China

**Overweight** *(no change)*

### Highlighted Companies

**BYD Co Ltd**
**ADD, TP HK$389.0, HK$210.6 close**

We like BYD because of its strong net profit growth prospects (+26% in FY24F, +15% in FY25F), supported by fast-growing NEV shipments and long-term EV profitability, thanks to costs advantage from in-house battery and semiconductor manufacturing, as well as integrated production capabilities.

**Li Auto Inc**
**ADD, TP HK$272.6, HK$137.0 close**

We believe Li Auto would maintain its market leadership in China's SUVs and NEVs priced above Rmb300k, thanks to its leading extended-range electric vehicle (EREV) technology. We are also optimistic about its battery electric vehicle (BEV) model Li MEGA, which is scheduled to start deliveries in Feb 2024F.

**NIO Inc**
**ADD, TP HK$105.0, HK$65.8 close**

We are positive on NIO due to its market-leading position in China's premium sedan segment, thanks to its unique battery swap technology and industry-leading autonomous driving system.

### Summary Valuation Metrics

| P/E (x) | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|
| BYD Co Ltd | 18.49 | 14.73 | 12.77 |
| Li Auto Inc | 29.76 | 21.88 | 16.35 |
| NIO Inc | NA | NA | NA |
| **P/BV (x)** | **Dec-23F** | **Dec-24F** | **Dec-25F** |
| BYD Co Ltd | 6.82 | 7.25 | 6.43 |
| Li Auto Inc | 4.64 | 3.69 | 3.07 |
| NIO Inc | 8.20 | 15.15 | 15.14 |
| **Dividend Yield** | **Dec-23F** | **Dec-24F** | **Dec-25F** |
| BYD Co Ltd | 0.11% | 0.14% | 0.16% |
| Li Auto Inc | 0.00% | 0.00% | 0.00% |
| NIO Inc | 0.00% | 0.00% | 0.00% |

Analyst

**Ray KWOK**
**T** (852) 2532 1113
**E** ray.kwok@cgs-cimb.com

# Autos

## Bright prospects for China's NEV exports

- We expect China's new energy vehicle (NEV) exports to be triple to 3.9m units in 2025F, from 1.3m units in 2023F.
- Europe and Southeast Asia remain the largest markets for Chinese NEV manufacturers outside China.
- Chinese EVs have a significant competitive technology edge, which will support their strong shipment growth in EU and SEA in the coming years .
- We reiterate our Overweight call on China's EV sector as we expect strong NEV sales growth driven by domestic NEV penetration and export growth.

### China's NEV exports expected to reach 3.4m units in 2025F

According to China Association of Automobile Manufacturers (CAAM), China exported a total of 2.14m vehicles and 534k NEVs in 1H23. We expect total vehicle and NEV exports to reach 5.3m and 1.3m, respectively, in 2023F, up 67% and 91% yoy. We forecast China's NEV exports to jump to 2.5m units (+94%) in 2024F and 3.9m units (+55%) in 2025F, with the help of supportive government policies for the EV market in the EU and Southeast Asia (SEA), and growing brand recognition for Chinese electric vehicles (EVs).

### Made in China EVs break into Europe and Southeast Asia

Chinese EVs have been gaining significant market share in the EU, rising from c.1.1% of EU's total EV market in 2020 to c.5.6% in 1H23 (source: European Commission, EC), thanks to the affordable price of high-quality EVs from BYD, NIO, and XPeng. We estimate Chinese EVs will continue to gain market share in the EU, reaching 15% in 2025F. We believe the EC's investigation into Chinese government policy benefits that could lead to unfair competition should be brief due to 1) rapid rise in demand for Chinese EVs in the EU, and 2) growing recognition of Chinese-branded EVs. Meanwhile Chinese EV makers are seeing strong growth potential in Thailand, Malaysia, Vietnam, and Indonesia. These countries offer attractive incentives, leading to a boom in EV sales in 2023. According to Counterpoint (an industry market research provider), Chinese brands have captured 75% of the EV market share by sales in SEA in 1H23, a significant increase from 38% in 2022.

### China's BYD gains market share from foreign brands

BYD shipped 242k EV units overseas in 2023, accounting for c.19% of China's total NEV shipment abroad in 2023. We estimate BYD to grow its exports further in 2024F and 2025F, with deliveries of c.500k and c.800k units, respectively, supported by its upcoming production bases in Thailand and Brazil. BYD sedans and hatchbacks are popular overseas, with the Atto 3 being the top-selling model in SEA in 1H23, according to EV Magazine.

### Chinese EVs have a significant competitive technological edge

We note that China's EV industry has a competitive edge in nearly all aspects of the EV industry value chain due to support from the Chinese government's massive investment in its EV ecosystem in the past decade. This includes intelligent cockpit, advanced driver assistance system (ADAS), auto semiconductor, battery management system, and electricity management EIC system (battery, electric motor, and electronic control).

### Reiterate Overweight on China's smart EV sector

We reiterate Overweight on China's smart EV sector due to the country's sustainable NEV sales growth, driven by continued domestic NEV penetration and export growth. Our sector top picks remain BYD and Li Auto for their robust EV deliveries and EV profit margins. Strong NEV sales in China, and a drop in EV battery material prices are among the sector re-rating catalysts. Sector downside risks include a weak China economic outlook, which will affect consumer sentiment for NEVs, and fierce competition reducing EV manufacturers' profitability.

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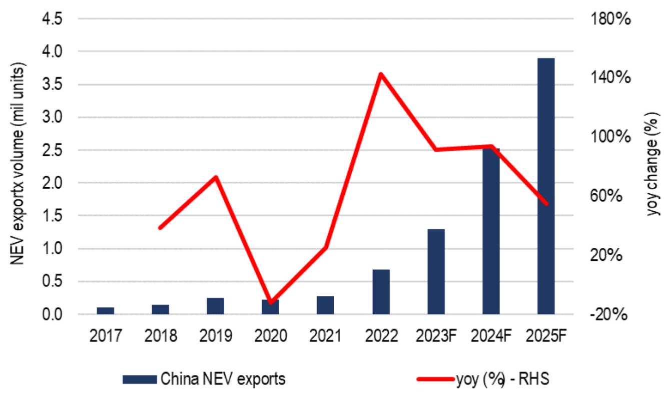
# KEY CHARTS

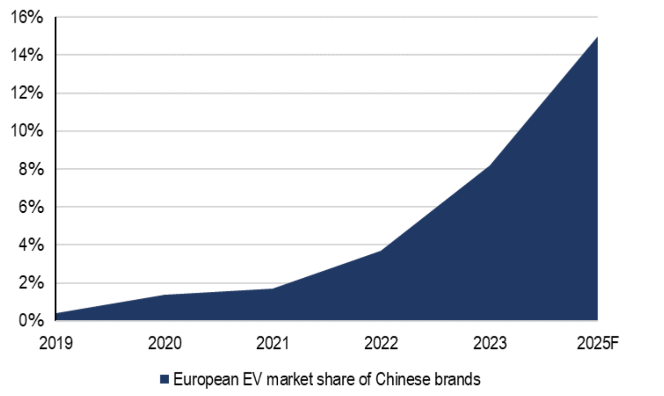
## China's NEV exports in 2017-25F

We anticipate that China's overall vehicle exports would reach c.5.2m units in 2023F, with NEVs accounting for around 25% of these exports, equivalent to c.1.3m vehicles. Furthermore, we forecast a 21% yoy increase in China's total vehicle exports, reaching 6.3m units in 2024F, while NEV exports are expected to experience a significant surge of 94% yoy, reaching 2.5m units. Looking ahead to 2025F, we predict China's total vehicle exports to reach c.7.8m units, and NEV exports reaching 3.9m units, with NEVs comprising 50% of the total China's vehicle exports.



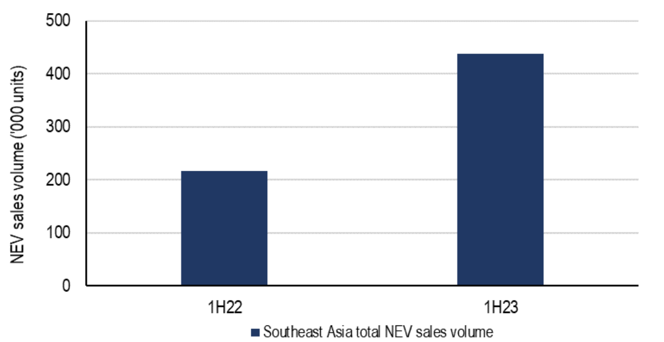

## Chinese brands' market share in European market

The growth of electric vehicles (EVs) exports from China is expected to maintain its momentum in 4Q23F, as projected by the European Commission, whose estimations indicate that China's share of EVs sold in Europe has increased to c.8% in 2023F, with further growth to reach around 15% by 2025F. These figures highlight the continued expansion of China's presence in the European EV market, in our view.



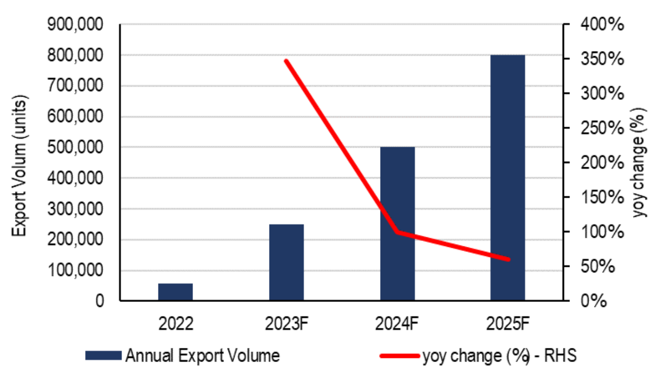

## Market share of EV brands in Thailand (Jan 2023 to Jul 2023)

Chinese EV brands, such as BYD, Neta, GWM's ORA, and SAIC's MG, have gained significant market share in Southeast Asia, making it China's third-largest EV export destination by quantity. These brands accounted for c.75% of the market share in SEA during the first six months of 2023.




## BYD's overseas deliveries by year (2022-2025F)

We believe BYD would achieve strong performance in its overseas markets, with its deliveries reaching 500k units (+106% yoy) in 2024F and 800k units (+60% yoy) in 2025F, following the completion of its production bases in Thailand (scheduled for 2024F), Brazil (scheduled for 2025F), and Hungary (scheduled for 2027F).




SOURCES: CGS-CIMB RESEARCH ESTIMATES, CAAM, EUROPEAN COMMISSION, AUTOLIFE THAILAND, BYD REOPRTS

# Bright prospects for China's NEV exports

## Investment summary

### China's NEV exports to reach 3.4m units in 2025F

According to China Association of Automobile Manufacturers (CAAM, , China new energy vehicle (NEV) exports jumped 160% yoy to 534k units in 1H23 to become the world's largest vehicle exporter, owing to technology advancement, market share gains outside China, and improved brand recognition in Europe (Belgium, UK, Spain) and Southeast Asia (include Thailand, Malaysia, Singapore, Indonesia, and Vietnam etc.,). Government policies revolving around replacing ICE vehicles with NEVs, notably in Europe and SEA, is the key factor for the surge. As of 1H23, China's NEV exports penetration rate has recovered to pre-Covid level of 25%, according to CAAM. We believe it will continue to trend upward with total vehicle exports and NEV exports reaching 5.2m and 1.3m units in 2023, respectively. We estimate China's total vehicle exports to rise 21% yoy to 6.3m units and total NEV exports to jump 94% yoy to 2.5m units in 2024F. We estimate further acceleration in 2025F, with China's total vehicle exports reaching 7.8m and NEVs reaching 3.9m units, underpinned by competitive EV models in terms of price to quotient ratio, owing to a significant cost advantage in manufacturing.

In 2023, China's NEV exports made up 25% of its total Chinese NEV sales (source: CAAM). We believe this proportion will grow further as China keep expanding its NEV production in China and overseas.

### Made-in-China NEVs break into Europe

Despite recent scrutiny about EVs manufactured in China imported into Europe, Chinese EVs are gaining market share in the EU, from 1.1% in 2020 to 4.1% in 2022, and further increased to c.5.6% in 1H23, according to European Commission (EC). We estimate it would rise to c.8% in 2023F and c.15% in 2025F, owing to strong EV overseas deliveries from BYD (1211.HK. Add, TP: HK$389.0), NIO (9866.HK, Add, TP: HK$105.0) and XPeng (9868.HK, Add, TP: HK$87.20). The EC is investigating policy benefits by the Chinese government, mainly revolving around tax breaks, production subsidies, and granted assets, which are offered to make Chinese brand-involved EVs cheap on purpose, leading to potentially unfair competition in the EV race. We believe the investigation would not last long due to the market's demand for more affordable high-quality EVs and the wide recognition of Chinese-brand EVs in Europe.

### Fast-growing SEA EV market attracts China EV makers

Chinese EV manufacturers see great EV export growth potential in Southeast Asian countries as their governments are offering attractive incentives (tax cuts on imported EVs and tax exemptions for EV manufacturers), which led to EV sales boom in 2023. As of 1H23, Chinese automotive companies, namely BYD, Neta, Great Wall Motor's ORA and SAIC-MG, have gained 75% of the EV market share in Southeast Asia (SEA) by sales, increasing 37% pts as compared to 38% in 2022, according to Counterpoint.

### China's BYD gains market share from foreign brands

BYD's sedans and hatchbacks are the most popular in the overseas market, while Song and Atto 3 (Yuan series) are the top 2 export models, according to Counterpoint. In Southeast Asia region, BYD's Atto 3 ranked number 1 in sales, winning market share from VinFast's, Vietnam-based EV maker, VF e34 and VF8. BYD won c.20% pts of market share in 2022 and c.34% in 1H23, making it the EV leader in SEA, mainly due to its competitive prices for Battery EV (BEV) and Plug-in Hybrid EV (PHEV) models. In 2023, BYD shipped 243k EVs to overseas markets, comprising 19% of China's total NEV shipments to the overseas market for the year (while Tesla's Shanghai Gigafactory made up of c.30% of China's total NEV export shipments), based on data from CAAM. We expect BYD to excel in its overseas performance in 2024F and 2025F, reaching deliveries of 500k and 800k units, respectively, as a result of its upcoming production bases in Thailand (completion in 2024F) and Brazil (completion in 2025F) enhancing the company's global supply chain across Southeast Asia and Latin America (LATAM).

## China EV technology advancement

Chinese auto brands accounted for nearly half of all EVs sold globally in 2022 (source: CAAM). Thanks to the country's massive investment in its EV ecosystem about a decade ago, China's EV industry has a competitive edge in nearly all aspects of the industry value chain, including intelligent cockpit, advanced driver assistance system (ADAS), auto semiconductor, battery management system, as well as electricity management EIC system (battery, electric motor, and electronic control, Fig 31).

## Reiterate Overweight on China's smart EV sector

We reiterate Overweight on China's smart EV sector due to the country's sustainable NEV sales growth, which is being driven by continued domestic NEV penetration and export growth. Our sector top picks remain BYD and Li Auto for their robust EV deliveries and EV profit margins. Strong NEV sales in China, further NEV penetration growth and a drop in EV battery material prices are among the sector re-rating catalysts.

**Sector risks:** Downside risks include 1) a weak China economic outlook which could dampen consumer sentiment for NEVs, and 2) fiercer competition which could reduce EV manufacturers' profitability.

