NATHAN RESEARCH GROUP

NRG CASE STUDY

Beyond the Home Fabs

How a Korean scrubber-and-chiller maker built around Samsung's fabs moved into China and Taiwan in 2009, and what followed.

KOSDAQ 036200 · UNISEM Co., Ltd.

Founded	China subsidiary set up	Revenue, FY2025	Exports, share of FY2025 revenue
1988	Aug 2009	₩273.3bn	36.3%

Nathan Research Group

Evidence base: UNISEM FY2025 Annual Report and 2026 Half-Year Report (DART), with the 2025–26 quarterly and half-year reports and earlier annual accounts; company brochure (2018) and presentation (2019); QYResearch, Meticulous Research and Korea IR Council research; trade press 2010–2026; NRG network bench as of 2026-09-30. Prepared in Seoul, September 2026.

Contents

THE CASE IN BRIEF

This case follows one choice: UNISEM's move into China and Taiwan in August 2009, at the bottom of a downturn and nine years after it set up a US unit near Samsung's Austin fab. The sections cover the market, the decision, its execution and the results filed through June 2026, and end on what public data leaves open.

Case Summary *The decision, four outcome facts, the open question*

1 **The Situation** *Small markets and one dominant customer* Ex. 1–3

2 **The Decision** *The 2009 move abroad and the options open then* Ex. 4–5

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HOW TO READ THIS CASE

Sections 1–3 are told in the past tense and Sections 4–6 in the present. DART figures are consolidated unless marked. Market sizes appear as ranges because research houses define these markets differently. When no company statement backs a reading of intent, the text labels it as NRG's. The case takes no investment view. No expert was consulted: §6 poses questions and shows where in NRG's network the answers sit.

Case Summary

THE DECISION IN BRIEF

UNISEM makes scrubbers and chillers for chip and display fabs. In August 2009, in a year when revenue ended 41% below its 2007 level[1], it set up a subsidiary in Shanghai and a Taiwan branch run through its local distributor[2][3]. In Q1 2010, months later, Samsung Electronics still took 68% of revenue[1].

Overseas sales then rose in two waves. On the company's own customer split, overseas customers were 37% of 2018 revenue, led by BOE and Kioxia[4]. On DART's export basis, a jump in chiller sales lifted exports above a third of FY2025 revenue[2]. The largest customer, which NRG reads as Samsung, still took over half of H1 2026 revenue[5].

Exports, FY2025

36.3%

of revenue; 26.1% in FY2024

Largest customer, H1 2026

52.8%

of revenue; not named in filings

Service share of op. profit

65%

FY2025; equipment margin 2.4%

Order backlog, 30 Jun 2026

₩111.2bn

₩34.1bn at 31 Dec 2025

THE QUESTION THIS CASE LEAVES OPEN

The FY2025 export jump can be read as progress, but the filings split exports by product line only. Whether new buyers or the anchor customer's own fabs abroad took them remains open; §6 sets out where the answer sits.

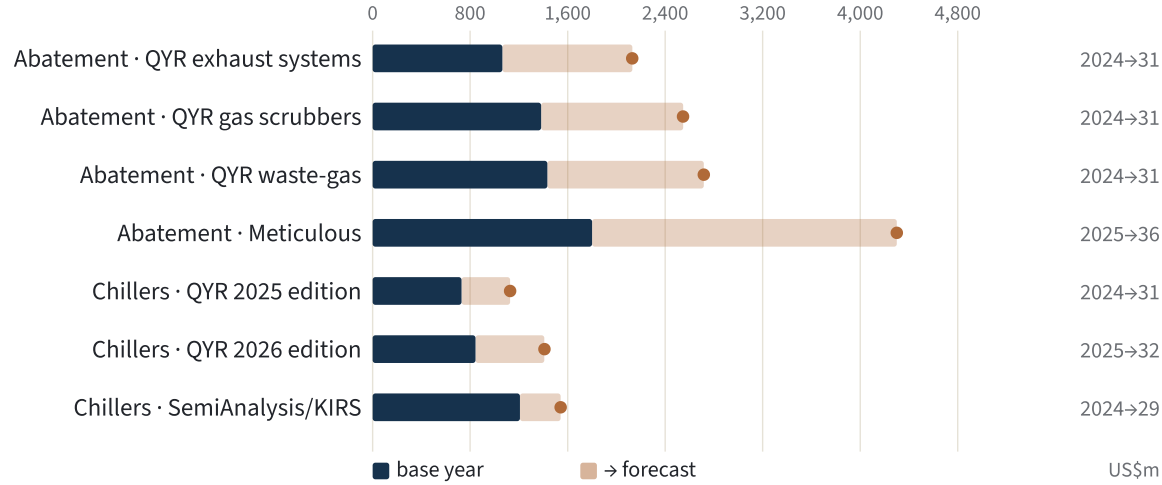
1 The Situation

UNISEM sells sub-fab equipment. A point-of-use scrubber sits behind a tool's vacuum pump and destroys the toxic, flammable or high-warming gases that deposition and etch steps exhaust[6]. A chiller holds a process chamber or wafer holder at a set temperature. Chillers are matched one-to-one with chambers, mostly in etch, so demand tracks the number of etch chambers a fab installs[6].

