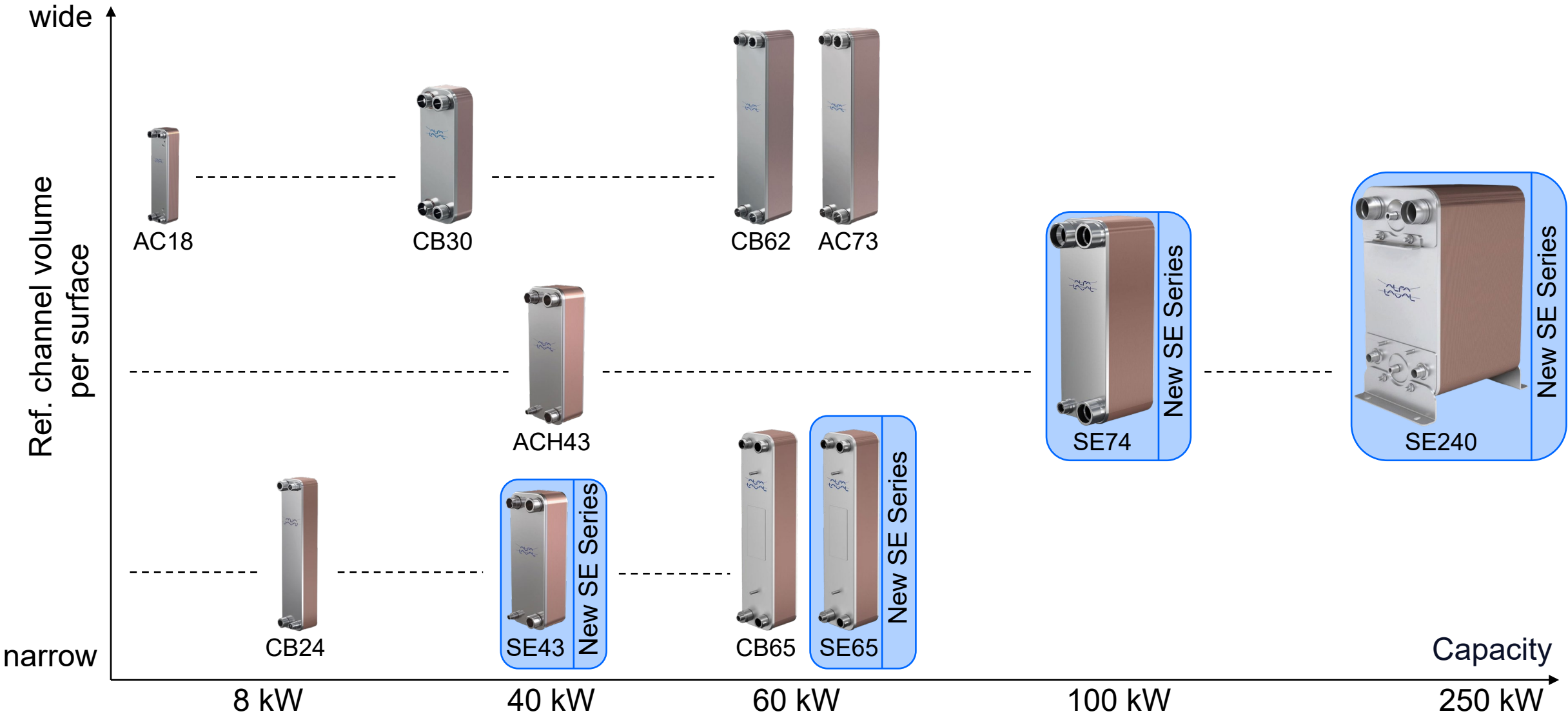
Key features vs legacy model (ACH240):

- **Same format**
→ Quick system implementation
- **-10 % ref hold-up volume** at same HTA
- Improved **heating performance**
→ Up to 2 K reduction in condensing temperature
- Optimized **cooling performance**

