China Longyuan (001289 CH)

Lead the way as the renewable frontrunner

BUY

Target Price	**RMB23.28**
Upside/Downside	14%
Current Price	**RMB20.41**

China Energy

Megan Xia, CESGA
(852) 3761 0836
meganxia@cmbi.com.hk

China Longyuan (CLY) reported revenue of RMB28.097bn for 1Q-3Q23, experiencing a 7.00% YoY decrease. However, its net profit saw a notable increase of 18.95% YoY to RMB6.379bn thanks to a rapid rise in newly added installed capacity of wind and solar power and lower operating costs. Additionally, CLY is actively focusing on "substitution of large for small" of wind turbine its old wind turbines to enhance long-term results and is actively engaged in green electricity and certificate trading. **The coverage of China Longyuan-A is transferred to us, and we assign a TP of RMB23.28 with a BUY rating.**

- **1Q-3Q23 earnings beat.** For 1Q-3Q23, CLY's revenue was RMB28.097bn, down by 7.00% YoY. However, the attributable net profit increased by 18.95% to RMB6.379bn. In particular, the wind power generation revenue saw a 3.53% increase, while the thermal power segment revenue experienced a 34.17% YoY decline. Other renewable power segment saw a solid increase of 68.48%YoY driven by robust solar power growth. The net profit attributable to shareholders up by 14.1% YoY thanks to increased newly-added installed capacity and lower operating cost.
- **Taking advantage of the "substitution of large for small" policy, CLY has actively upgraded and expanded old wind turbines' installed capacity, expecting significant long-term earnings improvement.** The policy allows for the retrofitting and upgrading of old wind turbines that have operated for over 15 years with installed capacity below 1.5 MW. CLY, with nearly 30 years of wind power project operation experience, owns a significant number of old turbines, with 70% having a capacity below 1.5 MW and 3,000 turbines below 1 MW. Seizing the policy opportunity, CLY aims to enhance its wind power generation efficiency and project scale.
- **On-grid tariffs of wind power and thermal power improved in 1Q-3Q23; CLY has actively engaged in green electricity and green certificate trading.** Both wind and thermal power tariffs rose in 1Q-2Q23, driven by higher tariffs and electricity demand in the southern region. Additionally, CLY has actively engaged in green electricity and green certificate trading, generating an income of RMB400mn from approximately 1bn kWh of trading. It has mature experience in green electricity and green certificate trading, which we think will provide favorable prospects for future growth.
- **Assign a TP of RMB23.28 for China Longyuan-A with a BUY rating.** We estimate CLY's EPS for 2023/2024 to be RMB0.97/1.14, representing an increase of 58.6/17.8% YoY. We assign a TP of RMB23.28 for CLY-A, based on a target FY23E P/E ratio of 24.0x. Currently, CLY-A trades at 21.8x FY23E P/E, and we believe the valuation is attractive, given the rapid growth of its newly-added installed capacity of wind and solar power, and solid revenue growth potential from retrofitting old wind turbines. We have a BUY rating on the stock.

Earnings Summary

(YE 31 Dec)	FY21A	FY22A	FY23E	FY24E	FY25E
Revenue (RMB mn)	39,893	39,863	42,649	47,248	52,036
YoY growth (%)	38.5	(0.1)	7.0	10.8	10.1
Net profit (RMB mn)	7,423.8	5,112.2	8,109.7	9,552.0	10,360.3
YoY growth (%)	49.2	(31.1)	58.6	17.8	8.5
EPS (Reported) (RMB)	0.92	0.61	0.97	1.14	1.24
EPS Consensus(RMB)	na	0.59	0.94	1.13	1.29
ROE (%)	11.7	7.4	11.2	12.0	11.7

Source: Company data, Bloomberg, CMBIGM estimates

Stock Data

Mkt Cap (RMB mn)	123,611
Avg 3 mths t/o (RMB mn)	42.13
52w High/Low (RMB)	22.46/16.9
Total Issued Shares (mn)	8,382

Source: FactSet

Shareholding Structure

CHN Energy	54.91%
HKSCC Nominees	39.79%

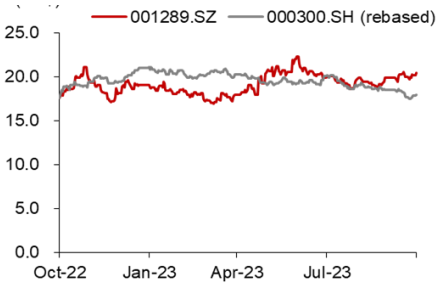
Source: HKEx

Share Performance

	Absolute	Relative
1-mth	3.1%	6.1%
3-mth	3.1%	14.9%
6-mth	14.5%	28.7%

Source: FactSet

12-mth Price Performance



Source: FactSet

Company background

Global leader in wind power industry

China Longyuan(CLY), a subsidiary of CHN Energy, completed its IPO on the Hong Kong Stock Exchange in 2009, earning the title of "China's first new energy stock." In 2022, it entered the A-share market through a merger. CLY specializes in wind power and thermal power generation and is recognized as a pioneer in wind power development in China. It has grown into a large-scale comprehensive power generation group, with projects in wind, solar, biomass, tidal, geothermal, and thermal power. CLY has established ten leading technical service systems and operates in 31 provinces in China, as well as internationally in countries like Canada, South Africa, and Ukraine, contributing to global green and low-carbon energy development.

As of June 2023, China Longyuan's total controlled capacity had reached 31,623.3 MW, with 26,317 MW from wind power, 3,431.2 MW from other renewable sources, and 1,875 MW from thermal power. CLY has received prestigious awards and has been ranked among the Global New Energy 500 Enterprises for ten consecutive years. With favorable policy and strong shareholder support as the main operating entity for wind power under CHN Energy, CLY continues to expand its wind power capacity and increase its operating cash flow.

Figure 1: China Longyuan's development history

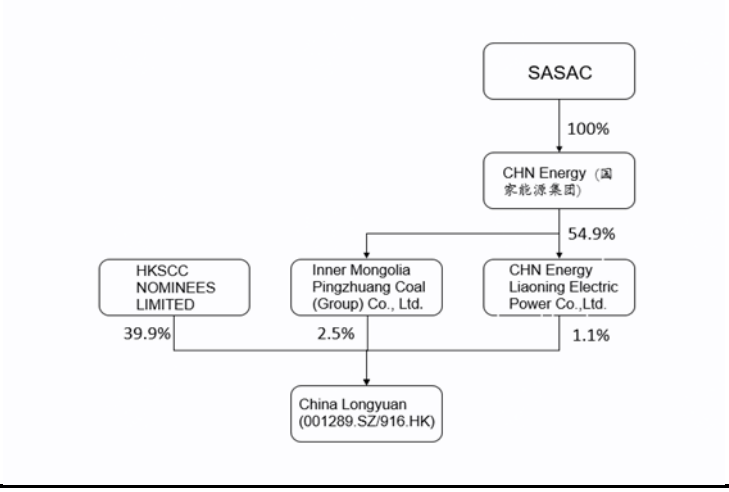
1993	China Longyuan was established in Jan 1993 as a state-owned enterprise directly managed by the former Ministry of Energy
2009	In 2009, approved by the SASAC, China Longyuan was resructured with China Guodian and China Guodian Northease Company as joint innitiators and listed on the HongKong Stock Exchenge. It was hailed as the "China's first new energy stock of China's new energy"
2017	China Guodian merged with Shenhua Group, making China Longyuan a listed company under the control of China Guodian
2022	China Longyuan completed a stock-for-stock merger with Pinzhuang Energy, achieving dual listing in both Mainland China and HongKong. It continues to lead in global wind power operations and actively promoted the construction and operation of new energy generation

Source: Company data, CMBIGM

Backed by CHN Energy

As of 1H23, CHN Energy (国家能源集团) was the largest shareholder of the company, holding a majority stake of 54.91% directly. Including indirect holdings through Inner Mongolia Pingzhuang Coal (Group) and CHN Energy Liaoning Electric Power, CHN Energy's total ownership amounted to 58.56%.

Figure 2: CLY's shareholder structure



Source: Company data, CMBIGM estimates

With the approval of the CPC Central Committee and the State Council, CHN Energy was formally established in 2017, following the merger of China Guodian Corporation and Shenhua Group. It is a key state-owned energy enterprise (SOE) directly administered by the central government, playing a pioneering role in the restructuring of SOEs, the reform of state-owned capital investment, the efforts to build a top-notch energy company with global competitiveness. CHN Energy provides products and services of whole industrial chains including coal, electric power, transportation and chemical industries. With operations distributed in 31 provinces, autonomous regions and municipalities across China, as well as more than 10 countries and regions including the US and Canada, CHN Energy is the world's largest company in coal mining, thermal power, wind power and coal-to-liquids industries.