None of the research houses consulted publishes a base year before about 2022, so the market of 2009 cannot be sized; today's estimates stand in for it. Four put semiconductor abatement at US$1.1–1.8bn on a 2024–25 base[7][8][9][10], and three put chillers at US$0.73–1.21bn[11][12][13]. The houses draw the abatement market differently, so the spread reflects scope as much as disagreement. Fab-equipment spending, by comparison, is forecast at US$145bn for 2026[14].

By 2024 plasma units, which burn no fuel, made up about 41% of scrubber types[8]. Deeper 3D NAND has pushed some etch steps toward low-temperature and cryogenic chillers. V9 low-temperature units were reported to cost about twice as much as legacy chillers, and V10 cryogenic units more[6].

Exhibit 1 · Seven estimates, all under US$2bn in their base year (US$m, base year to forecast year)



Source: QYResearch (2025-03, 2025-10, 2026-04); Meticulous Research (2026-08); SemiAnalysis as cited by KIRS (2025-07). SkyQuest (2026-02) excluded as low-confidence.

Where demand sits, and who supplies it

Korea accounts for only about a sixth of global chiller demand, so most of the market sits abroad (Exhibit 2)[12]. Supply is concentrated among a few global names, and they have bought into Korea: Atlas Copco, Edwards' parent, acquired the Korean abatement maker CSK in 2016[15].

No share estimate from 2009 was found in the sources consulted. By 2024 the company's own estimate put it at half of Korea's scrubber market and 40% of its chiller market[2]. A supplier that leads at home has two ways to grow faster than home fab spending: take share from rivals such as GST and CSK, or sell where most demand sits.

UNISEM's FY2025 Annual Report, written sixteen years after the move, describes the structure in the industry's own terms. Korean equipment makers are "vertically aligned under each chipmaker, with low cross-purchasing between groups", it says, and only world-class equipment lets them "go beyond the vertically integrated domestic market into the world market"[2].

Exhibit 2 · **Most demand sits outside Korea, and a few suppliers hold most of it**

Measure	Value	Year
Asia-Pacific share of scrubber demand	~78% (North America ~11%, Europe ~7%)	2024
Korea's share of chiller demand	16.6% (US$140m)	2025
Top-5 scrubber suppliers' share (QYResearch scrubber scope)	~63% (Edwards, Ebara, GST, CSK, Kanken)	2024
Top-10 chiller suppliers' share	78–80%; UNISEM named among the leading players (2026 edition)	2024–25
UNISEM's home share (company estimate)	**Scrubbers 50%, chillers 40%**	**2024**

Source: QYResearch (2025-03, 2025-10, 2026-04); UNISEM Annual Report FY2025 (home-share estimates).

UNISEM before the move

Founded in 1988, UNISEM describes itself as the first Korean company to develop a scrubber[2]. It started scrubbers in 1993–95 and chillers in 1998–99; sources differ on the exact years[3][4][6]. From 1998 it also laid vacuum piping in Samsung fabs[4], and it still signs annual unit-price supply contracts with both Samsung Electronics and SK hynix[2].

Revenue fell from ₩85.3bn in 2007 to ₩66.0bn in 2008 and ₩50.2bn in 2009, and operating profit from ₩6.2bn to ₩0.3bn[1]. A non-equipment division (CIS, later CCTV and car dashcams) had been 38% of 2008 sales and was 25% of 2009 sales[1].

UNISEM America, the first foothold abroad, was set up in September 2000 in Pflugerville, Texas, near Samsung's Austin fab, for "expansion of the company's products into the US market and maintenance of products sold"[2]. BOE, a Chinese display maker, had bought both product lines since 2005[16], and in September 2006 UNISEM signed Parrion Technology of Hsinchu as its Taiwan distributor[2].

The earliest customer split found dates from months after the move. In Q1 2010 one customer still took over two-thirds of revenue, and overseas customers about a tenth[1].

Exhibit 3 · In Q1 2010, months after the move, Samsung Electronics took 68% of revenue (share of Q1 2010 revenue, %)



Samsung Electronics the anchor customer	**68**
Hynix and others memory and other customers	**12**
LG Display display customer	**9**
Overseas customers all foreign sales	**11**

Source: News Tomato (2010-06-14), company revenue as reported by the press.

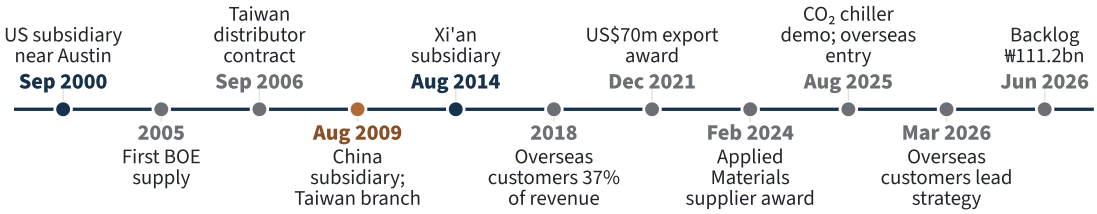
2 The Decision

UNISEM made its move at the bottom of the cycle. On 31 August 2009, the year revenue hit its low (§1), it set up UNISEM China in Shanghai[2]. The same year it opened a Taiwan branch, run through its distributor Parrion Technology[3].

