

## ESG&电新&公用 ESG & Power Equipment & Utilities

### 美国变压器深度：短缺有望持续存在，关注行业 $\beta$ 机会

### United States Transformers Report: Transformer Shortage will Continue to Exist, Pay Attention to The $\beta$ Opportunity of This Industry

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#### 热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

#### 1、变压器是发-输-变-配-用电系统中的基础设备，电力系统建设刚性需求

变压器广泛引用于电力系统，是重要的电力一次设备。变压器的原理是电磁感应现象，通过电磁感应实现电压变换、电流变换、阻抗变换等功能，保障电力系统的稳定运行，广泛应用于发电侧、电网侧和用户侧，是重要的电力一次设备。按照绝缘介质主要分为干式变压器和油浸式变压器，成本主要由硅钢和铜组成，合计占比达 55%，市占率方面，当前美国配电侧干式变压器占比约为 30%，略高于中国的 20%-25%。

#### 2、美国市场变压器主要靠进口，对外依赖度高，未来 5 年市场空间复合增速为 5%

美国是全球最大的变压器进口国，2021 年变压器进口额全球占比达 16.6%，变压器贸易逆差达 144 亿美元，对外越发依赖。根据 BACI 数据，2021 年全球变压器贸易额达 1200 亿美元，美国 2021 年进口额达 200 亿美元，占总贸易额达 16.6%，贸易逆差全球最大达 144 亿美元，进口占比从 2010 年的 13.6% 提升到 2021 年的 16.6%，对外越发依赖。在美国的前 10 大进口国中，墨西哥占比最大，根据美国国际贸易委员会数据，2015-2020 期间美国大型变压器 35% 来自墨西哥，17% 来自韩国，12.6% 和 10.3% 来自于澳大利亚和新西兰，中型变压器有 53% 来自于墨西哥，16.7% 来自于韩国。

2023-2028 年电力变压器市场规模 CAGR 为 7.5%，配电变压器 CAGR 为 3.75%，市场空间稳增长。根据 Grand View Research 数据，2023 年北美电力变压器市场规模有望达到 66.6 亿美元，其中美国占比 79%，美国市场规模约为 52.6 亿元，2023-2028 年的复合增长率为 7.5%。2023 年配电变压器市场空间为 38.4 亿美元，2023-2028 年的复合增长率为 3.75%，电力和配电变压器合计复合增速为 5%。

#### 3、近年来市场供需失衡，缺口不断扩大

**需求侧：IRA 政策加速能源转型，智能电网建设增加存量替换需求。**2022 年 8 月 IRA 法案正式通过，对 ITC 的补贴退坡时间点延后了 10 年，基础抵免比例提升到了 30%。PTC 新增加了先进制造业生产税收抵免（45X）和先进能源抵免（45C），在此推动下，预计 2022-2027 美国风电新增装机 CAGR 为 17.8%，光伏新增装机 CAGR 为 18.9%，增量需求旺盛，同时美国有 33% 的高压变压器使用寿命超过 50 年，超过 15% 的配电变压器使用年限超过 25 年，存量替换需求强烈，其中存量替换需求占总需求的三分之二。

**供给侧：贸易壁垒叠加产能扩张慢，降低供给弹性。**2020 年 12 月美国能源部长禁止从中国进口电压等级超过 69kV 的变压器，同时对进口中国变压器恢复加征 25% 的关税，降低了供给弹性，重要原材料取向硅钢短缺，劳动人口短缺导致产能扩张缓慢，某头部变压器企业产能扩张周期长达 4 年，当前美国变压器企业订单积压严重，配电变压器的订单等待时间从此前的 3 个月延长到 1 年，本地变压器制造商仅能供应 20% 的市场需求，供需缺口不断加大。

#### 4、变压器供应有望持续紧缺，重点关注行业量价齐升带来的 $\beta$ 机会

美国变压器短缺有望持续存在，行业景气度可持续性较强。美国变压器进口规模逐年提升，并从 2020 年开始呈现加速的趋势，2021 年美国变压器进口规模达 200 亿美元，金额和增速均创历史新高，价格方面，自 2020 年以来美国变压器价格上涨 2-3 倍。从中国出口情况来看，进入 2023 年，变压器价格显著上涨，除 2 月份之外，其余月份单个变压器价格同比上涨 44%-76%，整个变压器市场需求量和价格呈现量价齐升趋势。

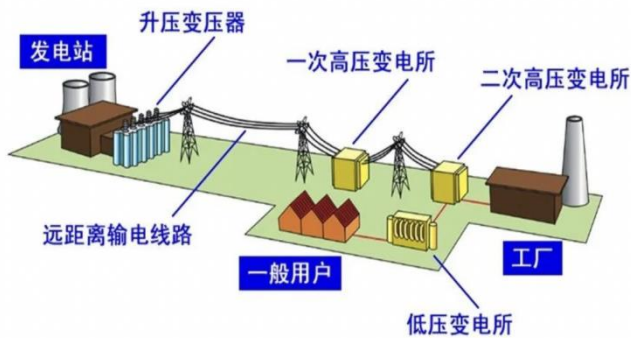
**投资建议：**重点关注变压器出口弹性较大的企业，如【金盘科技】、【华明装备】等。

