

The ambitions of China's BYD stretch well beyond electric vehicles

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中国比亚迪的野心远远超出了电动汽车领域

The company's global plans range from solar modules and electric buses, trucks and trains to complex transport systems. But is it trying to do too much?

该公司的全球计划涵盖太阳能组件、电动巴士、卡车和火车以及复杂的运输系统。但它是否试图做得太多？

Upon arriving at the palatial entrance of BYD's hexagon-shaped headquarters in Pingshan, on the outskirts of Shenzhen, a giant screen presents visitors with a question of biblical proportions: "Where is Noah's ark that saved mankind?"

当到达位于深圳郊区坪山的比亚迪六边形总部的富丽堂皇的入口时，一块巨大的屏幕向参观者提出了一个圣经般的问题：“拯救人类的诺亚方舟在哪里？”

The answer, given the query's prominence at the doorway to a company whose rapid expansion is sending shivers through the boardrooms of automakers worldwide, appears to be: "right here".

考虑到这个问题在这家公司门口的突出地位，而这家公司

司的快速扩张令全球汽车制造商的董事会感到不寒而栗，答案似乎是：“就在这里”。

BYD and its 58-year-old founder Wang Chuanfu have reason to feel confident. The Chinese company now rivals Elon Musk's Tesla for the world's most dominant EV company. In China, by far the biggest auto market, BYD's low-cost pure battery and plug-in hybrids account for about one-third of all new electric vehicles sold.

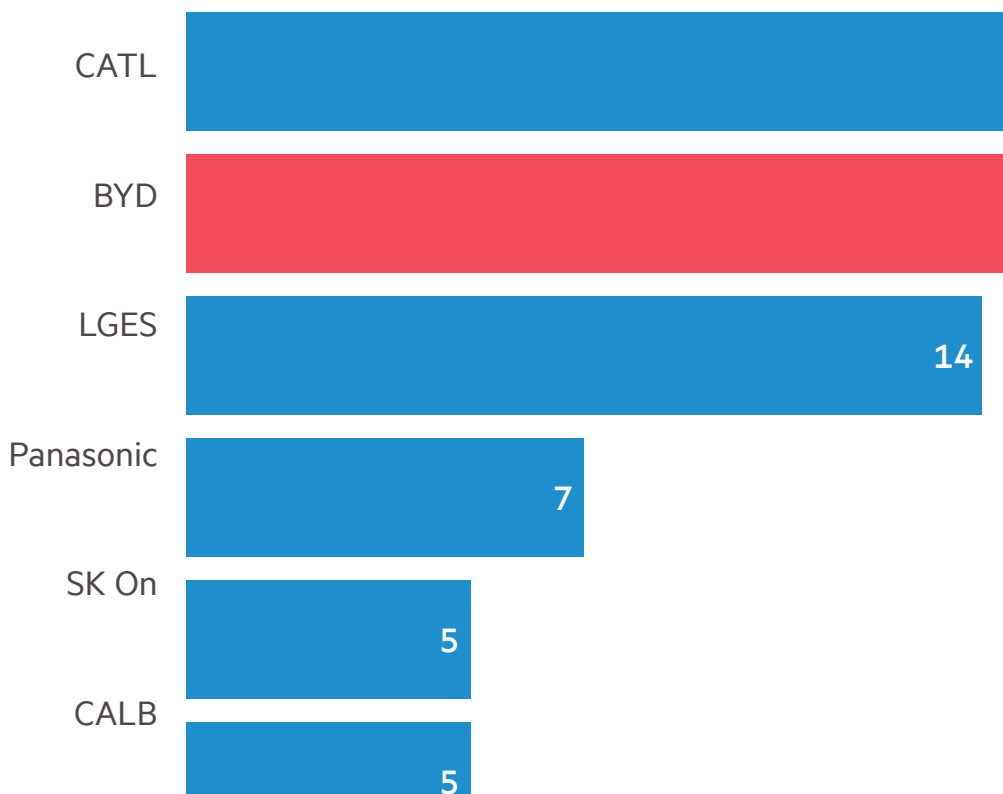
比亚迪及其58岁创始人王传福有理由充满信心。这家中国公司现在可以与埃隆·马斯克(Elon Musk)的特斯拉(Tesla)竞争，成为全球最具主导地位的电动汽车公司。在迄今为止最大的汽车市场中国，比亚迪的低成本纯电池和插电式混合动力汽车约占所有新电动汽车销量的三分之一。

But the ambition of BYD goes far beyond cars — and China's borders. As the world tries to ditch fossil fuels, the company has positioned itself as a manufacturing powerhouse across a suite of green technologies.

但比亚迪的野心远远超出了汽车和中国的边界。当世界试图抛弃化石燃料时，该公司将自己定位为一系列绿色技术的制造强国。

BYD has become the world's second-biggest battery producer

Global share by capacity, Jan-Sep 2023 (%)



This ranges from its flagship lithium batteries, solar modules, electric-powered buses, trucks and trains to complex artificial intelligence and software used to control and connect transport and power systems.

其范围从其旗舰锂电池、太阳能模块、电动巴士、卡车和火车到用于控制和连接运输和电力系统的复杂人工智能和软件。

“I don't think people realise BYD's greater ambition is to be an energy ecosystem company,” says Bridget McCarthy, the head of China operations at Snow Bull

Capital, a Shenzhen-based hedge fund invested in BYD.