NRG found no statement of intent from 2009 in the filings or press it consulted. The only stated purpose for the China unit is the one in the subsidiary table: "semiconductor/LCD equipment maintenance and trade"[2]. Five years later, on 27 August 2014, UNISEM Xian followed, three months after Samsung's Xi'an NAND fab began full operation[2][17].

NRG reads the 2009 units as a push beyond Samsung's fabs, toward chip and display makers such as BOE. Xi'an, like the US unit, followed the anchor customer. The company's later statements are consistent with that aim. Each half-year and quarterly report since August 2025 has cited "entry into new overseas customers" as an early result[18][5]; the FY2025 Annual Report drops the claim and lists "securing new overseas customers" as a goal[2].

Exhibit 4 · From a US sales-and-service unit to "new overseas customers", 2000–2026



Clay marks the 2009 move, navy the other subsidiaries and grey the customer and market milestones. Source: UNISEM Annual Report FY2025 and Half-Year Report 2026; company brochure (2018) and presentation (2019); News Tomato (2017-11-09); Financial News (2025-08-11).

The options around the move

Setting up abroad was one of several options open to UNISEM in 2009. Exhibit 5 groups the dated actions into four; the grouping is NRG's, not a plan the company stated.

The option closest to home was to diversify beyond chip equipment. The non-equipment division fell to under 15% of sales by Q1 2010[1]. A smart-ID subsidiary followed in 2013 and an IoT department in 2016[3]; the board closed the IoT business on 31 January 2023, citing "limited market entry"[2].

Exhibit 5 · Options open in 2009, grouped by NRG from dated actions

Option	What UNISEM did	Where it is tested
Sell to foreign chip and display makers	China subsidiary and Taiwan branch (2009), building on BOE and the Taiwan distributor	§3: 2018 customers, installed base, service staff; §4: subsidiaries
Follow the anchor abroad	US unit near Austin (Sep 2000); Xi'an (Aug 2014), after Samsung's fab there	§3: installed base; §4: subsidiaries, concentration
Sell through tool makers	Applied Materials; chillers reported on TEL cryogenic etch tools	§3; §6, Q2
Diversify beyond chip equipment	CCTV and car dashcams (2008–10); smart ID (2013); IoT (2016)	This page

Source: UNISEM Annual Report FY2025 (subsidiary table); company brochure (2018) and presentation (2019); News Tomato (2010-06-14, 2017-11-09); KIRS (2025-07-14) on TEL.

> **IN THE COMPANY'S WORDS**
>
> "Unisem have had biggest market share in local scrubber market and progressively expand global market share." Company brochure, 2018, English original[3].

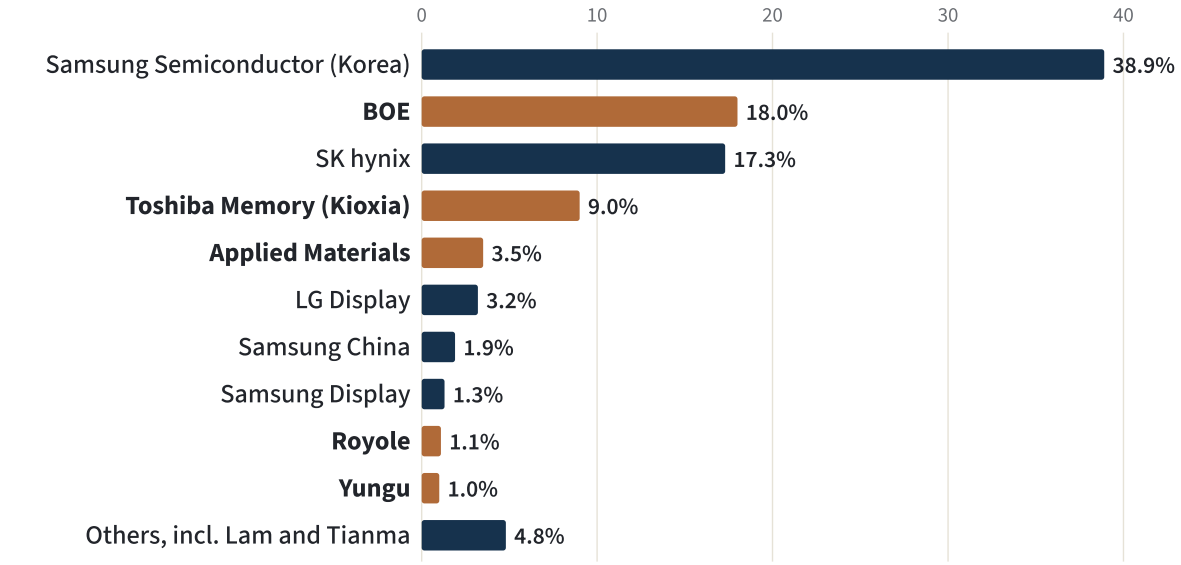
3 The Execution

On the company's own split, overseas customers were 37% of 2018 revenue; split by market, display applications were 32%[4]. BOE was the second-largest customer, and Toshiba Memory, now Kioxia, the largest foreign chipmaker among them (Exhibit 6).

