

电新&公用&ESG Power Equipment & New Energy & Utilities & ESG

从“百家争鸣”到“三足鼎立”，技术+资源+资金提升储能系统集中度

The Competition Pattern Switch from “A Hundred Schools Of Thought Contend” to “A Triple Balance of Power”, Technology+Resources+Capital Improves the Concentration Ratio of EES Integration Sector

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热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

2021 年以前储能系统集成商为“百家争鸣”，到 2022 年竞争格局呈现“三足鼎立”。2021 年之前储能系统集成布局者众多，除了独立的储能系统集成企业外，动力电池企业、光伏逆变器企业、PCS 等企业纷纷进行横向和纵向一体化布局，呈现百花齐放、百家争鸣的竞争格局。2022 年原材料碳酸锂价格暴涨，储能系统毛利率暴跌至 10%+，经历一次行业洗牌，当前储能系统集成商主要分为三类：（1）第一类为以比亚迪、宁德时代为代表的动力电池企业；（2）第二类为以阳光电源为代表的逆变器企业；（3）第三类为以海博思创为代表的独立储能系统集成商。根据 36 氪氢测算，在技术壁垒不断提升，客户粘性和资金实力越发重要的背景下，行业集中度不断提升，2022 年储能系统集成商出货量 CR5 占比为 54%，较 2021 年提升 13pct，CR3 为 38%，较 2021 年提升 8pct，行业正在经历从“百家争鸣”到“三足鼎立”的竞争格局。

技术：把控电池安全、掌握关键电网技术的集成商容易持续获得先发优势。储能系统集成并不是简单的物理连接和电芯堆叠，是一个数字化贯穿的过程。集成商需要通过数字化技术来把控电池全生命周期的性能状态，降低电池的衰减速度，平衡经济性和安全性，同时储能系统是以电力电子为核心，随着新能源渗透率加速提升，储能系统参与电网系统调峰、调频等辅助服务的频次增多，其拓扑结构也直接影响储能电站的转换效率、电能质量和响应速度，如高压级联拓扑结构可以减少簇间环流，转换效率比低压方案高 5% 左右，当前一些系统集成商如阳光电源研发构网型并网技术，让变流器及储能系统具备主动调节能力，通过模拟同步发电机的特性为电网注入强度和惯量，为电网的稳定性提供支撑作用，因此储能集成涉及电力电子、电化学、热管理等技术，存在较高的技术壁垒，PCS 一体化企业和电芯一体化企业优势较大。

资源：集成商下游对接央国企，具备渠道资源优势 and 国企属性容易拿到订单。储能系统集成商上游对接设备供应商，下游对接以五大四小、国家电网和南方电网为主的央国企。通过利用原业务的渠道资源更容易拓展储能集成业务，比如原逆变器制造企业下游同样是对接运营商，客户同源。国有企业获取订单方面同样容易获得竞争优势，比如作为国企的中车株洲所，2021 年国内出货量未进入前 10，2022 年储能系统出货量近 3GWh，排名国内第二，实现质的跃升。

资金：高现金流，低负债率有利于企业扩张储能系统产能，加速市场开拓。2023 年 5 月份 2 小时储能系统 EPC 中加权平均报价为 1.655 元/Wh，较 2022 年下降 8.5%，1GWh 对应 16.55 亿元资本开支，由于集成商下游面对的是央国企，议价能力较差，收款速度慢，导致通过产能扩张来提升市场份额对企业的盈利能力要求更高。比如科陆电子，2019 年储能系统出货量排名第二，由于公司有息负债较高，2021-2022 年净利润持续为负数，宜春基地产能扩张不及预期，公司 2020-2022 年储能系统出货量跌出前 10。盈利能力较强的企业如阳光电源 2019-2022 年储能系统国内外出货量稳居第一。

国内市场：更看重系统价格，强制配储政策驱动运营商将亏损风险前置，集采+低价中标成为主流。当前电源侧风光项目依旧实施强制配储政策，截至目前全国 25 个省份实施该政策，由于储能盈利模式仍然不成熟，对于运营商而言配储成本为沉没成本，难以通过参与辅助服务来收回投资，对价格敏感度较高，新能源+储能的 IRR 普遍小于 8%，因此运营商在经济性不佳的情况下将亏损风险前置，通过集采的方式来压低储能系统价格，价低者得标现象普遍，近几年储能系统产能扩张较快，进一步加剧供给侧竞争，头部企业通过规模优势和技术研发降本，获得相对竞争优势，实现出货量及市占率的提升。

