

## ESG & Power Equipment & New Energy & Utilities

### 全球电力需求预期高增，电力供应安全性依然至关重要

### Growth of global electricity demand is expected to accelerate, while electricity security remains essential

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热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

**发达国家电力需求减弱导致 2023 年全球电力需求增长放缓。**根据 IEA《电力 2024》报告，2023 年全球电力需求同比增长 2.2%，增幅较 2022 年下降 0.2%。发达经济体是主要拖累因素，其中欧盟电力需求连续两年下降，2022 和 2023 年欧盟电力需求分别下降 3.1%和 3.2%，工业领域电力需求连续两年同比降幅在 6%左右，尽管目前电力价格高位下降，但电力需求预计恢复到 2021 年的水平仍然需要 3 年；美国则由于天气原因在制冷供暖端电力需求减弱，2023 年电力需求下降 1.6%，去年同比增长 2.6%。发展中国家是 2023 年全球电力需求的主要引擎，其中中国电力需求同比增长 6.4%，主要由服务和工业领域，特别是高耗能的化工类、光伏制造产业链等需求扩张带动电力需求增长。而 2023 年电力需求增长最快的是印度，同比增长 7%。

**IEA 预计电力需求未来三年有望实现年化 3.4%的增长，电力价格高位回落。**IEA 预计，2024-2026 年，全球经济增长将带动电力需求的快速增长，居民端和交通板块的快速电气化以及数据中心的建设提速是主要驱动力，特别是在中国和发达经济体。在全球控制碳排放的背景下，IEA 认为 2023 年电力占总能源构成的比重由 2015 年的 18%提升至 20%，到 2030 年将进一步提高至 30%。按地区看，尽管中国经济面临结构性转型压力，中国的电力需求增长仍然贡献了未来三年电力需求地域性的主要增量，预计中国电力需求 2024-2026 年增长率分别为 5.1%、4.9%和 4.7%。印度方面，预计未来三年电力需求年平均增长率在 6%左右，主要由经济活力增强和空调的普及带动。欧盟未来三年电力需求预计年均增长在 2.3%，其中电动车及数据中心是主要的增量需求来源，而能源密集型工业部门预计难有显著恢复。美国 2024 年电力需求增长率预计将反弹到 2.5%，2025-2026 则维持年均 1%左右增长率，到 2026 年，三分之一以上的电力需求增量将来自于数据中心业务。从电价上看，经历了高通胀时期的价格高位后，预计天然气、煤炭等燃料价格回落带动电价下行，但日本、印度等燃料进口国电力价格可能会维持在高位。