### Figure 1: Peers comparison

| Company | Bloomberg Code | Recom. | Price (local curr) | Target price (local curr) | Upside (%) | Market Cap (US$m) | P/E (x) CY2023F | P/E (x) CY2024F | P/E (x) CY2025F | 3-year EPS CAGR % | P/BV (x) CY2023F | P/BV (x) CY2024F | ROE (%) CY2023F | ROE (%) CY2024F | EV/EBITDA (x) CY2023F | EV/EBITDA (x) CY2024F | Yield (%) CY2023F | Yield (%) CY2024F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **China Start-up EV makers** | | | | | | | | | | | | | | | | | | |
| Li Auto | 2015 HK | Add | 137.00 | 272.6 | 99% | 37,204 | 24.5 | 18.9 | 14.7 | 620% | 4.6 | 3.7 | 21.7% | 21.7% | 20.6 | 12.7 | 0.0% | 0.0% |
| **NIO Inc** | **9866 HK** | **Add** | **65.80** | **105.0** | **60%** | **17,453** | **N/A** | **N/A** | **132.3** | **N/A** | **8.2** | **15.2** | **-86.5%** | **-66.5%** | **N/A** | **N/A** | **0.0%** | **0.0%** |
| XPeng Inc | 9868 HK | Add | 54.95 | 87.2 | 59% | 13,268 | N/A | N/A | (46.4) | N/A | 2.8 | 3.6 | -26.5% | -18.4% | N/A | N/A | 0.0% | 0.0% |
| Zhejiang Leapmotor | 9863 HK | Not Rated | 32.65 | N/A | n.a. | 4,674 | N/A | N/A | N/A | -68.5% | 4.6 | 6.3 | -54.9% | -62.4% | na | na | 0.0% | 0.0% |
| **Average** | | | | | | | **24.5** | **18.9** | **33.5** | **N/A** | **5.0** | **7.2** | **-36.6%** | **-31.4%** | **20.6** | **12.7** | **0.0%** | **0.0%** |
| **Electric vehicle manufacturers** | | | | | | | | | | | | | | | | | | |
| BYD Co. | 1211 HK | Add | 210.60 | 389.0 | 85% | 78,591 | 18.5 | 14.7 | 12.8 | 34.4% | 6.8 | 7.3 | 32.3% | 47.7% | 7.9 | 6.7 | 0.1% | 0.1% |
| Tesla Inc | TSLA US | Not Rated | 248.42 | N/A | n.a. | 789,708 | 80.8 | 64.3 | 46.9 | 10.4% | 15.1 | 12.3 | 19.0% | 20.5% | 49.8 | 39.9 | 0.0% | 0.0% |
| Rivian Automotive | RIVN US | Not Rated | 21.10 | N/A | n.a. | 20,208 | na | na | na | -28.1% | 2.1 | 2.1 | -43.1% | -44.2% | na | na | 0.0% | 0.0% |
| Lucid Group | LCID US | Not Rated | 4.15 | N/A | n.a. | 9,501 | na | na | na | 1.9% | 1.9 | 3.2 | -60.0% | -69.3% | na | na | 0.0% | 0.0% |
| **Average** | | | | | | | **49.6** | **39.5** | **29.9** | **4.7%** | **6.5** | **6.2** | **-13.0%** | **-11.3%** | **28.9** | **23.3** | **0.0%** | **0.0%** |
| **China Automoible manufacturers** | | | | | | | | | | | | | | | | | | |
| Geely Automobile | 175 HK | Not Rated | 8.30 | N/A | n.a. | 10,700 | 15.9 | 11.0 | 8.6 | 21.7% | 0.9 | 0.9 | 6.1% | 8.3% | 4.2 | 3.0 | 2.3% | 3.3% |
| Great Wall Motor | 2333 HK | Not Rated | 9.50 | N/A | n.a. | 23,699 | 10.9 | 8.4 | 6.9 | 5.7% | 1.1 | 1.0 | 10.3% | 12.2% | 12.9 | 10.7 | 3.8% | 5.0% |
| Guangzhou Auto | 2238 HK | Not Rated | 3.59 | N/A | n.a. | 10,370 | 6.0 | 5.3 | 4.7 | -13.1% | 0.3 | 0.3 | 4.8% | 5.8% | 15.4 | 11.0 | 5.9% | 5.5% |
| **Average** | | | | | | | **10.9** | **8.2** | **6.7** | **4.8%** | **0.8** | **0.7** | **7.1%** | **8.7%** | **10.8** | **8.2** | **4.0%** | **4.6%** |
| **Foriegn automobile manufacturers** | | | | | | | | | | | | | | | | | | |
| Kia Motor | 000270 KS | Add | 93,800 | 120,000 | 28% | 28,996 | 4.3 | 4.1 | 4.4 | 17.2% | 0.8 | 0.7 | 20.7% | 18.7% | 0.9 | 0.7 | 4.8% | 4.8% |
| Hyundai Motor | 005380 KS | Add | 193,800 | 290,000 | 50% | 31,521 | 4.4 | 4.4 | 5.0 | 14.1% | 0.6 | 0.5 | 14.1% | 12.6% | 5.7 | 5.5 | 5.7% | 5.7% |
| Toyota | 7203 JP | Not Rated | 2,590.50 | N/A | n.a. | 296,028 | 14.4 | 8.2 | 8.3 | 15.3% | 1.2 | 1.1 | 9.4% | 14.3% | 15.7 | 9.9 | 2.1% | 3.1% |
| BMW | BMW GR | Not Rated | 100.12 | N/A | n.a. | 69,202 | 5.5 | 6.2 | 6.1 | -15.6% | 0.7 | 0.7 | 13.0% | 10.8% | 3.5 | 3.9 | 5.6% | 5.3% |
| Mercedes-Benz Group | MBG GR | Not Rated | 62.48 | N/A | n.a. | 72,197 | 4.8 | 5.3 | 5.2 | -3.5% | 0.7 | 0.7 | 15.3% | 13.3% | 1.5 | 1.5 | 8.2% | 7.8% |
| Volkswagen | VOW GR | Not Rated | 115.80 | N/A | n.a. | 62,407 | 3.8 | 3.9 | 3.6 | -1.1% | 0.3 | 0.3 | 8.9% | 7.9% | 1.0 | 0.9 | 7.6% | 7.6% |
| Ford | F US | Not Rated | 12.16 | N/A | n.a. | 48,676 | 6.5 | 7.2 | 7.3 | -3.1% | 1.1 | 1.0 | 15.1% | 14.2% | 2.5 | 2.7 | 9.0% | 5.1% |
| General Motor | GM US | Not Rated | 36.05 | N/A | n.a. | 49,370 | 4.8 | 4.8 | 4.6 | -5.2% | 0.7 | 0.5 | 15.4% | 11.5% | 2.7 | 2.6 | 1.0% | 1.3% |
| **Average** | | | | | | | **6.1** | **5.5** | **5.6** | **2.3%** | **0.8** | **0.7** | **14.0%** | **12.9%** | **4.2** | **3.4** | **5.5%** | **5.1%** |
| **Battery manufacturers** | | | | | | | | | | | | | | | | | | |
| CALB | 3931 HK | Not Rated | 17.60 | N/A | n.a. | 3,996 | 52.3 | 20.6 | 20.2 | 41.6% | 0.6 | 0.6 | 2.1% | 4.0% | 18.8 | 13.2 | 0.0% | 0.1% |
| Tianqi Lithium | 9696 HK | Not Rated | 42.60 | N/A | n.a. | 12,330 | 5.8 | 7.9 | 7.6 | -28.3% | 1.0 | 0.9 | 20.3% | 12.8% | 2.3 | 3.5 | 3.4% | 2.7% |
| CATL | 300750 CH | Not Rated | 155.80 | N/A | n.a. | 95,903 | 15.6 | 12.6 | 10.1 | 33.2% | 3.4 | 2.7 | 22.8% | 23.0% | 9.9 | 8.5 | 1.1% | 1.3% |
| EVE Energy | 300014 CH | Not Rated | 40.92 | N/A | n.a. | 11,714 | 17.6 | 12.6 | 9.6 | 36.6% | 2.4 | 2.0 | 13.8% | 16.7% | 14.6 | 10.7 | 0.8% | 1.1% |
| Gotion High-Tech | 002074 CH | Not Rated | 21.00 | N/A | n.a. | 5,244 | 55.9 | 31.3 | 21.1 | 72.7% | 1.5 | 1.4 | 2.8% | 4.8% | 24.4 | 17.5 | 0.0% | 0.1% |
| Shenzhen Desay Battery | 000049 CH | Not Rated | 26.47 | N/A | n.a. | 1,425 | 12.8 | 9.9 | 8.3 | -1.0% | 1.9 | 1.7 | 13.0% | 14.6% | N/A | N/A | 1.9% | 2.0% |
| LG Energy Solution | 373220 KS | Not Rated | 416,000 | N/A | n.a. | 74,316 | 58.2 | 38.0 | 23.5 | 67.9% | 4.7 | 4.2 | 8.4% | 11.7% | 22.4 | 14.5 | 0.0% | 0.0% |
| SK On | 096770 KS | Not Rated | 134,300 | N/A | n.a. | 10,320 | 18.6 | 7.6 | 5.2 | 2.3% | 0.6 | 0.6 | 3.4% | 7.9% | 8.4 | 6.7 | 2.4% | 2.4% |
| Samsung SDI | 006400 KS | Add | 446,500 | 590,000 | 32% | 23,608 | 15.5 | 13.9 | 12.4 | 8.4% | 1.6 | 1.5 | 11.3% | 11.2% | 5.3 | 4.3 | 0.2% | 0.2% |
| **Average** | | | | | | | **28.0** | **17.2** | **13.1** | **25.9%** | **2.0** | **1.7** | **10.9%** | **11.8%** | **13.2** | **9.9** | **1.1%** | **1.1%** |
| **Electric vehicle parts manufactuers** | | | | | | | | | | | | | | | | | | |
| Fuyao Glass | 3606 HK | Not Rated | 38.25 | N/A | n.a. | 13,627 | 16.1 | 14.3 | 12.3 | 14.4% | 2.9 | 2.6 | 18.2% | 18.7% | 11.3 | 9.7 | 3.9% | 4.2% |
| LK Technology | 558 HK | Add | 4.81 | 8.00 | 66% | 847 | 13.0 | 9.6 | 7.1 | 19.1% | 1.6 | 1.4 | 12.7% | 15.1% | 9.8 | 7.5 | 1.6% | 2.1% |
| Times Electric | 3898 HK | Not Rated | 21.30 | N/A | n.a. | 5,828 | 9.1 | 8.0 | 7.0 | 17.4% | 0.7 | 0.7 | 8.3% | 8.3% | 9.9 | 8.6 | 2.9% | 3.2% |
| Qingdao TGOOD Electric | 300001 CH | Not Rated | 21.03 | N/A | n.a. | 3,107 | 49.4 | 40.1 | 30.0 | 32.3% | 3.3 | 3.1 | 6.8% | 7.9% | 20.1 | 17.1 | 0.3% | 0.5% |
| Appotronics | 688007 CH | | | | | | | | | | | | | | | | | |
| Genetec Technology Bhd | GENE MK | Add | 2.31 | 3.60 | 56% | 388 | 20.3 | 16.5 | 13.8 | 19.9% | 3.8 | 3.1 | 21.7% | 20.9% | 15.5 | 12.3 | 0.6% | 0.9% |
| Malaysian Pacific Industries | MPI MK | Reduce | 28.02 | 23.65 | -16% | 1,210 | 44.1 | 27.0 | N/A | N/A | 2.8 | 2.6 | 6.7% | 10.2% | 10.4 | 8.7 | 1.2% | 1.1% |
| Continental AG | CON GY | Not Rated | 75.24 | N/A | n.a. | 16,448 | 10.3 | 8.3 | 6.8 | 23.6% | 1.0 | 1.0 | 10.8% | 11.7% | 4.4 | 3.7 | 2.7% | 3.6% |
| Valeo | FR FP | Not Rated | 13.64 | N/A | n.a. | 3,647 | 11.3 | 6.7 | 4.7 | 51.1% | 0.8 | 0.8 | 7.8% | 11.1% | 3.0 | 2.7 | 3.4% | 4.7% |
| Magna International | MGA US | Not Rated | 59.19 | N/A | n.a. | 16,954 | 10.8 | 8.8 | 7.4 | 21.6% | 1.5 | 1.3 | 13.7% | 15.6% | 6.3 | 5.4 | 3.1% | 3.2% |
| **Average** | | | | | | | **20.5** | **15.5** | **11.1** | **24.9%** | **2.0** | **1.9** | **11.8%** | **13.3%** | **10.1** | **8.4** | **2.2%** | **2.6%** |
| **Automotive software providers** | | | | | | | | | | | | | | | | | | |
| Desay SV | 002920 CH | Not Rated | 118.24 | N/A | n.a. | 9,183 | 43.7 | 31.4 | 23.6 | 36.9% | 8.5 | 7.0 | 20.3% | 23.2% | 36.2 | 25.7 | 0.6% | 0.7% |
| ThunderSoft | 300496 CH | Not Rated | 76.08 | N/A | n.a. | 4,896 | 43.7 | 33.6 | 25.0 | 14.6% | 3.6 | 3.3 | 8.3% | 9.9% | 33.8 | 25.9 | 0.5% | 0.6% |
| **Average** | | | | | | | **43.7** | **32.5** | **24.3** | **25.7%** | **6.1** | **5.1** | **14.3%** | **16.5%** | **35.0** | **25.8** | **0.5%** | **0.7%** |

SOURCES: CGS-CIMB RESEARCH ESTIMATES, BLOOMBERG (PRICE AS AT 03 JAN 2024 )

Note: Estimates for Not rated companies are based on Bloomberg consensus estimates

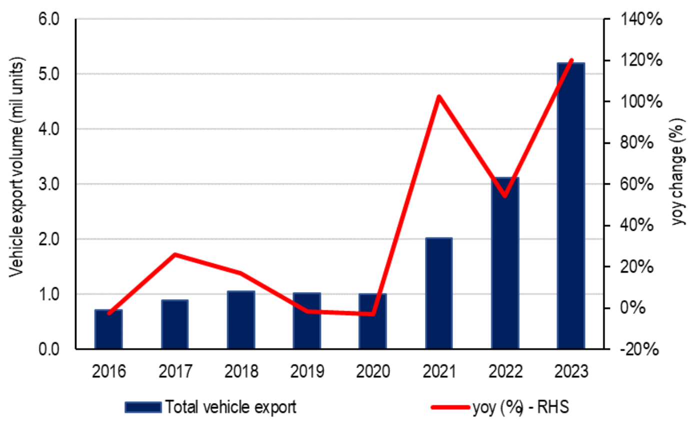
# China's new electric vehicle (NEV) exports

## Strong NEV exports in 2021, 2022, and 2023

**Chinese vehicle manufacturers have been expanding their global presence since 2021.** China's total vehicle exports more than doubled yoy to over 2m vehicles in 2021 (Fig 2), according to China Association of Automobile Manufacturers (CAAM, a China-based automotive association). This was due to 1) the development of the new energy vehicle (NEV) sector in China and globe, 2) the resilience of China's supply chain and 3) China's easing Covid-19 restrictions. Total vehicle exports climbed 54% yoy to 3.1m units in 2022 and jumped 67% yoy to c.5.2m units in 2023 alone (Fig 2). We believe this was due to 1) the technology, design, and manufacturing processes, 2) gaining market share in new regions, especially in emerging markets, and 3) improving the brand recognition of Chinese models in European and Southeast Asian markets.

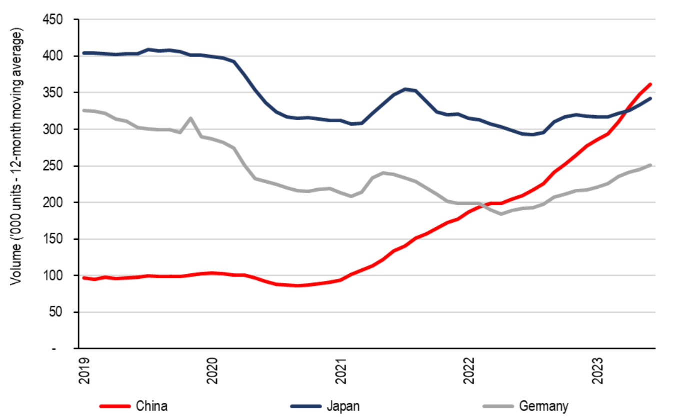
**China has become the world's largest vehicle exporter, surpassing Germany in 2022 and Japan in 1H23**. According to CAAM, overseas shipments of Chinese manufactured vehicles amounted to a total of 2.14m units from Jan to Jun 2023, representing a 120% yoy increase, overtaking long-time leader Japan and claiming an unprecedented first place in vehicle exports (Fig 3).

**Figure 2: China's total vehicle exports volume (2016 to 2023)**




SOURCES: CGS-CIMB RESEARCH, CAAM

**Figure 3: Top 3 countries' vehicle exports volume (12-month moving average in Jan 2019 – Jun 2023)**

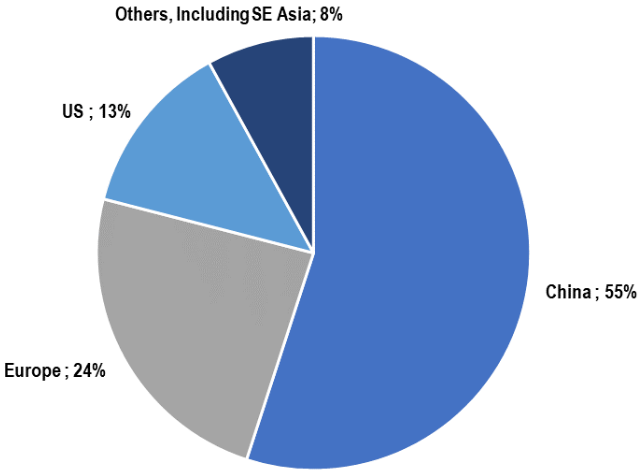



SOURCES: CGS-CIMB RESEARCH, CAAM

**China gained global vehicle market share in 1H23.** Automakers in China have grown their market share in Russia since the war began in the Ukraine. In Russia, over 350k vehicles manufactured in China were imported in 1H23. Moreover, Chinese companies have captured a large market share in Southeast Asia, Australia, and South America. Mexico was the second-largest importer of autos manufactured in China in 1H23, according to CAAM.

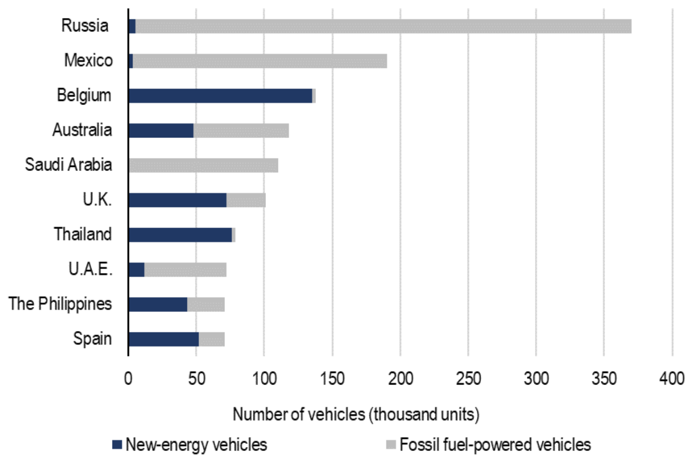
**NEV exports shine, especially in Europe.** Countries in the European region, such as Belgium, the UK and Spain, were among the top 10 list of China's vehicle export countries, and all of the three countries' imported EVs formed more than half of the total imported vehicles in 1H23. The Fig 5 shows China's push into the EV market, especially in Europe, with government policies saying that all Internal Combustion Engines (ICE) vehicles will need to be replaced with new energy vehicles by 2035.

**Figure 4: Global EV sales breakdown by country, by volume (China accounted for c.55% of Global NEV sales), in 1H23**




SOURCES: CGS-CIMB RESEARCH, CANALYS

**Figure 5: China's Top 10 vehicle export countries, by vehicle type, in 1H23**




SOURCES: CGS-CIMB RESEARCH ESTIMATES, CAAM

**Rapid growth of China's NEV exports.** We believe that China becoming the top vehicle exporter in terms of total vehicle exports that was fuelled by the "explosive growth" of NEV exports in 2023.

China's NEV exports rose 164% yoy to 0.53m units in 1H23, representing a 2.6x increase from that of last year (1H22) to account for c.25% of China's total vehicle exports. The yoy surge in vehicle exports in Mar/Apr 2023 was due to the lockdown in Shenzhen city in the same period of 2022. China's NEV exports accelerated further in 2H23F (Jul-Oct 2023), with shipments over 120k units in Oct 2023, as a result of increased export sales in BYD, Neta (unlisted), and Leapmotor (9683 HK, Not Rated) (Fig 6).

**Figure 6: China vehicle exports and NEV exports, by units, Jan to Oct 2023**

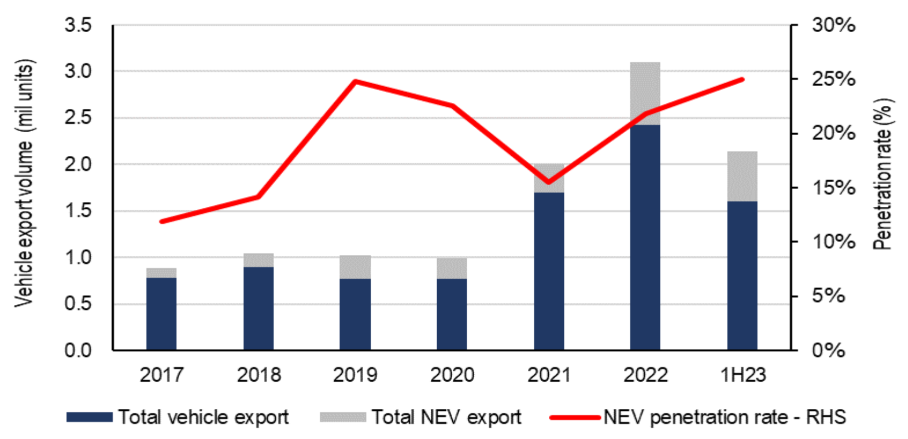
| China Vehicle Exports | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | 1H23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total vehicle exports ('000s) | 301 | 329 | 364 | 376 | 389 | 382 | 2,141 | 392 | 408 | 444 | 488 |
| yoy change (%) | 30% | 82% | 113% | 166% | 59% | 173% | 76% | 35% | 32% | 48% | 44% |
| NEV exports ('000s) | 83 | 87 | 78 | 100 | 108 | 78 | 534 | 101 | 90 | 96 | 124 |
| yoy change (%) | 48% | 80% | 392% | 845% | 151% | 173% | 164% | 87% | 8% | 92% | 14% |

SOURCES: CGS-CIMB RESEARCH, CAAM

**NEV penetration reaches pre-pandemic levels.** As seen in Fig 8 below, NEV penetration started to accelerate in 2018, and accounted for 25% of China's total vehicle exports in 2019. However, due to Covid-19 constraints in China, export volumes were largely and adversely affected, causing the penetration rate to drop to 23% in 2020, and further decrease by 8% pts to 15% in 2021.

Chinese vehicle makers, such as BYD, gained market share in the domestic market and enhanced brand recognition through various joint ventures during the period, and significantly increased export deliveries in 2022. During 1H23, China's NEV exports penetration rate reached 25%, recovering from to the pre-Covid 19 level of 25%. We expect the penetration rate will continue to trend upwards because of increasing overseas shipments from Chinese EV manufacturers and demand for Chinese produced competitive EV models (Fig 7).

**Figure 7: China's NEV export penetration rate and volumes, 2017 to 2022; 1H23**



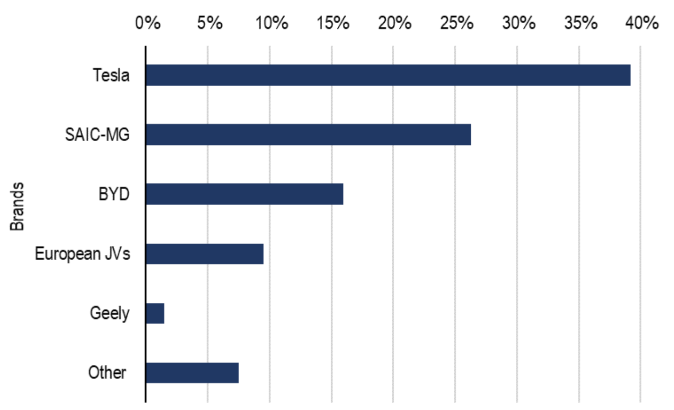

SOURCES: CGS-CIMB RESEARCH, CHINA'S GENERAL ADMINSTRATION OF CUSTOMERS, CAAM

**Largest EV exporters in China look for more cost advantages.** Currently in China, top 5 largest EV exporters are Tesla, SAIC-MG, BYD, and Geely Auto (175 HK, Not Rated), according to The China Automobile Dealers Association (CADA, a car manufacturer association China). Other domestic brands, such as Neta (Honzo Auto), Zeekr (Geely Auto) and Leapmotor, are also gaining market share in Southeast Asia (SEA) and the Europe (EU) by exporting China-manufactured EVs in 2023 (Fig 8 & 9).

According to Tesla, its Shanghai Gigafactory is a major production base. The total annual capacity is now over 950k out of 2.35m global output in 2Q23, increased by 200k yoy out of annual increase of 325k globally.

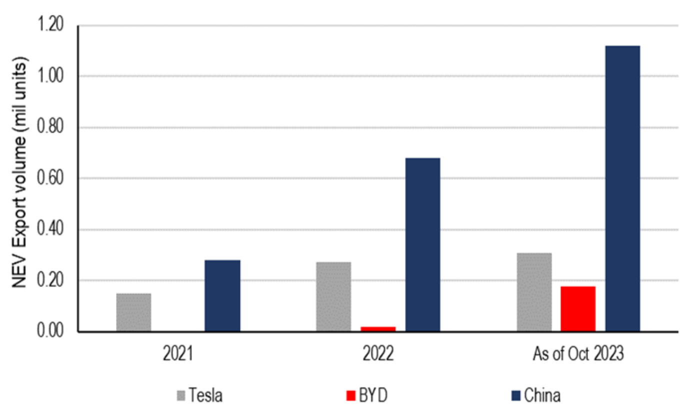
We believe Tesla's Shanghai Gigafactory's manufacturing output expansion is taking advantage of localisation of EV manufacturing in China, due to cost advantages, as a result of: 1) a well-developed EV industry supply chain, 2) lower manufacturing cost, and 3) technology advancement and talent base.

**Figure 8: Market share of China's NEV exports by brand (1H23)**




SOURCES: CGS-CIMB RESEARCH, CADA

**Figure 9: Total NEV export volume by Tesla, BYD and China (2021, 2022, and Jan - Oct 23)**




SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

**We see vehicle exports from China gaining momentum in 2024-25F.** We estimate China's total vehicle exports to reach 5.3m in 2023F (Fig 10) with NEVs comprising 25% of the exports, i.e., c.1.3m vehicles. Demand from the EU and Southeast Asia likely drove the strong sales growth trend seen at end-1H23.

