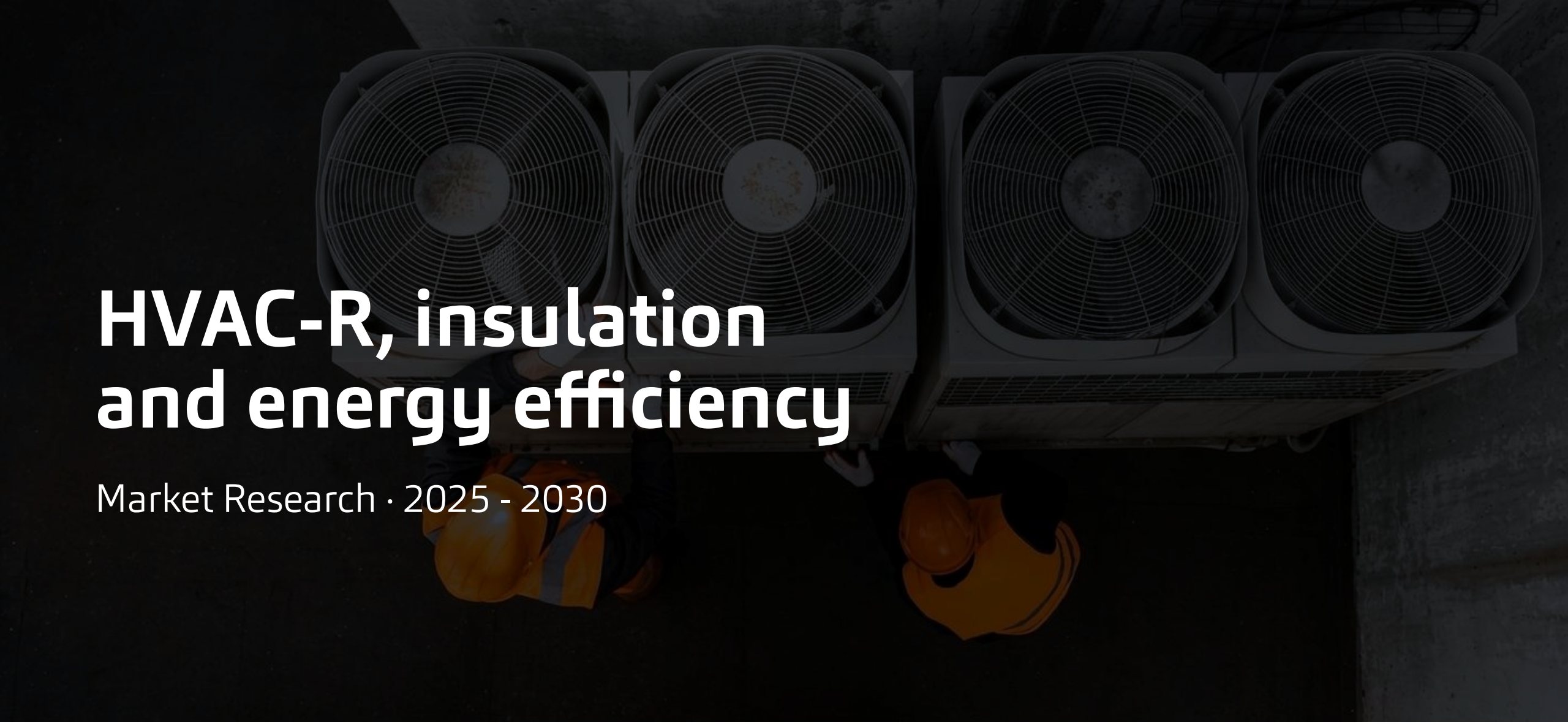


HVAC-R, insulation and energy efficiency

Market Research · 2025 - 2030

Now, for tomorrow

bakertilly

OVERVIEW

Executive Summary

The combined HVAC-R, insulation and energy-efficiency value pool reached roughly US$0.6–0.9 trillion in 2025, with a central estimate of about US$710bn, and compounds at 4.5–5.5% a year to 2030 in the base case. Value is moving away from residential unit volume toward commercial applied systems, data center thermal management and recurring service. M&A is now mainly about buying capabilities — liquid cooling IP, licensed technicians, controls and data, natural-refrigerant know-how — rather than volume. Fragmented installer, service and technical-insulation layers in Southern Europe are the most actionable buy-and-build terrain, and the handover from installation into maintenance is where recurring revenue is won or lost.