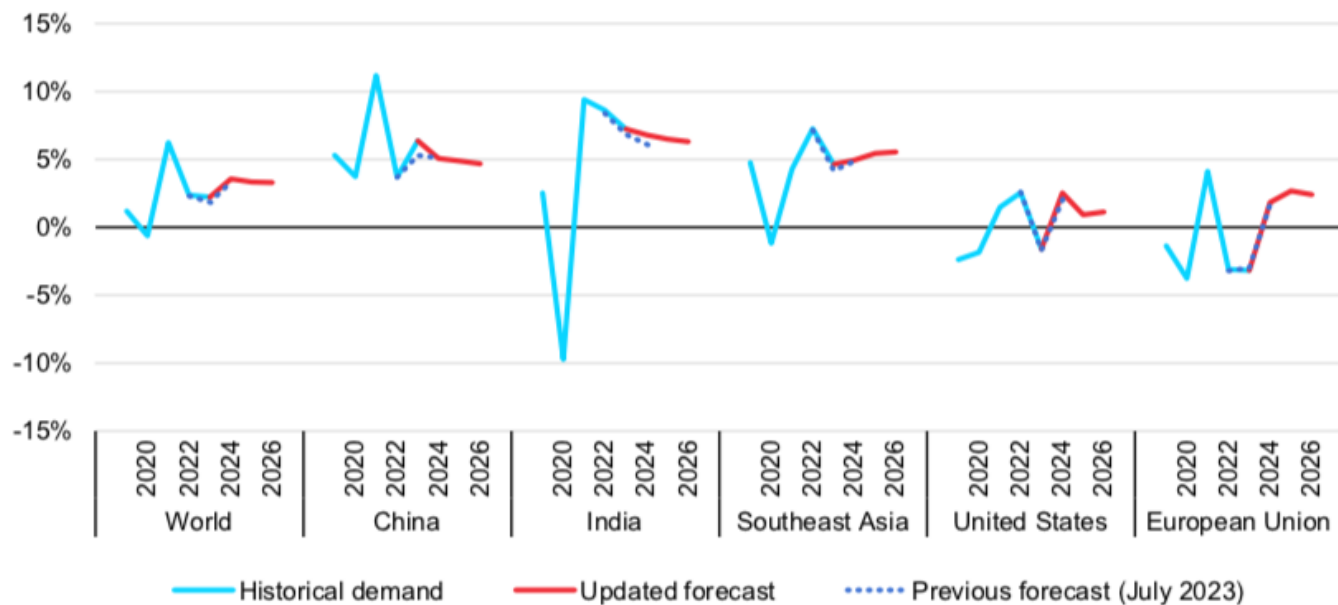
**2025 年可再生能源发电将取代煤电成为最主要的全球供电来源。**包括核能、太阳能、风能等在内的可再生能源在 2025 年发电占比将达到 37%，取代煤炭成为最主要的供电来源。在欧盟及美国等发达经济体，可再生能源装机将在 2026 年满足全部新增电力需求，这也将带动这些区域电网等基础设施建设。全球核能发电预计未来三年年增长 3%，累计新增核能装机 29GW，其中半数在中国和印度。水电由于气候的不确定性导致全球装机在 2023 年同比减少 2%。天然气预计年均增长 1%左右，预计到 2030 年新增 200GW。伴随着清洁能源的占比提升，全球发电板块的碳排放将得到有效控制，预计 2024-2026 年，碳排放逐年降低 4%左右，其中欧盟 2026 年的碳排放目标是每年降低 13%，中国目标是降低 6%，其次是美国逐年降低 5%。

**极端气候对供电能力的挑战依然存在，电力基础设施需求迫切。**2023 年极端天气导致的大规模电力紧缺在世界各地频频出现，美国的暴风雪、印度的台风等都带来大规模断电，影响生产生活。同时燃料供给及电网相关的基础设施建设也继续成为电力供给瓶颈，IEA 预计单电网等基础设施部分带来的经济损失每年在 1000 亿美元左右；除此之外，人为破坏电网设备等行为也在各地时有发生，美国北卡罗来纳州还出台了关于更严格的监控和惩罚措施；对电网系统的网络攻击也在近年来越来越多，从 2020 年到 2022 年，网络攻击事件增长两倍，美国 2023 年 3 月出台了新的网络安全准则来保护电网系统免受网络袭击。未来电网板块更高的标准化和数字化，一方面有效改善人为失误因素的负面影响，另一方面，也能保护电网网络系统。

**投资建议：**建议关注可再生能源发电企业及电力设备相关产业链。

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图 1: Year-on-year percent change in electricity demand in selected regions, 2019-2026



资料来源: IEA, HTI

## APPENDIX 1

**Reduction in power demand of developed countries dragged down global electricity demand in 2023.** According to the <Electricity 2024>, global electricity demand in 2023 sees a 2.2% yoy growth, slowing down 0.2% comparing to 2022, as the demand from developed countries has slowed down. EU has witnessed a two consecutive year decrease of electricity demand, that is -3.1% and -3.2% respectively in 2022 and 2023, though the price of electricity went down from high rate level in 2023, it is anticipated that the recovery to the demand level of year 2021 in EU would take 3 years to 2026. The electricity demand in United States also decline by 1.6% in 2023, versus 2.6% increase in 2022, due to the extreme weather. Emerging markets on the other hand are the engines of 2023 electricity demand. China gains 6.4% yoy since the energy intense industries like chemicals, pv manufacturing supply chain etc has led the demand for electricity. Besides, India has the fastest growth rate as 7%.