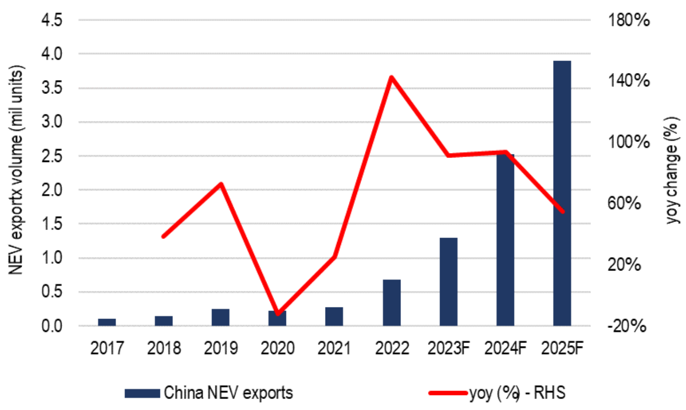
**In 2024F, growth in Southeast Asia offsets the impact of the EU probe on China's NEV exports.** We believe that the EU's investigation into China's NEV exports will stymie China's NEV export growth in 2024F. However, the adverse impact of these factors should be offset by the rapid growth in Southeast Asia region, in our view. We estimate China's NEV exports to jump 94% yoy to approximately 2.5m units in 2024F (Fig 11).

**In 2025F, China's NEV exports should grow at a more rapid pace.** We believe that Chinese EV manufacturers' exports should remain robust in 2025F, with potential new overseas markets in other regions, such as Latin America (LATAM) and the Middle East, and continued strong demand from SEA and the EU. We expect China's NEV exports to reach 3.9m units in 2025F (Fig 11).

**Figure 10: China's vehicle exports (2017 to 2025F)**

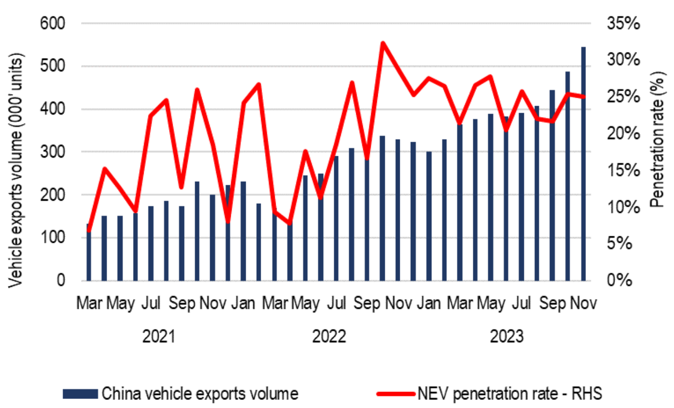

SOURCES: CGS-CIMB RESEARCH ESTIMATES, CAAM

**Figure 11: China's NEV exports (2017 to 2025F)**



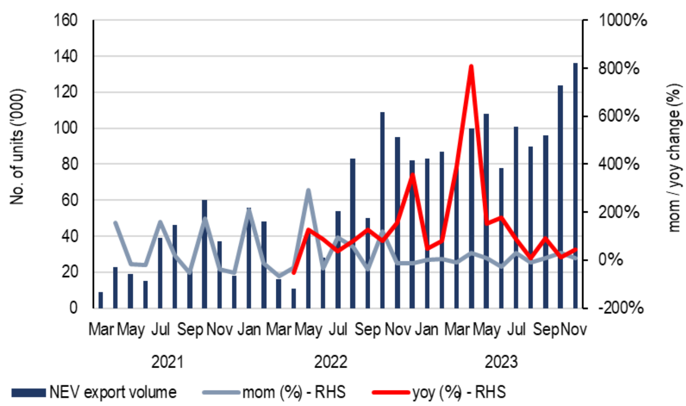

SOURCES: CGS-CIMB RESEARCH ESTIMATES, CAAM

**Figure 12: Percentage of NEV contribution vs. China's total vehicle exports from Mar 2021 to Aug 2023 (to Nov 2023)**




SOURCES: CGS-CIMB RESEARCH, CAAM

**Figure 13: China's total NEV exports from Mar 2021 to Aug 2023 (to Nov 2023)**




SOURCES: CGS-CIMB RESEARCH, CAAM

# Greatest potential markets – Europe & Southeast Asia

## Greatest potential markets – Europe and Southeast Asia

**The EU and Southeast Asia regions as key export markets in 2023-25F.** Over the last few years (2020-2022), BYD, NIO, Xpeng, Neta, and Leapmotor have been rapidly expanding their sales channels in the EU and Southeast Asia regions by setting up physical stores/showrooms and forming partnerships with local distributors, enhancing brand awareness, which we believe will bear fruit of strong EV sales in 2023-25F.

**China-manufactured NEVs gaining market share in the EU and SEA.** From the table below, we can see that Tesla's Model Y and Model 3 (produced in Tesla's Shanghai Gigafactory) are top two most popular EVs in Europe, while BYD's Atto3 and Neta's e34 are two of the most popular EV models in Southeast Asia countries. (Neta is a brand from Honzo Auto, a Chinese EV brand) (according to EV Magazine, Fig 14).

**Figure 14: EV portfolio of the top 5 best-selling models in Europe and Southeast Asia (1H23)**

| | # | Brand / Country | Type | Segment | Wheelbase (mm) | Driving range (km) | Acceleration time (0 to 100km/h) (s) | Peak Power (kW) | Maximum Torque (NM) | Autonomous driving package | Price (in USD) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EUROPE | 1 | Tesla (The US) | Model Y  | Mid size crossover SUV | 2,891 | 533 | 3.7 | 250 | 310 | Tesla Autopilot | 50,000 - 65,000 |
| EUROPE | 2 | Tesla (The US) | Model 3  | Mid Size Sedan | 2,875 | 629 | 4.4 | 208 | 330 | Tesla Autopilot | 45,000 - 64,000 |
| EUROPE | 3 | Volvo (Europe - China) | XC40  | Subcompact luxury PHEV crossover SUV | 2,700 | 418 | 7.3 | 185 | 420 | Volvo ADAS | 41,295 - 49,995 |
| EUROPE | 4 | Volkswagen (Germany) | ID. 4  | Compact luxury PHEV crossover SUV | 2,771 | 394 - 451 | 10.9 | 195 | 310 | Front Assist | 57,000 |
| EUROPE | 5 | Volkswagen (Germany) | ID. 3  | Small family car | 2,770 | 330/420/550 | 8.9 | 150 | 310 | Front Assist | 55,000 |
| SOUTHEAST ASIA | 1 | BYD (China) | Atto 3  | Compact Crossover SUV | 2,720 | 420 | 7.3 | 150 | 310 | Dipilot | 31,891 |
| SOUTHEAST ASIA | 2 | VinFast (Vietnam) | e34  | Compact Crossover SUV | 2,611 | 285 - 300 | 5.5 - 5.9 | 110 | 242 | VinFast ADAS | 34,860 |
| SOUTHEAST ASIA | 3 | Neta (China) | V  | Subcompact Crossover SUV | 2,420 | 380 | 3.9 | 70 | 175 | TA Pilot | 51,811 |
| SOUTHEAST ASIA | 4 | VinFast (Vietnam) | VF8  | Compact Crossover SUV | 2,950 | 471 | 5.5 | 300 | 500/620 | VinFast ADAS | 54,180 |
| SOUTHEAST ASIA | 5 | Hyundai (South Korea) | IONIQ 5  | Mid-size CUV | 3,000 | 365 | 5.2 | 225 | 605 | Hyundai RSPA | 46,905 |

SOURCES: CGS-CIMB RESEARCH, COMPANY WEBSITES, EV MAGAZINE

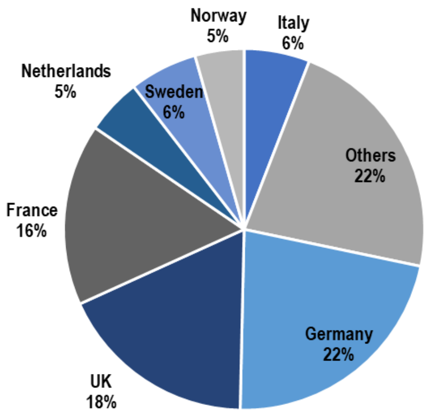
## Greatest potential market – Europe

### Europe actively fostering development of EV in recent years

**Europe has been actively fostering the development of EV in recent years.** As of 1Q23, Germany was leading the European EV race, accounting for 22% of total EV sales in Europe, followed by 18% from the UK and 16% from France (source: Counterpoint, Fig 15).

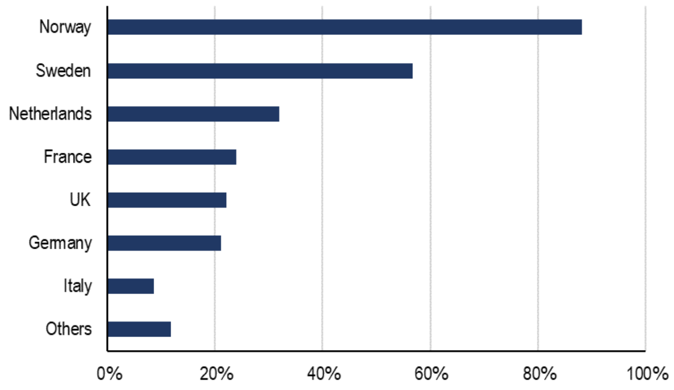
Remarkably, Norway had more than 88% EV sales penetration despite the fact that it only accounted for c.5% of total sales in the EU region. Sweden ranked second with over 55% of EV sales penetration, followed by the UK. Major manufacturing countries in Europe, including Germany and the UK, are catching up to the European Commission's EV targets to reach 100% EV penetration by 2035 (Fig 16).

Figure 15: Europe NEV sales market share by country in 1Q23




SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

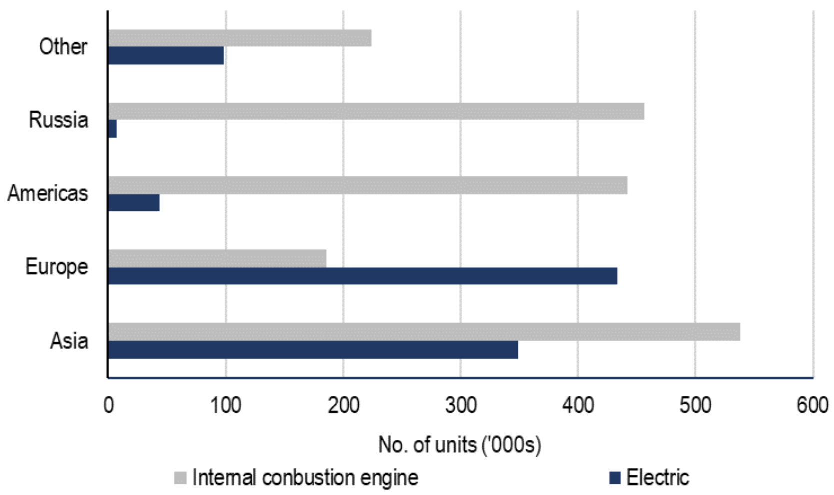
Figure 16: EV penetration in European countries in 1Q23




SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

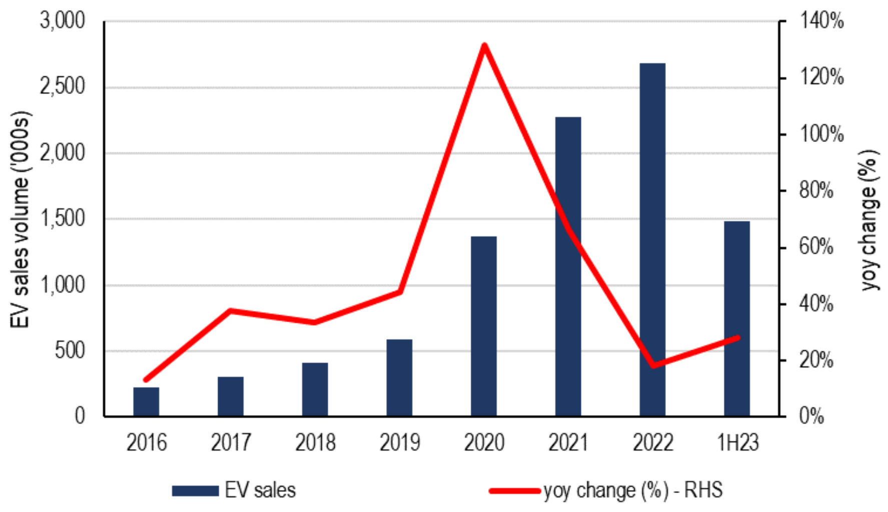
**Chinese NEV sales surpassed ICE models only in Europe.** Meanwhile, China is leading the global EV race with a competitive edge in nearly all aspects of the industry value chain due to the country's massive investment in its EV ecosystem, starting more than a decade ago. Only in the EU region was China's delivered NEV higher than ICE in 1H23. (Fig 17).

Figure 17: China's vehicle export sales by region (Jan 2023 to Jun 2023)




SOURCES: CGS-CIMB RESEARCH, CAAM

**Figure 18: Europe total EV sales by volume (2021-1H23)**



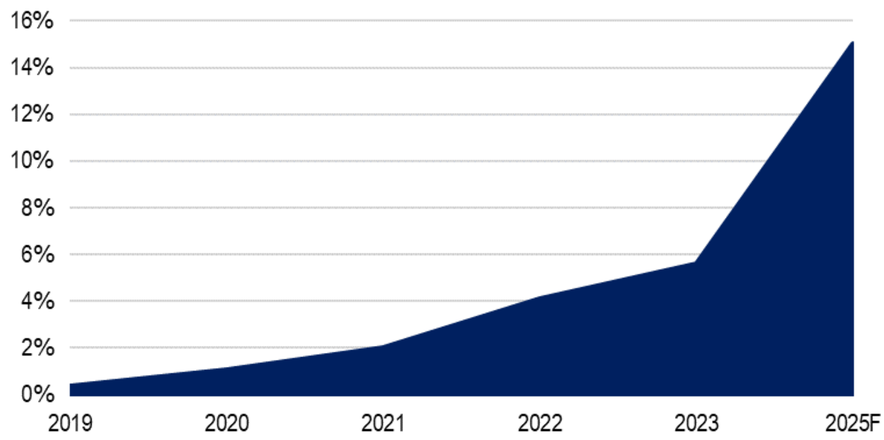

SOURCES: CGS-CIMB RESEARCH, EV VOLUMES.COM

**Chinese brands' share of Europe's EV market grew rapidly in just four years.** In 2020, the share of Chinese-made passenger auto exports to Europe was 1.1%, doubling to 2.0% in 2021, and again to 4.1% in 2022 according to European Commission. In 7M23, passenger vehicles originating from China already made up 5.6% of total EV sales in European EV market, and Chinese EV shipments to the European Union increased by 112% yoy, according to Jato Dynamics (a global automotive market research company).

European Commission estimates that China's share of total EVs sold in the EU will increase c.8% in 2023F and is forecast to reach c.15% in 2025F.

Fig 19 below shows the market share of Chinese brands in the EU EV market from 2019 to 2025F (Source: European Commission).

**Figure 19: Chinese brands' market share in the EU EV market**




SOURCES: CGS-CIMB RESEARCH ESTIMATE, EUROPEAN COMMISSION

## The European Commission is investigating Chinese subsidies in the NEV market

**Unwelcome arrival led to investigations in Europe.** Many automobile companies in China are struggling to generate consistent profits and are locked in a price war as China's economic growth slows. Therefore, most of them have made a push towards Europe to avoid a price war in China, in our view. However, this was regarded as unfair by European auto manufacturers who lagged behind in the NEV transition, resulting in a potential loss of market share to fast-developing Chinese companies.

On 13 Sep 2023, the European Commission announced an investigation into the subsidies doled out by China's government to the NEV industry between 1 Oct 2022 to 30 Sep 2023. The European Commission has gathered enough evidence to show that Chinese automakers have benefited from subsidies granted by the Chinese government and relevant countervailing measures would include tariffs close to the 27.5% level already imposed by the US on Chinese EVs (source: European Commission).

**The influx of Chinese vehicles with lower ASP has spurred the European Commission to investigate the subsidies provided by the Chinese government.** The bloc claimed that the EU was open to competition but not for a race to the bottom. China Chamber of Commerce for Import and Export of Machinery and Electronic Products opposed the criticisation and stated that China produces high-quality, low-price vehicles with technological innovation and benefits from a complete supply chain.

The anti-subsidy probe covers all battery-powered vehicles from China, such as models manufactured by market leader SAIC Motor (600104 CH, Not Rated), BYD as well as Dongfeng Motor (489 HK, Not Rated), and includes non-Chinese brands manufactured in the country, such as Renault (a France company, RNO SA, Not Rated)) and BMW (a Germany company, BMW GR, Not Rated), excluding Tesla (a US company, TSLA US, Not Rated). In the meantime, the EU is looking to implement income tax reduction and exemptions, lower prices for raw materials and batteries, preferential lending or cheap provision of land (source: European Commission).

## China's NEV supportive policies 1: Taxation, Production, Government grants

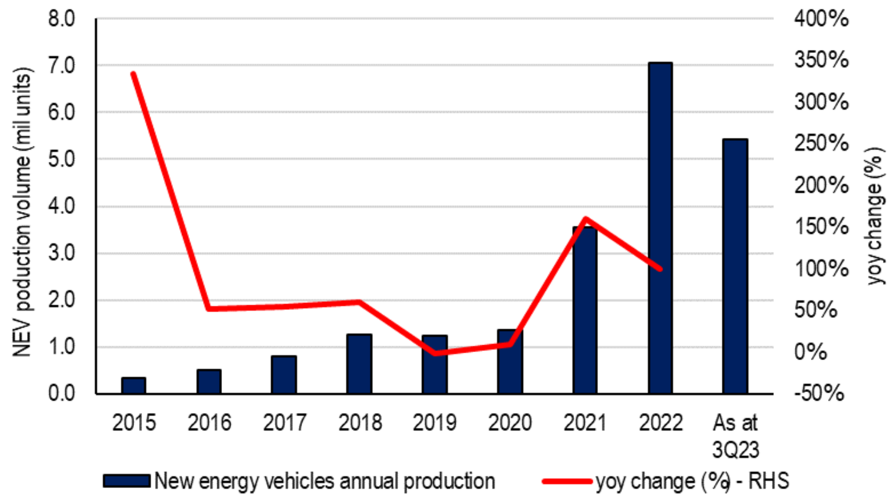
- **Tax Breaks:** China has implemented a new energy vehicle (NEV) purchase tax exemption policy since 2014 in order to support the development of the new energy vehicle industry. The policy was renewed three times, in 2017, 2020 and 2022, owing to the impact of the Covid-19 pandemic on the NEV market. The policy will remain in place until end-2027, while the maximum exemption amount for each unit purchased will be Rmb30,000 between 2024 and 2025 (source: The Ministry of Finance of the People's Republic of China).

  From 2019 to 2022, China spent Rmb520bn as tax incentive for NEVs and other environmental-friendly vehicles. China's central government spent around Rmb220bn on tax exemptions to support the purchase of NEVs between 2009 and 2022, according to the State Taxation Administration (STA). We estimate the tax exemption amount to exceed Rmb700bn by the end of 2027F.

- **Production subsidies**: NEVs manufactured in China are entitled to subsidies from the Ministry of Industry and Information Technology (MIIT), calculated based on the number of NEVs the company manufactured. Total production volume of NEVs in China reached 1.3m in 2020 and grew rapidly in 2021 to reach c.3.0m. China's NEV production has soared in 2022, increasing by 100% to c.7m vehicles (Fig 20). Among the 49 eligible companies that enjoyed favourable subsidies in 2022, BYD received the most and Tesla ranked second. Through the end of 2022, the Chinese government had paid almost Rmb39bn

(US$5.4bn) to subsidise the production of around 3.76m NEVs, according to MIIT's latest subsidy review.

Figure 20: China's NEV production volume (2015 to 2022, as at 3Q23)




SOURCES: CGS-CIMB RESEARCH, CAAM

- **Cheap land, loans and grants for R&D**: With the rapid growth of the NEV industry in China, governments at various levels have implemented measures to stimulate local economies, including providing companies with affordable loans, land, and grants.

## China's NEV supportive policies 2: nationwide EV infrastructure construction

**Increasing the number of EV charging piles and stations in China.** The construction of infrastructure such as charging piles, charging stations, and battery replacement systems supporting NEVs in China has also greatly improved over the past ten years. In 2020, the city of Hefei and government-related funds acquired a 24% stake in NIO for Rmb7.0bn, while funds associated with the Hangzhou city government invested Rmb3.0bn in Leapmotor during a pre-IPO funding round in 2021.

In addition to these investments, the Beijing government has played a role in supporting the expansion of charging infrastructure throughout China. The country's economic planning agency has committed to subsidising public chargers to meet the demand of over 20m new-energy vehicles by the end of 2025. The Ministry of Finance has also allocated nearly Rmb20bn towards promoting NEVs, including subsidies for charging infrastructure, as stated in its latest review.

This approach mirrors strategies employed in the United States, where Congress allocated US$7.5bn in Jul 2023 to fund electric vehicle charging stations. The US Department of Transportation has also provided funding for charging stations.

