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China Semiconductors

China Semicap: Local WFE Vendors Gear Up for Hybrid Bonding



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With export controls preventing China from accessing EUV lithography tools, further feature-size scaling using DUV has become increasingly challenging. As a result, the local semis industry is placing greater emphasis on advanced packaging to sustain improvements in chip performance. In particular, **hybrid bonding** (HB) has emerged as a promising technology, as that technology will be needed across Logic (LogicFolding), NAND (Xtacking), DRAM ($4F^2$) in China. We highlight recent development from NAURA, AMEC and Piotech in HB tools in this report. **OP on all three names.**

Piotech is the clear leader in HB, with their W2W HB tools already deployed in 3D NAND. The technology is developed through its controlled subsidiary Tuojing Jianke (拓荆键科) since 2018, with a product portfolio spanning bonding, surface preparation and supporting metrology. Its flagship Dione 300 W2W HB system has been adopted by YMTC and received repeat orders, while the Propus 300 surface-preparation tool has also been commercialized. The Pleione 300 D2W HB platform remains under customer qualification. HB revenue reached RMB 136mn in 2025, up 42% YoY, albeit from a low base. Importantly, Jianke secured up to RMB 450mn of investment from China's Big Fund III, which became its second-largest shareholder with a 12.71% stake, providing strong validation of its 3D integration technology and reinforcing the localization outlook for HB equipment.

AMEC continue to strengthen its investment in iSABers (青禾晶元). On 13 October, AMEC announced plans to invest up to RMB 35mn in iSABers, increasing its stake to more than 7% at an approximately RMB 7bn post-money valuation (link). Unlike most domestic HB start-ups, iSABers has already demonstrated meaningful commercialization, generating RMB 156mn of revenue in the first seven months of 2026. Its portfolio covers surface-activated bonding (SAB), wafer-to-wafer HB, and chip-to-wafer HB, with the flagship SAB82 platform supporting sub-10μm copper-to-copper interconnect pitch. We view the investment primarily as a strategic move that strengthens AMEC's participation in the emerging hybrid-bonding ecosystem without requiring a full acquisition.

NAURA recently announced the acquisition of a small start-up Beijing Nuohe Jianwei (诺合键维). On 16 October, NAURA announced the acquisition of 100% of Nuohe for RMB 404.6mn in cash (link). Nuohe was formed in 2025 through the acquisition of a hybrid-bonding equipment business and related technology assets from a company called Accuracy, and has built capabilities in optical alignment, compensation algorithms, motion and vibration control, and bond-head design. According to the company, its tools have achieved nanometre-level alignment accuracy, secured repeat orders, and are undergoing evaluation by multiple leading customers. While the business remains pre-scale and loss-making, the acquisition highlights NAURA's intention to establish a position in next-generation 3D integration and advanced packaging. The valuation premium paid reflects management's expectation of future commercialization and growth in hybrid-bonding demand.

See the Disclosure Appendix of this report for required disclosures, analyst certifications and other important information. Alternatively, visit our Global Research Disclosure Website.
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BERNSTEIN TICKER TABLE

			16 Oct 2026		TTM	Reported EPS				Reported P/E (x)	
Ticker	Rating	Cur	Closing Price	Price Target	Rel. Perf.	Cur	2025A	2026E	2027E	2025A	2026E	2027E
688012.CH (AMEC)	O	CNY	295.22	660.00	47.5%	CNY	2.28	5.30	7.26	129.4	55.8	40.6
002371.CH (NAURA)	O	CNY	593.63	1,380.00	31.7%	CNY	5.66	10.11	19.92	104.8	58.7	29.8
688072.CH (Piotech)	O	CNY	663.00	1,200.00	152.3%	CNY	3.32	10.18	16.61	199.7	65.1	39.9
ASIAX			1,820.54									

O - Outperform, M - Market-Perform, U - Underperform, NR - Not Rated, CS - Coverage Suspended

Source: Bloomberg, Bernstein estimates and analysis.

INVESTMENT IMPLICATIONS

We rate NAURA, AMEC, Piotech Outperform.