**风险提示：**1、美国电网投资和政策不及预期；2、贸易摩擦进一步加剧；3、汇率风险等。

## (一) 变压器是广泛应用于电力系统的一次电力设备

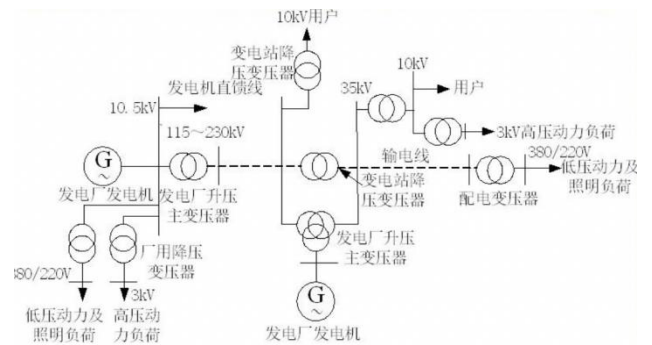
变压器通过电磁感应原理来改变交流电压、电流和阻抗的器件，是发-输-变-配-用电系统中的基础电力设备。变压器主要由铁芯和初级线圈和次级线圈组成，广泛运用于发电、输电、变电、配电等环节，通过电磁感应现象，来实现电压变换、电流变换、阻抗变换、隔离、稳压等功能，保障电力系统的稳定运行。在发电端，电力变压器一般用于升压，由于电流与线损成反比，因此通过提高电压来减少电力传输过程中的线损，由于负荷承受的电压一般不高，因此在电力经过远距离输送后，需要变压器在来降低电压，才能被工商业利用。

图 1: 送电过程



资料来源：电力技术生产, HTI



图 2: 输配电系统示意图



资料来源：电力技术生产, HTI

干式变压器较油浸式普遍贵 10%以上，市占率约占配电变压器 20%-25%，按照冷却介质及方式可以分为干式变压器和油浸式变压器，其中干式变压器主要用于配电系统，如家庭、农业、商业等场景，容量大多在 1600KVA 以下，而油浸式变压器主要用于大型电力系统，比如发电厂的升压变电站，特高压线路降压变电站等等，绝缘性能更好，寿命更长，干式变压器制造工艺更复杂，因此价格要贵 15%-40%，根据爱采购网报价，1600KVA 油浸式变压器报价普遍小于 10 万元/台，而相同容量的环氧树脂干式变压器的报价普遍在 11 万元-17 万元/台之间。市占率方面，根据中研网测算，中国干式变压器约占全部配点变压器的 20%-25%，配电网投资提速会显著增加干式变压器器需求。

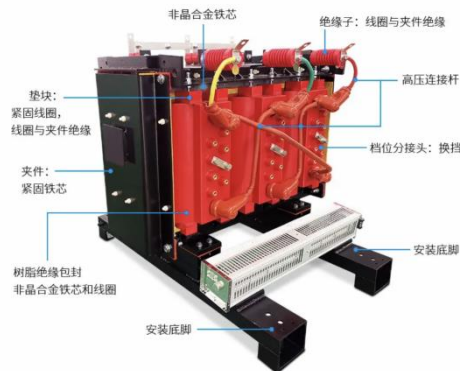
表 1: 变压器分类情况

分类方式	类型	特点	示意图
按照冷却介质及方式	干式变压器	1、绝缘介质一般为树脂 2、电压等级一般为 35kV 及以下 3、冷却方式有自然风冷和风机冷却 4、一般布置在“防火、防爆”的场所，比如建筑物室内等	
	油浸式变压器	1、绝缘介质为绝缘油 2、电压等级一般为 35kV 以上 3、冷却方式靠绝缘油在变压器内部循环带走热量 4、一般布置在室外，有场地挖事故油池，如独立变电站	

资料来源：电力课堂, HTI

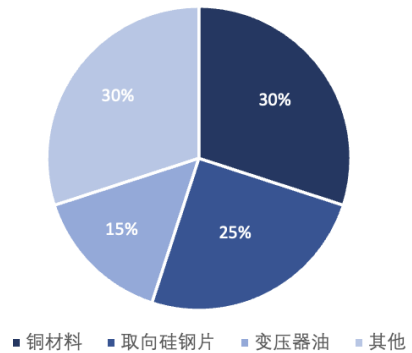
**铜线和硅钢是变压器的主要原材料，成本占比分别达 30%和 25%。** 变压器的主体材料主要有磁路材料，电路材料，绝缘材料和结构材料，具体来看磁路材料主要为取向硅钢片和非晶合金铁芯，生产工艺主要为冷轧，作为变压器的铁芯，在通电线圈中能够产生较大的磁感应强度，含硅量在 2.8%-4.8%之间，在变压器成本结构中占比达 25%；电路材料为铜材和铝材，变压器的内部电路通常由导线绕组构成，是变压器的核心部分，在变压器成本结构中占比最大，达 30%；绝缘材料又称为电介质，电阻系数高，导电能力低，用于隔离带电或不同电位的导体，使电流按一定方向流通。在变压器产品中，绝缘材料还起着散热、冷却、支撑、固定、灭弧、改善电位梯度、防潮、防霉和保护导体等作用，通常绝缘材料分为三类，气体绝缘材料主要为空气和六氟化硫，液体绝缘材料主要为矿物质油，植物油等，固态绝缘材料主要为环氧树脂，油浸式变压器中变压器油一般占总成本的 15%；其他的结构件比如变压器支撑，油箱，散热器等等，成本占比约为 30%。

