SECTOR
UPDATE

2026. 4. 24

Mid-Small Cap Spotlight #3

Renewable Energy (OVERWEIGHT)

How AI data centers are reshaping ESS demand

EV/Mobility Team

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WHY SHOULD
YOU READ THIS REPORT

Dear Investor,

In Oct 2025, we launched the Mid-Small Cap Spotlight series to highlight under-the-radar mid- and small-cap stocks that we thought were worthy of investor attention. The first installment covered specialty chemical firms including KCC, SK Chemicals, and UNID. The second report turned to the OCI Group, comprising OCI Holdings and its subsidiary OCI. This report explores how the explosive growth of AI data centers is transforming the energy storage system (ESS) market, and outlines the emerging opportunities for Korean suppliers of ESS components and supercapacitors.

AI data centers are reshaping electricity demand in terms of both volume and quality.

The surge in power consumption is being driven by the commercialization of generative AI and massive investments in AI data centers. Since ChatGPT's launch in late 2022, data center capacity—and the associated power load—has grown rapidly. Unlike traditional data centers, which focus on data storage, AI facilities require massive computational power for training and inference, resulting in far larger, more energy-intensive facilities. Much of these investments center on the US, where utilities are turning to scalable, fast-deploying solutions (solar and ESS) to keep pace with rising demand. This should accelerate ESS adoption—meaning high near-term and medium-term growth potential for battery cell makers and ESS-related component makers

Potential Korean beneficiaries include Seojin System (a producer of ESS enclosures), Hanjung NCS (water-cooled cooling systems for BESS), and Shinsung ST (critical BESS components, including busbars and liquid-cooled heat sinks).

The qualitative change in power load stems from the unique energy consumption patterns of AI data centers compared to traditional data centers. AI data centers experience sudden, millisecond-scale spikes in power demand during training and inference, necessitating measures to smooth out these rapid load fluctuations. Lithium-ion batteries are unable to effectively mitigate load fluctuations at the millisecond level. Supercapacitors, which have lower energy density than lithium-ion batteries but significantly higher power density, are therefore likely to see growing demand.

Korea's supercapacitor firms include Vina Tech and LS Materials. Having supplied Bloom Energy since last year, Vina Tech is positioned to capitalize on AI-driven demand. LS Materials is also advancing its efforts to supply supercapacitors to AI data centers this year.

We hope this report enhances your understanding of the industry and supports your informed investment decisions.

Thank you.

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Changes in power volume and quality

How AI data centers are reshaping ESS demand

Surge in power demand (volume) fueling rapid BESS growth

US driving rapid expansion of data centers

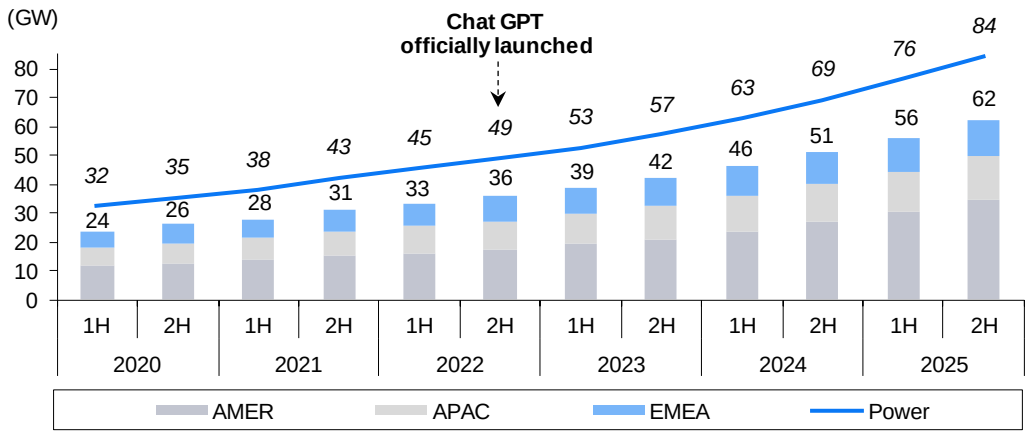
Data center capacity is expanding rapidly—led by the US—as global investments in AI accelerate. Global capacity rose 17% to 42 GW in 2023 (vs 36 GW at end-2022), grew 22% to 51 GW in 2024, and climbed 21% to 62 GW in 2025. The pace of growth in 2024 and 2025 outpaced that seen in earlier years, driven by the full-scale deployment of AI infrastructure.

Since OpenAI launched ChatGPT in late 2022, data-center spending has shifted decisively from general-purpose cloud services to dedicated AI computing. Google, Microsoft, Amazon, Meta, and other tech giants are investing heavily to secure AI leadership. Even as data center footprints continue to expand, the pace of market growth continues to grow at a blistering speed.

This expansion is overwhelmingly concentrated on the US. Global data center capacity grew 72% over end-2022 to end-2025 (from 35.9 GW to 62 GW), while US capacity surged 96% (from 17.5 GW to 34.3 GW). By comparison, Asia saw 56% growth (from 9.8 GW to 15.3 GW), and Europe and the Middle East grew just 43% (from 8.6 GW to 12.4 GW). The trend is even more pronounced for upcoming projects. As of end-3Q25, global construction pipelines totaled 23.1 GW of new capacity—73% (17 GW) of which are in the US, 14% in Asia, and just 13% in Europe and the Middle East.

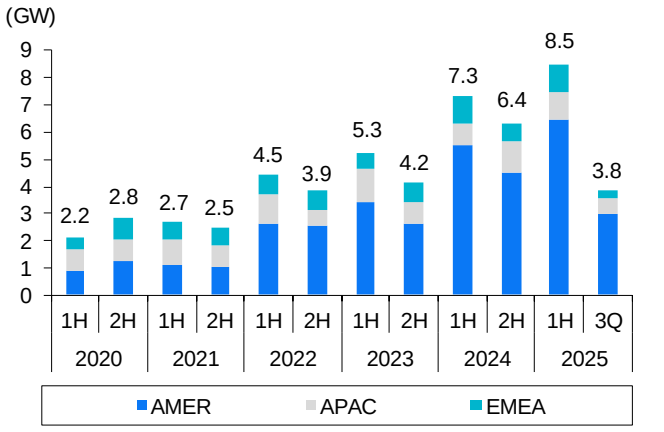
The concentration of data-center investments in the US is driving explosive growth in the battery energy storage system (BESS) market. The country's new power generation capacity grew 13.5 GW in 2022, 27 GW in 2023, 40.5 GW in 2024, and 30.3 GW over 1Q25-3Q25. Of the 70.8 GW in new capacity added over 1Q24-3Q25, solar power accounted for 48.5 GW of the figure and ESS (including BESS) 20.9 GW. Together, both types now represent the vast majority of new US power generation. Nuclear and large-scale natural gas plants take five or more years to build, making them ill-suited to meeting near-term power needs. At the same time, tech giants' commitments to achieving 100% renewable energy have sharply increased demand for renewables. This has created powerful synergies: Solar energy delivers clean power, but its intermittency demands reliable storage, making BESS not just complementary, but essential. Furthermore, generous investment tax credits (ITC) and advanced manufacturing production tax credits (AMPC) for both solar and BESS projects—under the Inflation Reduction Act (IRA), enacted since 2023—are adding further momentum. Against this backdrop, we believe BESS will prove to be the backbone of upcoming data centers in the US.

Global data centers: IT capacity and power load



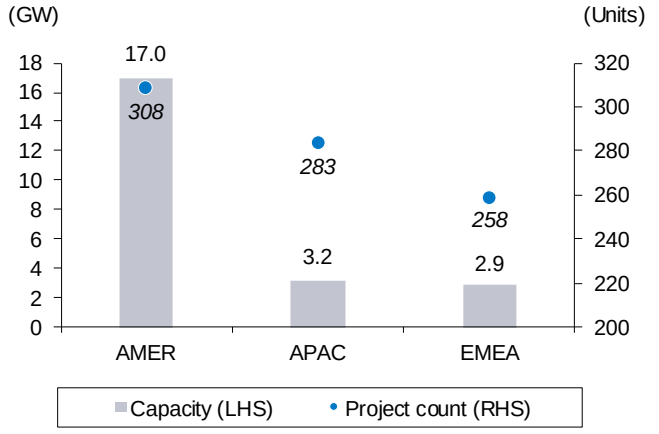
Source: Bloomberg NEF, Samsung Securities

Global data center construction pipelines, by groundbreaking date



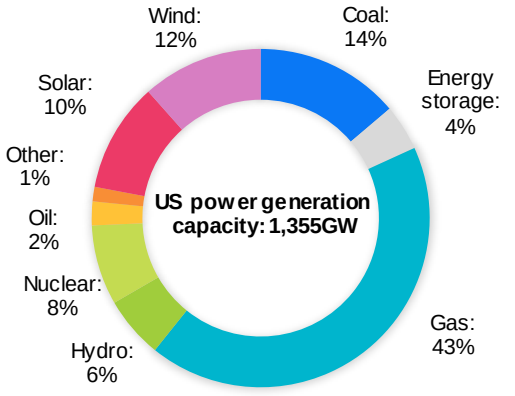
Source: Bloomberg NEF, Samsung Securities

Status of global data center IT construction pipelines (as of 3Q25)



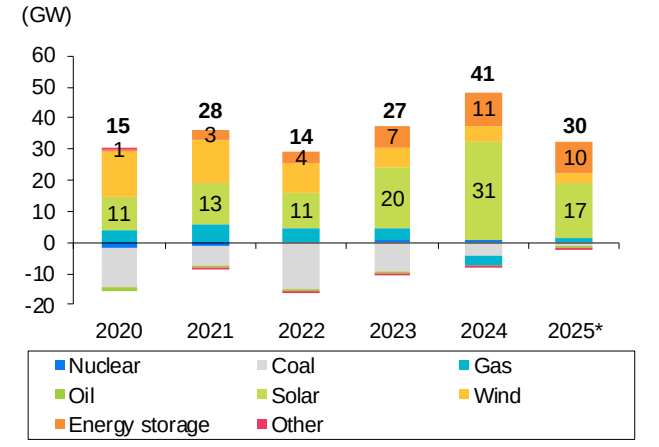
Source: Bloomberg NEF, Samsung Securities

US: Power generation capacity (as of 3Q25)



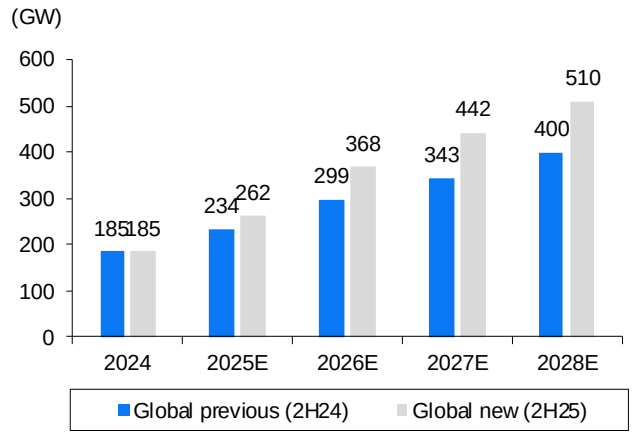
Source: Bloomberg NEF, Samsung Securities

US: Annual changes in new power generation capacity



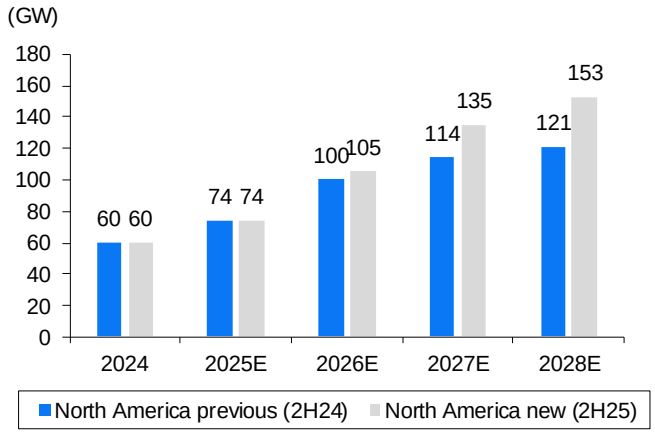
Note: * 2025 figures are 1Q-3Q basis
Source: Bloomberg NEF, Samsung Securities

LG Energy Solution: Changes in global ESS demand



Source: Company data, Samsung Securities

LG Energy Solution: Changes in North American ESS demand



Source: Company data, Samsung Securities

Strong BESS growth creating tailwinds for ESS component suppliers

As outlined earlier, the surge in power demand from AI data centers is driving rapid expansion of the BESS market. While Korean battery manufacturers are repurposing EV-use battery production lines for ESS, the broader supply chain should also enjoy solid order momentum and robust growth. Beneficiaries are expected to include Seojin System, Hanjung NCS, and Shinsung ST.

Seojin System, a global manufacturer of metal-based equipment, produces ESS enclosures. Its ESS-related sales should trend higher as its three North American assembly lines—each built for a specific client—are scheduled to come online sequentially over 2026-2027. By establishing a US manufacturing base, the company is well positioned to benefit from: 1) the global shift away from China-based supply chains; and 2) growing orders from clients operating in North America.

Hanjung NCS manufactures water-cooled cooling systems for BESS. It is the exclusive supplier of cooling solutions for Samsung SDI's Samsung Battery Box (SBB) models. As the client should expand its product lineup from two to four core models this year, Hanjung NCS' ESS-related sales should grow as well. Its US manufacturing facility for Samsung SDI is set to start operations in 2027, boosting its ESS-related upside and enhancing its competitive edge.

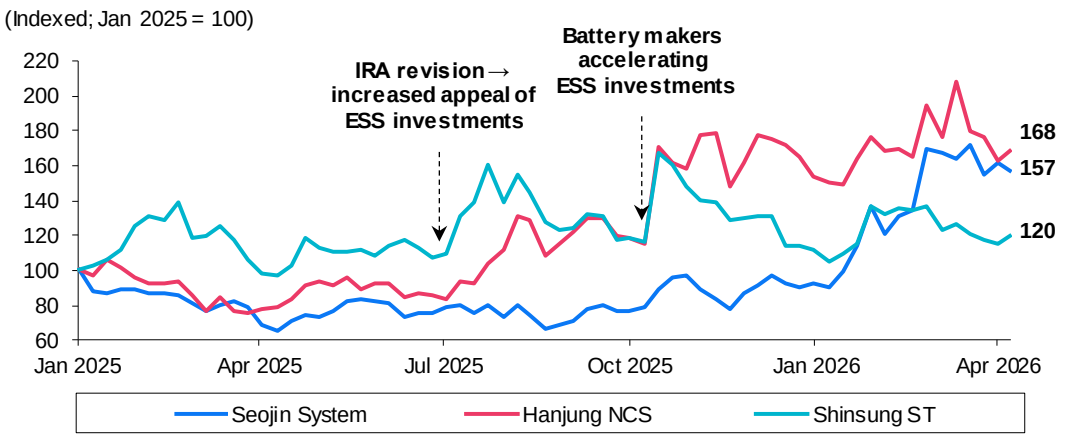
Shinsung ST produces critical BESS components, including busbars and module cases. It should commence mass-production of liquid-cooled heat sinks (thermal management component) at its new US Kentucky facility (scheduled to come online in May 2026) and supply them to LG Energy Solution. Additional orders for heat sinks would significantly lift its sales mix of higher-margin ESS components.

Status of Korean ESS component suppliers

	Market Cap	ESS-related Components	Key Clients	Stock price return			Revenue		Operating profit		OPM	
	(KRWb)			1M (%)	3M (%)	1Y (%)	2024	2025	2024	2025	2024	2025
Seojin Systems	2,509	Enclosures	Company F, Samsung SDI, SK On	-8.7	68.4	121.0	1,214	1,066	109	1	9.0	0.1
Hanjung NCS	445	Cooling Systems	Samsung SDI, LG Energy Solution	-4.4	11.7	117.0	177	175	10	4	5.4	2.3
Shinsung ST	295	Busbars, Heatsinks	LG Energy Solution, SK On	-7.8	8.7	16.2	127	117	9	2	6.9	1.9

Source: Samsung Securities

Korean ESS component suppliers: Relative share-price performance since 2025



Source: QuantiWise, Samsung Securities

Qualitative change in power load expanding use case for supercapacitors

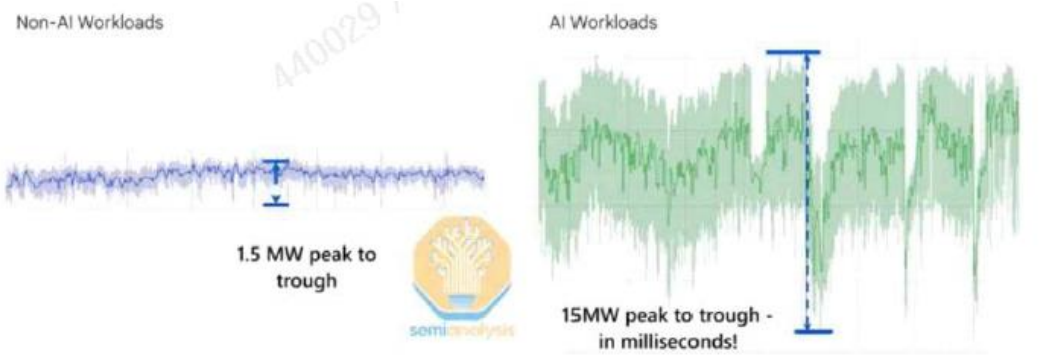
AI data centers transforming the nature of the power load

While data center growth has driven demand for BESS, the rise of AI data centers is transforming the 'quality' of power needed. The most significant change lies in the nature of the power load.

