

电新与火电 Power Equipment & New Energy & Thermal Power

利好政策不断推出，分散式风电开发潜力超 1000GW

Positive policies are constantly issued, the potential capacity of decentralized wind power market is expected to exceed 1000GW

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热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

近 10 年政策端不断释放利好，备案制的推出成为分散式风电发展的转折点。2011 年，国家能源局发布《关于分散式接入风电开发的通知》，首次明确了分散式风电的开发主题和边界条件，拉开了分散式风电的建设序幕；2016 年国家发改委和能源局连续发布三项重大政策，分别为《风电发展“十三五”规划》，《能源发展“十三五”规划》和《可再生能源发展“十三五”规划》，政策提出加大中东部地区和南方地区资源勘探开发，优先发展分散式风电，积极推动分散式风电落地；2017 年国家能源局出台了《关于加快推进分散式接入风电项目建设有关要求的通知》，明确鼓励民营企业参与分散式风电项目开发建设，探索分散式风电发展新模式；2022 年 1 月 6 日，国家能源局、农业农村部及国家乡村振兴局印发《加快农村能源转型发展助力乡村振兴的实施意见》提出到 2025 年，建成一批农村能源绿色低碳试点，风电、太阳能、生物质能、地热能等占农村能源的比重持续提升，并推动千村万户电力自发自用；2022 年 5 月，国家发改委和能源局发布《关于促进新时代新能源高质量发展实施方案的通知》，提出风电项目由核准制调整为备案制，只需要报政府备案后就可以办理后续手续，不用政府审批。我们认为政策端不断完善，特别是风电开发备案制的推出将助力“十四五”分散式风电开发高速增长。

分散式风电优势较集中式风电更靠近负荷中心，节约输电设备建设成本，利于消纳。分散式风电场主要特点：（1）本地平衡，本地消纳，项目主要布局在负荷中心，主要分布在中东部和南方，就近接入 110 千伏电压等级配电网，不需要长距离的特高压输送，节省输配电设备费用，因此各类工业园区、开发区和大型工厂是分散式风电场的理想用户；（2）并网方式在核准的时候可以选择“自发自用，余电上网”，自用比例按照当地的政策执行，也可以选择“全额上网”，各地分散式风电上网电价按照国家发改委 2019 年 5 月份发布的《国家发改改革委关于完善风电上网电价政策的通知》进行核定；（3）装机规模一般为 6MW-50MW，不占用国家核准计划指标，成为行业新增量。我们认为在大基地输电通道紧张的情况下，就近消纳的分散式风电装机增量空间广阔。

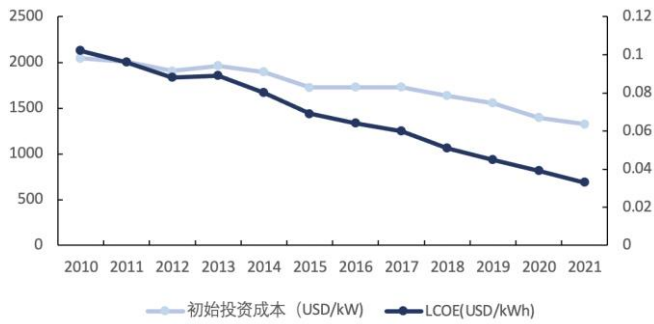
核准方式、用地限制及经济性较差等行业痛点不断被解决，扫清分散式风电高速发展障碍。以往受制于受制于核准周期长、建设用地限制大、融资和建设成本高、经济性较差，分散式风电发展一直慢于行业预期，而这些行业痛点在“十四五”期间不断被扫清。（1）**核准周期长问题：**风电开发模式已经由核准制改为备案制，核准周期有望大幅缩减，目前多地如四川省，张家口市跟进政策，推动政策落地。（2）**建设用地限制问题：**国家能源局发布的《分散式风电项目开发建设暂行管理办法》首次明确提出，除了常规风电开发通用的建设用地审批和协议流转途径外，投资商可使用本单位自有建设用地或租用其他单位建设用地建设分散式风电项目。可以释放大量闲置土地，提高土地利用效率。（3）**经济性较差问题：**分散式风电主要分布于我国中东及南部，风速条件较差，一般年均风速在 4-6m/s，近 10 年来陆上风电投资成本不断下降，全球 2010-2021 年陆上风电每千瓦投资成本下降了 35%，LOCE 下降了 67.6%，我国风机中标均价也不断下降，从 2021 年 9 月份的 2401 元/kW 下降到 2022 年 9 月份的 1808 元/kW 左右，分散式风电单机容量大型化趋势加速，2021 年单机容量在 3-3.9MW 之间的机组占比为 65.5%，同比增加 46%，大型化助力风电投资成本不断下降，推动我国陆上风电项目全面实现平价上网。我们认为分散式风电开发障碍基本扫除，未来主要看政策端的落实力度。