图 3: 干式变压器结构



资料来源：机电联盟, HTI

图 4: 油浸式变压器成本结构

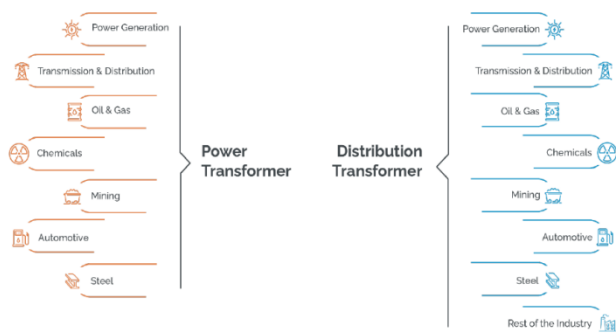


资料来源：观研天下, HTI

(二) 美国变压器主要靠进口，未来 5 年复合增速为 5%

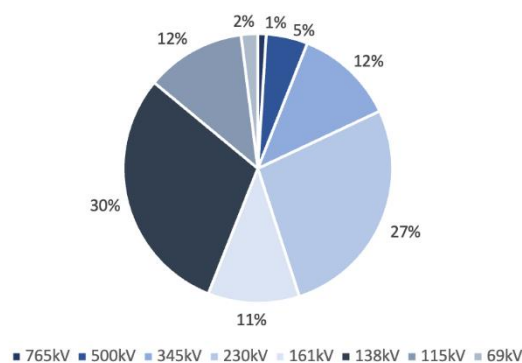
美国变压器主要分为发电变压器和配电变压器，下游应用场景主要为发电、变电、石油化工等。按照电压等级分类，美国一般将用于大于 72kV 电压等级的变压器称为电力变压器，将用于小于 72kV 电压等级的变压器称为配电变压器，电力变压器和配电变压器的下游应用场景相似，广泛应用于发电，电网，石油化工，煤炭，自动化，钢铁等行业，其中配电变压器的应用范围更广。根据 PTR 统计 2500 台变压器的销售情况，电压范围在 115kV-500kV 区间占比最多，占比达 92%，其中 138kV 电压等级变压器占比最高，占比为 30%，其次为 230kV，占比为 27%。

图 5: 美国变压器分类及应用场景



资料来源: PTR, HTI

图 6: 美国变压器电压分布情况



资料来源: PTR, HTI

市场主要由 ABB、西门子等跨国公司主导，大型电力变压器主要靠进口。美国变压器市场主要由大型跨国集团主导，比如 ABB、西门子、施耐德电气等等，本土也有一些厂商供应电力和配电变压器，比如 Htiachi Energy, WEG, Prolec GE, VA Transformer Technology, Pennsylvania Transformer Technology 等等，其中 Htiachi Energy, WEG, Prolec GE, VA Transformer Technology 能同时生产电力变压器，而 Pennsylvania Transformer Technology 和 Hyundai 仅供应电力变压器，超过 80% 的特高压变压器（大于 345kV）需要进口。

图 7: 美国本地主要供应商

PTR/DTR	Htiachi Energy
PTR/DTR	WEG
PTR/DTR	Prolec GE
PTR/DTR	VA Transformer Technology
PTR	Pennsylvania Transformer Technology
PTR	Hyundai