Alfa Laval Portfolio

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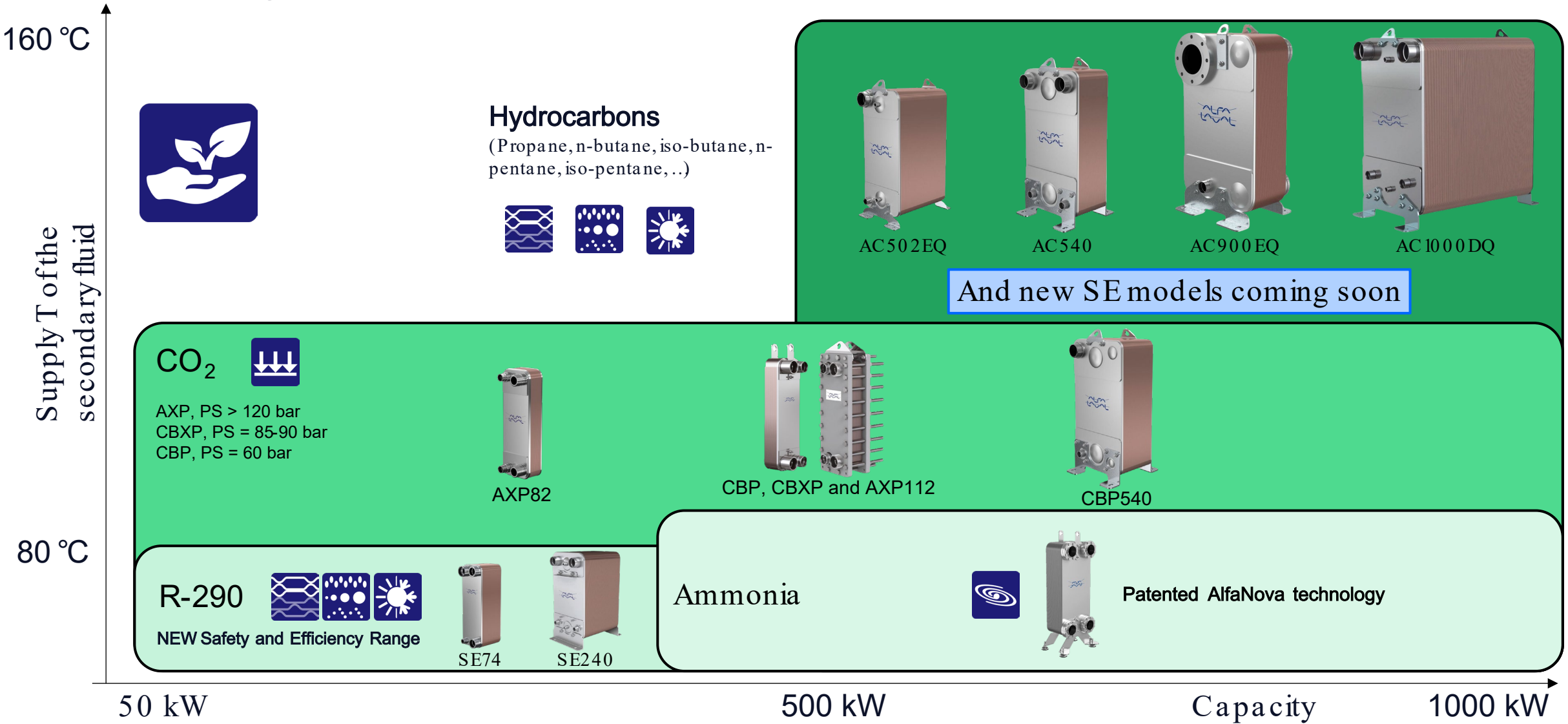
R-290



Alfa Laval Portfolio

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Natural refrigerants



Conclusions

- EU HP/AC market **rapidly evolving**
- Residential & Commercial HP market mainly focused on **Propane**
- Industrial HP market investigating alternatives (i.e. **Hydrocarbons**)
- Alfa Laval **SE range** addressing new market requirements (**Safety and Efficiency**)

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For more product information, please visit:

Alfa Laval Stand 6-138



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