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Research Report on Green Development Index (GDI) for Automobile Industry 2021

汽车行业绿色发展指数研究报告

汽车工业节能与绿色发展评价中心

Energy-saving and Green-development Assessment Center for Automobile Industrial

GDI

CNTARC 中汽中心 | 数据

《2021年汽车行业绿色发展指数（GDI）研究报告》

Research Report on the Green Development Index (GDI) for Automotive Industry 2021

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1.1 背景
Background

1.1.1 环境信息披露发展历史
Developmenth istory of environmental information disclosure

环境信息公开制度是治理理念的具体体现。自20世纪90年代以来“治理”概念日益成为新公共管理的核心概念，标志着政府管理含义的变化，是一种新的管理社会的方式。治理是各种公共的或私人的个人和机构管理其共同事务的诸多方式的总和，其基础不是控制，而是协调，强调了主体的多元化，参与管理的主体已不只是政府部门，而是包括各种非政府非营利组织、政府间和非政府间组织、各种社会团体甚至私人部门在内的多元主体的分层治理，是一个上下互动的管理过程，它主要通过合作、协商、伙伴关系、确立认同和共同的目标等方式实施对公共事务的管理。治理理念的兴起，带动了环境管理制度的改革创新，其中环境信息公开制度就是其中重要组成部分。

The environmental information disclosure system is the concrete embodiment of the concept of governance. Since the 1990s, the concept of “governance” has increasingly become a core concept of new public management, marking a change in the meaning of government management. It is a new way of social management. Governance is the sum of many ways in which various public or private individuals and institutions manage their common affairs. It is based not on control but on coordination. It emphasizes the diversification of subjects. It is a kind of hierarchical governance of multiple subjects, including government departments and also various non-governmental non-profit organizations, intergovernmental and non-governmental organizations, social groups and even private sectors. It is a management process with interactions from top to bottom. Public affairs are managed mainly through cooperation, consultation, partnership, identification and common goals. The rise of the concept of governance has led to the reform and innovation of the environmental management system, in which the environmental information disclosure system is an important part.

环境信息公开制度有利于公众积极参与环境保护和可持续发展，国际上确立和发展环境信息公开制度的标志是《奥胡斯公约》，主张保护公民获取信息，参与决策和诉诸法律的权利，以及保证现代人和后代人生活在一个足够健康和舒适环境中的权利。发展至今环境信息公开已成为一种有效的环境管理制度。

The environmental information disclosure system is conducive to the public to actively participate in environmental protection and sustainable development. The Aarhus Convention marks the establishment and development of the environmental information disclosure system globally. It advocates the protection of citizens’ rights to access information, participate in decision-making, and bring to court as well as their right to ensure that modern and future generations live in a sufficiently healthy and comfortable environment. Environmental information disclosure has become an effective environmental management system so far.

1.1.2

国外环境信息披露发展情况

Development of environmental information disclosure in foreign countries

自1990年起，美国、英国、澳大利亚、日本等国家开始相继重视企业对于环境信息的披露。美国是最早进行环境披露研究的国家之一，其信息披露规范体系也是最完备的，同时其自身实践也证明了政府对环境的监管可以也采用道德协议的方法，而且与行政命令相比，道德协议所取得的环境成效，不仅速度快而且成本低。英国对于企业环境信息披露的研究虽比较美国而言起步晚些，是世界上第一个正式建立企业社会环境信息披露数据库的国家。环境信息披露在金融领域已逐步变为强制性要求，除污染问题外，随着全球应对气候变化的加快推进，发达国家将逐步建立气候等信息披露制度。如欧盟发布《可持续发展融资行动计划》，提出加强可持续性信息披露和会计准则制定。英国Green Finance Strategy Repoet指出预期所有上市公司和大型企业2022年前按气候相关财务信息披露工作组TCFD建议作出披露，成立横跨英国监管机构的联合工作组，探索强制汇报的和合适性，澳洲证监会也提出在公司年报中披露气候信息。