资料来源: PTR, HTI

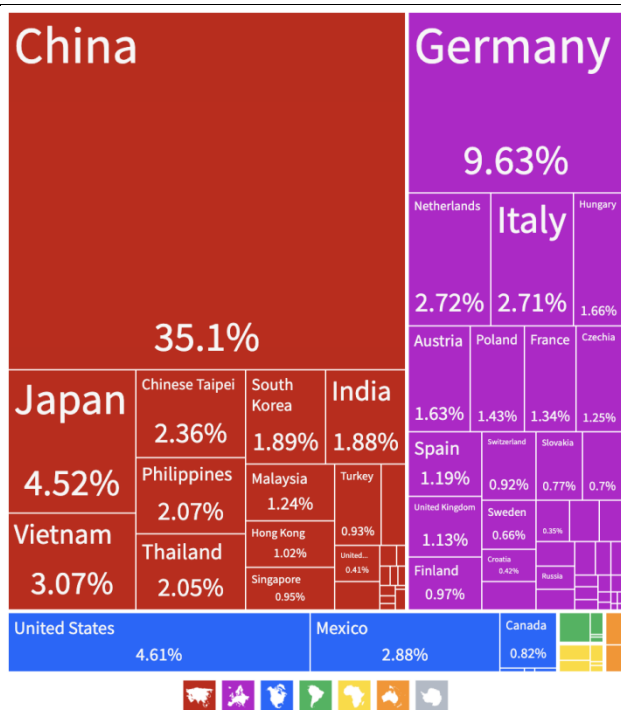
图 8: 美国市场其他主要供应商



资料来源: PTR, HTI

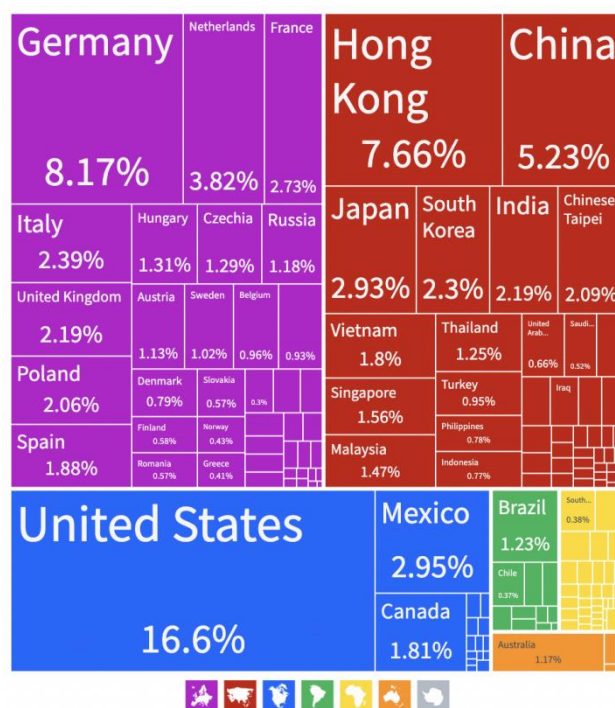
全球最大的变压器进口国，2021年变压器进口额占比达16.6%，变压器贸易逆差达144亿美元。根据BACI数据，2021年全球变压器贸易额达到1200亿美元，同比增长21.1%，其中最大的出口国为中国，出口占比达35.1%，金额为422亿美元，贸易顺差为359亿美元，美国为最大的进口国，2021年进口额达200亿美元，占比达16.6%，贸易逆差全球最大达144亿美元，美国变压器进口占比从2010年的13.6%提升到2021年的16.6%，体现出美国对外越发依赖。在美国的前10大进口国中，墨西哥占比最大，根据美国国际贸易委员会数据，2015-2020期间美国大型变压器（容量大于100000KVA）35%来自墨西哥，17%来自韩国，12.6%和10.3%来自于澳大利亚和新西兰，中型变压器中（容量为10000-100000KVA），有53%来自于墨西哥，16.7%来自于韩国。

图 9: 2021 年全球变压器出口占比



资料来源: BACI, HTI

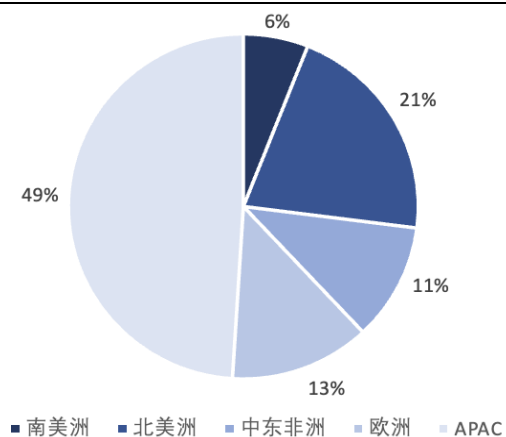
图 10: 2021 年变压器进口占比



资料来源: BACI, HTI

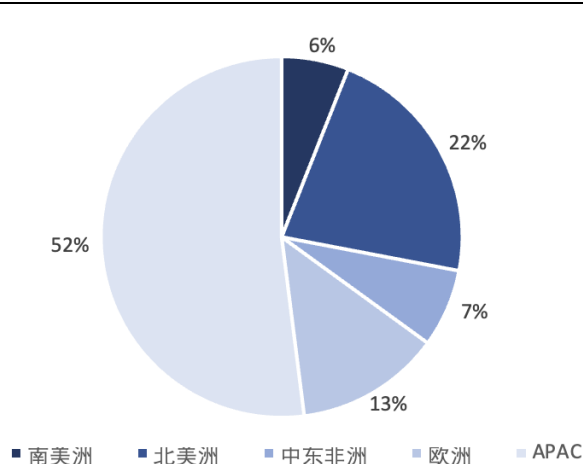
北美电力和配电变压器市场空间占全球比例分别为21%和22%，是全球第二大市场。根据PowerTechnology Research数据，2021年全球电力变压器市场规模为236亿美元，配电变压器为134亿美元，其中北美市场电力变压器市场规模为49.4亿美元，占比为21%，配电变压器市场规模为30亿美元，占比为22%，北美市场是全球第二大市场，美国占北美变压器市场为79%，电力变压器市场收入为38.5亿美元，配电变压器市场收入规模为24亿美元。2021年美国输电投资达760亿美元，未来电网投资的很大一部分将来自拜登的基础设施法案，该法案已拨款650亿美元用于清洁能源传输和电网基础设施。

图 11: 2021 年全球电力变压器市场结构 (电压等级大于 72kV)



