

October 13, 2022 09:00 PM GMT

Longshine Technology Group Co Ltd | Asia Pacific

Powering Up the Future

📈 Stock Rating
Overweight

👁 Industry View
In-Line

🎯 Price Target
Rmb33.00

We view Longshine as a software proxy to play the renewable energy, power market reform and EV themes. We initiate coverage with an Overweight rating and as a high conviction call given its lower valuation yet stronger financial performance versus other vertical software leaders.

Longshine is a leader in the power sales system market with 50%+ of provinces covered. Power sales systems should continue to see upgrade demand in China, driven by (1) the grid digitization initiatives as stated in the 14th Five-Year Plan (2021-25), including marketing 2.0, data acquisition 2.0, and load management system; (2) the development of renewable energies and emerging power consumption scenarios; and (3) market-oriented reform of the power industry. We see high sustainability and contract visibility emerging from these trends.

Exclusive supplier to Alipay utility payment with steady cash flow. Longshine is the sole supplier of the Electronic Bill Presentment & Payment (EBPP) system on Alipay, which links individual consumers with the utility companies, backed by strong synergies with Longshine's power sales system. As the leading utility payment platform in China, Alipay shares 80% of its service fee per payment with Longshine as well as advertising revenue. This business generates c.70% gross margin, and we believe it can provide Longshine with stable cash flow.

EV charging platform drives long-term margin expansion. Longshine is also a leading EV charging platform in China, supported by its deep partnership with Alipay. It connects EV charging piles with EV drivers, and generates revenue based on the charging volumes in an asset-light model. The business is currently loss-making, given it is in the early promotion stage with front-loaded costs, although losses started to narrow in 1H22. We see opportunity for margin expansion with economies of scale, increasing private EV drivers and industry consolidation trends.

Comfortable valuation with superior financials. On our estimates, Longshine trades at 20x 2023 P/E, below that of other vertical software leaders, yet we forecast it to deliver a stronger 25% EPS CAGR in 2021-24. Our DCF-derived price target implies 28x 2023 P/E, which indicates a high margin of safety. **Key risks:** (1) slower-than-expected grid digitization and market-oriented power reform; (2) intensifying competition in EV charging platform markets; (3) further sell-down by IDG Capital (Yue Qi Capital).

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Longshine Technology Group Co Ltd (300682.SZ, 300682 SZ)

Greater China IT Services and Software / China

Stock Rating	Overweight
Industry View	In-Line
Price target	Rmb33.00
Up/downside to price target (%)	43
Shr price, close (Oct 13, 2022)	Rmb23.13
52-Week Range	Rmb42.40-18.09
Sh out, dil, curr (mn)	1,046
Mkt cap, curr (mn)	Rmb24,183
EV, curr (mn)	Rmb22,036
Avg daily trading value (mn)	Rmb190

Fiscal Year Ending	12/21	12/22e	12/23e	12/24e
ModelWare EPS (Rmb)	0.82	0.94	1.17	1.47
EPS (Rmb)\$	-	1.02	1.33	1.71
Revenue, net (Rmb mn)	4,639	5,742	7,220	9,027
ModelWare net inc (Rmb mn)	847	986	1,223	1,541
P/E	45.2	24.5	19.8	15.7
P/BV	6.0	3.4	2.9	2.5
RNOA (%)	20.7	19.4	21.7	24.6
ROE (%)	15.3	15.4	17.1	18.5
Div yld (%)	0.6	0.2	1.0	1.3
FCF yld ratio (%)**	(0.0)	1.5	1.5	2.1
Leverage (EOP) (%)	(32.3)	(30.7)	(30.1)	(28.9)

Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework

\$ = Consensus data is provided by Refinitiv Estimates

** = Based on consensus methodology

e = Morgan Stanley Research estimates

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For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

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Financial Summary

Exhibit 1: Longshine: Financial summary

INCOME STATEMENT

Years Ending December 31 Rmb mn	2020	2021	2022E	2023E	2024E
Total consolidated revenue	3,387	4,639	5,742	7,220	9,027
Energy Digitization	1,757	2,371	2,964	3,853	4,932
Energy Internet	591	848	1,145	1,488	1,935
OTT	1,040	1,420	1,633	1,878	2,160
Cost of revenue	1,834	2,625	3,302	4,111	5,091
Gross profit	1,553	2,014	2,440	3,109	3,936
Tax expense	18	16	20	26	32
S&M expense	235	314	388	488	610
G&A expense	317	354	438	551	689
R&D expenses	363	572	674	813	972
Total operating expenses	933	1,256	1,521	1,877	2,303
Operating profit	621	758	919	1,232	1,634
Adjusted operating profit (VAT refund)	623	760	921	1,234	1,637
EBITDA	855	970	1,268	1,548	1,902
Profit before tax	811	882	1,095	1,359	1,712
Net profit	707	847	986	1,223	1,541
Net profit (normalized)	584	723	966	1,203	1,521
Average basic EPS	0.83	0.82	0.94	1.17	1.47
Average diluted EPS	0.83	0.82	0.94	1.17	1.47
EPS (normalized)	0.69	0.70	0.92	1.15	1.45

BALANCE SHEET

Years Ending December 31 Rmb mn	2020	2021	2022E	2023E	2024E
Cash	2,218	1,966	2,189	2,590	2,957
Accounts receivable and notes receivable	1,736	2,225	2,753	3,462	4,328
Prepayment and other receivable	167	141	175	220	275
Inventory	269	300	378	470	582
Other	1,081	1,622	1,977	2,453	3,035
Current Assets	5,471	6,255	7,472	9,195	11,177
Long-term investments	179	220	220	220	220
PP&E	59	73	328	360	354
Construction in progress	91	221	-	-	-
Intangible asset	71	81	70	60	52
Capitalized R&D	10	20	35	52	73
Goodwill	1,290	1,336	1,336	1,336	1,336
Other assets	568	644	644	644	644
Non-current asset	2,267	2,595	2,632	2,671	2,679
Total assets	7,739	8,850	10,104	11,867	13,856
S/T borrowings	27	14	14	14	14
Account payables and notes payables	597	820	1,031	1,284	1,590
Contract liabilities	185	121	150	189	236
Other ST liabilities	643	654	822	1,024	1,268
Total current liabilities	1,452	1,609	2,018	2,511	3,108
LT debt	-	104	196	288	379
Other LT liabilities	702	611	611	611	611
Total non-current liabilities	702	714	806	898	990
Total liabilities	2,154	2,324	2,824	3,409	4,098
Common shares	1,021	1,046	1,046	1,046	1,046
Share capital	2,182	2,524	2,524	2,524	2,524
Retained earnings	2,106	2,780	3,534	4,712	6,012
Minority interests	50	120	120	120	120
Other reserves	226	56	56	56	56
Total shareholders' equity	5,585	6,526	7,280	8,457	9,758
Total liabilities and equity	7,739	8,850	10,104	11,867	13,856

CASH FLOW STATEMENT

Years Ending December 31 Rmb mn	2020	2021	2022E	2023E	2024E
Net profit	714	842	986	1,223	1,541
Depreciation and amortization	42	64	164	177	173
Other non-cash adjustments	89	123	-	-	-
Net change in working capital	(457)	(865)	(586)	(829)	(1,018)
Operating cash flow	388	164	564	570	696
Capex (-)	(70)	(187)	(201)	(217)	(181)
Acquisition of subsidiaries (-)	(103)	-	-	-	-
Net change in investment*	(1,165)	(128)	-	-	-
Other investing cash flow	1	12	-	-	-
Investing cash flow	(1,338)	(303)	(201)	(217)	(181)
Net change of debts*	(18)	92	92	92	92
Net change in equity	23	117	-	-	-
Dividend paid (-)	(74)	(134)	(232)	(45)	(241)
Other financing cash flow	785	(162)	-	-	-
Financing cash flow	716	(88)	(140)	47	(149)
Other adjustments	599	(25)	-	-	-
Net change in cash	365	(252)	223	401	367
Beginning cash balance	1,854	2,218	1,966	2,189	2,590
Ending cash balance	2,218	1,966	2,189	2,590	2,957

KPI & FINANCIAL RATIOS

Years Ending December 31 Rmb mn	2020	2021	2022E	2023E	2024E
Growth % YoY					
Total consolidated revenue	14.1%	37.0%	23.8%	25.7%	25.0%
Operating profit	32.7%	22.1%	21.3%	34.0%	32.6%
Adjusted operating profit (VAT refund)	31.3%	22.0%	21.3%	34.0%	32.6%
Net profit	-30.7%	19.8%	16.4%	24.1%	26.0%
Net profit (normalized)	43.9%	23.8%	33.6%	24.6%	26.5%
Margin					
Gross margin	45.9%	43.4%	42.5%	43.1%	43.6%
Energy Digitization	47.4%	44.0%	45.0%	45.0%	45.0%
Energy Internet	63.2%	52.8%	51.0%	52.0%	53.0%
OTT	33.3%	36.9%	32.0%	32.0%	32.0%
EBITDA margin	25.2%	20.9%	22.1%	21.4%	21.1%
Operating margin	18.3%	16.3%	16.0%	17.1%	18.1%
Operating margin (VAT refund)	18.4%	16.4%	16.0%	17.1%	18.1%
Pretax margin	23.9%	19.0%	19.1%	18.8%	19.0%
Net margin	20.9%	18.3%	17.2%	16.9%	17.1%
Normalize net margin	17.2%	15.6%	16.8%	16.7%	16.9%
KPI					
R&D					
R&D spending as % revenue	11.1%	12.6%	12.0%	11.5%	11.0%
Capitalized R&D (as % of total R&D)	3.1%	2.1%	2.1%	2.1%	2.1%
R&D staff	2,408	3,465	3,465	3,465	3,465
ROE	11.3%	11.9%	14.0%	15.3%	16.7%
FCF	318	(23)	363	354	515
% change	-30.8%	-107.3%	-166.3%	-2.5%	45.6%
% of revenues	9.4%	-0.5%	6.3%	4.9%	5.7%

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

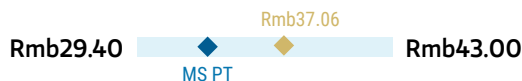
Risk Reward – Longshine Technology Group Co Ltd (300682.SZ)

Powering Up The Future

PRICE TARGET Rmb33.00

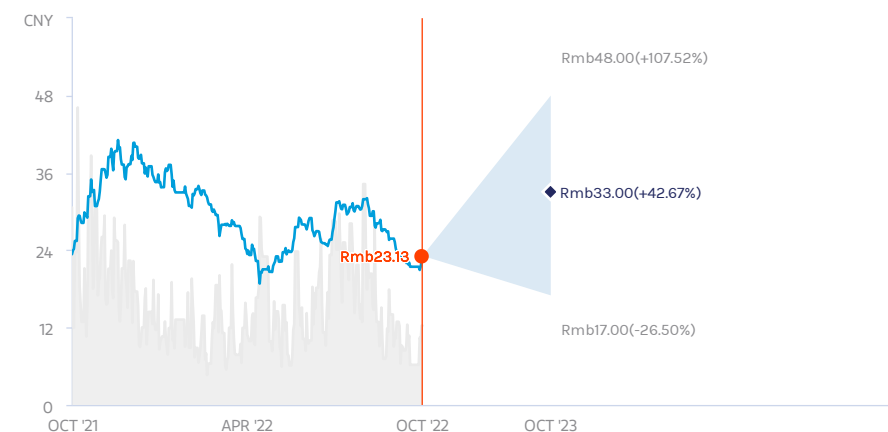
Base case, derived from our 10-year discounted cash flow model, as we believe DCF best reflects the company's long-term growth potential. Our key assumptions include a 3% terminal growth rate and 10.6% WACC (4% risk-free rate, 11.2% cost of equity, 1.1 beta, 6% cost of debt, 10:90 debt-to-equity ratio). The WACC that we use is in-line with that for other software names under our coverage.

Consensus Price Target Distribution



Source: Refinitiv, Morgan Stanley Research

RISK REWARD CHART



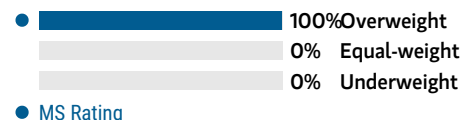
Key: — Historical Stock Performance ● Current Stock Price ◆ Price Target

Source: Refinitiv, Morgan Stanley Research

OVERWEIGHT THESIS

- Longshine's Energy Digitization business locks in sustainable growth, benefiting from China's increasing renewable energy needs, emerging energy consumption scenarios, and market-oriented reform of the power industry.
- The Energy Internet business generates steady profits from online utility payments on Alipay and surging revenue from EV charging platform. We also see margin expansion opportunities with economies of scale.
- Longshine is exploring other business models, including integration of photovoltaic and energy storage, which can further grow its TAM.
- Longshine trades at a lower valuation vs other software vertical leaders. We believe tech investors generally underestimate its value.

Consensus Rating Distribution



Source: Refinitiv, Morgan Stanley Research

Risk Reward Themes

Electric Vehicles:	Positive
Renewable Energy:	Positive
Secular Growth:	Positive

View descriptions of Risk Rewards Themes [here](#)

BULL CASE

Rmb48.00

Accelerating growth and margin expansion

Energy Internet growth: 43%/40%/40% for 2022-24

Energy Internet gross margin: 56%/57%/58% for 2022-24

R&D cash expenditure as a % of revenue: 10.5%/10%/9.5% for 2022-24

BASE CASE

Rmb33.00

Steady power digitization and EV penetration

Energy Internet growth: 35%/30%/30% for 2022-24

Energy Internet gross margin: 51%/52%/53% for 2022-24

R&D cash expenditure as a % of revenue: 12%/11.5%/11% for 2022-24

BEAR CASE

Rmb17.00

Slower-than-expected growth and lower margin

Energy Internet growth: 27%/22%/22% for 2022-24

Energy Internet gross margin: 46%/47%/48% for 2022-24

R&D cash expenditure as a % of revenue: 13.5%/13%/12.5% for 2022-24

Risk Reward – Longshine Technology Group Co Ltd (300682.SZ)

KEY EARNINGS INPUTS

Drivers	2021	2022e	2023e	2024e
Energy digitization revenue (Rmb, mn)	2,371	2,964	3,853	4,932
Energy internet revenue (Rmb, mn)	848	1,145	1,488	1,935
Energy internet gross margin (%)	52.8	51.0	52.0	53.0

INVESTMENT DRIVERS

- Power industry digitization
- Penetration of EVs

GLOBAL REVENUE EXPOSURE



100% Mainland China

Source: Morgan Stanley Research Estimate
View explanation of regional hierarchies [here](#)

RISKS TO PT/RATING

RISKS TO UPSIDE

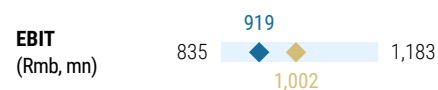
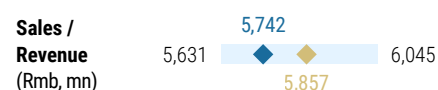
- Faster-than-expected implementation of grid digitization and market-oriented power reform
- Earlier-than-expected break-even reached by EV charging platform
- Significant progress of innovation business

RISKS TO DOWNSIDE

- Slower-than-expected grid digitization and market-oriented power reform
- End of partnership with the Alipay ecosystem
- Intensifying competition in EV charging platform markets

MS ESTIMATES VS. CONSENSUS

FY 2022e



◆ Mean ◆ Morgan Stanley Estimates

Source: Refinitiv, Morgan Stanley Research

Investment Thesis

Longshine's software business is built to serve in power sales scenarios with large growth potential for power supply (renewable energy) and power demand (EV charging) in China. Power industry software is a vertical that we believe will be insulated from current Covid control measures and fears of a global recession.

Power industry's digitization potential is underestimated by tech investors, especially in terms of power sales. Grid companies in China are adding to their investments in power digitization each year to construct smart grids. Power sales systems, as part of the smart grid, are consistently upgraded in response to fast developments in renewable energy, emerging power consumption scenarios, and market-oriented reform. Benefiting from this trend, we expect Longshine's Energy Digitization business to exhibit highly sustainable and visible growth as a leading domestic power sales system player.

Energy Internet business generates revenue based on volume, differentiating Longshine from other power IT vendors. We see this business as a combination of two platforms: (1) a mature online utility payment platform that produces stable profits, and (2) an emerging EV charging platform that should drive top-line growth. Longshine has been gradually gaining market share and narrowing its net losses in EV charging platforms. Although the platform is still in the early stage, we expect margins to expand on economies of scale.

Key investment positives:

- Power industry digitization and EV charging platforms are big market opportunities that can drive secular growth. Longshine has leading positions in power sales system and EV charging platform businesses.
- Longshine's exclusive partnership with Alipay as the only supplier of EBPP system on Alipay gives it a competitive edge.

Other innovative ways to think about Longshine's operations. Given its distinctive position connecting power supply and demand, the company is exploring other new business models including a photovoltaic (PV) cloud platform, Building Smart Energy (BSE) energy conservation system, and power purchase-sales business, targeting business customers. We see the PV and energy storage businesses as potential long-term growth drivers.

We initiate coverage with an Overweight rating and Rmb33 price target. We forecast an EPS CAGR of 27% in 2022-25. We derive our price target from DCF valuation, with a 10.6% WACC and 3% terminal growth. We cross-check our price target with sum-of-the-parts (SOTP) valuation, where we assign 30x 2023 P/E for the Energy Digitization business, 15x 2023 P/Sales for Energy Internet and 5x 2023 P/E for OTT. Our price target implies 35x/28x 2022/23 P/E or 6x/4x 2022/23 EV/Sales.

Key downside risks to our view: (1) slower-than-expected grid digitization and market-oriented power reform; (2) end of partnership with Alipay ecosystem; (3) intensifying competition in the EV charging platform market with increasing subsidies to end-consumers; (4) further sell-down by IDG Capital (Yue Qi Capital).

Key investment concerns:

- A higher interest rate could trigger the further de-rating of high-growth software stocks.
- The EV charging platform market still sees a lot competition and the business is not yet making profits.
- State-owned grid companies (Longshine's Energy Digitization downstream customers) have high bargaining power, which can result in potential receivables.

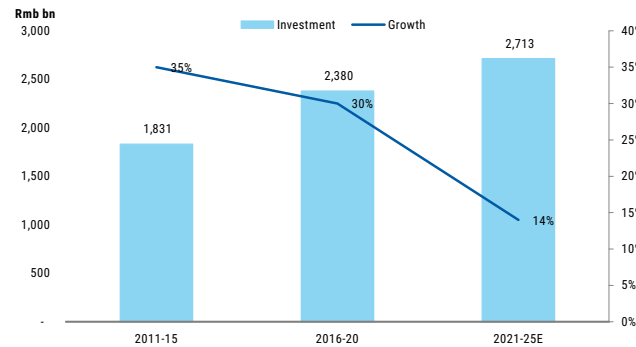
Sustainable Growth in Energy Digitization

We believe that the digitization potential of China's power industry is underestimated by tech investors. Renewable energy penetration, emerging power consumption scenarios and power marketization reform together drive the digitization demand. We see two key features emerging from these trends: high sustainability and high contract visibility. Considering competition in the power sales system markets is currently weak, we estimate Longshine's energy digitization business to deliver a long-term revenue CAGR of 16% in 2022-32.

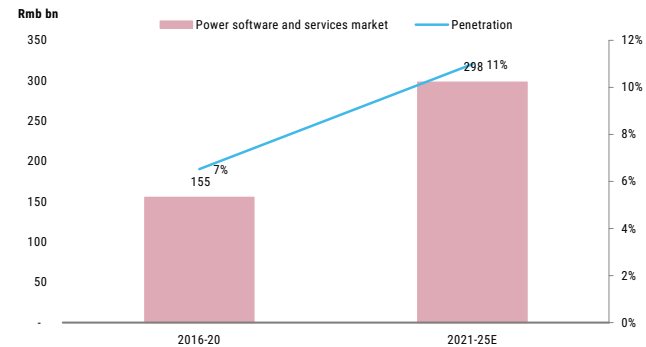
Digitization outgrows overall grid investments

Power grid investments are expected to grow 14% p.a. in 2021-25, according to the budget guidance of national grid groups. As state-owned enterprises, the State Grid Corporation of China (State Grid) and China Southern Grid Corp. (CSGC) have historically announced their target grid investment at the same time as China's five-year plan (FYP). While overall investments grew a robust 30%, from Rmb2bn in the 12th FYP (2011-15) to Rmb 2.6bn in 13th FYP (2016-20), our Morgan Stanley China Utilities team estimates investment growth to slow down to only 14% in 14th FYP (2021-25).