“我认为人们没有意识到比亚迪更大的野心是成为一家能源生态系统公司，”投资比亚迪的深圳对冲基金雪牛资本(Snow Bull Capital)中国业务主管布里奇特·麦卡锡(Bridget McCarthy)表示。

Selling passenger vehicles is just the first step, she adds. “They’re trying to say: ‘we’ll electrify your fleets of commercial vehicles, we’ll give you the energy storage, we’ll give you solar so you can generate electricity’.”

她补充道，销售乘用车只是第一步。“他们想说的是：‘我们将为您的商用车队提供电气化，我们将为您提供能源存储，我们将为您提供太阳能，以便您可以发电’。”

BYD was founded in 1995 by Wang, a former metallurgy professor, and initially focused on small lithium batteries used in early cell phones, supplying Motorola and Nokia. It then pivoted to cleantech in the early 2000s, producing bigger batteries as well as electric cars and buses.

比亚迪由前冶金教授王建于1995年，最初专注于早期手机中使用的小型锂电池，为摩托罗拉和诺基亚供货。然后在2000年代初转向清洁技术，生产更大的电池以及电动汽车和公共汽车。

Wang's strategic bet — that demand for green technologies would boom — has aligned neatly with Beijing's efforts to eradicate pollution, cut dependence on foreign oil and, more recently under President Xi Jinping, decarbonise the world's second-biggest economy. The company last year had revenue of Rmb602.3bn (\$83.2bn) from sales of just over 3mn vehicles, marking a fivefold increase from Rmb121.8bn in 2018.

王的战略赌注——对绿色技术的需求将会蓬勃发展——与北京消除污染、减少对外国石油的依赖以及最近在习近平主席领导下为世界第二大经济体脱碳的努力完全一致。该公司去年销售超过 300 万辆汽车，实现收入 6,023 亿元人民币（合 832 亿美元），比 2018 年的 1,218 亿元人民币增长了五倍。

BYD's rapid growth has been an important part of China's rise as the world's cleantech superpower. Chinese companies dominate the supply chains for resources, manufacturing and technologies crucial for electric vehicles and batteries as well as wind and solar energy.

比亚迪的快速增长是中国崛起为世界清洁技术超级大国的重要组成部分。中国企业主导着对电动汽车、电池以及风能和太阳能至关重要的资源、制造和技术的供应链。

The company's vertically integrated structure, economies of scale and ballooning research and development plans mark a stark challenge to companies in the west, analysts say.

分析师表示，该公司的垂直一体化结构、规模经济和不断膨胀的研发计划对西方公司构成了严峻的挑战。

Its rise, however, comes at a time of international scrutiny of Chinese industry, as well as security concerns over China's technological and supply chain supremacy. These concerns, as well as intensifying competition, raise questions over the company's next phase.

然而，它的崛起正值国际社会对中国工业进行审查，以及对中国技术和供应链霸权的安全担忧之际。这些担忧以及日益激烈的竞争给公司的下一阶段带来了疑问。

Still, Wang, who is one of China's richest men, in March told analysts that BYD, which declined interview requests, sees opportunities across south-east Asia, South America, the Middle East and Europe and confirmed the company's plan to expand its manufacturing operations in those markets. BYD has vowed to "go global".

尽管如此，中国首富之一的王健林今年三月对分析师表示，比亚迪看到了东南亚、南美、中东和欧洲的机遇，并确认了该公司扩大制造业务的计划，但拒绝了采访请求。在这些市场中。比亚迪誓言要“走向全球”。

“Our country has established a new industrial development advantage, in the process of promoting peak carbon and carbon neutrality,” Wang said in a speech in Beijing in March, adding that China has “built up a complete industrial chain with great resilience and competitiveness”.

王毅今年3月在北京发表讲话时表示，“我国在推动碳达峰和碳中和的过程中，建立了新的产业发展优势”，并补充说，中国“已经建成了具有强大韧性和竞争力的完整产业链”。

But “becoming a multinational on a very compressed timeline” will not be simple, says Ilaria Mazzocco, an expert on Chinese industry with the Center for Strategic and International Studies, a US think-tank. Transforming a handful of bus factories internationally into a global network of EV factories will be a “big challenge”, she adds. “It is a rapid expansion for a company that’s been very ambitious.”

但美国智库战略与国际研究中心的中国工业专家伊拉里亚·马佐科表示，“在非常紧迫的时间内成为跨国公司”并不简单。她补充道，将国际上的少数客车工厂转变为全球电动汽车工厂网络将是一个“巨大的挑战”。“对于一家雄心勃勃的公司来说，这是一次快速扩张。”

A century ago, Henry Ford reshaped how people travelled by bringing automobiles to the mass market. BYD’s Wang is following in his footsteps.

一个世纪前，亨利·福特将汽车推向大众市场，重塑了人们的出行方式。比亚迪的王正在追随他的脚步。

Like Ford — who amassed an empire of iron and coal mines and steel foundries to control his supply chain — Wang is “democratising” electric vehicles and the batteries they rely on via a vertically integrated business model and a relentless focus on technology, says Bill Russo, the former head of Chrysler’s China business. “The main bottleneck to commercialisation of the electric vehicle was its price relative to its predecessor,” he adds. “Affordability wins.”