CHN Energy plans to add 70-80GW of new energy installed capacity during the 14th Five-Year Plan period. As of 2022, its renewable energy installed capacity reached 88.81mn kW, accounting for 31% of the total. CHN Energy had 25.57mn kW new energy projects installed capacity that had started construction, and 11.8mn kW had been put into operation.

Additionally, CHN is tasked with the responsibility of adding new energy installed capacity during the 14th Five-Year Plan period, and it is expected to achieve cumulative new energy installed capacity of 50GW by 2025. Meanwhile, it plans to add 70-80GW of new energy installed capacity.

CLY is a specialized wind power operation platform under CHN Energy and has a leading position in the wind power industry. It plans to achieve an additional 30GW of new energy installed capacity during 14th Five-Year Plan Period The company added 2GW of new energy installed capacity in 2021 and 4.4GW in 2022. Therefore, we estimated that its average annual new energy installed capacity will be around 7-8GW from 2023 to 2025, and the cumulative new energy installed capacity will reach or exceed 50GW by 2025.

Furthermore, CHN Energy has committed to transferring its existing wind power business to CLY within the next three years, leading to a significant increase in CLY's future wind power installed capacity. The agreement, signed between the two companies, has already seen the transfer of 2 GW of wind power assets to CLY, with plans to transfer additional wind power assets still being developed. This move has helped CLY to rapidly expand its wind power capacity, driving substantial revenue and profit growth for the company.

Business overview

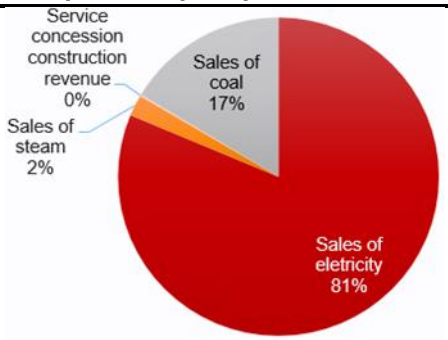
CLY has emerged as a major comprehensive power generation conglomerate primarily focused on renewable energy. It operates over 300 wind farms across China, along with various power projects including solar, biomass, tidal, geothermal, and thermal power. Its operations span 32 provinces, municipalities, and countries such as Canada and South Africa.

By 2022, CLY's total controlled installed capacity across different power sources had reached 31,107.8 MW. Wind power amounted to 26,191.8 MW (accounting for 84.20% of the total), solidifying its position as the world's largest wind power operator. Thermal power capacity stood at 1,875 MW (accounted for 6.03%), while other renewable energy sources recorded 3,041 MW (accounted for 9.77%).

As a leading player in onshore wind power, CLY has consistently delivered positive overall results. Its net profits for the years 2019 to 2021 were RMB 4.53bn, RMB 4.98 bn, and RMB 6.40bn, with growth rates of 6.66%YoY, 9.97%YoY, and 28.67%YoY.

However, there was a decline in net profit in 2022. The profit decline was caused by: 1) the decreased profit expectations for related subsidiaries or asset groups; 2) an increase in electricity sales volume and revenue lagging behind the growth of new energy construction costs; and 3) a decline in average on-grid tariff and weak wind resource.

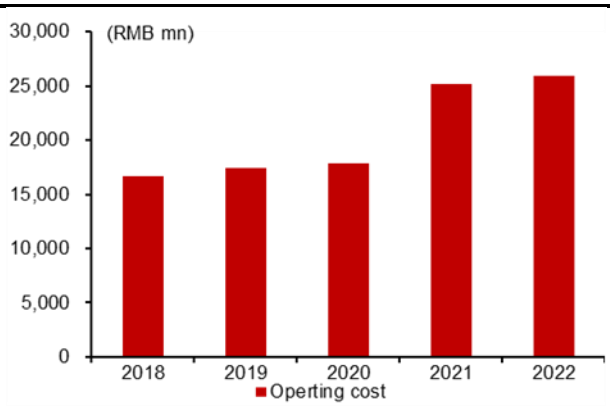
Figure 3: CLY's revenue composition (2022)



Source: Company data, CMBIGM estimates

Additionally, a significant increase in impairment provisions dragged its profit in 2022 as follows. Firstly, the company implemented "substitution of large for small"" in some old onshore wind power projects, resulting in an impairment of RMB590mn. Secondly, due to the Russia-Ukraine conflict, the company's projects in Ukraine experienced decreased profit expectations, resulting in a provision of RMB640mn. Thirdly, some assets experienced long-term operating losses, resulting in a loss provision of RMB51mn. Moreover, some project companies in Heilongjiang and Guangxi experienced long-term delays or suspension of construction, resulting in a provision of RMB260mn.

Figure 4: CLY's main business cost (2018-2022)



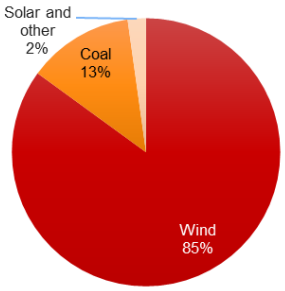
Source: Company data, CMBIGM estimates

In 1H23, CLY recorded a net profit of RMB5.83bn, representing a 13.5% YoY increase. The attributable net profit rose by 18.3%YoY to RMB5.12bn. For 1Q23-3Q23, the Group's revenue amounted to RMB280.9bn, with a 7% YoY decrease. The wind power segment showed a 3.53%YoY revenue increase to RMB208.57bn, while the thermal power segment experienced a decline of 34.17% YoY to RMB62.14bn. The attributable net profit reached RMB63.7bn, marking an 18.95% YoY increase.

■ Revenue composition

Since 2019, CLY's revenue has mainly come from wind power and thermal power generation, with fuel sales contributing a smaller portion. In 2022, electricity generation gross profit accounted for 38.75% of the total, while coal gross profit accounted for 2.31% of the total. It is evident that wind power constitutes the primary source of gross profit, consistently exceeding 90% over the past three years.

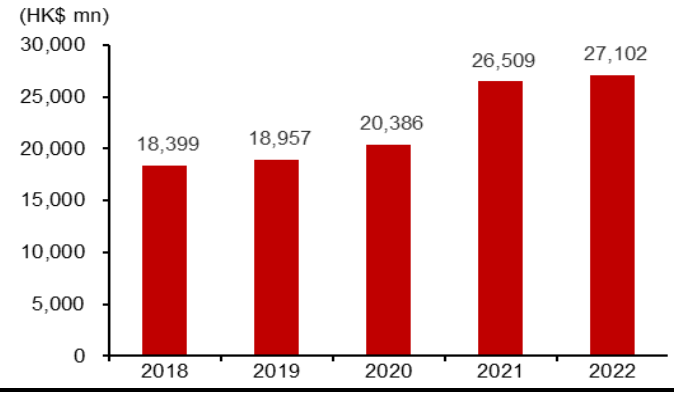
Figure 5: CLY's power generation revenue composition (2022)



Source: Company data, CMBIGM estimates

Due to increased wind power project put into operation and higher electricity sales volume, revenue from wind power has steadily risen in recent years. Moreover, effective cost control in wind power construction has maintained a stable gross profit margin for wind power. From 2020 to 2022, the gross profit margins for wind power were 53.47%, 44.16%, and 38.75%, respectively.

Figure 6: CLY's wind power revenue (2018-2022)



Source: Company data, CMBIGM estimates

The company's thermal power business is operated by subsidiaries Jiangyin Sulong Thermal Power Co., Ltd. and Nantong Tianshengang Power Generation Co., Ltd. With a consistent thermal power capacity of 1,875 MW over the past three years, this segment's revenue has remained stable and serves as a significant supplement to the company's operating revenue and gross profit. In 2021 and 2022, thermal power revenue was stable and amounted to RMB 9.31bn and RMB 8.78bn, respectively, maintaining stability.

Fuel sales primarily consist of coal sales, which have experienced revenue and gross profit margin volatility due to fluctuations in coal prices.