~US $710bn

INTEGRATED POOL, 2025

Central estimate built bottom-up; range US$600–885bn.

4.5–5.5%

BASE-CASE CAGR TO 2030

To ~US$885–930bn. Bear 2–3%, stretch 8–9%.

9.5x

HVAC SERVICES EV/EBITDA

2024 to mid-2026, normalised from 13.3x in 2021–2023 (Capstone).

29x

ECOLAB–COOLIT, NTM EBITDA

Liquid-cooling assets clear at three times the services multiple.

2.88m

EUROPEAN HEAT PUMP SALES, 2025

+13% across 21 countries after a 23% fall in 2024 (EHPA).

US $12.1bn

TRANE BACKLOG AFTER Q2 2026

+70%, about 90% tied to commercial HVAC.

32,406

SPANISH CNAE 4322 INSTALLERS

Average revenue €991,165; roughly five years behind the US curve.

12,000

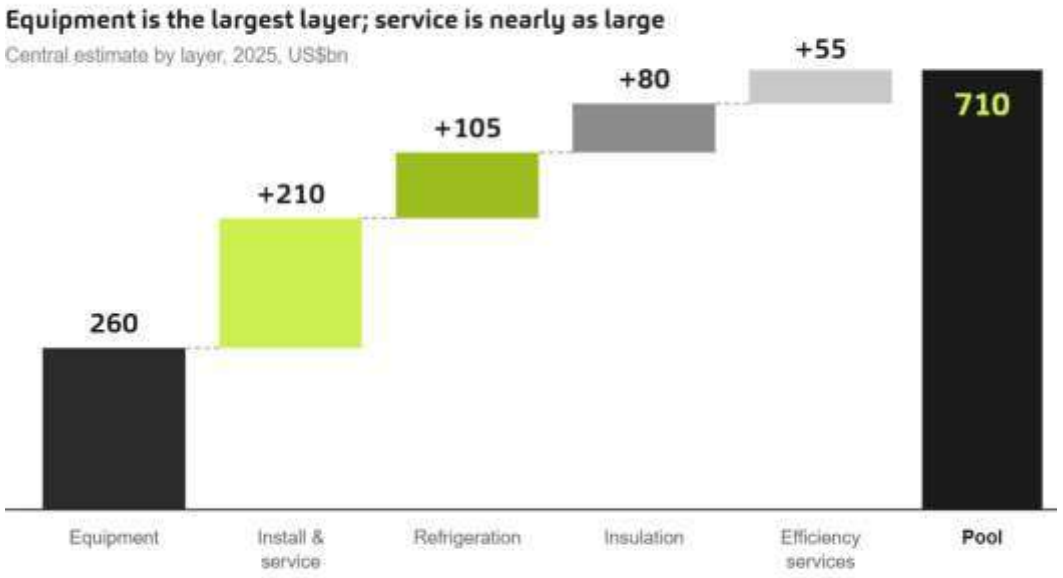
MISSING REFRIGERATION TECHNICIANS

Spain, AEFYT estimate. Labour is the binding constraint.

Sources: Baker Tilly bottom-up value-pool build; EHPA market report 2026; AHRI year-end 2025; Capstone Partners HVAC services updates; Ecolab March 2026 8-K; Trane Q2 2026 8-K; eInforma; AEFYT; Baker Tilly analysis.

Scope and Definition: Five Layers, One Pool

No single source measures the integrated building-climate and thermal-energy pool as defined here, so it is built bottom-up, each layer anchored on the closest primary or analyst figure. HVAC equipment including controls and BMS hardware is the largest layer at 35–37% of the total. The installation, service and maintenance layer is nearly as large, and it is the layer that drives private-equity theses. Refrigeration, insulation and efficiency services make up the remaining third. The result is cross-checked against IEA's US$380bn of 2024 buildings-sector efficiency, electrification and renewables investment, once replacement-cycle spending and service labour are added.