比尔·拉索（Bill Russo）表示，与福特一样——福特建立了一个由铁矿、煤矿和钢铁铸造厂组成的帝国来控制自己的供应链——王正通过垂直整合的商业模式和对技术的不懈关注，使电动汽车及其所依赖的电池“民主化”。前克莱斯勒中国业务负责人。“电动汽车商业化的主要瓶颈是其相对于其前身的价格，”他补充道。“负担得起的人获胜。”





The BYD Seal at a motor show. In China, the company's low-cost pure battery and plug-in hybrids account for about one-third of all new electric vehicles sold © Martial Trezzini/EPA-

EFE

汽车展上的比亚迪印章。在中国，该公司的低成本纯电池和插电式混合动力汽车约占所有新电动汽车销量的三分之一 © Martial

Trezzini/EPA-EFE

The company's advantage in batteries is not the result of one breakthrough, but the accumulation of a series of competitive strengths it has built up over two decades in access to resources, sustained investment in R&D and manufacturing economies of scale.

公司在电池方面的优势并不是一次突破的结果，而是二十多年来在资源获取、持续研发投入和制造规模经济等方面积累的一系列竞争优势的积累。

BYD owns stakes in mines in at least six countries across three continents, guaranteeing long-term access to lithium, the material crucial to its batteries. The Chinese group produces its own computer chips, has its own construction subsidiary for building new factories and develops its own software for increasingly sophisticated vehicles and energy systems.

比亚迪在三大洲至少六个国家拥有矿山股份，保证了其电池关键材料锂的长期供应。这家中国集团生产自己的计算机芯片，拥有自己的建筑子公司来建造新工厂，并为日益复杂的车辆和能源系统开发自己的软件。

The company is able to recruit from the millions of graduates in science, technology, engineering and mathematics who pour out of Chinese universities each year — China had 3.6mn Stem graduates in 2020, compared with 820,000 in the US, according to Georgetown University data.

该公司能够从每年从中国大学涌出的数百万科学、技术、工程和数学毕业生中招聘人才——根据乔治城大学的数据，2020年中国有360万名Stem毕业生，而美国为82万名。

BYD employs close to 100,000 people in research and development based at 11 different locations in China. On average, its researchers apply for 19 new patents every working day.

比亚迪在中国11个不同地点拥有近10万名研发人员。其研究人员平均每个工作日申请19项新专利。

Alongside compatriot CATL, the world's biggest EV battery maker, BYD's batteries boast a massive cost advantage over those produced by Japanese, South Korean and European rivals. The cost of building new factories for the two Chinese companies is around \$50mn to \$60mn per gigawatt hour compared to \$100mn/GWh for its competitors, according to Bernstein research.

与全球最大的电动汽车电池制造商宁德时代相比，比亚迪的电池比日本、韩国和欧洲竞争对手生产的电池拥有

巨大的成本优势。根据伯恩斯坦研究公司的数据，这两家中国公司建造新工厂的成本约为每吉瓦时 5000 万至 6000 万美元，而其竞争对手的成本为每吉瓦时 1 亿美元。

<\$60mn <6000万美元Cost (per GWh in capacity) of building new factories for BYD and CATL

比亚迪、宁德时代新建工厂成本（每GWh产能）

\$100mn/GWh 1亿美元/吉瓦时Cost faced by the competitors to the Chinese

中国竞争对手面临的成本

Analysts say that one of Wang's most important achievements came in 2022 when BYD cracked "cell-to-body", or "cell-to-chassis", technology. This fuses together the battery cell with a vehicle body and can be applied not only to cars, but to buses, trucks and other commercial vehicles.

分析人士表示，王健林最重要的成就之一是在 2022 年比亚迪破解了“细胞到车身”或“细胞到底盘”技术。它将电池单元与车身熔合在一起，不仅可以应用于汽车，还可以应用于公共汽车、卡车和其他商用车辆。

The breakthrough has helped further reduce costs and weight while increasing rigidity and crash safety, says Christoph Weber, who leads the China business for Swiss engineering software group AutoForm. It is emblematic, he adds, of how "BYD has been

systematically acquiring competence in all major supply chain disciplines”.

瑞士工程软件集团 AutoForm 中国业务负责人 Christoph Weber 表示，这一突破有助于进一步降低成本和重量，同时提高刚性和碰撞安全性。他补充道，这象征着“比亚迪如何系统地获得所有主要供应链领域的的能力”。

The next step for BYD is pulling off what only a few Chinese companies have succeeded at: shifting from exports to expanding manufacturing outside China.

比亚迪的下一步是实现只有少数中国公司取得成功的目标：从出口转向扩大中国境外的制造。

BYD has been quietly expanding its footprint beyond China's borders for some time. Wang regularly meets with heads of state, for example, and his top lieutenant Stella Li set up the company's Los Angeles offices more than a decade ago.

一段时间以来，比亚迪一直在悄悄地将其足迹扩展到中国境外。例如，王定期会见国家元首，他的高级副手斯特拉·李（Stella Li）十多年前就设立了该公司的洛杉矶办事处。

The company established bus factories in Lancaster, southern California, in 2013, and in Komárom, north-west Hungary in 2017. In Brazil, the company has over the past 10 years established manufacturing and assembly facilities for electric bus chassis, solar

photovoltaic modules, as well as batteries.