21 年新增装机同比增长 7 倍，分散式风电场开发潜力超 1000GW，有望成为万亿蓝海市场。根据 CWEA 数据，从 2021 年开始，我国分散式风电场装机规模呈现爆发式增长，新增装机容量 802.7 万千瓦，同比增长 702%，截至 2021 年底，分散式风电累计装机 996.3 万千瓦，同比增长 414.6%，项目主要分布在河南（31.7%）、陕西（15.5%）、山西（8.2%）等中东部省份。2021 年 10 月北京国际风能大会发布《风电伙伴行动·零碳城市富美乡村》行动方案，力争 2021 年年底前启动首批 10 个县市总规划容量 5GW 示范项目，“十四五”期间，在全国 100 个县，优选 5,000 个村，安装 1 万台风机，总装机规模达到 50GW。根据 CWEA 评估，在中东南部地区，地面风速定到每秒 6 米以上可以实现 2 亿千瓦装机量，地面风速定到每秒 5.5 米以上保守估计可具备 10 亿千瓦的开发潜力。**我们认为在政策端不断加码、经济性不断改善的情况下，“十四五”期间分散式风电的装机规模将超过 50GW 市场预期，万亿蓝海市场扬帆起航。**

投资建议：建议关注分散式风电场的风电整机商市占率第一的**金风科技**，风机中标规模稳步上市的**东方电气**；受益于风机中标价格不断下降的风电运营龙头**龙源电力**，新能源装机占比不断提升的**华润电力**。