Samsung's Korean chip fabs took 38.9% of 2018 revenue[4], against 68% for Samsung Electronics in Q1 2010 (§1), though the bases differ. In 2017 the company said its scrubbers held a 45% share at Samsung Electronics and that it had been "very busy since last year"[16].

Applied Materials took 3.5% of 2018 revenue[4] and named UNISEM a 2023 Best Supplier in February 2024[2]. UNISEM chillers have been reported on Tokyo Electron (TEL) cryogenic etch tools used for Samsung's V9 NAND[6]. A chiller bought by a tool maker ships inside the tool, which may spare the supplier fab-by-fab qualification; §6 treats that as an open question.

Exhibit 6 · BOE and Kioxia led the foreign customers in 2018 (share of 2018 revenue, %; foreign-owned customers in clay)



Source: UNISEM company presentation (2019; data as of end-2018).

Where the units went

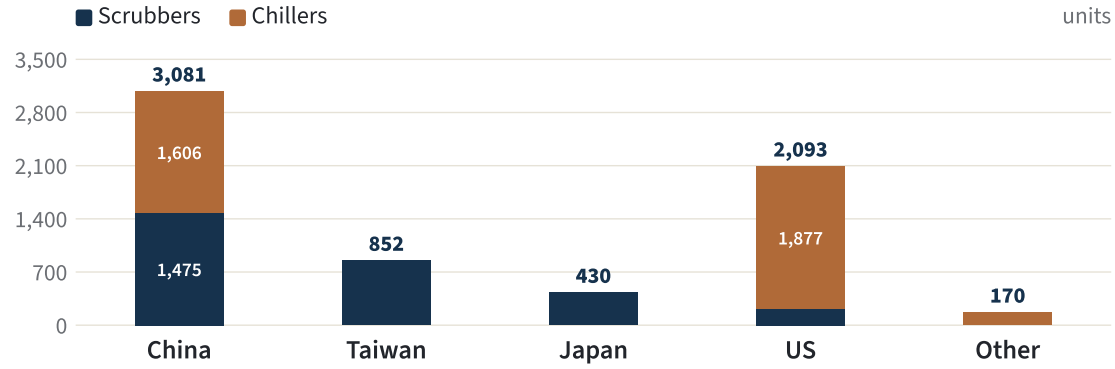
At the end of 2018 UNISEM counted 10,435 scrubbers and 15,532 chillers in the field, about a quarter of them outside Korea[4]. China and Taiwan, the markets of the 2009 move, held most of the scrubbers abroad (Exhibit 7).

Most chillers abroad were in the US and China, consistent with Samsung's Austin fab and with chillers shipped inside tools. The scrubbers' tilt to China and Taiwan points to display and foundry customers. The company gave no regional customer split, so both readings are NRG's.

In the company's 2019 presentation, 370 of 630 staff worked in service. Counting agents, 247 served abroad: 101 in China, 46 in Xi'an and 38 at the Taiwan branch[4].

Exports were 26.9% of revenue in FY2023 and 26.1% in FY2024 on DART's basis[2], below the 2018 overseas-customer share, which is measured differently. Export awards of US$30m in 2015 and US$70m in December 2021 are the only markers in between[3][2]. With no display and chip split after 2018, any link to Chinese panel makers' spending cannot be tested.

Exhibit 7 · Units installed outside Korea at end-2018 (in Korea: 7,462 scrubbers and 11,879 chillers)



Overseas share of the installed base: about 28% of scrubbers, 24% of chillers. US scrubbers: 216 units. The presentation prints 11,897 domestic chillers; its components sum to 11,879, which reconciles to the 15,532 total. Source: UNISEM company presentation (2019; data as of 31 Dec 2018).

The rival that went abroad wider

GST, founded in 2001, is based in Hwaseong, like UNISEM[19]. It is reported to have depended on Korean conglomerates until 2016 and to have diversified since, with results visible after 2021[19].

GST set up nine overseas subsidiaries between 2006 and 2024, including units in Texas, Xi'an, Singapore, Europe and Japan[19][20]. Its reported customers include Micron, YMTC and CXMT[19]. By FY2024 its revenue was about 1.6 times UNISEM's, at more than three times the operating margin (Exhibit 8)[19][21].

In August 2025 GST was reported to have won a CO_2 chiller order from a US-based customer[19], and UNISEM said it was preparing a CO_2 chiller demo for a Taiwan-based foundry[22]. US fab bids had been reported to treat low-GWP refrigerants as a core requirement[6]; in May 2026 the US EPA moved its deadline for certain semiconductor chillers to 1 January 2030[23].

