

Utilities - HK/China (H)

Watt's Up #14: Drinda outlook update, Aiko PERC upgrade, power shortage on AI

Industry Overview

Drinda: Future demand growth from overseas market

Drinda New Energy reported net profit rose 13.7% YoY in 2023. Management said future demand growth will slow down to 20-30% YoY vs c35% YoY in the past 5 years. Drinda sees higher demand from overseas market, and thus said it will consider capacity expansion in Southeast Asia and Middle East, which could be funded by pending H-share IPO. Like other solar module players, Drinda booked Rmb890mn asset impairment for its 9.5GW PERC capacity. Drinda targets to cut TOPCon production cost by at least Rmb2c/Watt and increase its conversion ratio by 0.5-0.8ppt in 2024. It estimates c.600GW TOPCon capacity was put into operation by end 2023 and expects N-type penetration will rise to 71% in 2024 from 20% in 2023. It believes industry will see large amount of PERC capacity retired in 2024, but new cell type will see better supply-demand balance.

Solar: Aiko upgrading 25GW PERC cell to TOPCon

On Mar 12, Aiko Solar announced to invest RMB2.7bn to upgrade its 25GW PERC cell capacity to TOPCon at Yiwu base in Zhejiang. The upgrade will start in Apr 2024 and complete in 2H24. The source of fund includes self-owned capital (40-45%), government subsidy (20-25%), and loans (30-40%).

The investment at RMB100mn/GW looks on the higher side to us, probably due to older facility. PERC plants with less than three years old typically can be upgraded to TOPCon. Other firms like Tongwei (8GW) and Chint Solar (5GW) have confirmed retrofitting plants to TOPCon earlier and more manufacturers will also announce their plans.

Power: US facing power shortage on surging AI demand

According to the Washington Post on Mar 7, US is facing severe power shortage given the boom in AI and clean-technology factories. Data centers consumed 4% of total power in 2022 which is expected to rise to 6% by 2026. Prosperity in computing industry have driven land values in regions with sufficient access to power up significantly. More than 155 "clean tech" factories have been announced since Biden administration introduced the incentive policy, and utility companies will double the power demand over the next 5 years. The sharp slowdown in new transmission line addition is another bottleneck to US power grid.

Renewables: 30GW 2024 wind & solar projects in Hebei

On Mar 11, Hebei NDRC announced 2024 wind and solar projects development plan, outlining 15.97GW of government-backed on-grid projects and 14.03GW of market-based on-grid projects. The government-backed projects shall complete grid connection by YE26, with complimentary power storage capacity of 20%/ 2-hour and 15%/ 2-hour in Northern Hebei Grid and Southern Grid area, respectively. The market-based projects shall complete grid connection by YE27, with integrated energy or complimentary power storage capacity of 20%/ 4-hour. (More on next page)

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12670983

Timestamp: 15 March 2024 05:50AM EDT

15 March 2024

Equity
HK/China
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PERC: Passivated Emitter and Rear Cell

AC: alternative current

DC direct current

RE: Renewable Energy

NDRC: National Development and Reform Commission

NEA: National Energy Administration

UHV: Ultra high voltage

HVDC: High-voltage Direct Current

Renewables: NEA sets renewable development tasks

On Mar 8, the Head of NEA laid out 5 aspects for the quality development of renewable energy: 1) accelerate the construction of large-scale renewables bases; 2) actively develop distributed renewables projects; 3) improve the construction of new adaptive power sources (e.g. flexible coal-fired power, pumped hydro, new storage, solar thermal etc); 4) more renewables usage in industrials, transportations, buildings, and agriculture; 5) cultivate stronger renewables supply chain.

We hosted a call with an industry expert Ms Xue ([see notes](#)) this week and she believes recent political meetings have supported more renewables installation growth. She upgraded her wind/solar installation forecast to 290-300GW in 2024 (flattish YoY vs mild down before).

Solar: Mar 14 solar supply chains – wafer price dropped

China Silicon Industry Association published weekly solar report on Mar 14. Wafer price dropped by 2-5% week-over-week (WoW), N-type wafer priced at RMB1.87/piece, or -4.1% WoW. CSIA revised the forecast of March wafer output down to 67-70GW, compared to last week's more than 70GW, since one specialized company cut production and two are planning. Forecasts of March cell production remain at 62GW. The ASP gap of N/P-type cell stabilized at Rmb0.085/W, and module price remain flat at RMB0.93/W. The utilization rates of the 2 tier-1 wafer producers are stable at 80% and 95% respectively, and integrated manufacturers at 80-100%, same as last week.