LAYER	2025, US$BN	ANCHOR	CONFIDENCE
HVAC equipment incl. controls / BMS	**215–330** (260)	Arizton $215bn to Market Data Forecast $328.4bn	Medium
Installation, service, maintenance, retrofit	**150–260** (210)	MnM services $72.5bn, uplifted for residential labour and replacement	Low–med
Commercial, industrial & transport refrigeration	**85–130** (105)	Triangulated from Beijer Ref, Transicold, Thermo King, Epta, Danfoss	Low
Thermal & technical insulation	**65–95** (80)	Kingspan €9.2bn, Rockwool €3.9bn plus contractor layers	Low
Energy-efficiency services	**45–70** (55)	UNEP-CCC ESCO survey $15.7bn; IEA China ESCO >$22bn	Low–med

Why sources disagree. The five analyst equipment figures span a 53% range, explained by unit of value (sell-in versus installed), product scope (water heating, air purification, BMS) and China's room-AC market in local currency. **Geography:** Asia-Pacific carries ~45% of equipment value, North America 25–27%, Europe 20–22% — but North America and Europe hold a disproportionate share of service, ESCO and insulation value.

Sources: Arizton; Next Move Strategy Consulting; Grand View Research; MarketsandMarkets; Market Data Forecast; UNEP-CCC Global ESCO Market 2025; IEA World Energy Investment 2025, Breakthrough Agenda 2025 and Energy Efficiency 2025; BSRIA; Kingspan; Rockwool; Baker Tilly analysis. Totals adjusted for double counting of controls and installed equipment.

Four Drivers Explain 80% of Forward Growth

The consensus narrative is "electrify, refrigerant-switch, digitise": mid-single-digit volume growth plus 1–3 points of annual regulatory price and mix uplift, with a mid-teens data center layer on top. A2L systems, R-290 monoblocs, CO2 transcritical racks and higher-efficiency equipment all carry structural price premia, and regulated transitions accrue disproportionately to whoever controls installation capacity and distribution.

1 · Regulated electrification of heat

EPBD recast (Directive (EU) 2024/1275) ends incentives for stand-alone fossil boilers from 1 January 2025; Germany's GEG, the UK Boiler Upgrade Scheme and Spain's CTE / PRTR stack.

2 · Refrigerant transition

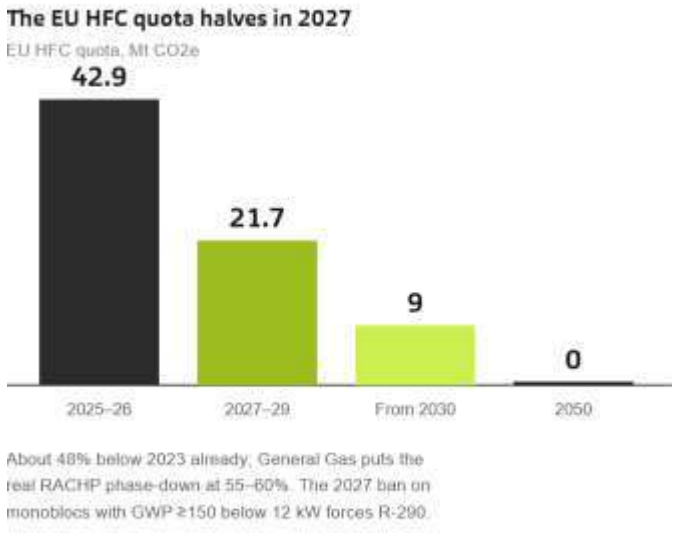
F-gas Regulation (EU) 2024/573 and the US AIM Act Technology Transitions rule force equipment replacement and raise average selling prices; A2L transition delivered double-digit OEM price increases.

3 · Data center thermal load

Trane's Q4 2025 Americas applied bookings +120% with 200% book-to-bill; Carrier's Q2 2026 data center orders above +300%; AI racks above 50–100 kW push cooling from air to liquid.

4 · Ageing installed base

Sustains replacement and service demand regardless of the new-build cycle. Carrier's aftermarket posted its fifth consecutive year of double-digit growth in 2025.