资料来源: PTR, HTI

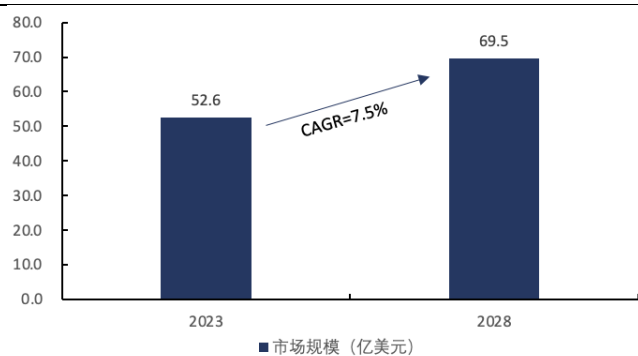
图 12: 2021 年全球配电变压器市场结构 (电压等级小于 72kV)



资料来源: PTR, HTI

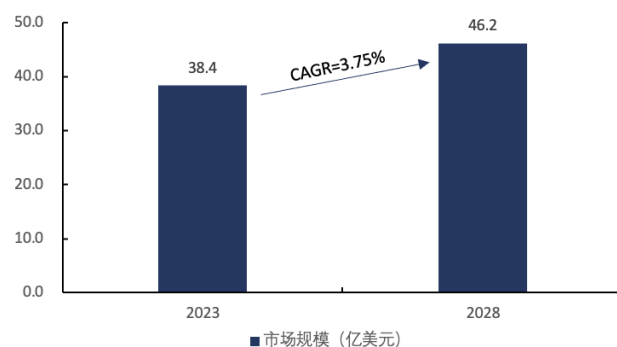
美国电力变压器市场规模 2023-2028 年 CAGR 为 7.5%，配电变压器 CAGR 为 3.75%。根据 Grand View Research 数据，2023 年北美国电力变压器市场规模有望达到 66.6 亿美元，其中美国占比 79%，因此美国市场规模约为 52.6 亿元，2023-2028 年的复合增长率为 7.5%，2023 年配电变压器市场空间为 38.4 亿美元，2023-2028 年的复合增长率为 3.75%，美国配电变压器市场预计将受到老化电网基础设施的替换、能源转型和电动汽车在美国的普及的大力推动，每年销售的配电变压器超过 100 万台，其中增量为三分之一，存量替换为三分之二。未来 5 年美国变压器市场复核增速为 5%左右。

图 13: 2023-2028 年美国电力变压器市场空间



资料来源: Grand View Research, HTI

图 14: 2023-2028 年美国配电变压器市场空间



资料来源: Mordor Intelligence, HTI

## (三) 变压器供需失衡，缺口不断扩大

## 1、需求端：IRA 政策加速能源转型，智能电网建设增加存量替换需求

美国能源转型加快，IRA 法案有望推动新能源装机大增，需求端打开变压器增长空间。ITC 是为太阳能、小型风电设备、地热、汽轮发电机提供税收抵免的政策，将新能源、储能等能源投资额抵免一定比例的增值税。2022 年 8 月 IRA 法案正式通过，对 ITC 的补贴退坡时间点延后了 10 年，基础抵免比例提升到了 30%，并首次纳入了独立储能，大幅利好新能源+储能投资。PTC 是生产税收抵免，对于发电运营商而言直接提供电价补贴，对于光伏上游设备制造商而言，PTC 新增加了先进制造业生产税收抵免（45X）和先进能源抵免（45C）。抵免政策加速美国能源转型，2021 年美国公布了到 2050 年实现“净零”温室气体排放长期政策，到 2030 年，无碳能源的电力份额从当前的 37%提升到 70%-85%，到 2035 年实现 100%零碳电力目标，风电和太阳能在实现“净零”排放目标中占主导地位。

表 2: 美国 ITC 政策储能抵税前后情况

政策	类型	2022	2023	2024	2025-2032	2033	2034
IRA更新前	工商业/电站级别	26%	22%	10%	10%	10%	10%
IRA更新后	户用	26%	22%	-	-	-	-
IRA更新前	工商业/电站级别	30%	30%	30%	30%	26%	22%
IRA更新后	户用	30%	30%	30%	30%	26%	22%

资料来源：SEIA，HTI

表 3: 美国 PTC 政策对光伏电站基础抵免情况（美分/kWh）

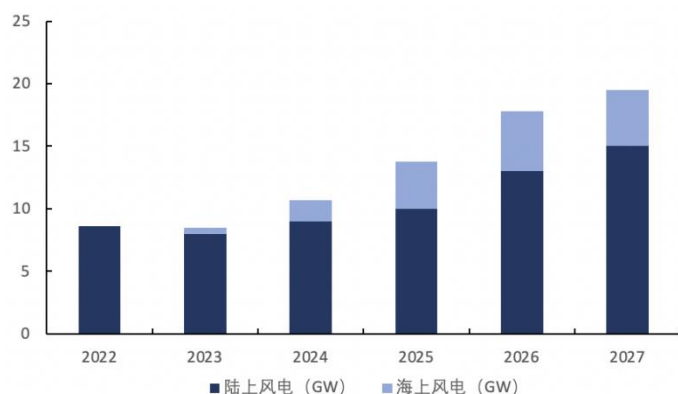
光伏电站类别	政策	2021	2022-2032
1MW以上	原政策	0.9	0
	IRA新政策	0.3	0.3
1MW以内+符合条件的1MW以上	原政策	0.9	0
	IRA新政策	1.5	1.5