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DETAILS

POSITIONING OF LOCAL WFE VENDORS FOR THE HYBRID-BONDING ERA

AI demand is accelerating the adoption of hybrid bonding, and we expect it to become a core process in advanced packaging. The scaling of AI training and inference clusters is driving higher interconnect density requirements across high-bandwidth memory (HBM), logic devices, and the advanced-packaging architectures that connect them. As bump pitch shrinks, thermo compression bonding remains viable at roughly 40–10μm, but, below 10μm, the industry increasingly adopts hybrid bonding, which simultaneously joins copper and dielectric interfaces. The process is already used in 3D NAND, where an array wafer is bonded to a CMOS wafer, in emerging 4F² DRAM architectures, where the cell wafer is bonded to peripheral CMOS, and in Huawei's latest LogicFolding chip. Future HBM generations and many chiplet-based packaging schemes rely on the die-to-wafer variant of the same technology. In our view, the larger equipment opportunity in China lies in wafer-to-wafer applications, as NAND, 4F² DRAM, and LogicFolding are inherently wafer-scale manufacturing flows. This helps explain why domestic equipment platforms are now increasing their exposure to W2W hybrid bonding. The recent transactions are consistent with that trend. Although the disclosures provide no information on market share, shipment volumes, or production yields, we believe commercial hybrid-bonding deployment will attract more and more participants from local vendors.

Competition in semiconductor equipment is gradually shifting from mature front-end process tools toward the broader equipment ecosystem required for 3D integration. Domestic substitution in etch, deposition, and cleaning equipment has already advanced significantly through companies such as NAURA, AMEC, and Piotech. The next competitive battleground is the set of process technologies required after the device layer is formed: hybrid bonding, TSV/TGV/RDL-related deposition and etch, surface activation, and the metrology surrounding bond formation. The three transactions reflect different approaches to addressing that opportunity. NAURA is acquiring a bonding platform that was previously outside its consolidation perimeter. AMEC is increasing its exposure through a minority investment in an independent bonding specialist with both wafer-to-wafer and chip-to-wafer capabilities. Piotech is expanding around a bonding franchise it already controls, integrating complementary deposition and etch technologies into its portfolio. While the transactions differ in structure, they point toward the same strategic direction: building a more complete 3D-integration equipment offering.

More broadly, the industry has been evolving from single-tool import substitution toward platform integration and advanced-packaging system capabilities, a shift that favors established equipment vendors. Once customers qualify an integrated process flow rather than an individual tool, the competitive position of standalone equipment suppliers becomes more challenging. Large platform companies are better positioned to fund lengthy qualification cycles, absorb temporary losses during market introduction, and offer adjacent process steps as part of a broader solution. Smaller specialist vendors remain important sources of innovation at the tool level, but customer access, balance-sheet strength, and the ability to provide process suites increasingly reside with the leading platforms. These transactions extend that advantage into 3D integration.

Within the past week, NAURA and AMEC each announced transactions related to Hybrid Bonding, although the target assets and levels of control differ. AMEC Lingang plans to invest up to RMB 35mn in iSABers' current funding round for a 0.5% stake, which would increase its ownership to more than 7% based on a post-money valuation of RMB 7bn; the definitive agreement has not yet been signed. NAURA's board approved the cash acquisition of 100% of Beijing Nuohe Jianwei for RMB 404.6mn from the Equipment Industry M&A Fund II. Nuohe, incorporated in April 2025, develops hybrid bonding equipment. Neither the AMEC nor the NAURA transaction requires shareholder approval. Piotech's similar step was the Sep 2025 financing of Tuojing Jianke (Haining), the subsidiary that carries the advanced-bonding franchise. The round was up to RMB 1.04bn at an agreed pre-money valuation of RMB 2.5bn. Piotech subscribed up to RMB 450mn and remained the controlling shareholder, at over 53% after the round. All these developments are still early stage, and we don't think local tools can surpass the global tools in performance, but clearly we see an increasing emphasize from local WFE vendors on advanced packaging.