Twelve trends, in brief

Heat pump V-shape — 2022 peak, 2023–24 slump, 2025 recovery.

US A2L transition — a price-for-volume trade.

F-gas quota scarcity as a replacement engine.

Data center cooling — the growth engine and M&A premium.

Commercial applied outgrows residential.

Service and aftermarket as the profit annuity.

Distribution consolidates and digitises pricing.

Insulation splits — sluggish envelope, outperforming technical.

Spain's CAE scheme monetises efficiency.

Policy bifurcation — EU mandates, US incentive rollback.

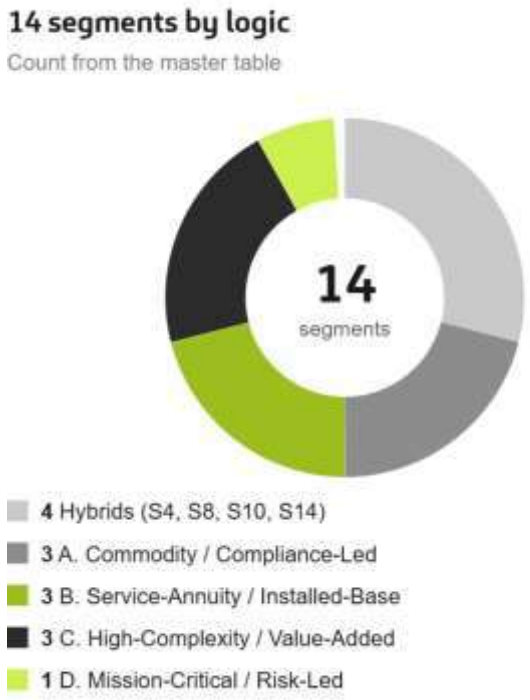
Labour scarcity as a consolidation catalyst.

"Power plus cooling" portfolio reshaping.

Sources: Directive (EU) 2024/1275; Regulation (EU) 2024/573; General Gas; US EPA AIM Act Technology Transitions rule; Trane and Carrier earnings; Watsco Q3 2025; Baker Tilly trend and driver map.

Segmentation: Fourteen Segments, Four Strategic Logics

Five criteria — demand trigger, service complexity, customer sophistication, regulatory regime and revenue model — group fourteen segments into four strategic logics. Data center cooling is the only pure Mission-Critical segment, and it carries the highest margins and multiples.