Data centers rely primarily on CPU-based servers, which draw power in a relatively stable, gradual manner. Power density per rack typically ranges 4-12 kW—well within the capabilities of conventional lithium-ion battery-based uninterruptible power supply (UPS) systems.

However, AI data centers experience sudden, millisecond-scale spikes in power demand (spiky loads) when GPU clusters perform training or inference. Power density per rack can surge to 20-100 kW or more, with electricity draw rising from trough to peak in as little as 200 milliseconds (0.2 seconds). As a result, when no AI training is running, the variation in power load (peak to trough) is typically around 1.5 MW, but during active AI training, this fluctuation can expand to 15 MW within milliseconds.

General data centers vs AI data centers: Differences in load fluctuation



Source: Google Cloud, SemiAnalysis, Samsung Securities

The increasing variability in power load—a qualitative change in power load—requires energy storage solutions such as supercapacitors that complement traditional lithium-ion batteries. Supercapacitors are energy storage devices designed for applications needing high power, long life, high reliability, fast charge/discharge cycles, and enhanced safety. While they store and release electricity like lithium-ion batteries do, supercapacitors have low energy density (Wh/L or Wh/kg) and very high power density (W/L or W/kg). In terms of lifespan, lithium-ion batteries typically last 500 to 2,000 charge-discharge cycles, whereas supercapacitors can endure over 500,000 cycles.

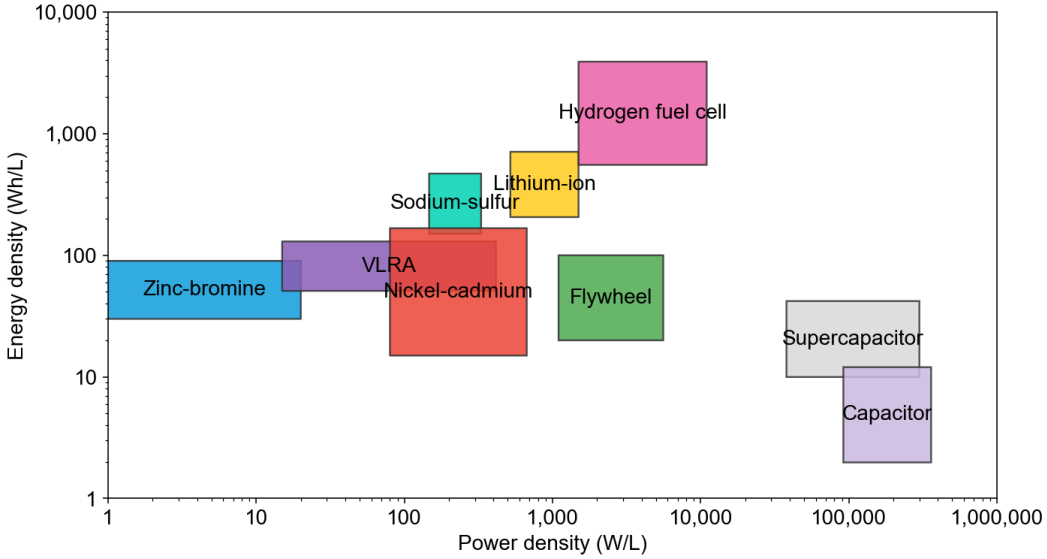
These characteristics make supercapacitors better suited than lithium-ion batteries for load leveling (peak shaving) in AI data centers, where load fluctuations are significant. Integrating supercapacitors into server racks, power distribution units (PDUs), and power buses should help mitigate ultra-short-term power variations (pulse-load smoothing).

Product characteristics of supercapacitors and hybrid capacitors

	Supercapacitor (EDLC)	Hybrid capacitor (LiC)	Lithium-ion battery (LiB)
Mechanism	Physical ion adsorption/desorption (electrode surface)	Physical ion adsorption/desorption + chemical bonding	Chemical bonding (internal electrode)
Energy density (Wh/kg)	Medium (3-5)	Medium (7-12)	High (20-150)
Power density (kW/kg)	High (2.0-3.0)	High (1.0-2.0)	Low (0.05-0.3)
Charge/discharge efficiency (%)	90-95	90-95	70-85
Operating temperature	-40ºC to +85ºC	-20ºC to +70ºC	-20ºC to +45ºC
Cycle Life	500,000+	20,000+	500-2,000

Source: Company data, Samsung Securities

Power density and energy density, by energy storage technology



Source: Bloomberg NEF, Samsung Securities

UPS for data centers: Required number of energy storage cabinets by backup duration

(Units)	Supercapacitors	LFP Batteries	LTO Batteries
Footprint comparison - number of industry-standard 19" energy storage cabinets required.			
1 MW for 1 second	**6**	38	10
1 MW for 2 minutes	234	115	**24**

Source: Skeleton, Samsung Securities

800 VDC data center expands use case for supercapacitors

As AI chips advance, power architecture will inevitably change. Since last year, capital markets have shown growing interest in 800 VDC (800-volt direct current) data center power infrastructure. By 2027, Nvidia plans to launch its next-generation Rubin (Rubin Ultra) chips, which are expected to push rack-level power density to 1 MW—more than triple today's levels. To support this, Nvidia is introducing new rack architecture called Kyber. As part of this transition, the power infrastructure is expected to shift from the 54 VDC (used in Blackwell systems) to 800 VDC.

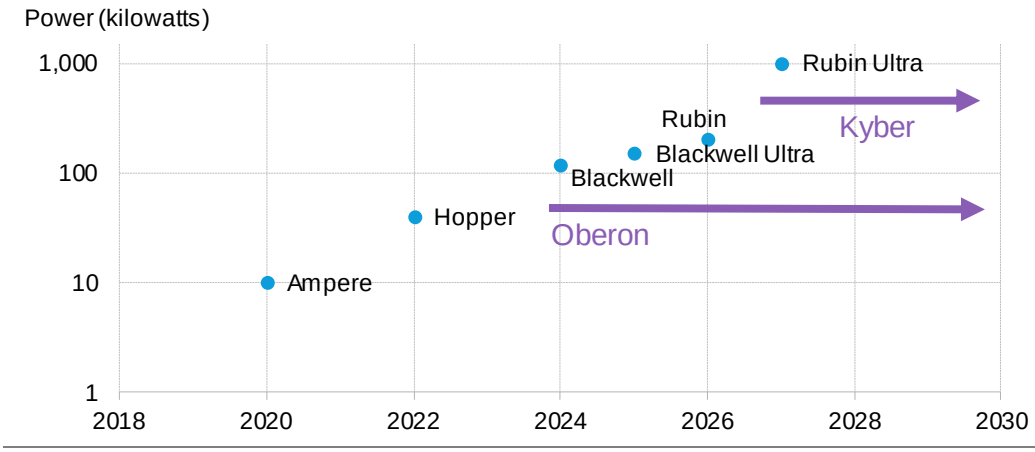
Why make this change to 800 VDC power infrastructure?

First, to maximize power efficiency. Traditional data centers rely on a multi-stage conversions: AC → high-voltage DC → low-voltage AC → 54 VDC → GPU. During each conversion step, energy is lost as heat. With 800 VDC, the number of conversion stages is dramatically reduced (eliminating the AC-to-DC step). This improves end-to-end power efficiency by 5% and lowers cooling costs.

Second, to reduce copper usage. At 54 V, delivering 1 MW of power requires an extremely high current. This means massive copper busbars are needed—up to 200 kg per rack just for power delivery, and up to 300 kg when including cooling infrastructure. For a given power level, voltage and current are inversely proportional (power = voltage x current). So, raising the voltage to 800 V allows the same power to be delivered with roughly 45% less copper.

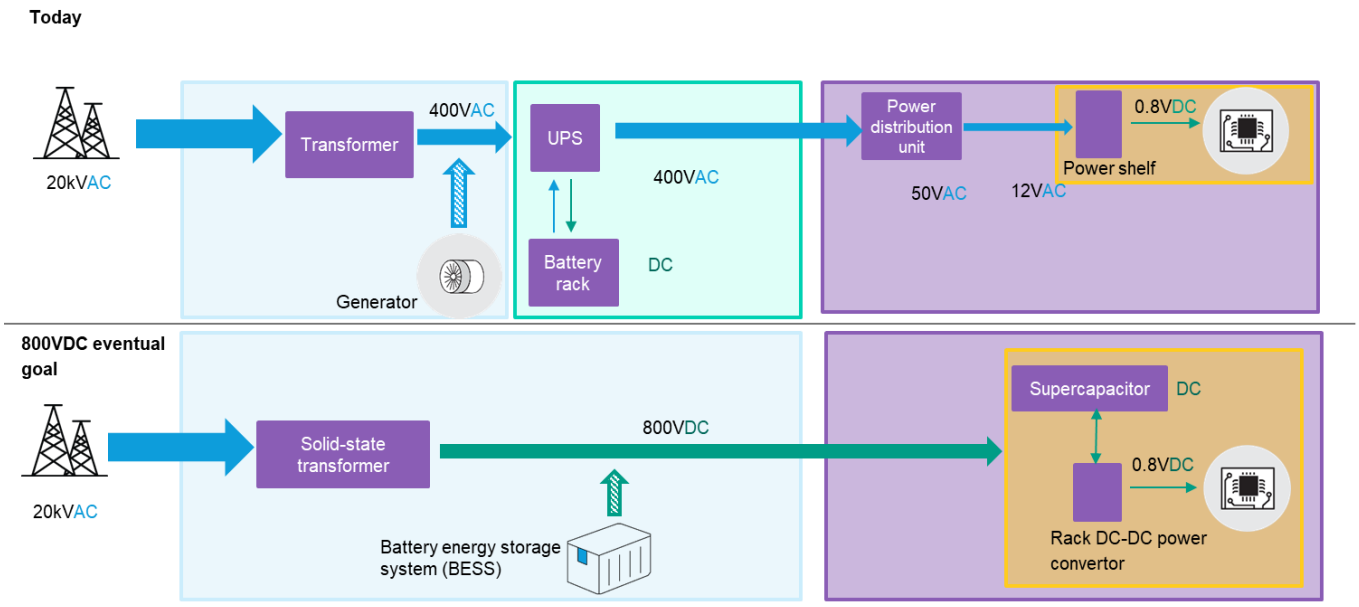
This transition to 800 VDC data centers increases the use case for supercapacitors. At high voltages, even minor voltage fluctuations (voltage ripples) result in large voltage swings. This makes power spikes—brief surges that can happen every few milliseconds—more likely. To smooth out these spikes, data centers can adopt capacitor bank units (CBU) that integrate supercapacitors. Power infrastructure suppliers are already responding. In March, Texas Instruments introduced an 800 VDC reference design and officially unveiled a CBU product integrated with supercapacitors. Also in March, Flex unveiled an 800 VDC power rack for Nvidia, highlighting high-density CBUs as a core component of power stability.

Rack power density based on Nvidia roadmap



Note: Blue indicates chip type; purple indicates power/cooling architecture.
Source: Nvidia, Samsung Securities

Mid-to-long-term plan for 800 VDC data center power distribution



Source: Bloomberg NEF, Samsung Securities

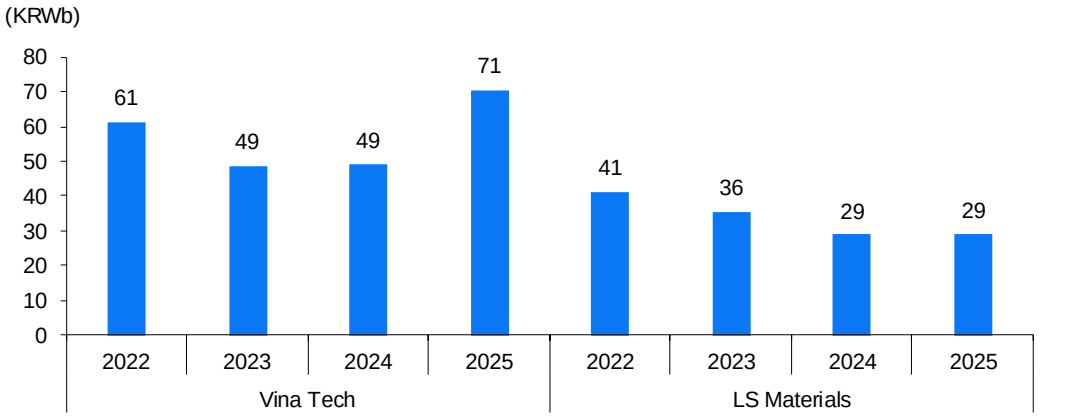
Korean supercapacitor firms to benefit from AI data centers

As AI data centers drive demand for supercapacitors, two Korean companies—Vina Tech and LS Materials—are positioned to benefit. Historically, supercapacitor applications focused on power stabilization in semiconductor and display fabs, automated guided vehicles (AGVs) in automated logistics, and blade pitch control systems in wind turbines. But recently, supercapacitor demand has been rising from new sources: CBUs for AI data centers and emergency backup power systems in hydrogen fuel-cell power plants serving AI data centers.

Vina Tech in May 2025 signed a deal with Bloom Energy to provide supercapacitors as backup power units for the latter's fuel-cell systems. Vina Tech is believed to be Bloom Energy's exclusive supplier. While Bloom Energy's solid oxide fuel cells (SOFC) offer highly efficient power generation, they respond too slowly to sudden power spikes. This appears to be where supercapacitors come in—as power load increases, so too will the need for supercapacitors. Vina Tech is also targeting the AI data center CBU market, transitioning from selling individual cells to offering modules and packages to capture more added value. By expanding its supercapacitor business, the company aims to grow its sales from KRW82.2b in 2025 to KRW1t by 2030.

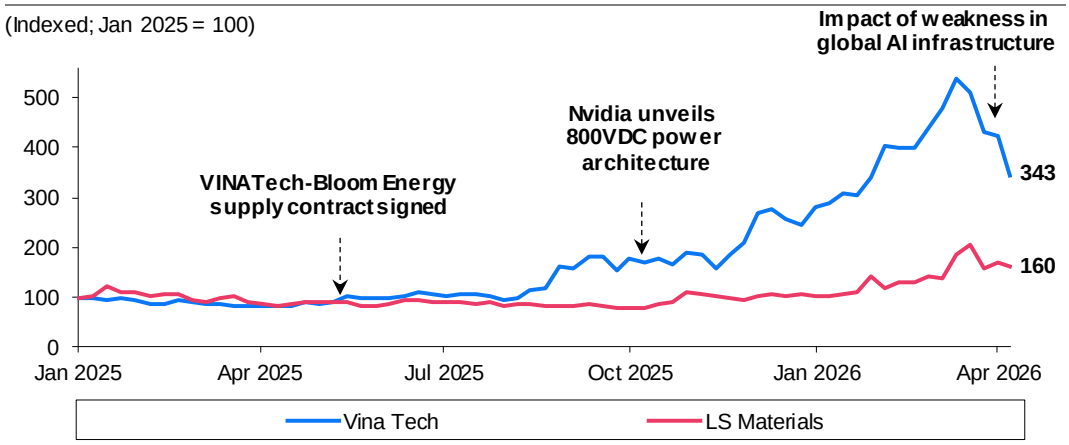
LS Materials produces supercapacitors and aluminum components, but has yet to generate sales from AI-related applications. Over the past 2-3 years, it saw sluggish sales growth as its traditional markets—especially wind energy—underperformed. Demand from AI data centers remains in its early stages. In Sep 2024, it signed an MOU with Vertiv, a global data center power solutions provider and a key Nvidia partner, to supply supercapacitors (marketed by LS Materials as ultracapacitors (UC)) for AI data center UPS. In Apr 2026, LS Materials said it had begun supplying desulfurization components (manufactured by its subsidiary LS Alsco) to a global hydrogen fuel-cell company. It now aims to supply supercapacitors to AI data centers by the end of this year and resume sales growth.