资料来源：SEIA，HTI

**2022-2027 美国风电新增装机 CAGR 为 17.8%，光伏新增装机 CAGR 为 18.9%。**

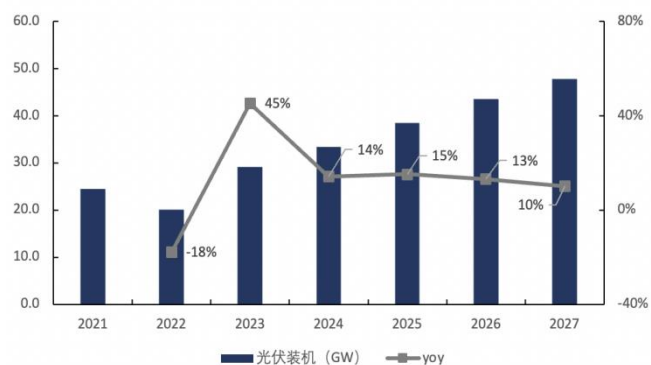
根据 GWEC 数据披露，美国 2022 年新增风电装机约为 8.6GW，同比下降 32.4%，主要原因是许多项目被推迟，开发商在等待 IRA 政策的颁布，从 2023 年开始，陆风和海风装机开始起量，预计 2022-2027 年的新增装机复合增速为 17.8%。2022 年美国光伏新增装机约 20GW，同比下降 18%，主要原因是美国商务部对新的反规避关税进行调查，以及美国海关根据《强迫劳动预防法》扣留了光伏组件，进入 2023 年美国组件供应链限制有所缓解，供应商变多，推动安装商开始安装去年延迟的项目，光伏市场有望在 2023 年迎来复苏，预计新增装机同比增长 45%，根据 Woodmac 和 SEIA 联合发布的报告，2022-2027 年美国光伏新增装机 CAGR 将达到 17.8%。

图 15: 2022-2027 年美国风电装机预测



资料来源: GWEC, HTI

图 16: 2021-2027 年美国光伏装机预测



资料来源: Woodmac, SEIA, HTI

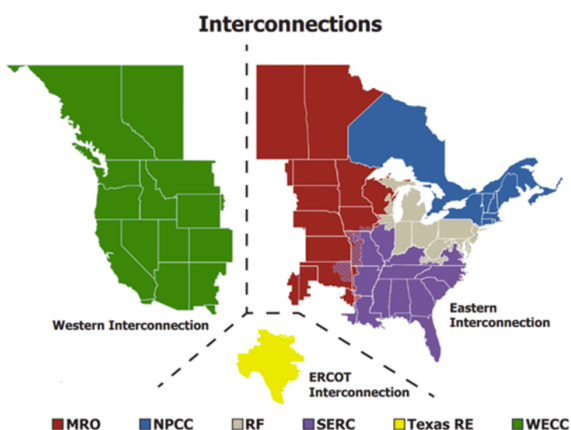
### 电网老旧导致电力供应保障性差，停电事件频发，变压器存量替换需求迫切。

美国电网主要由私立和公营电力公司根据自身的负荷和电源分布组成的一个个独立的电网，最后形成三大电网，东部电网的电源结构以煤电和天然气发电为主，西部电网以水电和天然气发电为主，德州电网以天然气发电为主，三大区域售电量占比分别为 73%、19%和 8%。美国电网输电系统设备老旧，根据 PTR 披露，美国高压电网拥有超过 3500 个变电站，其中超过 33%的变压器使用寿命超过 50 年，大约六分之一的变压器使用超过 60 年，同时超过 15%的配电变压器使用年限超过 25 年，其中大约 15%已经超过了 40 年的配电变压器预期使用寿命，导致电网供电稳定性较差，停电事件频发，根据《华尔街日报》的一项分析，2000 到 2020 年美国重大停电数量从 20 次增加到 180 次，2020 年的平均停电时间是 2013 年的 2 倍，美国每年销售超过 100 万台变压器，有三分之二是替换需求，美国变压器市场存量替换需求强烈。

**美国智能电网建设不断获得政策支持，电网投资有望加速。**2022 年 11 月 18 日，拜登通过美国能源部宣布拨款 130 亿美元成立电网弹性基金，通过两党基础设施法案来实现电网的现代化，其中提升电网弹性基金 25 亿美元，用以解决因为自然因素导致的电力中断问题；智能电网建设 30 亿美元，用于提高电力系统灵活性、效率和可靠性；电网创新计划 50 亿美元，用以自主地方政府和公用事业委员会与电网运营商的合作，增强电网弹性和可靠性，这是美国历史上单一联邦直接投资的最大输配电投资。2020 年美国普林斯顿大学的一份报告显示，美国若要实现到 2050 年 100%汽车都是电动汽车，到 2030 年输电网络投资需要 3600 亿美元，到 2050 年需要 2.4 万亿美元投资，美国电网投资空间广阔，长坡厚雪。