Exhibit 8 · **UNISEM went abroad first; GST went wider**

Measure	UNISEM	GST
First overseas subsidiary	US, Sep 2000	US, Jul 2006
Overseas subsidiaries, 2025	3	9
Export award, Dec 2021	US$70m	US$100m
Named foreign customers	BOE, Kioxia, Applied Materials (2018)	Micron, YMTC, CXMT (reported, 2026)
Revenue FY2022 / FY2023 / FY2024, ₩bn	253.2 / 232.1 / 218.2	312.8 / 279.2 / 346.2
Operating margin FY2022 / FY2023 / FY2024	**11.5% / 7.5% / 4.6%**	**18.2% / 15.2% / 17.1%**

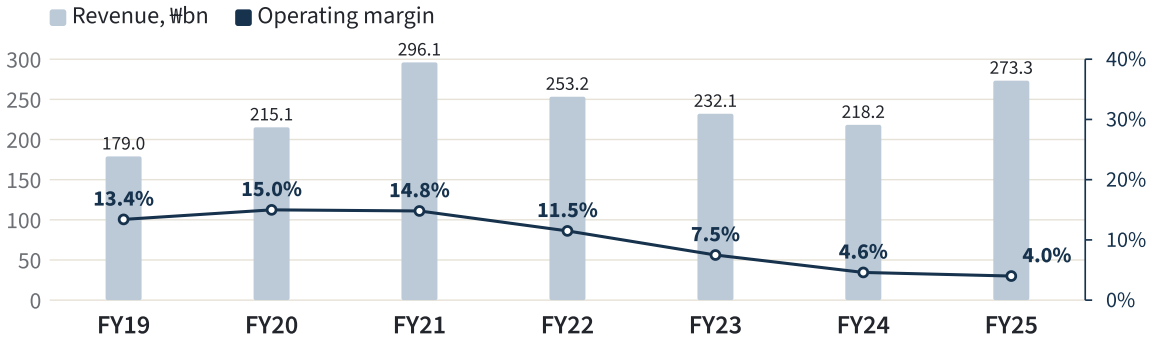
Consolidated basis. GST FY2025 left out: the sources conflict. Source: UNISEM Annual Reports FY2022–FY2025 and company presentation (2019); GST IR presentation (2025-02); KIRS GST report (2026-02-23).

4 The Outcome

Revenue still follows the memory cycle. It fell by about a quarter from its FY2021 peak to FY2024[24][21] and recovered 25.3% in FY2025[2]. The recovery came at a 4.0% operating margin, the lowest of the seven years in Exhibit 9; the segment notes show where the profit went (Exhibit 11).

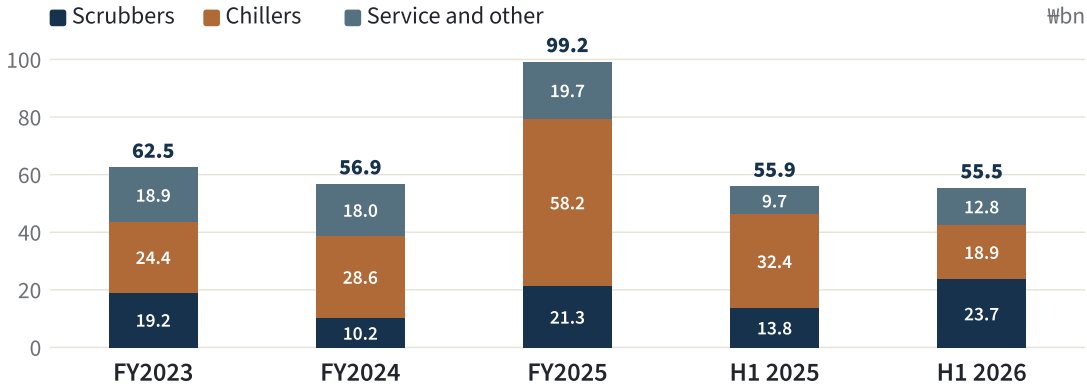
Exports supplied most of the FY2025 recovery, rising by ₩42.3bn to 36.3% of revenue[2], near the 2018 overseas-customer share, though on a different basis. Scrubber exports in H1 2026 already exceeded the FY2025 total (Exhibit 10)[5].

Exhibit 9 · Revenue recovered in FY2025; the operating margin did not



Consolidated. H1 2026: revenue ₩155.0bn, operating margin 6.8%. Source: UNISEM Annual Reports FY2021–FY2025; Half-Year Report 2026.

Exhibit 10 · Exports by product line, ₩bn: chillers drove FY2025, scrubbers led H1 2026



Export share of revenue: 26.9% (FY2023), 26.1% (FY2024), 36.3% (FY2025), 39.7% (H1 2025), 35.8% (H1 2026). Totals as filed; components are rounded. Source: UNISEM Annual Report FY2025; Half-Year Reports 2025 and 2026.

Where the profit is made

Equipment revenue grew 39% in FY2025, but its operating margin fell to 2.4%, and service carried most of the profit (Exhibit 11)[2]. The filings give no reason for the thin equipment margin. Export pricing, warranty terms, demo units and coolant are all candidates. Coolant was 17.5% of FY2025 raw-material purchases[2], and its average purchase price rose from about ₩159,000 to ₩201,000 per unit between FY2023 and H1 2026[2][5].

Exhibit 11 · Since 2025, service has carried most of the operating profit

	FY2024	FY2025	H1 2025	H1 2026
Equipment revenue, ₩bn	130.4	180.8	96.9	104.6
Equipment operating margin	4.4%	2.4%	3.5%	4.0%
Service revenue, ₩bn	87.8	92.4	43.6	50.2
Service operating margin	5.0%	7.7%	8.5%	12.9%
Service share of operating profit	**44%**	**65%**	**54%**	**62%**

Segment notes, consolidated; the share uses consolidated operating profit. Source: UNISEM Annual Report FY2025; Half-Year Report 2026.