**IEA estimate the electricity demand will grow at 3.4% yoy for next three year with price falling down from record high.** According to IEA, during year 2024-2026, with the economic pacing up, the demand on electricity will rise rapidly, both the residential, the electrification of transportation and the implementation of data centre will boost the demand of electricity, especially in developed countries and China. Under the background of net zero or related carbon emission policies, the share of electricity in final energy consumption is estimated to have reached 20% in 2023, up from 18% in 2015, and will touch 30% on 2030. Geographically, though China is facing the restructuring of its economy, it is still the main engine on global electricity demand during 2024-2026, IEA estimate the growth rate of China electricity demand will be 5.1%, 4.9%, 4.7% respectively the next three years. And the average electricity demand growth for India will be 6% from 2024-2026 due to the strong economic activity and air conditioner widely distributed. EU's demand for electricity is expected to grow at 2.3% yoy to 2026. The EV and data centre make the most contribution as on the other hand, energy intense industries is hard to recover. Demand of electricity in US may rebound at 2.5% on 2024, and 1% increase yoy during 2025-2026, the data centre related business would take up to two third of the additional electricity demand. From the price perspective, after the high inflation period, the power price would fall from record high level with the lower natural gas and coal price. But countries like Japan and India, which import fuels mostly, would still see high power price.

**The renewable energy will be the largest source of electricity supply in 2025.** Renewables like nuclear, solar, wind ect will take up 35% of all the power generation, replace coal to be the largest sources of electricity supply. Renewables will meet the additional demand of electricity in developed countries, which will stimulate the infrastructure construction there. Fuel wise, between 2024 and 2026, an additional 29 GW of new nuclear capacity is expected to come online globally, more than half of them in China and India. Hydropower generation was down 2%yoy in 2023 in numerous regions due to weather impact. The natural gas power installation would rise 1% yoy the next three years, reaching 200GW in 2030. With more renewables installed, carbon emission will be well controlled, with a 4% decrease yoy during 2024-2026. While EU will aggressively aim at 13% yoy down, while China and US are 6% and 5% down respectively.

**Extreme weather challenges the power supply, grid infrastructure is urged to be updated worldwide.** Extreme weather cause largescale power outages in many regions in 2023, like the ice storm in US and hurricane in India. Insufficient power capacity and fuel supply issues due to elevated energy costs continue to plague a significant number of emerging economies. IES estimates grid-related technical/equipment failures alone cause at least USD 100 billion economic damages per year globally. Besides, the US power grid is currently facing a surge in physical attacks, which has reached a decade high, in response, state lawmakers in North Carolina have passed an amendment, effective July 2024, that will mandate public utilities to operate a 24-hour security system at substations while stricter penalties will be enforced upon electric utility infrastructure damage. Besides, the cyber threat is also a growing concern. Between 2020 and 2022, the average number of cyberattacks against utilities worldwide more than doubled. Leveraging technology to digitalise and automate processes can effectively reduce violations while protecting the infrastructure and systems.

**Investment advice:** Renewables power generation companies and electrical equipment manufacturers.

**Risks:** electricity demand and renewable power installation may not meet expectations; price fluctuation of fuels (natural gas, etc).

## 附录 APPENDIX

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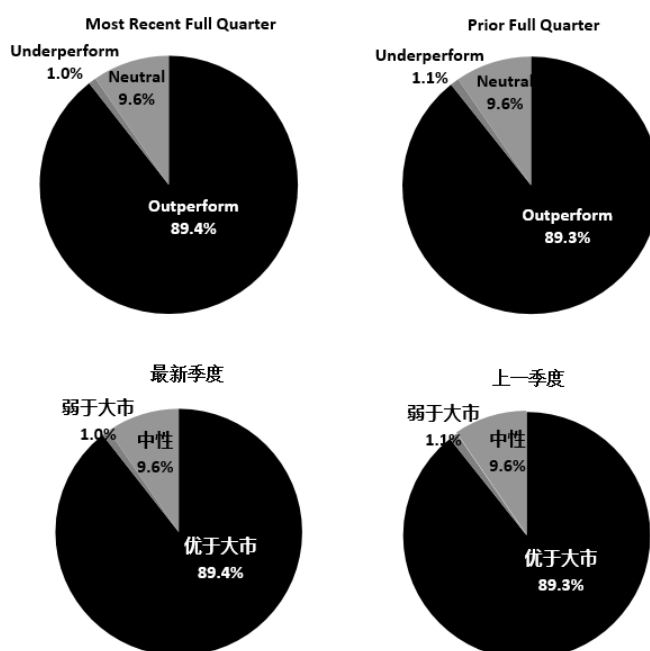
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卖出，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

各地股票基准指数：日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100; 其他所有中国概念股 – MSCI China.

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