Solar: Trina and Jinko cell procurement contract secured

On Mar 11, Trina Solar agreed with Zhejiang Sunmoon Solar Technology, a wholly-owned subsidiary of Zhejiang Ming Jewelry, on procuring 1.3bn pieces of bifacial TOPCon cells in 2024-2026. On Mar 9, Jinko Solar signed cooperation contract with Suzhou Shijing Environmental Technology to jointly build 20GW wafer + 20GW cell production base (2 phases), and to procure 2.5bn pieces cell in 2024-25. The wafer + cell base Phase I, with 10GW capacity, is expected to start construction in Apr 2024 and commission in 4Q24.

Solar: BNEF forecasts China to add 255GWac in 2024

On Mar 12, BloombergNEF stated that China added 96GWac of distributed solar in 2023, among which commercial and industrial (C&I) of 52.8GWac and residential of 43.5GWac. The government is promoting to integrate small-scale residential projects (< 10kWac each) and connect to higher-voltage grid, given grid-connection constraints held back residential solar installation. In addition, China targets power grids to have the connection capacity for 500GW distributed RE by 2025 ([see our previous Watt's up](#)). BNEF adjusted its historical and forecast AC to DC ratio for residential solar from 1.2 to 1.05, with C&I solar at 1.2, and utility-scale at 1.26. BNEF expects China to add 255GWac or 305GWdc of solar capacity in 2024.

Gas: Sanhe gas explosion not in HK listed operators' area

On March 13, a gas explosion took place in a building in Sanhe City of Hebei Langfang. Local gas distributors are Bestsun Energy and Teda Gas, but neither stated to supply piped gas to the building. The reason for the explosion is still under investigation.

Solar: Module production cost comparisons

Cheaper module imports from Southeast Asia may drive prices and margins lower in the US. According to BloombergNEF, **total production costs for US-made cell and module will reach almost USD30c/W by end 2024, compared to USD23c for US-made module with SE Asian cell imports and USD16c for SE Asian-made cell and module imports.** Integrated suppliers can charge a 'made in US' premium to project developers that are eligible to earn domestic content subsidy bonus.

Solar: Europe to boost rooftop solar through legislation

On Mar 12, the European Parliament approved Energy Performance of Buildings Directive (EPBD) to achieve EU's energy and climate goals. **Starting from 2030 all newly constructed residential buildings will be powered by rooftop solar**, and public and non-residential buildings will install solar based on assessment of scale, technology, and economics. According to the European Commission, buildings in the EU are responsible for 40% of energy consumption and 36% of greenhouse gas emissions. New public owned buildings are set to achieve zero-emission by 2028 and all new buildings will achieve zero-emission starting from 2030.

Power: New Ultra-High-Voltage line starts construction

According to China Electric Power News on Mar 15, the State Grid started construction of Northern Shaanxi – Anhui 800kV High-voltage Direct Current (HVDC) Transmission project and Yuexi Pumped Storage Station. The UHV transmission project has a rated voltage of 800kV and capacity of 8GW, with a dynamic investment amount of RMB20.5bn and a length of 1069 kilometers. The pumped storage station installed capacity of 4*300MW reversible units and connected to East China grid with two of 500kV outgoing lines, with a dynamic investment of RMB7.5bn. The UHV project has a capability of transmitting more than 36bn kWh per year to Anhui, and scale of power transmitted from Shaanxi will exceeds 31GW. The Shaanxi-Anhui UHV project is connected with supporting renewable capacity of 11GW, which can promote the large-scale development and utilization of clean energy in Shaanxi.

CEB Greentech: collected RE subsidy RMB1.377bn

China Everbright Greentech (CEB Greentech) announced on Mar 12 that the company received the notice that the State Grid has settled **renewables subsidy of RMB1.534bn** for 16 biomass power stations of the company for Jan 1 to Mar 8, 2024, and **CEB Greentech has received RMB1.377bn**.