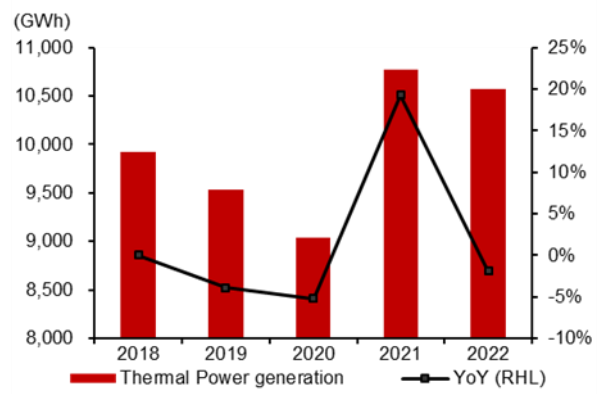
■ Power generation experienced rapid growth

In recent years, the company has been adding 1.5-2.3mn kW of wind power capacity annually. The total attributable installed capacity of wind power increased from 10,546.6 MW in 2012 to 26,191.8 MW in 2022. This expansion in installed capacity has led to substantial growth in power generation.
The company's total power generation has displayed an upward trend, indicating overall growth in electricity production. From 2019 to 2022, the total power generation increased by approximately 39%. This growth was primarily driven by the expansion of wind power generation, which has compensated for the decline in thermal power generation and contributed to the overall increase in renewable energy generation.

For wind power, CLY's wind power generation has grown rapidly. The growth rates of wind power generation range from 3.01% YoY in 2019 to 17.44% YoY in 2021. In 2022, wind power generation increased by 13.7% YoY. This trend indicates a strong focus on and investment in wind power.

For thermal power, generation has declined over the years. The decrease trend in thermal power generation can be seen from 2019 to 2022.

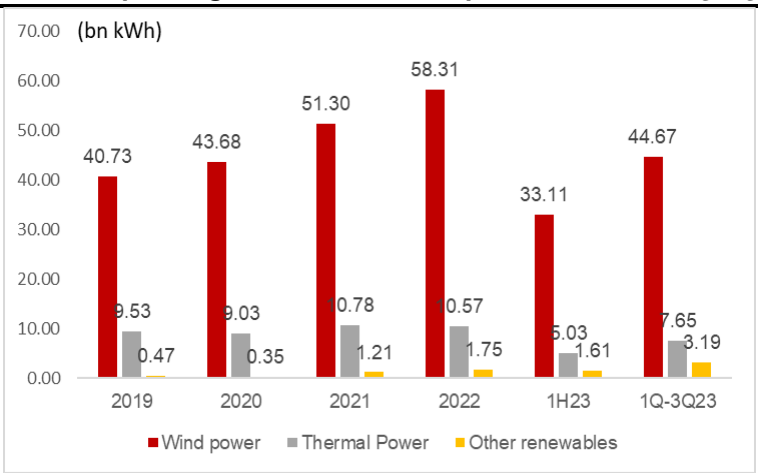
Figure 7: CLY's thermal power generation (2018-2022)



Source: Company data, CMBIGM estimates

Additionally, CLY's power generation from other renewable energy has shown rapid growth since 2021. In 2021, such power generation witnessed a remarkable increase of 246.70%YoY thanks to resilient solar power generation performance, and the growth extended into 2022 and 1H23/1Q-3Q23 as well. We believe its solar power generation will maintain robust growth as newly added installed capacity of solar power climbs.

Figure 8: CLY's wind power generation revenue (2019-2022/1H23/1Q-3Q23)



Source: Company data, CMBIGM estimates

■ Accelerated growth in new energy installed capacity

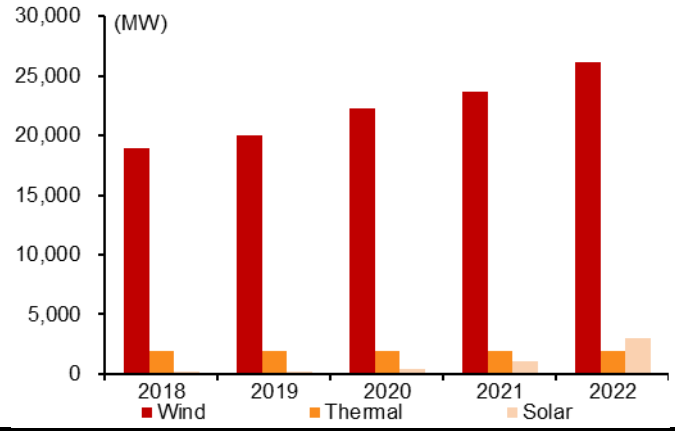
In recent years, the company has been actively acquiring high-quality resources and optimizing its development layout, particularly in the wind power sector.
By 2022, CLY's total controlled installed capacity had reached 31,107.8 MW, with wind power accounting for 26,191.8 MW, solidifying its position as the world's largest wind power company. The controlled installed capacity of thermal power stood at 1,875 MW, while other renewable energy sources contributed 3,041 MW.

Figure 9:The milestones of wind power and solar power installed capacity

2017	Achieved approved 32 wind power projects totalling 178.8MW
2018	Achieved approved 14 wind power projects totalling 1,710MW, including a record-breaking offshore project
2019	Achieved approved wind power projects totalling 1,470 MW, including a 1000MW offshore wind power project in Guangdong. In addtion, CLY made breakthrough in solar power projects, filing 7 solar projects with total installed capacity of 324MW
2021	Achieved attributable newly-added installed capacity of 24 wind power projects with 1,451MW and 8 solar power projects
2022	Achieved attributable newly-added installed capacity of 46 wind power projects with 2,524MW and 62 solar power projects of 1,885.2MW (Self-construction:534.4MW of wind power and 1875.2MW of solar power; M&A:1986.6MW wind power and 10MW solar power)

Source: Company data, CMBIGM estimates

Figure 10: CLY's controlled installed capacity (2018-2022)



Source: Company data, CMBIGM estimates

■ Analysis of key performance metrics in CLY's wind power operations

1) On-grid tariff showed a trend of decline while green electricity and green certificate trading increased

CLY's average on-grid electricity price for wind power remained steady at RMB0.482/kWh in 2019 and increased slightly to RMB0.487/RMB0.489/kWh in 2020/2021. However, by 2022, it decreased to RMB0.481/kWh due to a raised proportion of electricity transactions.

In 1H23, CLY's average on-grid electricity price was RMB0.457/kWh, with on-grid tariff of wind power at RMB0.469/kWh (a 3.5%YoY decrease), that of solar power at RMB0.313/kWh (a 33.7% YoY decrease), and that of thermal power at RMB415/MWh (a 3.9% YoY drop). The decline in average on-grid tariff was attributed to the growth in the proportion of electricity transactions.

For 1Q-3Q23, the average on-grid electricity price for wind power was RMB0.474/kWh, while for thermal power, it was RMB0.421/kWh. Both wind and thermal power tariff experienced an overall increase compared to 1H23, driven by higher tariff in south region.

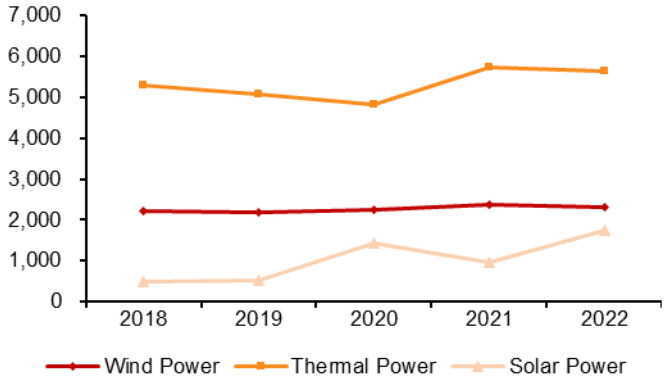
Additionally, the company's revenue from green electricity and green certificate trading saw a rise, reaching RMB400mn in 1Q-3Q23, with a total of 1bn kWh traded. We believe that as green electricity and green certificate trading mature, it will bring significant revenue growth for CLY in the future.

2) Utilization hours and electricity sales

For utilization hours and wind condition, in 2022, the average utilization hours for CLY's wind power were 2,296 hours, which decreased by 70 hours compared to 2021 due to a decline in average wind speed. However, 1H23 showed an improvement, with wind power utilization hours of 1,271, an increase of 98 hours compared to the same period in 2022. In 1H23, wind power utilization hours slightly improved to 1,388 hours.

For electricity sales, in 2022, the company's total electricity sales reached 68,145,463 MWh, with wind power accounting for 56,295,80 MWh. Wind power sales increased by 14.95%YoY, primarily driven by an increase in installed capacity, and alower curtailment. In 1H23, electricity sales amounted to 38,496 GWh.