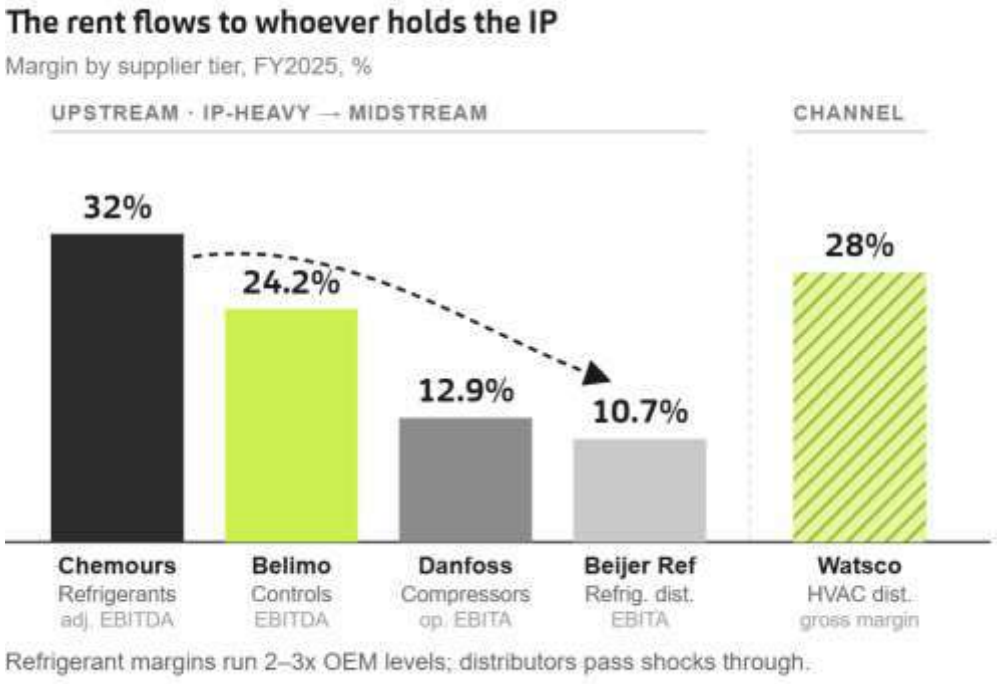


SEGMENT	LOGIC	REPRESENTATIVE EXAMPLES
S1 Residential heat pumps & hydronic	A	Daikin, Bosch, Vaillant, Viessmann, Baxi
S2 Residential split & room AC	A	Daikin, Mitsubishi, Midea, Gree, LG
S3 Residential install & service contractors	B	Apex, Grup Nextclima
S4 Light commercial unitary, rooftop, VRF	A/C	Carrier, Trane, Lennox, Daikin VRV
S5 Commercial HVAC (chillers, AHUs)	C	Trane, Carrier, Daikin Applied, JCI York
S6 Data center & mission-critical cooling	D	Vertiv, Schneider, Eaton, Trane, Kingspan Advnsys
S7 Commercial services, controls & BMS	B	Carrier, Trane, JCI OpenBlue, Serveo, Apleona, VDK
S8 Food-retail & commercial refrigeration	A/B	Epta, Danfoss, Beijer Ref
S9 Cold chain & industrial (NH3/CO2)	C	GEA, Johnson Controls (Frick, Sabroe), Mayekawa
S10 Transport refrigeration	C/A	Carrier Transicold, Thermo King (Trane)
S11 HVAC-R distribution & wholesale	B	Watsco, Beijer Ref, Ferguson
S12 Building envelope insulation	A	Kingspan, Rockwool, Isover, Knauf
S13 Technical & industrial insulation	C (fragmented)	Rockwool TI, Armacell, Kaefer
S14 ESCO, EPC & efficiency services	C/B	ANESE members, Veolia, Engie, CAE delegated subjects

Sources: Baker Tilly master segmentation table built on EHPA; AFEC; Daikin; Capstone; Carrier; AHRI; Trane; Vertiv; Kingspan; Watsco; Beijer Ref; Rockwool; ANESE; MITECO.

Supplier Ecosystem: the Regulatory Rent Channel

Suppliers hold more pricing power than most buy-and-build theses assume. Each time regulation forces a refrigerant, efficiency or safety change, the supplier holding the enabling IP collects the first and largest share of the transition economics. Chemours' Opteon sales rose 56% to US$1,264m in FY2025 even as AHRI shipments fell 20%; MDI producers pushed through four rounds of increases between December 2025 and August 2026; copper above US$12,000/t has forced OEMs into aluminium redesigns. Equipment makers absorb these shocks; distributors and service contractors largely pass them through.



Eight supplier tiers, none optional

1 Refrigerants & chemistry	Chemours, Solstice (spun from Honeywell Oct 2025), Arkema, Orbia/Koura. Opteon +56%; legacy Freon −30% to $428m
2 Compressors & circuit	Copeland (Blackstone, $14bn; 80% of revenue from repair and replacement), Danfoss €9,430m, Midea GMCC >30% of rotary
3 Metals	Copper / aluminium ratio a record 4.3 in Jan 2026 vs a 3.7 average
4 Power electronics	Infineon, onsemi, STMicro; EU JRC flags import dependency as the main weakness
5 Insulation raw materials	MDI five-player oligopoly: BASF, Covestro, Huntsman, Dow, Wanhua
6 Controls, BMS & software	Belimo CHF 1,120.8m (+23.3%), data centers ~17% of sales from ~11%
7 Regulators & certifiers	EC, US EPA, AHRI, Eurovent, MITECO, ENAC — the "licence to operate"
8 Labour, alliances, capital	~61 heat pumps per installer: Spain's 2025 volume absorbs ~3,700 FTE installers

Sources: Chemours FY2025 (~32% TSS adjusted EBITDA on $670m over $2.1bn); Solstice Q3 2025; Copeland and Blackstone / Emerson; Danfoss FY2025; Midea GMCC; ACHR News; LME Insight; EU JRC heat-pump monitoring report; Belimo FY2025; Watsco; Beijer Ref; AEFYT; Baker Tilly supplier tier map.