## Chinese EVs are cost-effective and performance well

**Chinese NEVs are cheap in Europe.** Tensions between China and Europe have been simmering since the EU launched an anti-subsidy investigation on Chinese NEV companies, in our view. Europe is a perfect steppingstone for China's NEV companies to become global (BYD, SAIC's MG motor, etc.), in our view. European auto buyers are currently seeking affordable NEVs after the European Commission announced its target of zero emission vehicles by 2035. This not only urges some traditional vehicle producers to develop electric solutions, but also creates opportunities for more mature and advanced Chinese NEV makers to expand into Europe. Moreover, many buyers have been on long waitlists for new EVs manufactured by European brands and safety concerns over Chinese NEVs have eased. These factors have helped to improve the reputation of Chinese brands to manufacture safe and low-budget, or even premium, models with affordable prices.

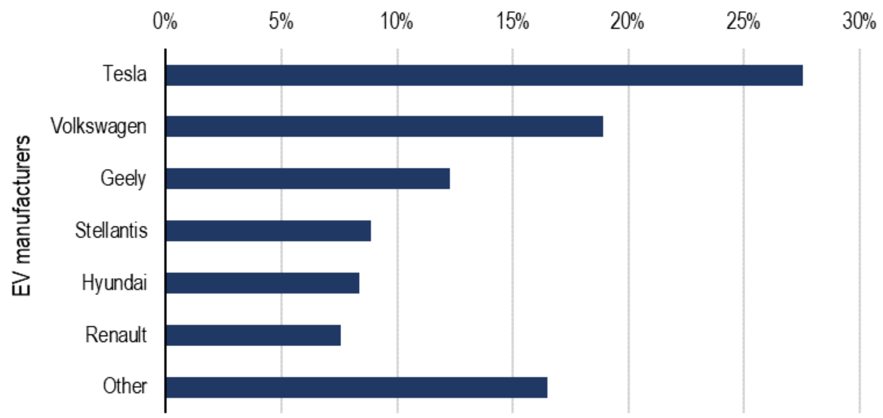
**Chinese NEVs are priced lower.** Chinese EV manufacturers like BYD, Xpeng and NIO have established a strong reputation in the EU for their cost-competitive and high performance EVs, thanks to a push for innovation and production in China.

In Europe, Chinese-made NEVs are currently sold at a 20 – 30% discount to local competitors. In Germany, the average retail price of a Chinese-brand NEV was approximately 30% cheaper than non-Chinese models without incentives or discounts as at the first six months in 2023. ASPs of Chinese NEVs were approximately 32% lower than that of non-Chinese NEVs in France and 38% lower in the UK in the first six months in 2023.

In 1H23, NEVs in China cost less than €32,000 (Rmb250,000), on average, compared with around €67,000 (Rmb520,000), on average, in Europe, according to Jato Dynamics.

The Fig 21 show that Geely is the largest Chinese auto manufacturer have high market share in European EV market (source: CleanTechnica, widely regarded as the #1 website in the US for cleantech news & commentary).

**Figure 21: Europe EV market share, by brand, in 1H23**




SOURCES: CGS-CIMB RESEARCH, CLEAN TECHNICA

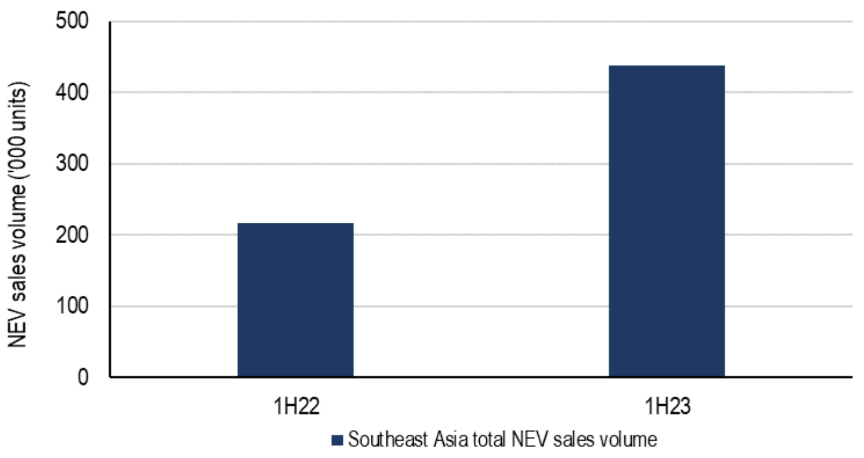
## Greatest potential market – Southeast Asia

### Southeast Asia catching up in EV race

**Developing the Southeast Asian market.** As China's EV exports have been under increased scrutiny in the EU, it has seen a shift in its EV exports to emerging markets. Apart from Europe, Southeast Asia (SEA) saw the highest growth in the EV market in 1Q23, and sales growing by approximately 100% yoy from 217,000 in 1H22 to 438,000 units in 1H23, according to Autolife Thailand (a Thailand-based car news website) (Fig 22).

The jump in EV sales was mainly contributed by EV passenger model sales. According to Counterpoint, EV unit sales in the Indochina region grew by 894% yoy in 2Q23, given that the markets are in the nascent stages and growth will be significant in the short-term.

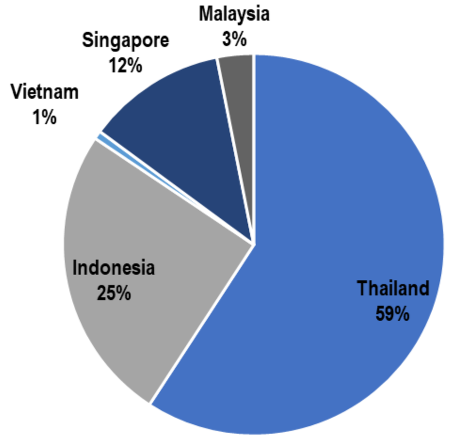
Figure 22: EV sales in Southeast Asia (1H22 vs 1H23)




SOURCES: CGS-CIMB RESEARCH, AUTOLIFE THAILAND

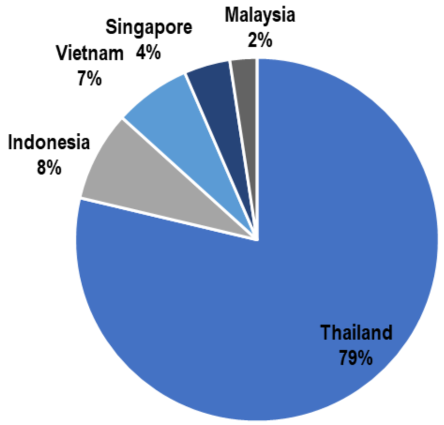
According to Counterpoint, Thailand accounted for over 79% of Southeast Asia's EV sales in 1Q23, growing from 59% in 3Q22, followed by Indonesia and Vietnam (Fig 23 & 24).

Figure 23: EV sales in SEA regions by country in 3Q22




SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 24: EV sales in SEA region by country in 1Q23




SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

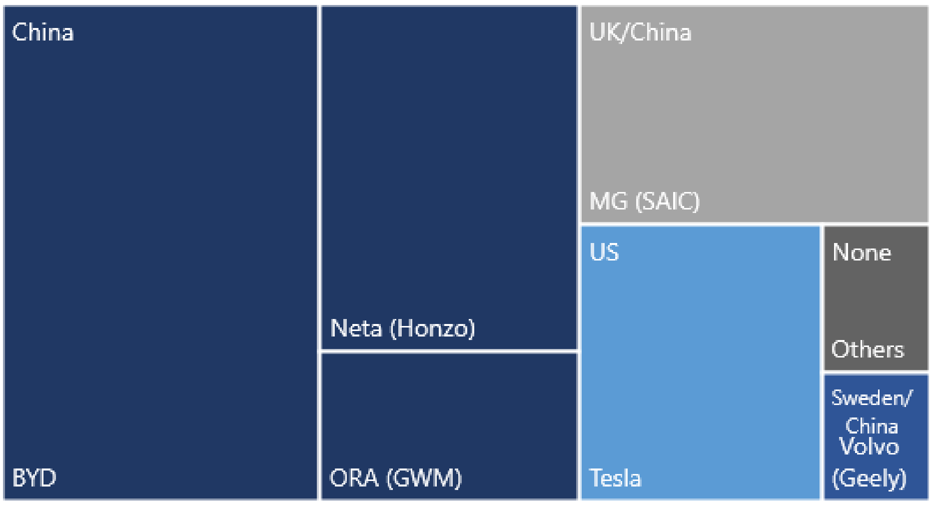
## Chinese automotive companies capture EV demand in SEA

**Chinese automotive companies benefitted from SEA government policies.** Governments in Southeast Asia are offering attractive incentives, including tax cuts on imported EVs and income and tax exemptions for EV manufacturers, to companies that invest in the local manufacturing of EVs and lithium batteries. This has resulted in a surge in investments from China and Korea in the region. According to Counterpoint, Chinese automotive companies are witnessing remarkable sales growth and surpassing their competitors in the Southeast Asian (SEA) region, as their market share has surged from 38% within the past year to nearly 75% in 1H23, indicating that three out of every four EVs sold were from a Chinese automaker. In 2023, China exported over 5.2m vehicles, 25% of which were EVs (c.1.3m units), according to CAAM.

**Thailand is the EV leader in Southeast Asia.** Among all the countries in the SEA region, Thailand is becoming a major destination for EV exports from China. Average selling prices of Chinese passenger vehicles exported to Thailand are increasing rapidly, from US$5,700 in 2022 to US$14,600 in 2023, representing over a 150% yoy increase in prices within a year. This also indicates that the quality of vehicles imported from China is improving.

China is exporting a lot of EVs to Thailand, and Thailand is becoming China's third-largest EV export destination in terms of EV volumes, given that China related brands (BYD, Honzo's Neta, GWM's ORA, SAIC's MG) accounted for almost 80% of market share in Thailand in 7M23, according to Autolife Thailand (Fig 25). GAC's Aion has a factory with a capacity of 50k units per year in the pipeline in Thailand, and it is planning to launch more products in Cambodia to drive the country's auto industry's transition to EV. In addition, MG, a sub-brand of SAIC in China, also started to manufacture power batteries in Thailand in Nov 2023 (Fig 25). Chinese EV makers are putting more efforts to localise the EV supply chain in Thailand and gaining market share rapidly due to the Thai government's EV target of phasing out 30% of ICE vehicles by 2030.

Figure 25: Market share of EV brands in Thailand (Jan 2023 to Jul 2023)




SOURCES: CGS-CIMB RESEARCH, AUTOLIFE THAILAND

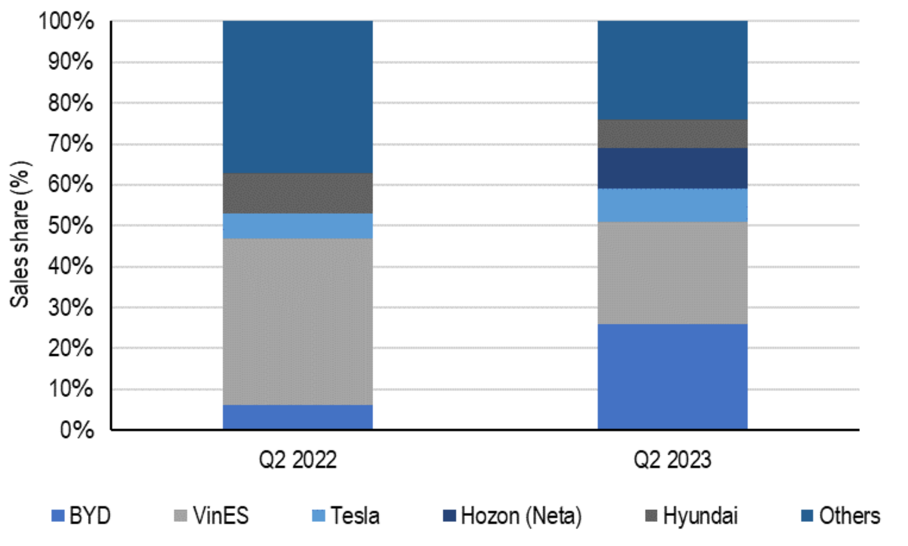
# BYD overseas expansion

## BYD gaining market share in Southeast Asia

**China saw strong NEV sales in 2Q23, driven by higher demand across Southeast Asia.** China saw strong EV sales in Southeast Asia in 2Q23, driven by higher demand across Thailand, Vietnam, Indonesia, and Malaysia. BYD gained market share in terms of sales in Southeast Asia, growing from 6% in 2Q22 to 26% in 2Q23, implying a 47x of NEV unit sales yoy growth, owing to the spread of its sales networks and established brand recognition. Currently, BYD has c.3,000 dealerships globally. The company's economics of scale (cost cutting and controlling) and the vertical integration on its NEV supply chain (batteries, semiconductors, vehicle manufacturing to sales distribution network) also help BYD to be competitive in price.

Vingroup (HOSE VIC, Not Rated), a Vietnam-based EV producer targeting the Southeast Asian EV market, is apparently losing its market share to BYD in terms of NEV sales in 1H23, dropping from 41% in 2Q22 to 25% in 2Q23, implying a 16%-pt reduction (Fig 26). In our view, BYD would gradually expand and become a Southeast Asia NEV leader by 2024.

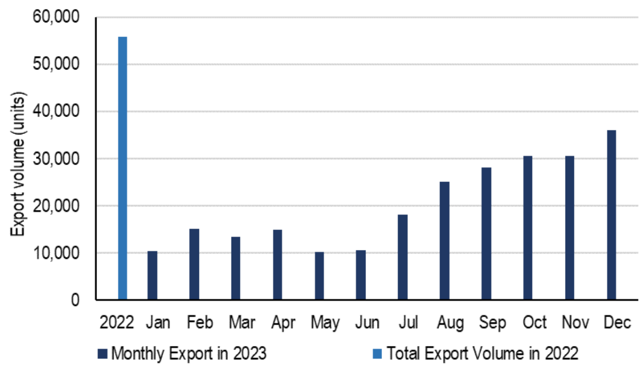
Figure 26: Sales share and yoy growth in SEA by auto company, 2Q22 and 2Q23




SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT REPORTS

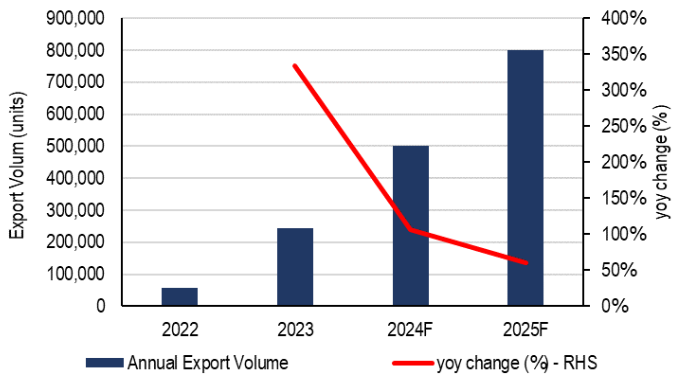
**Robust export sales performance in 3Q23.** In 1H23, BYD export sales hovered around 10,000 units monthly. Its exports then grew significantly in 3Q23 to record shipments of 18,169, 25,023, and 28,039 units in Jul, Aug and Sep, respectively, growing at c.14% mom. With Oct/Nov/Dec export sales hitting new highs at 30,521/30,629/36,095 units, we believe BYD's robust export shipments were due to: 1) continued NEV demand from Southeast Asia and Europe, and 2) market share gain and established reputation in offshore NEV markets. We expect BYD to excel in its overseas performance in 2024F and 2025F, reaching deliveries of 500,000 and 800,000 units, respectively, taking into account its upcoming production bases in Thailand (completion in 2024F) and Brazil (completion in 2025F) enhancing the company's global supply chain across Southeast Asia and Latin America (Fig 27).

**Figure 27: BYD's overseas deliveries by months (2022 vs. 2023)**




SOURCES: CGS-CIMB RESEARCH, BYD REPORTS

**Figure 28: BYD's overseas deliveries by year (2022-2025F), estimates by CGS-CIMB Research**




SOURCES: CGS-CIMB RESEARCH ESTIMATES, BYD REPORTS

## Overseas supply chain

**BYD is extending its supply chain dominance using overseas expansion.** BYD's total NEV export sales volume reached 247k units, making up 19% of China's total NEV shipments to overseas market for the year. BYD is currently selling its NEVs in 58 countries and regions. Its major production bases are located at: 1) Shenzhen (300,000-unit capacity), 2) Xian (1m-unit capacity), and 3) Changsha (700,000-unit capacity), accounting for over 70% of BYD's total capacity with around 2m units per year.

With its globalisation and localisation strategy, the company is constructing to build a factory in Thailand in 2024F and in Brazil in 2025F, given the fast-growing demand for NEVs from Southeast Asia and South America. The plants are expected, according to BYD, to produce 150,000-200,000 units of NEVs p.a. in Thailand and 200,000 units p.a. in Brazil. In Dec 2023, BYD also announced that it will build a EV production facilities in the Hungarian city of Szeged, which will be constructed in phases, to further expand its production capacity overseas.

## Competitive product portfolio

**BYD's top models for overseas markets.** The top two models from BYD to break into the overseas markets are Song family and Atto 3 (Yuan series). Among BYD's Top 5 export models, we note that the SUV segment has more market share than the sedan and hatchback (Fig 29).

**Figure 29: BYD's top 5 export models as at 31 Dec 2023**

| | # | Type | Segment | Wheelbase (mm) | Driving range (km) | Acceleration time (0 to 100km/h) (s) | Peak Power (kW) | Maximum Torque (NM) | Autonomous driving package | Price (in USD) |
|---|---|---|---|---|---|---|---|---|---|---|
| BYD | 1 | Seal U (Song Plus)  | Mid-size SUV | 2,765 | 505 | 8.5 | 135 | 280 | Dipilot | 31,891 |
| BYD | 2 | Atto 3 (Yuan Plus)  | Compact Crossover SUV | 2,720 | 420 | 7.3 | 150 | 310 | Dipilot | 45,000 |
| BYD | 3 | Dolphin  | Subcompact (B-segment) hatchback | 2,700 | 427 | 7 | 150 | 290 | Dipilot | 35,000 |
| BYD | 4 | Tang  | PH CUV | 2,820 | 600/730/635 | 4.6 | 168/180/380 | 700 | Dipilot | 34,300/37,700/41,100 |
| BYD | 5 | Han  | Executive sedan | 2,920 | 521 | 3.9 | 380 | 700 | Dipilot | 77,000 |

SOURCES: CGS-CIMB RESEARCH, BYD WEBSITES

**Figure 30: BYD's global production roadmap, as of 31 Dec 2023**

| Region | Country | Usage | Status | Description |
|---|---|---|---|---|
| ASIA | Thailand | EV production | in construction (finished in 2024) | Begins construction in Mar 2023<br>Location: Rayong, Thailand<br>Capacity: 150,000 - 200,000 EVs per year |
| | | EV manufacuring components (complete car seats) | planning | BYD partnership with Forvia (Faurecia)<br>Location: Rayong, Thailand |
| | Indonesia | EV production | planning | Signed a preliminary aggreement with Indonesian government |
| | Vietnam | EV production | planning | n.a. |
| | India | EV production (Electric buses) | into operation | Olectra Greentech (Joint Venture by BYD and Megha Engineering) |
| | Uzbekistan | EV production | in construction | Announced investment on Sep 26, 2023<br>Location: Jizzax, Uzbekistan<br>Capacity: 50,000 EVs in 2024 (Expected), 300,000 EVs in 2025 (Expected) |
| AMERICA | US | EV production (Electric buses) | into operation | Location: Lancaster, US |
| | Brazil | EV production | in construction (finished in 2025) | Location: Bahia, Brazil |
| | | Lithium and iron phophate processing | in construction | Capacity: 200,000 EVs in 2025 (Expected) |
| | | R&D centre | in construction | On a defunct Ford factory |
| | Chile | Lithium cathode processing | into operation | Location: Northern Chile |
| EUROPE | Hungary | EV production | planning | n.a. |
| | | EV production (Electric buses) | into operation | Location: Komarom, Hungary |
| | Netherland | EV production (Electric buses) | into operation | Location: Schiedam, the Nethelands |
| | UK | EV production (Electric buses) | into operation | Location: Iver, UK |

| Region | City | Usage | Status | Description |
|---|---|---|---|---|
| CHINA | Changsha | EV production | into operation | Capacity: 700,000 units per year |
| | Xian | EV production | into operation | Capacity: 1,000,000 units per year |
| | Shenzhen | EV production | into operation | Capacity: 400,000 units per year |
| | Hefei | EV production | into operation | Capacity: 400,000 units per year |
| | Changzhou | EV production | into operation | Capacity: 400,000 units per year |
| | Jinan | EV production | into operation | Capacity: 150,000 units per year |
| | Zhengzhou | EV production | into operation | Capacity: 400,000 units per year<br>Projected revenue: RMB20bn per year<br>Estimated job creation: 12,000 per year |
| | Fuzhou | EV production | into operation | Capacity: 200,000 units per year |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS, NIKKELASIA, CNEVPOST, CARNEWSCHINA