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EXHIBIT 1: **Transaction Summaries**

	AMEC	NAURA	Piotech
Company	iSABers	Beijing Nuohe Jianwei	Tuojing Jianke
Post-deal Valuation	RMB 7bn	RMB 404.6mn	RMB 3.54bn
Disclosure	13-Oct-26	16-Oct-26	Announced at 12 Sep 2025; company dates completion to Oct 2025
Subject	0.5% of the current Qinghe Jingyuan round, AMEC Lingang holding 7.0718% after the round	100% of Beijing Nuohe Jianwei	Cappital increase in subsidiary Tuojing Jianke (Haining); Piotech holding about 53.57% after the round
Business	Wafer bonding, die bonding and surface treatment, including W2W and C2W hybrid bonding	Hybrid-bonding equipment	Advanced bonding for 3d integration: hybrid bond, fusion bond, and associate metrology
Consideration	Up to RMB 35mn (round size RMB 250mn)	Cash, RMB 404.6mn	Round of up to RMB1.04bn; agreed pre-mony RMB 2.5bn; Piotech up to RMB 450mn
Accounting	Minority interest; equity accounted	Consolidated	Consolidated
Status	Approved by the board; a shareholder vote is not required. The investment aggreement has not been signed	Approved by the board; a shareholder vote is not required	Completed

Source: Company reports, Bernstein analysis



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PIOTECH: UP TO RMB 1.04BN FOR HYBRID BONDING, REINFORCING COVERAGE IN 3D INTEGRATION

On 12 September 2025, Piotech announced a capital increase at Tuojing Jianke (Haining), its controlled subsidiary focused on advanced bonding equipment. The financing totaled up to RMB 1.04bn and was completed at an agreed pre-money valuation of RMB 2.5bn. Piotech subscribed for up to RMB 450mn of newly issued capital, comprising RMB 270.9mn of assessed receivables owed by Jianke and RMB 179.1mn in cash. Following completion, Piotech's ownership remained approximately 53.57%, and Jianke continued to be consolidated. The company indicated that the financing closed in October 2025, with the corresponding industrial-registration changes completed on 12 November 2025.

Established in September 2020, Jianke develops advanced bonding equipment for 3D integration, including hybrid bonding, fusion bonding, and related metrology solutions. Its product portfolio includes wafer-to-wafer hybrid bonding, wafer-to-wafer fusion bonding, die-to-wafer surface preparation, die-to-wafer hybrid bonding, bond-overlay metrology, and laser debonding following permanent bonding. According to the filing, Jianke has shipped systems to customers in the advanced memory, logic, and image-sensor markets. The company generated revenue of RMB 97.3mn in 2024 and reported a net loss of RMB 2.1mn.

On the same day, Piotech separately announced a proposed placement of up to RMB 4.6bn at the listed-company level to fund a deposition-equipment manufacturing base, an R&D centre, and working capital. While that placement would increase the parent company's share count, it is unrelated to the Jianke financing. Jianke was already consolidated prior to the September 2025 transaction and remained within Piotech's consolidated reporting perimeter thereafter.

EXHIBIT 2: **Piotech Dione 300 W2W HB System**



Source: Company reports, Bernstein analysis

EXHIBIT 3: **Piotech Propus 300 Surface-preparation System**



Source: Company reports, Bernstein analysis

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AMEC: UP TO RMB 35MN, TAKING THE ISABERS STAKE TO OVER 7%

AMEC Lingang intends to subscribe for 0.50% of iSABers' newly issued registered capital for consideration of up to RMB 35mn. A total of 18 investors are participating in the round, investing RMB 250mn in aggregate. The transaction is based on a pre-money valuation of RMB 6.75bn. Upon completion, AMEC Lingang's ownership stake would increase to 7.07% from 6.82% prior to the financing.

In March 2026, iSABers completed an approximately RMB 500mn strategic financing round jointly led by AMEC and Firstred Capital. The current round represents a follow-on financing at the same private-market valuation. The filing notes that the definitive investment agreement has not yet been signed, and that the final investor list, investment amounts, and ownership percentages remain subject to definitive documentation. Chairman Gerald Yin serves as a director of iSABers and recused himself from the board vote. The transaction does not constitute a major asset restructuring and does not require shareholder approval.