Complements Monetise the Core; Regulation Bounds the Substitutes

A complement passes the "removal neutrality" test: a Trane chiller runs without BrainBox AI, but BrainBox AI has nothing to optimise without the chiller. Complements monetise the information, money and compliance flows the core generates, and attach to it through the maintenance contract. A substitute must deliver close to the same outcome and also displace the independent provider — and each credible substitute runs into F-gas certification, licensing, liability or flammability rules. The real threat is a regulatory carve-out, not a better product.

Seven complement categories

Field service software · connected equipment · AI-native controls · BMS and digital twins · ESG and compliance tools · financing and outcome contracts · training and certification. Customers adopt them in order: **compliance first** (F-gas logs, RITE records), **then cost** (energy optimisation, leak reduction), **then revenue or financing** (CAE, subscriptions).

US$82.1bn

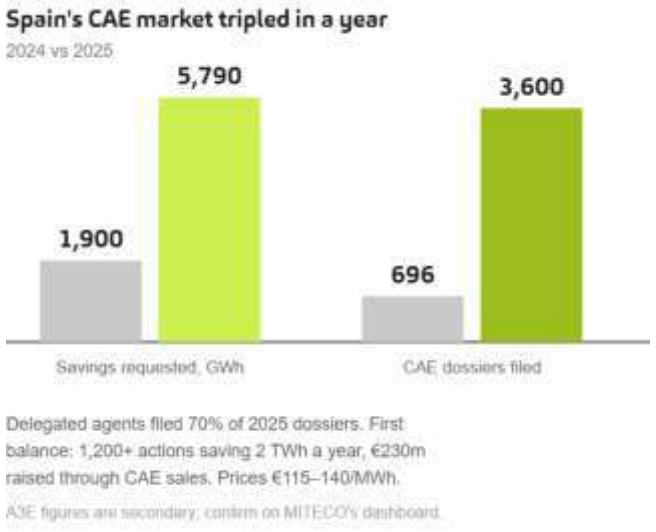
SERVICETITAN GTV, FY2026

~1.2% take rate, gross dollar retention above 95%.

Bought or backed

INCUMBENTS MOVE IN

Trane–BrainBox AI; JCI and Carrier backed PassiveLogic and 75F.



Seven substitutes, bounded

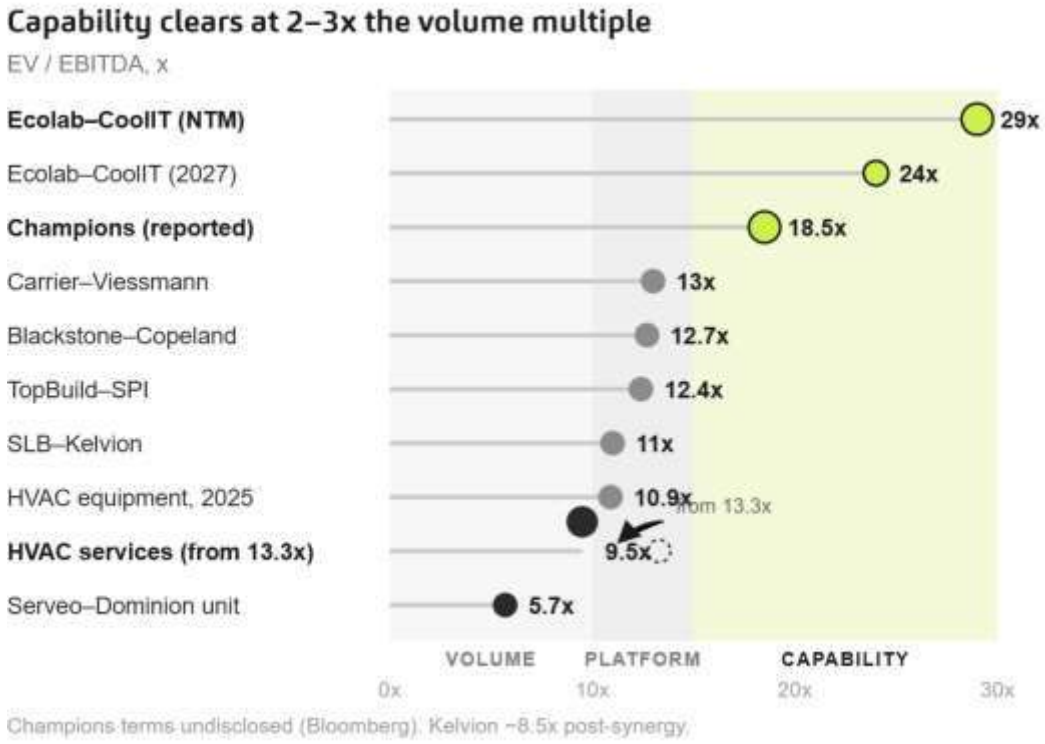
In-house FM teams	Still **56.8%** of European FM spend
OEM, utility, D2C	Octopus **£4,064** per heat pump vs £5,408 UK median
DIY equipment	Mini-splits; limited by refrigerant handling rules
District heating & cooling	Spain: **585 networks, 1,753 MW**
Envelope-first design	Reduces load; does not remove service
AI autonomous ops	Moves routine tasks inward
Self-certification	Only where regulation allows