Korean supercapacitor suppliers: Supercapacitor revenue



Source: Company data, Samsung Securities

Korean supercapacitor suppliers: Relative share-price performance since 2025



Source: QuantiWise, Samsung Securities

COMPANY UPDATE

2026. 4. 15

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Seojin System (178320)

Time to focus on its competitiveness

- Seojin System should see its ESS and semiconductor equipment businesses' sales (as a portion of its total sale) expand thanks to increasing AI investments around the world.
- Its three North American assembly lines—each built for a specific client—are scheduled to come online over 2026-2027, a factor that should enable the company to cash in from growing demand for non-Chinese suppliers.
- At the semiconductor equipment business, the company has been diversifying its product portfolio and client base. It is also expanding into advanced industries such as solid oxide fuel cell and aerospace.

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AT A GLANCE

Not Rated

Target price	n/a
Current price	**KRW49,950**
Market Cap	KRW3.0t/USD2.0b
Shares (float)	59,240,429 (63.9%)
52-week high/low	KRW49,950/KRW18,650
Avg daily trading value (60-day)	KRW90.9b/ USD61.3m

ONE-YEAR PERFORMANCE

	1M	6M	12M
Seojin System (%)	8.8	123.5	163.0
Vs Kosdaq (%pts)	11.8	68.9	66.2

KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	Not Rated		
Target price	n/a		
2026E EPS	n/a		
2027E EPS	n/a		

SAMSUNG vs THE STREET

No of estimates	2
Target price	62,500
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL

WHAT'S THE STORY?

Company overview: Seojin System is a global manufacturer of metal-based equipment, and it has vertically integrated its businesses (spanning raw material sourcing and metal processing to final assembly). This end-to-end control allows the company to respond quickly and flexibly to evolving demands across multiple high-growth industries. Its 2025 sales and operating profit came in at KRW1.06t (down 12.1%) and KRW1.1b (down 99%), respectively. Specifically, 37% of its sales came from the ESS business, 27% from the semiconductor equipment business, 12% from the communications equipment business, 7% from the EV & battery components business, and 16% from its other businesses.

(Continued on the next page)

SUMMARY FINANCIAL DATA

	2022	2023	2024	2025
Revenue (KRWb)	736	779	1,214	1,066
Operating profit (KRWb)	60	49	109	1
Net Profit (KRWb)	2	(23)	84	(102)
EPS (adj) (KRW)	4,834	n/a	252,768	n/a
EPS (adj) growth (%)	(95.8)	nm	nm	nm
EBITDA margin (%)	16.9	16.4	16.7	10.1
ROE (%)	0.4	(4.3)	12.3	(12.6)
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	4.0	5.3	4.1	10.9
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

The company achieved full vertical integration after acquiring Texon (now a subsidiary) in 2015, transitioning from a component supplier to a full-system assembler of electronic equipment. It operates manufacturing facilities in Korea, Vietnam, and the US. Its Vietnamese plant (its main production base that is almost 1m m^2) has a massive production capacity and a significant cost advantage. In response to global supply-chain realignments away from China, Seojin System has established North American assembly lines dedicated to its key clients. These capabilities underpin its core strength: Its ability to scale rapidly in response to strong demand for ESS, semiconductors, robotics, aerospace, and more.

ESS business to benefit from growing demand for non-Chinese suppliers: Seojin System supplies fully assembled ESS units to major clients, including Client F and Korea's number-one and number-two cell makers. It manufactures all components in-house—except for battery cells and cooling systems—typically delivering products as integrated enclosures (outer casings) and DC blocks. Its ESS sales tumbled 37.5% in 2025, primarily due to project delays at a client amid uncertainty surrounding US tariffs. However, the project was resumed in November, easing near-term concerns. More importantly, rising US tariffs on Chinese imports should benefit Seojin System.

Meanwhile, the firm's three dedicated North American assembly lines—each built for a specific client—are scheduled to come online sequentially from 2026, which should drive steady growth in orders from North America. After initially supplying the Samsung Battery Box (SBB) 1.5 model, it should produce SBB 1.7 and SBB 2.0—the first North American-made versions of the product made by Korea's leading cell maker. Furthermore, last month, it began to deliver Client F's Smartstack, a next-generation ESS with 30% higher energy density. This shift towards higher-value products should improve its product mix and boost its profitability.

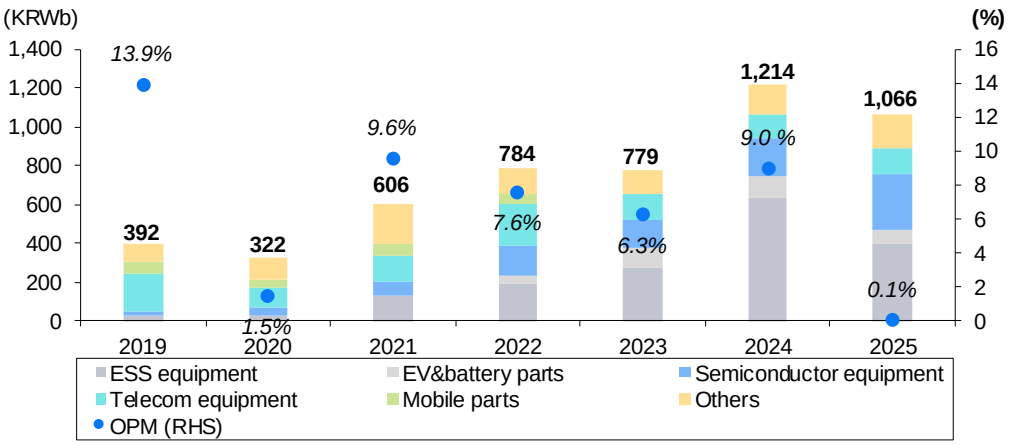
Moving up the semiconductor business's value chain: Previously, Seojin System's semiconductor business relied almost entirely on sales to Client L, which client accounted for 95% of its sales. It assembled parts for Client L at its Hwaseong plant. From 2H25, however, Seojin System began producing key components and carrying out final assembly of these parts at its Vietnamese plant, entering a phase of better profitability and growing order volume as a value-added partner.

Seojin System has also been diversifying its product portfolio and client base. In Sep 2025, it started supplying critical equipment (process modules) to Client L through its Vietnamese facility, moving beyond peripheral components and into core equipment. Besides, the firm has completed qualification testing with Client A and expects to secure its first new order from this client this year.

Entering high-margin new business (SOFC): Seojin System is expanding into advanced industries such as robotics and aerospace. One of its most promising initiatives is its entry into the Solid Oxide Fuel Cell (SOFC) business. In 2022, Bloom SK Fuel Cell—a joint venture between SK Ecoplant and US-based Bloom Energy—picked Texon as its US component supplier. Since then, Seojin System has been developing design and pilot production capabilities for SOFC cell stack enclosure. This year, it began making deliveries, with additional contracts expected to be won in 2H26. SOFC-related products carry significantly higher margins than those generated at the firm's other businesses.

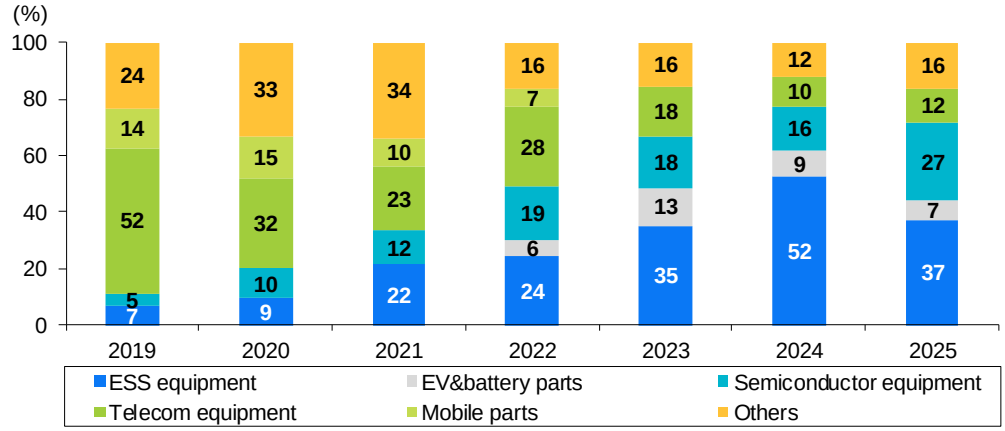
View—time to focus on core competencies: Seojin System is well positioned to benefit from the global shift away from Chinese supply chains. Its customers include leading AI infra players. The company's long-term growth story rests on three pillars: 1) full vertical integration across the production chain; 2) massive production capacity and unmatched cost efficiency; and 3) proven production track records with global tier-1 clients. Additionally, a long-standing overhang concern—stemming from a put option at KRW32,000 on 47.1% of total outstanding shares—was fully resolved in Jan 2026, removing a discount factor.

Seojin System: Revenue vs operating margin



Source: Company data, Samsung Securities

Seojin System: Revenue, by division



Source: Company data, Samsung Securities

Seojin System: North American plant start-up dates & contract details

Client	Location	Start-up	Contract Status
Company F	Houston	2Q26	• Signed 5-year Master Manufacturing Agreement (MMA). • Priority allocation to Seojin for the majority of the client's production volume.
K-Cell Maker 1	Indiana	3Q26	• Signed 7-year supply agreement. • US production of SBB 1.7 and SBB 2.0.
K-Cell Maker 2	Georgia	1Q27	• Signed 10-year supply agreement. • Contract value fixed at KRW1.9t for 24 GWh supply over 2027-2030.

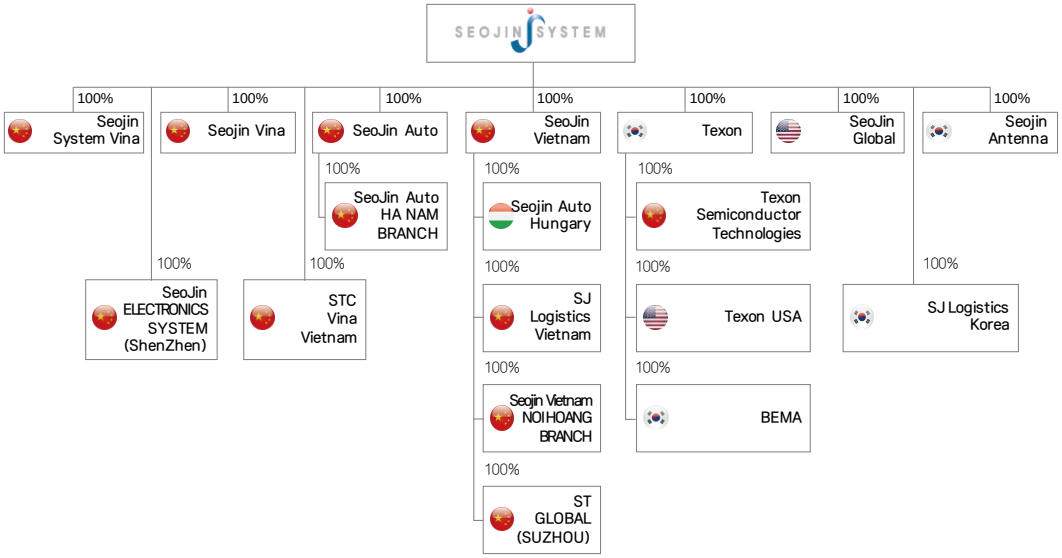
Source: Company data, Samsung Securities

Seojin System: ESS equipment orders placed by company F

Start Date	End Date	Amount (KRWb)	Client	Production Base	Supply Region
2026-03-17	2027-12-31	270	Company F	US / Vietnam	US
2025-12-24	2026-06-09	66	Company F	Vietnam	US, Europe
2025-11-26	2026-08-14	185	Company F	US / Vietnam	US
2025-08-26	2026-03-31	122	Company F	Vietnam	US, Europe, etc.
2025-04-01	2025-08-07	91	Company F	Vietnam	US, Europe, etc.
2024-12-26	2025-09-26	91	Company F	Vietnam	US, Europe, etc.

Note: Orders in lilac shading undergo final assembly at the Houston plant, US.
Source: Company data, Samsung Securities

Seojin System: Corporate governance



Source: Company data, Samsung Securities

Seojin System: Governance restructuring & put option resolution timeline

Issue	Date	Detail
Existing FI Entry	Crescendo (2015~) SKS PE (2021~)	**(Crescendo)** Continued investment across 4+ rounds since 2015. **(SKS PE)** Invested via CB/BW between 2021–2022.
CB to Equity	Apr 30, 2024	**(CB Conversion)** Crescendo & SKS PE: ~KRW360b **(New Shares Issued)** 17.7m shares (~47% of total shares) **(Market Impact)** Equity dilution & overhang risks
Put-Option Agreement	May 2024	**(Contracting Parties)** CEO Dong-kyu Jun ↔ Crescendo & SKS PE **(Objective)** Deferring immediate market dumping by FIs **(Exercise Price)** KRW32,000 per share **(Exercise Period)** Extended from June 2025 to Year-end 2025 **(Target Volume)** ~10.63m shares (~KRW340b)
Divestment & Risk Resolution	Jan 29, 2026	**(Acquiring Entity)** SPC led by Shinhan & Hana Sec **(Acquisition Size)** Remaining shares held by FIs (18.1% stake) **(Acquisition Price)** ~KRW30,000 per share **(Financing)** ~KRW320b Bridge Loan (Shinhan & Hana Sec.) **(Key Outcome)** Exit of PEs; Lock-up period during loan repayment

Source: Company data, Samsung Securities

Seojin System: Results

(KRWb)	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2022	2023	2024	2025
KRW/USD (average)	1,329	1,371	1,358	1,400	1,453	1,401	1,387	1,449	1,292	1,306	1,365	1,422
Sales	**326**	**309**	**315**	**264**	**281**	**259**	**216**	**311**	**736**	**779**	**1,214**	**1,066**
Growth (% q-q)	26.1	-5.2	1.9	-16.0	6.4	-8.1	-16.7	44.3				
Growth (% y-y)	72.3	80.5	96.5	2.4	-13.6	-16.3	-31.6	17.6	29.3	-0.6	55.9	-12.1
ESS Equipment	200	161	178	96	129	97	55	116	190	274	636	398
EV & Battery Parts	31	31	28	23	12	18	23	18	48	105	112	72
Semiconductor Equipment	33	52	47	63	76	58	69	89	148	139	194	291
Telecom Equipment	29	30	28	36	33	34	32	33	221	139	123	132
Others	32	35	34	47	32	51	36	55	129	122	148	174
EBITDA	**64**	**52**	**55**	**26**	**47**	**22**	**-12**	**52**	**124**	**125**	**197**	**108**
Growth (% q-q)	12.5	-19.3	5.9	-53.2	81.9	-53.8	Turned neg	Turned pos				
Growth (% y-y)	75.0	479.2	148.7	-55.0	-27.2	-58.4	Turned neg	101.7	16.4	0.8	57.5	-45.2
Operating profit	**43**	**31**	**33**	**1**	**21**	**-6**	**-37**	**24**	**60**	**49**	**109**	**1**
Growth (% q-q)	23.9	-28.0	6.9	-97.0	1,977.5	Turned neg	Remained neg	Turned pos				
Growth (% y-y)	116.7	Turned pos	903.0	-97.1	-51.8	Turned neg	Turned neg	2,241.0	2.9	-17.9	121.8	-98.9
Earnings Before Tax	39	32	19	29	2	-95	-43	30	30	0	118	-106
Growth (% q-q)	143.2	-18.3	-39.9	51.5	-92.2	Turned neg	Remained neg	Turned pos				
Growth (% y-y)	39.9	Turned pos	Turned pos	80.8	-94.2	Turned neg	Turned neg	4.4	-32.4	-99.1	44,551.6	Turned neg
Net income	**37**	**15**	**24**	**8**	**1**	**-81**	**-48**	**26**	**2**	**-23**	**84**	**-102**
Growth (% q-q)	137.1	-60.3	61.1	-66.8	Remained neg	Remained neg	Remained neg	Remained neg				
Growth (% y-y)	178.5	Turned pos	Turned pos	-49.7	-97.0	Turned neg	Turned neg	223.7	-95.8	Turned neg	Turned pos	Turned neg
Net profit attr. Parent	**37**	**15**	**24**	**8**	**1**	**-81**	**-48**	**26**	**2**	**-23**	**84**	**-101**
Margins (%)												
EBITDA	13.3	10.1	10.6	0.4	7.4	-2.3	-17.3	7.8	15.8	16.1	16.2	0.2
Operating profit	13.3	10.1	10.6	0.4	7.4	-2.3	-17.3	7.6	8.1	6.3	9.0	0.1
Pre-tax income	11.9	10.3	6.0	10.9	0.8	-36.8	-20.0	9.7	3.9	0.0	9.8	-9.9
Net profit	11.5	4.8	7.6	3.0	0.4	-31.4	-22.3	8.2	0.2	-2.9	6.9	-9.6