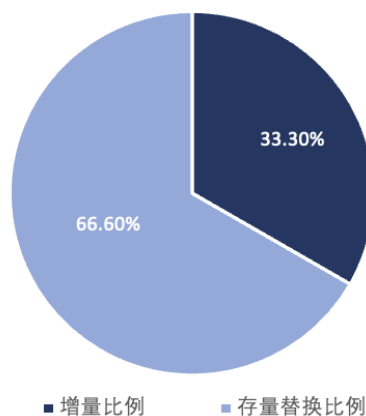


图 17: 美国电网组成



资料来源: North American Electric Reliability, HTI

图 18: 配电变压器增量和存量占比

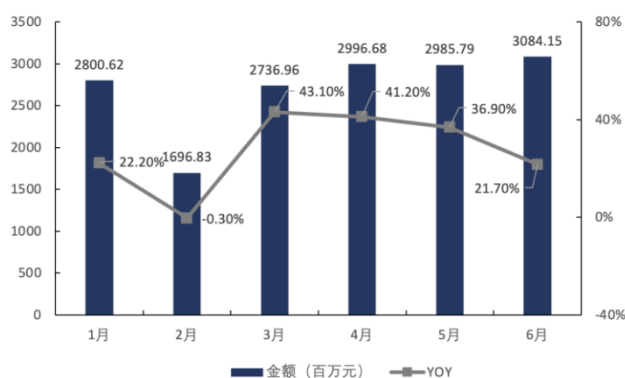


资料来源: PTR, HTI

## 2、供给端：贸易壁垒叠加产能扩张慢，降低供给弹性

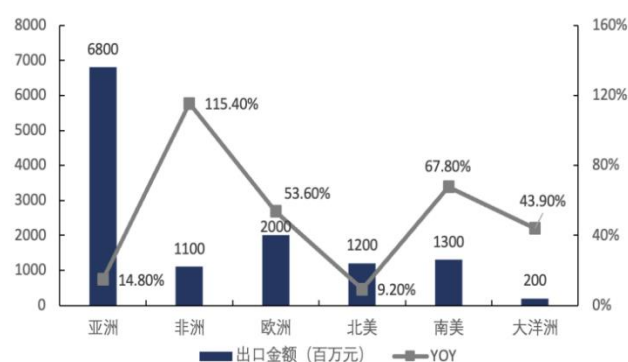
中美贸易壁垒降低美国大型电力变压器供给弹性，加剧紧缺。2020 年 12 月美国能源部长 Dan Brouillette 出于能源安全的考虑签署禁令，禁止美国向关键国防设施供电的电力公司进口特定电力系统产品，这些特定电力系统产品包含 69kV 及以上的变压器，同年美国对中国变压器恢复加征 25% 的关税，导致中国变压器难以进入美国市场，根据中国海关数据，2023 年 1-6 月份中国变压器出口额同比提升明显，在出口增速中，出口北美增速最低，仅为 9.2%，中国当前变压器集中度较低，处于产能过剩状态，与美国市场形成强烈的反差和对比。

图 19: 2023 年 1-6 月中国变压器出口金额及增速



资料来源: 中国海关, HTI

图 20: 2023 年 1-5 月份中国变压器出口地区情况



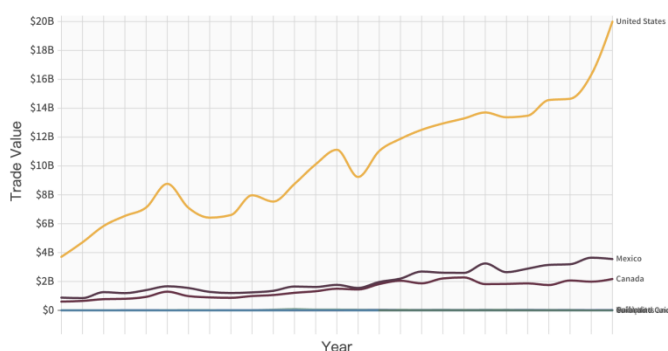
资料来源: 中国海关, HTI

劳动力及原材料短缺导致变压器扩产慢，供需缺口拉大。近年来美国变压器产能扩展不及预期，2018年ABB关闭了位于波士顿南部的小型变压器工厂，2019年HIC（韩国）购买了Mitsubishi的制造工厂，并打算在2021年之前投资1亿美元生产变压器，但是该工厂目前并未正常运营，产能供给不断受到影响。2022年原材料硅钢、铜价大幅上涨，降低了企业生产意愿，同时疫情带来的供应链不顺畅，劳动力不足，产能扩张缓慢，某头部变压器企业产能扩张周期长达4年，当前美国变压器企业订单积压严重，变压器订单的等待时间从此前的3个月延长到1年，供需缺口不断加大。

#### （四）美国变压器供应有望持续紧缺，行业量价齐升迎β机会

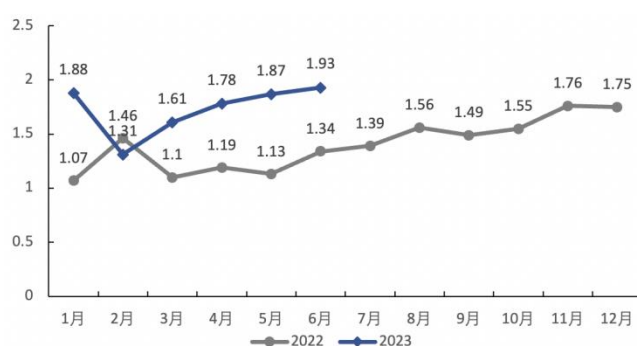
美国变压器进口额加速，量价齐升推动行业迎β机会。根据BACI数据，美国变压器进口规模逐年提升，并从2020年开始呈现加速的趋势，2021年美国变压器进口规模达200亿美元，金额和增速均创历史新高，变压器价格方面，当前美国市场由于供需失衡，价格上涨明显，自2020年以来美国变压器价格上涨2-3倍，从中国出口数据可知，进入2023年，变压器价格显著上涨，除2月份之外，其余月份单个变压器价格同比上涨44%-76%，整个变压器市场需求量和价格呈现量价齐升趋势。