Figure 11: Utilization hours (2018-2022)



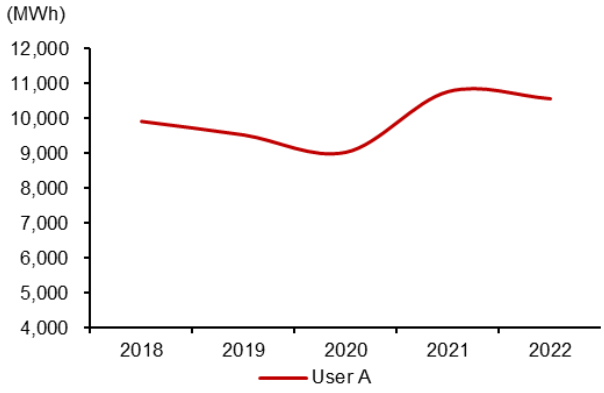
Source: Company data, CMBIGM estimate

■ **Thermal power experienced growth slowdown**

For 2022, CLY's sales volume of thermal power increased by 1.60% YoY, primarily due to reduced power consumption rates at Jiangyin Sulong and Nantong Tianshengang Power Co.. These companies benefit from a favorable location in Jiangsu Province, with high electricity demand and prices. Their cogeneration units, operating under a clean energy dispatch mechanism, enjoy priority within the regional power grid, resulting in higher efficiency and utilization hours.

By 2022, the combined installed capacity of the two companies totaled 1,875,000 kW. In 2020, thermal power generation decreased by 5.21% due to the growth of external power supply and new energy generation. However, there was a significant increase of 19.28% in thermal power generation in 2021, accompanied by higher utilization hours. In 2022, cumulative thermal power generation continued to grow, reaching 70,633,024 MWh, with an 11.6% YoY increase.

Figure 12: Thermal power generation (2018-2022)



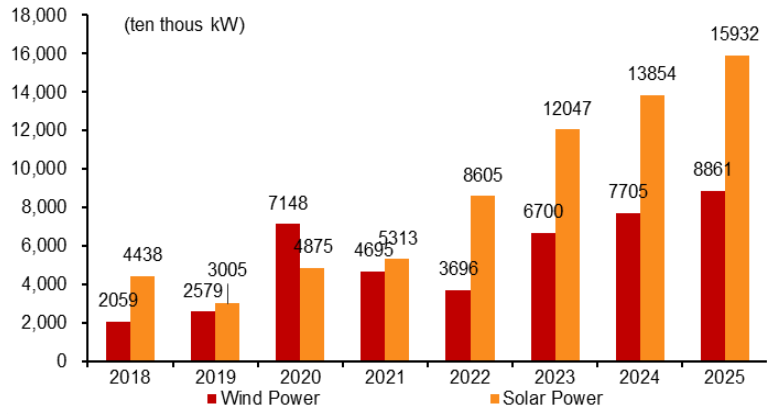
Source: Company data, CMBIGM estimates

Industry Analysis

- National energy policy targets to support high-speed growth of the wind power and solar power generation industry

In 2022, China's cumulative installed wind power capacity reached 37 GW, with a CAGR of 16.17% from 2016 to 2022. The wind and solar power installation plans for different regions in China during the 14th Five-Year Plan period are clear. We estimate China's wind power installed capacity to reach 620mn kW by 2025, with a CAGR of 17% from 2021 to 2025.

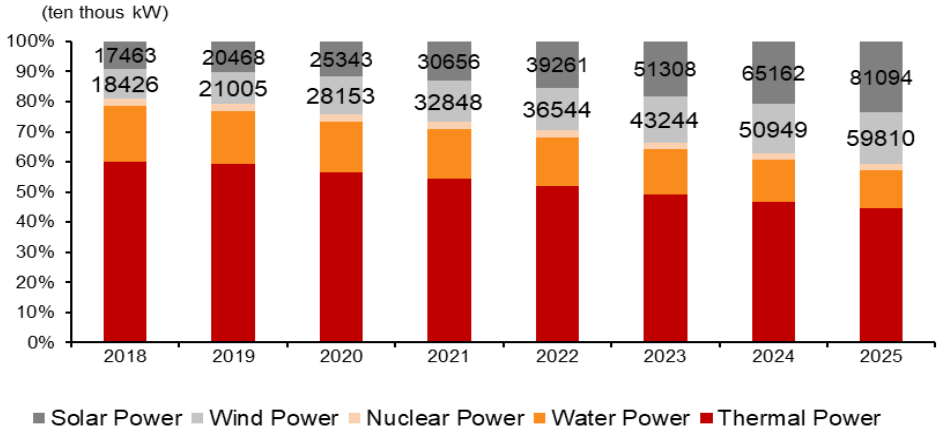
Figure 13: Newly-added wind power and solar power installed capacity in China (2018-25E)



Source: NBS, NEA, CMBIGM estimates

According to data from Wind Daily and the National Energy Administration (NEA), in 2022, wind power bidding exceeded 103.27 GW in China, and newly-added installed capacity of wind power reached 37 GW. Most of the bidding capacity is expected to be grid-connected in 2023, resulting in an estimated 67 GW of newly-added installed capacity and an increase of around 81% YoY. Thus, in 2023, we predict the cumulative installed wind power capacity to be around 432 GW in China. Additionally, the newly-added installed wind power capacity in 2024 and 2025 will be up by 15% YoY and reach 77 GW and 89 GW respectively, with a predicted cumulative installed wind power capacity of 509 GW and 598 GW, maintaining around 20% YoY growth each year.

Figure 14: Accumulated power installed capacity in China (2018-25E)



Source: NBS, NEA, CMBIGM estimates

For solar power, China's solar power installed capacity was 392 GW in 2022, and the solar bidding capacity for 2022 was about 155 GW. Based on views of China Photovoltaic Industry Association (CPIA), China's conservative prediction for newly-added installed capacity of solar power in 2023 will be 95GW, and the optimistic prediction will be 120 GW. Meanwhile, according to data from the NEA, the newly-added installed capacity of solar power in 1Q23 was 33.66 GW, up by 154.81% YoY. As of Apr 2023, domestic PV component bids had exceeded approximately 82 GW.

In the first eight months of this year, China added 113.16 GW of solar power installed capacityrepresenting YoY growth of 154.46%. This is in line with our optimistic expectations, so we maintain our previous forecast and we are positive that the newly-added installed capacity of solar power in 2023 may reach 120 GW, with cumulative installed capacity of 513 GW for the year.

Additionally, solar power will continue to maintain high growth in 2024 and 2025, and we estimate cumulative solar power installed capacity will reach 652 GW and 811 GW.

By 2025, we estimate the cumulative installed capacity of wind and solar power will reach 1,409 GW, exceeding the national 14th Five-Year Plan target of 1,200 GW.

Figure 15: Layout of large-scale clean energy bases during the 14th Five-Year Plan period

Source: NBS, NEA

- **Technological innovation in the wind power industry will further reduce the cost of wind power operation**

China’s wind power industry is undergoing technological innovation during these years, and new technologies will further reduce the cost of wind power. Currently, technological innovation in the wind power industry is mainly focused on three areas: 1) advances in wind turbine technology, including large-scale, high-efficiency, intelligent, and modular turbines; 2) improvements in wind farm operation and maintenance management technology, including digitization, intelligence, autonomy, and integration; and 3) optimization of wind farm layout and design, including site selection, wind farm layout, wind farm integration, and multi-energy complementarity.

- **Policy support for the solar power industry and energy storage**

The solar power industry has also received policy support, and policy dividends will drive rapid development of the solar market, in our view. In recent years, the NEA has issued a notice on solar power generation development, proposing a series of policy measures, including increasing support for developing PV power for poverty alleviation, promoting the construction of “solar power+ energy storage” projects, and accelerating the construction of demonstration PV power stations for poverty alleviation, providing strong policy guarantees for the development of the solar power industry.

Overall, the new energy power generation industry in China is in a phase of rapid development, with abundant resource reserves, strong policy support, continuous technological improvement, and broad market prospects.

In the future, wind power generation and photovoltaic power generation will continue to be the main forms of new energy power generation, in our view. At the same time, to better promote the development of new energy power generation, we believe it is also necessary to strengthen grid construction and research on energy storage technologies, and improve the consumption capacity and stability of new energy power generation.