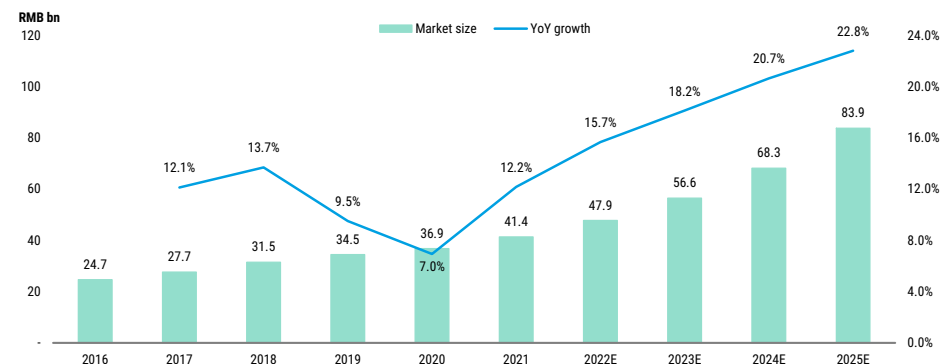
Power grid investments are mostly composed of hardware investments including infrastructure, electronic devices, and automation units. The power industry software market size only achieved Rmb155bn in 2016-20 with 7% penetration to overall investments. But, iResearch forecasts **power software to outperform overall investments with a 19% CAGR in 2021-25**, reaching 11% penetration in these five years. We note that the software market's growth decline in 2019-20 was mainly due to electricity tariff cuts in 2018-19, which hampered grids' profitability. As market-oriented reform rolls out (which we will discuss in the following sub-section), we believe such a setback will be less likely to occur in the future. Our expectations are primarily driven by an increased emphasis on power digitization in the 14th FYP. Although the top-down policies are an important market booster, we also see strong bottom-up demand for digitization.

Exhibit 8: China's power grid investments


Source: State Grid, Morgan Stanley Research. E = Morgan Stanley Research estimates.

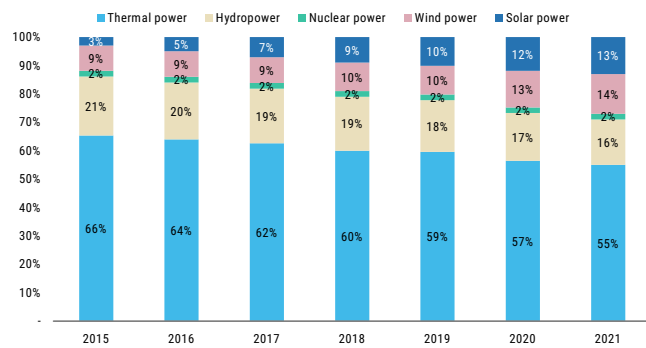
Exhibit 9: China's power software market and penetration


Source: iResearch, Morgan Stanley Research. E = iResearch estimates.

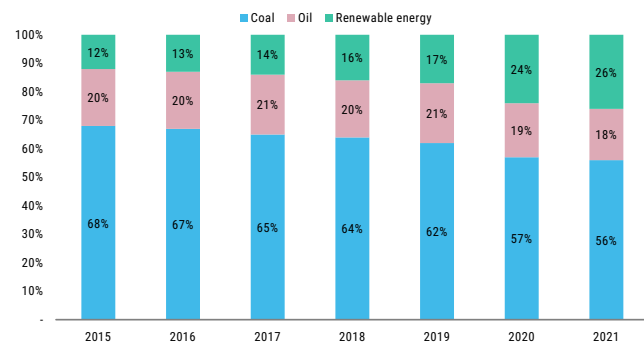
Exhibit 10: China's power software market


Source: iResearch, Morgan Stanley Research. E = iResearch estimates.

On the supply side, renewable energy adoption raises challenges. As China aims to reach peak carbon emissions by 2030 and carbon neutrality by 2060, the consumption of renewable energies including hydropower, nuclear power, wind power and solar power is overtaking thermal power. However, rising renewable power consumption brings more operational challenges to power suppliers (power generation players + grid companies), including (1) wider distribution of power generation locations, (2) more diversity of power generation methods, (3) greater instability of power generation source given unstable solar, wind and water, and (4) higher generation and operation costs.

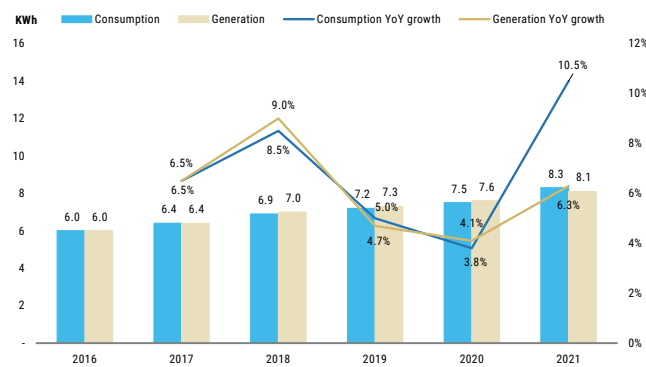
Exhibit 11: China's installed power capacity breakdown


Source: National Energy Administration (NEA) (China), National Bureau of Statistics of China (NBSC), iResearch, Morgan Stanley Research.

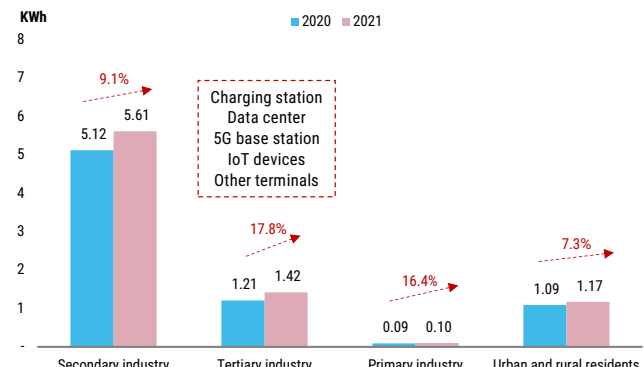
Exhibit 12: China's energy consumption breakdown


Source: NEA, NBSC, iResearch, Morgan Stanley Research.

On the demand side, evolving power consumption scenarios call for a more stable power supply. China's power consumption grew by a robust 10.5% YoY in 2021, mainly driven by the 17.8% YoY growth in the service industries. Emerging trends such as data centers, EV charging stations, and Internet of things (IoT) devices have become major drivers of power consumption in the service industries since the 5G roll-out in 2020. Meanwhile, power generation grew only 6.3% YoY in 2021, which led to the largest supply shortage in China. The disparity continued in 1H22, when power consumption increased by 2.9% YoY, while power generation grew by only 0.7% YoY, partially due to the extreme weather, according to China Electricity Council (CEC).

Exhibit 13: China's power consumption and generation


Source: NEA, NBSC, iResearch, Morgan Stanley Research.

Exhibit 14: China's power consumption breakdown


Source: NEA, NBSC, iResearch, Morgan Stanley Research.

Digitization is one way to overcome the challenges in the power industry. In an effort to tackle the challenges in power supply and demand, the central government announced a plan in March 2021 to develop a New Power System (NPS) with an aim to keep the country's smart grid clean, safe, efficient, smart and open. Construction of the NPS will involve the support of a digitization platform and require technology upgrades in information acquisition, computing power, automation and smart operation. In 2022, the Northwest Grid was expected by governments to deliver the first regional NPS established in China.

Major power digitization products are composed of scenario applications, digitization

platform and solutions. Systems such as dispatch/distribution automation, load control, device detection and smart maintenance at the power generation side target to improve power generation and distribution efficiency. Meanwhile, at the power consumption side, development of the power sales & marketing systems, metering data management as well as virtual power plant (VPP) aim to further match power supply with demand.

Exhibit 15: Major software systems and pricing in the power industry

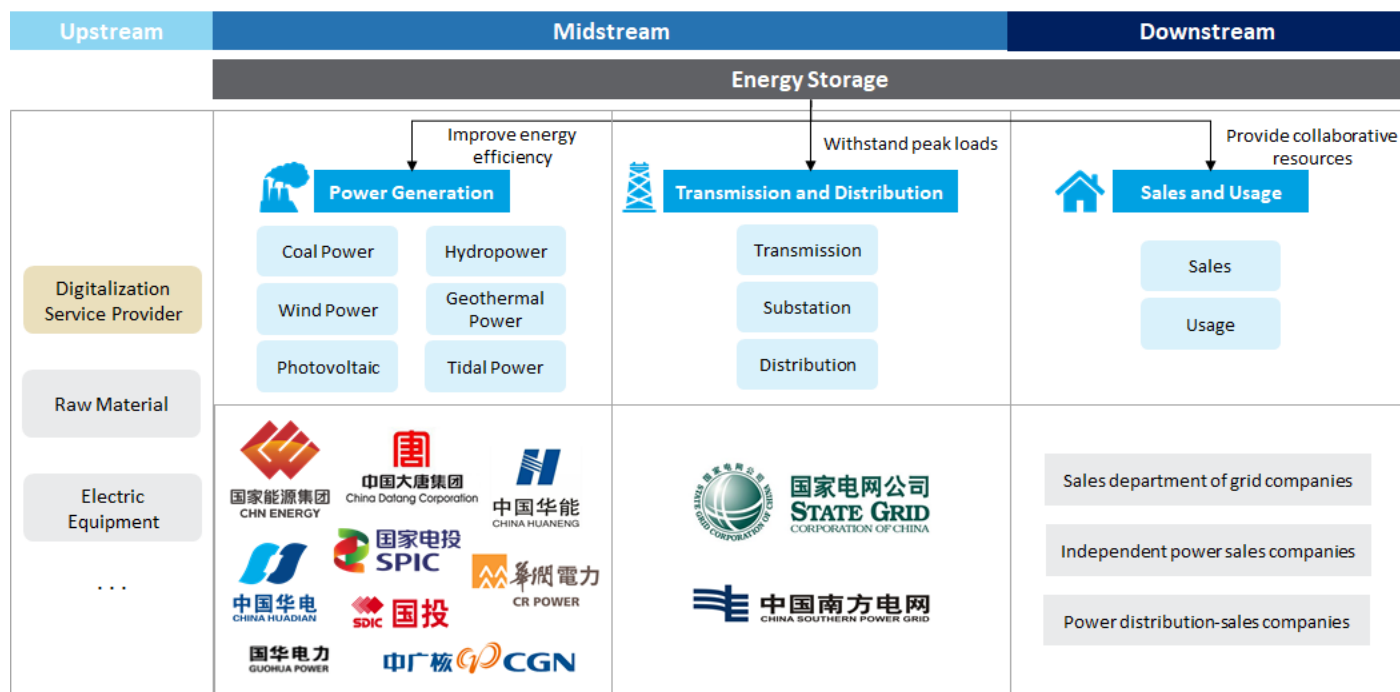
	Scenario Application	Digitalization Platform	Solution
> Rmb 10mn	<ul style="list-style-type: none"> Production Control Informatization Power Transaction Digitalization Collaborative Office System 	<ul style="list-style-type: none"> Digitalization Platform Power Grid Management Platform Power Market Transaction Digitalization 	<ul style="list-style-type: none"> Digital Transformation Consulting Digital Project Handover and Data Migration Service
Rmb 5-10mn	<ul style="list-style-type: none"> Smart Infrastructure Management System File Management Digitalization Human Resources Digitalization 	<ul style="list-style-type: none"> Distribution Network Digital Management Platform 	<ul style="list-style-type: none"> Power Monitoring Extreme Risk Identification and Security Protection Research Information System Operation and Maintenance Service
Rmb 1-5mn	<ul style="list-style-type: none"> Power Monitoring System Distribution Network Management Digitalization Asset Management Digitalization Dispatch Automation Information System Development Network Security Testing 3D Digitalization Design System Security Assessment/Network Traffic Control System Engineering Digitalization Design System 	<ul style="list-style-type: none"> Marketing Information Platform Unified Supervision Platform Digital Twin Platform and Intelligent Inspection Centralized Factory Management Platform 	<ul style="list-style-type: none"> Data Informatization, AI and Asset Domain Application Power Market Transaction Digitalization Service (Software and Hardware Integration) Audit Digitalization Consulting Platform System Development and Design Technical Support Enterprise Digitalization Platform Value and Data Governance Research Enterprise Informatization Consulting Information System Transformation and Cloud Migration
< Rmb 1mn		<ul style="list-style-type: none"> Operation Management Platform Construction Power Generation Network Monitoring Platform Information Asset Control Platform Digital Cloud Platform 	

Source: Jianyu360, iResearch, Morgan Stanley Research.

Market-oriented industry reform brings new business opportunities

The power industry is composed of power generation, transmission & distribution as well as sales and usage. The major participants in each of the power sub-sectors are mainly state-owned enterprises, especially in the power transmission and distribution markets, where the State Grid and CSGC are the dominant players. The entire power industry is highly regulated and controlled by the central government, with feed-in/electricity tariffs largely fixed and permission required for a company to be able to participate.

Exhibit 16: Power industry value chain



Source: iResearch, Morgan Stanley Research.

China's power markets have gradually migrated away from the fixed power tariffs set by the NDRC towards market-oriented tariffs sets by the power plants and users. Multiple rounds of market-oriented reform have taken place since 2002. In January 2022, the NDRC and National Energy Administration (NEA) published "[Guiding Opinion on Acceleration of Establishing National Electricity Markets](#)" to further accelerate the establishment of a national power market. The Guiding Opinions include (1) renewable energy prices to be entirely market-oriented by 2030 for both the national and provincial power markets; (2) the promotion of a competitive market with multiple power suppliers.

Exhibit 17: Major market-oriented reform policies

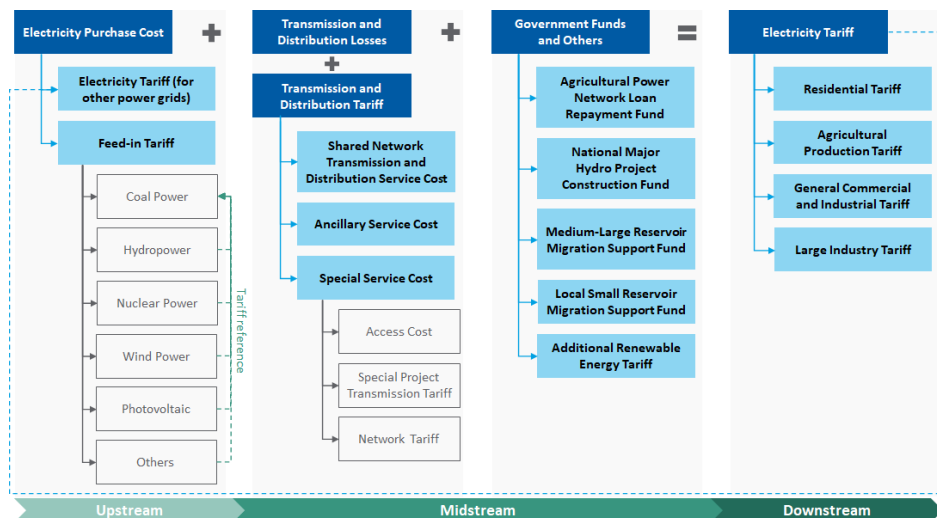
Year	Entity	Policy	Main Content
2002	State Council	Electricity System Reform Plan	<ul style="list-style-type: none"> Mark the start of China's electricity market-oriented reform, aiming to improve issues such as oversupply, overcapacity in local areas, inter-provincial trade barriers and inflexible dispatching Separation of generation and transmission, separation of primary and ancillary, separation of transmission & distribution and promotion of competitive electricity tariff Split State Power Corporation into two power grid companies, five power generation companies, and four ancillary companies
2015	State Council NDRC	Opinions on Further Deepening the Electricity System Reform	<ul style="list-style-type: none"> To gradually form an electricity system with sufficient competition and orderly and healthy development Open up power generation and power purchase, strengthen supervision for transmission and distribution, assess reasonable transmission and distribution tariff, and establish market-oriented electricity tariff Expand the scope of inter-provincial distribution
2022	NDRC NEA	Guiding Opinions on Accelerating the Establishment of Unified National Electricity Market	<ul style="list-style-type: none"> Optimize electricity market design, unify trading rules and technical standards in electricity trading, promote an electricity market that is adaptive to energy structure transformation Aim to complete establishment of unified national electricity market by 2030, in which national and regional entities jointly operate, and where renewable energy fully participates in market trading

Source: State Council, NDRC, NEA, Morgan Stanley Research.

Previously, grid companies in China generated profits by purchasing power from power plants and selling the power to the power users after transmission and distribution. The main power cost of grid companies is the feed-in tariff paid to the power plants, and revenue is generated from the electricity tariffs charged to the power users. Electricity

tariffs are thus calculated based on the sum of the cost of electricity purchased, transmission and distribution fees, as well as government funds and others. When the power tariffs at both the supply and demand ends were regulated by governments, the power users' fees became generally standardized and the grid companies' profits became highly predictable.

Exhibit 18: Composition of power tariffs

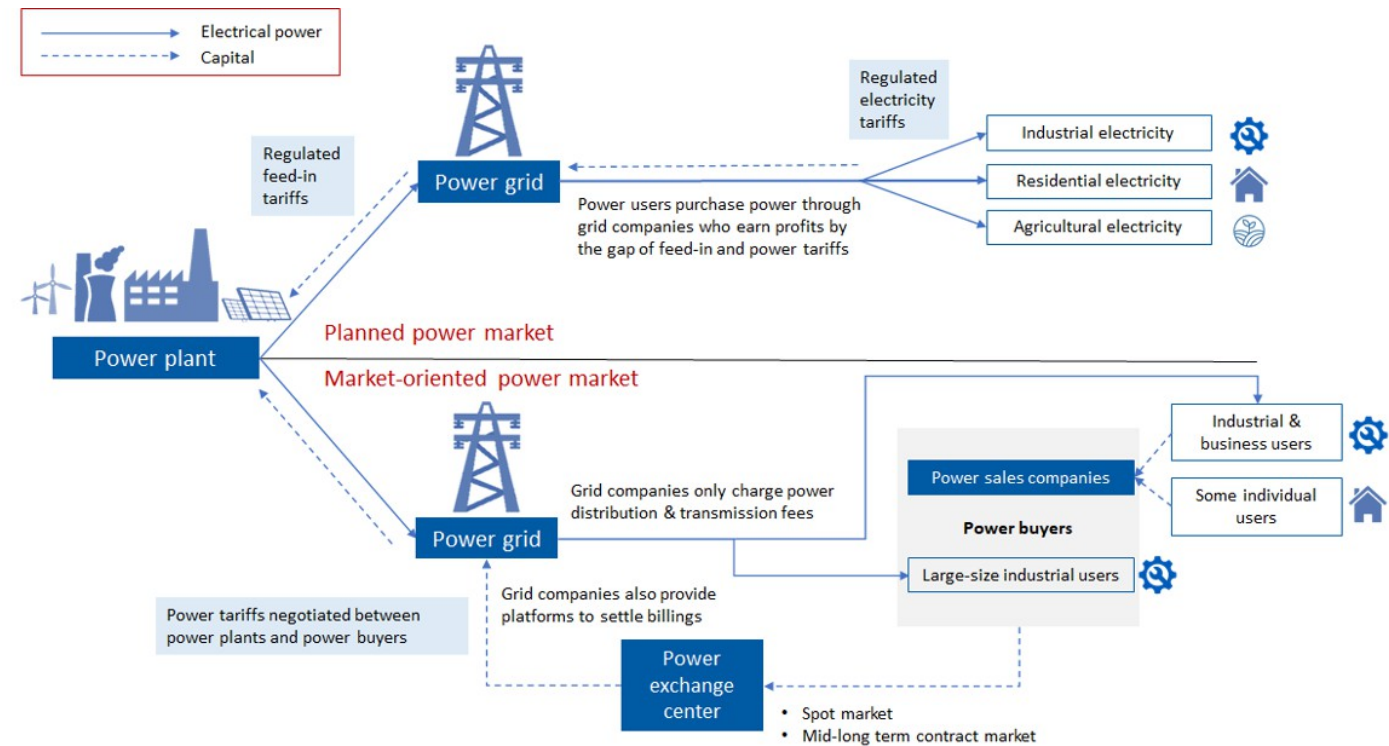


Source: National Energy Information Platform, Morgan Stanley Research.