Compared with Nuohe Jianwei, iSABers has demonstrated a meaningful revenue ramp as a bonding equipment company. According to unaudited figures disclosed in the AMEC filing, the company generated RMB 93.7mn of revenue in 2025, with a net loss of RMB 182mn. For the seven months ended 31 July 2026, revenue reached RMB 155.8mn, while the net loss narrowed to RMB 113mn.

iSABers was incorporated in Tianjin on 8 July 2020. Based on the filing and contemporaneous industry coverage, its product portfolio comprises three primary technology platforms: room-temperature surface-activated bonding (SAB) for heterogeneous materials; SAB62 hydrophilic and hybrid bonding solutions targeting POI, SOI, MEMS, and 3D image-sensor applications; and SAB82 chip-to-wafer hybrid bonding systems featuring sub-10μm copper-to-copper interconnect pitch and known-good-die capability, primarily aimed at chiplet applications. AMEC characterises the investment as part of its industry strategy and collaboration efforts. Proceeds from the financing will be used to support the R&D, marketing, and delivery of hybrid-bonding and atom-beam equipment. Given the minority nature of the investment, iSABers will not be consolidated, nor does the transaction materially expand AMEC's etch or deposition equipment portfolio.

The RMB 6.75bn pre-money valuation, compared with revenue of RMB 155.8mn in the first seven months of 2026 and continued operating losses, reflects a venture-style growth valuation. At this valuation, RMB 35mn secures only a 0.5% incremental stake. We therefore view the investment primarily as a strategic portfolio holding rather than an operating acquisition.

EXHIBIT 4: **SAB62 W2W Hybrid Bonding Equipment**



Source: Company reports, Bernstein analysis

EXHIBIT 5: **SAB82 C2W/W2W Hybrid Bonding Equipment**



Source: Company reports, Bernstein analysis

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NAURA: OVER RMB 400MN CASH FOR 100% OF A HYBRID-BONDING EQUIPMENT COMPANY

NAURA Microelectronics, a wholly owned subsidiary of NAURA, has agreed to acquire 100% of Nuohe Jianwei in cash from the Equipment Industry M&A Fund II. Nuohe was incorporated on 22 April 2025 with registered capital of RMB 350mn. Following its establishment, the company acquired the assets, intellectual property, operating business, and engineering team associated with a hybrid-bonding equipment platform. Upon completion of the transaction, the business will be consolidated into NAURA's operations.

The financial profile remains characteristic of an early-stage equipment company. Audited 2025 revenue was RMB 19.2mn, with a net loss of RMB 29.9mn. In 1H26, the company reported no revenue, a net loss of RMB 9.4mn, and shareholders' equity of RMB 311mn. Liabilities are minimal. According to the filing, losses primarily reflect ongoing product iteration, customer qualification, and market-development efforts, with R&D spending continuing to outpace commercial revenue. The filing highlights capabilities in optical alignment, compensation algorithms, motion and vibration control, and bond-head design. Management states that shipped systems have achieved nanometer-level alignment accuracy, repeat orders have already been secured, and additional customer qualifications and potential orders are under discussion with leading domestic customers. No information was disclosed regarding customers, shipment volumes, or average selling prices.

The transaction was valued applying the income approach. As of the 31 January 2026 valuation date, book equity within the valuation scope was RMB 318.4mn, while the asset-based valuation was RMB 323.3mn. The income approach yielded an equity value of RMB 404.6mn, representing a premium of RMB 86.1mn, or 27.0%, over book value. Transaction consideration was set equal to the income-based valuation. The acquisition will be funded entirely with internal cash resources, with 95% of the consideration payable within 20 business days after closing conditions are satisfied or waived and the remaining 5% payable within 20 business days following completion of the post-closing audit. The valuation premium relative to the asset-based approach effectively reflects expectations for future commercialization and shipment growth.

The acquisition constitutes a related-party transaction. Equipment Industry M&A Fund II was established on 30 December 2024 with registered capital of RMB 3.1bn. The general partner is Beijing Nuohua Capital. NAURA Innovation Investment holds a 16.45% interest in the fund. NAURA's Chairman Zhao Jinrong serves on the fund's investment committee and recused himself from the board vote. Excluding the current acquisition, NAURA's related-party transactions with the fund totaled RMB 63.9mn from the beginning of 2026 through the announcement date. Independent directors concluded that the consideration was supported by an independent valuation report. The transaction does not constitute a major asset restructuring and does not require shareholder approval.