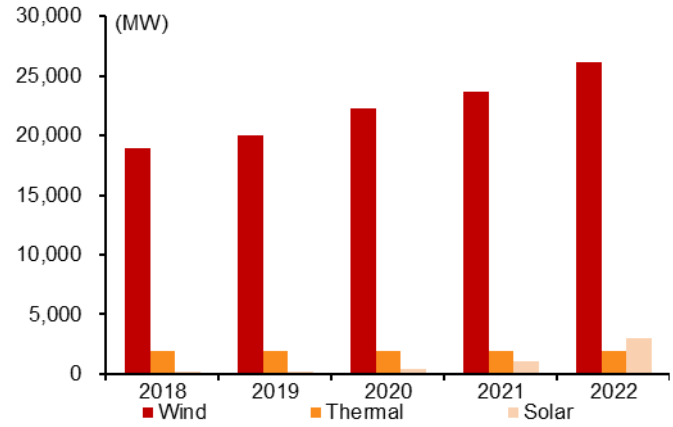
Abundant project reserves to support continued growth in electricity generation

During the "14th Five-Year Plan" period, the CHN Energyaims to add 70-80 GW of new energy installed capacity, while CLY plans to achieve 30 GW of new energy installations. In 2021, there was an addition newly-added installed capacity of 2 GW, followed by 4.4 GW newly added attributable installed capacity in 2022.

For 2023, CLY's target is to add 5.5-6.5 GW of newly-added installed capacity, with a split of 45% for wind power and 55% for solar power. With the declining prices of solar components, we expect that the company will achieve solid newly-added installed capacity in solar power. From 2024 to 2025, CLY anticipates an average annual addition of 8-9 GW of newly-added installed capacity.

Additionally, in 2022, CLY's new projects reserves increased by 9.8% YoY, reaching 62 GW, and the company secured development quotas of 18.37 GW and won bids for offshore wind power and solar projects with a total capacity of 2,100 MW. In 1H23, new project development agreements totaling 29.34 GW were signed, marking a 77.94% YoY increase, and development quotas of 4.01 GW were achieved.

Figure 16: CLY's controlled installed capacity (2018-2022)



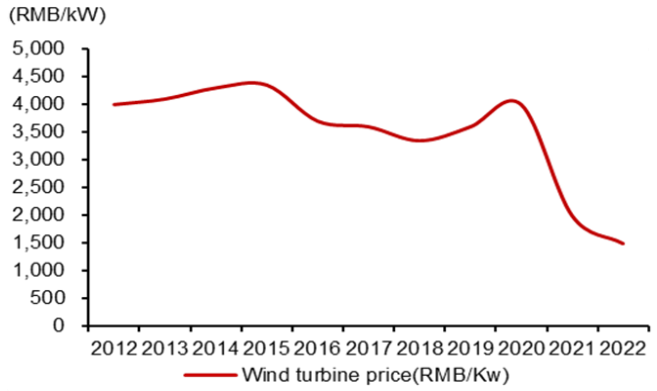
Source: Company data, CMBIGM estimates

Lower upstream costs lead to higher IRR of wind farm and solar power projects, lifting CLY's investment willingness

The wind power industry in China has entered the Grid Parity Era since 2021, leading to a reduction in upstream costs and a decline in wind turbine prices. According to Wind Power Headlines, the highest price for onshore wind turbines reached RMB4,200/kW in mid-2020 and fell to the lowest at RMB1,150/kW (ex-tower tube) in Feb 2023, dropping by 73%. Therefore, lower upstream costs have resulted in an increase in the IRR of wind power projects, making more projects suitable for investment by CLY.As a result, we expect CLY to show a higher willingness to invest in wind power installation in 2023.

In the past three months, turbine prices have experienced a rebound. From May to July, the price of onshore turbines (excluding the tower) increased to RMB1,652/kW, returning to early 2023 levels. However, in recent tenders and purchases, prices have been lowered again. In the latest few weeks the average winning bid price for a 350 MW onshore wind power project (ex- the tower) was RMB1,601/kW. The lowest winning bid price (ex-the tower) was RMB1,420/kW, while the highest winning bid price was RMB1,788/kW. The winning bid price, including the tower, was RMB2,100/kW.

Figure 17: Wind turbine price (2012-2022) – onshore wind turbine



Source: Wind, CMBIGM estimates

Figure 18: Onshore wind power tariff policies

Date	I Resources Area	II Resources Area	III Resources Area	IV Resources Area	Embodiment
2015	0.51	0.54	0.58	0.61	Benchmark
2016	0.49	0.52	0.56	0.61	Benchmark
2017	0.47	0.50	0.54	0.60	Benchmark
2018	0.40	0.45	0.49	0.57	Benchmark
2019(after 1st Jan)	0.34	0.39	0.43	0.52	Benchmark
2019(after1st Jul)	0.34	0.39	0.43	0.52	Bid
2020	0.29	0.34	0.38	0.47	Bid
2021			Grid Parity		Grid Party

Source: NDRC, CMBIGM estimates

The optimization of the industrial chain in the wind power sector reduces cost and increases efficiency, which drives the long-term growth in IRR of the onshore wind power projects. For example, if the average tariff (incl. tax) for the project is RMB0.45/kWh, and the construction cost of a 100MW onshore wind power project falls from RMB4,500/kW to RMB4,000/kW, the IRR of the project would increase from 11% to 14.3%. Additionally, if the construction cost decreases further to RMB3,800/kWh, the IRR would increase to 15.5%. Despite recent wind turbine prices have experienced a slight rebound;, the lowest bidding prices in the market remain around RMB1,400. We believe that a reasonable price level would be around RMB1,600. Despite this, we believe the overall profitability outlook remains optimistic, indicating a positive IRR.

Figure 19: Sensitivity analysis of IRR (onshore wind power project)

		capital cost (RMB/watt)				
		3.5	4.0	4.5	5.0	5.5
Tariff (RMB, Incl. VAT)	0.35	9%	7%	4%	2%	1%
	0.40	14%	11%	8%	6%	4%
	0.45	18%	14%	**11%**	9%	7%
	0.50	22%	18%	15%	12%	10%
	0.55	26%	21%	18%	15%	13%

Source: CMBIGM estimates
*Assuming utilization hours of 2,000

As the IRR for wind farm projects increases thanks to lower upstream costs, more projects will meet CLY's investment IRR criteria. Therefore, a higher IRR of wind power projects is likely to boost CLY's investment willingness in newly-added wind power installations.

For solar farms, given the upstream costs continue to drop, we believe the IRR of wind farm projects will further rise. Recently, the lowest reported price for solar module components reached a historical low of RMB1.18/W (in July 2023). In the recent bidding for a 9 GW photovoltaic component procurement by China Huadian, an astonishingly low price of RMB0.993/W was observed, breaking the barrier of RMB1/W, according to the latest group procurement. In light of CLY'sfocus on increasing photovoltaic installed capacity in 2023, we believe the company can easily achieve and exceed its new energy's newly-added installed capacity targets for 2023. As a result, CLY's new project IRR is expected to further increase, and the process of solar power capacity installation is expected to accelerate.

Figure 20: Sensitivity analysis of IRR (solar power project)

		capital cost (RMB/watt)				
		2.5	3.0	3.5	4.0	4.5
Tariff (RMB, ex. VAT)	0.50	26%	20%	16%	13%	10%
	0.45	21%	16%	12%	9%	7%
	0.40	16%	11%	**8%**	6%	3%
	0.35	10%	7%	4%	1%	-1%
	0.30	5%	1%	-2%	-4%	-7%

Assuming utilization hours of 1300

Source: Company data, CMBIGM estimates

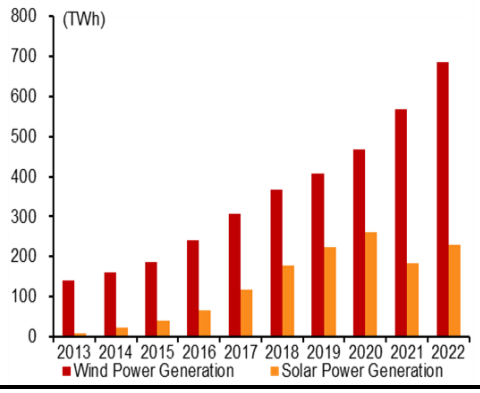
Lower upstream costs in the short to medium term are expected to benefit the IRR of CLY's new energy projects, while continuous technological progress may also create opportunities for IRR improvement. Otherwise, changes in the non-technical costs related to local governments will need to be monitored to comprehensively measure a project's IRR as well.