Following the second round of market-oriented reform announced in 2015, the central government started to implement a **double track price system for power sales** and rolled it out in phases. Independent power sales companies and large-size industrial power users can directly participate in power transactions by setting up power tariffs with power plants via power exchange centers. Meanwhile, other electricity users, primarily households, still stick to the power tariffs set up by governments and purchase the power through the grid companies. According to the China Electricity Council (CEC), the power traded in market-oriented transactions accounted for 45.5% of total power consumption by 2021.

As it evolves towards being a free market, which is the ultimate goal of reforms, the power sales process has become increasingly complicated. In the market-oriented power market, grid companies still need to act as middlemen providing settlement services for power transaction parties at both ends, while transiting the electricity. In addition, the complexity of billing and accounting has escalated even further with the establishment of more market mechanisms such as power spot markets and contract markets. Hence, we believe **consistent upgrades in the power sales systems is an inevitable long-term trend for grid companies.**

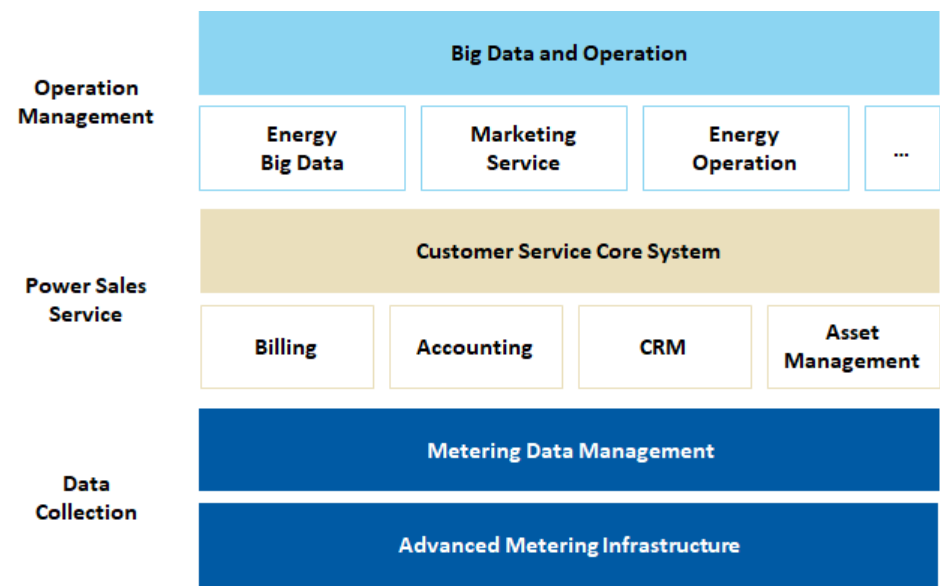
Exhibit 19: Double tracks of power sales chain



Source: Morgan Stanley Research.

Longshine primarily offers front-office power sales systems for the grid companies, covering (1) power user data acquisition through smart meters, (2) power sales services including billing, accounting, and CRM, and (3) data-driven operations. Its major customers are the **sales & customer service departments of grid companies**, which are the profit centers that directly sell power to end users and charge payments in the planned power markets, and provide transaction settlement in the market-oriented power markets.

Exhibit 20: Longshine: Power digitization product portfolio



Source: Company data.

We believe Longshine is set to benefit from long-term market-oriented reform in the power industry in three phases:

- Near term, the grid companies will require continuous upgrades to power sales systems that adapt to market-driven tariffs billings, accounting and settlement. The functions will also need to be expanded to cover multiple counter-parties including independent power sales companies and large-size industrial power users.
- Mid term, the various power consumption scenarios will produce a significant amount of operation data that can be utilized for further digitization of the power industry and the development of power internet.
- Long term, independent power sales companies are likely to grow in size as more individual power users (i.e., EV charging stations) enter the market-oriented power space. This would also lead to new demand for power sales systems such as CRM. The independent power sales companies will potentially become Longshine's customers in addition to grid companies.

Leader in the power sales system market

We identify key IT vendors in the power industry value chain and find that the value chain is **not crowded in terms of the power sales system**. Although there are multiple power IT vendors, the power front-office (sales and usage) markets are generally not as crowded, with Longshine and State Grid Information (600131 CH, Not Covered) the major players that provide information management systems. We view the landscape of the front-office system markets as an oligopoly, given: (1) there are only 31 provincial grid company customers, and each of them only need one front-office system; (2) a strong industry know-how in power sales is required, which can only come from having a long-term partnership with grid companies; and (3) it would be difficult for grid companies to replace their front-end systems, which are used in daily business operations, and the meter systems that are connected to millions of end users (i.e., households).

Exhibit 21: Major power IT players in China

Power IT Demands		Power IT Companies		Cross-functional
Generation	<ul style="list-style-type: none"> ✓ Power station design ✓ Power prediction ✓ Smart grid connection ✓ Equipment monitoring ✓ Power station operation and maintenance ✓ Enterprise management 	<ul style="list-style-type: none"> • Wiscom System (002090 CH) • Guodian Nanjing Automation (600268 CH) 	<ul style="list-style-type: none"> • State Power Rixin Tech (301162 CH) • East Environment Energy (831083 CH) • Goldwind (2208 HK) 	
Transmission	<ul style="list-style-type: none"> ✓ Circuit design ✓ Distribution network error detection IWOS ✓ Automated monitoring, operation and maintenance (drone, visualization) ✓ Automated distribution network system 	Production Control <ul style="list-style-type: none"> • Wiscom System • Zhiyang Innovation Tech (688191 CH) • Dongfang Electronics (000682 CH) 	Information Management	
Distribution	<ul style="list-style-type: none"> ✓ Circuit design ✓ Smart scheduling ✓ Automated monitoring, operation and maintenance (drone, visualization) 	<ul style="list-style-type: none"> • Wiscom System • Guodian Nanjing Automation • Zhiyang Innovation Tech • Dongfang Electronics 		
Substation	<ul style="list-style-type: none"> ✓ Monitoring, operation and maintenance ✓ Automated substation control system 	<ul style="list-style-type: none"> • Zhiyang Innovation Tech • Dongfang Electronics 	<ul style="list-style-type: none"> • YGSOFT (002063 CH) 	
Sales & Usage	<ul style="list-style-type: none"> ✓ Transaction settlement ✓ Electricity usage information collection ✓ Marketing system ✓ Smart metering ✓ Virtual power plant (VPP) ✓ Comprehensive energy services (information service, electricity usage service) 	<ul style="list-style-type: none"> • E-techstar (300513 CH) 	<ul style="list-style-type: none"> • Longshine (300682 CH) • YGSOFT 	

Source: Morgan Stanley Research.

Longshine has over 50% share in the power sales system market in the country, covering 18 out of 31 provinces (excluding Hong Kong, Macau, and Taiwan). Since the State Grid and China South Industries Group Corporation Limited (CSGC) conduct their business through their provincial subsidiaries, Longshine sells its power sales system to each of the provincial grid companies. Among the State Grid's 26 provinces, Longshine provides software to 13 provincial subsidiaries. Longshine also covers CSGC's 5 provincial subsidiaries. In terms of end users, Longshine's power sales system covered ~270m, implying a c.40% market share in China.

Exhibit 22: Provincial grid subsidiaries served by Longshine



Source: Company data, State Grid, China South Industries Group Corporation Limited (CSGC), Morgan Stanley Research.

We see limited competition in incremental power digitization demand. Longshine's power digitization business is exposed to grids' ongoing system upgrade requirements. According to management, its near-term pipeline includes a marketing system 2.0 upgrade, data acquisition system 2.0 upgrade as well as load management system deployment. These will become the major revenue generators for Longshine in 2022-25. In each of the sub-systems, Longshine has only 1-3 software peers.

Exhibit 23: Major incremental power digitization demand

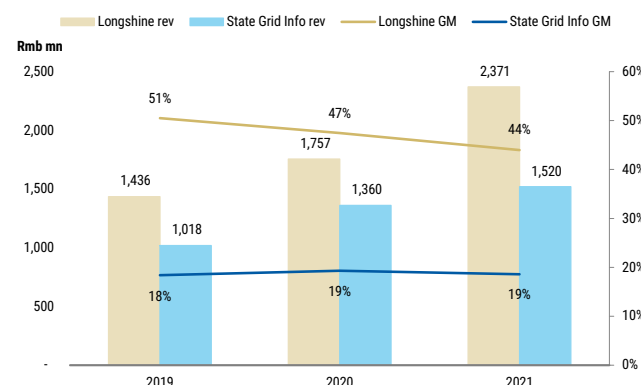
	2021	2022	2023	2024	2025
Marketing system 2.0	Trial	Roll-out	Roll-out		
Data acquisition system 2.0	Trial	Trial	Roll-out	Roll-out	
Load management system		Trial	Trial	Roll-out	Roll-out

Source: Company data, Morgan Stanley Research.

Marketing system 2.0. In 2019, State Grid announced plans to upgrade the marketing system 1.0, which was launched in 2010, to 2.0 as the key digitization target in 14th FYP. The marketing 2.0 system, which is based on the private cloud, enriches the functions of marketing system 1.0 to suit new power consumption scenarios. The TAM of the marketing system 2.0 is estimated by Longshine to be around Rmb7bn, which comprises Rmb4bn in headquarter budgets and Rmb3bn in provincial subsidiary budgets. Considering Longshine and State Grid Info (SGI) are the two major suppliers participating in the construction of marketing system 2.0, they will share most of the Rmb7bn revenue opportunity in 2021-23. The roll-out of marketing system 2.0 will start in 2H22, with Longshine expected by the management to gain grid customers in Shandong, Fujian, Tianjin, Shanghai and Zhejiang provinces.

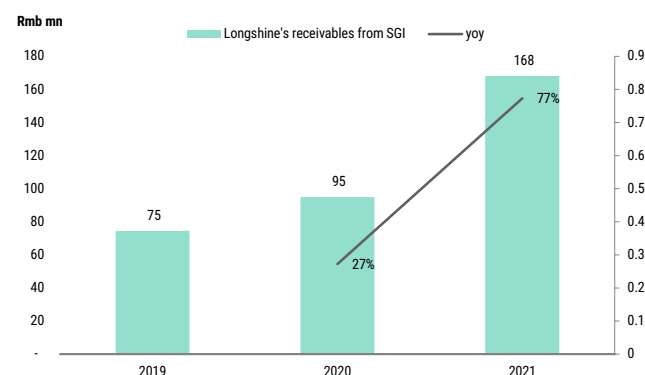
Although State Grid Info is a controlled subsidiary of State Grid, we believe Longshine should still be able to maintain market share since there is more cooperation than competition between these two companies. In 2021, State Grid Info had 1,171 employees, versus Longshine's 6,020 employees. Meanwhile State Grid Info's business covers cloud infrastructure, power digitization as well as enterprise digitization, while **Longshine specializes in power front-office software systems**. Hence, State Grid Info has outsourced the software development and implementation work of the marketing system 2.0 to Longshine. Longshine's receivables from State Grid Info has surged 77% YoY in 2021, when the marketing system 2.0 development began.

Exhibit 24: Longshine vs. State Grid Info: Power digitization revenue and GPM



Source: Company data, Morgan Stanley Research.

Exhibit 25: Longshine: Receivables from State Grid Info (SGI)



Source: Company data, Morgan Stanley Research.

Meter data acquisition system 2.0. State Grid upgraded its data acquisition system in 2021 with a trial run by its Fujian provincial subsidiary. Data acquisition system 2.0, as part of the power sales system, can (1) support more device access including EV charging piles and power storage stations; (2) carry out smart functions such as real-time online detection; (3) compress the data acquisition time significantly from 30 minutes to 4 hours in the 1.0 version to only 5 minutes in the 2.0 version. Longshine penetrated into the development of data acquisition system 2.0 in 1H22, with Nari (600406 CH, covered by Eva Hou) as its major peer.

Load management system. This system helps grid companies monitor power loads and forecast power demand in a precise and timely way, through the usage data acquired from smart meters. The load management system is an important application in emerging scenarios such as Virtual Power Plant, power purchasing and selling as well as energy storage. Over the next three years, grids plan to invest in load management systems starting from 2023. Longshine has previously stated that it plans to penetrate into this market. Other major peers in this field are SGI and Nari.

Energy Internet: Scale-driven Margin Expansion

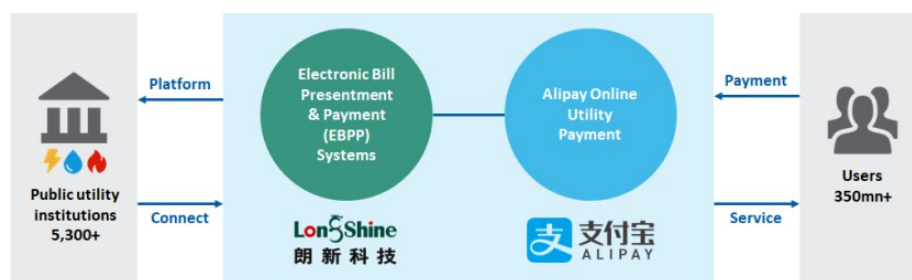
Longshine differentiates itself from other power IT vendors by providing the Energy Internet business, which we consider an optimal platform combo: the mature online utility payment platform to generate stable cash flow and the emerging EV charging platform to drive the growth. As the platform scales up, we forecast gross margin of this business to expand from 51% to 60% in 2022-32.

Online utility payment: The stable cash cow

Longshine is the only supplier of a utility payment system on Alipay through its subsidiary called Bang Dao Technology. Bang Dao was co-founded by Ant Financial with 40% holding and Longshine with 40% holding in 2015. In 2019, Longshine acquired a 50% stake in Bang Dao from Ant Financial and other shareholders, making it the parent company of Bang Dao with a 90% shareholding after the acquisition. Ant Financial remains a minority shareholder, ensuring Bang Dao's exclusivity on Alipay.

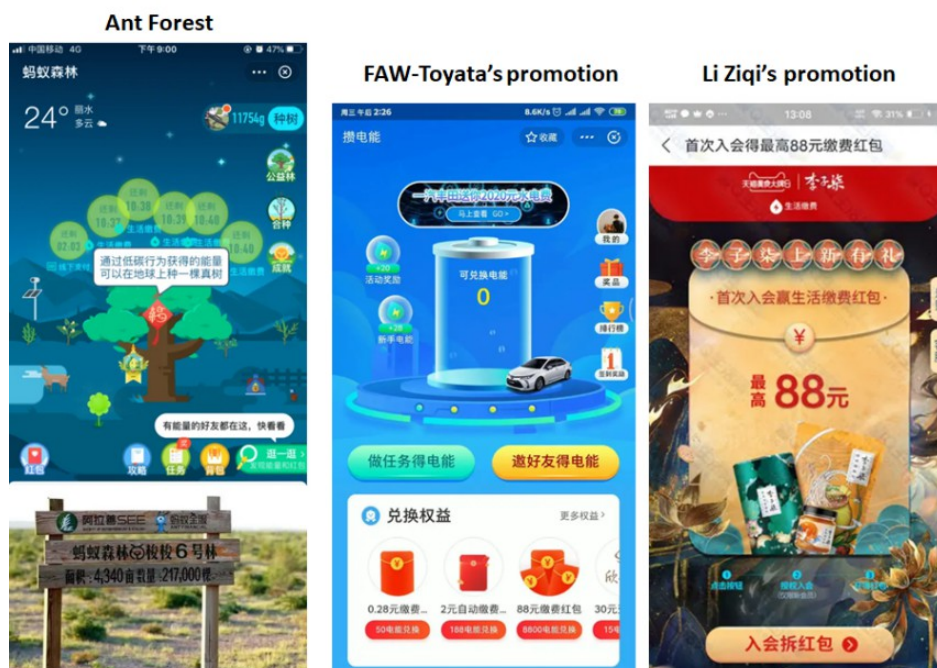
Through Bang Dao, Longshine primarily develops an Electronic Bill Presentment & Payment (EBPP) system. The system connects grid/gas/water companies with individual consumers, enabling them to pay their utility bills via Alipay.

Exhibit 26: Longshine's EBPP System



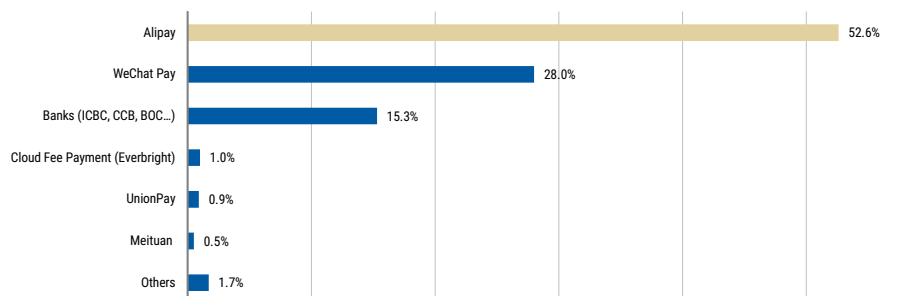
Source: Company data.

Longshine generates revenue primarily through two methods: (1) 80% revenue sharing from Alipay's channel fee charged for each utility payment, and (2) marketing and advertisement revenue. Considering there are 13m daily active users (DAUs) on Alipay's online utility payment, according to the company, this business drives significant marketing value. To attract more active users on the Alipay ecosystem, Ant Financial has launched multiple marketing activities on this platform. One typical example is Ant Forest, where Alipay pledges to grow trees in China's real deserts if users consume credits (or "green energies") collected from bill payments. Merchants also often launch their promotions and advertisements in Alipay. Longshine connects the EBPP to Ant Forest as well as other promotion activities in Alipay, and helps to plan, launch and operate the advertisements on Alipay ([Exhibit 27](#)).

Exhibit 27: Examples of marketing & promotion content on Alipay

Source: Alipay.

Why are individual consumers choosing Alipay over WeChat Pay for bill payments? In a survey conducted by Everbright Bank in 2021 with a sample size of over 10k, Alipay is the most preferred platform for online bill payments, including electricity, water, gas and heating, etc. WeChat Pay, another top online payment platform a large user group, was preferred by only 28% of respondents for bill payments, versus Alipay's 53%.

Exhibit 28: Preference of online bill payment platform, 2021

Source: Everbright Bank "China Bill Payment Industry Report 2021".

We think that **Longshine, as it is the EBPP supplier of Alipay, is one of the key reasons** that the respondents in the survey preferred Alipay by a wide margin. Longshine originally provided the sales system for utility companies. Through Longshine's EBPP, which is directly connected to utility institutions' front-office sales systems, individual consumers are able to review their bill details such as power/water/gas usage. Such functions enable consumers to better plan their future utility usage and save on expenses. Meanwhile, WeChat Pay's EBPP supplier is Everbright Bank, which is a pure financial institution that connects individual consumers with the back-office ERP systems of utility institutions, from which WeChat Pay bills can provide financial information only.