Since 1990, the United States, the United Kingdom, Australia, Japan and some other countries began to attach importance to the disclosure of environmental information by enterprises one after another. The United States is one of the first countries which conducted research on environmental information disclosure. It owns the most complete information disclosure criteria and system. Meanwhile, its practices prove that the government can also regulate the environment by morality agreements. The environmental regulation results achieved by morality agreements is not only faster but also low-cost compared with administrative orders. Though the research on corporate environmental information disclosure in the United Kingdom started later than that in the United States, the United Kingdom is the first country in the world which formally established a corporate social and environmental information disclosure database. Environmental information disclosure has gradually become a mandatory requirement in the financial field. In addition to pollution issues, developed countries will gradually establish climate and other information disclosure systems with the acceleration of global response to climate change. For example, the EU released its Action Plan: Financing Sustainable Development, according to which sustainable information disclosure would be strengthened and accounting standards would be formulated. The UK Green Finance Strategy Report pointed out that all listed companies and large enterprises were expected to make disclosures by 2022 as recommended by the Task Force on Climate-related Financial Disclosure (TCFD) and that a joint working group, which stretches across the regulatory authorities in the UK, would be established to explore the appropriateness of mandatory reporting. Australian Securities and Investment Commission also required companies to disclose climate information in their annual reports.

1.1.3

国内环境信息披露发展情况

Development of environmental information disclosure in China

近年来，我国加大重视环境信息披露工作，自2003年国家环保局(现生态环境部)发布《关于企业环境信息公开的公告》(我国第一个关于企业环境信息披露的政策)以来，我国陆续在环境污染防控等方面提出环境信息披露要求，并重点对上市提出信息披露要求。当前我国环境信息披露从自愿性逐渐到强制性过渡。

In recent years, China has attached greater importance to environmental information disclosure. Since the State Environmental Protection Administration (currently, the Ministry of Ecology and Environment) issued the Announcement on Corporate Environmental Information Disclosure (the first policy on corporate environmental information disclosure in China) in 2003, China has successively released environmental information disclosure requirements in terms of environmental pollution prevention and control, which mainly targeted listed companies. Currently, the environmental information disclosure in China is gradually transitioning from voluntary disclosure to mandatory disclosure.

金融领域持续强化环境信息披露要求：港交所发布的有关检讨《环境、社会及管治报告指引》及相关《上市规则》条文的咨询文件对环境及气候信息披露明确了详细披露要求。中国人民银行下发了《金融机构环境信息披露指南(试行)》探索开展环境信息披露试点工作；中国证监会修订发布《公开发行证券的公司信息披露内容与格式准则第2号—年度报告的内容与格式》中，新增环境和社会责任章节，进一步强调了上市公司的环境信息披露，同时鼓励企业披露减少碳排放所采取的措施及效果。

In the financial sector, environmental information disclosure requirements were intensified continuously: the HKEx issued a consultation paper on the review of related provisions of the Environmental, Social and Governance Reporting Guidelines and the Listing Rules, which specified detailed disclosure requirements for environmental and climate information disclosure. The People's Bank of China issued the Guidelines on the Environmental Information Disclosure of Financial Institutions (for trial implementation) to explore pilot environmental information disclosure work; China Securities Regulatory Commission (CSRC) issued the revision of No. 2 Standard on the Content and Format of Information Disclosure by Companies Issuing Securities Publicly - Content and Format of Annual Reports, in which a new section on environmental and social responsibilities was provided to further emphasize environmental information disclosure of listed companies and encourage enterprises to disclose measures taken to reduce carbon emissions and their results.

加快建立健全环境信息披露披露管理制度：党的十九大报告中明确提出健全信息强制性披露制度，2021年生态环境部印发《环境信息依法披露制度改革方案》(以下简称《方案》)，指出环境信息依法披露是重要的企业环境管理制度，是生态文明制度体系的基础性内容，深化环境信息依法披露制度改革是推进生态环境治理体系和治理能力现代化的重要举措，同时发布生态环境部部令《企业环境信息依法披露管理办法》，对环境信息依法披露主体、披露内容和时限、披露管理、依法监督等基本内容和关键环节进行了规定，规范企业环境信息依法披露活动，强化生态环境保护主体责任。随着碳达峰碳中和“1+N”政策体系的加快发布，对于气候信息披露要求也逐步增加，推动健全企业、金融机构等碳排放报告和信息披露制度。工业和信息化部、人民银行、银保监会、证监会联合发布《关于加强产融合作推动工业绿色发展的指导意见》提出“到2025年，工业企业绿色信息披露机制更加健全”的目标；同时在《“十四五”工业绿色发展规划》中也提出“将环境信息强制性披露纳入绿色制造评价体系，鼓励绿色制造企业编制绿色低碳发展年度报告”。我国企业环境信息披露工作将全面展开。