Additionally, CLY's accelerated deployment of wind and solar power installed capacity, as well as active deployment of energy storage, should support the stability of its wind and photovoltaic power generation. However, developing energy storage capacity may increase construction costs and put some pressure on the project's IRR. Therefore, overall changes in IRR should be considered comprehensively.

- **The improvement of power generation and average utilization hours**

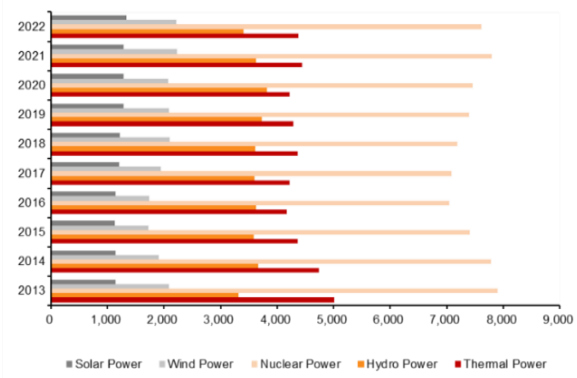
Due to the rapid increase in wind power and solar power installed capacity, China's wind power and solar power generation have grown significantly. The average utilization hours of grid-connected wind and solar power equipment have shown an overall upward trend, mainly due to the significant improvement in the wind and solar power curtailment rate.

Figure 21: China's wind and solar power generation(2013-2022)



Source: Company data, NDRC, CMBIGM estimates

Figure 22: China's utilization hours of main power (2013-2022)



Source: Company data,NDRC, CMBIGM estimates

CLY's business highlights

Increase in installed capacity with strong focus on solar power

In the first three quarters of 2023, CLY experienced a significant increase in installed capacity for renewable energy. The total newly-added installed capacity for new energy reached 1,701.66 MW, with wind power contributing 570 MW and solar adding 1,121.81 MW. As of Sep 2023, the company's attributable installed capacity had reached 32.81 GW, with solar power showing the highest growth rate. The cumulative installed capacity development target for renewable energy since 2021 reached 47.38 GW, with a strong focus on photovoltaic projects. We believe the abundant project reserves will support CLY to reach the installed capacity target in 2025.

Figure 23: Solar project

Source: Company data, CMBIGM estimates

Harnessing the "Replacing Small with Large" strategy and riding the wave of favourable policies

CLY, a company with around 30 years of operation, is capitalizing on the "Replacing Small with Large" strategy and favorable policies. The policy allows for the upgrading of wind turbines operating for over 15 years and with capacities smaller than 1.5 MW. This presents a significant opportunity for CLY, as it has been involved in wind power projects for nearly 30 years. The company aims to prioritize the comprehensive upgrade of old wind turbines, especially those below 1 MW, which account for 70% of the total. By seizing this window of opportunity, CLY aims to maximize the capacity expansion potential and enhance efficiency.

Slight decrease trend in on-grid tariff and mature green energy trading system

Despite the on-grid tariff showed a decline trend in recent years due to higher electricity trading proportion..CLY has also established a mature green energy and green certificate trading system. In 1Q-3Q23, the company conducted 61 transactions, resulting in 1bn kWh of green electricity traded at a premium price compared to the benchmark price. This trading system provided additional revenue of RMB400mn. The company remains confident in the opportunities presented by the green energy market. In the future, we believe CLY will benefit more from green power and green certificate trading.

Share repurchases plan as a display of confidence

On Sep 2023, CLY granted general authorization to the Board of Directors to repurchase up to 10% of the total issued H-shares during the authorized period. This decision reflects the company's confidence in its future prospects and signifies its commitment to enhancing shareholder value.

Financial analysis

P&L analysis

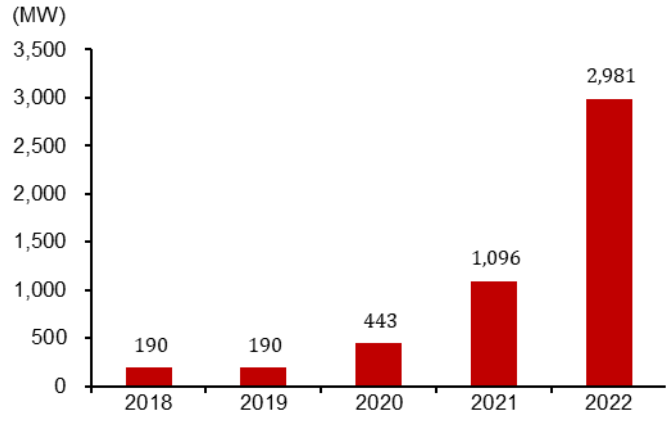
From 2020 to 2022, CLY's main operating income remained stable, with growth rates of 5.11%, 29.10%, and 7.24% YoY, respectively. In 2022, the company achieved a main operating income of RMB39.45bn, primarily from wind power and thermal power. The main operating costs of the company increased by 2.70%, 34.61%, and 7.50% YoY in 2020, 2021, and 2022, respectively.

In 2022, the main business costs amounted to RMB25.905bn, with a composition similar to that of the main business income, mainly from the wind power and thermal power sectors. The company's gross profit margin for the main business was 37.22%, 34.87%, and 34.34% from 2020 to 2022, respectively.

Over the past three years, operating expenses have shown a stable increasing trend, with financial expenses being the largest component.

CLY's net profit for the years 2020, 2021, and 2022 was RMB5.748bn, 7.263bn, and 6.096bn, respectively. The significant decrease in net profit is mainly due to declining electricity prices and asset impairment, with the company recognizing asset impairment losses of RMB2bn in 2022, a substantial increase compared to the previous year.

Figure 24: Attributable solar power installed capacity (2018-2022)

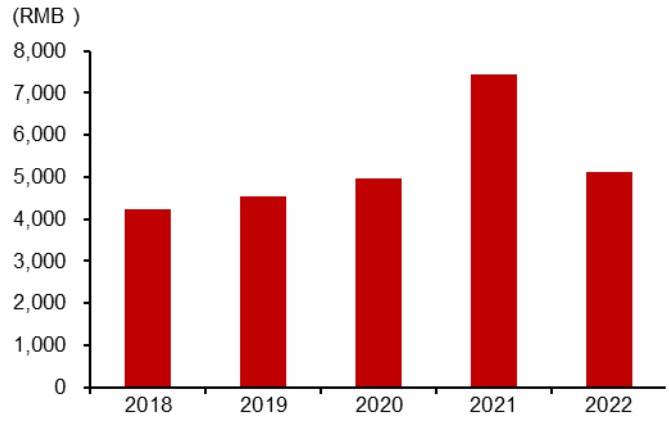


Source: Company data, CMBIGM estimates

In the first three quarters of 2023, the company's revenue decreased by RMB2.11bn to RMB28.097bn. Wind power revenue increased by RMB710mn, driven by expanded

installed capacity and higher wind power sales. However, the thermal power segment saw a decline in revenue due to weak demand and reduced coal sales. Operating expenses decreased by 11.97% YoY, and financial expenses dropped by 14.4% YoY. Attributable net profit showed a positive trend, increasing by 18.97% YoY, primarily due to the growth in installed capacity and improved power sales performance.

Figure 25: CLY's net profit (2018-2022)



Source: Company data, CMBIGM estimates

Balance sheet (B/S) analysis

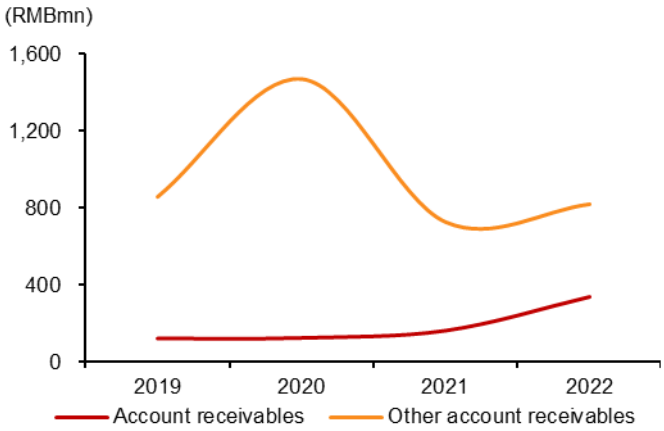
CLY has obtained most of its project investment funds through external financing, resulting in a continuous expansion of liabilities in recent years. At the end of 2020, 2021, and 2022, the company's total liabilities amounted to RMB107.757bn, RMB116.587bn, and RMB144.765bn, respectively, with liability-asset ratios of 61.71%, 61.59%, and 64.95%.