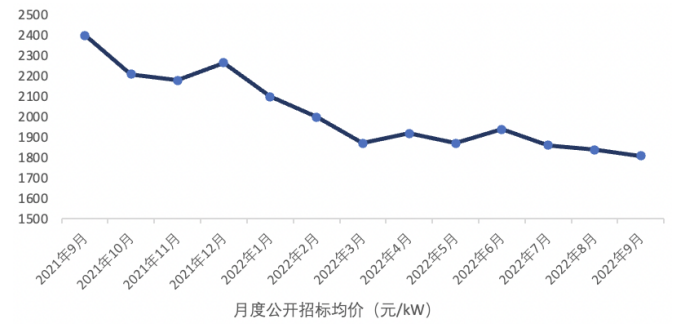
风险：政策和需求不及预期，风电装机不及预期。

图 1: 2010-21 年全球陆上风机投资成本下降趋势



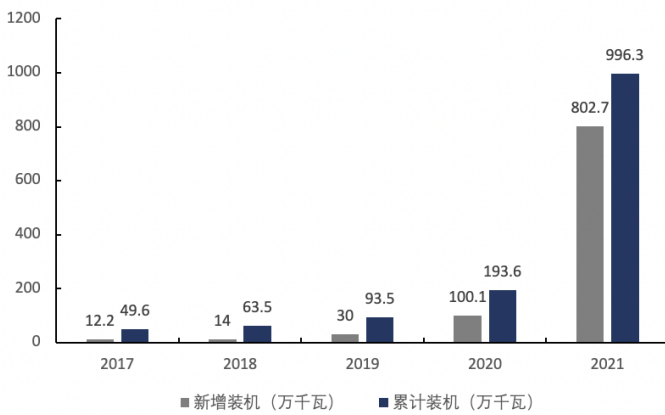
资料来源: IRENA, HTI

图 2: 21-22 年中国全市场风机月度招标均价



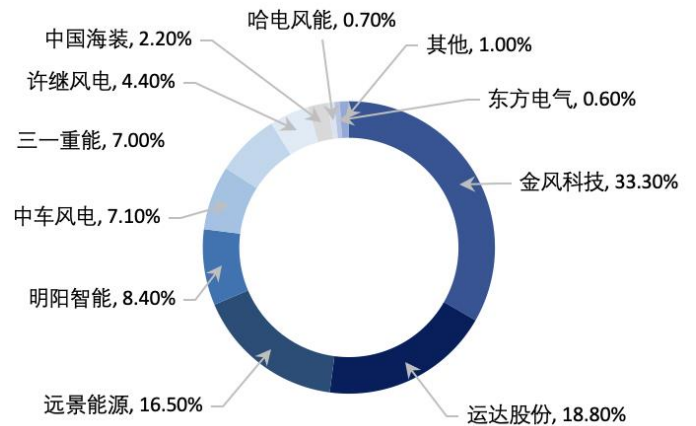
资料来源: 金风科技, HTI

图 3: 17-21 年中国分散式风电装机新增及累计装机规模



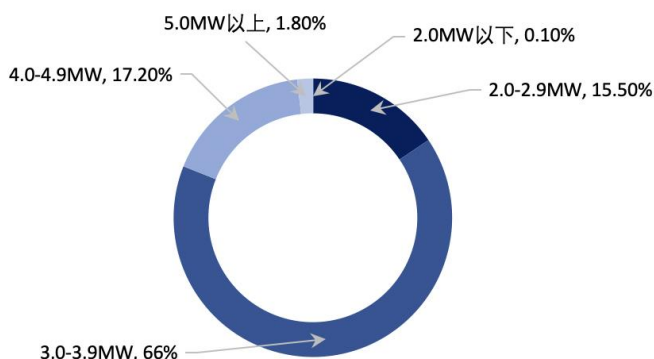
资料来源: CWEA, HTI

图 4: 21 年中国分散式整机商装机市占率



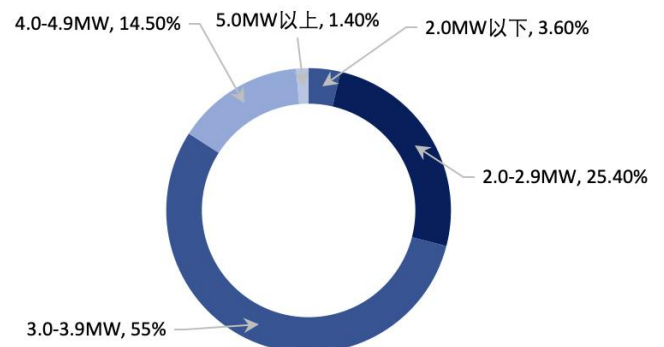
资料来源: CWEA, HTI

图 5: 21 年中国新增分散式风电单机容量占比



资料来源: CWEA, HTI

图 6: 21 年中国累计分散式风电单机容量占比



资料来源: CWEA, HTI

APPENDIX 1

Positive policies are constantly issued about decentralized wind power, the potential capacity of decentralized wind power market is expected to exceed 1000GW.

The characteristics of decentralized wind power are followers:(1) Closer to the load side than centralized wind power, saving the construction cost of transmission equipment;(2) The mode of grid connection can be "self-use and surplus power online", the proportion of self-use shall be implemented according to local policies, or "full power online" ;(3) The installed capacity is generally 6MW-50MW, which does not occupy the national quota and becomes a net increment in the industry.

The barriers to the development of decentralized wind power, such as the approval method, land use restrictions and poor economy, have been continuously resolved, the installation capacity of decentralized wind power mainly depends on the implementation of the policy.

By 2021, the new installed capacity increased by 7 times year-on-year, and the development potential of distributed wind power exceeded 1000GW, which is expected to become a trillions blue ocean markets.

Risks: less-than-expected growth in demand, policy changes.

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。

弱于大市, 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

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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.

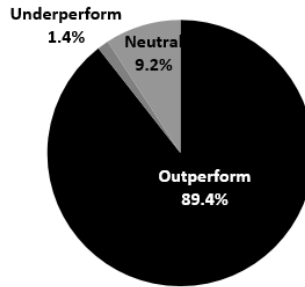
Neutral: The stock's total return over the next 12-18 months is expected to be in line with the return of its relevant broad market benchmark, as indicated below. For purposes only of FINRA/NYSE ratings distribution rules, our Neutral rating falls into a hold rating category.

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

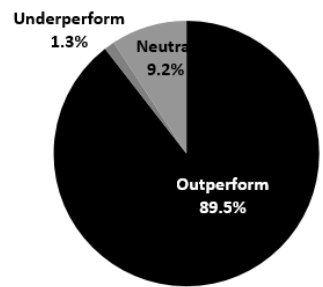
Benchmarks for each stock's listed region are as follows: Japan – TOPIX, Korea – KOSPI, Taiwan – TAIEX, India – Nifty100, US – SP500; for all other China-concept stocks – MSCI China.

评级分布 Rating Distribution

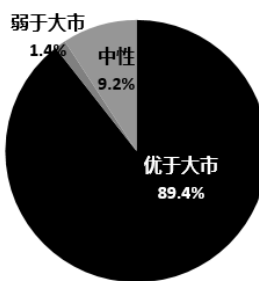
Most Recent Full Quarter



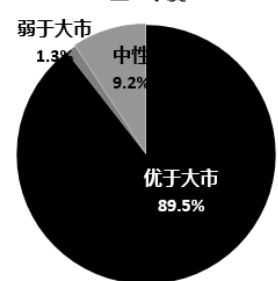
Prior Full Quarter



最新季度



上一季度



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*在每个评级类别里投资银行客户所占的百分比。

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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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IB clients*	5.5%	6.8%	4.5%

*Percentage of investment banking clients in each rating category.

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