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VALUATION METHODOLOGY

Advanced Micro-Fabrication Equipment Inc China

We value AMEC at a PT of CNY 660 with 39x Price to EPS multiple, based on our estimate of 2028 earnings per share of RMB 16.89.

NAURA Technology Group Co Ltd

We value NAURA at a PT of CNY1,380 with 32x Price to EPS multiple, based on our 2028 earnings per share of RMB 43.56.

Piotech Inc

We value Piotech at a PT of CNY 1,200 with 36x Price to EPS multiple, based on our estimate of 2028 EPS of RMB 33.74.

RISKS

Advanced Micro-Fabrication Equipment Inc China

Downside risks:

- Worse-than-expected MOCVD revenue decline due to sluggish LED equipment demand.
- The capital expenditure for fabs in China did not meet the expected targets.
- Slower-than-expected domestic equipment localization progress due to unforeseen technical difficulties in specific manufacturing processes or production capacity bottlenecks of domestic equipment manufacturers.

NAURA Technology Group Co Ltd

Downside risks:

- Prolonged down cycles in LED and photovoltaic (PV) industries could negatively impact NAURA's non-Wafer Fab Equipment and electronic components businesses.
- The capital expenditure for fabs in China did not meet the expected targets.
- Slower-than-expected domestic equipment localization progress due to unforeseen technical difficulties in specific manufacturing processes or production capacity bottlenecks of domestic equipment manufacturers

Piotech Inc

Downside risks:

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- Unexpected order losses from key clients due to over-reliance on a few large clients.
- The capital expenditure for fabs in China did not meet the expected targets.
- Slower-than-expected domestic equipment localization progress due to unforeseen technical difficulties in certain manufacturing processes or production capacity bottlenecks of domestic equipment manufacturers

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Not Covered (NC) denotes companies that are not under coverage.

Bernstein brand stock ratings are based on a 12-month time horizon.

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The Autonomous brand rates common stocks as indicated below. As our benchmarks we use the Bloomberg Europe 600 Financials Price Return Index (E600BK) and Bloomberg Europe Dev Mkt Financials Large and Mid Cap Price Ret Index EUR (EDMFI) index for developed European banks and Payments, the Bloomberg Europe 600 Insurance Price Return Index (E600IN) for European insurers, the S&P 500 and S&P Financials for US banks and Payments coverage, S5LIFE for US Insurance, the S&P Insurance Select Industry (SPSIINS) for US Non-Life Insurers coverage, the Bloomberg Emerging Markets Financials Large, Mid and Small Cap Price Return Index (EMLSF) for emerging market banks and insurers and Payments, and the Bloomberg Japan Financials Large & Mid Cap Price Return Index (JPFILM) for Japanese Financials. Ratings are stated relative to the sector (not the market).

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on events and developments.

Those denoted as 'Feature' (e.g., Feature Outperform FOP, Feature Under Outperform FUP) are our core ideas.