该公司于2013年在南加州兰开斯特建立了客车工厂，并于2017年在匈牙利西北部科马罗姆建立了客车工厂。过去10年来，该公司在巴西建立了电动客车底盘、太阳能光伏组件、以及电池。

These factories have helped BYD corner the market for electric buses. More importantly, analysts say, the company has been gaining expertise in working with foreign utilities, city and national-level governments as well as labour representatives and local communities.

这些工厂帮助比亚迪垄断了电动公交车市场。分析师表示，更重要的是，该公司在与外国公用事业公司、城市和国家级政府以及劳工代表和当地社区合作方面不断积累专业知识。

This experience will now be tested with new EV factories announced in Thailand, Indonesia, Brazil and Hungary. BYD has been talking to officials in Mexico for a new factory south of the American border, and in Chile, the company is planning to build a \$290mn factory to produce lithium cathodes, one of the core building blocks of a battery.

这种经验现在将在泰国、印度尼西亚、巴西和匈牙利宣布的新电动汽车工厂进行测试。比亚迪一直在与墨西哥官员就在美国边境以南建立一座新工厂进行谈判，该公

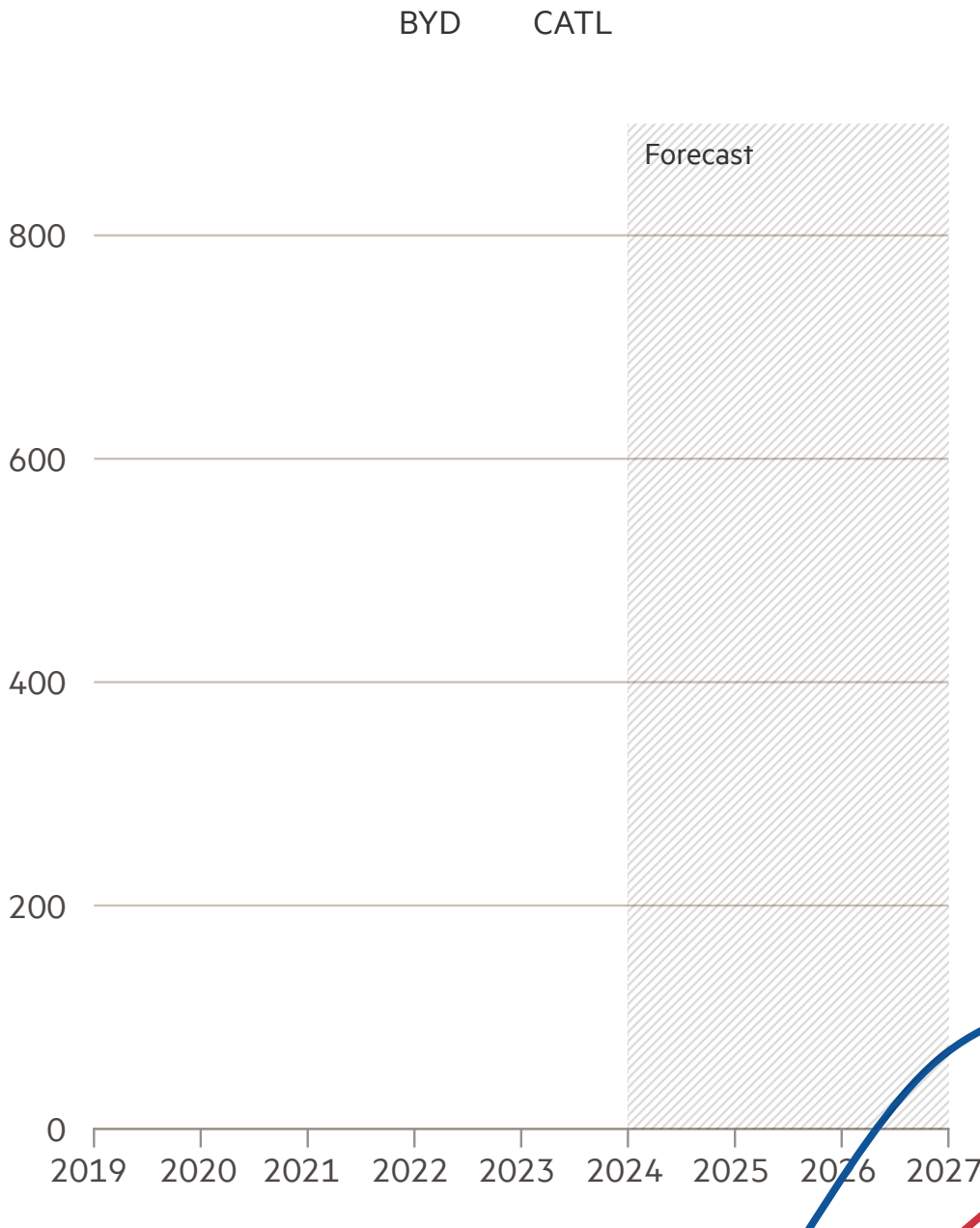
司正计划在智利建造一座耗资 2.9 亿美元的工厂，生产锂阴极，这是电池的核心组成部分之一。

Analysts expect that as BYD's EV business expands overseas the solar and battery units will be close behind. Its total battery factory capacity jumped to about 381GWh last year, from 245GWh in 2022. The company's market share rose to 15.8 per cent, propelling BYD past South Korea's LG conglomerate to become the world's second biggest battery producer.