The pace of establishing a sound environmental information disclosure management system has been accelerated: The report of the 19th National Congress of the CPC clearly pointed out that the mandatory information disclosure system would be improved. In 2021, the Ministry of Ecology and Environment issued the Scheme on the Reform of the System for Disclosing Environmental Information According to Law (hereinafter referred to as “the Scheme”), which pointed out that the system for disclosing environmental information according to law is an important corporate environmental management system, providing for fundamental contents of the ecological civilization system. Deepening the reform of the system for disclosing environmental information according to law is an important measure to push forward the modernization of the ecological and environmental governance system and governance capacity. At the same time, the Ministry of Ecology and Environment issued the Measures for the Administration of Enterprises’ Disclosure of Environmental Information According to Law, which provided for such basic contents and key links as subjects of environmental information disclosure, contents to be disclosed, time limit for disclosure, disclosure management, and supervision according to law and standardized enterprises’ environmental information disclosure activities and strengthened the responsibilities of entities responsible for ecological and environmental protection. With the accelerated release of the “1+N” policy system for peaking carbon dioxide emissions and carbon neutrality, the requirements for climate information disclosure have also been gradually increased, leading to the establishment of a sound carbon emission reporting and information disclosure system for enterprises and financial institutions. The Ministry of Industry and Information Technology, the People’s Bank of China, China Banking and Insurance Regulatory Commission and the China Securities Regulatory Commission jointly issued the Guidance on Strengthening the Industry-Finance Cooperation and Promoting Green Industrial Development, which set a goal to realize a sounder green information disclosure mechanism for industrial enterprises by 2025; at the same time, according to the Green Industrial Development Planning for 14th Five-Year Plan Period, mandatory environmental information disclosure will be incorporated into the green manufacturing evaluation system and green manufacturing enterprises will be encouraged to prepare annual reports on green and low-carbon development. Corporate environmental information disclosure work will be in full swing in China.

企业强化树立环境保护负责任形象：当前，多数企业已认识到加强环境保护和降低气候变化风险是企业发展的必要条件，企业利益是与社会利益相一致的。汽车行业中较多企业已将环境保护提升至企业发展战略，如宝马竭力打造更安全、绿色的产品，将对环境的影响降到最低；沃尔沃将“可持续”纳入企业宗旨；吉利将“造最安全、最环保、最节能等好车”作为企业使命；蔚来以向用户交付低碳、环保、安全、舒适的产品为使命。越来越多的汽车企业加大重视产品的环保属性，同时加大宣传强化自身环保形象的建立，通过企业官网、绿色发展报告、可持续发展报告等披露企业环境行为。

Enterprises made more efforts to build an image of being responsible enterprises in terms of environmental protection: currently, most enterprises have realized that strengthening environmental protection and reducing climate change risks are necessary for their development and that their corporate interests are aligned with social interests. Many companies in the automotive industry have upgraded environmental protection as their corporate development strategy. For example, BMW strives to manufacture safer and greener products and reduce the impact on the environment to the largest degree; Volvo has incorporated “sustainability” into its tenet; Geely has determined its mission as “to manufacture the safest, most environmentally friendly and energy efficient cars”; NIO has determined its mission as “to deliver low-carbon, environmentally friendly, safe and comfortable products to customers”. More and more automotive enterprises have paid more attention to the environmental protection attribute of their products. At the same time, they are making more efforts to publicize and strengthen their image of advocating environmental protection. They disclose their environmental protection behaviors through their official websites, green development reports and sustainable development reports and so on.