海外市场：更看重技术和品牌带来的可融资性，头部企业认可度更高。海外业主对于储能系统的价格敏感度较低，更加关注储能系统技术水平和品牌知名度，国内产品进入海外市场首先要经过一些列的认证，如美国市场的 UL9540A，欧盟 CE 认证等，而可融资性是美国 IPP 选择中国企业产品的重要考量因素，2022 年中国 7 家储能系统集成商进入 BNEF 可融资性评级榜单，阳光电源、比亚迪和宁德时代位居前三。阳光电源和比亚迪作为第一批进入美国市场的储能系统集成商，2022 年各自主打产品 Sungrow Power Titan 和 BYD CUBE T28 在美国均实现 GWh 级出货。

展望 1：政策推动储能参与电力市场交易提高储能系统性能要求，行业加速洗牌。2023 年以前储能盈利模式尚不清晰，强制配储政策导致劣币驱逐良币，低价中标导致储能系统质量下降，难以被电网调用，根据中电联调研，2022 年电源侧新能源配储日均利用次数仅为 0.2 次，电网侧独立储能利用次数仅为 0.4 次。进入 2023 年，成本端价格不断下降，国家层面和地方层面不断推动储能参与电力市场交易，如现货市场、辅助服务市场来发挥储能灵活性调节作用，以容量电价+容量租赁+现货市场套利的商业模式逐渐清晰，低质量储能系统盈利能力、安全性较差，行业加速洗牌。

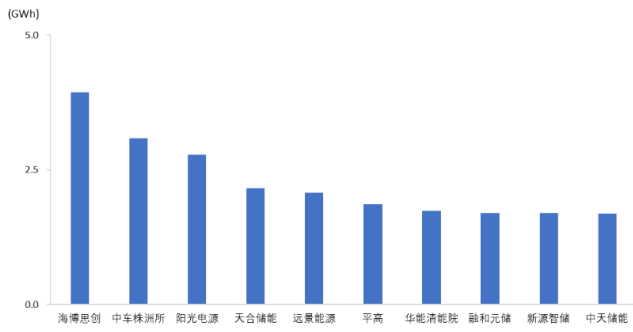
展望 2：技术驱动产品实现差异化竞争，PCS 一体化企业走的最前面。2023 年有 300 多家企业参与 ESIE2023，其中具备系统集成能力的过半，温控技术基本采用液冷，同质化严重，以 PCS 电力电子技术切入储能集成领域的一体化企业如阳光电源、科华数能、华为等等纷纷推出 DC-DC 簇级管理产品，减少电池簇之间环流，提升全生命周期放电量。消防方面部分企业推出配置 PACK 级别探测及灭火的产品，来满足最新国家标准《电化学储能安全规程》要求，在同质化产品中获得差异化竞争优势。

展望 3：海外市场增加营收弹性，头部企业强者恒强。美国 IRA 政策首次将独立储能纳入抵免范围，推动储能发展，根据 Wood Mackenzie 数据，到 2031 年美国电化学储能容量将达到 636GWh，22-23 年 CAGR 为 40%，是全球第一大市场，占比 36%，当前在美国市场大规模出货的中国系统集成企业主要为阳光电源、比亚迪、宁德时代等头部企业，与客户建立起合作关系后可以进一步增加客户粘性，形成进入壁垒，强者恒强。

投资建议：建议关注头部储能系统集成商【比亚迪】、【阳光电源】、【科陆电子】、【南网科技】等。

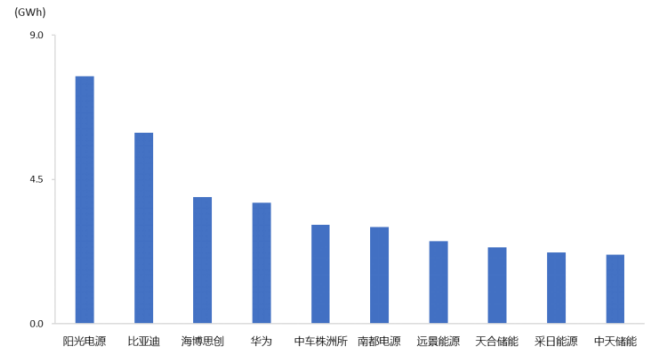
风险：储能政策和需求不及预期，价格竞争，原材料价格大幅上涨。

图 1:2022 国内储能系统集成商出货量



资料来源: CNESA, HTI

图 2:2022 全球储能系统集成商出货量



资料来源: CNESA, HTI

APPENDIX 1

The competition pattern switch from “A hundred schools of thought contend” to “a triple balance of power”, technology+resources+capital improves the concentration ratio of EES integration sector