The largest customer's share has fallen from 58.5% of FY2024 revenue but remains above half (Exhibit 12)[2][5]. Customers outside the top two supplied ₩33.4bn of the ₩55.2bn revenue gain in FY2025[2]. The segment notes name the counterparty as "Samsung Electronics and others"[2], which is why NRG reads the largest customer as Samsung.

Exhibit 12 · The largest customer still takes about half of revenue

Share of revenue	FY2024	FY2025	H1 2025	H1 2026
Largest customer (not named)	**58.5%**	**52.1%**	**49.2%**	**52.8%**
Second customer (not named)	15.2%	14.7%	15.0%	16.1%
All other customers	26.3%	33.2%	35.8%	31.1%

Source: UNISEM Annual Report FY2025 and Half-Year Reports 2025 and 2026 (major-customer notes).

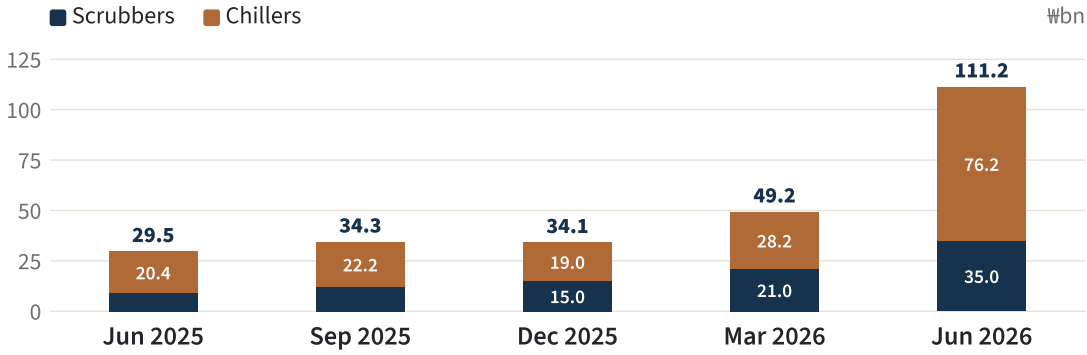
Subsidiaries, backlog and the home share

UNISEM China, the 2009 unit, reported ₩6.4bn of its own revenue in FY2025, and the US and Xi'an units ₩11.7bn together; about ₩4.0bn of the three units' revenue was billed to the parent[2]. Set against ₩99.2bn of exports, most equipment sold abroad appears to ship straight from Korea.

Backlog more than tripled in the first half of 2026, to ₩111.2bn at 30 June[2][5]. Samsung's P4 and SK hynix's M15X are being readied for high-bandwidth memory[25], and Samsung's Taylor fab entered its equipment phase in 2026[26].

The company's own estimates of its home share fell in 2025, to 40% in scrubbers from 50% and to 30% in chillers from 40%[2]; the filing warns that such estimates vary with project awards. By NRG's estimate, at ₩1,400 per US dollar, FY2025 domestic chiller revenue of ₩64.2bn is about a third of the Korean chiller market[12], in line with the company's 30%. No filing explains the drop (§6, Q3).

Exhibit 13 · Order backlog at quarter-end, ₩bn: chillers drove the June 2026 jump



Scrubber backlog ₩9.1bn (Jun 2025) and ₩12.1bn (Sep 2025). Not split by destination or customer. Totals as filed. Source: UNISEM Half-Year Report 2025, Quarterly Report Q3 2025, Annual Report FY2025, Quarterly Report Q1 2026, Half-Year Report 2026.

5 What Transfers

Five lessons carry over to other suppliers built around one customer. Each rests on evidence in Sections 1–4.

- **Following the anchor abroad keeps the anchor.** The US and Xi'an units sat next to Samsung fabs and booked ₩11.7bn of their own revenue in FY2025. The largest customer, which NRG reads as Samsung, still took over half of H1 2026 revenue (§4).
- **Revenue won on one end-market wave may leave with it.** Display applications were 32% of 2018 revenue and overseas customers 37%, on the company's split. Exports were 26.1% of FY2024 revenue on DART's basis. The bases differ and no display split exists after 2018, so the link is NRG's reading (§3).
- **A part that ships inside another company's tool may travel further.** If tool makers buy the chiller, the supplier may skip fab-by-fab qualification. Chiller exports doubled in FY2025, but whether tool makers drove that is open (§3; §6, Q2).
- **The installed base pays through service.** Since 2025 service has carried most of UNISEM's operating profit (§4). Keeping that profit depends on service staff where the units are (§3).
- **Home share can slip while attention is abroad.** UNISEM's own estimates of its Korean share fell ten points in both lines in 2025, for reasons the filings do not give (§4).

> **THE COMMON THREAD**
>
> The only customer list that names foreign buyers, for 2018, ranks BOE second and Kioxia fourth. The anchor customer's share that year is also the lowest of any period in this case, on the company's own basis (§3). Whether the FY2025 export wave repeats that is the open question in §6.

6 The NRG View

Public data leaves six questions open. Exhibit 14 ties each to the section it comes from and to the part of NRG's network where the answer sits (ESH: environment, safety and health). None of the six asks for a company's non-public figures.