Exhibit 29: Alipay vs WeChat Pay utility bill interface

WeChat Pay Electricity Bill

09:53 支付宝

账单详情

应缴金额 0.00元

缴费户名 *业

缴费户号 2*

缴费单位 国网北京市电力公司

用电地址 北京市 *****

自动缴费, 安全又省心 去开通 >

输入金额

¥ 请输入缴费金额

50元 100元 150元

下一步

此户号的缴费记录

Alipay Electricity Bill

09:55 生活缴费

国网北京市电力公司

户号信息

住址信息 北京市*****

缴费单位 国网北京市电力公司

应缴金额 0.00元

补加金额 0.00元

扣减金额 0.00元

购电次数 5次

入表金额 50.00元

手机号码 13

缴费成功后, 国网北京电力会发送短信通知。

购电金额

100元 200元 300元

¥ 50

立即缴费

开通自动缴费 安全有保障 去开通

09:57 缴费详情 已到账

支付成功 机构处理 缴费到账

怎么查询用电量

部分地区用户, 在【生活缴费】页面, 点击户号进入缴费页, 通过下方【账单查询】进行查询。
> 如下方没有【账单查询】按钮, 则表明当地电力公司在缴费页未提供相关服务, 可通过下载“网上国网”APP进行查询 (网上国网app下载);

网上国网APP“电量电费”查询步骤如下

步骤一: 打开“网上国网”APP, 选择所在城市“北京”, 点击“电量电费”

步骤二: 进入电量电费查询页面, 选择“户号电费”

10:26 电量电费

*业

用电户号:2

北京市 *****

月用电量 月用电量

2022年 2021年 2020年

月用电分布图

单位: 千瓦时

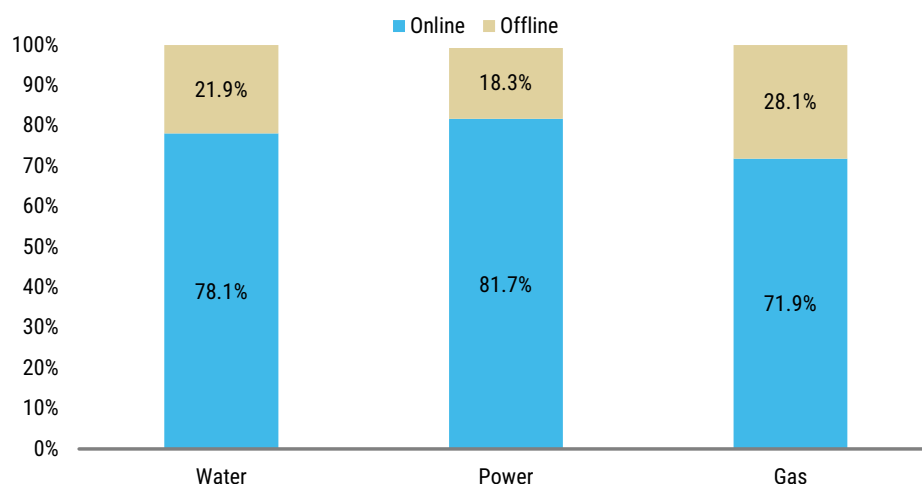
月份	电量(千瓦时)	电费(元)
09月	66	32.23
08月	78	38.09
07月	121	59.08
06月	329	160.65

有帮助 没帮助

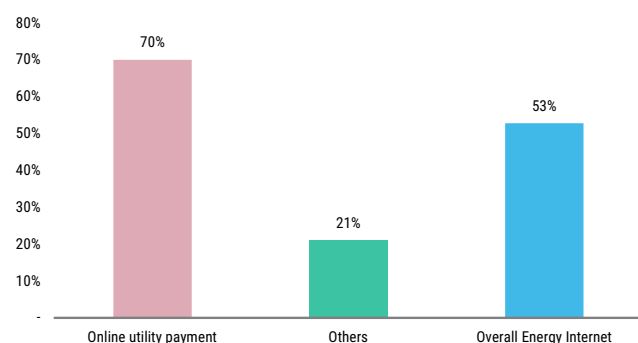
Source: Company data.

A cash cow that generates profits. In addition to Alipay, Longshine also extended its EBPP system to the UnionPay ecosystem. The market landscape of EBPP among online platforms has already stabilized without much disruption. Meanwhile, penetration of online utility payments reached over 70% in 2020. Hence, we do not expect Longshine's online utility payment business to deliver further high growth via penetration improvement or market share gains.

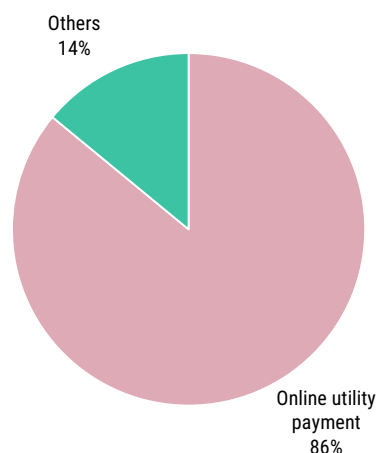
However, this business generated c.70% gross margin for Longshine in 2021, versus 53% gross margin for its overall Energy Internet business. According to the company, online utility payments recorded c.Rmb 550mn in revenue in 2021, implying gross profit of Rmb385mn, which accounted for 86% of its overall Energy Internet gross profit. Rather than being a top-line growth driver, we view the online utility payment business as a steady profit generator for Longshine.

Exhibit 30: Penetration of online utility payments, 2020

Source: Everbright Bank "China Bill Payment Industry Report 2021".

Exhibit 31: Longshine: Gross margin comparison, 2021

Source: Company data, Morgan Stanley Research.

Exhibit 32: Longshine: Gross profit contribution of Energy Internet, 2021

Source: Company data, Morgan Stanley Research.

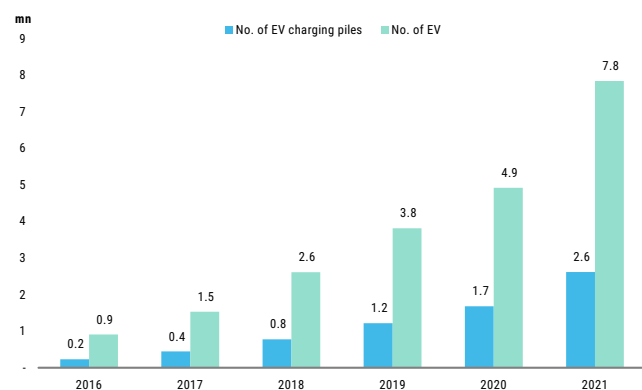
EV charging platform: The new growth driver

Supply shortage in EV charging piles. An EV charging pile provides electricity for EVs. EV charging piles can be deployed in EV charging stations or parking lots alongside highways, office buildings, shopping malls, and residential areas, etc. Demand for EV charging piles comes from EV growth. According to the EV Charging Infrastructure Development Guidance 2015-2020 released by National Energy Administration (NEA), EV parking units (i.e., the total number of EVs in China) are estimated to have reached around 5mn by 2020. The number of EV charging piles was thus targeted have reached 4.8mn at a nearly 1:1 EV-to-charging-piles ratio.

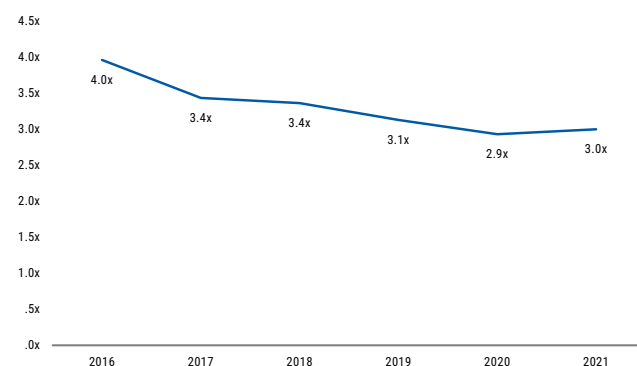
Exhibit 33: EV charging piles

Source: Shutterstock.

Since 2016, the number of battery electric vehicle (BEV, i.e., without internal combustion engines) parking units in China has surged at a 52% CAGR, to 4mn by 2020. Together with hybrid electric vehicles (HEVs) and plug-in hybrid electric vehicles (PHEVs), the total number of EV parking units reached 4.9mn in China in 2020, aligned with the original targets of NEA. However, the number of EV charging piles only grew to 1.7mn in 2020, **which brought the ratio to 2.9:1, far from the 1:1 target of NEA**. In 2021, the gap further expanded to 3:1 as the number of EV parking units surged to 7.8mn, while the number of EV charging station increased to 2.6mn only. To boost the number of EV charging piles, government subsidies also gradually shifted away from EVs and towards EV charging piles.

Exhibit 34: Number of EVs and EV charging piles in China

Source: EVCIPA, Morgan Stanley Research.

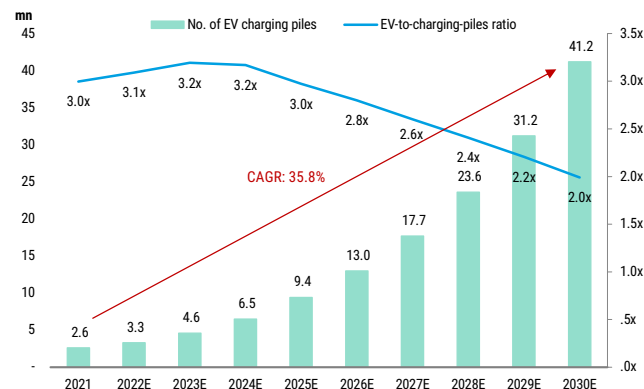
Exhibit 35: EV-to-EV-charging-piles ratio in China

Source: EVCIPA, CAAM, MPS, Morgan Stanley Research.

EV charging pile is expected to see robust growth. The Morgan Stanley China Autos and Utilities teams forecast the number of EV charging piles to achieve a 35.8% CAGR in 2021-30, to 41.2mn, with an EV-to-charging-piles ratio rising to 2:1 by 2030. EV charging volumes should thus see significant growth from 32bn kWh in 2021 to 435bn kWh in 2030, up 13.5x. Charging volumes for public charging piles should experience even

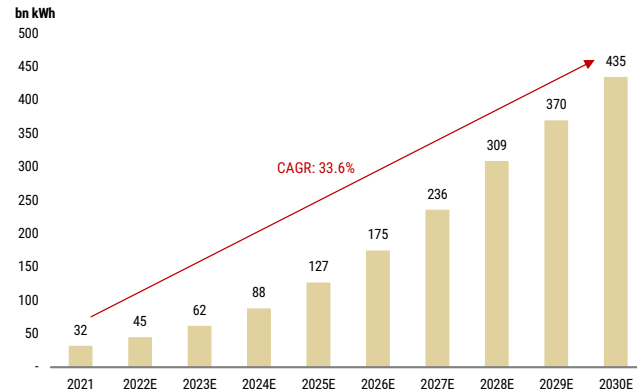
stronger growth, at a 4.3% CAGR in 2021-30, from 11bn kWh to 286bn kWh, driven by new energy passenger vehicles including buses and logistics vehicles as well as ride-hailing EVs.

Exhibit 36: Our EV charging piles forecasts



Source: EVCIPA, CAAM, MPS, Morgan Stanley Research. E = Morgan Stanley Research estimates.

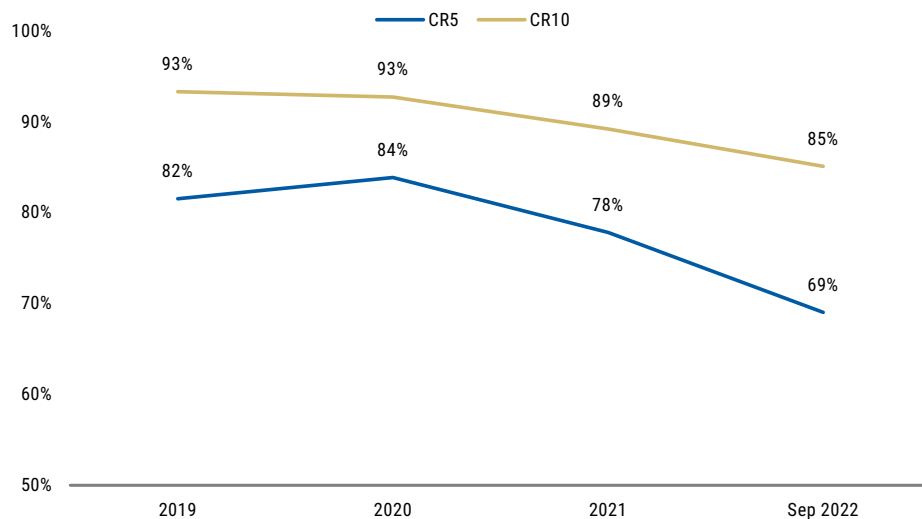
Exhibit 37: Our EV charging volume forecasts



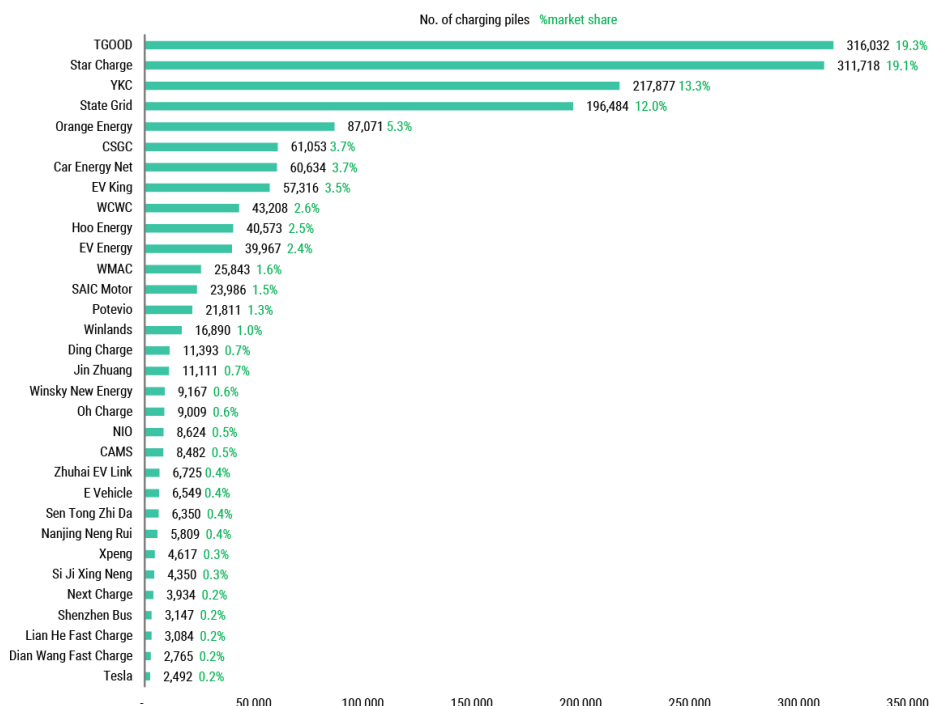
Source: EVCIPA, Morgan Stanley Research. E=Morgan Stanley Research estimates.

Public EV charging pile distribution is getting more fragmented. As the EV charging market continues to grow, we are seeing more new EV charging operators that own and run EV charging piles in the public EV charging markets given the low barriers to entry. Based on the number of public EV charging piles in China, we find that the market share of the top 5 operators continuously declined from 82% in 2019 to 69% in September 2022. The top 10 operators witnessed a similar situation, with their combined market share down from 93% in 2019 to 85% in September 2022. As of 1H22, there are more than 900 public EV charging operators in China markets.

Exhibit 38: Concentration level of EV charging piles



Source: EVCIPA, Morgan Stanley Research.

Exhibit 39: EV charging pile market share breakdown, September 2022

Source: EVCIPA, Morgan Stanley Research.

We expect the industry to consolidate long term, given EV charging infrastructure operation is a capital-heavy industry, and most operators are loss-making. **However, we see five types of operators with sufficient capital and/or strategic purposes that will remain** in this market for a long period: (1) current leading EV charging operators with large scale; (2) grid companies; (3) power transmission and distribution manufacturers; (4) battery makers; and (5) EV manufacturers.

Disruption by EV manufacturers should not be ignored, since they position their charging stations as an after-sales service to attract more potential buyers. We note that such competition from EV manufacturers is escalating; Xpeng has announced plans to develop next-generation super piles in 2H22. These super piles are expected to charge vehicles 4x faster than current super piles. Xpeng, Li Auto and NIO have also started to build their own EV battery-swap-stations as an alternative to EV charging stations that would significantly shorten the waiting time for charging. In our view, EV charging will be a very dynamic market near term.

Exhibit 40: Major EV charging operators in China

Types	Major players
Leading EV charging operators	TGOOD, Star Charge, EV Power, Potevio
Grid companies	State Grid, CSGC
Power transmission and distribution manufacturers	XJ Electric, NARI Technology, Sieyuan Electric, Senyuan Electric
Battery makers	CATL
EV manufacturers	Xpeng, NIO, BYD, Tesla

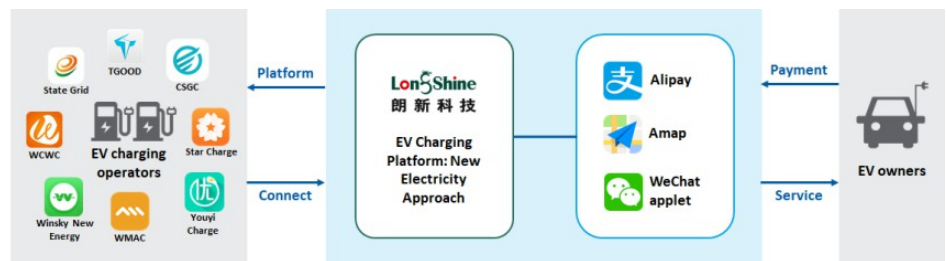
Source: Morgan Stanley Research.

Hence, **EV charging is a fragmented and growing market; strong demand for a centralized platform**. Although most leading EV charging operators run their own apps, EV drivers would naturally prefer to have one platform to access all charging piles instead of having multiple apps. At the same time, a number of smaller charging

operators that lack the adequate distribution channels also prefer to have a platform with massive user traffic to reach EV drivers and improve utilization rate. To meet the needs of both EV drivers and EV charging operators, we think the online payment platforms are best positioned to serve as the middlemen since they are most accessed by individual consumers on a daily basis in China. Mapping apps can also serve as the middlemen, since they also provide such functions as destination navigation with surrounding facilities.