# China EV technology's competitive edge

## China EV technology's competitive edge

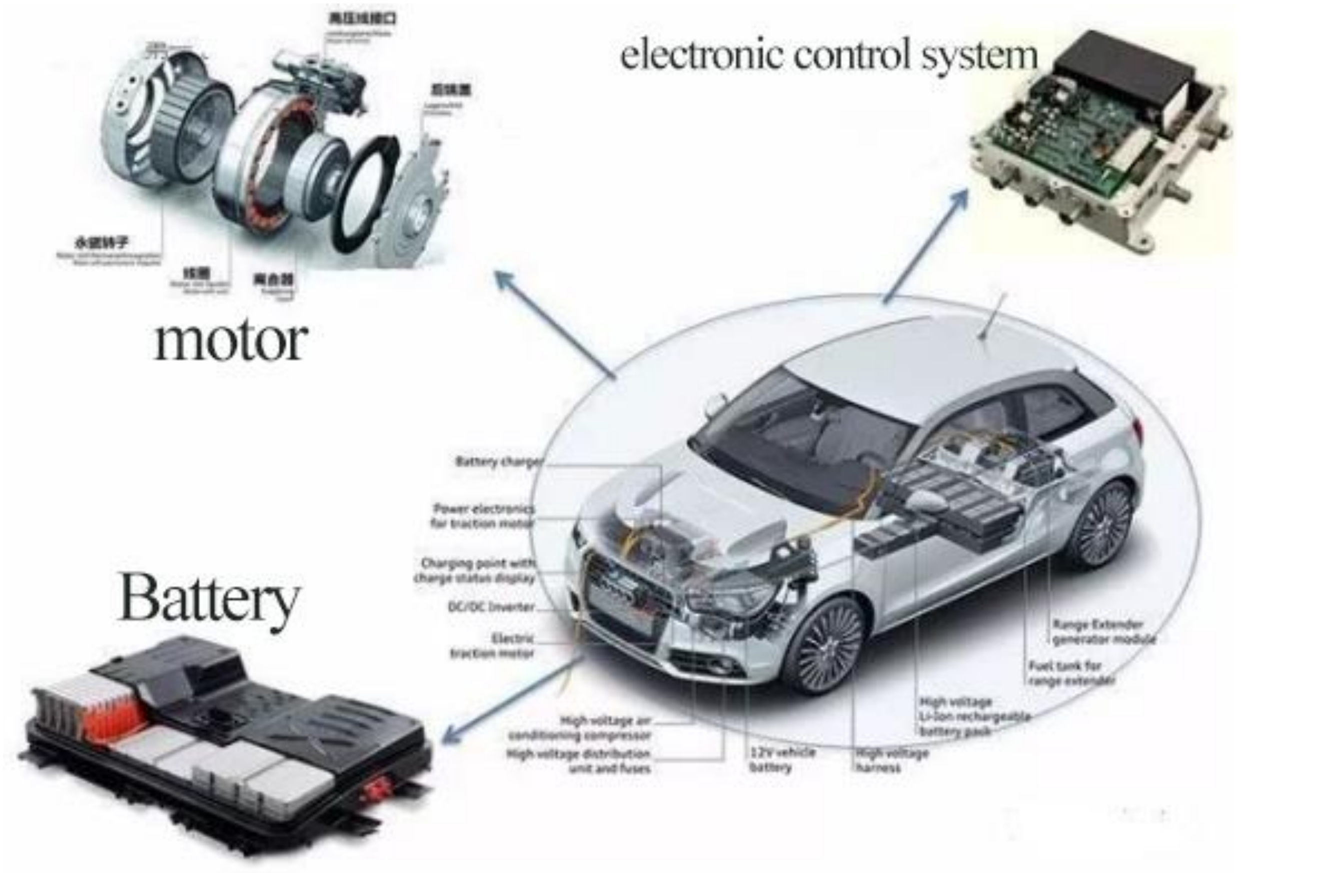
**China EV technology advancement.** Chinese auto brands accounted for nearly half of all EVs sold globally in 2022 (source: CAAM). Thanks to the country's massive investment in its EV ecosystem about a decade ago, China's EV industry has a competitive edge in nearly all aspects of the industry value chain, including intelligent cockpit, advanced driver assistance system (ADAS), auto semiconductor, battery management system, as well as electricity management EIC system (battery, electric motor, and electronic control, Fig 31).

## 1. EIC system advancements

**Advanced EIC system**. We have seen significant developments in EIC systems (battery, electric motor, and electronic control) among EV manufacturers, including leading players such as BYD, Li Auto, NIO, and XPeng, over the past few years.

- **EV battery:** The different types of batteries used today are Lithium Iron Phosphate (LFP), Nickel Manganese Cobalt Oxide (NMC), and Lithium Nickel Cobalt Aluminum Oxide (NCA) are the most common types of batteries used today in EVs. China currently controls most of the its battery materials supply from upstream to mid-stream, as well as EV battery cell/module manufacturing.
- **Electric motor:** Electric motors in NEVs are well-developed by Chinese EV makers, enhancing performance with minimal impact from issues such as heat problems and charging efficiency.
- **Electronic control system:** China is encouraging the development of electronic control systems and accelerating the process of domestic substitution for insulated-gate bipolar transistor (IGBT).

**Figure 31: Illustration of the EIC system in an electric vehicle**




SOURCES: CGS-CIMB RESEARCH, RED DRAGON CO.LTD

## 2. Production cost advantage

**Supportive policies and investments facilitate.** The Chinese EV players are superior to foreign auto brands in terms of cost, technology and manufacturing scale. We believe China's EV industry is around 2-5 years ahead of the traditional foreign auto makers in terms technology and manufacturing scale in EV production. China's first-mover advantage in the global EV industry has been bolstered by years of supportive government policies and private sector investments in battery technology, upstream minerals mining and refining, and broad advances in mobile digitalisation and in-vehicle software development.

BYD is one of the world's largest battery manufacturers, which means the company can manufacture electric vehicles using its own EV batteries, making it the only EV manufacturer in the world with fully-integrated production capabilities spanning battery, semiconductor, EIC system, and vehicle manufacturing.

## 3. Battery technology advantage

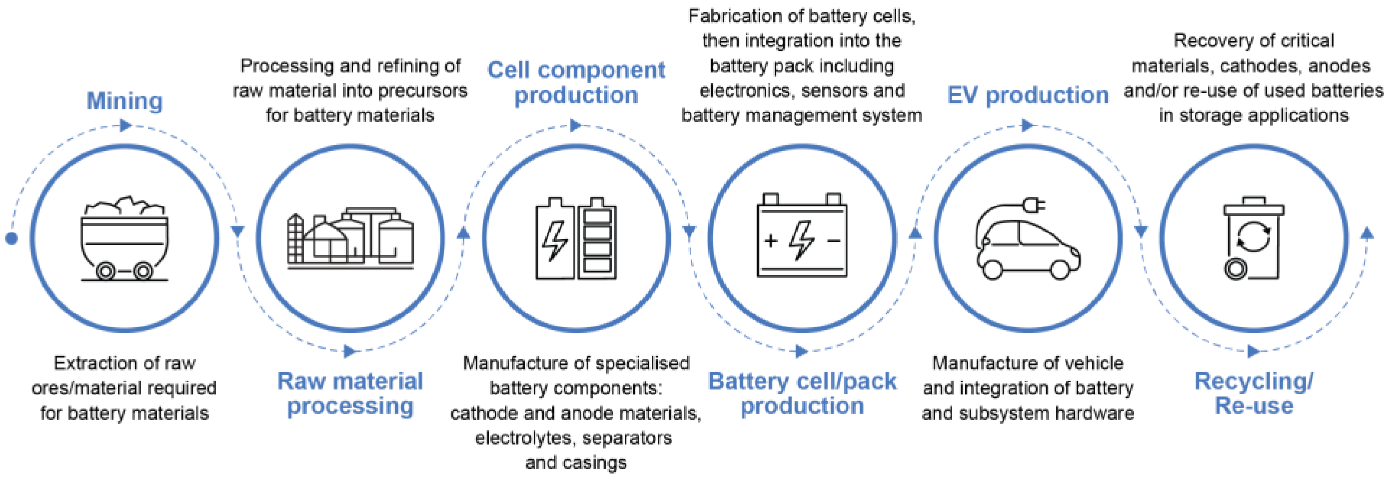
**Battery technology advancements in tandem with China's NEV sales.** We believe that advancements in battery technology are also key to increasing NEV adoption in China. Automakers can offer products with better quality such as improved driving range, enhanced battery safety, etc. Upgrades in battery technology can guarantee better NEV performance and enhance user experience. Also, technology upgrades improve the cost-effectiveness of producing an EV battery, lower the cost of NEV production and as a result, lead to affordable prices for consumers.

## 4. Dominance of EV battery supply

**China is the world leader in EV battery manufacturing**. According to CNEVPOST (a website focused on the EV industry in China), six of the top ten EV battery manufacturers are Chinese brands, with the top two Chinese producers, CATL and BYD together accounting for 53% of the global market share in Sep 2023, compared with 48% in Dec 2022, Fig 34).

**The EV battery supply chain can be divided into 6 stages:** Mining; Raw material processing; Cell component production; Battery cell/pack production; EV production; Recycling/ Re-use, and production in all stages of EV battery supply chain concentrated in a few companies (Fig 32 & 33).

**Figure 32: EV battery supply chain**




SOURCES: CGS-CIMB RESEARCH, INTERNATIONAL ENERGY AGENCY

**Figure 33: Top-three companies in each EV production stage in 2022**

| Mining | Cell Components | Battery Production | EV Production |
|---|---|---|---|
| - *Lithium*<br>Sociedad Quimica y Minera de Chile (Chile)<br>Pilbara Minerals (Australia)<br>Allkem (Australia)<br><br>- *Nickel*<br>**Jinchuan Group (China)**<br>BHP Group (Australia)<br>Vale SA (Brazil) | - *Cathode*<br>Sumitomo (Japan)<br>**Tianjin B&M Science and Technology (China)**<br>**Shenzhen Dynanonic (China)**<br><br>- *Anode*<br>Ningbo Shanshan (China)<br>**BTR New Energy Materials (China)**<br>**Shanghai Putailai New Energy Technology (China)** | **CATL (China)**<br>LG Energy Solution (Korea)<br>Panasonic (Japan) | Tesla (US)<br>VW Group (Germany)<br>**BYD (China)** |

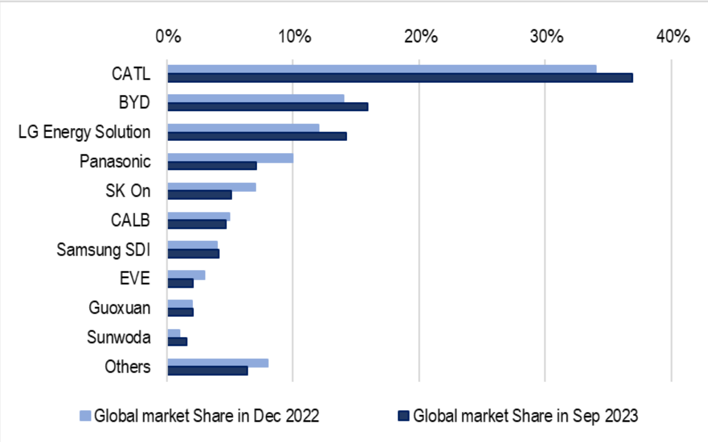
SOURCES: CGS-CIMB RESEARCH ESTIMATES, INTERNATIONAL ENERGY AGENCY

**Figure 34: EV battery installations global market share (Sep 2023 vs Dec 2022)**

| Rank | Company | Global market Share in Dec 2022 | Global market Share in Sep 2023 | Country |
|---|---|---|---|---|
| **#1** | **CATL** | **34%** | **37%** | **China** |
| **#2** | **BYD** | 14% | **16%** | **China** |
| 3 | LG Energy Solution | **12%** | 14% | Korea |
| 4 | Panasonic | 10% | 7% | Japan |
| 5 | SK On | 7% | 5% | Korea |
| 6 | CALB | 5% | 5% | China |
| 7 | Samsung SDI | 4% | 4% | Korea |
| 8 | EVE | 3% | 2% | China |
| 9 | Guoxuan | 2% | 2% | China |
| 10 | Sunwoda | 1% | 2% | China |
| | Others | 8% | 6% | |

SOURCES: CGS-CIMB RESEARCH, CNEVPOST

**Figure 35: EV battery installations global market share (Sep 2023 vs. Dec 2022)**




SOURCES: CGS-CIMB RESEARCH ESTIMATES, SNE RESEARCH

**Well-established EV supply chain.** China has absolute dominance in the global EV battery supply chain from upstream to downstream.

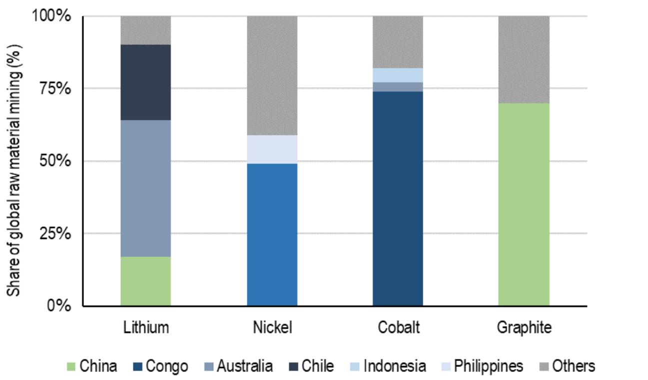
- It produces 77% of all lithium-ion batteries (batteries often used in EVs instead of fuel), 70% of cathodes and 85% of anodes (Fig 36).
- Raw materials are easy to access in China. The supply chain of one of the critical minerals for EV batteries, namely graphite, is dominated by China end-to-end, represented by 70% of global graphite mining, 100% graphite processing, and 85% of global anode manufacturing (Fig 36).
- Sodium-ion (Na-ion) batteries, an alternative to Li-ion batteries and developed by China's CATL and BYD, cost 30% less than LFP batteries, according to International Energy Agency.
- Steel and electronics used in vehicles are low in price in China too.
- Many Chinese local governments provide companies involved in the EV supply chain with land almost free of charge, loans with nearly zero interest rates, and various subsidies, in a bid to attract them to invest in their regions.

**Figure 36: Illustration of the global EV supply chain (2021)**

| | | China | Europe | US | Japan | Korea | Congo | Australia | Chile | Indonesia | Philippine: | Others |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mining | Lithium | 17% | 0% | 0% | 0% | 0% | 0% | 47% | 26% | 0% | 0% | 10% |
| | Nickel | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 49% | 10% | 41% |
| | Cobalt | 0% | 0% | 0% | 0% | 0% | 74% | 3% | 0% | 5% | 0% | 18% |
| | Graphite | 70% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 30% |
| Battery material processing | Lithium | 65% | 0% | 0% | 0% | 0% | 0% | 0% | 29% | 0% | 0% | 6% |
| | Nickel | 17% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 43% | 0% | 40% |
| | Cobalt | 74% | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 16% |
| | Graphite | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Battery cell components | Cathode | 70% | 0% | 0% | 14% | 15% | 0% | 0% | 0% | 0% | 0% | 1% |
| | Anode | 85% | 0% | 0% | 11% | 0% | 0% | 0% | 0% | 0% | 0% | 4% |
| Bettery production | Battery production | 77% | 7% | 7% | 4% | 5% | 0% | 0% | 0% | 0% | 0% | 0% |
| EV production | EV production | 55% | 25% | 10% | 4% | 3% | 0% | 0% | 0% | 0% | 0% | 3% |

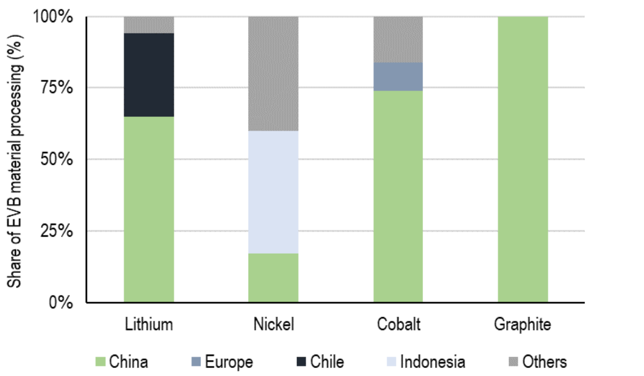
SOURCES: CGS-CIMB RESEARCH, INTERNATIONAL ENERGY AGENCY

**Figure 37: Share of global EV battery raw material mining by country in 2022**



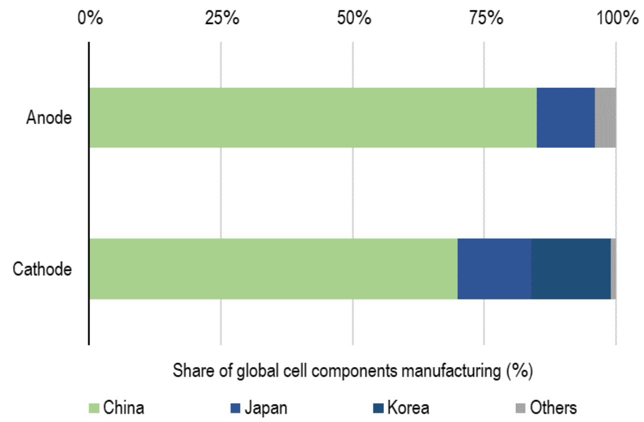

SOURCES: CGS-CIMB RESEARCH, INTERNATIONAL ENERGY AGENCY

**Figure 38: Share of global EV battery raw material processing by country in 2022**



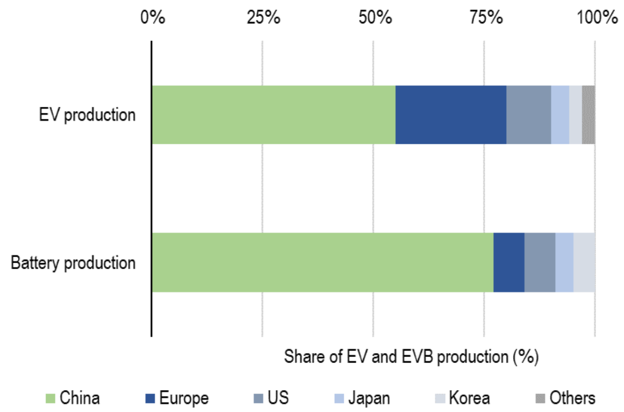

SOURCES: CGS-CIMB RESEARCH, INTERNATIONAL ENERGY AGENCY

**Figure 39: Share of global EV battery cell components manufacturing by country in 2022**




SOURCES: CGS-CIMB RESEARCH, INTERNATIONAL ENERGY AGENCY

**Figure 40: Share of global EV and battery production by country in 2022**




SOURCES: CGS-CIMB RESEARCH, INTERNATIONAL ENERGY AGENCY

## 5. Intelligent cockpit advantage

**Chinese government sets goal to develop smart and connected vehicles in EV industry.** In addition to the NEV boom, the China market is also heading to the "smart" stage. The Chinese government has set out its vision for the smart and connected vehicles in the NEV Industry Development Plan. Specific strategic goals include i) achieving mass commercialisation of high level of autonomous driving for specific scenarios by 2025; and ii) strengthening the research and development of the key auto parts and systems in relation to connected vehicles. Therefore, China has seen a surge in demand for smart battery electric vehicles (Smart BEV) as they can enhance vehicle safety, relieve traffic congestion, and enable more in-car entertainment.

**"Smart" elements to be differentiating factor in NIO, XPeng, and Li Auto**. We believe NIO, XPeng and Li Auto (NXL) are leaders in the 'Smart EV' field in China due to their localised advantage. NXL has been paying enormous attention to its products' smart technologies, such as enhancing the geographical coverage of its advanced driver assistance system (ADAS), sending upgrades via Over-to-air (OTA) and improving Human-Machine Interaction (HMI) with Augmented Reality (AR) and Virtual Reality (VR) capabilities, voice assistance (local language) and three-dimensional (3D) interactive systems.

More importantly, we believe NXL's self-developed ADAS has a huge local advantage over Tesla's Autopilot (the major rival in China's smart EV market) as the former's ADAS software systems provide more accurate and reliable assistance and instructions, thanks to data collection on Chinese driving behaviours and China's road and tariff conditions.

As sophisticated ADAS and intelligent operating systems are the key deciding factors for customers' smart EV purchases, we believe NXL's self-developed ADAS and intelligent operating systems give them an edge, helping them carve out a nice slice of China's NEV market.

**Huawei and Baidu are leading intelligent cockpit suppliers in China.** Huawei and Baidu are also key players in China's intelligent cockpit and ADAS developments, in partnership with China's EV makers.

- Huawei's intelligent cockpit for EVs, called Huawei HiCar, was launched in Sep 2020. The HiCar system is an intelligent cockpit system and a specific feature in the Harmony OS designed for EVs to enhance in-car experience by integrating various features such as connectivity, entertainment, and smart controls, as well as connecting an EV's infotainment system, with the smartphone.
- In recent years, Baidu has been actively involved in the development of intelligent cockpits and ADAS for EVs. Baidu's Apollo platform seeks to supply automakers with advanced autonomous driving technologies and related solutions. Apollo ADAS uses a variety of sensors, cameras, and algorithms to deliver features including Forward Collision Warning (FCW), Lane Keeping Assist (LKA), Adaptive Cruise Control (ACC), and others. These features are intended to aid drivers in various driving situations and help prevent accidents. Baidu's Apollo platform is an open platform that allows automakers, technology partners, and developers to collaborate to expedite the development and deployment of autonomous driving and associated technologies. Baidu has been aggressively collaborating with automakers and industry stakeholders to integrate its intelligent cockpit technologies and ADAS into vehicles.