分析师预计，随着比亚迪电动汽车业务向海外扩张，太阳能和电池部门将紧随其后。其电池工厂总产能从2022年的245GWh跃升至去年的约381GWh。该公司的市场份额升至15.8%，推动比亚迪超越韩国LG集团，成为全球第二大电池生产商。

BYD and CATL race ahead in production

Total battery capacity (GWh)



FINANCIAL TIMES

Sources: company data, Bernstein analysis and estimates • based on current and already announced future projects

BYD is well positioned to take a “very significant market share” as transportation systems are electrified and more batteries are needed to provide back-up to

intermittent renewable electricity generation or cope with demand from AI and data centres, says Neil Beveridge, a Hong Kong-based analyst who leads Bernstein's energy research.

香港人尼尔·贝弗里奇 (Neil Beveridge) 表示，随着交通系统电气化，需要更多电池来为间歇性可再生能源发电提供备份或应对人工智能和数据中心的需求，比亚迪处于有利位置，可以占据“非常重要的市场份额”。领导伯恩斯坦能源研究的分析师。

But as the company grows, Beveridge points out that rival manufacturers may not want to buy batteries from a company whose products they also have to compete with. “That is one of the big questions around the business model,” he adds.

但贝弗里奇指出，随着公司的发展，竞争对手的制造商可能不想从其产品也必须与之竞争的公司购买电池。“这是围绕商业模式的大问题之一，”他补充道。

While the company does not disclose the market share of its energy storage business, which includes large battery packs for grid-level storage, it says it has provided batteries to more than 100 cities around the world. Goldman Sachs has forecast that China alone will require about 520GW of energy storage by 2030, a 70-fold increase from battery storage levels in 2021, with as much as 410GW coming from batteries.

虽然该公司没有透露其储能业务的市场份额，其中包括

用于电网级存储的大型电池组，但该公司表示已向全球100多个城市提供电池。高盛预测，到2030年，仅中国就需要约520GW的储能容量，比2021年的电池储能水平增长70倍，其中电池容量将高达410GW。





BYD's batteries boast a massive cost advantage over those produced by Japanese, South Korean and European rivals © Qilai Shen/Bloomberg

比亚迪的电池比日本、韩国和欧洲竞争对手生产的电池拥有巨大的成本优势 © Qilai Shen/
彭博社

According to SNE Research, a Seoul-based analysis group, BYD has more than 10 per cent of the global energy storage system market. And in January, BYD won a contract to supply batteries for what Spanish group Greenergy claims will be the world's biggest energy storage project in Chile's Atacama Desert.

总部位于首尔的分析机构 SNE Research 的数据显示，比亚迪在全球储能系统市场的份额超过 10%。今年一月，比亚迪赢得了一份为西班牙 Greenergy 集团提供电池的合同，该项目将是智利阿塔卡马沙漠世界上最大的储能项目。

Privately, the company has told investors it is winning as much as a 30 per cent share of the utility-scale US market, according to one Shenzhen-based analyst who asked not to be named.

一位不愿透露姓名的深圳分析师表示，该公司私下告诉投资者，它正在赢得美国公用事业规模市场高达 30% 的份额。

After decades of flying under the radar, Wang has decided to “go global” at a time of immense scrutiny on perceived economic and security risks posed by China and Chinese companies.

几十年来一直低调行事，在中国和中国企业面临的经济和安全风险受到严格审查之际，王毅决定“走向全球”。

In April, Janet Yellen, the US Treasury secretary, visited Beijing and warned the Chinese government over state support for clean-technology industries and said that the “viability of American and other foreign firms” would be called into question if global markets were flooded with “artificially cheap Chinese products”. Days later, the European Commission published an updated report, 711 pages long, on state-induced distortions in the Chinese economy.

4月，美国财政部长珍妮特·耶伦 (Janet Yellen) 访问北京，就国家对清洁技术产业的支持向中国政府发出警告，并表示，如果全球市场充斥着清洁技术产业，“美国和其他外国公司的生存能力”将受到质疑。“人为廉价的中国产品”。几天后，欧盟委员会发布了一份长达 711 页的更新报告，内容涉及国家引发的中国经济扭曲。