图 21: 美国历年变压器进口额



资料来源：BACI，HTI

图 22: 中国变压器出口均价（美元/个）



资料来源：中国海关，HTI

美国变压器短缺有望持续存在，行业景气度可持续性较强，关注变压器出口弹性较大的企业。首先变压器产能扩张较慢，需求端美国新能源装机从2023年迎来增长拐点，对变压器刚性需求强烈，供需缺口预计持续到2027年及以后，其次拜登签署的基础设施法案重整美国制造业，计划投资650亿美元用于建设可靠的输电线路和电力传输系统，行业需求可持续性较强。重点关注在美国和墨西哥布局变压器工厂的企业，如金盘科技，作为我国少数向美国出口干式变压器的企业，在美国深耕十几年，在美国的品牌知名度与一线品牌如ABB、西门子在同一水平，2023H1美国新签约订单增速达150%，具备明显的先发优势。

## APPENDIX 1

### Summary

1. Transformers are the basic equipment in the power generation, transmission, and distribution system, and it's a rigid requirement and widely used in the construction of the power system.

2. United States mainly relies on imports and has a high degree of external dependence. The compound growth rate of the market space in the next five years is 5%.

(1) The United States is the world's largest importer of transformers, accounting for 16.6% of the global transformers trade in 2021. The transformers' trade deficit reached 14.4 billion US dollars, making it increasingly dependent on foreign countries.

(2) The market size of the power transformers from 2023 to 2028 has a CAGR of 7.5%, while the distribution transformers market has a CAGR of 3.75% during the same period.

3. In recent years, there has been an imbalance between supply and demand in the market, and the gap has been continuously expanding.

(1) Demand side: The IRA policy accelerates energy transition, and the construction of smart grids increases the demand for stock replacement.

(2) Supply side: Trade barriers combined with slow capacity expansion speed reduce supply elasticity.

4. Transformer shortage is expected to continue in the next five years, the industry welcomes  $\beta$  opportunity.

Investment suggestion: Focus on enterprises with high export elasticity of transformers, such as Jinpan Technology and Huaming Power Equipment.

Risk reminder: 1. US power grid investment and policies are less than expected; 2. Further exacerbation of trade frictions; 3. Foreign exchange risk.

## 附录 APPENDIX

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**优于大市**，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。

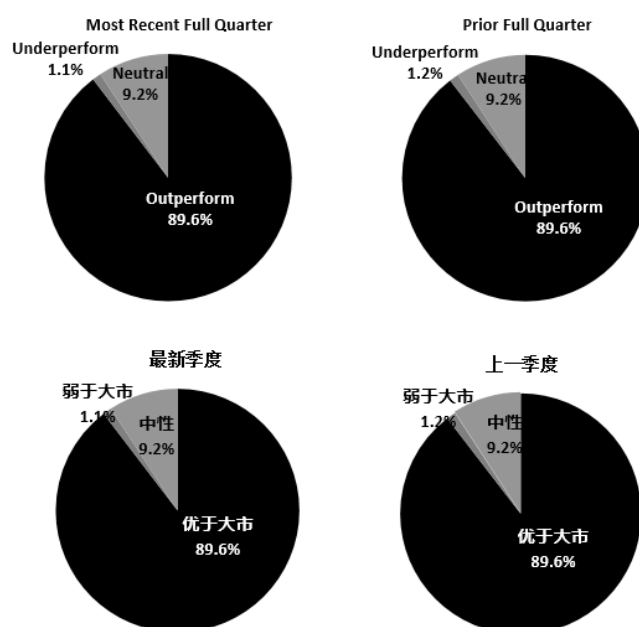
**弱于大市**，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

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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**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.**

#### 截至 2023 年 6 月 30 日海通国际股票研究评级分布

	优于大市	中性 (持有)	弱于大市
海通国际股票研究覆盖率	89.6%	9.2%	1.1%
投资银行客户*	4.7%	5.6%	10.0%

\*在每个评级类别里投资银行客户所占的百分比。

上述分布中的买入，中性和卖出分别对应我们当前优于大市，中性和落后大市评级。

只有根据 FINRA/NYSE 的评级分布规则，我们才将中性评级划入持有这一类别。请注意在上表中不包含非评级的股票。

#### 此前的评级系统定义（直至 2020 年 6 月 30 日）：

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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IB clients*	4.7%	5.6%	10.0%

\*Percentage of investment banking clients in each rating category.

BUY, Neutral, and SELL in the above distribution correspond to our current ratings of Outperform, Neutral, and Underperform.

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**SELL:** 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.

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