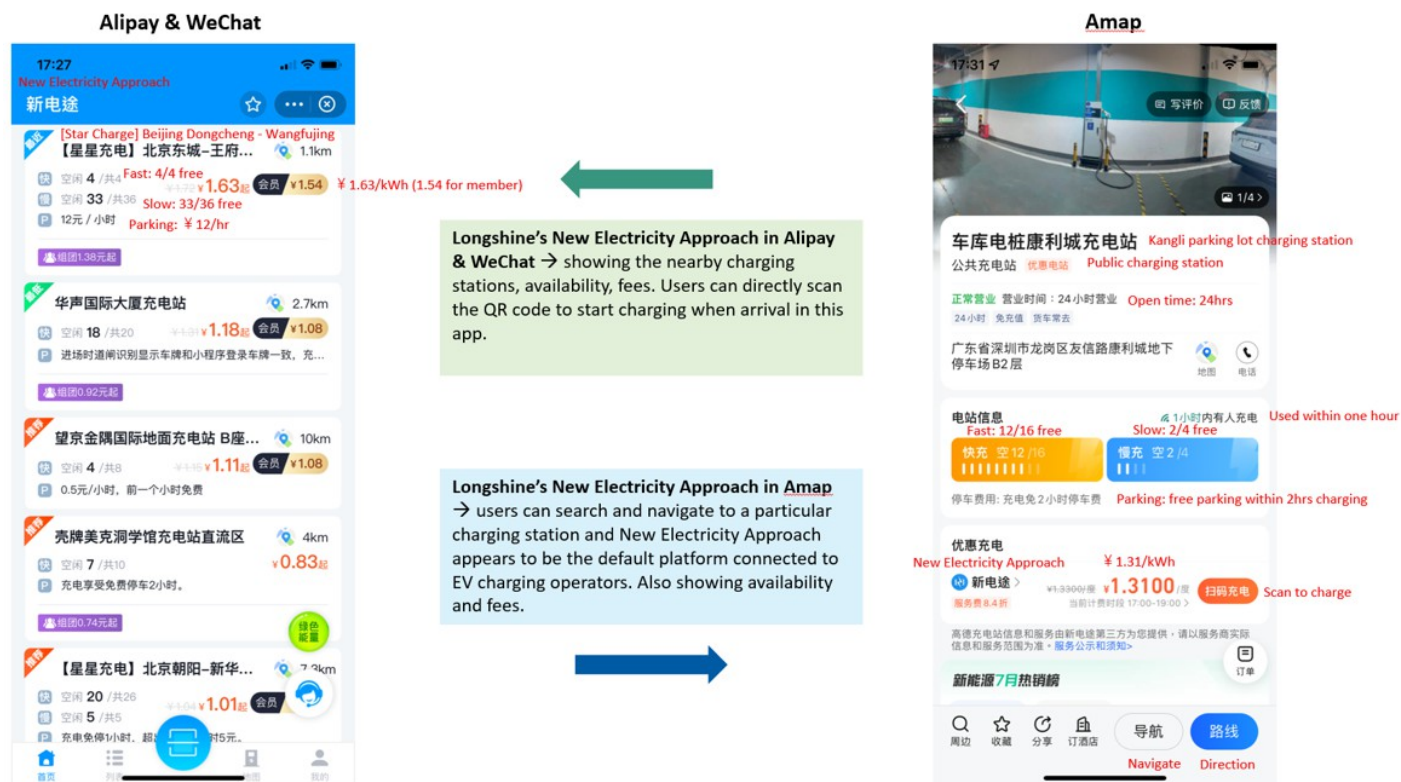
Through its subsidiary New Electricity Approach, Longshine provides the aggregated EV charging platform for Alipay, Amap, and Wechat Applet that connects EV drivers with various EV charging operators. EV drivers are thus able to access one-stop charging services covering (1) location of the nearest EV charging pile with availability and fee details, (2) code scanning, and (3) payment of bills all in one interface. Longshine also introduced the Sesame Credit + Ant Credit Pay system standard of Alipay to its New Electricity Approach, enabling EV drivers to charge first and pay later. In May 2022, Longshine also announced a partnership with Baidu Map for the EV charging platform.

Exhibit 41: Longshine's EV charging platform business



Source: Company data.

Exhibit 42: Demo of New Electricity Approach



Source: Alipay, WeChat, Amap.

Similar to the online utility payment, **Longshine generates its EV charging revenue primarily through** (1) 10-15% revenue sharing with operators' charging service fee based on the charging volume, and (2) marketing campaigns and operation on the platform. In 2020/2021/1H22, the company saw significant gains in terms of charging volume with market shares of 1%/5%/10% in the public markets. EV charging volumes also increased from 560mn kWh in 2021 to 830mn kWh in 1H22. Longshine management targets to maintain a 10% market share for 2022, moving towards a potential 20% in 2023.

We expect EV charging platform revenue to grow 17x from 2021-25 given a low base in 2021, together with surging penetration of EVs. The Morgan Stanley China Utilities team estimates public EV charging volumes will reach 127bn kWh by 2025. Based on this macro background, we set up the following three scenarios for Longshine:

- **Base case:** Longshine's market share rises from 10% in 1H22 to 12% in 2025, in terms of public EV charging volume, with revenue per kWh maintained at Rmb0.1. This implies that Longshine's bargaining power sustain and it gains market share via better services and more connections with Business/Consumer ends.
- **Bull case:** Longshine's market share rises from 10% in 1H22 to 15% in 2025, with revenue per kWh rising to Rmb0.12. This implies that Longshine's bargaining power is further strengthened when reaching a bigger scale.
- **Bear case:** Longshine's market share stays at 10% by 2025, with revenue per kWh declining to Rmb0.08. This implies that Longshine faces more competition with price wars and offers more discounts in order to retain its market share.

Exhibit 43: Longshine: EV charging platform revenue scenario assumptions

	2021	1H22	Bear 2025E	Base 2025E	Bull 2025E
Public EV charging volume (bn kWh)	11	8	127	127	127
Longshine market share	5%	10%	10%	12%	15%
Longshine platform charging volume (bn kWh)	0.6	0.8	12.7	15.2	19.1
Revenue per kWh (Rmb)	0.10	0.11	0.08	0.10	0.12
Longshine EV charging platform revenue (Rmb mn)	55	90	1,016	1,524	2,286
2025E as of 2021			11.3x	16.9x	25.4x

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Potential margin expansion for EV charging

We believe the scale of user traffic is a key competitive edge for EV charging platforms.

This is because the EV charging platform is a B2B2C business that brings together EV charging operators and EV drivers. EV charging operators are thus highly incentivized to connect with platforms that can bring more EV drivers to improve the utilization rate. Meanwhile, the revenue sharing ratio stays at a reasonable range to ensure profitability. EV drivers also would like to access an EV charging platform that covers the most EV charging piles nearby with cheaper service fees. Hence, the leading platform players are more likely to continuously gain share given their bigger scale with massive user traffic. New entrants would have to consistently invest a considerable amount in marketing and subsidies to attract more user traffic to catch up with the existing players.

Longshine and NAAS are the market leaders. We compare the major EV charging platforms in China and find that Longshine owns the most charging piles and has the most customers, while NAAS owns the most EV charging operators and charging volumes in public markets in 1H22. We exclude YKC, which connects with c. 6K operators because these are primarily individual operators running c.30 piles on average, compared with Longshine/NAAS, which connect with 500/981 operators running 1,000/413 piles on average.

Exhibit 44: Major China EV charging platform operating data

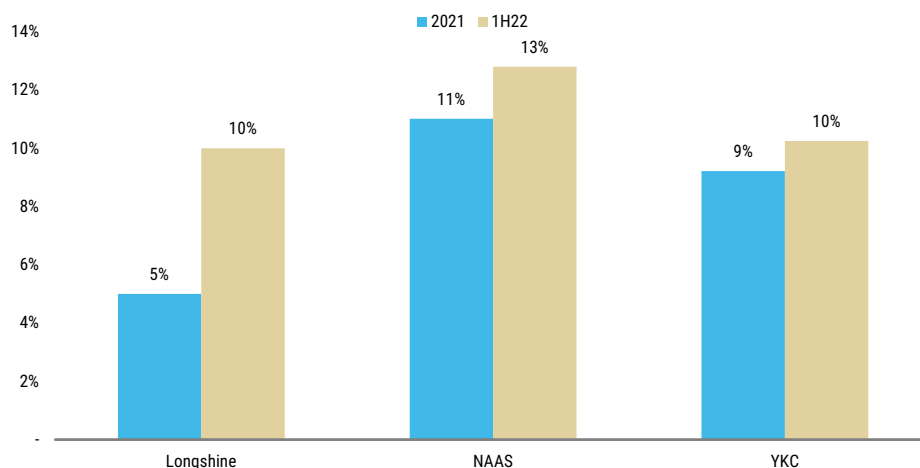
		By 1H22	By 1H22	By 1H22	In 1H22
	Main interface	No. of charging piles	No. of operators	No. of customers	Charging volume (mn kWh)
Longshine	Alipay/Amap	500,000	500	3,800,000	830
NAAS	App	404,000	981	2,200,000	1,062
YKC	App	183,741	6,000	270,000	851
Xiaoju (Didi)	App	76,007	100	100,000	n.a
JNC	App	60,000	n.a	n.a	n.a

Source: Company data, EVCIPA, Morgan Stanley Research. Note: NAAS's customer number is up to 1Q22 and YKC's customer number is up to August 2022.

In terms of charging volume market share, NAAS and YKC were the top 2 major EV charging platforms in 1H22 given their early-mover advantage; they were established in 2019 and 2016, respectively. However, although Longshine's EV charging platform (New Electricity Approach) was established in 2020, its market share rose rapidly from 5% in 2021 to 10% in 1H22. We believe the **(1) interfaces through Alipay and Amap instead of self-developed apps, as well as (2) in-depth know-how in power demand by providing a grid sales system are Longshine's key competitive edges** that have helped it to generate massive user traffic in such a short period. In addition, we also see early consolidation signs in the EV charging platform markets, with Concentration Ratio of top 3 players

(Longshine, NAAS, and YKC) up from 25% in 2021 to 33% in 1H22.

Exhibit 45: Market share by public EV charging volume

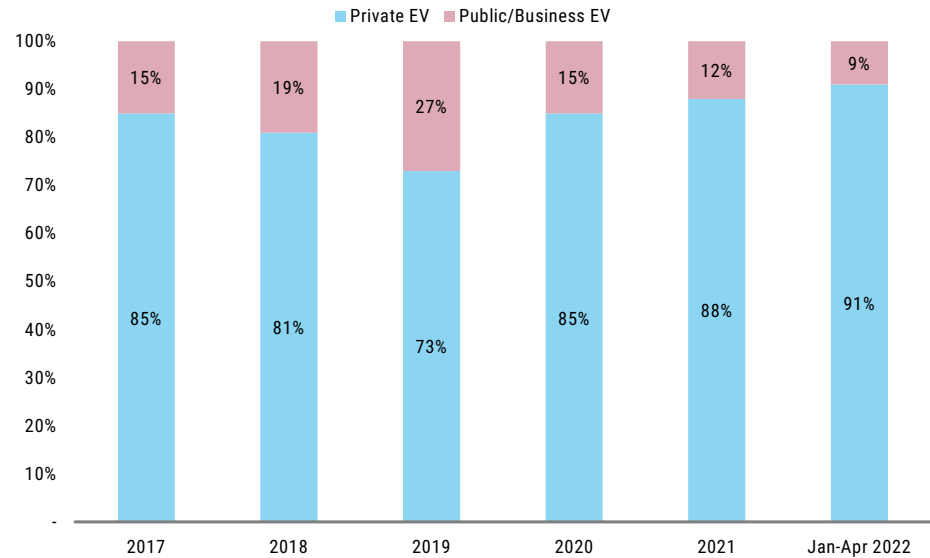


Source: Company data, EVCIPA, Morgan Stanley Research.

There is ongoing debate on how profitable the EV charging business is, since EV charging platform players may have a low revenue sharing ratio from EV charging operators to attract as many operators as possible, and they likely also offer high subsidies to EV drivers to maintain market share. While leading players such as Longshine are still loss-making, **we see profitability potential and margin expansion opportunities**, mainly driven by three aspects:

(1) Price war among EV charging operators is not sustainable. EV charging platforms' revenue sharing comes from EV charging operators' service fees. EV charging operators' price war would hamper the revenue of EV charging platforms. Although service fee is an important consideration, the location of the EV charging piles remains the top factor for drivers when choosing an operator. Meanwhile, EV charging operation is capital-heavy, and fixed costs mainly include depreciation and rental costs. Smaller operators with subpar locations may have to offer a cheaper service fee in order to gain market share. In contrast, leading operators with prime locations can enjoy stronger bargaining power with EV drivers and thus maintain a higher service fee.

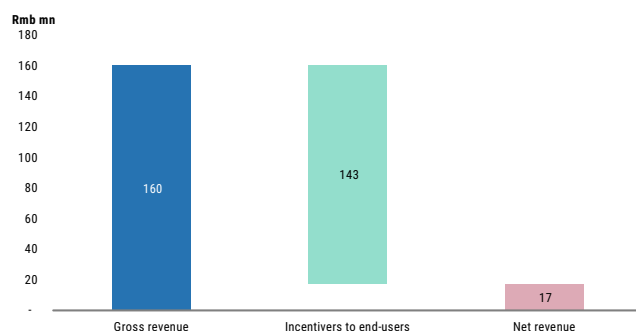
(2) Privately owned EVs are gaining share and are less price sensitive. The EV roll-out in China in 2012 was primarily led by public transportation such as electric buses and electric taxis. According to iResearch, in 2020 70-80% of the charging volume was consumed by public transportation vehicles, versus only 20-30% consumed by private vehicles. Public EV drivers are more price sensitive towards EV charging as the lower service fee results in higher profits for them. Meanwhile, private EV drivers value convenience and service quality more than public EV drivers, and thus are willing to accept a higher service fee in exchange for a better user experience. As EV penetration has continued to grow, it has expanded into private EV markets, which have a bigger TAM. Privately owned EVs have become the key driver of EV sales since 2017, accounting for more than 70% of unit sales each year. This should lead to more upside to EV charging service fees, and EV charging platforms with better operations should be able to gain more market share.

Exhibit 46: New EV sales breakdown in China


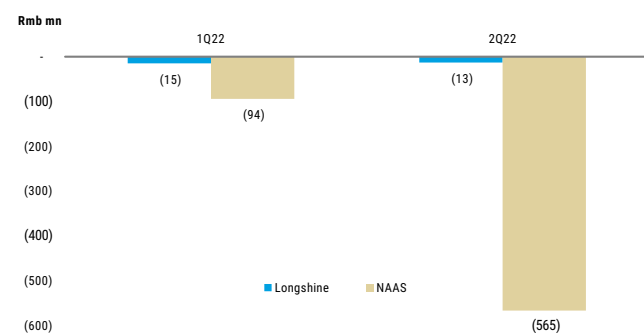
Source: China Automobile Dealers Association, Morgan Stanley Research.

(3) Economies of scale of EV charging platform. Aside from offering subsidies, the major cost item of EV charging platform players is the initial integration with each EV charging operator's charging stations and piles; this is a one-time fixed expense. Marginal costs should decline as the platform grows in scale and thus improve its profitability.

Longshine's net loss in the EV charging platform business narrowed from Rmb15mn in 1Q22 to Rmb13mn in 2Q22. Management guided for net losses to be less than Rmb15mn in both 3Q22 and 4Q22. Meanwhile, the company's market share rose from 8% in 1Q22 to 10% in 2Q22. In contrast, net loss of its main competitor NAAS escalated from Rmb94mn in 1Q22 to Rmb565mn in 2Q22. In 2021, NAAS's subsidies to EV drivers accounted for nearly 90% of its gross revenue. If we take into account net revenue only, NAAS would have recorded negative gross margin, and this trend seems to have continued in 1H22. We think that the divergent financial performance of Longshine and NAAS implies that the subsidy to EV drivers is not a sustainable way for an EV charging platform business to scale up.

Exhibit 47: NAAS: Revenue breakdown, 2021


Source: Company data, Morgan Stanley Research.

Exhibit 48: Net profit comparison of EV charging platform players, 1H22


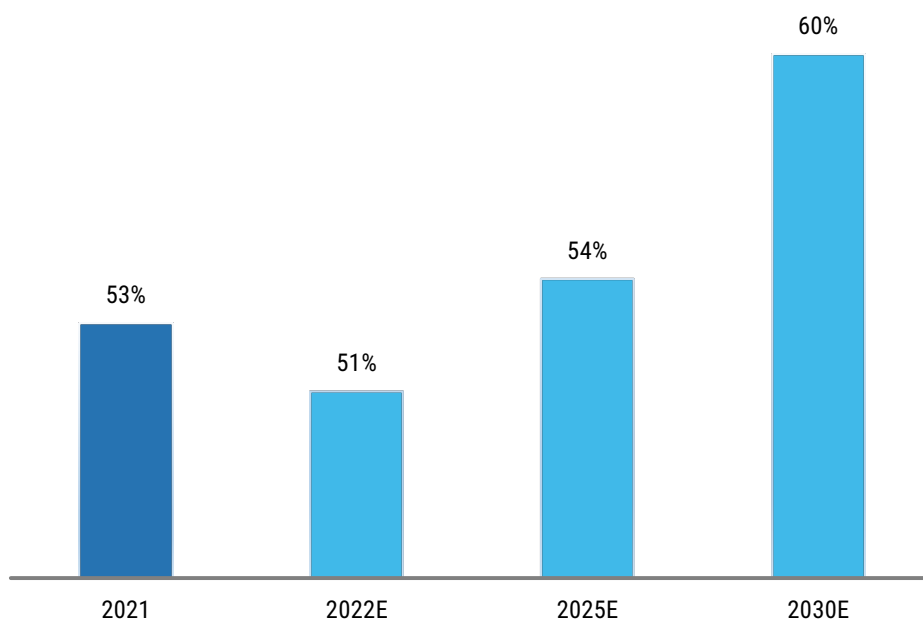
Source: Company data, Morgan Stanley Research.

We expect Longshine's gross margin to pick up for the Energy Internet business,

primarily driven by the EV charging platform. According to management, in 2021 the EV charging platform generated c.Rmb55mn in gross revenue and the subsidies to EV drivers reached Rmb25mn, and when deducted from cost of revenue led to a gross margin of around 25%. If the subsidy cost is added back to cost of revenue, the gross margin of EV charging platforms would have reached 70%.

We believe 2022 will be the trough for the EV charging platform gross margin, and expect it to pick up starting from 2023. We estimate overall gross margin for the Energy Internet business to decline to 51%/52% in 2022/2023 and then gradually rise to 54% in 2025; long term, we expect gross margin to reach 60% by 2030.

Exhibit 49: Longshine: Gross margin forecasts for Energy Internet business



Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

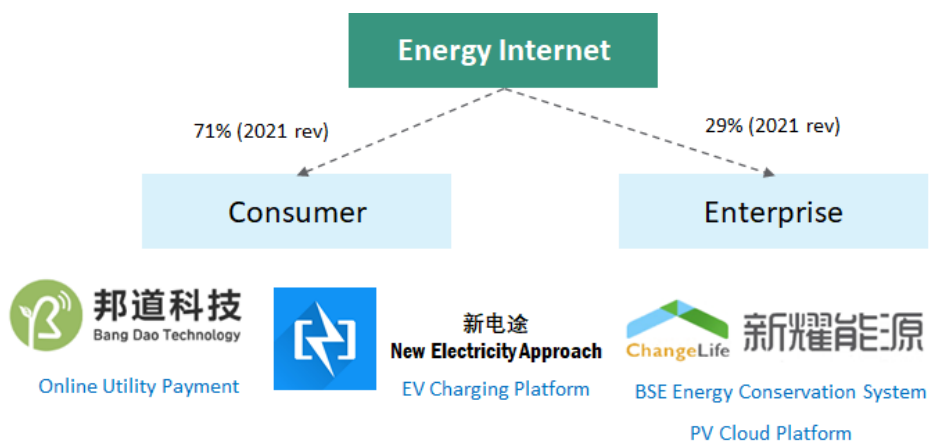
Emerging Innovation Business Ahead

Longshine is expanding its offerings to other power sales sub-sectors, which give it more growth opportunities other than power sales systems, online utility payments and EV charging platforms. The company is incubating innovative product models and exploring new business opportunities that may become another long-term growth driver.

ToB platform of Energy Internet

In addition to online utility payments and EV charging platforms, whose end-customers are individual consumers, Longshine has also launched platforms to serve enterprise customers as part of its Energy Internet business through another subsidiary, Change Life. These To Business (ToB) platforms include Building Smart Energy (BSE) energy conservation system and the distributed Photovoltaic (PV) platform.

Exhibit 50: Longshine: Energy Internet business breakdown



Source: Company data, Morgan Stanley Research.

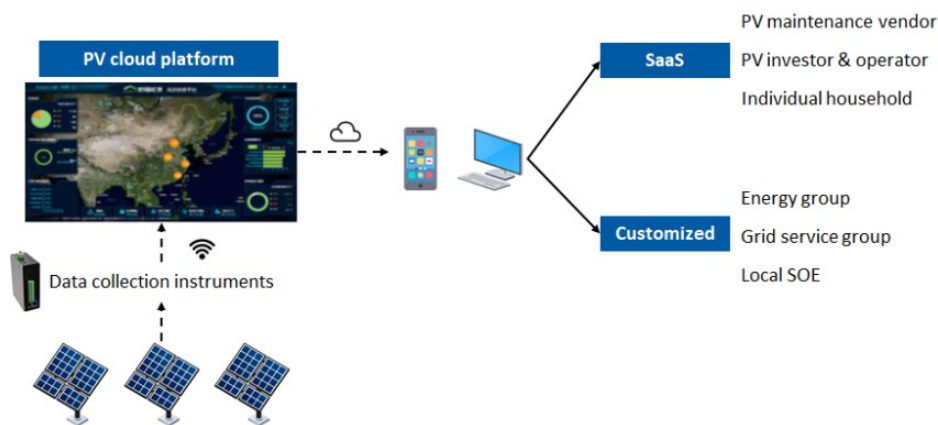
BSE energy conservation system. BSE is a cloud-based platform that monitors, controls, and optimizes the energy consumption of enterprises by connecting with IoT devices. Based on the weather conditions and production pipeline, BSE can also automatically generate daily energy supply solutions. Enterprises with large energy consumption scenarios such as centralized high power air conditioning in data centers and electronics/chemicals/biotech/pharmaceutical production are the target customers. Currently Longshine's BSE serves more than 10 airports, hospitals and industrial parks in China that have an energy conservation rate above 18%. Longshine generates revenue by sharing reduced energy costs with enterprise customers.