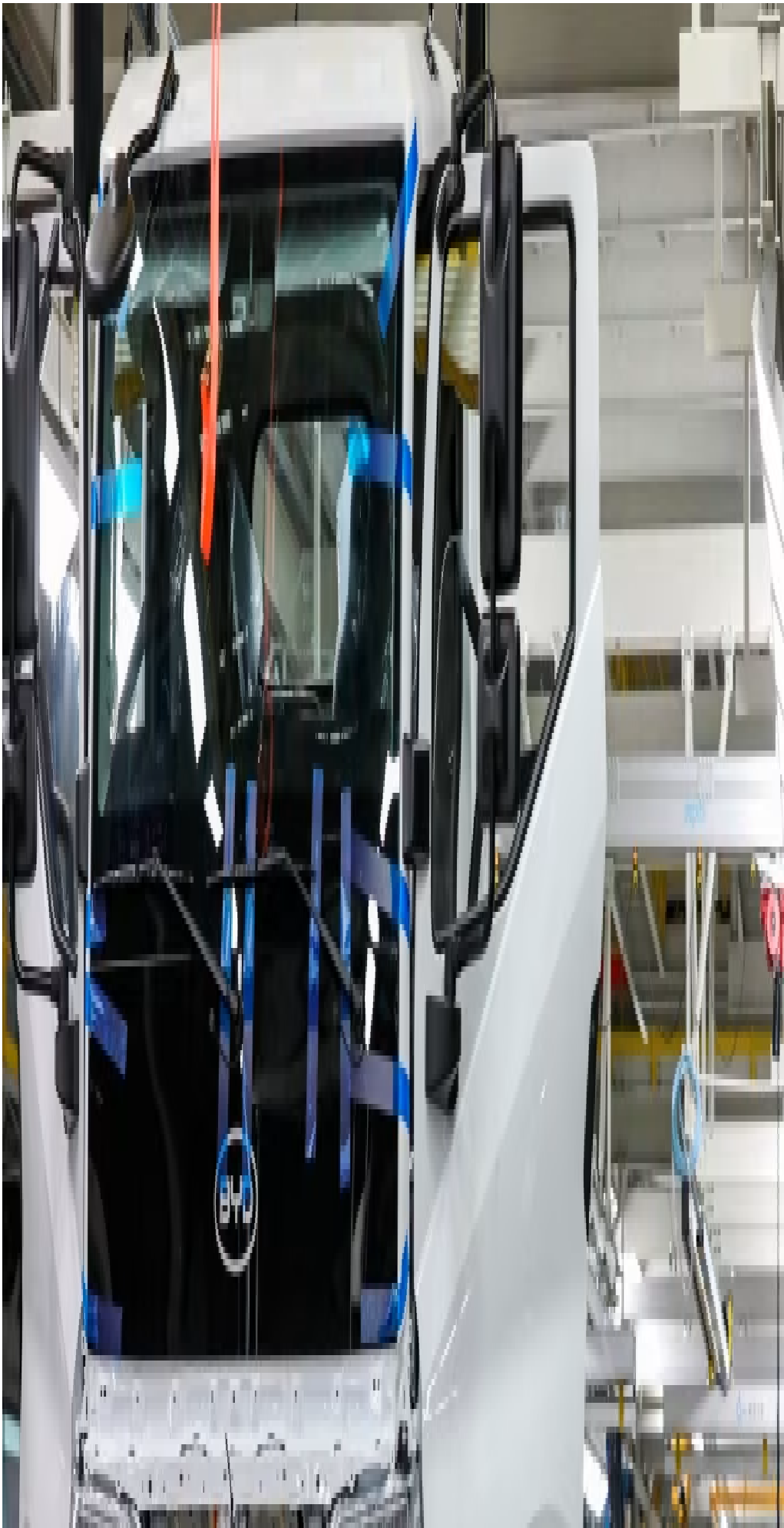
The trade complaint, broadly, is that China follows a nefarious playbook whereby it has attracted foreign investment, required joint ventures and acquired key technologies, granted massive subsidies for domestic suppliers while also slowly erecting barriers or closing the market for foreign groups, and then dumped excess supply on foreign markets.

贸易投诉大体上是指中国遵循一种邪恶的策略，吸引外国投资，要求建立合资企业并获取关键技术，为国内供

应商提供大量补贴，同时慢慢地为外国集团设置壁垒或关闭市场，然后倾销国外市场供应过剩。

According to research from the Kiel Institute for the World Economy, a German think-tank, BYD has been a chief beneficiary of EV-related subsidies with direct government subsidies to the company of up to €3.4bn from 2018 to 2022.

德国智库基尔世界经济研究所的研究显示，比亚迪一直是电动汽车相关补贴的主要受益者，2018年至2022年，政府对该公司的直接补贴高达34亿欧元。





BYD's battery technology can be applied not only to cars, but also to buses, trucks and other commercial vehicles © Costfoto/NurPhoto/Getty Images

比亚迪的电池技术不仅可以应用于汽车，还可以应用于公共汽车、卡车和其他商用车 ©
Costfoto/NurPhoto/Getty Images

Across the Chinese green-tech industries, the research points to other channels of government support including preferential access to critical raw materials, forced technology transfers, strategic use of public procurement as well as the favourable treatment of domestic companies by local officials.

在中国的绿色科技产业中，研究指出了政府支持的其他渠道，包括优先获取关键原材料、强制技术转让、战略性使用公共采购以及地方官员对国内公司的优惠待遇。

Mazzocco, the CSIS analyst who has studied Chinese industrial subsidies, points out that while BYD has received “a lot of state support”, western officials will need to try to “disentangle” what is unfair state support from “good business strategy”.

研究中国工业补贴的CSIS分析师马佐科指出，虽然比亚迪获得了“大量的国家支持”，但西方官员需要努力将不公平的国家支持与“良好的商业战略”“区分开来”。

Experts say that BYD, along with other Chinese cleantech companies, will have to respond to increasing western focus on the risks of forced labour and other human rights or environmental abuses in supply chains. This includes the Uyghur Forced Labor Prevention Act, which in effect prohibits imports to

the US of products made in whole or in part in Xinjiang, and the forthcoming EU global forced labour import ban.