The generalist middle is hollowing out: routine tasks move inward, regulated safety-critical work moves outward to certified third parties.

Sources: ServiceTitan FY2026; Trane; Johnson Controls; Carrier; A3E citing MITECO progress reports; ASDAE; MITECO first CAE balance (February 2025); Mordor Intelligence; Octopus Energy; Spanish district-heating census; Baker Tilly complement and substitute landscape.

M&A Landscape: Capability Commands the Multiple

In 2026, capability deals command the multiples and volume deals command the count. The data center adjacency pulls strategics; service annuities pull sponsors. Services multiples have normalised from 13.3x to 9.5x and broader HVAC from 13.4x to 11.4x, while higher financing costs push sponsors toward add-ons over new platforms — platform creations fell to nine. Capstone counted 149 HVAC services deals in 2025 (+12.9%), with PE add-ons making up 41.3% of 2026 deals to date.



Five transaction types

Large strategic reshaping ($1bn+)	Carrier–Viessmann €12bn; JCI residential to Bosch $8.1bn; Eaton–Boyd $9.5bn; Ecolab–CoolIT ~$4.75bn; SLB–Kelvion $3.4bn
Service roll-ups	Service Logic, Apex, Champions, VDK, Syclef, Serveo — the core PE thesis
Vertical entry downstream	OEMs buy aftermarket and installer access: Viessmann's 75,000 installers in 25 countries
Data center capability	Trane–LiquidStack, Trane–Stellar, Schneider–Motivair (€850m for 75%), Vertiv–PurgeRite (~$1.0bn)
Carve-outs and portfolio pivots	Carrier sold >$10bn of fire, security, refrigeration at blended mid-teens; Serveo carve-outs at ~5.7x

Ranked by risk-adjusted return

1 Spain and Portugal HVAC-R and refrigeration services (entry 4–8x, 10–20% discount to core Europe) · **2** Southern European technical insulation · **3** US commercial HVAC services · **4** European data center thermal services · **5** US residential services (17–20x, sell-side only) · **6** European residential heat pump equipment (avoid at full multiples).

Sources: Ecolab March 2026 8-K; Bloomberg; Carrier; Blackstone / Emerson; TopBuild; SLB 8-K; Capstone Partners HVAC services updates; Serveo / Dominion; Schneider; Vertiv; Eaton. Spanish SME multiples come from advisory-firm marketing material, not transaction databases.

Contact us

advisory@bakertilly.es

+34 946 42 41 42

www.techma.bakertilly.es

© 2024 Baker Tilly (Spain) is an independent member of Baker Tilly International. Baker Tilly International Limited is an English company. Baker Tilly International does not provide professional services to its clients.

bakertilly