The proportion of current liabilities to total liabilities increased from 47.42% in 2020 to 51.23% in 2022, while the proportion of non-current liabilities increased from 50.02% to 53.68% during the same period. The company's total assets mainly consist of fixed assets and construction in progress, accounting for a significant proportion of total assets. As of the end of 2022, the proportion of fixed assets and construction in progress to total assets was 68.36%.

Accounts receivable, including bills receivable, accounts receivable, and other receivables, amounted to RMB276.43bn at the end of 2022, with a YoY increase of RMB5.73bn. The increase in accounts receivable is mainly attributed to the increase in renewable energy power generation and the delayed receipt of renewable energy generation subsidies.

Overall, the company's liability scale has expanded due to external financing, while the asset structure is predominantly composed of fixed assets and construction in progress, with a certain increase in current assets. The growing scale of accounts receivable still take time to figure out.

Figure 26: CLY's account receivables (2019-2022)



Source: Company data, CMBIGM estimates

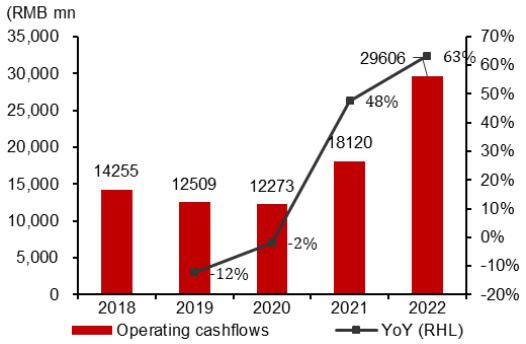
CF analysis

The net cash flows generated from operating activities of CLY were RMB12.27bn/16.76bn/29.61bn in 2020/2021/2022. The cash flows from operating activities showed a slight decrease in 2020, followed by significant increases in 2021 and 2022.

Financing cash flows were RMB9.459bn/95mn/384mn in 2020, 2021, and 2022. The significant increase in 2020 was mainly attributed to external borrowings, while the subsequent years showed smaller fluctuations.

In terms of net cash flows, the company experienced a notable increase in 2020, a negative cash flow in 2021 due to project expenditures and loan repayments, and a significant increase again in 2022.

Figure 27: CLY's operating cashflow (2018-2022)



Source: Company data, CMBIGM estimates

Key assumptions and valuation

In 2022, the company's attributable net profit decreased by 31.1% YoY to RMB5.11bn. This was primarily due to a one-time provision for impairment of RMB2.04bn. Excluding the impact of impairment, the attributable net profit decreased by RMB340mn mainly because of unfavorable wind conditions, resulting in lower revenue in 2022.

Looking ahead, we anticipate that the company's revenue will increase by 7%, 11% YoY and 10%YoY in 2023/2024/2025, reaching RMB42.6bn,RMB47.2bn and RMB52.0bn, respectively. We expect no significant impairment factors to affect the company in 2023, and we project that the net profit attributable to shareholders will increase by 59%YoY, 8% YoY, 9% YoY in 2023/ 2024/2025, reaching RMB8.11bn,RMB9.55bn and RMB10.36bn, respectively.

Additionally, we estimate the company's earnings per share for 2023 and 2025 to be RMB0.97,RMB1.14,RMB1.24/share, respectively.

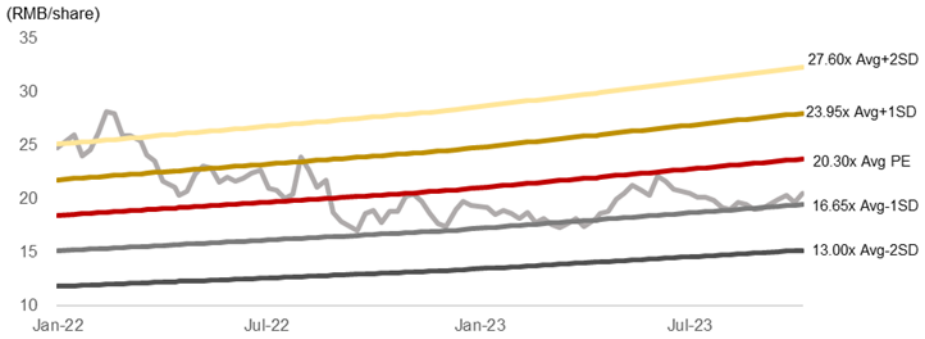
Figure 28: Key assumptions (2020-25E)

Total controlled installed capacity-MW	2020	2021	2022	2023E	2024E	2025E
Wind Power	22,303	23,668	26,192	29,192	33,192	37,692
YoY	3%	6%	11%	11%	14%	14%
Thermal power	1,875	1,875	1,875	1,875	1,875	1,875
YoY	-	-	-	-	-	-
Solar and others	443	1,096	2,981	6,581	10,581	15,581
YoY	133%	148%	172%	121%	61%	47%
Others	60	60	60	60	60	60
Total	24,681	26,699	31,108	37,708	45,508	55,008
On-grid tariff-RMB/kWh(ex-tax)	2020	2021	2022	2023E	2024E	2025E
Wind Power	0.487	0.494	0.481	0.471	0.456	0.442
Thermal power	0.325	0.352	0.400	0.410	0.389	0.370
Solar and others	0.820	0.758	0.417	0.369	0.339	0.324
Power generation-Gwh	2020	2021	2022	2023E	2024E	2025E
Wind Power	43,683	51,300	58,308	63,002	72,621	82,573
Thermal power	9,034	10,776	10,573	10,573	10,573	10,573
Solar and others	349	1,210	1,752	6,476	12,585	19,614
Total	53,066	63,286	70,633	80,051	95,779	112,760

Source: Company data, CMBIGM estimates

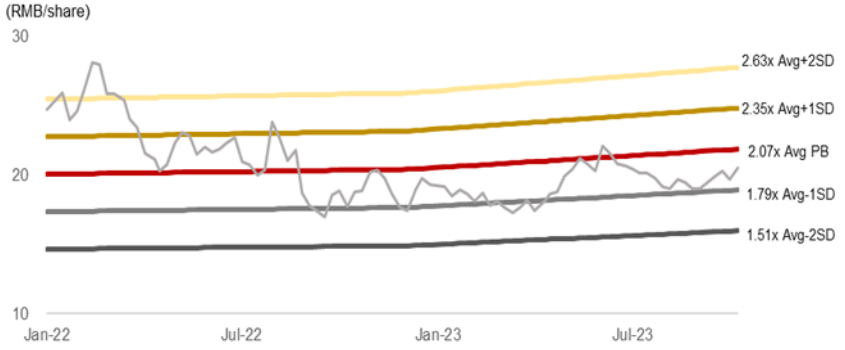
We assign a target price of RMB23.28 for CLY-A shares, based on FY23E P/E ratio of 24.0x (close to +1SD of 3-year avg. P/E). Currently, CLY-A trades at 21.8x FY23E P/E. We believe the valuation is not demanding but still has upside potential. Given the rapid growth of the company's newly-added installed capacity of wind power and solar power, improved wind condition, and "substitution of large for small" will unlock growth potential, we have a BUY rating for CLY-A.