Exhibit 14 · What public data cannot answer, and where the answers sit

#	Question	From	Bench segment(s)
Q1	How do Samsung's and SK hynix's fabs abroad source scrubbers and chillers compared with their home fabs, and how often do Korean suppliers follow them?	§4	**Memory-fab facility & ESH**: the people who specify and buy scrubbers and chillers.
Q2	How do fabs qualify and dual-source a scrubber or chiller vendor, how long does it take, and does a Samsung reference count at a foreign fab or a tool maker?	§3	**Memory-fab facility & ESH** (primary): how fabs qualify and dual-source scrubbers and chillers. **Abatement & vacuum makers**: global vs Korean supplier competition.
Q3	What moves vendor shares at Korean fabs from one year to the next, and which suppliers gained in 2025?	§4	**Memory-fab facility & ESH**: how fabs dual-source scrubbers and chillers.
Q4	Why do service contracts earn about three times the equipment margin, and do they travel with exported units?	§4	**Memory-fab facility & ESH**: service-contract economics.
Q5	Does the shift to plasma and non-combustion abatement, and to low-GWP and cryogenic chillers, reshuffle vendor positions? Did the US deferral to 2030 change foreign fabs' specifications?	§1, §3	**Abatement & vacuum makers**: technology shifts. **Memory-fab facility & ESH**: emissions rules and abatement demand.
Q6	How do fab phases like P4, M15X and Taylor usually sequence sub-fab orders, and with what lead times? Could that sequencing explain swings between chiller and scrubber exports?	§4	**Memory-fab facility & ESH**: the link between fab build-outs and abatement demand. **Memory makers (broad)**, context only: fab build schedules.

Segments: NRG expert network, profiles as of 2026-09-30. The full roster is on the Working With Nathan Research page.

How NRG would sequence the calls

NRG would start with the people who buy the equipment, then turn to the people who make it. The broad memory-maker segment comes last and is optional: it adds context on build timelines that are already public.

- **1 · Memory-fab facility & ESH.** Three calls would cover qualification and dual-sourcing (Q2), vendor shifts (Q3), service economics (Q4) and how build phases sequence orders (Q6), with overseas sourcing (Q1) raised in each.
- **2 · Abatement & vacuum makers.** One or two calls would cover technology shifts and the incumbents' response (Q5, Q2).
- **3 · Memory-fab facility & ESH again.** NRG would close with one call to test the combined picture.
- **4 · Memory makers (broad), optional.** One call, if needed, would frame Q6 against public build timelines.

That is five to seven calls over about two weeks, an NRG planning estimate.

Q1 and Q6 matter most. They would show whether an export wave like FY2025's comes from the anchor's own builds abroad or from new buyers, the question the Case Summary leaves open. Q4 and Q5 would show whether the equipment line can earn more as exports grow.

> COVERAGE GAPS
>
> NRG has no meaningful coverage of UNISEM itself, so company-specific questions go to buyers and competitors. The abatement-maker segment is thin and carries two questions only (Q2 and Q5).

Working With Nathan Research

The questions in §6 map to three segments of NRG's network. The descriptions below come from NRG's expert profiles as of 30 September 2026.

Memory-fab facility & ESH

Several

Former facility, utility and ESH engineers from Samsung Electronics and SK hynix fabs, the people who specify and buy scrubbers and chillers.

Speaks to: how fabs qualify and dual-source scrubbers and chillers; the link between fab build-outs, emissions rules and abatement demand; service-contract economics.

Abatement & vacuum makers

A handful

Former engineers and program managers from abatement and vacuum makers, including Edwards.

Speaks to: how sub-fab abatement is specified, priced and serviced; global vs Korean supplier competition; technology shifts (plasma vs burn-wet, PFC destruction efficiency).

Memory makers (broad)

Several hundred

Former Samsung Electronics and SK hynix staff across process, equipment and R&D.

Speaks to: capex timing and fab build schedules, as context only.

How the bench is described

Profiles are grouped by former employer type and function. The Appendix gives the full method note.

How an engagement works

1 · Scope

You bring the decision and the questions. NRG maps them to segments, as §6 does for this case.

2 · Screen and match

NRG matches profiles to each segment and runs a conflict and MNPI screen before any call.

3 · Calls and synthesis

NRG runs short calls on your timeline, then writes a synthesis tied to your questions.

Partner With Nathan Research

START THE CONVERSATION

If your team is working on Korea's semiconductor supply chain, sub-fab equipment or the memory build-out, we would welcome a conversation. Tell us the decision you face, and we will say plainly whether our network can help.

Expect a direct reply from a partner and a scoping conversation. From there, NRG assembles a screened panel on your timeline and, where useful, a written synthesis that builds on this case.