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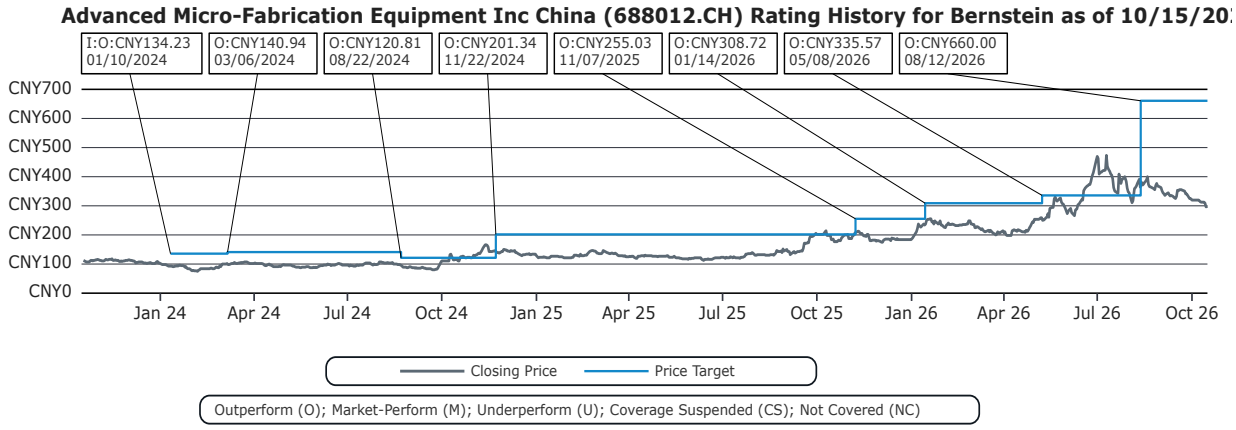
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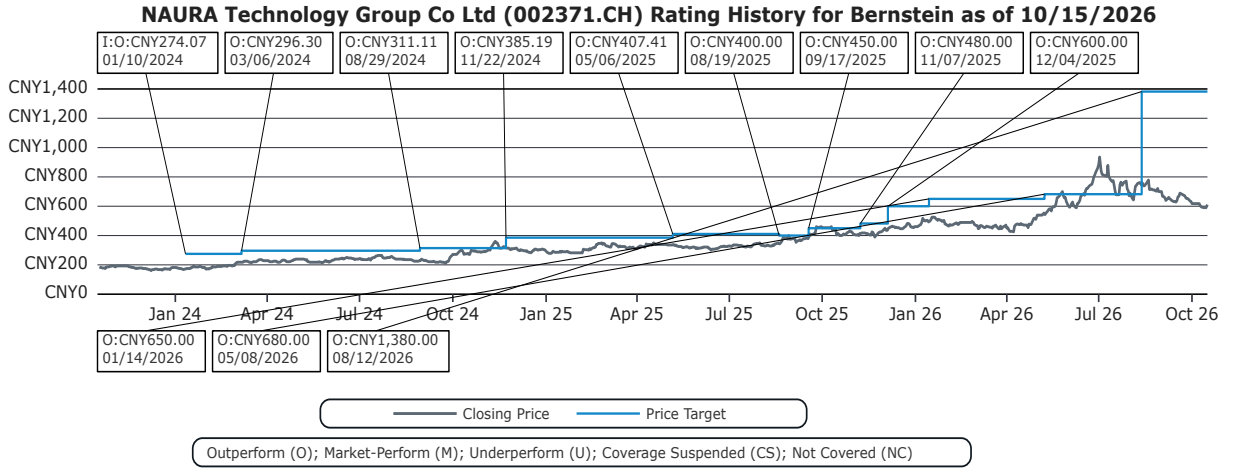
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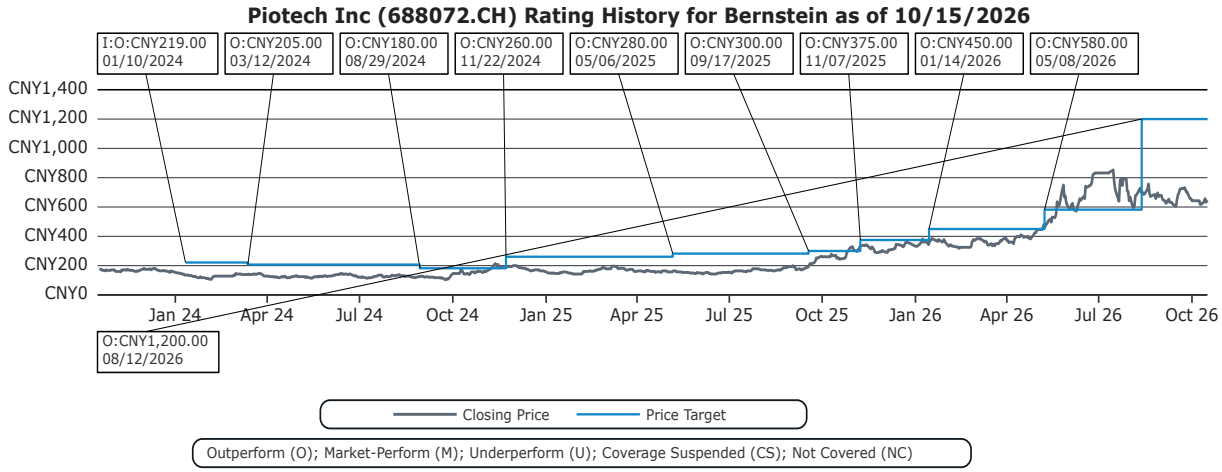
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