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Sales	**606**	**736**	**779**	**1,214**	**1,066**
Cost of goods sold	489	607	641	1,000	956
Gross profit	**118**	**129**	**138**	**213**	**110**
Gross margin (%)	19.4	17.5	17.7	17.6	10.4
SG&A expenses	60	69	89	105	109
Operating profit	**58**	**60**	**49**	**109**	**1**
Operating margin (%)	9.6	8.1	6.3	9.0	0.1
Non-operating Gains (Losses)	**(13)**	**(29)**	**(49)**	**10**	**(107)**
Financial Profit	13	22	41	146	68
Financial Costs	28	53	91	137	174
Gains (Losses) in Equity Method	0	1	0	(0)	(0)
Other	2	1	1	0	(0)
Pre-tax profit	**45**	**30**	**0**	**118**	**(106)**
Taxes	6	14	2	34	(3)
Effective tax rate (%)	14.3	44.5	941.4	29.1	3.2
Profit from continuing operations	39	17	(2)	84	(102)
Profit from discontinued operations	0	(15)	(20)	0	0
Net profit	**39**	**2**	**(23)**	**84**	**(102)**
Net margin (%)	6.4	0.2	(2.9)	6.9	(9.6)
Net profit (Controlling Interests)	39	2	(23)	84	(101)
Net profit (Non-controlling Interests)	0	0	(0)	(0)	(1)
EBITDA	107	124	127	202	108
EBITDA margin (%)	17.6	16.9	16.4	16.7	10.1
EPS (parent) (KRW)	115,826	4,834	n/a	252,768	n/a
EPS (consolidated) (KRW)	115,826	4,834	n/a	251,764	n/a
Adjusted EPS (KRW)*	115,826	4,834	n/a	252,768	n/a

Balance sheet

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Current assets	**531**	**729**	**780**	**1,142**	**1,192**
Cash & equivalents	24	19	16	41	32
Accounts receivable	107	141	105	242	234
Inventories	344	527	619	772	850
Other current assets	56	42	40	86	75
Fixed assets	**519**	**656**	**740**	**962**	**1,115**
Investment assets	1	2	2	36	2
Tangible assets	466	576	646	819	976
Intangible assets	5	6	7	20	22
Other long-term assets	47	73	85	86	115
Total assets	**1,050**	**1,385**	**1,520**	**2,103**	**2,306**
Current liabilities	**438**	**663**	**920**	**885**	**1,377**
Accounts payable	180	271	198	250	244
Short-term debt	189	226	300	413	623
Other current liabilities	70	166	422	222	510
Long-term liabilities	**251**	**182**	**102**	**343**	**191**
Bond & long-term debt	206	148	79	271	155
Other long-term liabilities	45	34	23	72	36
Total liabilities	**690**	**845**	**1,022**	**1,228**	**1,569**
Owners of parent equity	**360**	**540**	**498**	**870**	**733**
Capital stock	9	19	19	28	28
Capital surplus	180	171	171	555	553
Retained earnings	147	137	106	189	78
Other	24	213	202	98	74
Non-controlling interests equity	**0**	**0**	**(0)**	**6**	**4**
Total equity	**360**	**540**	**498**	**876**	**738**
Net debt	444	496	671	815	1,169

Cash flow statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Cash flow from operations	**(5)**	**24**	**43**	**(113)**	**(40)**
Net profit	39	2	(23)	84	(102)
Non-Cash Profit and Expense	89	115	138	115	226
Depreciation	48	64	78	92	105
Amortization	0	0	1	1	2
Others	41	51	60	22	119
Changes in A/L from Operating Activities	(131)	(62)	(35)	(266)	(94)
Cash flow from investments	**(119)**	**(214)**	**(162)**	**(212)**	**(306)**
Change in Tangible Assets	(117)	(153)	(157)	(173)	(288)
Change in Financial Assets	(1)	(0)	(2)	(8)	5
Other	(0)	(60)	(4)	(31)	(23)
Cash flow from financing	**126**	**184**	**117**	**349**	**334**
Change in debt	119	47	174	166	351
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	0	(6)	0	0	0
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	2	(5)	(3)	25	(9)
Cash at beginning of year	22	24	19	16	41
Cash at end of year	24	19	16	41	32
Gross cash flow	**128**	**117**	**115**	**199**	**124**
Free cash flow	**(126)**	**(139)**	**(120)**	**(291)**	**(332)**

Financial ratios

Year-end Dec 31	2021	2022	2023	2024	2025
Growth (%)					
Sales	88.3	21.4	5.8	55.9	(12.1)
Operating profit	1,082.2	2.9	(17.9)	121.8	(98.9)
Net profit	nm	(95.8)	nm	nm	nm
Adjusted EPS**	nm	(95.8)	nm	nm	nm
Per share data (KRW)					
EPS (parent)	115,826	4,834	n/a	252,768	n/a
EPS (consolidated)	115,826	4,834	n/a	251,764	n/a
Adjusted EPS **	115,826	4,834	n/a	252,768	n/a
BPS	26,680	39,968	36,904	64,443	54,330
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	4.2	4.0	5.3	4.1	10.9
Ratios					
ROE (%)	12.8	0.4	(4.3)	12.3	(12.6)
ROA (%)	4.4	0.1	(1.6)	4.6	(4.6)
ROIC (%)	7.2	3.6	(37.4)	5.4	0.1
Payout ratio (%)	n/a	n/a	n/a	n/a	n/a
Dividend yield (Common, %)	n/a	n/a	n/a	n/a	n/a
Net debt to equity (%)	123.2	91.9	134.8	93.1	158.5
Interest coverage (x)	2.8	2.1	1.1	2.2	0.0

Note: *Excluding one-off items
**Fully diluted, excluding one-off items
***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

COMPANY UPDATE

2026. 4. 15

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Hanjung NCS (107640)

Earnings to surge in 2027

- Hanjung NCS, a key supplier of water-cooled ESS cooling systems to Samsung SDI, is positioned to benefit from the global ESS expansion trend.
- Next year, the firm's new facility (a Samsung SDI-dedicated plant in the US) should expand its product lineup from two to four core water-cooled ESS cooling system models, leading to meaningful top-line growth.
- In 2027: 1) its investments should start bolstering sales in earnest; and 2) its profitability and earnings momentum should be driven by growing global demand for ESS.

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AT A GLANCE

Not Rated

Target price	n/a
Current price	**KRW53,800**
Market Cap	KRW487.69b/USD327.48m
Shares (float)	9,064,946 (64.5%)
52-week high/low	KRW61,300/KRW22,850
Avg daily trading value (60-day)	KRW12.5b/ USD8.4m

ONE-YEAR PERFORMANCE

	1M	6M	12M
Hanjung NCS (%)	-11.1	58.7	135.4
Vs Kosdaq (%pts)	-6.8	24.2	48.9

KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	Not Rated		
Target price	n/a		
2026E EPS	n/a		
2027E EPS	n/a		

SAMSUNG vs THE STREET

No of estimates	2
Target price	82,500
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL

WHAT'S THE STORY?

2025 review—Preparing to leap forward: In 2025, Hanjung NCS posted consolidated sales of KRW175.3b (down 1.1%) and an operating profit of KRW4b (down 57.9%). While sales at the ESS business (which produces water-cooled cooling systems) jumped 33.3% to KRW143b, sales at the EV and internal combustion engine (ICE) parts businesses slumped 40.2% and 83.9%, respectively, to KRW28.8b and KRW3.5b. Although the ESS portion of its revenue rose 21.1%pts y-y (its ESS sales generate higher margins), the firm's operating margin fell 3.1%pts y-y due to the recognition of strategic upfront investments: Development costs (relating to two new Samsung Battery Box (SBB) models (SBB 1.7 and SBB 2.0) for Samsung SDI) and related workforce expansions. These investments should start bolstering its sales and profitability in earnest from 2027.

The countdown to 2027: Hanjung NCS is on track to record meaningful growth in 2027, driven by three key developments: 1) a full SBB product lineup for Samsung SDI; 2) the completion of construction of a Samsung SDI-dedicated plant in the US; and 3) the start of deliveries of EV parts to LG Energy Solution (LGES).

(Continued on the next page)

SUMMARY FINANCIAL DATA

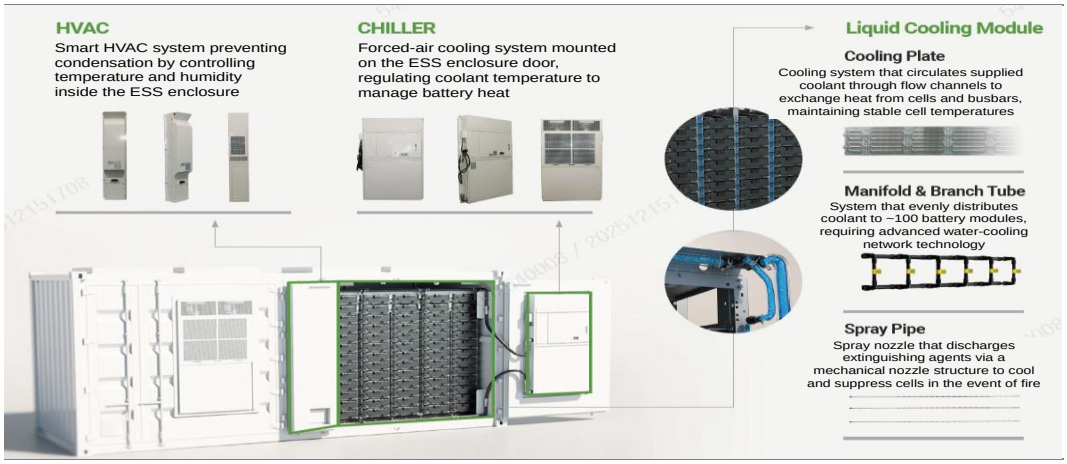
	2022	2023	2024	2025
Revenue (KRWb)	89	122	177	175
Operating profit (KRWb)	(14)	(13)	10	4
Net Profit (KRWb)	(20)	(19)	15	5
EPS (adj) (KRW)	n/a	n/a	2,627	619
EPS (adj) growth (%)	nm	nm	nm	(76.4)
EBITDA margin (%)	(10.3)	(6.5)	8.3	5.7
ROE (%)	(91.5)	(83.2)	36.1	4.5
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	n/a	n/a	1.0	6.0
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

- SBB 1.7 and SBB 2.0 are set to hit the market in Jul and Dec 2026, respectively. SBB 1.7 (6.14 MWh) has a 16.7% higher energy capacity than its predecessor (5.26 MWh). SBB 2.0 will use LFP chemistry (NCA chemistry is used in previous models), which is now the industry standard, and be sold alongside previous SBB models (NCA chemistry). This dual-chemistry approach should broaden its market reach and better align with evolving customer needs. With full-scale production of the complete SBB lineup expected in 2027, significant sales growth is anticipated.
- Construction of a Samsung SDI-dedicated plant in the US is set to begin in April in Indiana, near StarPlus Energy (a JV between Samsung SDI and Stellantis). Pilot production should start in 1Q27 and full-scale production in 2H27. The new facility should enable Hanjung NCS to respond more effectively to new-product demand from Samsung SDI. With Hanjung NCS's ESS division's 2025 sales (KRW143b) accounting for 71% of its Korean plant's sales capacity (KRW200b), the new US plant is essential to meeting future client demand and securing long-term contracts.
- Hanjung NCS officially became a qualified supplier to LGES in 4Q25, and has been developing cooling plates for the client's EV business. To support this, the company acquired a dedicated facility near its headquarters in Yeongcheon, Gyeongsangbuk-do. Deliveries to LGES are expected to begin in 1H27. While the sales size has yet to be confirmed, this new relationship should reduce customer concentration risk and establish a second growth pillar (alongside the ESS segment), setting the stage for balanced earnings growth from 2027.

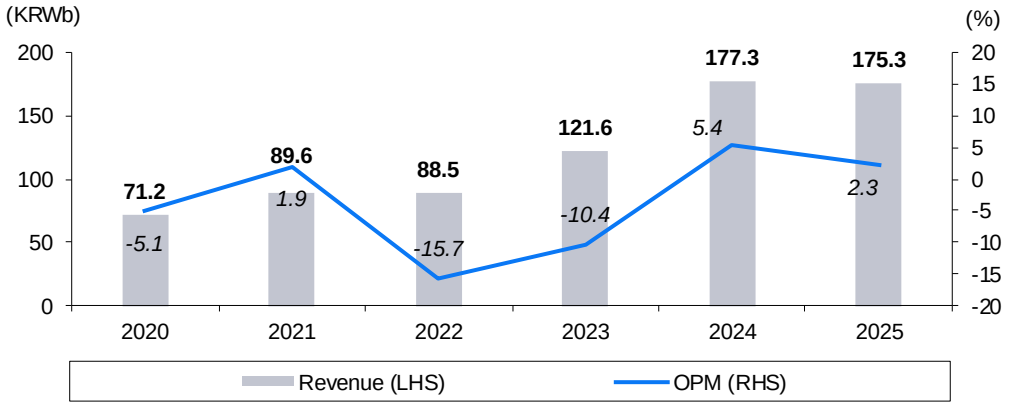
View—Entering growth phase in 2026: Hanjung NCS is set to resume growing in 2026, with both its sales and earnings set to recover. The start of mass-production of new ESS and EV products should drive organic expansion. Furthermore, the company should make more than KRW40b in sales in 2026 by providing products to Samsung SDI, which company has been finalized as the supplier of battery cells for Korea's first- and second-round ESS central procurement contracts, with confirmed volumes of 429 MW (Phase 1) and 202 MW (Phase 2). Meanwhile, profitability should improve as high-margin ESS sales gain traction and its ESS sales portion grows. Domestic affiliates HDC and HJ Futures are expected to report normalized earnings this year, while Hanjung NCS's loss-making ICE business is expected to be fully phased out by mid-2026. The stock, which reached a new high in March, has since pulled back amid broader geopolitical uncertainty, lowering valuation pressure and improving its risk-reward profile. Key drivers for 2026 include: New orders from its key customer and strong demand for ESS systems, especially in North America.

Hanjung NCS: Key products for liquid-cooled ESS cooling systems



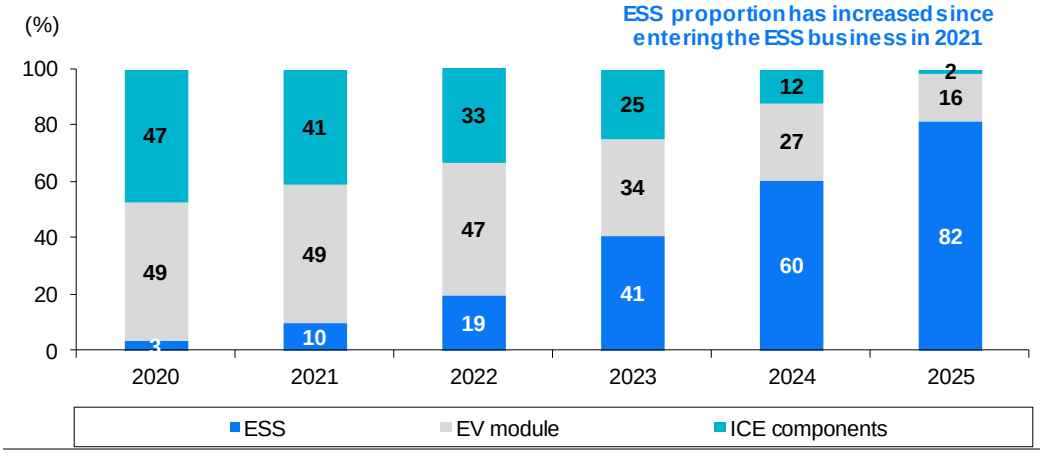
Source: Company data, Samsung Securities

Hanjung NCS: Revenue vs operating margin



Source: Company data, Samsung Securities

Hanjung NCS: Revenue portion, by business



Source: Company data, Samsung Securities

Samsung SDI: SBB product lineup

Product name	Launch date	Cell capacity	Energy	Chemistry	Production site	Hanjung NCS supply timeline*
SBB 1.0	May 2024	145Ah	3.84 MWh	NCA	Korea	2024
SBB 1.5	Sep 2024	145Ah	5.26 MWh	NCA	Korea	2025~
SBB 1.7	Jul 2026	152Ah	6.14 MWh	NCA	US	Mar 2026
SBB 2.0	Dec 2026	273Ah	5.0 MWh	LFP	US	2H26

Note: *Start date for the supply of Hanjung NCS's liquid cooling systems equipped in Samsung SDI's SBB products.
Source: Company data, Samsung Securities