PV cloud platform. Longshine provides a software as a system (SaaS)-based operation platform for distributed PVs. Compared with centralized PVs, distributed PVs have lower

requirements on initial investments, environments and land resources. The lower barriers of entry make distributed PVs preferred by small-sized PV operators including households that lack capability to manage digitized PVs. Through Longshine's PV cloud platform, these small-sized PV operators can manage PV operations, maintain devices, and generate bills from data collected from PV equipment. For large-sized energy groups and local SOEs that also generate power via PV equipment, Longshine can also provide a platform in the form of customized projects.

Currently Longshine's PV cloud platform connects with 2.4k+ PV power operators with 18k+ PV power plants and 10GW installed capacity (versus 107.5GW total installed capacity of distributed PVs in China in 2021). In 1H22, around 3k PV power plants with 600MW incremental capacity were connected. Revenue from this business is generated from installed PV power capacity on a recurring basis under an SaaS model.

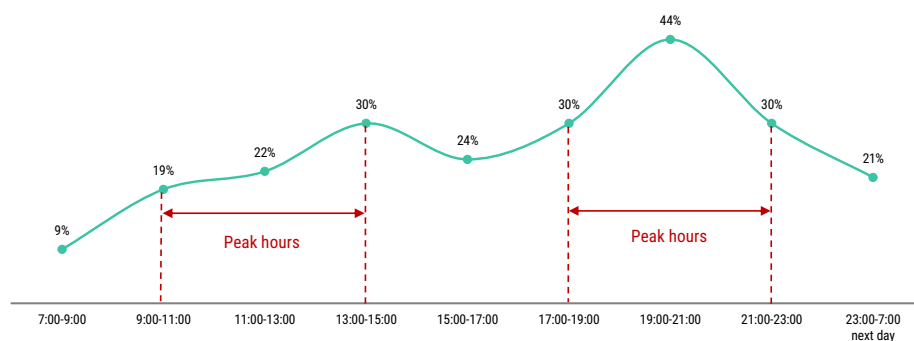
Exhibit 51: Longshine: PV cloud platform



Source: Company data, Morgan Stanley Research.

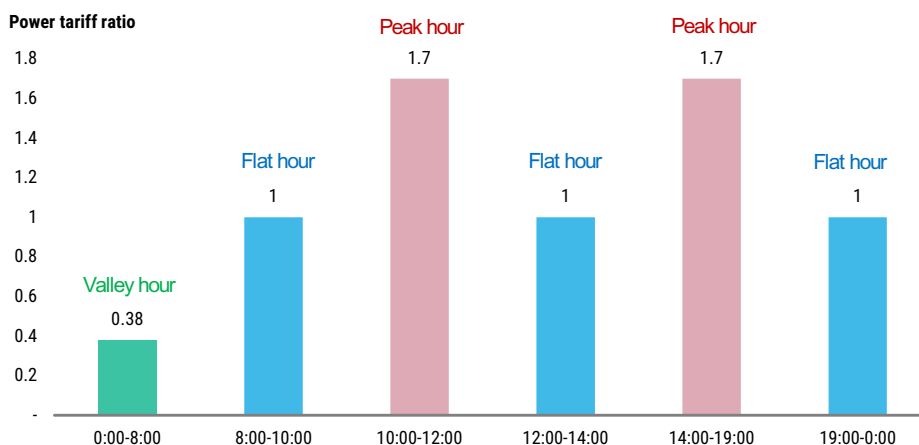
Integration of charging, storing and PV

Public EV charging is a highly volatile power consumption scenario. According to an iResearch survey of 1,034 respondents in 2020, the peak hours of EV charging at public charging stations are 9:00-15:00 and 17:00-23:00 when EVs are parked in public spaces. During the busiest period, 19:00-21:00, around 44% of EV drivers charge their vehicles in stations, versus only 9% during the slowest period, 7:00-9:00. This creates highly volatile power demand for public EV charging stations, which translates into a volatile daily revenue stream for EV charging operators.

Exhibit 52: Percentage of EV vehicles that are charging in a public charging station per day

Source: IResearch, QQ Survey, Morgan Stanley Research.

Meanwhile, because of the peak-valley tariff mechanism, daily power tariffs are also volatile, accounting for more than 50% of operating costs for EV charging operators. For example, in Shenzhen the power tariff during peak hours are 1.7x that during flat hours, versus valley hours at only 0.38x. Based on the regulations in Guangdong province, peak hours are set at 10:00-12:00 and 14:00-19:00, with valley hours at 0:00-8:00, in-line with demand for public EV charging. Hence, **we see limited upside to profitability for public EV charging operators when revenue and costs fluctuate at the same time.**

Exhibit 53: Shenzhen power peak-valley tariff ratio

Source: Shenzhen govts, Morgan Stanley Research. Note: Updated to February 2022.

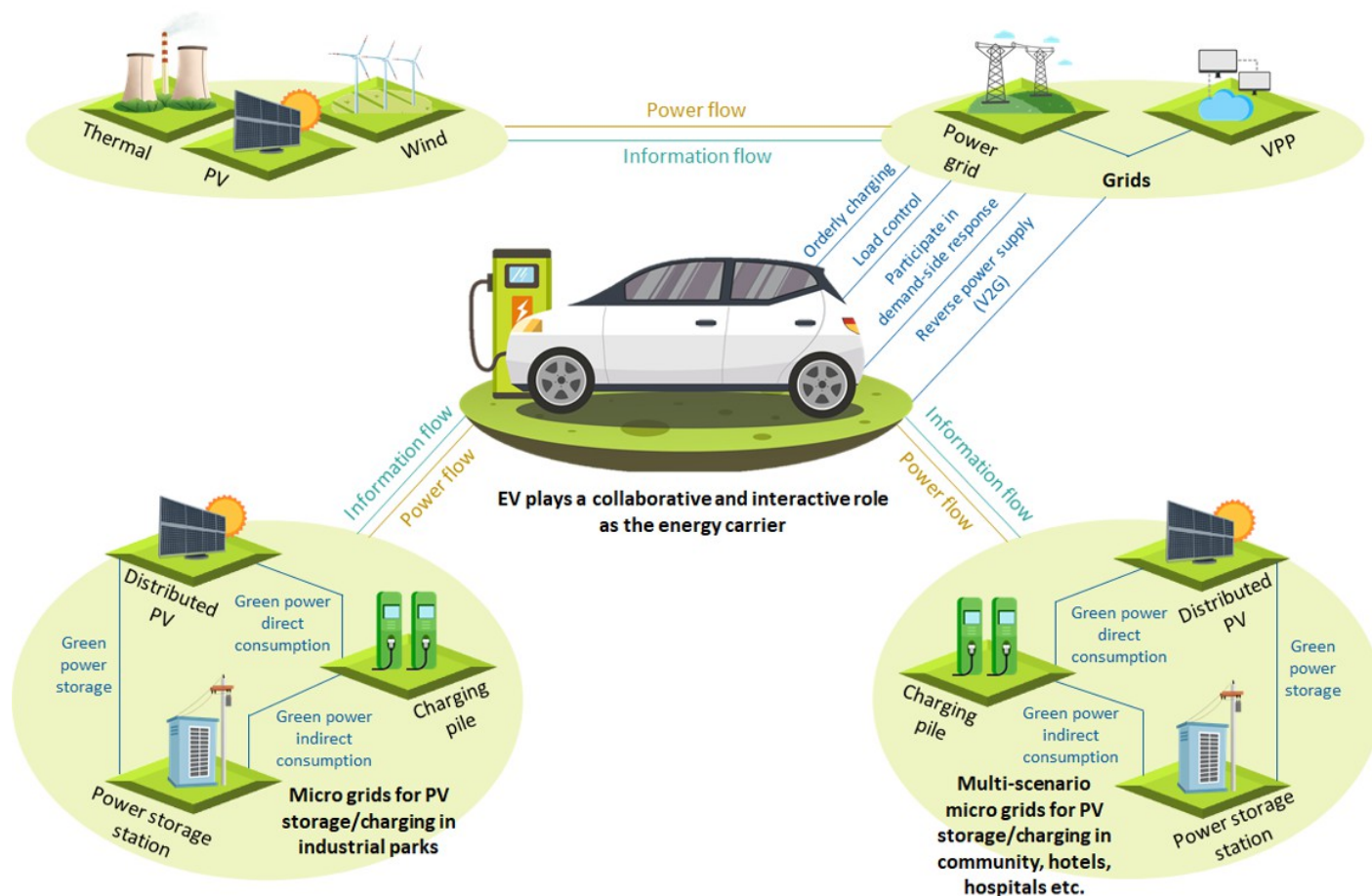
Through energy storage and power sales, Longshine helps EV charging operators improve profitability. Longshine obtained a power sales license in 2021 and started trial runs of its EV charging + power sales + power storage business in 2022. Here, Longshine purchases power from power plants during valley hours with low tariffs, stores the energy and sells it to public EV charging operators at peak hours at a price cheaper than grid's peak tariffs, which allows operators to save more on costs.

In addition, only 16 public EV charging operators have more than 10k charging piles each, according to EVCIPA. Most public EV charging operators are either small in size with limited power demand, which puts them in a difficult position, or do not meet the minimum bid size when purchasing power from the power market. By aggregating the power demand of small units on Longshine's EV charging platform, and supported by

data analysis, Longshine can purchase power at a bigger discount and offer the smaller operators similar services as a power plant does. This business is very similar in concept to a virtual power plant (VPP) business.

Longshine's is evolving towards virtual power plant (VPP) opportunities. VPP is a cloud-based power facilitation system that aggregates decentralized power demand (i.e., EV charging) and supply (i.e., distributed PV) together with storage systems to eliminate fluctuations in power load and balance the grids. Longshine implements such trials by integrating its PV cloud platform, power sales and EV charging platform with energy storage. Its existing business model is to generate profits by sharing in the power tariff gaps of purchasing and selling. In 1H22, of the 830mn kWh total power consumption volume on Longshine's EV charging platform, 300mn kWh were pre-purchased by Longshine. The company is also actively investing in the integration of EV charging stations, PVs and energy storage. We think this has set a solid foundation for potential VPP development.

Exhibit 54: Integration of EV charging, energy storage and PV



Source: Company, Morgan Stanley Research.

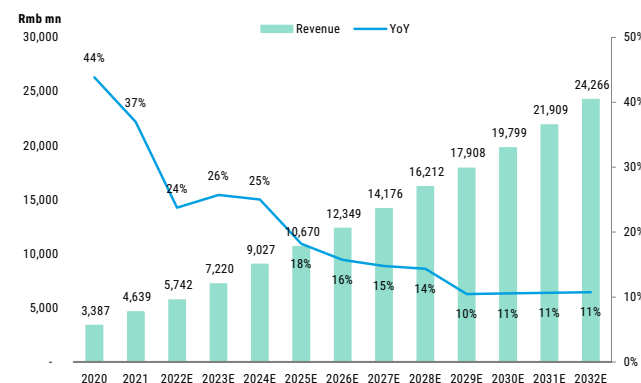
Financial Forecasts and Earnings Outlook

Revenue and drivers

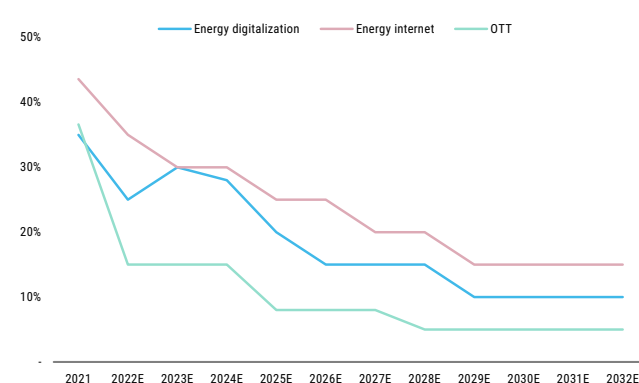
We forecast Longshine's top line to grow 24% YoY to Rmb5.7bn in 2022, mainly driven by 35% YoY growth in the Energy Internet business and 25% in Energy Digitization, in-line with guidance. We forecast revenue to reach Rmb24.3bn in 2032, representing a 15.5% CAGR in 2022-32.

We expect Energy Digitization to deliver sustainable growth at a 16.1% CAGR in 2022-32, with revenue contribution relatively stable, from 51% in 2021 to 54% in 2032. We expect Energy Internet to become the major long-term growth driver, with revenue contribution expanding from 18% in 2021 to 31% in 2032, representing a 10-year CAGR of 20.9%. This will be primarily driven by a growing EV charging platform business. As Over The Top (OTT), as mature market, is likely to see limited development, we expect the business to deliver only a 7.8% 10-year CAGR, accounting for 14% of total revenue by 2032.

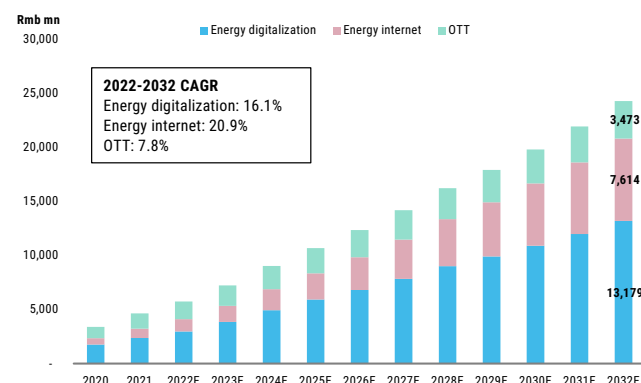
Overall, we expect Longshine to deliver management's guidance on revenue growth with EV charging platform starting to see positive profit from 2024.

Exhibit 55: Longshine: Revenue forecasts


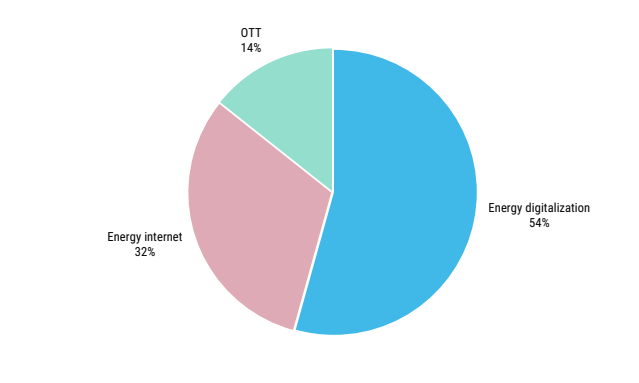
Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 57: Longshine: Revenue growth breakdown


Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 56: Longshine: Revenue forecast breakdown


Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 58: Longshine: Breakdown of our revenue forecasts, 2032


Source: Morgan Stanley Research. E = Morgan Stanley Research estimates.

Costs, profitability and cash flow

Longshine's cost of revenue primarily consists of (1) labor costs, (2) direct material costs, and (3) outsourced services costs. We expect overall GPM to gradually improve from 43% in 2021 to 48% in 2032, mainly from margin expansion in the Energy Internet business. We break down our gross margin forecasts as follows:

- **Energy Digitization:** We forecast gross margin to stay flat at c.45% long term, given sustainable software investment in grid companies and Longshine's stable market share.
- **Energy Internet:** We forecast gross margin to decline from 53% in 2021 to 51% in 2022, from the expansion of EV charging platforms with lowered gross margin, and gradually grow to 60% in 2032 as the company achieves economies of scale in EV charging platforms.
- **OTT:** We forecast gross margin to remain stable at c.32% long term, due its mature business model.

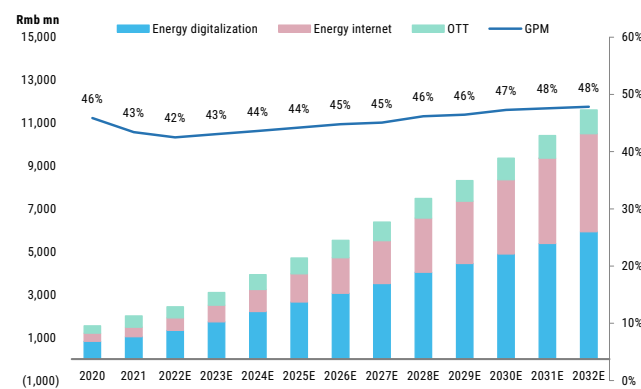
We expect R&D to remain the biggest contributor of Longshine's operating expenses through 2032 and gradually decline from 12% of revenue to at 10% in the long-term as

the company rolls out data acquisition and load management systems for its Energy Digitization business in the 14FYP period and continues to introduce innovative products such as BSE energy conservation system and distributed PV platform for its Energy Internet business. We also expect both S&M expenses and G&A expenses as % of revenue to remain relatively flat in the future.

We expect Longshine's overall net margin to gradually improve from 17% in 2022 to 22% in 2032 on gross margin expansion.

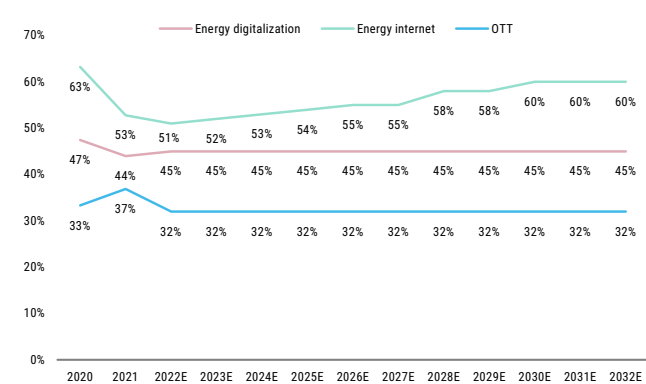
We forecast both operating cash flow and free cash flow to grow steadily in 2022-2032.