Before 2021, there were many energy storage system integrators. In addition to independent energy storage system integration enterprises, power battery enterprises, Solar inverter enterprises, PCS, and other enterprises also carried out their horizontal and vertical integration layout. In 2022, the price of raw material Lithium carbonate will rise sharply, leading to the gross margin decrease sharply to 10%+ of those companies, the competition pattern switched from “A hundred schools of thought contend” to “a triple balance of power”.

Technology: Integrators who master battery safety and key grid technologies are likely to gain a sustained first-mover advantage.

Resources: The downstream of Integrators are central state-owned enterprises, integrators with advantages in channel resources and state-owned enterprise attributes make them easy to win orders

Capital: High cash flow and low debt ratio are beneficial for enterprises to expand their energy storage system production capacity and accelerate market development.

Domestic markets: Pay more attention to the price of EES.

Overseas markets: Pay more attention to the financiability brought by technology and brand, and the recognition of top enterprises is higher

Outlook1: Policies promote the participation of energy storage in electricity market transactions, improve the performance requirements of energy storage systems, and accelerate industry reshuffle

Outlook2: Technology-driven products achieve differentiated competition, and PCS enterprises are at the forefront

Outlook3: Overseas markets increase revenue elasticity, and top companies are always strong.

Investment suggestion: It is recommended to pay attention to [BYD], [SUNGROW], [Clou Electronics],[Southern Powergrid Technology]

Risks: less-than-expected growth in demand and policies, price competition, raw material prices increase sharply.

附录 APPENDIX

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中性，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

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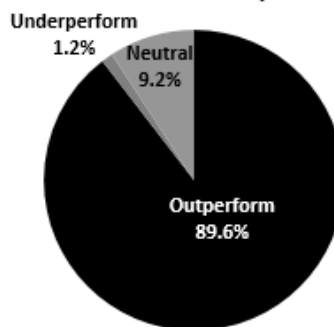
各地股票基准指数：日本 - TOPIX, 韩国 - KOSPI, 台湾 - TAIEX, 印度 - Nifty100, 美国 - SP500; 其他所有中国概念股 - MSCI China.

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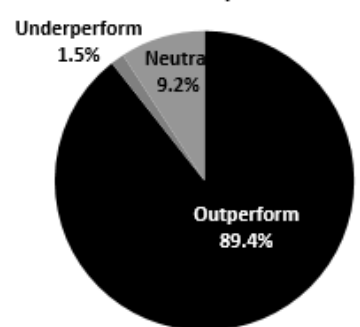
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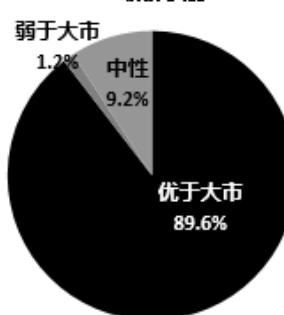
Most Recent Full Quarter



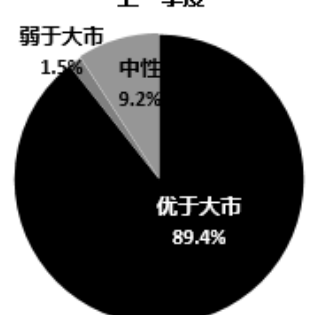
Prior Full Quarter



最新季度



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Outperform: The stock's total return over the next 12-18 months is expected to exceed the return of its relevant broad market benchmark, as indicated below.

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Benchmarks for each stock's listed region are as follows: Japan – TOPIX, Korea – KOSPI, Taiwan – TAIEX, India – Nifty100, US – SP500; for all other China-concept stocks – MSCI China.

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投资银行客户*	5.2%	6.4%	9.5%

*在每个评级类别里投资银行客户所占的百分比。

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买入，未来 12-18 个月内预期相对基准指数涨幅在 10%以上，基准定义如下

中性，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

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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*Percentage of investment banking clients in each rating category.

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