Samsung SDI: SBB order status

Date	Client	Product*	Contract size	Supply period	Details
Mar 2026	Major Energy Firm (US)	SBB1.5/SBB1/7/SBB2.0	KRW1.5t	2026-2029	Produced at US plant
Feb 2026	2nd ESS Centralized Contract Market Bid (Korea)	SBB1.5/SBB1.7	KRW360b	2026-2027	Won 36% of the total 565 MW order
Jan 2026	Tesla (US)	SBB2.0	KRW3t-5t	2027-2029년	Details undisclosed due to NDA; based on media estimates. Estimated supply of 10 GWh batteries annually for 3 years.
Dec 2025	Major Energy Firm (US)	SBB2.0	Over KRW2t	2027-2029	Produced at US plant
Jul 2025	1st ESS Centralized Contract Market Bid (Korea)	SBB1.5	KRW760b	2025-2026	Won 76% of the total 536 MW order
Jun 2025	Tesvolt (Germany)	SBB1.0 / SBB1.5	Undisclosed	2025~	Track record of supplying ESS batteries since 2017
Mar 2025	NextEra Energy (US)	SBB1.0/SBB1.5	KRW437.4b	2024-2025	Part of a long-term supply project; follow-up disclosures possible
2Q 2024	Fluence Energy (US)	ESS Battery	Undisclosed	2024~?	Supply size is less than 10% of annual revenue

Note: *Estimated SBB product lineup for each order based on delivery timeline and chemistry (NCA or LFP).
Source: Company data, Samsung Securities

Hanjung NCS: Results

(KRWb)	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2020	2021	2022	2023	2024	2025
KRW/USD (average)	1,329	1,371	1,358	1,400	1,453	1,401	1,387	1,449	1,180	1,145	1,292	1,306	1,365	1,422
Sales	**30.6**	**43.6**	**47.6**	**55.4**	**33.1**	**36.4**	**45.9**	**59.9**	**71.2**	**89.6**	**88.5**	**121.6**	**177.3**	**175.3**
Growth (% q-q)	-8.2	42.5	9.1	16.4	-40.2	10.0	25.9	30.5						
Growth (% y-y)	2.2	48.6	65.1	66.0	8.1	-16.5	-3.6	8.1	-13.8	25.9	-1.2	37.3	45.8	-1.1
ESS	14.8	21.1	32.2	39.1	21.8	28.3	39.1	53.8	2.5	8.9	17.2	49.6	107.2	143.0
EV module	9.5	13.5	11.5	13.7	9.4	7.4	6.6	5.3	34.9	43.7	41.7	41.4	48.1	28.8
ICE components	6.4	9.1	3.8	2.7	1.7	0.9	0.2	0.8	33.8	36.7	29.6	30.6	21.9	3.5
EBITDA	**1.0**	**3.6**	**2.9**	**7.3**	**0.8**	**1.9**	**2.9**	**4.4**	**0.8**	**6.3**	**-9.3**	**-7.9**	**14.7**	**10.0**
Growth (% q-q)	Turnedpos	278.8	-21.4	154.2	-88.7	129.7	54.8	49.9						
Growth (% y-y)	Turnedpos	Turnedpos	Turnedpos	Turnedpos	-14.3	-48.0	2.4	-39.6	-88.0	702.8	Turnedneg	Remainedneg	Turnedpos	-31.9
Operating profit	**-0.3**	**2.4**	**1.6**	**5.9**	**-0.6**	**0.4**	**1.5**	**2.7**	**-3.7**	**1.7**	**-13.9**	**-12.7**	**9.6**	**4.0**
Growth (% q-q)	Remainedneg	Turnedpos	-33.2	271.1	Turnedneg	Turnedpos	284.1	78.3						
Growth (% y-y)	Remainedneg	Turnedpos	Turnedpos	Turnedpos	Remainedneg	-83.3	-3.7	-53.8	Turnedneg	Turnedpos	Turnedneg	Remainedneg	Turnedpos	-57.9
Pre-tax profit	-1.4	1.1	0.9	5.1	-1.1	-0.3	2.2	-1.1	-5.7	-1.8	-20.4	-16.2	5.8	-0.3
Growth (% q-q)	Remainedneg	Turnedpos	-11.6	444.3	Turnedneg	Remainedneg	Turnedpos	Turnedneg						
Growth (% y-y)	Remainedneg	Turnedpos	Turnedpos	Turnedpos	Remainedneg	Turnedneg	128.6	Turnedneg	Turnedneg	Remainedneg	Remainedneg	Remainedneg	Turnedpos	Turnedneg
Net profit	**-1.4**	**1.1**	**0.9**	**14.7**	**-1.0**	**0.2**	**1.4**	**4.2**	**-4.3**	**-1.9**	**-20.3**	**-18.6**	**15.4**	**4.9**
Growth (% q-q)	Remainedneg	Turnedpos	-11.6	1,459.1	Turnedneg	Turnedpos	592.2	200.9						
Growth (% y-y)	Remainedneg	Turnedpos	Turnedpos	Turnedpos	Remainedneg	-81.0	49.1	-71.2	Turnedneg	Remainedneg	Remainedneg	Remainedneg	Turnedpos	-68.2
Attr. to parent	**-0.8**	**1.8**	**1.4**	**14.8**	**-0.6**	**0.1**	**0.6**	**4.0**	**-4.3**	**-1.9**	**-20.2**	**-16.4**	**17.3**	**4.1**
Margins (%)														
EBITDA	3.1	8.3	6.0	13.1	2.5	5.2	6.4	7.3	1.1	7.1	-10.5	-6.5	8.3	5.7
Operating profit	-0.9	5.4	3.3	10.6	-1.9	1.1	3.3	4.6	-5.1	1.9	-15.7	-10.4	5.4	2.3
Pre-tax profit	-4.5	2.5	2.0	9.3	-3.2	-1.0	4.7	-1.9	-8.0	-2.0	-23.0	-13.3	3.3	-0.2
Net profit	-4.5	2.4	2.0	26.6	-2.9	0.6	3.1	7.1	-6.0	-2.1	-22.9	-15.3	8.7	2.8

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Sales	**90**	**89**	**122**	**177**	**175**
Cost of goods sold	79	90	119	150	144
Gross profit	**11**	**(1)**	**3**	**27**	**31**
Gross margin (%)	11.9	(1.5)	2.2	15.2	17.7
SG&A expenses	9	13	15	17	27
Operating profit	**2**	**(14)**	**(13)**	**10**	**4**
Operating margin (%)	1.9	(15.7)	(10.4)	5.4	2.3
Non-operating Gains (Losses)	**(3)**	**(6)**	**(3)**	**(4)**	**(4)**
Financial Profit	0	0	0	1	1
Financial Costs	2	2	4	5	4
Gains (Losses) in Equity Method	0	0	0	0	0
Other	(2)	(4)	1	(0)	(2)
Pre-tax profit	**(2)**	**(20)**	**(16)**	**6**	**(0)**
Taxes	0	(0)	2	(10)	(5)
Effective tax rate (%)	(2.8)	0.5	(15.4)	(165.0)	1,501.3
Profit from continuing operations	(2)	(20)	(19)	15	5
Profit from discontinued operations	0	0	0	0	0
Net profit	**(2)**	**(20)**	**(19)**	**15**	**5**
Net margin (%)	(2.1)	(22.9)	(15.3)	8.7	2.8
Net profit (Controlling Interests)	(2)	(20)	(16)	17	4
Net profit (Non-controlling Interests)	0	(0)	(2)	(2)	1
EBITDA	6	(9)	(8)	15	10
EBITDA margin (%)	7.0	(10.3)	(6.5)	8.3	5.7
EPS (parent) (KRW)	n/a	n/a	n/a	2,627	619
EPS (consolidated) (KRW)	n/a	n/a	n/a	2,331	742
Adjusted EPS (KRW)*	n/a	n/a	n/a	2,627	619

Balance sheet

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Current assets	**45**	**49**	**42**	**75**	**105**
Cash & equivalents	1	11	9	30	48
Accounts receivable	15	12	17	14	20
Inventories	21	15	11	14	22
Other current assets	8	11	5	17	16
Fixed assets	**49**	**68**	**80**	**92**	**148**
Investment assets	1	2	1	1	1
Tangible assets	46	66	79	84	136
Intangible assets	1	1	1	1	1
Other long-term assets	0	0	0	6	10
Total assets	**93**	**117**	**123**	**167**	**253**
Current liabilities	**60**	**58**	**65**	**50**	**116**
Accounts payable	14	15	23	18	22
Short-term debt	21	23	23	15	44
Other current liabilities	25	21	19	17	49
Long-term liabilities	**15**	**31**	**44**	**37**	**37**
Bond & long-term debt	14	18	28	22	23
Other long-term liabilities	2	13	17	14	15
Total liabilities	**75**	**89**	**109**	**86**	**153**
Owners of parent equity	**18**	**26**	**13**	**82**	**98**
Capital stock	2	4	4	5	5
Capital surplus	2	28	28	79	50
Retained earnings	5	(15)	(31)	(14)	34
Other	9	9	13	12	9
Non-controlling interests equity	**0**	**2**	**0**	**(2)**	**2**
Total equity	**18**	**28**	**13**	**80**	**100**
Net debt	54	53	64	17	58

Cash flow statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Cash flow from operations	**2**	**(1)**	**5**	**6**	**1**
Net profit	(2)	(20)	(19)	15	5
Non-Cash Profit and Expense	9	15	11	(3)	6
Depreciation	4	4	5	5	6
Amortization	0	0	0	0	0
Others	4	10	7	(8)	(0)
Changes in A/L from Operating Activities	(4)	6	15	(4)	(9)
Cash flow from investments	**(4)**	**(12)**	**(14)**	**(20)**	**(41)**
Change in Tangible Assets	(4)	(13)	(16)	(10)	(46)
Change in Financial Assets	0	0	0	(10)	5
Other	(0)	0	2	0	0
Cash flow from financing	**0**	**24**	**7**	**35**	**58**
Change in debt	1	10	8	(15)	53
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	0	0	0	0	0
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	(2)	10	(2)	21	17
Cash at beginning of year	3	1	11	9	30
Cash at end of year	1	11	9	30	48
Gross cash flow	**7**	**(6)**	**(7)**	**13**	**11**
Free cash flow	**(2)**	**(14)**	**(12)**	**(4)**	**(47)**

Financial ratios

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Growth (%)					
Sales	25.9	(1.2)	37.3	45.8	(1.1)
Operating profit	nm	nm	nm	nm	(57.9)
Net profit	nm	nm	nm	nm	(68.2)
Adjusted EPS**	nm	nm	nm	nm	(76.4)
Per share data (KRW)					
EPS (parent)	n/a	n/a	n/a	2,627	619
EPS (consolidated)	n/a	n/a	n/a	2,331	742
Adjusted EPS **	n/a	n/a	n/a	2,627	619
BPS	2,734	3,956	2,044	12,500	14,896
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	8.5	n/a	n/a	1.0	6.0
Ratios					
ROE (%)	(10.3)	(91.5)	(83.2)	36.1	4.5
ROA (%)	(2.0)	(19.2)	(15.5)	10.6	2.3
ROIC (%)	2.5	(18.4)	(18.2)	29.7	(47.1)
Payout ratio (%)	n/a	n/a	n/a	n/a	n/a
Dividend yield (Common, %)	n/a	n/a	n/a	n/a	n/a
Net debt to equity (%)	298.5	188.2	471.6	20.7	57.8
Interest coverage (x)	1.0	(6.4)	(3.0)	2.1	1.1

Note: *Excluding one-off items
**Fully diluted, excluding one-off items
***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

COMPANY UPDATE

2026. 4. 15

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Shinsung ST (416180)

Soft profitability despite robust top-line growth

- Shinsung ST generates 71% of its sales from rechargeable battery components, with LG Energy Solution (LGES) its primary client.
- Its profitability deteriorated in 2025, as US tariffs on Chinese goods caused volumes to drop amid higher fixed costs (on a delayed startup of a US factory). Beginning this year, however, its profitability should gradually improve.
- The question is whether the US plant commences mass-production in a timely manner and whether its sales mix improves.

AT A GLANCE

Not Rated

Target price	n/a
Current price	KRW35,100
Market Cap	KRW317.3b/USD214.22m
Shares (float)	9,039,778 (52.9%)
52-week high/low	KRW51,800/KRW27,800
Avg daily trading value (60-day)	KRW4.1b/ USD2.8m

ONE-YEAR PERFORMANCE

	1M	6M	12M
Shinsung ST (%)	-3.2	-15.8	26.3
Vs Kosdaq (%pts)	-0.5	-36.4	-20.2

KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	Not Rated		
Target price	n/a		
2026E EPS	n/a		
2027E EPS	n/a		

SAMSUNG vs THE STREET

No of estimates	n/a
Target price	n/a
Recommendation	n/a

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL

WHAT'S THE STORY?

Company overview: Founded in 2004, Shinsung ST is a manufacturer of rechargeable battery components and IT/automotive parts. As of 2025, its sales comprised 71% battery components and 29% IT/automotive parts. It primarily: 1) supplies busbars (current-carrying connectors) and module cases (protective housings) for the battery segment; and 2) produces EV camera modules and display-related smartphone components for the IT/auto segments. This year, the company aims to commence mass-production of liquid-cooled heat sinks (a thermal management component) at its new Kentucky facility (US), marking its expansion into higher value-added product lines.

(Continued on the next page)

SUMMARY FINANCIAL DATA

	2022	2023	2024	2025
Revenue (KRWb)	107	125	127	117
Operating profit (KRWb)	8	8	9	2
Net Profit (KRWb)	9	9	7	1
EPS (adj) (KRW)	92,869	91,085	71,042	5,537
EPS (adj) growth (%)	26.9	(1.9)	(22.0)	(92.2)
EBITDA margin (%)	10.2	9.6	10.4	7.4
ROE (%)	28.9	13.6	7.1	0.5
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	2.0	0.2	0.4	8.7
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

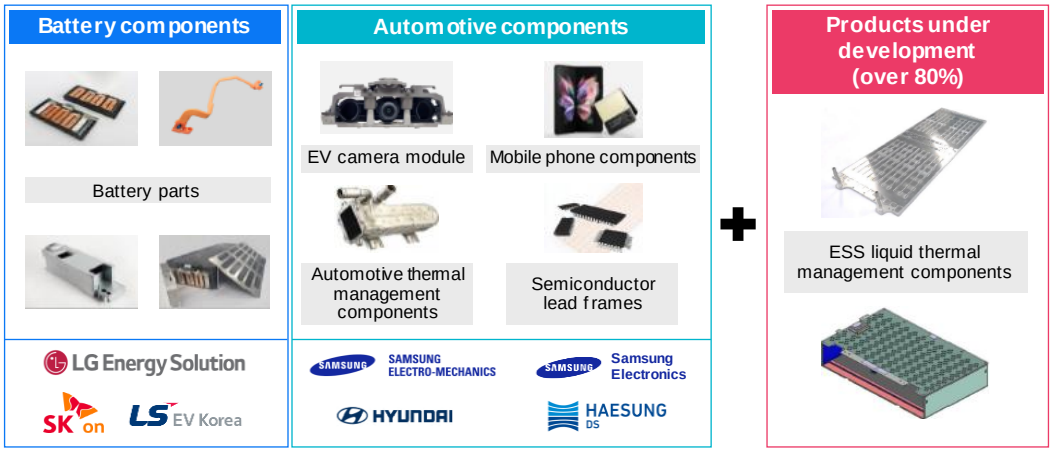
2025 review—both sales and operating profit decline: Shinsung ST reported weak 2025 results, showing sales of KRW116.9b (down 8%) and an operating profit of KRW2.3b (down 74.2%), as its shipments to LG Energy Solution (LGES) were impacted by higher US tariffs on Chinese imports. The company had been producing busbars and module cases at its Chinese facility and supplying them to LGES for distribution in the US and Europe. Following last year's tariff hike, its production in China became untenable, prompting a temporary sharp drop in output in 2Q25. Some of the production was shifted to its facilities in Poland and Korea in 3Q25, but higher costs eroded its margins. Delays in commencing mass-production at a new US plant in 4Q25 resulted in an elevated fixed-cost burden, pushing the company into the red (a 4Q25 operating margin of -6.6% vs +10% in 1Q25).

Entering North American ESS market with heat sinks: In May, Shinsung ST is scheduled to begin supplying LGES with liquid-cooled heat sinks for ESS applications, which components will be produced at its newly-established facility in Kentucky (US; capacity of 20 GWh). Its initial order book totals KRW1.1t, with deliveries planned through 2030. LGES is believed to be transitioning its liquid-cooling component sourcing away from Chinese suppliers, and Shinsung ST aims to meet 30% of this client's thermal management system needs over time. With US policy increasingly favoring non-Chinese supply chains, the company is well positioned to expand its market share in North America. Successful mass-production at the Kentucky facility may unlock additional orders from LGES, possibly triggering a capacity expansion in 2027. Shinsung ST is already developing components for LGES's next-generation ESS product JF3. However, given the repeated delays in the heat sink delivery schedule—delivery was originally set to start in Nov 2025—the commencement of mass production at the new facility remains the key near-term milestone.