## 6. ADAS and Autonomous Driving

**Autonomous driving** refers to a transport system that can perform driving tasks without intervention by a human driver. Technically, advanced driver assistance system (ADAS) can be classified into levels 0-5: No Automation (Level 0), Driver Assistance (Level 1), Partial Automation (Level 2), Conditional Automation (Level 3), High Automation (Level 4), and Full Automation (Level 5).

Given the compliance and safety concerns, many smart vehicles in China use Level 2 autonomous driving on highways and in certain urban areas, as provided by automakers.

***# What is the difference between ADAS and Autonomous Driving? Autonomous driving is an extension of ADAS.*** *Based on the above classification levels for autonomous driving, we refer to* ***Level 1 and 2 as ADAS****, which provide driver support, while* ***Level 3 to 5 is autonomous driving****, as it performs most/all operations.*

**Figure 41: Illustration of 5 levels of autonomous driving**

| Level 0 | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
|---|---|---|---|---|---|
| The driver is fully responsible and permanently carries out all aspects of the driving tasks | The driver can delegate either steering or accelerating / braking to the system | The driver must permanently monitor the system | In certain situations, the drivercan turn attention away from the road, but must always be ready to take full control again | The driver can transfer complete control to the system and devote himself to other activities. However, he can take control at any time if he wants | No driver needed |
| No driver assistance systems | The system will perform one of the driving tasks | The system will perform several of the driving tasks | The system can autonomously control the vehicle on defined routes | The system is able to perform all driving tasks | The system controls the vehicle autonomously under all conditions |

SOURCES: CGS-CIMB RESEARCH, WIKIPEDIA

**NIO's autonomous driving technology – NAD.** NIO Autonomous Driving (NAD) is currently the core and latest technology of NIO. NIO launched NAD, a full-stack solution equipped with perception algorithms, localisation, control strategy, and platform software developed in-house on Jan, 2021.

According to the company, NAD is developed based on the NT 2.0 platform with a full-stack self-developed technology. NIO plans to gradually expand the cover use cases from expressways, urban roads, parking, and battery swaps in cover 100 key cities in China, to provide a safer and more relaxing autonomous driving experience (Fig 42).

The ET7, which was delivered to customers in Mar 2022, was the first NIO EV to be equipped with NIO's NAD, which is now available on all NIO models that use the NT 2.0 platform, with full functionality available on a monthly subscription basis.

**Figure 42: NIO Autonomous Driving (NAD) key parameters**

| Aquila Super Sensing | Adam Super Computing | AD Algorithm | Vehicle Platform for AD |
|---|---|---|---|
| 33 High-Performance Sensing Units<br>8 MP High-Resolution Cameras<br>Ultralong-Range High-Resolution LiDAR<br>360° Vision Redundancy<br>All-Direction Fusion | 4 x NVIDIA DRIVE Orin 1,016 TOPS<br>Super ISP Pipeline<br>Ultrahigh-Bandwidth Backbone Network<br>Hot Standby Redundancy | Mulit-Solution Perception Fusion<br>Multi-Source Integrated Localisation<br>Multi-Modal Prediction and Planning<br>Crowd AI Personalisation | NIO Vehicle Operating System<br>Power Supply and Communication Redundancy<br>Steering Redundancy, Parking Brake Redundancy, Dual Motors |

SOURCES: CGS-CIMB RESEARCH, NIO

**XPeng's autonomous driving technology – XPILOT.** According to IHS Markit, XPeng is currently the only automotive company in China that develops full-stack autonomous driving software encompassing localisation and high definition map fusion, perception algorithm and sensor fusion, behavior planning, motion planning and control in house. XPeng has deployed abovementioned software on mass-produced vehicles.

XPeng's latest autonomous driving system 3.5 version was launched in Oct 2021, representing one of the most advanced autonomous driving technologies adopted in commercially available vehicles. XPILOT 3.5 is a new feature for driving in cities call "City NGP" which allows XPeng's EVs to change lanes, speed up or slow down, or overtake cars and enter and exit highways.

The company plans to roll out XPILOT 4.0 to support a wider geographical coverage and provide better vehicle interface and improve in-car experience for both drivers and passengers (Fig 43). XPeng aims to launch XNGP in 50 cities by end-2023 without relying on high-definition (HD) and plans to roll out XPILOT 4.0 in 2024.

**Figure 43: XPeng Autonomous Driving (XPILOT) contents**

| XPILOT 2.5 (launched in 2019) | XPILOT 3.0 (launched in Jan 2021) | XPILOT 3.5 (launched in Oct 2021) | XPILOT 4.0 (to be launched in 2024) |
|---|---|---|---|
| - Adaptive cruise control<br>- Adaptive turning control<br>- Lane centering control<br>- Automated lane charging<br>- Automated parking<br>- Active safety features | - Functions of XPILOT 2.5<br>- NGP for highwat driving<br>- Valet Parking Assist<br>- Surrounding Reality (SR) display | - Function of XPILOT 3.0<br>- NGP for major urban roads (in cities)<br>- change lens, speed up or slow down<br>- overtake cars and entre and exit highways | - Function of XPILOT 3.5<br>- wider geographical coverage<br>- better Q1 vehicle interface<br>- improved in-car experience for both drivers and passengers |

SOURCES: CGS-CIMB RESEARCH, XPENG

**Li Auto's autonomous driving technology – Li Auto AD Max.** Li Auto's autonomous driving technology – Li Auto AD Max or Li Auto AD is currently applied to model L7, L8, and L9, respectively.

The former autonomous driving system is an updated version of latter, which has equipped more advanced equipment to improve driving assistance quality. Both of them have equipped the level 2 basic autonomous driving features such as adaptive cruise control, automatic emergency braking, automatic parking assist, forward collision warning, intelligent headlight control, lane change assist, lane departure warning, lane keep assist, and side view assist (Fig 44).

In Apr 2023, Li Auto introduced its latest AD Max 3.0 at the Shanghai Auto Show, marking the company's debut into the urban scene. AD Max 3.0 is the first appearance of Li Auto's full-stack self-development and is equipped with a large-scale AI algorithm that enables real-time perception, decision-making, and planning like a human driver without relying on high-precision maps. The algorithm has already shown high degrees of accuracy in identifying objects such as open car doors and puppies on the side of the road.

Li Auto intends to launch AD Max 3.0 in 100 Chinese cities by the end of 2023, seamlessly integrating cities and roads. Li Auto's self-service supercharging stations will also be connected with the AD Max 3.0, making it easier for users to visit Supercharge stations rather than petrol stations. Furthermore, Li Auto AD Max 3.0 City NOA's software and service rates are perpetual, with no subscription fees.

**Figure 44: Li Auto's ADAS Hardware Platforms (New vs. Old)**

| Li Auto AD Max | Li Auto AD |
|---|---|
| 1) NIVIDA Orin X chips x2<br>2) Forward 128-line LiDAR x1<br>3) 8-megapixel Camera x6<br>4) 2-megapixel Camera x5<br>5) Ultrasonic Sensor x12<br>6) Forward Millimeter Wave Radar x1<br>7) Capacitive Hand Detection Steering Wheel<br>8) Steering Wheel with Vibration Alert<br>9) Attention Warning System | 1) Horizon Robotics Journey 3 Processor x2<br>2) 8-megapixel camera x1<br>3) 2-megapixel camera x4<br>4) Fifth-generation Millimeter-wave Radars x5<br>5) Ultrasonic sensor x12 |

SOURCES: CGS-CIMB RESEARCH, LI AUTO

# China new energy vehicle industry ESG

## ESG in a nutshell – China NEV industry

ESG

In our view, the China new energy vehicle industry has a medium ESG risk, based on the ESG scores provided by Refinitiv. Our coverage had 2 "B"s, 3 "C+"s and 1 "D+" ratings as of 2022, indicating the companies have ESG practices in place but face certain ESG risks in their operations. China NEV manufacturers face potential ESG challenges such as 1) transparency of environmental expenditure and investment disclosure, 2) companies' CSR governance strategies, and 3) a large supply chain across multiple jurisdictions. As the China EV industry is growing rapidly, in our view, NEVs exports are gaining considerable market share. Therefore, ensuring good practices in environmental protection, business ethics and labour practices in each jurisdiction and sufficient data disclosure is a potential challenge.

| Keep your eye on | Implications |
|---|---|
| China government has been providing subsidies for either production of new energy vehicles (NEVs) and purchase of NEVs, supporting and boosting the plans for the five strategic tasks for China's NEV industry for the next 15 years (2021-35). | In our view, China's national carbon emissions trading scheme (ETS) launched in Jul 2022 benefits China's NEV industry as a whole, including electric vehicle (EV) charging business, EV battery business and other EV core components business. It could offer long-term sustainable investment opportunities as more coal- and gas-fired power plants are gradually phased out. However, we believe there would be moderate risk in other jurisdictions. |
| **ESG highlights** | **Implications** |
| Our sector top pick is BYD. Its combined ESG score from Refinitiv was B- as of 2022. BYD scored a B+ in the environmental pillar and B- in the governance pillar. | BYD was ranked 9th out of 43 companies by Refinitiv in terms of ESG in 2023 in the automobiles and auto parts sector in China. The company also ranked 4th in the environmental pillar. Within the pillar, BYD did the best in environmental innovation The company offers a variety of battery-electric bus and coach models, which have achieved more than 18m emission-free miles in revenue services, in the US and Asia, according to BYD's websites. |
| **Trends** | **Implications** |
| With China's NEV supply chain gradually becoming clear and well-segmented, some upstream businesses such as mining and refining would largely affect the whole industry even though the NEV industry's purpose is aimed at protecting the environment by reducing carbon footprint. | To reduce carbon emissions in China, the Chinese government has set a number of targets, including 1) reducing carbon intensity, or the amount of carbon emitted per unit of GDP, by more than 65% by 2030, and 2) installing enough solar and wind power generators. Supportive policies for the NEV industry are becoming increasingly important in order to meet the Chinese government's reduction of carbon emissions. |

SOURCES: CGS-CIMB RESEARCH, REFINITIV

# BYD Co Ltd

## Solid EV delivery outlook, with a stable VPM

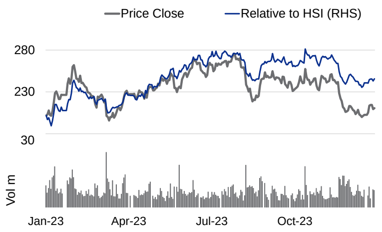
- BYD is one of our top picks in the sector because of its outstanding earnings growth potential and cost advantage over competitors.
- We expect its NEV shipments to rise to 3.7m/4.3m units (+22%/+17% yoy) in FY24F/25F due to stable market share in China and higher overseas sales.
- We reiterate our Add call with an unchanged SOP-based TP of HK$389.0.

### Hong Kong

**ADD** *(no change)*

| | |
|---|---|
| Consensus ratings*: | Buy 36 Hold 1 Sell 1 |
| Current price: | HK$210.6 |
| Target price: | HK$389.0 |
| Previous target: | HK$389.0 |
| Up/downside: | 84.7% |
| CGS-CIMB / Consensus: | 16.1% |
| Reuters: | 1211.HK |
| Bloomberg: | 1211 HK |
| Market cap: | US$78,591m |
| | HK$614,125m |
| Average daily turnover: | US$190.5m |
| | HK$1,490m |
| Current shares o/s | 2,911m |
| Free float: | 68.9% |

**Source: Bloomberg*




*Source: Bloomberg*

| Price performance | 1M | 3M | 12M |
|---|---|---|---|
| Absolute (%) | 2.2 | -11.7 | 4.5 |
| Relative (%) | 3.3 | -7.7 | 21.9 |

| Major shareholders | % held |
|---|---|
| Mr. Wang Chuan Fu (Chairman) | 17.6 |
| Mr. Lv Xiang Yang (non exeutive vice | 13.5 |
| Berkshire Hathaway | 5.6 |

### Solid earnings growth prospects

- BYD is China's largest new energy vehicle (NEV) manufacturer, with a market share of more than 35% by sales volume in 2023 (source: CAAM), targeting the mass market (Rmb150k to 250k price range) and pioneering plug-in technology.
- We like BYD because of its strong net profit growth prospects (+26% in FY24F/+15% in FY25F), supported by fast-growing NEV shipments and long-term EV profitability, thanks to cost advantages from in-house battery and semiconductor manufacturing, as well as integrated production capabilities.

### Promising NEV deliveries outlook

- BYD shipped 3.0m NEVs in 2023 (+62% yoy), thanks to strong deliveries of low- to mid-end A-class models (Qin and Dolphin), further penetration into lower-tier cities, and increased overseas shipments.
- We remain optimistic about BYD's position in China's NEV market, where it initially focused on the mass market segment before entering the mid- to high-end and luxury segments (Denza series and Yangwang), as well as expanding overseas shipments through ongoing collaboration with local distributors.
- We project its EV deliveries to rise to 3.68m units (+22% yoy) and 4.31m units (+17% yoy) in FY24F and FY25F, respectively, driven by consumer preference for plug-in hybrid EVs (PHEV), strong deliveries of low- to mid-end A-class models (Qin and Dolphin models), rising shipments from its Denza-series, and the fast-growing overseas shipments.
- BYD delivered 240k NEVs to overseas markets, accounting for 8% of its total NEV shipments in FY23F. We expect its overseas shipments to rise to 450k/800k units, forming 12%/19% of total shipments in FY24F/FY25F.

### Vehicle profit margin trends in FY24F

- Despite growing competition in the mid-priced mass market, we expect its vehicle profit margin (VPM) to remain healthy in FY24F, at 20-25%, due to price discipline, strong operating leverage, and decreased lithium carbonate costs.

### Reiterate Add: TP unchanged at HK$389.0

- We reiterate Add as we expect strong NEV deliveries to sustain in FY24-25F due to the launch of new models, stable market share in China, and overseas network expansion. Our SOP TP of HK$389.0 implies 33x FY23F P/E and 19x FY23F EV/EBITDA.
- Re-rating catalysts: stable NEV delivery growth, robust export sales, and stable VPM outlook. Downside risks: higher-than-expected promotion expenses to expand in overseas markets and higher lithium carbonate costs lifting its EV battery costs.

| Financial Summary | Dec-21A | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|---|
| Revenue (Rmbm) | 216,142 | 424,061 | 598,467 | 703,894 | 803,455 |
| Operating EBITDA (Rmbm) | 16,405 | 41,041 | 58,189 | 66,926 | 74,094 |
| Net Profit (Rmbm) | 3,045 | 16,622 | 30,307 | 38,045 | 43,870 |
| Normalised EPS (Rmb) | 1.07 | 5.71 | 10.41 | 13.07 | 15.07 |
| Normalised EPS Growth | (31%) | 435% | 82% | 26% | 15% |
| FD Normalised P/E (x) | 184.0 | 33.7 | 18.5 | 14.7 | 12.8 |
| DPS (Rmb) | 0.11 | 0.11 | 0.21 | 0.26 | 0.30 |
| Dividend Yield | 0.057% | 0.059% | 0.108% | 0.136% | 0.157% |
| EV/EBITDA (x) | 31.77 | 12.59 | 7.94 | 6.47 | 5.40 |
| P/FCFE (x) | NA | 146.4 | 10.3 | 19.4 | 16.8 |
| Net Gearing | (28%) | (32%) | (101%) | (139%) | (159%) |
| P/BV (x) | 5.78 | 5.05 | 6.82 | 7.25 | 6.43 |
| ROE | 4.0% | 16.1% | 31.4% | 47.7% | 53.4% |
| Normalised EPS/consensus EPS (x) | | | 0.97 | 0.93 | 0.85 |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

**Analyst**

**Ray KWOK**
**T** (852) 2532 1113
**E** ray.kwok@cgs-cimb.com

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# BY THE NUMBERS

## Profit & Loss

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| **Total Net Revenues** | **424,061** | **598,467** | **703,894** | **803,455** |
| **Gross Profit** | **72,245** | **117,928** | **142,076** | **163,856** |
| **Operating EBITDA** | **41,041** | **58,189** | **66,926** | **74,094** |
| Depreciation And Amortisation | -19,786 | -24,218 | -25,395 | -26,394 |
| **Operating EBIT** | **21,255** | **33,971** | **41,530** | **47,699** |
| Financial Income/(Expense) | 513 | 1,419 | 3,610 | 4,782 |
| Pretax Income/(Loss) from Assoc. | -686 | 0 | 0 | 0 |
| Non-Operating Income/(Expense) | -3 | 2,800 | 2,800 | 2,800 |
| **Profit Before Tax (pre-EI)** | **21,080** | **38,190** | **47,940** | **55,281** |
| Exceptional Items | 0 | 0 | 0 | 0 |
| **Pre-tax Profit** | **21,080** | **38,190** | **47,940** | **55,281** |
| Taxation | -3,367 | -5,907 | -7,415 | -8,551 |
| Exceptional Income - post-tax | | | | |
| **Profit After Tax** | **17,713** | **32,283** | **40,525** | **46,730** |
| Minority Interests | -1,091 | -1,976 | -2,480 | -2,860 |
| Preferred Dividends | | | | |
| FX Gain/(Loss) - post tax | | | | |
| Other Adjustments - post-tax | | | | |
| **Net Profit** | **16,622** | **30,307** | **38,045** | **43,870** |
| Normalised Net Profit | 17,713 | 32,283 | 40,525 | 46,730 |
| **Fully Diluted Normalised Profit** | **16,622** | **30,307** | **38,045** | **43,870** |

## Balance Sheet

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Total Cash And Equivalents | 51,471 | 104,703 | 132,459 | 164,547 |
| Total Debtors | 80,573 | 102,073 | 120,054 | 137,035 |
| Inventories | 79,107 | 78,993 | 92,354 | 105,140 |
| Total Other Current Assets | 29,652 | 29,652 | 29,652 | 29,652 |
| **Total Current Assets** | **240,804** | **315,420** | **374,518** | **436,373** |
| Fixed Assets | 131,880 | 139,662 | 146,267 | 151,873 |
| Total Investments | 15,485 | 15,485 | 15,485 | 15,485 |
| Intangible Assets | 23,223 | 23,223 | 23,223 | 23,223 |
| Total Other Non-Current Assets | 82,468 | 82,468 | 82,468 | 82,468 |
| **Total Non-current Assets** | **253,057** | **260,839** | **267,444** | **273,049** |
| Short-term Debt | 5,208 | 5,468 | 5,741 | 6,029 |
| Current Portion of Long-Term Debt | | | | |
| Total Creditors | 80,573 | 102,073 | 120,054 | 137,035 |
| Other Current Liabilities | 247,564 | 338,165 | 391,792 | 433,356 |
| **Total Current Liabilities** | **333,345** | **445,706** | **517,587** | **576,419** |
| Total Long-term Debt | 7,594 | 6,094 | 4,594 | 3,094 |
| Hybrid Debt - Debt Component | | | | |
| Total Other Non-Current Liabilities | 31,533 | 31,948 | 32,162 | 32,349 |
| **Total Non-current Liabilities** | **39,126** | **38,041** | **36,756** | **35,443** |
| Total Provisions | 0 | 0 | 0 | 0 |
| **Total Liabilities** | **372,471** | **483,747** | **554,343** | **611,862** |
| Shareholders' Equity | 111,029 | 82,151 | 77,259 | 87,200 |
| Minority Interests | 10,361 | 10,361 | 10,361 | 10,361 |
| **Total Equity** | **121,390** | **92,512** | **87,619** | **97,560** |

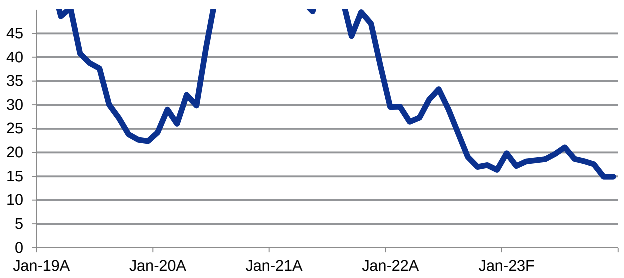
## Cash Flow

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| EBITDA | 41,041 | 58,189 | 66,926 | 74,094 |
| Cash Flow from Invt. & Assoc. | 686 | 0 | 0 | 0 |
| Change In Working Capital | 98,418 | 38,406 | 5,902 | 4,280 |
| (Incr)/Decr in Total Provisions | | | | |
| Other Non-Cash (Income)/Expense | | | | |
| Other Operating Cashflow | 748 | 1,973 | -219 | -1,390 |
| Net Interest (Paid)/Received | 513 | 1,419 | 3,610 | 4,782 |
| Tax Paid | -569 | -5,907 | -7,415 | -8,551 |
| **Cashflow From Operations** | **140,838** | **94,079** | **68,803** | **73,214** |
| Capex | -97,457 | -30,000 | -30,000 | -30,000 |
| Disposals Of FAs/subsidiaries | -8,636 | -8,636 | -8,636 | -8,636 |
| Acq. Of Subsidiaries/investments | 0 | 0 | 0 | 0 |
| Other Investing Cashflow | -14,503 | 0 | 0 | 0 |
| **Cash Flow From Investing** | **-120,596** | **-38,636** | **-38,636** | **-38,636** |
| Debt Raised/(repaid) | -16,413 | -1,240 | -1,227 | -1,213 |
| Proceeds From Issue Of Shares | 508 | 0 | 0 | 0 |
| Shares Repurchased | 0 | 0 | 0 | 0 |
| Dividends Paid | -385 | -332 | -606 | -761 |
| Preferred Dividends | | | | |
| Other Financing Cashflow | -3,198 | -640 | -578 | -517 |
| **Cash Flow From Financing** | **-19,489** | **-2,212** | **-2,411** | **-2,491** |
| Total Cash Generated | 753 | 53,231 | 27,756 | 32,088 |
| **Free Cashflow To Equity** | **3,829** | **54,204** | **28,941** | **33,365** |
| **Free Cashflow To Firm** | **21,558** | **56,084** | **30,745** | **35,095** |