1.2 意义
Significance

绿色发展信息是在企业基本环境信息的基础上按照全生命周期理念，全面披露企业及产品碳足迹、绿色发展、保护生态、防治污染、履行环境责任的相关信息，是企业绿色低碳发展的工作总结和展示，对于政府、企业、消费者、投资者等利益相关者具有重大意义。

Green development information refers to the information regarding enterprises and products’ carbon footprint, green development, ecological protection, pollution prevention and control, and fulfillment of environmental responsibility that is comprehensively disclosed based on the basic environmental information of enterprises in accordance with full life cycle concepts. It is a summary and display of enterprises’ green and low-carbon development work, being of great significance to stakeholders, such as government, enterprises, consumers and investors.

政府部门 Government departments

全面掌握企业绿色发展水平，提高政府决策科学化、民主化、法治化水平，降低政府对企业环境监管成本。企业公开的环境信息受到公众和媒体的广泛关注和重视，社会舆论在一定程度上能够把环境污染监管的压力及时传导给各相关部门及企业，降低政府监管压力，是推进环境治理体系现代化的重要基础。

They comprehensively grasp the level of green development of enterprises, improve the level of scientific, democratic and law-based decisions of the government, and reduce the cost of the government's environmental supervision over enterprises. The environmental information disclosed by enterprises is widely concerned and valued by the public and media. Public opinion can, to a certain extent, transfer the pressure of environmental pollution supervision to all related departments and enterprises in time so as to reduce the government's supervision pressure. It is an important basis for promoting the modernization of the environmental governance system.

行业 The industry

支撑建立健全汽车行业绿色发展信息披露体系，将有利于引导汽车行业建立透明的绿色发展产业链，实现行业企业间的横向与纵向对比，形成企业自律、管理有效、社会监督、支撑有力的汽车行业绿色发展转型模式，推动汽车行业加快绿色高质量发展。

Supporting the establishment of a sound green development information disclosure system for the automotive industry will help guide the automotive industry establish a transparent green development industry chain, realize horizontal and vertical comparisons among enterprises in the industry, form a green development transformation mode in the automotive industry that is characterized by self-disciplined enterprises, effective management, social supervision and strong support, and promote the automotive industry to accelerate its green and high-quality development.

企业 Enterprises

对企业绿色低碳发展的工作总结和展示，展现企业绿色低碳发展形象，助力企业绿色发展的自我梳理、行业对标、自我提升，并应对政府及证券市场管理要求。披露环境信息可以推动从根本上将自身改造为负责任的企业，带动企业上下游产业链实现绿色低碳发展共同进步，降低供应链环保风险，支撑企业提升长期竞争力，并获得更多绿色低碳政策与绿色金融的支持。

The summary and display of enterprises' green and low-carbon development work reflect enterprises' image of green and low-carbon development, help enterprises comb through their green development, keep pace with the industry, realize self-improvement, and make response to the government and securities market's management requirements. Disclosure of environmental information can promote the fundamental transformation of itself into a responsible enterprise, drive the enterprise's upstream and downstream industrial chains to achieve common progress in green and low-carbon development, reduce environmental risks in the supply chain, support the enterprise to improve its long-term competitiveness, and obtain more support from green and low-carbon policies and green finance.

消费者 Consumers

了解企业绿色发展水平，增加对企业绿色发展的监督，践行绿色消费。生态文明建设不断推动绿色发展的新理念和新战略深入人心，消费者加大关注企业及产品的“绿色”属性，企业绿色发展信息公开将有利于帮助企业选择更绿色低碳的企业及产品。

After consumers have learned about enterprises' level of green development, they can further supervise enterprises' green development and put green consumption into practice. Due to ecological civilization construction, new green development concepts and strategies have enjoyed popular support. Consumers pay more attention to the "green" attributes of enterprises and their products. The disclosure of enterprises' green development information will help enterprises choose greener and low-carbon enterprises and products.