BofA Global Research Reports

Title: Subtitle	Primary Author	Date Published
Utilities - HK/China: Watt's Up #13: A first look if renewable curtailment cap is relaxed	Gary Tsang	11 March 2024
Utilities - HK/China (H): Watt's Up #12: National People's Congress on power, EU ban on forced labor products	Gary Tsang	08 March 2024
Utilities - HK/China (H): Watt's Up #11: Solar capacity add, Xi's speech on RE: RE output >20% by 2027	Gary Tsang	01 March 2024
Utilities - HK/China (H): Watt's Up #10: Jinko Solar 4Q results, more scrutiny on US solar imports	Gary Tsang	28 February 2024
Utilities - HK/China (H): Watt's Up #9: Post-CNY solar update, Trina 4Q miss, NEA on low carbon	Gary Tsang	23 February 2024
Utilities - HK/China: Watt's Up #8: Carbon emission trading regulation, EU on Chinese solar imports	Gary Tsang	07 February 2024
Utilities - HK/China (H): Watt's Up #7: 2024 power demand growth at 6%, EU solar aids, US restrictions	Gary Tsang	02 February 2024
Utilities - HK/China (H): Watt's Up #6: Huaneng, Huadian, Trina 4Q net profit miss	Gary Tsang	31 January 2024

Exhibit 1: Valuation comparison table for China Utilities and Renewable companies

Selected valuation metrics for utility and renewable sector companies in 2023-25E

		Prices (LCY)		PE		PB			EPS Growth			ROE			Dividend yield		
		2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E	2023E	2024E	2025E	
Wind																	
Longyuan -H	916 HK	5.8	6.8	5.0	3.7	0.6	0.6	0.5	32%	37%	33%	10%	12%	14%	2.9%	4.0%	5.4%
Datang Renewables	1798 HK	1.8	4.9	5.2	4.5	0.4	0.3	0.3	-16%	-5%	15%	8%	7%	7%	2.5%	2.4%	2.8%
Goldwind-H	2208 HK	3.1	4.9	4.7	3.7	0.3	0.3	0.3	10%	4%	28%	8%	8%	10%	6.1%	6.3%	8.1%
IPPs																	
China Resources Power	836 HK	18.9	9.6	6.7	6.1	1.0	1.0	0.9	35%	43%	9%	11%	15%	15%	4.2%	8.6%	6.5%
Huaneng-H	902 HK	4.8	6.4	7.3	7.2	1.0	0.9	0.8	n.a.	-13%	1%	18%	13%	12%	7.8%	6.8%	6.9%
Huadian-H	1071 HK	4.2	7.7	7.1	6.4	0.9	0.8	0.7	n.a.	9%	11%	12%	12%	11%	6.5%	7.0%	7.8%
CPID	2380 HK	3.4	11.7	7.4	6.6	1.0	0.9	0.8	20%	58%	12%	8%	12%	13%	4.6%	7.2%	8.0%
Gas																	
ENN Energy	2688 HK	63.3	9.6	10.5	10.1	1.5	1.4	1.3	17%	-9%	4%	18%	14%	13%	4.6%	4.0%	4.3%
China Gas	384 HK	7.5	10.5	8.0	7.4	0.7	0.7	0.6	-10%	31%	7%	7%	8%	9%	6.7%	7.5%	8.2%
BJ Enterprises Holding	392 HK	29.8	5.3	5.0	4.5	0.4	0.4	0.4	-7%	6%	12%	8%	8%	8%	5.1%	6.5%	7.8%
Environmental protection																	
Everbright Environment	257 HK	3.1	4.3	4.3	4.4	0.4	0.4	0.3	-5%	-2%	0%	9%	8%	8%	7.5%	7.4%	7.3%
BJ Enterprises Water	371 HK	1.9	8.7	8.7	8.1	0.6	0.6	0.6	70%	0%	7%	7%	7%	7%	8.1%	8.1%	8.1%
HK Utilities																	
CK Infrastructure	1038 HK	46.4	16.0	14.6	14.2	1.0	1.0	0.9	-6%	9%	3%	6%	7%	7%	5.5%	5.6%	5.7%
CLP Holdings	2 HK	64.0	24.3	13.7	13.2	1.6	1.5	1.5	620%	78%	3%	6%	11%	11%	4.8%	5.0%	5.2%
Guangdong Investment	270 HK	4.8	7.9	7.2	6.0	0.7	0.7	0.7	-15%	9%	21%	9%	10%	12%	12.7%	12.7%	12.7%

Source: BofA Global Research estimates

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