专家表示，比亚迪和其他中国清洁技术公司将不得不对西方国家对供应链中强迫劳动和其他人权或环境破坏风险的日益关注。这包括《维吾尔强迫劳动预防法》，该法实际上禁止向美国进口全部或部分新疆制造的产品，以及即将出台的欧盟全球强迫劳动进口禁令。

Jim Wormington, a researcher with Human Rights Watch who has analysed carmaker supply chains in China, says BYD's ambition to sell to foreign markets will require it to meet the requirements of these laws. "That requires BYD to establish robust policies and systems to trace its supply chains," he adds.

人权观察组织研究员吉姆·沃明顿（Jim Wormington）分析了中国汽车制造商的供应链，他表示，比亚迪向海外市场销售的雄心将要求其满足这些法律的要求。“这需要比亚迪建立强有力的政策和系统来追踪其供应链，”他补充道。

Wang also faces challenges at home. The Chinese car market has become hyper-competitive with a slowing economy, a price war and new, low-cost cars launched by tech conglomerates Huawei and Xiaomi. After a bumper year in 2022, the company's 2023 earnings missed forecasts, rising 81 per cent to Rmb30bn (\$4.16bn).

王在国内也面临着挑战。随着经济放缓、价格战以及科技集团华为和小米推出新款低成本汽车，中国汽车市场的竞争变得异常激烈。在经历了 2022 年的丰收之后，该公司 2023 年的盈利未达到预期，增长 81% 至 300 亿元人民币（合 41.6 亿美元）。

Some key projects are also in trouble. The future of the company's monorail system SkyRail, which BYD said would be cheaper and faster to build than traditional subways, has faltered after Beijing moved to eradicate unsustainable infrastructure spending.

一些重点项目也陷入困境。比亚迪表示，该公司的单轨系统 SkyRail 的建造成本比传统地铁更便宜、速度更快，但在北京采取行动消除不可持续的基础设施支出后，该系统的前景已经岌岌可危。

Despite auto market pressures, China's slowing economic growth and western trade protectionism there are no signs that BYD is rethinking its plans for global expansion.

尽管面临汽车市场压力、中国经济增长放缓以及西方贸易保护主义，但没有迹象表明比亚迪正在重新考虑其全球扩张计划。

Management at BYD, which already exports cars to more than 70 countries, has told investors that they believe they can increase overseas sales from nearly 250,000 cars in 2023 to between 2mn-3mn cars in the

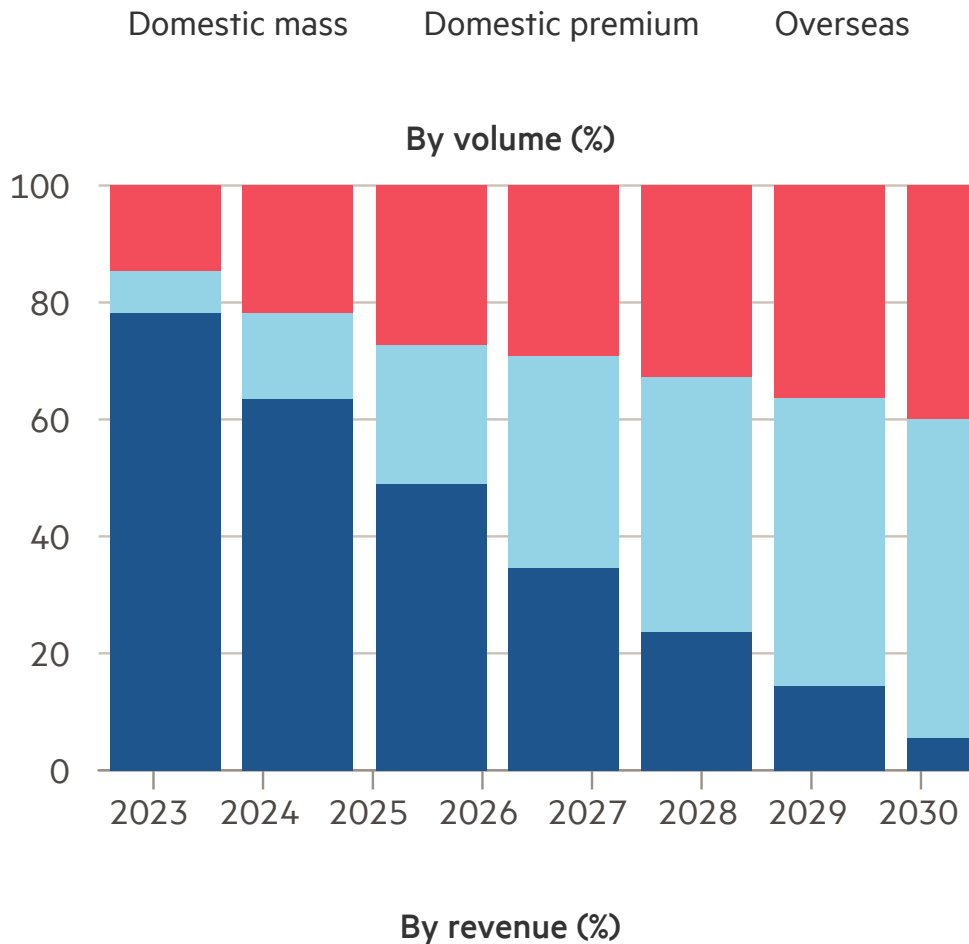
coming years, reflecting around 10 per cent of the market, excluding Europe and the US.