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A Appendix

Evidence base

Source type	What was used	For
DART filings	FY2025 Annual Report and 2026 Half-Year Report (anchors); Half-Year Report 2025; Quarterly Reports Q3 2025 and Q1 2026; key consolidated accounts from the FY2021–FY2024 Annual Reports	Revenue and margin, FY2019–H1 2026; product and export splits, FY2023–H1 2026; segment and major-customer notes, FY2024–H1 2026; backlog; subsidiaries; company statements
Company material	English corporate brochure (2018); Japanese-edition presentation (2019; installed base and customer mix as of 31 Dec 2018), both hosted by UNISEM's Japanese agent, Nishimura Chemitech (NYS)	History, 2018 customer list, installed base, staff mix
Market research	QYResearch (three abatement scopes, 2025; chiller editions of 2025 and 2026); Meticulous Research (2026); SemiAnalysis as cited by KIRS (2025)	Market-size ranges, regional demand, supplier concentration
Competitors and context	GST IR presentation (2025-02); KIRS reports on UNISEM (2025-07-14) and GST (2026-02-23); Atlas Copco (2016); StorageReview, TrendForce, The Investor and Holland & Knight on fab builds and US rules	GST comparison; attributed technology and customer reports; context
Press	News Tomato (2010, 2017); Financial News (2025)	Pre-2019 revenue and customer mix; company statements
Excluded	Sell-side research; KRX market data; SkyQuest sizing (low confidence); an unverified earlier QYResearch estimate; GST FY2025 results and a single 2018 UNISEM revenue figure (sources conflict)	—

BENCH METHOD NOTE

Network figures describe NRG expert profiles as of 30 September 2026, grouped by former employer type and function. Counts are floors. Individuals are not identified, and current employees of UNISEM are excluded. No expert was consulted for this case; the questions in §6 are the ones NRG would put to these segments.

A Appendix

Data gaps

1. Export destinations and customers are not disclosed; exports are split by product line only, FY2023–H1 2026.

2. No product or export split before FY2023. The overseas-customer share is known for Q1 2010 (press) and 2018 (company); the export share for FY2023–H1 2026 (DART). The 2015 and 2021 export awards are the only markers between.

3. Segment and major-customer notes cover FY2024–H1 2026 only, and customers are not named. Linking the largest customer to Samsung is NRG's reading.

4. No split of display and chip revenue after 2018. None of the houses consulted publishes a base year before about 2022, Korea's abatement market or UNISEM's overseas share.

5. The filings give no reason for the 2025 fall in home-share estimates or the 2.4% equipment margin. NRG estimates convert at ₩1,400 per US$, within the company's FX option strikes of ₩1,376.5–1,419.

Source Register

Numbered in order of first citation in the text. DART filings carry their receipt numbers and filing dates.

[1] News Tomato, *(Small-cap report) UNISEM*, 2010-06-14

[2] UNISEM Annual Report FY2025 (DART rcept_no 20260313001168, filed 2026-03-13)

[3] UNISEM, corporate brochure (English, 2018 version), hosted by Nishimura Chemitech (NYS), UNISEM's Japanese agent (nishimura-ct.co.jp)

[4] UNISEM, company presentation (Japanese edition; installed base and customer mix as of 31 Dec 2018; file dated Dec 2019), hosted by Nishimura Chemitech (NYS), UNISEM's Japanese agent (nishimura-ct.co.jp)

[5] UNISEM Half-Year Report 2026 (DART rcept_no 20260814000905, filed 2026-08-14)

[6] Korea IR Council Research Center (KIRS), UNISEM company analysis report, 2025-07-14

[7] QYResearch, *Exhaust Abatement Systems for Semiconductor — Global Market Report*, October 2025

[8] QYResearch, *Semiconductor Exhaust Gas Treatment Scrubbers — Market Share and Ranking*, October 2025

[9] QYResearch, *Semiconductor Waste Gas Abatement Systems — Global Market Report*, October 2025

[10] Meticulous Research, *Semiconductor Gas Abatement Systems Market*, August 2026

[11] QYResearch, *Semiconductor Chiller — Global Market Share and Ranking*, 2025-03-11

[12] QYResearch, *Semiconductor Chiller — Global Market Share and Ranking*, April 2026

[13] SemiAnalysis chiller market estimates, as cited in the KIRS UNISEM report, 2025-07-14

[14] SEMI, 2026 fab-equipment spending forecast, as cited in the business section of UNISEM Annual Report FY2025

[15] Atlas Copco, *Atlas Copco to acquire South Korean abatement company*, press release, 2016-06-01

[16] News Tomato, small-cap company visit: UNISEM, 2017-11-09

[17] Samsung Electronics, full-scale operation of the Xi'an memory facility, as reported by StorageReview, 2014-05-09

[18] UNISEM Half-Year Report 2025 (DART rcept_no 20250814003707, filed 2025-08-14)

[19] Korea IR Council Research Center (KIRS), GST company analysis report, 2026-02-23

[20] Global Standard Technology (GST), 2024 Investor Relations presentation, February 2025

[21] UNISEM Annual Report FY2024, key consolidated accounts (DART rcept_no 20250307001164, filed 2025-03-07)

[22] Financial News, report on UNISEM's CO_2 chiller development, 2025-08-11

[23] Holland & Knight, *EPA Finalizes Changes to Technology Transitions Provisions*, 2026-05-26

[24] UNISEM Annual Report FY2021, amended filing; key consolidated accounts with FY2019–FY2020 comparatives (DART rcept_no 20220811000332, filed 2022-08-11)

[25] TrendForce, *Asia's chipmakers reportedly set to spend $136B in 2026, up 25% YoY*, 2026-03-04

[26] The Investor (Korea Herald), *Samsung ups hiring as Texas fab enters equipment phase*, 2026-04-02