Exhibit 59: Longshine: Gross profit forecasts



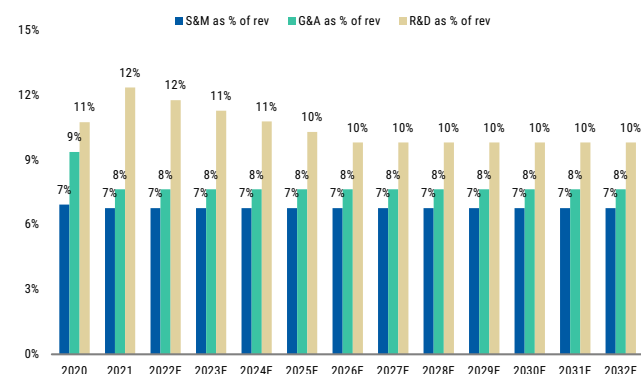
Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 63: Longshine: Breakdown of our gross margin forecasts



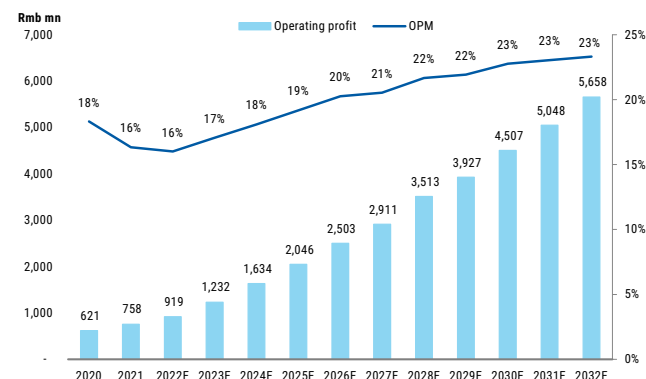
Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 60: Longshine: Opex as a percentage of revenue



Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 64: Longshine: Operating profit forecasts



Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 61: Longshine: Operating leverage

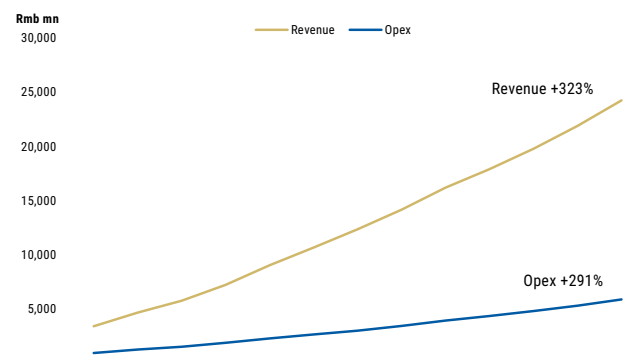
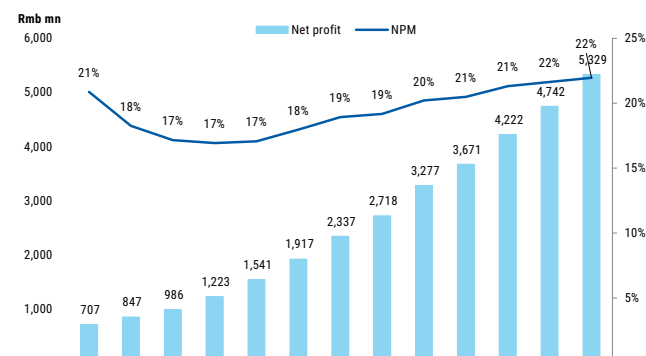


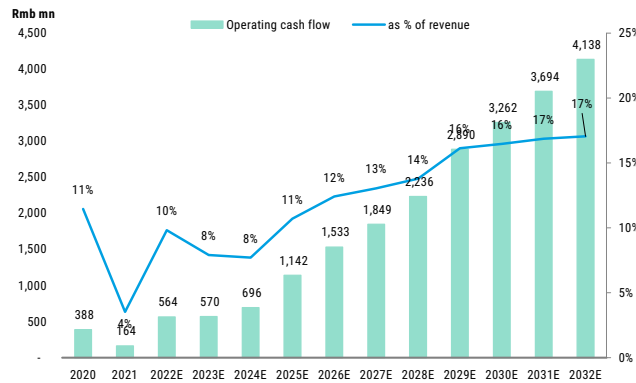
Exhibit 65: Longshine: Net profit forecasts



2020 2021 2022E 2023E 2024E 2025E 2026E 2027E 2028E 2029E 2030E 2031E 2032E

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 62: Longshine: Operating cash flow forecasts

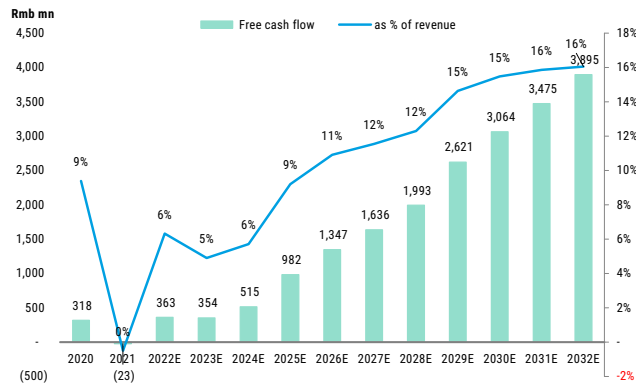


Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

2020 2021 2022E 2023E 2024E 2025E 2026E 2027E 2028E 2029E 2030E 2031E 2032E

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 66: Longshine: Free cash flow forecasts

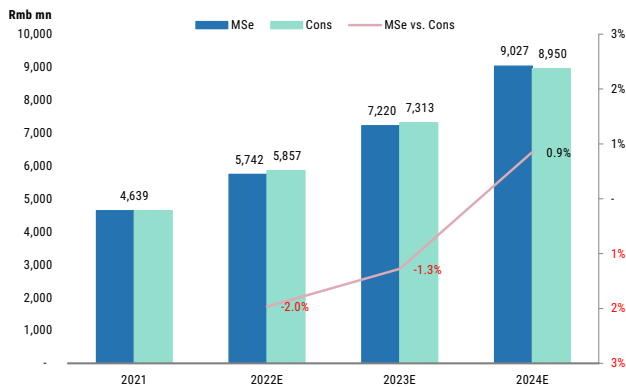


Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Our estimates versus consensus

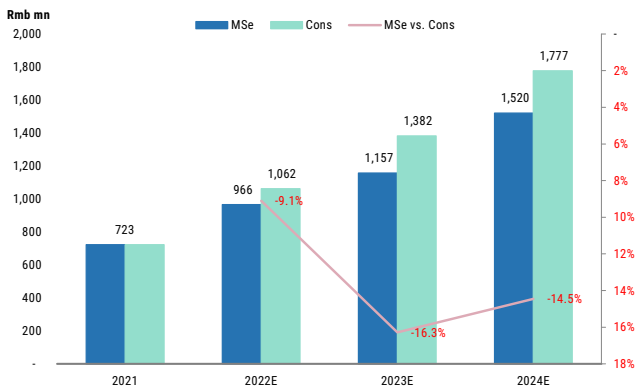
Our revenue forecasts are largely in-line with consensus, but our bottom-line forecasts are more bearish, as we believe the rapid expansion of loss-making EV charging platforms will continue to hamper profitability before it reaches breakeven. Based on consensus forecasts, Longshine is expected to deliver net margin of 18% in 2022, while we forecast at 17%.

Exhibit 67: MSe vs consensus revenue forecasts



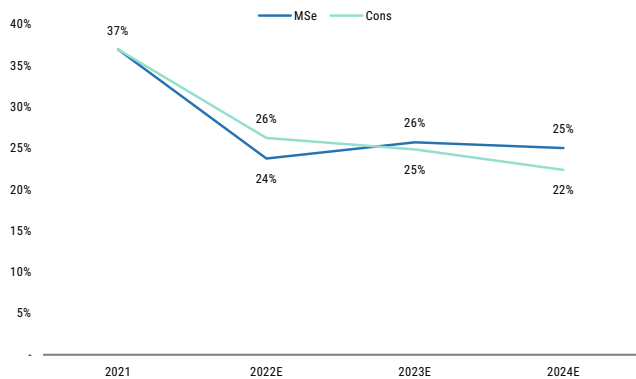
Source: Refinitiv consensus estimates, Morgan Stanley Research estimates. Note: As of September 29, 2022.

Exhibit 69: MSe vs consensus net profit forecasts



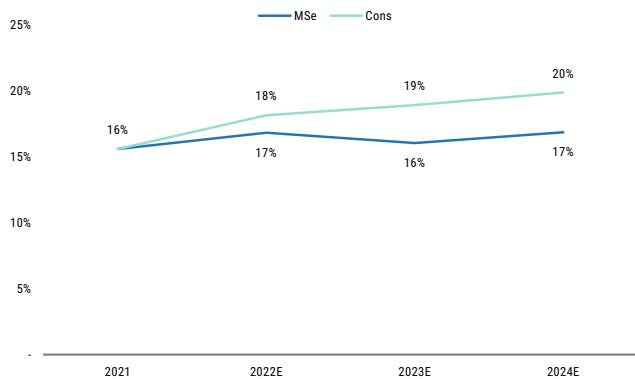
Source: Refinitiv consensus estimates, Morgan Stanley Research estimates. Note: As of September 29, 2022.

Exhibit 68: MSe vs. consensus revenue growth forecasts



Source: Refinitiv consensus estimates, Morgan Stanley Research estimates. Note: As of September 29, 2022.

Exhibit 70: MSe vs. consensus net profit margin forecasts



Source: Refinitiv consensus estimates, Morgan Stanley Research estimates. Note: As of September 29, 2022.

Valuation and Comparables

Valuation methodology

We derive our Rmb33 price target for Longshine from our 10-year discounted cash flow (DCF) model, as we believe DCF best reflects the company's long-term growth potential.

Our key DCF assumptions include a 3% terminal growth rate and 10.6% WACC (4% risk-free rate, 11.2% cost of equity, 1.1 beta, 6% cost of debt, 10:90 debt-to-equity ratio). The WACC that we use is in-line with that for other software names under our coverage. Our price target, which is also our base case, implies P/E of 35x/28x in 2022/23 and EV/Sales of 6x/4x in 2022/23.

On our estimates the company is currently trading at 1SD below the 5-year average forward P/E of 36x and EV/S of 6x. The 2023 multiples implied by our price target are below the historical averages, but it already suggest significant upside based on current share price level.

Risks to the downside include: (1) slower-than-expected grid digitization and market-oriented power reform; (2) end of partnership with Alipay ecosystem; (3) intensifying competition in EV charging platform markets with increasing subsidies to end consumers; and (4) further sell-down by IDG Capital (Yue Qi Capital), the third-largest shareholder (now c.12% of Longshine), as a primary market fund that invested in Longshine pre-IPO. IDG Capital held 14.36% of Longshine as of end-2021.

Risks to the upside include: (1) faster-than-expected implementation of grid digitization and market-oriented power reform; (2) earlier-than-expected break-even reached by EV charging platform; and (3) significant progress of innovation business such as integration of EV charging, energy storage and PV.

Exhibit 71: Longshine: DCF valuation summary

Years Ending December 31	2018	2019	2020	2021	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
				Scenario	0										
Rmb mn															
DCF															
FCF	(22)	460	318	(23)	363	354	515	982	1,347	1,636	1,993	2,621	3,064	3,475	3,895
% change	-155.8%	-2378.8%	-30.8%	-107.3%	-1666.3%	-2.5%	45.6%	90.6%	37.3%	21.5%	21.8%	31.5%	16.9%	13.4%	12.1%
% 3-yr CAGR	2.3%	-7.6%	3.6%	-381.2%	39.3%	56.1%	47.0%	26.6%	24.8%	23.3%	20.4%	14.1%	0.0%	0.0%	0.0%
% of revenue	-2.1%	15.5%	9.4%	-0.5%	6.3%	4.9%	5.7%	9.2%	10.9%	11.5%	12.3%	14.6%	15.5%	15.9%	16.1%
Discounted CF					0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10-year
					11.6%	344	449	767	944	1,027	1,122	1,322	1,385	1,408	1,414
					10.6%	345	454	783	972	1,067	1,176	1,399	1,478	1,516	1,537
					9.6%	346	459	799	1,001	1,109	1,233	1,480	1,579	1,634	1,672
WACC															
Cost of debt															
Tax rate															
After-tax cost of debt															
Debt weighting															
Risk-free rate															
Equity risk premium															
Beta															
Cost of equity															
Equity weighting															
WACC															
Terminal growth						2.0%	3.0%	4.0%	2.0%	3.0%	4.0%	2.0%	3.0%	4.0%	
10Y CF						10,182	10,182	10,182	10,728	10,728	10,728	11,313	11,313	11,313	
Terminal value						15,065	16,987	19,416	18,283	20,900	24,312	22,511	26,189	31,187	
Enterprise value						25,248	27,170	29,599	29,011	31,627	35,040	33,825	37,503	42,500	
Net cash/(debt)						2,211	2,211	2,211	2,211	2,211	2,211	2,211	2,211	2,211	
Minority interest						120	120	120	120	120	120	120	120	120	
Investment						220	220	220	220	220	220	220	220	220	
Equity value						27,799	29,721	32,150	31,562	34,179	37,591	36,376	40,054	45,051	
No. of shares						1,046	1,046	1,046	1,046	1,046	1,046	1,046	1,046	1,046	
Price target						26.6	28.4	30.8	30.2	33.0	36.0	34.8	38.3	43.1	
EV/sales 2022e						4.4	4.7	5.2	5.1	5.5	6.1	5.9	6.5	7.4	
EV/sales 2023e						3.5	3.8	4.1	4.0	4.4	4.9	4.7	5.2	5.9	
PE 2022e						28.2	30.2	32.6	32.0	34.7	38.1	36.9	40.6	45.7	
PE 2023e						22.7	24.3	26.3	25.8	28.0	30.7	29.8	32.8	36.8	

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

SOTP valuation. We cross-check our DCF model using SOTP valuation, since (1) the business model and development stage of Longshine's three businesses are very different from each other; and (2) we think the OTT business should be valued at a discount given it has significant hardware components, and there are hardly any synergies in this business with the power industry. We choose P/E valuation for the Energy Digitization and OTT business given they are at a mature stage and generate revenue by projects/product sales with steady profits. Meanwhile, we choose P/Sales valuation for the Energy Internet business to reflect its fast evolution based on volume, with costs ahead of profits. Considering 30 P/E (1x PEG) for Energy Digitization, 15x P/S (0.5x PSG) for Energy Internet and 5x P/E (0.3x PEG) for OTT in 2023, we arrive at an SOTP-derived value of Rmb35, which is close to our DCF-derived value of Rmb 33.

Exhibit 72: Longshine: SOTP valuation summary

Years Ending December 31	2018	2019	2020	2021	2022E	2023E	2024E
				Scenario	0		
SOTP							
Net profit of Energy Digitization				245	296	385	493
P/E				47	39	30	23
Market value						11,560	
Peg						1.0	0.8
Sales of Energy Internet				848	1,145	1,488	1,935
P/S				26	20	15	12
Market value						22,325	
PsG						0.5	0.4
Net profit of OTT				373	408	470	540
P/E				6	6	5	4
Market value						2,348	
Peg						0.3	0.3
Total market cap						36,233	
No. of shares (mn)						1,046	
Implied SOTP value (Rmb)						35.0	

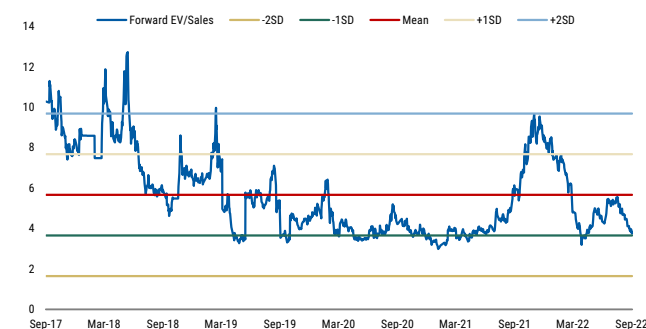
Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Exhibit 73: Longshine: 1-year forward P/E band



Source: Refinitiv, Morgan Stanley Research.

Exhibit 74: Longshine: 1-year forward EV/Sales band



Source: Refinitiv, Morgan Stanley Research.

Scenario analysis

Bull case: Rmb48

Our **bull case** scenario assumes faster-than-expected growth in the innovative Energy Internet business, which starts to contribute more to the bottom line on better management execution to reduce subsidies. We also assume better EV charging

platform growth, while gross margin expands together with improved bargaining power on a larger scale.

- Energy Internet growth: 43%/40%/40% for 2022-24
- Energy Internet gross margin: 56%/57%/58% for 2022-24
- R&D cash expenditure as a percentage of revenue: 10.5%/10%/9.5% for 2022-24

Exhibit 75: Longshine: DCF valuation summary - Bull case

Years Ending December 31		2018	2019	2020	2021	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Rmb mn	Scenario					1										
DCF																
FCF	(22)	460	318	(23)	442	482	703	1,257	1,792	2,235	2,787	3,685	4,428	5,192	6,017	
% change	-155.8%	-2378.8%	-30.8%	-107.3%	-2006.9%	9.1%	45.9%	78.8%	42.5%	24.7%	24.7%	32.2%	20.1%	17.3%	15.9%	
% 3-yr CAGR	2.3%	-1.3%	14.8%	-411.9%	41.7%	54.9%	47.0%	30.4%	27.2%	25.6%	23.0%	17.8%	0.0%	0.0%	0.0%	
% of revenue	-2.1%	15.5%	9.4%	-0.5%	7.6%	6.5%	7.4%	11.0%	13.3%	14.2%	15.2%	17.8%	18.9%	19.6%	19.9%	
Discounted CF					0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10-year	
					11.6%	469	613	983	1,255	1,403	1,569	1,859	2,001	2,103	2,185	14,439
					10.6%	470	620	1,003	1,293	1,458	1,644	1,966	2,136	2,266	2,374	15,230
					9.6%	471	627	1,023	1,331	1,515	1,725	2,081	2,282	2,442	2,582	16,080
WACC	Terminal growth	2.0%	3.0%	4.0%	2.0%	3.0%	4.0%	2.0%	3.0%	4.0%	2.0%	3.0%	4.0%	2.0%	3.0%	4.0%
Cost of debt	6.0%	10Y CF	14,439	14,439	14,439	15,230	15,230	15,230	16,080	16,080	16,080	16,080	16,080	16,080	16,080	16,080
Tax rate	10.0%	Terminal value	23,272	26,241	29,993	28,242	32,284	37,556	34,774	40,455	48,175					
After-tax cost of debt	5.4%	Enterprise value	37,711	40,680	44,432	43,472	47,514	52,786	50,854	56,535	64,255					
Debt weighting	10.0%	Net cash/(debt)	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386					
		Minority interest	120	120	120	120	120	120	120	120	120					
Risk-free rate	4.0%	Investment	220	220	220	220	220	220	220	220	220					
Equity risk premium	6.5%	Equity value	40,437	43,406	47,159	46,198	50,240	55,512	53,580	59,261	66,981					
Beta	1.10	No. of shares	1,046	1,046	1,046	1,046	1,046	1,046	1,046	1,046	1,046					
Cost of equity	11.2%	Price target	38.7	41.5	45.1	44.2	48.0	53.1	51.2	56.7	64.1					
Equity weighting	90.0%	EV/sales 2022e	6.5	7.0	7.6	7.5	8.2	9.1	8.8	9.7	11.1					
WACC	10.6%	EV/sales 2023e	5.1	5.5	6.0	5.9	6.4	7.1	6.8	7.6	8.6					
		PE 2022e	35.7	38.3	41.6	40.8	44.4	49.0	47.3	52.3	59.1					
		PE 2023e	27.9	30.0	32.6	31.9	34.7	38.3	37.0	40.9	46.2					

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Bear case: Rmb17

Our **bear case** scenario assumes slower-than-expected roll-out of EV charging platforms and intensifying market competition, leading to declining gross margin. We also assume the innovative Energy Internet business fails to contribute to overall profit.

- Energy Internet growth: 27%/22%/22% for 2022-24
- Energy Internet gross margin: 43%/41%/39% for 2022-24
- R&D cash expenditure as a percentage of revenue: 13.5%/13%/12.5% for 2022-24

Exhibit 76: Longshine: DCF valuation summary - Bear case

Years Ending December 31	2018	2019	2020	2021	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Rmb mn					-1										
DCF															
FCF	(22)	460	318	(23)	274	179	243	582	790	892	997	1,334	1,510	1,639	1,788
% change	-155.8%	-2378.8%	-30.8%	-107.3%	-1283.4%	-34.7%	35.7%	139.7%	35.8%	12.9%	11.7%	33.8%	13.2%	8.6%	9.1%
% 3-yr CAGR	2.3%	-15.8%	-17.5%	-318.8%	28.5%	64.1%	54.3%	19.6%	19.1%	19.2%	18.0%	10.3%	0.0%	0.0%	0.0%
% of revenue	-2.1%	15.5%	9.4%	-0.5%	4.8%	2.5%	2.8%	5.7%	6.9%	6.9%	6.8%	8.4%	8.8%	8.8%	8.8%
Discounted CF					0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10-year
					11.6%	174	212	455	554	560	561	673	682	684	649
					10.6%	174	214	464	570	582	588	712	728	715	706
					9.6%	175	217	474	587	605	617	753	778	771	767
WACC															
Cost of debt															
Tax rate															
After-tax cost of debt															
Debt weighting															
Risk-free rate															
Equity risk premium															
Beta															
Cost of equity															
Equity weighting															
WACC															

Source: Company data, Morgan Stanley Research. E = Morgan Stanley Research estimates.