比亚迪已经向70多个国家出口汽车，其管理层告诉投资者，他们相信他们可以将海外销量从2023年的近25万辆汽车增加到未来几年的200万至300万辆汽车，占市场份额的10%左右，不包括欧洲和美国。

“They are strategically farsighted,” says Tim Buckley, director of Climate Energy Finance, an Australian think-tank. “They don’t have the myopic short-termism of western capitalism.”

“他们具有战略远见，”澳大利亚智库气候能源金融总监蒂姆·巴克利 (Tim Buckley) 表示。“他们没有西方资本主义那种短视的短期主义。”

BYD is expected to sell more premium EVs and more outside of China



Despite the protectionist trade landscape under US President Joe Biden, BYD is also finding new ways to operate in the American market.

尽管美国总统拜登领导下的贸易保护主义抬头，比亚迪也在寻找新的方式在美国市场运营。

One of its battery subsidiaries has signed a deal with BorgWarner, the US-listed supplier to GM, Ford and Stellantis. BYD has also started to rebrand its US bus unit under a new name, Ride, to distance the business

from its Chinese owners as it starts to bid for more public bus contracts in the US.

其电池子公司之一已与博格华纳签署了一项协议，博格华纳是通用汽车、福特和 Stellantis 的美国上市供应商。随着比亚迪开始在美国竞标更多公共巴士合同，比亚迪还开始将其美国巴士部门重新命名为新名称“Ride”，以远离其中国所有者。

Analysts expect the company to increasingly target city or regional-level infrastructure projects that include fleets of BYD cars, buses and other commercial vehicles, but also its energy storage and solar power systems.

分析师预计，该公司将越来越多地瞄准城市或地区级基础设施项目，其中包括比亚迪汽车、公共汽车和其他商用车车队，以及其储能和太阳能系统。

Duo Fu, who leads battery markets research at Rystad Energy, says Wang's core strategy is to capture “not just the supply chain” but “the whole value chain”. BYD's “grand” ambition, he adds, is to integrate its products within a city's “entire” transportation and data management systems.

Rystad Energy 电池市场研究负责人 Duo Fu 表示，Wang 的核心战略是“不仅是供应链”，而是“整个价值链”。他补充道，比亚迪的“宏伟”目标是将其产品集成到城市“整个”交通和数据管理系统中。

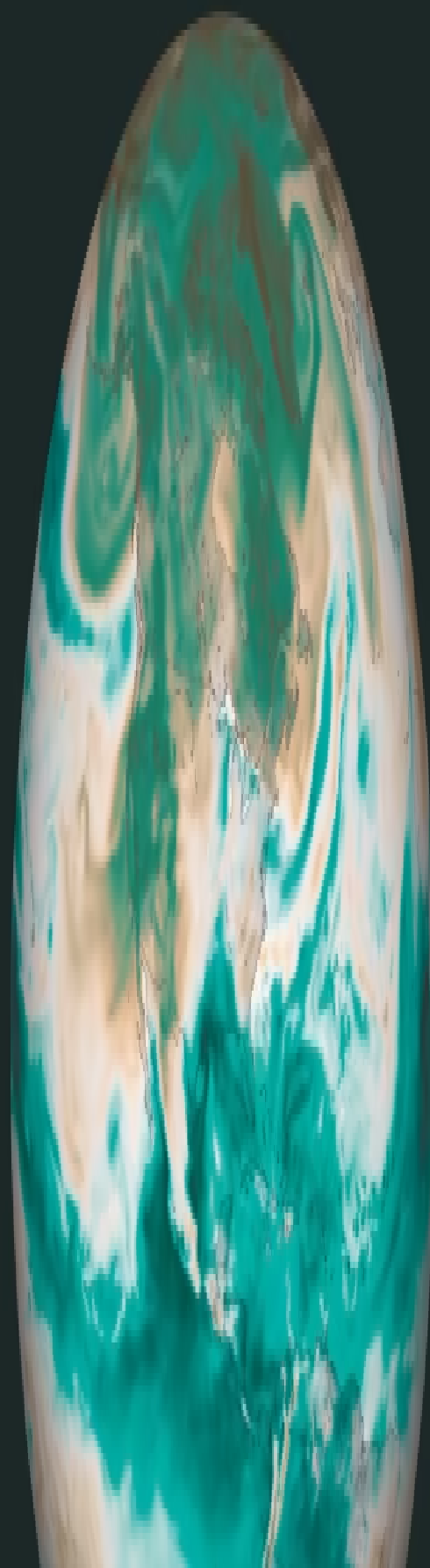
Selling high-tech energy products and transportation services around the battery is how the company was “shaped from the beginning”, says McCarthy, the Shenzhen-based investor.

深圳投资者麦卡锡表示，围绕电池销售高科技能源产品和运输服务是该公司“从一开始就形成的”。

“Wang Chuanfu has always been a battery guy, it was a battery company, it still is a battery company at its core,” she says. “EVs were the natural transition — they obviously saw a huge opportunity — but to this day the number one advantage they have is their battery technology.”

“王传福一直是一个电池人，它是一家电池公司，它的核心仍然是一家电池公司，”她说。“电动汽车是自然的过渡——他们显然看到了巨大的机会——但迄今为止，他们拥有的首要优势是电池技术。”

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