投资者 Investors

增加投资判断准确性，提升绿色融资效率，降低投资人的投资风险。绿色金融已成为我国社会全面绿色低碳转型的重要支撑，高质量的环境和气候信息披露，是金融机构做好环境压力测试和风险评估的基础，帮助投资者更准确地评估企业价值以及环境风险管控水平，发现投资机会，规避投资风险。

Investors can make more accurate investment judgments. Green financing efficiency can be higher. Investors' investment risks may be reduced. Green finance has already become an important factor supporting the comprehensive green and low-carbon transformation in China. High-quality environmental and climate information disclosure is the basis for financial institutions to do a good job in environmental pressure test and risk assessment, helping investors assess an enterprise's value and the level of environmental risk control more accurately, discover investment opportunities, and avoid investment risks.

汽车行业绿色发展指数(GDI)

Green Development Index (GDI) for Automotive Industry

02

汽车行业绿色发展指数(GDI)是对汽车行业企业绿色发展信息透明度和绿色发展水平的定量评估体系。

The Green Development Index (GDI) in the automotive industry is a system used to quantitatively assess the transparency of green development information and the green development level of enterprises in the automotive industry.

目标是通过建立我国统一的绿色发展信息披露通用标准,引导企业定期、规范、准确的公开绿色发展信息并对信息负责,支撑汽车行业绿色高质量发展。

Its objective is to support the green and high-quality development of the automotive industry by establishing a unified general standard for green development information disclosure in China and guiding enterprises to disclose green development information regularly, normatively and accurately and to be responsible for the information disclosed.

2.1 核算范围
Scope of calculation

汽车生产企业:本报告核算范围为2020年销量超过1万辆或受到社会广泛关注的企业,共48家汽车生产企业。

Automotive manufacturers: This report covers enterprises whose sales volume exceeded 10,000 vehicles in 2020 or enterprises which have received wide attention from the public. Totally, there are 48 automotive manufacturers.

汽车零部件企业:本报告核算范围为《中国汽车报》发布的2020中国汽车零部件企业百强榜单,以及受到广泛关注的动力蓄电池生产企业,共108家汽车零部件企业。

Automotive parts manufacturers: This report covers the automotive parts manufactures listed on the List of Top 100 Automotive Parts Manufactures in China in 2020 released by China Automotive News and the power battery manufacturers that have received widespread attention. Totally, there are 108 automotive parts manufacturers.

2.2 核算指标
Calculation indicators

核算指标由一级指标和二级指标构成，一级指标包括企业基本信息、发展战略、管理方针、新概念技术开发应用、优化生命周期设计、降低材料环境影响、减少材料用量、优化生产过程、优化分销系统、优化使用过程、优化回收处理共11项。

Calculation indicators are comprised of primary indicators and secondary indicators. There are 11 primary indicators, i.e. basic information of enterprises, development strategies, management guidelines, development and application of new-concept technologies, optimization of life cycle design, reduction of materials' environmental impact, reduction of material consumption, optimization of production process, optimization of distribution system, optimization of use process, and optimization of recycling and disposal.

企业基本信息
Basic information of enterprises

从企业的主要产品、运营范围、企业规模等几个方面对企业的基本情况进行说明。

Basic information in terms of main products, scope of operation and enterprise scale.

发展战略
Development strategies

围绕企业全产业链战略管理、碳中和等方面说明。

Enterprises' strategic management of the entire industrial chain and carbon neutrality.

管理方针
Management guidelines

在职业健康安全管理、环境管理、能源管理等体系和绿色供应链管理等方面的成果绩效。

Achievements and performance in occupational health and safety management, environmental management, energy management systems and green supply chain management are described.

新概念技术开发应用

Development and application of new-concept technologies

企业在开发符合社会需求的产品系统功能的新思路和实现需求的方法。

New ideas of enterprises in developing systematic functions of products that meet the needs of society and the ways to realize their demands are described.

优化生命周期设计

Optimization of life cycle design

企业产品生命周期碳排放管理情况。

Enterprises' carbon emission management details during the life cycle of products.

降低材料环境影响

Reduction of materials' environmental impact

企业在产品原材料的选择上,尽量选择低碳、绿色、环保、无毒无害或低毒低害材料。

Enterprises' use of low-carbon, green, environmentally-friendly, non-toxic and non-hazardous or low-toxic and low-harmful raw materials.