Polish subsidiary to be fully consolidated: The company is poised to strengthen its European footprint through its full consolidation of the Polish subsidiary. As a JV with an affiliate (50% stake), the Polish entity has fallen under equity-method accounting since 2018. In 2H26, Shinsung ST aims to acquire the remaining 50% stake, resulting in the subsidiary's earnings being booked as consolidated from 2027. The facility will produce top plate assembly (TPA; a high value-added module case) over 2026-2035, which item will be delivered to Ford via LGES from 2H26. We expect the Polish subsidiary's sales contribution and profitability in the module case segment to improve meaningfully from 2026.

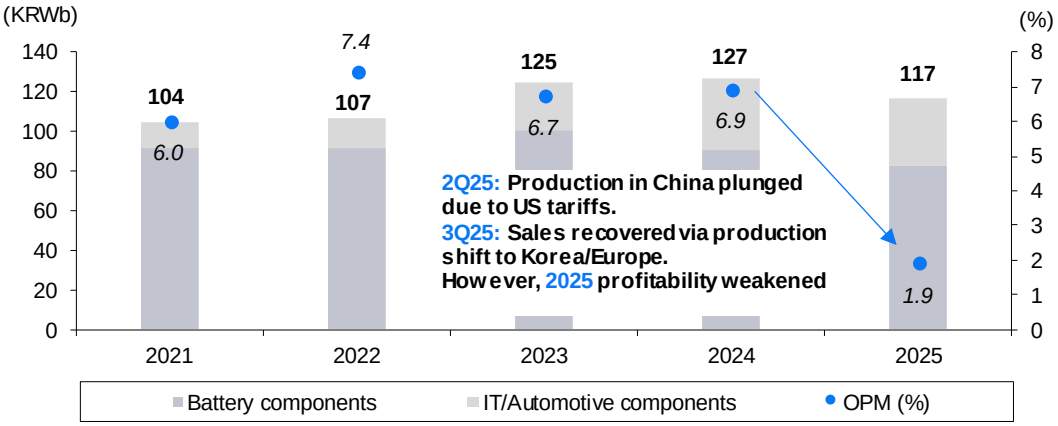
View—top line to grow in 2026, but profitability under pressure: The firm's battery component sales are likely to rise from 71% of its total sales in 2025 to over 80% in 2026, driven not only by volume, but also by a strategic shift towards high value-added products such as heat sinks and TPA. However, profitability is likely to remain constrained. Its operating margin fell from an average of 7% over 2021-2024 to 1.9% in 2025 and is unlikely to recover much in 2026 due to: 1) heavy fixed costs associated with bringing a new heat sink facility online; and 2) ongoing margin erosion from the relocation of production of legacy battery components. For meaningful improvement in investor sentiment, uncertainty surrounding mass-production delays at the US plant must be resolved, and utilization at the plant needs to normalize. On the earnings side, profitability ought to gradually improve. Momentum-wise, clear signs of additional orders—taken either by the US plant or from other customers—must be confirmed.

Shinsung ST: Main product



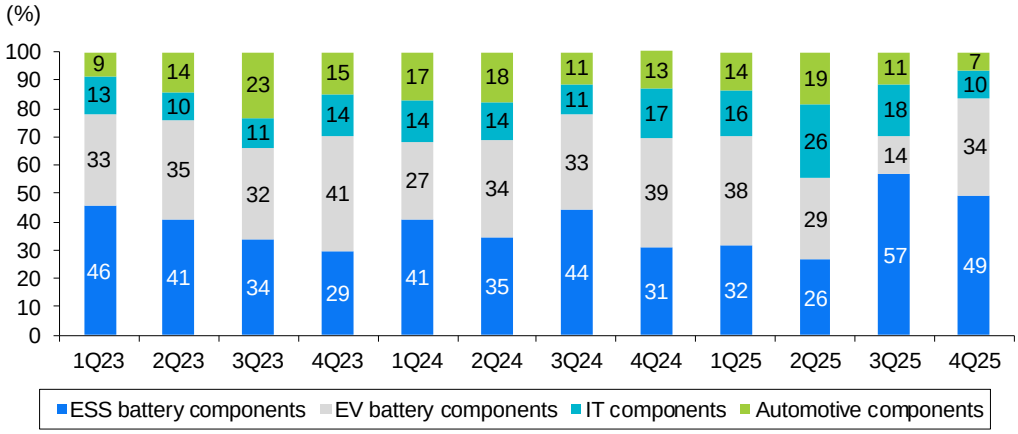
Source: Company data, Samsung Securities

Shinsung ST: Annual revenue vs operating margin



Source: Company data, Samsung Securities

Shinsung ST: Revenue, by division



Source: Company data, Samsung Securities

Shinsung ST: Results

(KRWb)	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2023	2024	2025
KRW/USD (Average)	1,329	1,371	1,358	1,400	1,453	1,401	1,387	1,452	1,306	1,365	1,423
Sales	**30.7**	**34.7**	**33.7**	**28.0**	**29.4**	**23.9**	**29.6**	**34.0**	**124.7**	**127.0**	**116.9**
Growth (% q-q)	7.9	12.9	-2.8	-17.0	5.2	-18.6	23.7	14.7			
Growth (% y-y)	-14.7	13.9	13.1	-1.7	-4.2	-30.9	-12.2	21.4	17.1	1.9	-8.0
ESS Battery components	12.6	12.1	14.9	8.7	9.4	6.3	16.7	16.8	47.3	48.3	49.3
EV Battery components	8.4	11.8	11.3	10.8	11.2	6.9	4.1	11.5	43.7	42.3	33.7
IT components	4.4	4.7	3.6	4.8	4.8	6.2	5.4	3.4	15.1	17.6	19.8
Automotive components	5.3	6.1	3.9	3.7	4.0	4.5	3.3	2.3	18.7	18.9	14.1
EBITDA	**4.2**	**4.3**	**2.2**	**2.5**	**4.2**	**1.6**	**2.5**	**0.3**	**11.9**	**13.3**	**8.6**
Growth (% q-q)	Turned neg	2.2	-48.0	11.8	69.7	-62.7	58.5	-88.6			
Growth (% y-y)	-21.7	6.6	-29.4	Turned neg	0.8	-63.2	12.1	-88.6	9.5	11.4	-34.9
Operating profit	**3.2**	**3.2**	**2.2**	**0.2**	**3.0**	**0.2**	**1.4**	**-2.2**	**8.4**	**8.8**	**2.3**
Growth (% q-q)	Turned neg	1.4	-30.1	-90.0	1,218.8	-93.7	646.1	Turned pos			
Growth (% y-y)	-30.0	1.2	-2.1	Turned neg	-6.3	-94.2	-38.3	Turned pos	6.1	5.2	-74.2
Earnings Before Tax	3.2	3.3	2.4	0.5	3.2	0.2	0.7	-3.7	11.6	9.4	0.3
Growth (% q-q)	861.7	0.3	-27.4	-78.3	522.8	-94.1	270.4	Turned pos			
Growth (% y-y)	-43.1	-18.8	53.2	52.0	-1.6	-94.2	-70.6	Turned pos	0.9	-19.1	-96.4
Net income	**2.5**	**2.2**	**2.0**	**0.4**	**2.2**	**-0.2**	**0.1**	**-1.5**	**9.1**	**7.1**	**0.6**
Growth (% q-q)	455.6	-10.9	-8.2	-78.7	412.5	Turned pos	Turned neg	Turned pos			
Growth (% y-y)	-47.8	-16.0	51.5	-3.2	-10.7	Turned pos	-94.9	Turned pos	-1.9	-22.0	-92.2
Attr. to parents	**2.5**	**2.2**	**2.0**	**0.4**	**2.2**	**-0.2**	**0.1**	**-1.5**	**9.1**	**7.1**	**0.6**
Margins (%)											
EBITDA	13.7	12.4	6.6	9.0	14.4	6.6	8.5	0.8	9.6	10.4	7.4
Operating profit	10.3	9.2	6.6	0.8	10.0	0.8	4.7	-6.6	6.7	6.9	1.9
Pre-tax income	10.6	9.4	7.0	1.8	10.9	0.8	2.3	-11.0	9.3	7.4	0.3
Net profit	8.0	6.3	6.0	1.5	7.5	-1.0	0.3	-4.5	7.3	5.6	0.5

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31	2021	2022	2023	2024	2025
Sales	**104**	**107**	**125**	**127**	**117**
Cost of goods sold	91	91	104	104	96
Gross profit	**13**	**16**	**20**	**23**	**21**
Gross margin (%)	12.8	14.8	16.3	18.1	18.1
SG&A expenses	7	8	12	14	19
Operating profit	**6**	**8**	**8**	**9**	**2**
Operating margin (%)	6.0	7.4	6.7	6.9	1.9
Non-operating Gains (Losses)	**2**	**4**	**3**	**1**	**(2)**
Financial Profit	1	1	2	2	2
Financial Costs	2	2	2	2	3
Gains (Losses) in Equity Method	3	2	1	(0)	(2)
Other	1	2	2	1	1
Pre-tax profit	**9**	**11**	**12**	**9**	**0**
Taxes	1	2	2	2	(0)
Effective tax rate (%)	15.5	19.1	21.4	24.2	(64.1)
Profit from continuing operations	7	9	9	7	1
Profit from discontinued operations	0	0	0	0	0
Net profit	**7**	**9**	**9**	**7**	**1**
Net margin (%)	7.0	8.7	7.3	5.6	0.5
Net profit (Controlling Interests)	7	9	9	7	1
Net profit (Non-controlling Interests)	0	0	0	0	0
EBITDA	9	11	12	13	9
EBITDA margin (%)	8.5	10.2	9.6	10.4	7.4
EPS (parent) (KRW)	73,194	92,869	91,085	71,042	5,537
EPS (consolidated) (KRW)	73,194	92,869	91,085	71,042	5,537
Adjusted EPS (KRW)*	73,194	92,869	91,085	71,042	5,537

Balance sheet

Year-end Dec 31	2021	2022	2023	2024	2025
Current assets	**37**	**51**	**94**	**94**	**116**
Cash & equivalents	2	3	5	3	38
Accounts receivable	28	37	32	34	34
Inventories	6	8	8	12	25
Other current assets	2	3	48	44	18
Fixed assets	**31**	**35**	**43**	**51**	**130**
Investment assets	8	10	14	15	14
Tangible assets	18	20	25	30	92
Intangible assets	0	0	0	0	0
Other long-term assets	4	4	3	5	23
Total assets	**68**	**86**	**136**	**144**	**246**
Current liabilities	**35**	**45**	**36**	**37**	**54**
Accounts payable	14	19	12	16	15
Short-term debt	15	20	18	14	22
Other current liabilities	6	6	6	7	18
Long-term liabilities	**6**	**4**	**3**	**5**	**87**
Bond & long-term debt	2	1	2	3	71
Other long-term liabilities	3	3	1	2	16
Total liabilities	**41**	**49**	**39**	**42**	**142**
Owners of parent equity	**28**	**36**	**97**	**103**	**104**
Capital stock	4	4	5	5	5
Capital surplus	10	10	60	60	61
Retained earnings	16	25	35	40	38
Other	(2)	(2)	(2)	(1)	(0)
Non-controlling interests equity	**0**	**0**	**0**	**0**	**0**
Total equity	**28**	**36**	**97**	**103**	**104**
Net debt	20	22	2	6	75

Cash flow statement

Year-end Dec 31	2021	2022	2023	2024	2025
Cash flow from operations	**3**	**3**	**6**	**11**	**(9)**
Net profit	7	9	9	7	1
Non-Cash Profit and Expense	3	5	6	8	10
Depreciation	3	3	4	4	6
Amortization	0	0	0	0	0
Others	0	2	2	3	3
Changes in A/L from Operating Activities	(6)	(8)	(6)	(1)	(15)
Cash flow from investments	**(2)**	**(4)**	**(51)**	**(3)**	**(30)**
Change in Tangible Assets	(2)	(4)	(5)	(7)	(61)
Change in Financial Assets	(0)	(0)	(16)	4	12
Other	0	0	(30)	(0)	19
Cash flow from financing	**(4)**	**2**	**48**	**(11)**	**74**
Change in debt	(0)	3	(2)	(3)	93
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	0	0	0	(2)	(2)
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	(3)	1	3	(3)	35
Cash at beginning of year	4	2	3	5	3
Cash at end of year	2	3	5	3	38
Gross cash flow	**10**	**14**	**15**	**15**	**10**
Free cash flow	**1**	**(1)**	**1**	**5**	**(70)**

Financial ratios

Year-end Dec 31	2021	2022	2023	2024	2025
Growth (%)					
Sales	24.4	2.2	17.1	1.9	(8.0)
Operating profit	42.9	25.5	6.1	5.2	(74.2)
Net profit	75.8	26.9	(1.9)	(22.0)	(92.2)
Adjusted EPS**	75.8	26.9	(1.9)	(22.0)	(92.2)
Per share data (KRW)					
EPS (parent)	73,194	92,869	91,085	71,042	5,537
EPS (consolidated)	73,194	92,869	91,085	71,042	5,537
Adjusted EPS **	73,194	92,869	91,085	71,042	5,537
BPS	5,252	6,883	18,355	19,383	19,649
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	2.2	2.0	0.2	0.4	8.7
Ratios					
ROE (%)	30.8	28.9	13.6	7.1	0.5
ROA (%)	11.0	12.1	8.2	5.1	0.3
ROIC (%)	14.6	14.5	9.9	7.5	2.9
Payout ratio (%)	n/a	n/a	n/a	n/a	n/a
Dividend yield (Common, %)	n/a	n/a	n/a	n/a	n/a
Net debt to equity (%)	71.6	60.1	2.0	5.8	72.1
Interest coverage (x)	11.2	11.7	8.7	9.7	1.2

Note: *Excluding one-off items
**Fully diluted, excluding one-off items
***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

COMPANY UPDATE

2026. 4. 15

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LS Materials (417200)

Applications expanding to include AI

- LS Materials, a subsidiary of LS Cable & System, is engaged in the ultracapacitor (UC) business.
- The UC sales weakness, which was seen over 2024-2025, is likely to reverse course in 2026—expanding UC applications into AI data centers are expected to serve as a longer-term growth catalyst.

EV/Mobility Team

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AT A GLANCE

Not Rated

Target price	n/a
Current price	KRW20,400
Market Cap	KRW1.4t/USD0.9b
Shares (float)	67,652,659 (56.4%)
52-week high/low	KRW25,300/KRW9,360
Avg daily trading value (60-day)	KRW72.9b/ USD48.9m

ONE-YEAR PERFORMANCE

	1M	6M	12M
LS Materials (%)	-10.7	114.3	99.0
Vs Kosdaq (%pts)	-6.4	67.7	25.9

KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	Not Rated		
Target price	n/a		
2026E EPS	n/a		
2027E EPS	n/a		

SAMSUNG vs THE STREET

No of estimates	n/a
Target price	n/a
Recommendation	n/a

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL

WHAT'S THE STORY?

Company overview: LS Materials, a subsidiary of LS Cable & System, is a manufacturer of ultracapacitors (UC; also known as supercapacitors). Its core businesses are UC and aluminum materials/components. UC is an energy storage solution similar to, yet distinctly different from, lithium-ion batteries, with demand expanding from traditional applications (wind turbines, semiconductor plant uninterruptible power supplies (UPS), and automated guided vehicles (AGVs)) to AI data centers. Over 2022-2023 when UC was profitable, UC accounted for 26% of LS Materials' sales and 34% of its operating profit, while aluminum materials/components generated 74% of its sales and 66% of its operating profit.

UC utilization rate recovering: Sales at the UC business fell 29% over 2022-2025 (from KRW41.3b to KRW29.1b). Its operating income of KRW5.5b (for a margin of 13.4%) in 2022 turned into a loss of KRW4.9b (-16.9% margin) in 2025, due to declining UC factory utilization rates and resulting fixed-cost pressure. Large-cell utilization, in particular, plunged from 54% in 2023 to 26% in 2025. The 2025 weakness is attributable to sluggish demand from the North American wind energy segments and from European industrial sectors. However, signs of a gradual recovery have emerged in 2026, brightening the prospects for y-y utilization growth.