## Key Ratios

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Revenue Growth | 96.2% | 41.1% | 17.6% | 14.1% |
| Operating EBITDA Growth | 150% | 42% | 15% | 11% |
| Operating EBITDA Margin | 9.68% | 9.72% | 9.51% | 9.22% |
| Net Cash Per Share (Rmb) | 13.28 | 31.99 | 41.95 | 53.39 |
| BVPS (Rmb) | 38.14 | 28.22 | 26.54 | 29.95 |
| Gross Interest Cover | 16.15 | 53.07 | 71.84 | 92.31 |
| Effective Tax Rate | 16.0% | 15.5% | 15.5% | 15.5% |
| Net Dividend Payout Ratio | 2.0% | 2.0% | 2.0% | 2.0% |
| Accounts Receivables Days | 32.03 | 26.84 | 27.83 | 28.14 |
| Inventory Days | 63.53 | 60.04 | 55.81 | 56.35 |
| Accounts Payables Days | 38.61 | 33.43 | 34.87 | 35.35 |
| ROIC (%) | 21% | 26% | 197% | (201%) |
| ROCE (%) | 17.8% | 30.2% | 45.3% | 51.8% |
| Return On Average Assets | 4.39% | 5.83% | 6.21% | 6.39% |

## 12-mth Fwd FD P/E (x) - BYD Co Ltd




## Key Drivers

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Vehicle sales (No. of '000 units) | 1,867,128.0 | 2,969,962.1 | 3,682,752.9 | 4,308,820.9 |
| Vehicle sales (Rmb bn) | 324.7 | 494.1 | 594.3 | 688.4 |
| Vehicle margin (%) | 20.3% | 22.6% | 22.8% | 22.8% |

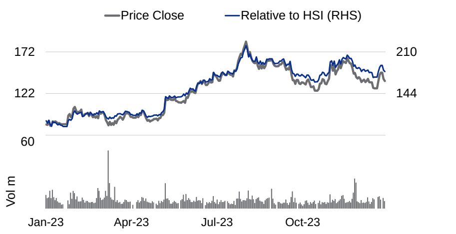
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Hong Kong

**ADD** *(no change)*

| Consensus ratings*: | Buy 34 Hold 1 Sell 0 |
|---|---|
| Current price: | HK$137.0 |
| Target price: | HK$272.6 |
| Previous target: | HK$272.6 |
| Up/downside: | 99.0% |
| CGS-CIMB / Consensus: | 28.1% |
| Reuters: | 2015.HK |
| Bloomberg: | 2015 HK |
| Market cap: | US$37,204m |
| | HK$290,717m |
| Average daily turnover: | US$119.4m |
| | HK$932.2m |
| Current shares o/s | 2,085m |
| Free float: | 56.2% |

**Source: Bloomberg*




*Source: Bloomberg*

| Price performance | 1M | 3M | 12M |
|---|---|---|---|
| Absolute (%) | -6.6 | 2.2 | 61.5 |
| Relative (%) | -5.5 | 6.2 | 78.9 |

| Major shareholders | % held |
|---|---|
| Amp Lee Ltd. | 23.8 |
| Inspired Elite Investment Limited | 13.2 |
| Zijin Global Inc. | 6.8 |

# Li Auto Inc

## EREVs and BEVs to drive EV sales

- Li Auto is the market leader in China's premium SUV segment, with a market share of c.15% in 2023.
- We expect Li Auto's EV deliveries at 560k units in FY24F, increasing to 800k units in FY25F, underpinned by an expanding EV portfolio.
- We reiterate our Add call, with a DCF-based TP of HK$272.60.

### The market leader in China's premium SUV segment

- Li Auto held a 4.3% market share by volume in China's NEV market in 2023 (source: CAAM), and c.15% market share in China's premium SUV segment (NEV and ICE at Rmb400k and above), owing to an expanding portfolio of extended-range electric vehicle (EREV) models that are particularly appealing to young Chinese families.
- Li Auto is one of our sector top picks. We believe Li Auto would maintain its market leadership in China's SUVs and NEVs priced above Rmb300k, thanks to its leading EREV technology. More importantly, we are optimistic about its battery electric vehicle (BEV) model Li MEGA, which will start deliveries in Feb 24F.

### Strong FY24F/25F EV delivery outlook, with 49%/43% yoy growth

- Li Auto delivered 376k EREVs in FY23F (+189% yoy) due to the strong performance of its L7, L8 and L9 models, as well as improved delivery efficiency and increased production capacity.
- We expect Li MEGA to drive stronger EV deliveries of 560k units in FY24F (+49% yoy) and 800k units in FY25F (+43% yoy), with its expanding EV portfolio (4 EREV models and 3 BEV models) and further expansion in its production capacity (from 45k/month by end-FY23 to c.70k/month by end-FY24F).

### Stable VPM outlook in FY24F

- We expect Li Auto's vehicle profit margin (VPM) to remain above 22% FY24F (19.8% in 1Q23, 21.0% in 2Q23 and 21.2% in 3Q23), despite increased competition in China's premium SUV segment, because of production efficiency improvement and higher economies of scale.

### Reiterate Add with unchanged target price of HK$272.6

- We reiterate our Add call on Li Auto, with a DCF-based TP of HK$272.6 (WACC: 14.4%, TGR: 3.0%), as we remain positive on its BEV launches, which would generate new revenue, and its market position in China's premium SUV segment.
- Share price catalysts are successful Li MEGA launch, stable VPM outlook, and stable EV battery costs. Increased competition in the Rmb400k+ passenger car price segment (both EV and ICE) and lower-than-expected VPM for its BEV models are potential downside risks.

**Analyst**

**Ray KWOK**
**T** (852) 2532 1113
**E** ray.kwok@cgs-cimb.com

| Financial Summary | Dec-21A | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|---|
| Revenue (Rmbm) | 27,010 | 45,287 | 126,089 | 182,166 | 255,609 |
| Operating EBITDA (Rmbm) | -427 | -2,441 | 9,722 | 14,583 | 19,099 |
| Net Profit (Rmbm) | -321 | -2,012 | 8,773 | 11,932 | 15,962 |
| Normalised EPS (Rmb) | 0.42 | 0.02 | 5.19 | 6.71 | 8.64 |
| Normalised EPS Growth | 29% | (95%) | 24519% | 29% | 29% |
| FD Normalised P/E (x) | 298 | 5,936 | 24 | 19 | 15 |
| DPS (Rmb) | - | - | - | - | - |
| Dividend Yield | 0% | 0% | 0% | 0% | 0% |
| EV/EBITDA (x) | 278.6 | NA | 17.0 | 10.8 | 7.3 |
| P/FCFE (x) | 63.5 | 103.2 | 31.4 | 17.9 | 12.5 |
| Net Gearing | (108%) | (108%) | (108%) | (115%) | (124%) |
| P/BV (x) | 6.30 | 5.82 | 4.64 | 3.69 | 3.07 |
| ROE | 2.2% | 0.1% | 21.4% | 22.0% | 23.1% |
| Normalised EPS/consensus EPS (x) | | | 1.50 | 1.22 | 0.99 |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

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# BY THE NUMBERS

## Profit & Loss

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| **Total Net Revenues** | **45,287** | **126,089** | **182,166** | **255,609** |
| **Gross Profit** | **8,790** | **27,248** | **39,366** | **55,236** |
| **Operating EBITDA** | **-2,441** | **9,722** | **14,583** | **19,099** |
| Depreciation And Amortisation | -1,214 | -2,270 | -2,907 | -3,482 |
| **Operating EBIT** | **-3,655** | **7,452** | **11,676** | **15,617** |
| Financial Income/(Expense) | 870 | 1,404 | 1,681 | 2,269 |
| Pretax Income/(Loss) from Assoc. | 0 | 0 | 0 | 0 |
| Non-Operating Income/(Expense) | 626 | 745 | 0 | 0 |
| **Profit Before Tax (pre-EI)** | **-106** | **11,654** | **15,411** | **19,939** |
| Exceptional Items | 0 | 0 | 0 | 0 |
| **Pre-tax Profit** | **-2,159** | **9,601** | **13,358** | **17,886** |
| Taxation | 127 | -768 | -1,336 | -1,789 |
| Exceptional Income - post-tax | | | | |
| **Profit After Tax** | **-2,032** | **8,833** | **12,022** | **16,097** |
| Minority Interests | 20 | -60 | -90 | -135 |
| Preferred Dividends | | | | |
| FX Gain/(Loss) - post tax | | | | |
| Other Adjustments - post-tax | | | | |
| **Net Profit** | **-2,012** | **8,773** | **11,932** | **15,962** |
| Normalised Net Profit | 21 | 10,886 | 14,075 | 18,150 |
| **Fully Diluted Normalised Profit** | **41** | **10,826** | **13,985** | **18,015** |

## Balance Sheet

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Total Cash And Equivalents | 58,450 | 72,086 | 93,415 | 118,241 |
| Total Debtors | 1,738 | 4,840 | 6,992 | 9,811 |
| Inventories | 6,805 | 18,429 | 26,625 | 37,359 |
| Total Other Current Assets | 0 | 0 | 0 | 0 |
| **Total Current Assets** | **66,992** | **95,354** | **127,032** | **165,411** |
| Fixed Assets | 11,188 | 14,918 | 18,511 | 21,529 |
| Total Investments | 1,484 | 1,484 | 1,484 | 1,484 |
| Intangible Assets | 833 | 833 | 833 | 833 |
| Total Other Non-Current Assets | 6,040 | 6,040 | 6,040 | 6,040 |
| **Total Non-current Assets** | **19,545** | **23,275** | **26,869** | **29,887** |
| Short-term Debt | 391 | 870 | 1,006 | 1,129 |
| Current Portion of Long-Term Debt | | | | |
| Total Creditors | 25,709 | 45,198 | 65,299 | 91,625 |
| Other Current Liabilities | 1,273 | 1,273 | 1,273 | 1,273 |
| **Total Current Liabilities** | **27,373** | **47,341** | **67,578** | **94,027** |
| Total Long-term Debt | 9,231 | 10,000 | 10,500 | 11,025 |
| Hybrid Debt - Debt Component | | | | |
| Total Other Non-Current Liabilities | 4,670 | 4,670 | 4,670 | 4,670 |
| **Total Non-current Liabilities** | **13,901** | **14,670** | **15,170** | **15,695** |
| Total Provisions | 78 | 78 | 78 | 78 |
| **Total Liabilities** | **41,352** | **62,089** | **82,826** | **109,801** |
| Shareholders' Equity | 44,859 | 56,213 | 70,747 | 85,170 |
| Minority Interests | 328 | 328 | 328 | 328 |
| **Total Equity** | **45,186** | **56,540** | **71,075** | **85,497** |

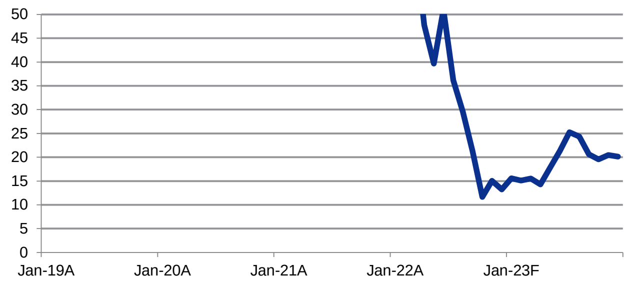
## Cash Flow

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| EBITDA | -2,441 | 9,722 | 14,583 | 19,099 |
| Cash Flow from Invt. & Assoc. | 0 | 0 | 0 | 0 |
| Change In Working Capital | 4,740 | 3,469 | 7,401 | 9,692 |
| (Incr)/Decr in Total Provisions | | | | |
| Other Non-Cash (Income)/Expense | | | | |
| Other Operating Cashflow | 5,314 | 918 | 196 | 67 |
| Net Interest (Paid)/Received | -106 | -173 | -196 | -67 |
| Tax Paid | -127 | -768 | -1,336 | -1,789 |
| **Cashflow From Operations** | **7,380** | **13,168** | **20,648** | **27,003** |
| Capex | -5,128 | -6,000 | -6,500 | -6,500 |
| Disposals Of FAs/subsidiaries | 60,468 | 0 | 0 | 0 |
| Acq. Of Subsidiaries/investments | 0 | 0 | 0 | 0 |
| Other Investing Cashflow | -59,705 | 0 | 0 | 0 |
| **Cash Flow From Investing** | **-4,365** | **-6,000** | **-6,500** | **-6,500** |
| Debt Raised/(repaid) | -661 | 1,249 | 636 | 648 |
| Proceeds From Issue Of Shares | 2,462 | 0 | 0 | 0 |
| Shares Repurchased | 0 | 0 | 0 | 0 |
| Dividends Paid | 0 | 0 | 0 | 0 |
| Preferred Dividends | | | | |
| Other Financing Cashflow | 3,838 | 3,568 | 3,546 | 3,675 |
| **Cash Flow From Financing** | **5,639** | **4,817** | **4,181** | **4,323** |
| Total Cash Generated | 8,655 | 11,985 | 18,330 | 24,826 |
| **Free Cashflow To Equity** | **2,354** | **8,416** | **14,784** | **21,151** |
| **Free Cashflow To Firm** | **3,122** | **7,341** | **14,344** | **20,569** |

## Key Ratios

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Revenue Growth | 68% | 178% | 44% | 40% |
| Operating EBITDA Growth | (158%) | N/A | 41% | 27% |
| Operating EBITDA Margin | (0.86%) | 9.34% | 9.13% | 8.28% |
| Net Cash Per Share (Rmb) | 23.42 | 29.37 | 39.29 | 50.89 |
| BVPS (Rmb) | 21.52 | 26.97 | 33.94 | 40.86 |
| Gross Interest Cover | (15.1) | 54.9 | 70.2 | 265.2 |
| Effective Tax Rate | 0.0% | 8.0% | 10.0% | 10.0% |
| Net Dividend Payout Ratio | NA | NA | NA | NA |
| Accounts Receivables Days | 0.68 | 0.26 | 0.33 | 0.33 |
| Inventory Days | 42.12 | 46.59 | 57.74 | 58.28 |
| Accounts Payables Days | 147.0 | 102.0 | 110.3 | 111.3 |
| ROIC (%) | 279% | (2314%) | (876%) | (210%) |
| ROCE (%) | (1.2%) | 18.1% | 20.8% | 22.2% |
| Return On Average Assets | (1.08%) | 9.35% | 9.22% | 9.23% |

## 12-mth Fwd FD P/E (x) - Li Auto Inc




## Key Drivers

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| No. of EV deliveries ('000 units) | 133.2 | 372.0 | 560.1 | 800.2 |
| No. of EV deliveries (units yoy% chg) | 47.2% | 179.2% | 50.6% | 42.9% |
| Vehcile sales (Rmb m yoy % chg) | 68.8% | 178.9% | 44.5% | 40.3% |
| Vehcile sales (GPM %) | 31.5% | 46.0% | 46.0% | 46.0% |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

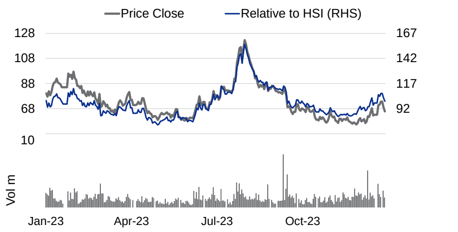
D+ Refinitiv ESG Combined Score

## Hong Kong

**ADD** *(no change)*

| Consensus ratings*: | Buy 15 Hold 3 Sell 1 |
|---|---|
| Current price: | HK$65.80 |
| Target price: | HK$105.0 |
| Previous target: | HK$105.0 |
| Up/downside: | 59.6% |
| CGS-CIMB / Consensus: | 20.9% |
| Reuters: | 9866.HK |
| Bloomberg: | 9866 HK |
| Market cap: | US$17,453m |
| | HK$136,378m |
| Average daily turnover: | US$10.58m |
| | HK$82.80m |
| Current shares o/s | 1,820m |
| Free float: | 74.4% |

**Source: Bloomberg*




*Source: Bloomberg*

| Price performance | 1M | 3M | 12M |
|---|---|---|---|
| Absolute (%) | 16.6 | -2.5 | -18 |
| Relative (%) | 17.7 | 1.5 | -0.6 |

| Major shareholders | % held |
|---|---|
| Mr. Bin Li | 10.5 |
| Tencent | 9.8 |
| Baillie Gifford & Co. | 5.3 |

# NIO Inc

## Profitability set to improve in FY24F

- We are positive on NIO due to its leading market share in China's premium sedan segment.
- We expect NIO's profitability to continue to improve in FY24-25F due to improved VPM and battery swap operations, as well as increased EV sales.
- Reiterate Add, with an unchanged DCF-based target price of HK$105.

### NIO holds dominant market share in China's premium EV segment

- NIO had a market share of more than 50% in China's premium EV segment priced above Rmb300k in 2023, according to CAAM.
- We are positive on NIO due to its market-leading position in China's premium sedan segment (Rmb300k-Rmb400k price range), thanks to its unique battery swap technology and industry-leading autonomous driving system.

### EV deliveries to grow 50% in FY24F and 29% yoy in FY25F

- NIO's EV shipments improved in 2H23 (+75% yoy to 55k units in 3Q23, +22% yoy to 49k units in 4Q23), driven by strong deliveries for new models of ES6 SUV, ES8 SUV, EC6 SUV, ET5 sedan, and ET5T station wagon, vs. a +7% growth in 1H23 due to increased competition, bringing total EV deliveries in FY23F to 160k (+25% yoy).
- We forecast NIO's EV deliveries at 240k (+50% yoy) in FY24F and 310k (+29% yoy) in FY25F, respectively, driven by its expanding distribution network in China and the scheduled launch of two sub-brands in 2H24F: 1) Alps, a mid-range family sedan with innovative features, and 2) Firefly, a budget-friendly sedan. We also expect increased overseas shipments in FY24-25F. NIO currently sells EVs in five European countries.

### FY24F and FY25F VPM set to improve on new production platform

- We expect NIO's vehicle profit margin to improve in FY24F/25F (c.11% in FY23F), owing to 1) increased EV deliveries, 2) higher sales of high-end models, 3) lower production costs from its own production factories, and 4) operating leverage. Furthermore, we expect its blended GPM to significantly improve in FY24F due to improving profitability of its battery swap operations, as NIO has agreed to share its battery swap infrastructure with Geely and Changan Auto.