Figure 29: PE Band (China Longyuan-A)



Source: Company data, CMBIGM estimates

Figure 30: PB Band (China Longyuan-A)



Source: Company data, CMBIGM estimates

Figure 31: Peers table (A-shares)

Company	Ticker	Closing Price (RMB)	Mkt cap (RMBmn)	EPS 23E	EPS 24E	EPS 25E	23-25E CAGR	PER 23E	PER 24E	PER 25E	PBR 23E	PBR 24E	PBR 25E
CHINA LONGYUAN-A	001289 CH	20.41	123611.01	0.94	1.11	1.23	14.6%	21.83	18.42	16.61	2.22	2.04	1.85
CHINA THREE GO-A	600905 CH	4.80	137390.78	0.30	0.35	0.42	18.7%	16.22	13.56	11.51	1.64	1.48	1.32
HUANENG POWER-A	600011 CH	7.61	99777.85	0.88	0.94	1.11	12.4%	8.70	8.14	6.88	1.03	0.99	0.87
CHINA SOUTHERN-A	003035 CH	5.44	20606.06	0.17	0.23	0.31	35.9%	32.00	23.25	17.32	2.93	2.62	2.28
ZHONGMIN ENER-A	600163 CH	4.50	8563.48	0.42	0.44	0.46	4.7%	10.71	10.23	9.78	1.33	1.19	1.08
CECEP WIND POW-A	601016 CH	3.17	20525.41	0.28	0.32	0.35	11.8%	11.32	10.06	9.06	1.09	0.95	0.86
Average								**16.8**	**13.9**	**11.9**	**1.7**	**1.5**	**1.4**

Source: Company data, CMBIGM estimates

Figure 32: Peers table (H-shares)

Company	Ticker	Closing Price (HK$)	Mkt cap (HK$mn)	EPS 23E	EPS 24E	EPS 25E	23-25E CAGR	PER 23E	PER 24E	PER 25E	PBR 23E	PBR 24E	PBR 25E
CHINA LONGYUAN-H	916 HK	6.63	132203.50	0.94	1.12	1.28	16.6%	6.57	5.52	4.84	0.70	0.64	0.58
CHINA SUNTIEN-H	956 HK	2.72	25745.51	0.54	0.65	0.78	20.7%	4.74	3.94	3.25	0.50	0.46	0.43
CHINA POWER INTE	2380 HK	3.04	37605.26	0.32	0.45	0.56	33.8%	9.02	6.26	5.04	0.77	0.70	0.63
CHINA RES POWER	836 HK	15.16	72926.33	2.68	3.08	3.69	17.2%	5.65	4.93	4.11	0.81	0.73	0.65
CGN NEW ENERGY H	1811 HK	2.04	8753.28	0.08	0.08	0.09	6.1%	3.26	3.26	2.90	na	na	na
CHINA DATANG C-H	1798 HK	1.77	12874.45	0.40	0.44	0.51	12.5%	4.11	3.75	3.25	0.65	0.57	0.49
DATANG INTL PO-H	991 HK	1.18	41548.16	0.19	0.27	0.32	29.8%	5.81	4.09	3.45	0.31	0.29	0.27
HUANENG POWER-H	902 HK	3.66	106713.64	0.83	0.89	1.05	13.0%	4.15	3.85	3.25	0.45	0.48	0.42
HUADIAN POWER-H	1071 HK	3.14	50082.44	0.56	0.71	0.80	19.1%	5.21	4.15	3.67	0.56	0.51	0.43
CONCORD NE	182 HK	0.64	5404.62	0.12	0.13	0.15	11.8%	4.99	4.60	3.99	0.94	0.89	0.78
Average								**5.2**	**4.3**	**3.7**	**0.6**	**0.6**	**0.5**

Source: Company data, CMBIGM estimates

Financial Summary

INCOME STATEMENT	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Revenue	**28,807**	**39,893**	**39,863**	**42,649**	**47,248**	**52,036**
Cost of goods sold	(18,085)	(25,348)	(26,139)	(27,539)	(29,609)	(32,610)
Gross profit	**10,722**	**14,545**	**13,724**	**15,110**	**17,639**	**19,427**
Operating expenses	**(206)**	**366**	**246**	**1,870**	**(72)**	**(36)**
Selling expense	3	3	0	0	0	0
Admin expense	354	363	398	301	384	425
Others	(563)	0	(152)	1,568	(456)	(461)
Operating profit	**10,081**	**13,965**	**11,492**	**14,795**	**17,246**	**18,928**
Other expense	3,148	3,998	3,806	3,250	3,574	3,879
Other gains/(losses)	47	49	(49)	0	0	0
Pre-tax profit	**6,981**	**10,016**	**7,638**	**11,545**	**13,672**	**15,049**
Income tax	1,233	1,599	1,542	2,308	2,801	3,159
After tax profit	**5,748**	**8,417**	**6,096**	**9,237**	**10,871**	**11,890**
Minority interest	770	993	983	1,127	1,319	1,530
Net profit	**4,977**	**7,424**	**5,112**	**8,110**	**9,552**	**10,360**

BALANCE SHEET	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Current assets	**31,356**	**40,136**	**53,286**	**40,002**	**44,827**	**42,779**
Cash & equivalents	5,588	4,175	20,493	6,407	9,230	5,260
Account receivables	1,594	1,094	1,362	1,263	1,422	1,588
Inventories	801	765	750	746	803	885
Other current assets	23,374	34,101	30,682	31,586	33,372	35,046
Non-current assets	**143,272**	**165,010**	**169,609**	**192,919**	**219,639**	**249,638**
PP&E	96,942	125,724	134,641	147,143	166,552	190,358
Deferred income tax	207	286	506	506	506	506
Intangibles	14,690	13,757	13,132	13,441	13,667	13,808
Other non-current assets	31,434	25,243	21,330	31,828	38,915	44,967
Total assets	**174,629**	**205,146**	**222,895**	**232,921**	**264,467**	**292,418**
Current liabilities	**53,862**	**63,533**	**74,711**	**75,907**	**77,644**	**80,044**
Short-term borrowings	15,341	19,893	18,524	18,624	18,624	18,624
Account payables	7,971	11,764	11,100	11,770	12,736	14,027
Tax payable	665	723	795	913	982	1,082
Other current liabilities	29,886	31,153	44,292	44,600	45,303	46,312
Non-current liabilities	**53,895**	**63,191**	**68,105**	**67,888**	**87,591**	**102,295**
Long-term borrowings	35,402	46,373	55,548	55,252	74,956	89,660
Other non-current liabilities	18,493	16,818	12,557	12,636	12,636	12,636
Total liabilities	**107,757**	**126,724**	**142,816**	**143,795**	**165,236**	**182,339**
Share capital	8,036	8,036	8,382	8,382	8,382	8,382
Other reserves	44,428	54,778	55,867	62,995	70,990	79,516
Total shareholders equity	**58,104**	**68,499**	**68,807**	**75,935**	**83,930**	**92,456**
Total equity and liabilities	**174,629**	**205,146**	**222,895**	**232,921**	**264,467**	**292,418**

CASH FLOW	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Operating						
Profit before taxation	**4,977**	**7,424**	**5,112**	**8,110**	**9,552**	**10,360**
Depreciation & amortization	7,729	8,187	10,158	12,454	13,990	15,899
Change in working capital	(6,100)	(2,875)	2,915	301	(266)	478
Others	5,667	5,384	11,421	4,351	4,843	5,359
Net cash from operations	**12,273**	**18,120**	**29,606**	**25,216**	**28,119**	**32,096**
Investing						
Capital expenditure	(19,677)	(18,273)	(22,255)	(35,151)	(40,067)	(45,256)
Others	236	(737)	3,246	0	0	0
Net cash from investing	**(19,441)**	**(19,010)**	**(19,009)**	**(35,151)**	**(40,067)**	**(45,256)**
Financing						
Dividend paid	(2,916)	(3,399)	(4,501)	(4,232)	(5,131)	(5,713)
Net borrowings	6,029	17,006	8,261	(196)	19,704	14,704
Others	6,347	(14,413)	79	277	198	198
Net cash from financing	**9,459**	**(807)**	**3,839**	**(4,151)**	**14,771**	**9,189**
Net change in cash						
Cash at the beginning of the year	2,907	5,225	3,536	17,961	3,875	6,698
Cash at the end of the year	**5,225**	**3,536**	**17,961**	**3,875**	**6,698**	**2,728**

GROWTH	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Revenue	4.5%	38.5%	(0.1%)	7.0%	10.8%	10.1%
Gross profit	8.5%	36.0%	(6.0%)	10.2%	16.9%	10.1%
Operating profit	9.0%	43.7%	(22.9%)	50.2%	18.4%	10.1%
Net profit	10.0%	49.2%	(31.1%)	58.6%	17.8%	8.5%

PROFITABILITY	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Gross profit margin	36.3%	35.6%	33.5%	34.5%	36.4%	36.4%
Operating margin	24.1%	25.0%	19.3%	27.1%	28.9%	28.9%
Return on equity (ROE)	8.9%	11.7%	7.4%	11.2%	12.0%	11.7%

GEARING/LIQUIDITY/ACTIVITIES	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Current ratio (x)	0.6	0.6	0.7	0.5	0.6	0.5
Receivable turnover days	1.7	3.0	5.1	5.1	5.1	5.1
Inventory turnover days	16.2	10.8	10.6	10.0	10.0	10.0

VALUATION	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						

Source: Company data, CMBIGM estimates. Note: The calculation of net cash includes financial assets.

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CMB International Global Markets Limited

Address: 45/F, Champion Tower, 3 Garden Road, Hong Kong, Tel: (852) 3900 0888 Fax: (852) 3900 0800

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