(Continued on the next page)

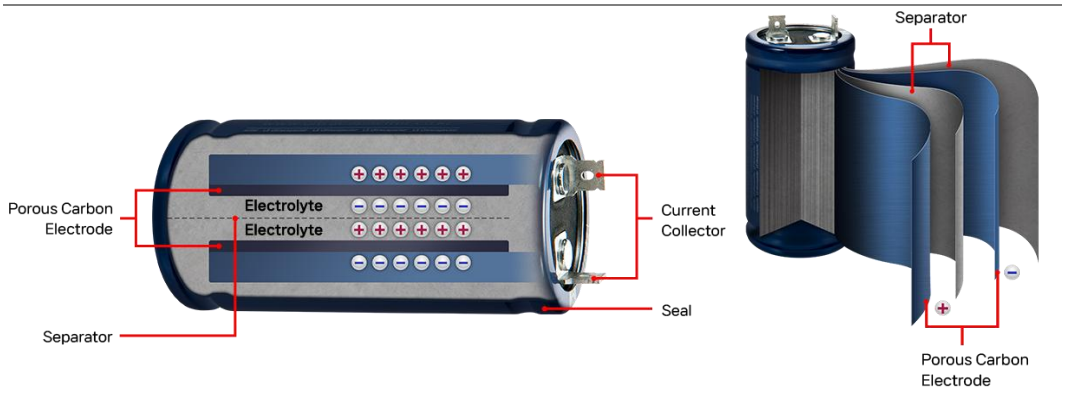
SUMMARY FINANCIAL DATA

	2022	2023	2024	2025
Revenue (KRWb)	162	137	142	154
Operating profit (KRWb)	14	14	6	(0)
Net Profit (KRWb)	8	12	6	(1)
EPS (adj) (KRW)	n/a	n/a	n/a	n/a
EPS (adj) growth (%)	n/a	n/a	n/a	n/a
EBITDA margin (%)	11.9	14.0	8.9	5.3
ROE (%)	9.6	8.7	3.1	0.2
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	(0.2)	(3.6)	(0.3)	1.6
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

Applications expand into AI: Compared to traditional data centers (IDCs), AI data centers (AIDCs) exhibit sharper power fluctuations, prompting the adoption of multi-layered storage architectures that integrate not only battery backup units but also UCs. The introduction of 800V DC data centers has further accelerated this trend—simplified DC power distribution and DC-to-DC conversion systems necessitate robust buffering between upstream and downstream power stages, where UCs are uniquely suited to provide transient power support. In other words, the acceleration of AI adoption has created positive momentum for UC demand.

LS Materials: Ultracapacitor structure



LS Ultracapacitor Cylindrical Type

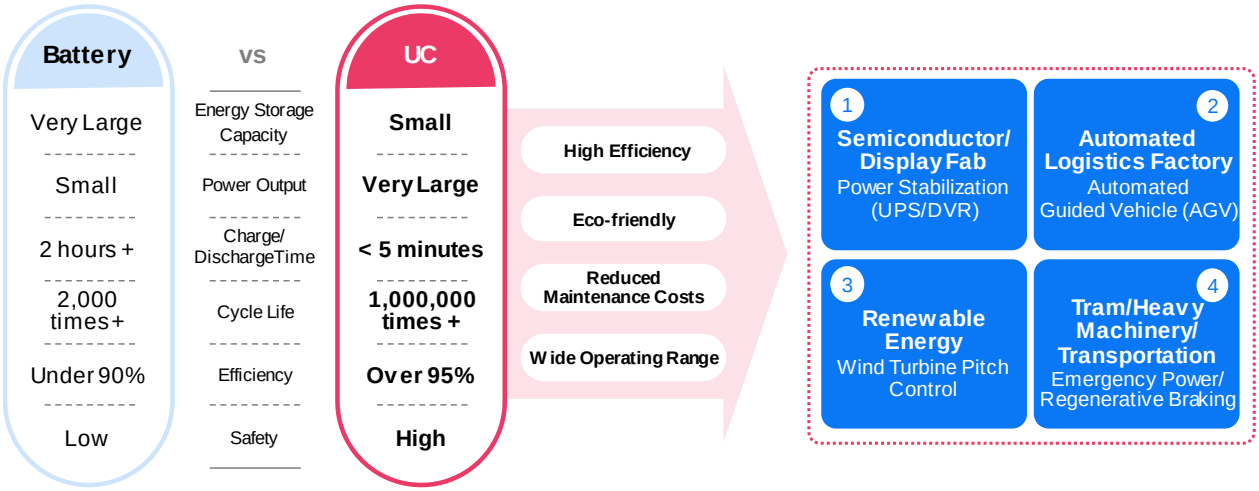
Source: Company data, Samsung Securities

Ultracapacitor: Performance comparison with conventional capacitors and batteries

	Conventional Capacitor	Ultracapacitor	Battery
Discharge Time	10^{-6}-10^{-3} sec	1-30 sec	0.3-4.0 hours
Charge Time	10^{-6}-10^{-3} sec	Seconds to minutes	0.5-5.0 hours
Energy Density (Wh/kg)	Under 0.1	1-10	30-100
Power Density (W/kg)	Over 10,000	1,000-2,000	50-200
Charge/Discharge Efficiency	1.0 or less	0.90-0.95	0.70-0.85
Cycle Life	Infinite	Over 1,000,000 times	500-2,000

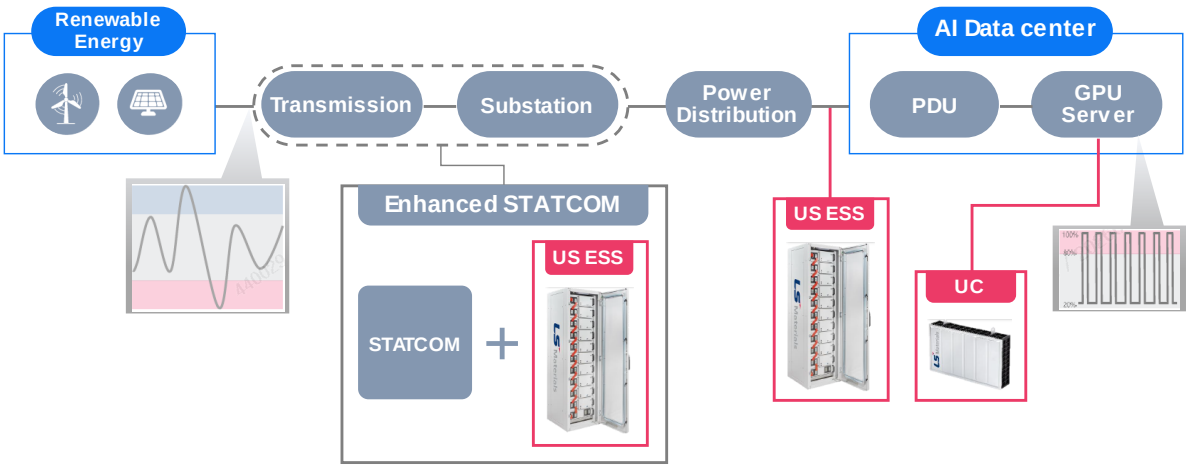
Source: Company data, Samsung Securities

Ultracapacitor: Features and applications



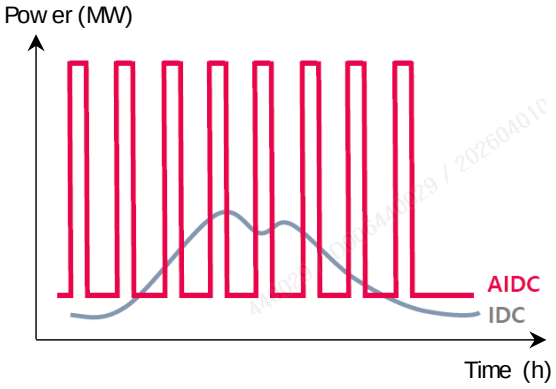
Source: Company data, Samsung Securities

Concept of ultracapacitor integration in renewable energy power grids



Source: Company data, Samsung Securities

Comparison of power demand characteristics between general data centers (IDC) and AI data centers (AIDC)



	IDC	AIDC
Power Consumption	Low (KW~MW)	High (Hundreds of MW)
Output Variation	Frequent output variation	Rapid output variation ▼ Fast response time
Cycles	Few cycles (Hours basis) ▼ Low charge/discharge frequency** (Hundreds per year)	Many cycles (Tens of seconds basis) ▼ High charge/discharge frequency (Over 1 million per year)

Source: Company data, Samsung Securities

LS Materials: Results

(KRWb)	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2022	2023	2024	2025
KRW/USD (average)	1,329	1,371	1,358	1,400	1,453	1,401	1,387	1,449	1,292	1,306	1,365	1,422
Sales	**32.6**	**38.9**	**33.3**	**37.2**	**35.3**	**39.2**	**38.5**	**40.6**	**162.0**	**136.9**	**142.1**	**153.6**
Growth (% q-q)	-10.1	19.3	-14.4	11.7	-5.1	10.9	-1.8	5.3				
Growth (% y-y)	-0.1	2.0	11.9	2.5	8.3	0.7	15.6	9.0	279.7	-15.5	3.8	8.1
Ultra Capacitor	7.3	7.2	7.9	6.4	5.6	6.9	8.3	8.3	41.3	35.6	28.8	29.1
LS Alsco	25.5	32.1	25.6	31.1	30.0	32.6	30.5	32.4	120.8	101.5	114.2	125.5
HAIMK								0.1	0.0	0.0	0.0	0.1
Operating profit	**1.2**	**1.9**	**1.1**	**1.9**	**-1.1**	**0.0**	**-0.2**	**1.1**	**14.5**	**13.6**	**6.2**	**-0.1**
Growth (% q-q)	-56.9	56.8	-45.5	83.7	Turned neg	Turned pos	Turned neg	Turned pos				
Growth (% y-y)	-54.1	-64.9	-56.6	-32.3	Turned neg	-98.0	Turned neg	-42.8	470.9	-6.2	-54.3	Turned neg
Ultra Capacitor	0.0	0.0	-0.7	-1.3	-1.3	-1.4	-1.0	-1.3	5.5	4.0	-1.9	-4.9
LS Alsco	1.3	2.1	2.0	3.9	0.9	2.3	2.2	4.1	8.6	9.5	9.4	9.5
HAIMK					-0.5	-0.8	-1.4	-1.7	0.0	0.0	-0.8	-4.5
Pre-tax profit	2.2	1.9	1.4	2.2	-0.9	0.2	-0.2	1.7	10.7	15.2	7.6	0.7
Growth (% q-q)	-33.8	-13.8	-27.7	59.7	Turned neg	Turned pos	Turned neg	Turned pos				
Growth (% y-y)	-26.4	-69.1	-51.4	-34.2	Turned neg	-92.0	Turned neg	-20.8	320.8	42.6	-49.9	-90.7
Net profit	**1.7**	**1.5**	**1.1**	**1.4**	**-1.1**	**-0.2**	**-0.6**	**0.9**	**8.4**	**12.2**	**5.7**	**-1.0**
Growth (% q-q)	-41.5	-10.7	-27.8	33.8	Turned neg	Remained neg	Remained neg	Turned pos				
Growth (% y-y)	-27.4	-69.0	-51.7	-49.5	Turned neg	Turned neg	Turned neg	-38.1	316.5	45.3	-53.4	Turned neg
Attributable to parent	**1.6**	**1.5**	**1.1**	**1.5**	**-1.0**	**0.1**	**0.0**	**1.3**	**8.4**	**12.2**	**5.7**	**0.4**
Margins (%)												
Operating profit	3.8	5.0	3.2	5.2	-3.1	0.1	-0.5	2.7	8.9	9.9	4.4	-0.1
Ultra Capacitor	0.2	0.5	-8.9	-19.9	-23.4	-19.7	-11.9	-15.3	13.4	11.3	-6.7	-16.9
LS Alsco	5.3	6.6	8.0	12.4	2.9	7.0	7.3	12.8	7.1	9.3	8.2	7.6
HAIMK								-1,602.8				-4,122.2
Pre-tax profit	6.7	4.8	4.1	5.8	-2.7	0.4	-0.6	4.3	6.6	11.1	5.4	0.5
Net profit	5.1	3.8	3.2	3.9	-3.2	-0.5	-1.5	2.2	5.2	8.9	4.0	-0.7

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Sales	**43**	**162**	**137**	**142**	**154**
Cost of goods sold	36	138	113	124	140
Gross profit	**7**	**24**	**24**	**18**	**13**
Gross margin (%)	15.6	14.9	17.2	12.7	8.5
SG&A expenses	4	10	10	12	13
Operating profit	**3**	**14**	**14**	**6**	**(0)**
Operating margin (%)	5.9	8.9	9.9	4.4	(0.1)
Non-operating Gains (Losses)	**(0)**	**(4)**	**2**	**1**	**1**
Financial Profit	0	1	2	3	2
Financial Costs	0	1	2	1	1
Gains (Losses) in Equity Method	0	0	0	0	0
Other	0	(4)	1	(0)	(0)
Pre-tax profit	**3**	**11**	**15**	**8**	**1**
Taxes	1	2	3	2	2
Effective tax rate (%)	20.2	21.0	19.5	25.3	242.5
Profit from continuing operations	2	8	12	6	(1)
Profit from discontinued operations	0	0	0	0	0
Net profit	**2**	**8**	**12**	**6**	**(1)**
Net margin (%)	4.7	5.2	8.9	4.0	(0.7)
Net profit (Controlling Interests)	2	8	12	6	0
Net profit (Non-controlling Interests)	0	0	0	0	(1)
EBITDA	5	19	19	13	8
EBITDA margin (%)	10.8	11.9	14.0	8.9	5.3
EPS (parent) (KRW)	n/a	n/a	n/a	n/a	n/a
EPS (consolidated) (KRW)	n/a	n/a	n/a	n/a	n/a
Adjusted EPS (KRW)*	n/a	n/a	n/a	n/a	n/a

Balance sheet

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Current assets	**71**	**84**	**179**	**112**	**121**
Cash & equivalents	16	17	120	50	57
Accounts receivable	18	23	30	26	31
Inventories	24	23	25	30	29
Other current assets	13	21	3	6	4
Fixed assets	**60**	**64**	**88**	**141**	**153**
Investment assets	0	1	1	1	1
Tangible assets	43	48	63	113	127
Intangible assets	3	3	21	21	21
Other long-term assets	13	13	4	6	4
Total assets	**131**	**148**	**266**	**253**	**275**
Current liabilities	**43**	**38**	**62**	**40**	**32**
Accounts payable	29	24	27	6	3
Short-term debt	0	0	23	16	12
Other current liabilities	13	14	12	18	17
Long-term liabilities	**12**	**11**	**1**	**6**	**36**
Bond & long-term debt	2	2	0	4	35
Other long-term liabilities	10	9	1	2	1
Total liabilities	**55**	**49**	**63**	**46**	**68**
Owners of parent equity	**76**	**99**	**180**	**185**	**185**
Capital stock	24	26	34	34	34
Capital surplus	50	63	127	127	127
Retained earnings	2	9	20	24	24
Other	0	0	0	(0)	(0)
Non-controlling interests equity	**0**	**0**	**23**	**23**	**21**
Total equity	**76**	**99**	**203**	**207**	**206**
Net debt	(3)	(3)	(92)	(27)	(8)

Cash flow statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Cash flow from operations	**6**	**2**	**7**	**(11)**	**6**
Net profit	2	8	12	6	(1)
Non-Cash Profit and Expense	4	10	7	7	11
Depreciation	2	4	5	6	7
Amortization	0	1	1	1	1
Others	2	5	2	1	3
Changes in A/L from Operating Activities	0	(14)	(10)	(22)	(3)
Cash flow from investments	**(3)**	**(15)**	**(18)**	**(50)**	**(24)**
Change in Tangible Assets	(4)	(6)	(18)	(48)	(23)
Change in Financial Assets	(0)	0	(0)	0	0
Other	2	(9)	1	(1)	(1)
Cash flow from financing	**13**	**14**	**114**	**(9)**	**25**
Change in debt	13	1	14	(5)	26
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	0	(1)	(1)	(1)	0
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	16	1	103	(69)	7
Cash at beginning of year	0	16	17	120	50
Cash at end of year	16	17	120	50	57
Gross cash flow	**6**	**18**	**19**	**13**	**10**
Free cash flow	**2**	**(4)**	**(11)**	**(60)**	**(18)**

Financial ratios

Year-end Dec 31	2021	2022	2023	2024	2025
Growth (%)					
Sales	n/a	279.7	(15.5)	3.8	8.1
Operating profit	n/a	470.9	(6.2)	(54.3)	nm
Net profit	n/a	316.5	45.3	(53.4)	nm
Adjusted EPS**	n/a	n/a	n/a	n/a	n/a
Per share data (KRW)					
EPS (parent)	n/a	n/a	n/a	n/a	n/a
EPS (consolidated)	n/a	n/a	n/a	n/a	n/a
Adjusted EPS **	n/a	n/a	n/a	n/a	n/a
BPS	n/a	n/a	n/a	n/a	n/a
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	(0.6)	(0.2)	(3.6)	(0.3)	1.6
Ratios					
ROE (%)	5.3	9.6	8.7	3.1	0.2
ROA (%)	3.1	6.0	5.9	2.2	(0.4)
ROIC (%)	5.6	13.6	10.6	3.2	0.1
Payout ratio (%)	n/a	n/a	n/a	n/a	n/a
Dividend yield (Common, %)	n/a	n/a	n/a	n/a	n/a
Net debt to equity (%)	(3.8)	(3.0)	(45.2)	(13.0)	(3.9)
Interest coverage (x)	7.8	18.3	8.9	4.8	(0.2)

Note: *Excluding one-off items
**Fully diluted, excluding one-off items
***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

COMPANY UPDATE

2026. 4. 16

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Vina Tech (126340)

Beneficiary of AI data center growth

- Vina Tech produces supercapacitors and hydrogen fuel cell materials/parts.
- It has been enjoying AI momentum thanks to a deal to supply Bloom Energy with capacitors. The emergence of 800V DC data centers should help it add new capacitor clients, further expanding its AI earnings momentum.