Valuation comps

Vertical leaders as peers: We select leaders in different software verticals as Longshine's peers instead of State Grid Info (600131 CH, Not Covered) and NARI Technology (600406 CH, Covered by Eva Hou), which are often viewed by the market as its peers. Both SGI and Nari's businesses cover a much wider range of power IT from power generation, transmission & substation, distribution to sales and even cloud infrastructure (SGI) which have very little overlap with Longshine's businesses. In addition, NARI is a power grid secondary equipment player with gross margin ranging from 20-30%, versus Longshine at 40-50%. And although NaaS Technology (NAAS US, Not Covered) is Longshine's direct competitor in EV charging platforms, the lack of consensus data is (no analyst has updated their estimates in the past 12 months) prevents us from making an informed analysis of the two companies. Overall, we believe that no other company has a business model that is similar to Longshine's in all aspects. Given its leading position in the power sales system, online utility payment and EV charging platform markets, as well as the software business nature, leaders from other software verticals will form a better comparison to Longshine.

P/E multiple: We primarily use P/E as a benchmark multiple for peer comparison, supported by EV/Sales, as over 80% of Longshine's revenue comes from projects/products instead of recurring revenue. On our estimates Longshine is trading at 24x/20x/15x 2022/23/24 P/E, which are all significantly lower than peers. From an EV/Sales perspective, Longshine trades at 3.7x/3x/2.4x for 2022/23/24, all of which are also well below the peer average. However, we expect Longshine to deliver higher-than-average revenue and EPS CAGRs at 28% in 2021-24. We also expect Longshine to see higher margins at the operating and net level compared to peers. Hence, we believe the market is undervaluing Longshine's earnings potential, and this is likely because Longshine is perceived more as a utility name than a software name.

Exhibit 77: Longshine: Peer comps - trading metrics

Company	RIC	Last Price (Local Cur)	MV (US\$ mn)	EV (LC mn)	EV/Sales (x)			EV/Sales/Growth (x)			P/E			Rev. CAGR 21-24E	EPS CAGR 21-24E
					2022E	2023E	2024E	2022E	2023E	2024E	2022E	2023E	2024E		
Longshine	300682.SZ	22.37	3,341	21,419	3.7x	3.0x	2.4x	0.16x	0.12x	0.09x	24.2x	19.4x	15.4x	24.8%	27.7%
Glodon	002410.SZ	46.00	7,828	49,880	7.1x	5.8x	4.9x	0.29x	0.27x	0.25x	55.4x	38.2x	27.2x	22.1%	45.6%
Hundsun	600570.SS	33.41	8,942	56,602	8.6x	6.9x	5.8x	0.44x	0.28x	0.29x	95.9x	53.8x	38.5x	21.4%	10.2%
Thundersoft	300496.SZ	105.10	6,847	43,490	7.2x	5.1x	3.7x	0.16x	0.12x	0.09x	59.6x	43.9x	35.7x	42.3%	24.7%
Shiji	002153.SZ	11.80	3,539	18,917	5.8x	5.0x	4.3x	NM	0.31x	0.26x	NM	NM	NM	11.1%	NM
Baosight	600845.SS	36.17	10,211	67,321	4.8x	4.0x	3.5x	0.25x	0.20x	0.23x	34.5x	28.5x	24.4x	18.0%	14.3%
China vertical leader - Mean					6.2x	5.0x	4.1x	0.26x	0.22x	0.20x	53.9x	36.8x	28.2x	23.3%	24.5%

Source: Refinitiv, company data, Morgan Stanley Research. E = Morgan Stanley Research estimates. Note: Closing prices as at October 13, 2022.

Exhibit 78: Longshine: Peer comps - operating metrics

Company	RIC	GPM			OPM			Rule of 40			NPM		
		2022E	2023E	2024E	2022E	2023E	2024E	2022E	2023E	2024E	2022E	2023E	2024E
Longshine	300682.SZ	42.5%	43.1%	43.6%	16.0%	17.1%	18.1%	39.8	42.8	43.2	17.2%	16.9%	17.1%
Glodon	002410.SZ	83.3%	83.5%	83.2%	15.8%	18.5%	21.3%	40.6	40.4	40.9	14.1%	16.8%	19.7%
Hundsun	600570.SS	70.0%	71.0%	71.0%	6.1%	13.0%	16.0%	25.8	37.6	35.8	6.8%	15.6%	17.8%
Thundersoft	300496.SZ	39.5%	37.9%	36.3%	13.2%	11.7%	10.1%	59.5	53.7	49.0	12.6%	11.3%	9.7%
Shiji	002153.SZ	36.8%	38.5%	40.1%	-1.9%	0.8%	4.2%	-0.9	17.2	20.8	-6.4%	1.0%	4.0%
Baosight	600845.SS	30.6%	30.6%	30.7%	15.4%	15.6%	15.9%	34.4	35.4	31.2	14.8%	15.0%	15.2%
China vertical leader - Mean		50.5%	50.8%	50.8%	10.8%	12.8%	14.3%	33.2	37.9	36.8	9.8%	12.8%	13.9%

Source: Refinitiv, company data, Morgan Stanley Research. E = Morgan Stanley Research estimates. Note: Closing prices as at October 13, 2022.

Exhibit 79: Longshine: Major share price catalysts in the past five years


Source: Wind, Morgan Stanley Research.

Company Background

Founded in 1996 and listed on Shenzhen Exchange in 2017, Longshine Technology is a leading IT solution provider for the energy industry in China. The company started as a software developer for power companies and later expanded its business into OTT TV and online utility payments through its respective subsidiaries, YSTen and Bangdao Technology. In recent years, the company further diversified into areas such as EV charging platforms, distributed solar management systems and smart energy management systems. Longshine currently has three key business lines:

- **Energy Digitization:** Longshine is a major software provider to the largest power companies in China such as State Grid Corporation of China (SGCC) and China Southern Power Grid (CSPG), serving more than 270mn electricity consumers in 22 provinces/regions. The company is a main developer of SGCC's next-generation energy marketing system (Marketing 2.0), which completed testing in Zhejiang province in 1H22 and is set to be launched in multiple provinces starting from 2H22.
- **Energy Internet:** This encompasses (1) **Online utility payments** - Through its cooperation with Alipay, Longshine operates the largest online utility payment platform in China, covering more than 385 million users and over 5,400 public utility companies, (2) **EV charging platform**- Longshine aggregates EV charging stations for over 500 charging operators and provides EV charging payment services through channels such as Alipay, Amap, WeChat and Baidu, and (3) Longshine provides monitoring and management systems for distributed solar stations and smart energy management systems for enterprise clients
- **OTT (Over The Top):** Longshine provides Internet TV solutions to over 72 million households, including Internet TV platform development and operation services as well as smart terminal products

Exhibit 80: Longshine: Historical revenue breakdown

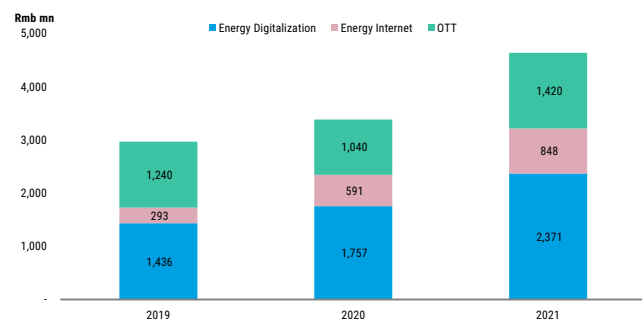


Exhibit 81: Longshine: Revenue breakdown, 2021

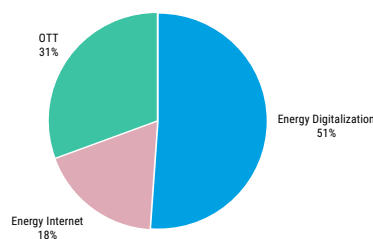
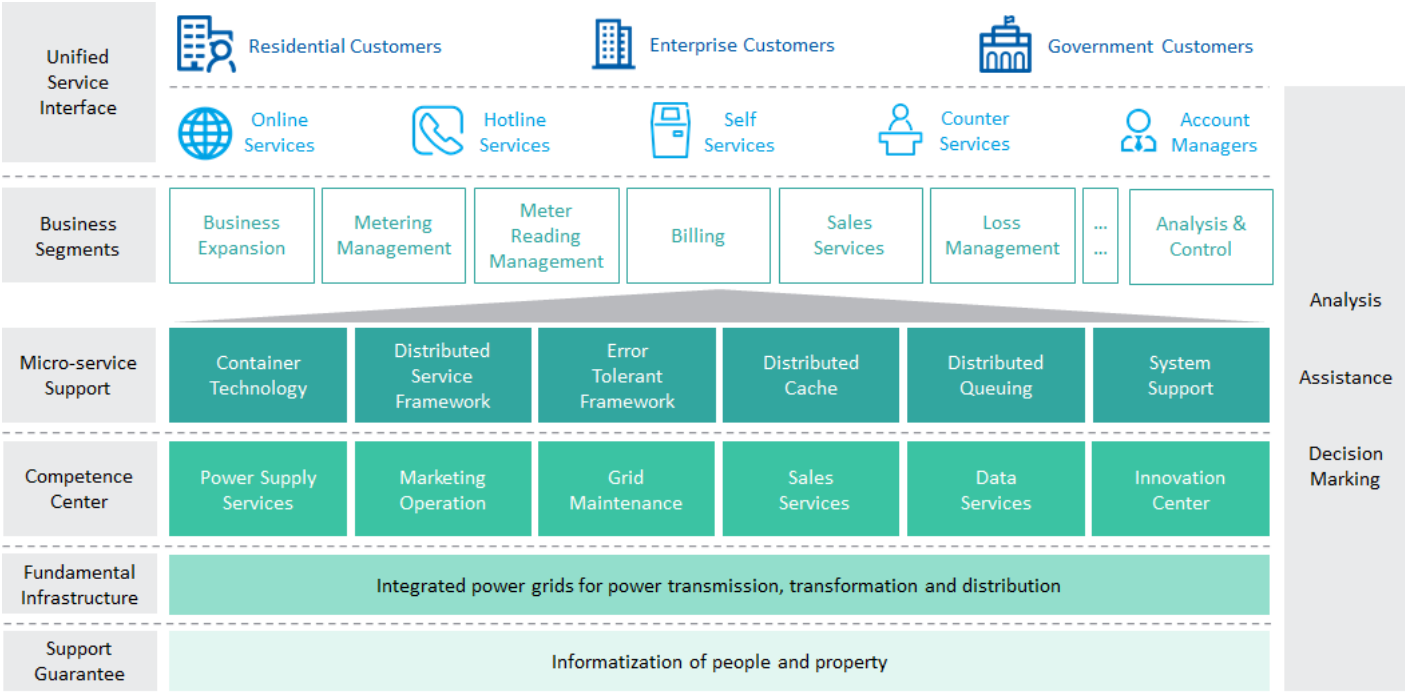
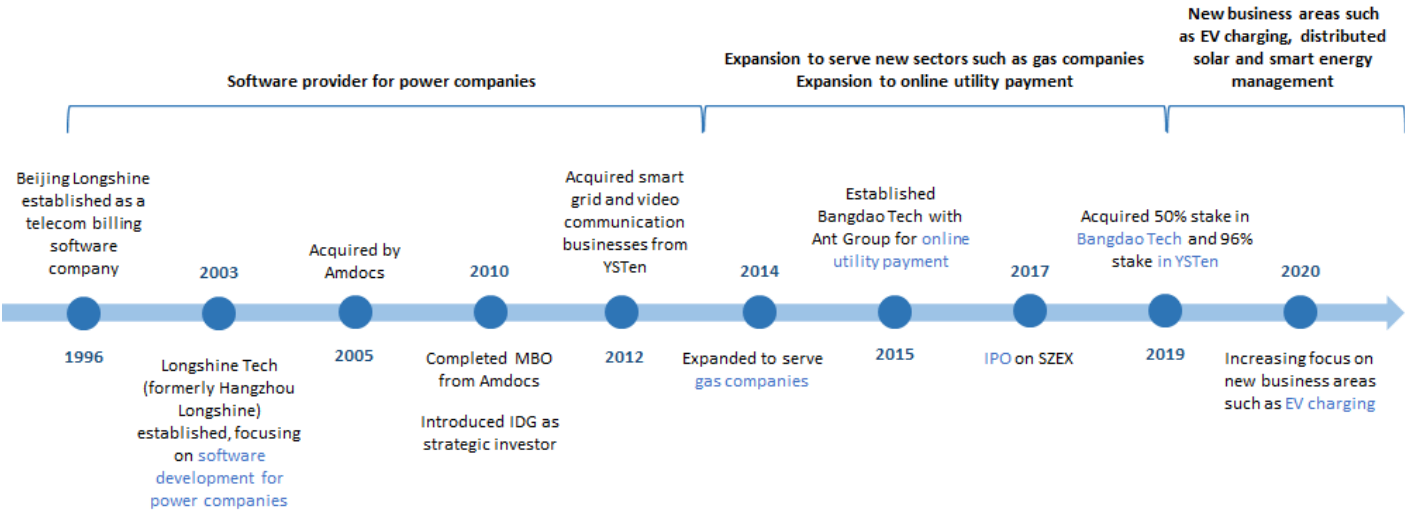


Exhibit 82: Longshine: Business overview



Source: Company, iResearch, Morgan Stanley Research.

Exhibit 83: Longshine: Development history



Source: Company data, Morgan Stanley Research.

As of September 2022, co-founders and other management of Longshine collectively hold 30.34% of the company. Key strategic holders include IDG Capital, which holds a 12.20% stake in the company. IDG Capital is a primary market fund that holds Longshine through its fully-owned subsidiary Yue Qi Capital.

Exhibit 84: Longshine: Shareholding structure

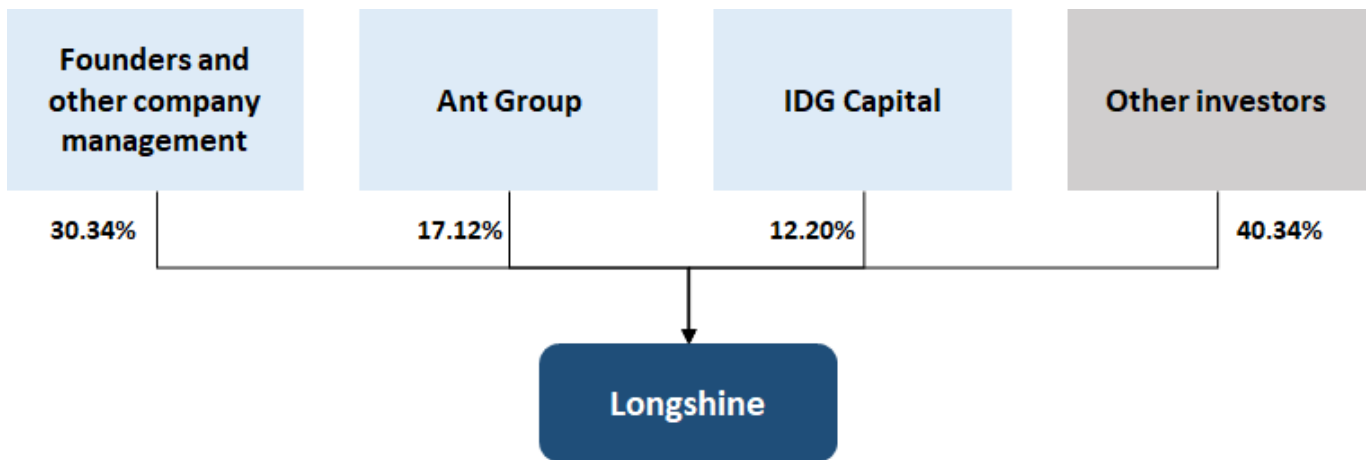


Exhibit 85:

Source: Company data. Note: As of September 2022.

Longshine key management:

- **Mr. Changjun XU, Co-founder, Chairman**, worked at the North China Institute of Computing Technology prior to co-founding Longshine in 1996. He also currently serves as the Chairman of Bangdao Tech and YSTen. He graduated with a master's degree from Tsinghua University.
- **Mr. Mingping ZHANG, Vice Chairman**, worked at the Organization Department of CPC Central Committee and China International Talent Exchange Center before joining Longshine in 2017.
- **Mr. Xinbiao ZHENG, Co-founder, General Manager**, worked at the North China Institute of Computing Technology prior to co-founding Longshine in 1996.
- **Ms. Qingfang LU, CFO**, worked as Manager of Finance at Silicon Valley Power Network Technology before joining Longshine in 2002. She has 20 years of experience in the field of accounting and finance.

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Global Stock Ratings Distribution

(as of September 30, 2022)

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STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MSC
Overweight/Buy	1342	38%	295	41%	22%	590	39%
Equal-weight/Hold	1582	45%	335	47%	21%	702	46%
Not-Rated/Hold	0	0%	0	0%	0%	0	0%
Underweight/Sell	610	17%	84	12%	14%	219	14%
TOTAL	3,534		714			1511	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

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Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

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Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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COMPANY (TICKER)	RATING (AS OF)	PRICE* (10/12/2022)
Lydia Lin		
Longshine Technology Group Co Ltd (300682.SZ)	O (10/13/2022)	Rmb23.13
Shiji Info Tech (002153.SZ)	U (06/28/2022)	Rmb11.93
Thunder Software Technology Co Ltd (300496.SZ)	O (10/10/2022)	Rmb107.19
Sharon Shih		
Beijing Orient National Communication (300166.SZ)	E (06/19/2019)	Rmb7.87
iFlytek Co Ltd (002230.SZ)	E (04/20/2021)	Rmb31.71
Yang Liu		
Agora Inc. (API.O)	O (05/03/2022)	US\$2.97
Beijing Kingsoft Office Software Inc (688111.SS)	E (09/06/2021)	Rmb234.61
Beijing Thunisoft Corp (300271.SZ)	U (12/03/2021)	Rmb6.16
DBAPPSECURITY Co. Ltd (688023.SS)	E (08/03/2021)	Rmb154.60
Glodon Co. Ltd. (002410.SZ)	O (03/10/2022)	Rmb46.03
Hundsun Technologies Inc. (600570.SS)	O (11/29/2021)	Rmb34.31
Kingdee International Software Group (0268.HK)	E (04/25/2022)	HK\$9.19
Kingsoft Corp Ltd (3888.HK)	E (03/28/2022)	HK\$18.36
Ming Yuan Cloud Group Holdings Limited (0909.HK)	E (08/23/2022)	HK\$4.12
NSFOCUS Technologies Group Co Ltd (300369.SZ)	E (01/04/2021)	Rmb9.28
OneConnect Financial Tech Co Ltd (OCFT.N)	E (08/04/2021)	US\$0.70
Qi An Xin Technology Group Inc (688561.SS)	O (01/04/2021)	Rmb43.99
Sangfor Technologies Inc (300454.SZ)	U (01/27/2022)	Rmb93.88
Shanghai Baosight Software Co Ltd (600845.SS)	U (05/11/2020)	Rmb37.02
Shenzhen Sunline Tech Co Ltd (300348.SZ)	E (07/27/2021)	Rmb12.48
Topsec Technologies Group Inc (002212.SZ)	E (06/30/2022)	Rmb10.02
Tuya Inc. (TUYAN)	E (02/19/2022)	US\$0.90
VenusTech (002439.SZ)	O (06/19/2019)	Rmb22.02
Wangsu Science & Technology (300017.SZ)	U (03/20/2019)	Rmb4.92
Weimob Inc (2013.HK)	E (03/29/2022)	HK\$2.37
Winning Health Technology Group Co Ltd (300253.SZ)	U (06/19/2019)	Rmb7.48
Yonyou Network Technology Co Ltd (600588.SS)	E (04/25/2022)	Rmb18.09
Yusys Technologies Co Ltd (300674.SZ)	O (07/27/2021)	Rmb15.07

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* Historical prices are not split adjusted.