### Reiterate Add, with unchanged target price HK$105.0

- We reiterate Add on NIO as we believe it would gain further market share in China's premium pure battery EV segment (priced Rmb300k-500k/unit) and improve its VPM on the back of its refreshed EV portfolio. Our DCF-based TP of HK$105.0 (WACC: 9.3%, TGR: 3.0%) is unchanged.
- Share price catalysts: stronger EV deliveries and sustained VPM improvement. Downside risks: increased competition in China's EV market impacting EV sales, and increased EV battery costs, which could lead to lower VPM.

| Financial Summary | Dec-21A | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|---|
| Revenue (Rmbm) | 36,136 | 49,269 | 55,205 | 84,672 | 110,825 |
| Operating EBITDA (Rmbm) | -2,788 | -12,788 | -15,076 | -5,817 | 1,308 |
| Net Profit (Rmbm) | -10,572 | -14,559 | -18,319 | -8,744 | -1,290 |
| Normalised EPS (Rmb) | -2.32 | -7.55 | -9.11 | -3.76 | 0.45 |
| Normalised EPS Growth | (46%) | 225% | 21% | (59%) | |
| FD Normalised P/E (x) | NA | NA | NA | NA | 132.3 |
| DPS (Rmb) | - | - | - | - | - |
| Dividend Yield | 0% | 0% | 0% | 0% | 0% |
| EV/EBITDA (x) | 14.42 | NA | NA | NA | 31.70 |
| P/FCFE (x) | 92.20 | NA | NA | NA | NA |
| Net Gearing | (101%) | (99%) | (45%) | (3%) | 11% |
| P/BV (x) | 2.88 | 4.26 | 8.20 | 15.15 | 15.14 |
| ROE | (11.8%) | (42.2%) | (85.0%) | (66.5%) | 11.4% |
| Normalised EPS/consensus EPS (x) | | | 0.86 | 0.55 | -0.17 |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

**Analyst**

**Ray KWOK**
**T** (852) 2532 1113
**E** ray.kwok@cgs-cimb.com

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# BY THE NUMBERS

## Profit & Loss

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| **Total Net Revenues** | **49,269** | **55,205** | **84,672** | **110,825** |
| **Gross Profit** | **5,144** | **4,445** | **11,642** | **17,833** |
| **Operating EBITDA** | **-12,788** | **-15,076** | **-5,817** | **1,308** |
| Depreciation And Amortisation | -2,852 | -4,332 | -4,175 | -4,058 |
| **Operating EBIT** | **-15,641** | **-19,408** | **-9,993** | **-2,750** |
| Financial Income/(Expense) | 1,026 | 869 | 818 | 593 |
| Pretax Income/(Loss) from Assoc. | 378 | 25 | 0 | 0 |
| Non-Operating Income/(Expense) | -283 | 450 | 854 | 996 |
| **Profit Before Tax (pre-EI)** | **-12,175** | **-15,164** | **-5,936** | **898** |
| Exceptional Items | 138 | 0 | 0 | 0 |
| **Pre-tax Profit** | **-14,382** | **-18,064** | **-8,321** | **-1,161** |
| Taxation | -55 | -30 | -250 | -35 |
| Exceptional Income - post-tax | | | | |
| **Profit After Tax** | **-14,437** | **-18,094** | **-8,570** | **-1,196** |
| Minority Interests | 157 | 25 | 12 | -35 |
| Preferred Dividends | | | | |
| FX Gain/(Loss) - post tax | | | | |
| Other Adjustments - post-tax | -279 | -250 | -185 | -59 |
| **Net Profit** | **-14,559** | **-18,319** | **-8,744** | **-1,290** |
| Normalised Net Profit | -12,230 | -15,194 | -6,185 | 863 |
| **Fully Diluted Normalised Profit** | **-12,353** | **-15,419** | **-6,359** | **769** |

## Balance Sheet

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Total Cash And Equivalents | 42,213 | 22,915 | 16,732 | 15,466 |
| Total Debtors | 7,365 | 8,252 | 12,657 | 16,566 |
| Inventories | 8,191 | 9,423 | 13,557 | 17,263 |
| Total Other Current Assets | 1,381 | 1,381 | 1,381 | 1,381 |
| **Total Current Assets** | **59,150** | **41,971** | **44,327** | **50,676** |
| Fixed Assets | 15,659 | 15,027 | 14,552 | 14,194 |
| Total Investments | 6,356 | 6,356 | 6,356 | 6,356 |
| Intangible Assets | 0 | 0 | 0 | 0 |
| Total Other Non-Current Assets | 15,099 | 15,099 | 15,099 | 15,099 |
| **Total Non-current Assets** | **37,114** | **36,483** | **36,007** | **35,649** |
| Short-term Debt | 4,039 | 3,621 | 4,443 | 4,652 |
| Current Portion of Long-Term Debt | | | | |
| Total Creditors | 25,224 | 18,079 | 25,010 | 29,299 |
| Other Current Liabilities | 16,589 | 16,676 | 16,506 | 17,994 |
| **Total Current Liabilities** | **45,852** | **38,376** | **45,959** | **51,945** |
| Total Long-term Debt | 10,886 | 12,000 | 12,000 | 12,000 |
| Hybrid Debt - Debt Component | | | | |
| Total Other Non-Current Liabilities | 11,661 | 11,661 | 11,661 | 11,661 |
| **Total Non-current Liabilities** | **22,547** | **23,661** | **23,661** | **23,661** |
| Total Provisions | 218 | 218 | 218 | 218 |
| **Total Liabilities** | **68,617** | **62,255** | **69,838** | **75,824** |
| Shareholders' Equity | 23,868 | 12,420 | 6,718 | 6,723 |
| Minority Interests | 3,779 | 3,779 | 3,779 | 3,779 |
| **Total Equity** | **27,647** | **16,199** | **10,496** | **10,501** |

## Cash Flow

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| EBITDA | -12,788 | -15,076 | -5,817 | 1,308 |
| Cash Flow from Invt. & Assoc. | -378 | -25 | 0 | 0 |
| Change In Working Capital | 3,090 | -8,993 | -264 | -2,134 |
| (Incr)/Decr in Total Provisions | | | | |
| Other Non-Cash (Income)/Expense | | | | |
| Other Operating Cashflow | 6,202 | 3,288 | 3,682 | 3,907 |
| Net Interest (Paid)/Received | -333 | -313 | -328 | -411 |
| Tax Paid | 342 | -30 | -250 | -35 |
| **Cashflow From Operations** | **-3,866** | **-21,150** | **-2,977** | **2,635** |
| Capex | -6,973 | -3,700 | -3,700 | -3,700 |
| Disposals Of FAs/subsidiaries | 19,027 | 0 | 0 | 0 |
| Acq. Of Subsidiaries/investments | -279 | 0 | 0 | 0 |
| Other Investing Cashflow | -18,466 | 0 | 0 | 0 |
| **Cash Flow From Investing** | **-6,692** | **-3,700** | **-3,700** | **-3,700** |
| Debt Raised/(repaid) | -1,632 | -7,855 | -7,728 | -8,341 |
| Proceeds From Issue Of Shares | 0 | 5,170 | 0 | 0 |
| Shares Repurchased | 0 | 0 | 0 | 0 |
| Dividends Paid | 0 | 0 | 0 | 0 |
| Preferred Dividends | | | | |
| Other Financing Cashflow | 15 | -313 | -328 | -411 |
| **Cash Flow From Financing** | **-1,616** | **-2,999** | **-8,056** | **-8,752** |
| Total Cash Generated | -12,174 | -27,848 | -14,733 | -9,817 |
| **Free Cashflow To Equity** | **-12,189** | **-32,704** | **-14,405** | **-9,406** |
| **Free Cashflow To Firm** | **-10,224** | **-24,536** | **-6,349** | **-654** |

## Key Ratios

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Revenue Growth | 36% | 12% | 53% | 31% |
| Operating EBITDA Growth | (353%) | 17% | (72%) | N/A |
| Operating EBITDA Margin | (21.2%) | (22.1%) | (4.1%) | 3.0% |
| Net Cash Per Share (Rmb) | 16.12 | 4.31 | 0.17 | -0.70 |
| BVPS (Rmb) | 14.10 | 7.34 | 3.97 | 3.97 |
| Gross Interest Cover | -39.90 | -52.67 | -23.19 | -1.68 |
| Effective Tax Rate | 0% | 0% | 0% | 0% |
| Net Dividend Payout Ratio | NA | NA | NA | NA |
| Accounts Receivables Days | 29.32 | 35.88 | 31.41 | 33.44 |
| Inventory Days | 42.38 | 63.33 | 57.59 | 60.49 |
| Accounts Payables Days | 156.6 | 155.7 | 108.0 | 106.6 |
| ROIC (%) | (526%) | (281%) | (54%) | (5%) |
| ROCE (%) | (24.4%) | (41.0%) | (21.8%) | 1.1% |
| Return On Average Assets | (15.1%) | (18.7%) | (9.1%) | 0.2% |

## Key Drivers

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Total no. of EV sales ('000 units) | 122.5 | 159.0 | 240.0 | 310.0 |
| Total no. of EV sales (units, yoy% chg) | 34.0% | 29.8% | 50.9% | 29.2% |
| Vehcile sales (Rmb, yoy % chg) | 37.2% | 7.7% | 54.3% | 33.3% |
| Vehcile sales margin (GPM %) | -29.0% | -18.0% | -5.0% | -3.0% |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

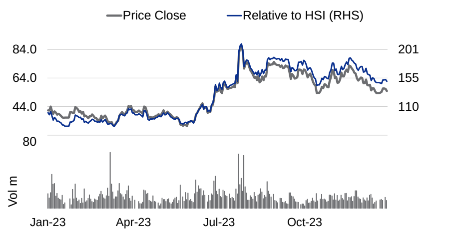
B
Refinitiv ESG Combined Score

Hong Kong

**ADD** *(no change)*

| Consensus ratings*: | Buy 25 Hold 5 Sell 5 |
|---|---|
| Current price: | HK$54.95 |
| Target price: | HK$87.20 |
| Previous target: | HK$87.20 |
| Up/downside: | 58.7% |
| CGS-CIMB / Consensus: | 10.1% |
| Reuters: | 9868.HK |
| Bloomberg: | 9868 HK |
| Market cap: | US$13,268m |
| | HK$103,681m |
| Average daily turnover: | US$86.88m |
| | HK$676.5m |
| Current shares o/s | 1,725m |
| Free float: | 77.6% |

*Source: Bloomberg*




*Source: Bloomberg*

| Price performance | 1M | 3M | 12M |
|---|---|---|---|
| Absolute (%) | -13.8 | -20.9 | 32.9 |
| Relative (%) | -12.7 | -16.9 | 50.3 |

| Major shareholders | % held |
|---|---|
| Xiaopeng He | 19.1 |
| Heng Xia | 3.3 |
| aha | |

# XPeng Inc

## EV margins likely to turn positive in FY24F

- We are optimistic about XPeng's expanding EV portfolio, with models that range from the mass market to A-class and premium segments.
- We expect XPeng's EV shipments to rise by 60%/40% yoy to 228k/320k in 24F/25F due to new models and store expansion.
- Reiterate Add with unchanged DCF-based target price of HK$87.20.

### Portfolio expansion to help boost EV deliveries in FY24-25F

- We are optimistic about XPeng's expanding EV portfolio that ranges from China's mass market to premium EV segments. We believe its collaboration with DiDi Global (DIDIY US, Not Rated) to expand into the A-class smart EV segment will accelerate shipments growth in FY24-25F.
- We think XPeng is the preferred EV maker among middle-class Chinese consumers for its industry-leading advanced driver assistance system (ADAS) software (XPILOT) and in-car intelligent operating system (Xmart OS) capabilities.

### EV deliveries set to accelerate in FY24F

- XPeng delivered 142k EVs in FY23, up 17% yoy, thanks to improved EV sales in 2H23 (-47% yoy in 1Q23, -33% yoy in 2Q23, +35% yoy in 3Q23, and +171% yoy in 4Q23), thanks to strong demand for its G6 SUV (manufacturer's suggested retail price [MSRP] of Rmb210k) and the newly-revamped G9 SUV, as well as LFP-based P7i sedan.
- We anticipate 228k/320k EV deliveries in FY24F/FY25F, up 60%/40% yoy, due to the addition of two SUV models, the P9 large-sized SUV, the G5 mid-sized SUV, the X9 MPV (starting Jan 24), the launch of Mona, a new brand, and an A-class EV model launch for DiDi Global, as well as continued store expansion, which will improve delivery efficiency.

### Production efficiency and cost-cutting measures could boost VPM

- XPeng delivered the weakest vehicle profit margins (VPM) among China's top-3 start-up EV makers (NIO, XPeng and Li Auto) in FY23F, with -6.1% in 3Q23 and c.4-5% in 4Q23F, due to increased marketing and promotional expenses and inventory write-offs on the legacy models. Nevertheless, we expect its VPM to improve to c.8% in FY24F and c.10% in FY25F due to increased EV deliveries, improved production efficiency and on-going cost reductions.

### Reiterate Add with unchanged target price of HK$87.20

- We maintain Add on XPeng due to its improved margins in EV sales and accelerated EV deliveries. Our DCF-based TP of HK$87.20 (WACC: 11.3%, TGR: 3.0) is unchanged.
- Share price catalysts include strong deliveries of the G9 and P7i and sustainable VPM improvements. Downside risks include increased competition in the Rmb150k-250k price segments, which would hurt EV sales and VPM, as well as higher-than-expected marketing expenses due to its overseas market expansion.

| Financial Summary | Dec-21A | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|---|
| Revenue (Rmbm) | 20,988 | 26,855 | 28,452 | 49,438 | 65,617 |
| Operating EBITDA (Rmbm) | -6,198 | -7,833 | -9,135 | -5,139 | -1,337 |
| Net Profit (Rmbm) | -4,863 | -9,139 | -9,726 | -6,271 | -3,143 |
| Normalised EPS (Rmb) | -2.71 | -4.88 | -5.13 | -2.96 | -1.08 |
| Normalised EPS Growth | 161% | 80% | 5% | (42%) | (63%) |
| FD Normalised P/E (x) | NA | NA | NA | NA | NA |
| DPS (Rmb) | - | - | - | - | - |
| Dividend Yield | 0% | 0% | 0% | 0% | 0% |
| EV/EBITDA (x) | NA | NA | NA | NA | NA |
| P/FCFE (x) | NA | 6.31 | NA | NA | NA |
| Net Gearing | (91.7%) | (64.7%) | (50.5%) | (32.8%) | (17.2%) |
| P/BV (x) | 2.04 | 2.35 | 2.75 | 3.60 | 4.21 |
| ROE | (11.6%) | (21.2%) | (25.9%) | (18.4%) | (8.4%) |
| Normalised EPS/consensus EPS (x) | | | 0.88 | 0.74 | 0.71 |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

**Analyst**

**Ray KWOK**
**T** (852) 2532 1113
**E** ray.kwok@cgs-cimb.com

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# BY THE NUMBERS

### Profit & Loss

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| **Total Net Revenues** | **26,855** | **28,452** | **49,438** | **65,617** |
| **Gross Profit** | **3,088** | **939** | **5,727** | **10,845** |
| **Operating EBITDA** | **-7,833** | **-9,135** | **-5,139** | **-1,337** |
| Depreciation And Amortisation | -981 | -1,591 | -1,988 | -2,254 |
| **Operating EBIT** | **-8,815** | **-10,726** | **-7,127** | **-3,590** |
| Financial Income/(Expense) | 927 | 981 | 922 | 581 |
| Pretax Income/(Loss) from Assoc. | 0 | 0 | 0 | 0 |
| Non-Operating Income/(Expense) | -1,230 | 0 | 0 | 0 |
| **Profit Before Tax (pre-EI)** | **-8,342** | **-8,879** | **-5,039** | **-1,733** |
| Exceptional Items | 0 | 0 | 0 | 0 |
| **Pre-tax Profit** | **-9,118** | **-9,745** | **-6,204** | **-3,009** |
| Taxation | -25 | -16 | -19 | -9 |
| Exceptional Income - post-tax | | | | |
| **Profit After Tax** | **-9,143** | **-9,761** | **-6,223** | **-3,018** |
| Minority Interests | 4 | 35 | -48 | -125 |
| Preferred Dividends | | | | |
| FX Gain/(Loss) - post tax | | | | |
| Other Adjustments - post-tax | | | | |
| **Net Profit** | **-9,139** | **-9,726** | **-6,271** | **-3,143** |
| Normalised Net Profit | -8,367 | -8,895 | -5,057 | -1,742 |
| **Fully Diluted Normalised Profit** | **-8,363** | **-8,860** | **-5,105** | **-1,867** |

### Balance Sheet

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Total Cash And Equivalents | 30,898 | 21,464 | 14,731 | 10,569 |
| Total Debtors | 6,339 | 6,379 | 11,085 | 14,712 |
| Inventories | 4,521 | 5,234 | 8,316 | 10,420 |
| Total Other Current Assets | 1,769 | 1,769 | 1,769 | 1,769 |
| **Total Current Assets** | **43,527** | **34,847** | **35,900** | **37,470** |
| Fixed Assets | 10,607 | 14,581 | 17,159 | 18,971 |
| Total Investments | 9,221 | 9,221 | 9,221 | 9,221 |
| Intangible Assets | 1,043 | 1,043 | 1,043 | 1,043 |
| Total Other Non-Current Assets | 7,092 | 7,092 | 7,092 | 7,092 |
| **Total Non-current Assets** | **27,964** | **31,938** | **34,516** | **36,328** |
| Short-term Debt | 2,419 | 2,050 | 2,850 | 3,026 |
| Current Portion of Long-Term Debt | | | | |
| Total Creditors | 14,314 | 16,570 | 26,326 | 32,987 |
| Other Current Liabilities | 7,382 | 7,329 | 7,338 | 7,335 |
| **Total Current Liabilities** | **24,115** | **25,950** | **36,514** | **43,349** |
| Total Long-term Debt | 4,613 | 3,500 | 4,000 | 4,000 |
| Hybrid Debt - Debt Component | | | | |
| Total Other Non-Current Liabilities | 5,852 | 5,852 | 5,852 | 5,852 |
| **Total Non-current Liabilities** | **10,465** | **9,352** | **9,852** | **9,852** |
| Total Provisions | 0 | 0 | 0 | 0 |
| **Total Liabilities** | **34,580** | **35,302** | **46,367** | **53,202** |
| Shareholders' Equity | 36,911 | 31,483 | 24,049 | 20,596 |
| Minority Interests | 0 | 0 | 0 | 0 |
| **Total Equity** | **36,911** | **31,483** | **24,049** | **20,596** |

### Cash Flow

| (Rmbm) | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| EBITDA | -7,833 | -9,135 | -5,139 | -1,337 |
| Cash Flow from Invt. & Assoc. | | | | |
| Change In Working Capital | -2,677 | 1,225 | 752 | 98 |
| (Incr)/Decr in Total Provisions | | | | |
| Other Non-Cash (Income)/Expense | | | | |
| Other Operating Cashflow | 13,303 | 7,910 | 4,387 | 1,239 |
| Net Interest (Paid)/Received | -132 | -302 | -305 | -377 |
| Tax Paid | 5 | -16 | -19 | -9 |
| **Cashflow From Operations** | **2,666** | **-318** | **-324** | **-386** |
| Capex | -4,276 | -5,500 | -4,500 | -4,000 |
| Disposals Of FAs/subsidiaries | 77 | 77 | 77 | 77 |
| Acq. Of Subsidiaries/investments | -98 | 0 | 0 | 0 |
| Other Investing Cashflow | 9,143 | 0 | 0 | 0 |
| **Cash Flow From Investing** | **4,846** | **-5,423** | **-4,423** | **-3,923** |
| Debt Raised/(repaid) | 6,119 | -2,163 | 618 | -506 |
| Proceeds From Issue Of Shares | 0 | 4,900 | 0 | 0 |
| Shares Repurchased | 0 | 0 | 0 | 0 |
| Dividends Paid | 0 | 0 | 0 | 0 |
| Preferred Dividends | | | | |
| Other Financing Cashflow | -115 | -302 | -305 | -377 |
| **Cash Flow From Financing** | **6,004** | **2,434** | **313** | **-882** |
| Total Cash Generated | 13,515 | -3,307 | -4,434 | -5,191 |
| **Free Cashflow To Equity** | **13,631** | **-7,905** | **-4,129** | **-4,814** |
| **Free Cashflow To Firm** | **7,644** | **-5,439** | **-4,442** | **-3,932** |

### Key Ratios

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Revenue Growth | 28% | 6% | 74% | 33% |
| Operating EBITDA Growth | 22% | 17% | (52%) | (97%) |
| Operating EBITDA Margin | (26.5%) | (29.3%) | (8.2%) | (0.2%) |
| Net Cash Per Share (Rmb) | 13.83 | 9.22 | 4.57 | 2.05 |
| BVPS (Rmb) | 21.39 | 18.25 | 13.94 | 11.94 |
| Gross Interest Cover | (60.8) | (32.6) | (19.5) | (6.1) |
| Effective Tax Rate | 0% | 0% | 0% | 0% |
| Net Dividend Payout Ratio | NA | NA | NA | NA |
| Accounts Receivables Days | 44.49 | 49.84 | 39.50 | 43.84 |
| Inventory Days | 55.16 | 64.71 | 56.73 | 62.43 |
| Accounts Payables Days | 204.1 | 203.6 | 178.4 | 196.4 |
| ROIC (%) | (268%) | (87%) | (42%) | (15%) |
| ROCE (%) | (15.9%) | (21.2%) | (13.9%) | (4.6%) |
| Return On Average Assets | (13.4%) | (14.1%) | (8.5%) | (3.1%) |

### Key Drivers

| | Dec-22A | Dec-23F | Dec-24F | Dec-25F |
|---|---|---|---|---|
| Total no. of EV sales ('000 units) | 120.8 | 143.0 | 228.0 | 320.0 |
| Total no. of EV sales (units yoy% chg) | 23.0% | 18.4% | 59.4% | 40.4% |
| Vehcile sales (Rmb yoy % chg) | 23.9% | 8.1% | 73.8% | 32.7% |
| Vehcile sales (GPM %) | 9.4% | 1.7% | 10.0% | 15.0% |

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

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| **Description:** | Excellent | Very Good | Good | N/A | N/A |

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| Distribution of stock ratings and investment banking clients for quarter ended on 30 September 2023<br>634 companies under coverage for quarter ended on 30 September 2023 | | |
|---|---|---|
| | Rating Distribution (%) | Investment Banking clients (%) |
| Add | 66.7% | 0.9% |
| Hold | 23.7% | 0.0% |
| Reduce | 9.6% | 0.2% |

**Recommendation Framework**

| **Stock Ratings** | Definition: |
|---|---|
| Add | The stock's total return is expected to exceed 10% over the next 12 months. |
| Hold | The stock's total return is expected to be between 0% and positive 10% over the next 12 months. |
| Reduce | The stock's total return is expected to fall below 0% or more over the next 12 months. |

*The total expected return of a stock is defined as the sum of the: (i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.*

| **Sector Ratings** | Definition: |
|---|---|
| Overweight | An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation. |
| Neutral | A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation. |
| Underweight | An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation. |

| **Country Ratings** | Definition: |
|---|---|
| Overweight | An Overweight rating means investors should be positioned with an above-market weight in this country relative to benchmark. |
| Neutral | A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark. |
| Underweight | An Underweight rating means investors should be positioned with a below-market weight in this country relative to benchmark. |

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