WHAT'S THE STORY?

Company overview: Vina Tech manufactures supercapacitors, alongside core materials/components for hydrogen fuel cells. Its supercapacitors are electric double layer capacitors (EDLC)—the same as LS Materials' ultracapacitors. It also produces lithium-ion capacitors (LiC), a hybrid capacitor that combines the advantages of supercapacitors and lithium-ion batteries. For fuel-cell applications, Vina Tech supplies components including supports, catalysts, and membrane electrode assembly (MEA). Over 2024-2025, its sales mix consisted of 85% supercapacitors, 11% hydrogen fuel-cell components, and 4% others.

Beneficiary of AI data center boom: In May 2025, Vina Tech signed a deal to supply Bloom Energy with supercapacitors (through end-2027), making it an early beneficiary of the AI data center boom. Its supercapacitors provide backup power for Bloom Energy's solid oxide fuel cell (SOFC) systems, which systems are used in AI data centers. As Bloom Energy's exclusive supplier, Vina Tech stands to benefit from the growing adoption of fuel cells in AI data centers.

(Continued on the next page)

AT A GLANCE

Not Rated

Target price	n/a
Current price	KRW133,300
Market cap	KRW926.04b/USD625.2m
Shares (float)	7,143,528 (68.4%)
52-week high/low	KRW151,300/KRW23,272
Avg daily trading value (60-day)	KRW16.7b/ USD11.3m

ONE-YEAR PERFORMANCE

	1M	6M	12M
Vina Tech (%)	-11.9	178.3	471.6
Vs Kosdaq (%pts)	-9.5	110.3	261.2

KEY CHANGES

(KRW)	New	Old	Diff
Recommend.	Not Rated	Not Rated	
Target price	n/a	n/a	n/a
2023E EPS	-20,500	n/a	n/a
2024E EPS	-140,679	n/a	n/a

SAMSUNG vs THE STREET

No of estimates	2
Target price	168,500
Recommendation	4.0

※ Rating: 4 < → BUY, 3 = HOLD, 2 > → SELL

SUMMARY FINANCIAL DATA

	2022	2023	2024	2025
Revenue (KRWb)	71	55	60	82
Operating profit (KRWb)	9	3	(8)	2
Net profit (adj) (KRWb)	12	2	(10)	(7)
EPS (adj) (KRW)	3,603	610	n/a	n/a
EPS (adj) growth (% y-y)	55.7	(83.1)	n/a	n/a
EBITDA margin (%)	19.9	15.4	(2.0)	14.7
ROE (%)	21.0	3.2	(12.2)	(7.1)
P/E (adj) (x)	n/a	n/a	n/a	n/a
P/B (x)	n/a	n/a	n/a	n/a
EV/EBITDA (x)	2.7	4.1	n/a	7.6
Dividend yield (%)	n/a	n/a	n/a	n/a

Source: Company data, Samsung Securities estimates

Applications expand into AI: To handle AI data centers' volatile power demands, capacitors are now being added to battery backup units (BBUs)—a task that was once handled only by lithium-ion batteries. As 800V DC data centers emerge, their DC-based simplified power distribution and DC-to-DC architecture should increase the need for a buffering device between upstream and downstream power stages. Supercapacitors are ideal for this role. As AI adoption expands, supercapacitors will be needed not just for fuel cells, but across a growing range of applications.

VinaTech: Supercapacitors and hybrid capacitors

Source: Company data, Samsung Securities

Supercapacitors: Applications by industry

	Main power	Power assist	Backup power
Consumer electronics	Smart remote controls, stylus pens (e-pens)	Trackers, smart poles	Wireless chargers, wireless earbuds
Industrial	AGVs, portable X-rays, landscape lighting, blood glucose meters, pagers	Smart meters, forklift trucks, PLC modems, DCUs	Drones, UPS, emergency/exit lights, syringe pumps
Automotive electronics*			Dashcams, e-call, e-latch, braking systems, AVN, e-door

Source: Company data, Samsung Securities

Product characteristics of supercapacitors and hybrid capacitors

	Supercapacitor (ELDC)	Hybrid Capacitor (LiC)	Lithium-Ion Battery (LiB)
Mechanism	Physical ion adsorption/desorption (electrode surface)	Physical ion adsorption/desorption + chemical bonding	Chemical bonding (internal electrode)
Energy density (Wh/kg)	Medium (3-5)	Medium (7-12)	High (20-150)
Power density (kW/kg)	High (2.0-3.0)	High (1.0-2.0)	Low (0.05-0.3)
Charge/discharge efficiency (%)	90-95	90-95	70-85
Operating temp. (ºC)	-40 to +85	-20 to +70	-20 to +45
Cycle Life	500,000+	20,000+	500-2,000

Source: Company data, Samsung Securities

Overview of global supercapacitor manufacturers

	HQ Location	Key customers / region	Key Applications
Company M	Japan	Japan / Europe / North America	Small/medium electronics, automotive
Company P	Japan	Asia / North America / Europe energy storage, automotive	UPS
Company S	Germany	Europe / North America	Automotive, elevators, power, AGV
Company M	US	Europe / North America / China	Automotive, renewable energy
Company E	US	North America / Europe energy storage	UPS, automotive, telecom
Company J	China	Domestic automotive (China)	Automotive, electronics
Company T	Japan	Asia energy storage	ESS, UPS
Company L	Korea	Energy storage, medium/large	Electronics

Source: Company data, Samsung Securities

Vina Tech: Results

(KRWb)	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25	4Q25	2022	2023	2024	2025
KRW/USD (average)	1,329	1,371	1,358	1,400	1,453	1,401	1,387	1,449	1,292	1,306	1,365	1,422
Sales	**13.5**	**18.3**	**14.0**	**13.7**	**15.7**	**20.7**	**23.0**	**22.8**	**70.7**	**55.0**	**59.6**	**82.2**
Chg (% q-q)	-7.6	36.1	-23.4	-2.3	14.7	31.5	11.2	-1.0				
Chg (% y-y)	10.8	24.6	4.0	-5.9	16.8	12.8	63.8	66.1	44.3	-22.2	8.4	38.0
Super Capacitor	11.8	16.1	11.3	9.9	12.9	17.3	20.1	20.4	61.5	48.7	49.1	70.7
Fuel Cell parts	1.3	1.5	2.2	2.9	1.9	2.3	2.0	1.6	6.0	4.3	7.9	7.9
Others	0.4	0.7	0.5	1.0	0.9	1.1	0.9	0.8	3.1	2.0	2.6	3.6
Operating profit	**0.4**	**0.7**	**-2.5**	**-6.7**	**-2.4**	**1.0**	**2.6**	**0.7**	**9.4**	**3.0**	**-8.1**	**1.8**
Chg (% q-q)	-54.8	62.0	Turned neg	Remained neg	Remained neg	Turned pos	168.1	-74.3				
Chg (% y-y)	Turned pos	-37.9	Turned neg	Turned neg	Turned neg	37.8	Turned pos	Turned pos	66.2	-67.5	Turned neg	Turned pos
Pre-tax profit	1.1	1.4	-8.5	-1.4	-3.2	-1.8	2.1	-1.4	8.6	1.7	-7.4	-4.3
Chg (% q-q)	Turned pos	19.4	Turned neg	Remained neg	Remained neg	Remained neg	Turned pos	Turned neg				
Chg (% y-y)	249.2	125.5	Turned neg	Remained neg	Turned neg	Turned neg	Turned pos	Remained neg	9.4	-80.3	Turned neg	Remained neg
Net profit	**1.3**	**1.3**	**-6.7**	**-5.5**	**-2.6**	**-2.9**	**2.2**	**-3.7**	**11.7**	**2.0**	**-9.7**	**-7.0**
Chg (% q-q)	Turned pos	-0.4	Turned neg	Remained neg	Remained neg	Remained neg	Turned pos	Turned neg				
Chg (% y-y)	155.5	105.7	Turned neg	Remained neg	Turned neg	Turned neg	Turned pos	Remained neg	55.7	-83.1	Turned neg	Remained neg
Attri. to parent	**1.3**	**1.5**	**-6.5**	**-5.4**	**-2.3**	**-2.7**	**2.5**	**-3.3**	**11.7**	**2.0**	**-9.1**	**-5.9**
Margins (%)												
Operating profit	3.2	3.8	-17.9	-48.7	-15.3	4.6	11.1	2.9	13.2	5.5	-13.5	2.2
Pre-tax profit	8.5	7.5	-60.7	-9.9	-20.4	-8.9	9.1	-6.1	12.2	3.1	-12.4	-5.3
Net profit	9.7	7.1	-47.9	-40.4	-16.4	-14.2	9.6	-16.1	16.5	3.6	-16.2	-8.5
Net profit A.P.	9.7	8.3	-46.6	-39.2	-14.6	-13.3	11.0	-14.7	16.5	3.6	-15.3	-7.1

Source: Company data, Samsung Securities

Income statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Sales	**49**	**71**	**55**	**60**	**82**
Cost of goods sold	34	48	37	41	57
Gross profit	**15**	**22**	**18**	**19**	**25**
Gross margin (%)	30.9	31.5	32.8	32.0	30.7
SG&A expenses	10	13	15	27	23
Operating profit	**6**	**9**	**3**	**(8)**	**2**
Operating margin (%)	11.5	13.2	5.5	(13.5)	2.2
Non-operating gains (losses)	**2**	**(1)**	**(1)**	**1**	**(6)**
Financial profit	4	4	3	6	3
Financial costs	1	5	4	5	7
Equity-method gains (losses)	0	0	0	0	0
Other	(0)	(0)	(1)	0	(3)
Pre-tax profit	**8**	**9**	**2**	**(7)**	**(4)**
Taxes	0	(3)	(0)	2	3
Effective tax rate (%)	4.7	(35.6)	(16.9)	(31.1)	(61.3)
Profit from continuing operations	7	12	2	(10)	(7)
Profit from discontinued operations	0	0	0	0	0
Net profit	**7**	**12**	**2**	**(10)**	**(7)**
Net margin (%)	15.3	16.5	3.6	(16.2)	(8.5)
Net profit (controlling interests)	7	12	2	(9)	(6)
Net profit (non-controlling interests)	0	0	0	(1)	(1)
EBITDA	9	14	8	(1)	12
EBITDA margin (%)	17.8	19.9	15.4	(2.0)	14.7
EPS (parent-based) (KRW)	2,314	3,603	610	n/a	n/a
EPS (consolidated) (KRW)	2,314	3,603	610	n/a	n/a
Adjusted EPS (KRW)*	2,314	3,603	610	n/a	n/a

Balance sheet

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Current assets	**36**	**56**	**47**	**46**	**71**
Cash & equivalents	7	16	18	11	10
Accounts receivable	13	17	14	18	20
Inventories	10	10	7	11	27
Other current assets	6	12	7	6	14
Fixed assets	**63**	**78**	**83**	**130**	**131**
Investment assets	3	5	6	5	5
Tangible assets	58	68	72	120	125
Intangible assets	1	1	1	2	1
Other long-term assets	1	4	4	2	0
Total assets	**98**	**133**	**130**	**176**	**202**
Current liabilities	**25**	**45**	**41**	**57**	**83**
Accounts payable	2	3	2	3	10
Short-term debt	16	25	31	44	59
Other current liabilities	6	16	8	11	14
Long-term liabilities	**24**	**28**	**24**	**35**	**41**
Bonds & long-term debt	21	26	23	31	37
Other long-term liabilities	2	1	2	4	5
Total liabilities	**48**	**72**	**66**	**92**	**124**
Owners of parent equity	**50**	**61**	**64**	**84**	**80**
Capital stock	3	3	3	3	4
Capital surplus	34	34	36	36	52
Retained earnings	16	27	29	20	14
Other	(3)	(4)	(4)	25	11
Non-controlling interests' equity	**0**	**0**	**0**	**(0)**	**(2)**
Total equity	**50**	**61**	**64**	**84**	**78**
Net debt	30	38	34	69	94

Cash flow statement

Year-end Dec 31 (KRWb)	2021	2022	2023	2024	2025
Cash flow from operations	**4**	**11**	**13**	**(3)**	**(6)**
Net profit	7	12	2	(10)	(7)
Non-cash profit and expenses	4	5	10	17	23
Depreciation	3	5	5	7	10
Amortization	0	0	0	0	0
Other	1	0	5	10	13
Changes in A/L from operating activities	(7)	(4)	2	(8)	(19)
Cash flow from investments	**(8)**	**(24)**	**(4)**	**(40)**	**(18)**
Change in tangible assets	(28)	(24)	(12)	(45)	(19)
Change in financial assets	21	(7)	7	3	(0)
Other	(1)	7	2	2	1
Cash flow from financing	**9**	**21**	**(7)**	**36**	**22**
Change in debt	11	24	(8)	26	22
Change in equity	n/a	n/a	n/a	n/a	n/a
Dividends	0	0	0	0	0
Other	n/a	n/a	n/a	n/a	n/a
Change in cash	5	9	2	(7)	(2)
Cash at beginning of year	2	7	16	18	11
Cash at end of year	7	16	18	11	10
Gross cash flow	**11**	**17**	**12**	**7**	**16**
Free cash flow	**(24)**	**(13)**	**1**	**(48)**	**(25)**

Financial ratios

Year-end Dec 31	2021	2022	2023	2024	2025
Growth (%)					
Sales	4.9	44.3	(22.2)	8.4	38.0
Operating profit	(11.6)	66.2	(67.5)	nm	nm
Net profit	62.4	55.7	(83.1)	nm	nm
Adjusted EPS**	62.4	55.7	(83.1)	n/a	n/a
Per-share data (KRW)					
EPS (parent-based)	2,314	3,603	610	n/a	n/a
EPS (consolidated)	2,314	3,603	610	n/a	n/a
Adjusted EPS**	2,314	3,603	610	n/a	n/a
BVPS	13,111	15,913	16,771	21,984	19,371
DPS (common)	n/a	n/a	n/a	n/a	n/a
Valuations (x)					
P/E***	n/a	n/a	n/a	n/a	n/a
P/B***	n/a	n/a	n/a	n/a	n/a
EV/EBITDA	3.4	2.7	4.1	n/a	7.6
Ratios (%)					
ROE	16.0	21.0	3.2	(12.2)	(7.1)
ROA	8.4	10.1	1.5	(6.3)	(3.7)
ROIC	8.5	14.8	3.9	(8.8)	1.8
Payout ratio	n/a	n/a	n/a	n/a	n/a
Dividend yield (common)	n/a	n/a	n/a	n/a	n/a
Net debt to equity	59.7	63.0	53.5	82.7	119.9
Interest coverage (x)	7.5	6.5	1.5	(2.9)	0.5

Note: *Excluding one-off items
**Fully diluted, excluding one-off items
***From companies subject to equity-method valuation

Source: Company data, Samsung Securities estimates

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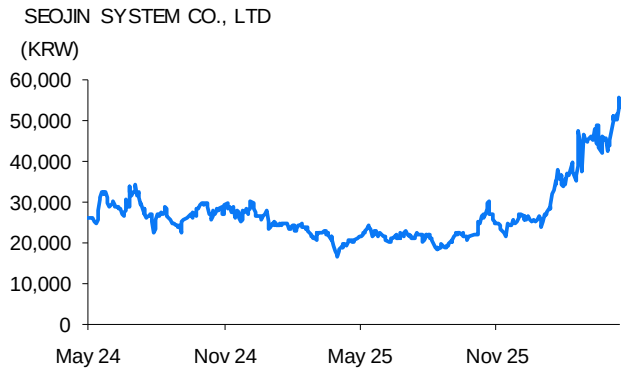
Target price changes in past two years



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