减少材料用量

Reduction of material consumption

企业在产品的开发设计方面,尽可能减少材料使用的数量,包括减少的重量和体积。

Decrease of the number of materials used in terms of development and design of products, including the decrease in weight and volume.

优化生产过程

Optimization of production process

企业通过优化生产技术,投入高效节能设备,加强生产管理等手段,减少能源资源投入和污染物排放。

Reduction of energy resource inputs and pollutant emissions by optimizing production technology, using energy-efficient equipment, and strengthening production management.

优化分销系统

Optimization of distribution system

企业在物流管理、产品包装材料及方式、销售运输方式、储存布局等方面优化分销系统的举措，以最有效的运输方式将产品运输到工厂、经销商及使用者。

Measures taken by enterprises to optimize the distribution system in terms of logistics management, product packaging materials and methods, sales and transportation methods, and storage layout so as to transport products to factories, distributors, and users in the most efficient transportation manners.

优化使用过程

Optimization of use process

企业生产的产品在行业中具有的优势，在满足用户需求的条件下，能够减少或尽量降低使用过程中对环境、使用者的影响。

Advantages of enterprises' products in the industry, by which the impact of the use process on the environment and users and can be reduced or minimized under the condition of meeting users' needs.

优化回收处理

Optimization of recycling and disposal

企业在初始生命周期结束后对产品的妥善处理或处置，再利用有价值的零部件、材料，确保废物正确处理，减少产品零部件或材料产生的环境影响。

Enterprises' proper treatment or disposal of products at the end of their initial life cycle, reuse of valuable parts and materials, guaranteed correct disposal of waste, and reduction of the impact of parts or materials of products on the environment.

表 1 汽车企业绿色发展指数核算指标及权重表

Table 1 Automotive Manufacturers' GDI Calculation Indicators and Weights

序号 Serial No.	一级指标 Primary Indicators	二级指标 Secondary Indicators	定性 Qualitative	定量 Quantitative	改善 Improvement
1	企业基本信息 Basic information of enterprises	主要产品信息 Main product information	1	0	0
2		企业运营范围 Scope of operation	0.5	0	0
3		企业规模 Enterprise scale	0	3	0
4	发展战略 Development strategies	企业全产业链战略管理 Strategic management of the entire industry chain	3	0	0
5		碳中和 Carbon neutrality	1.5	0	0
6	管理方针 Management guidelines	职业健康安全管理体系 Occupational health and safety management system	1	0	0
7		环境管理体系 Environmental management system	1	0	0
8		能源管理体系 Energy management system	1	0	0
9		绿色供应链管理 Green supply chain management	2.5	1	1.5
10	新概念技术开发应用 Development and application of new-concept technologies	电动化 Electrification	1	0	0
11	优化生命周期设计 Optimization of life cycle design	产品生命周期碳排放 Carbon emissions during the life cycle of products	1	1	0
12	降低材料环境影响 Reduction of materials' environmental impact	材料 VOC 管控 Material VOC control	0.5	1	0
13		材料有害物质管控 Materials' hazardous substance control	0.5	2	0
14		再生材料的使用 Use of renewable materials	0.5	0	0
15		可降解材料的使用 Use of biodegradable materials	0.5	0	0
16	减少材料用量 Reduction of material consumption	汽车轻量化 Automotive light-weighting	1	2	0
17	优化生产过程 Optimization of production process	能源消耗 Energy consumption	3	2	0
18		单车能耗 Energy consumption per vehicle	0	2	1.5
19		水资源消耗 Water consumption	0.5	1	0

序号 Serial No	一级指标 Primary Indicators	二级指标 Secondary Indicators	定性 Qualitative	定量 Quantitative	改善 Improvement
20	优化生产过程 Optimization of production process	单车水耗 Water consumption per vehicle	0	1	1.5
21		废水排放 Waste water discharge	0.5	4	1.5
22		企业温室气体排放 Greenhouse gas emissions	0.5	1	0
23		废气排放 Exhaust emissions	1.5	1	0
24		固废排放 Solid waste discharge	0.5	3	1.5
25		厂界环境噪声 Ambient noise at plant boundary	1	0	0
26		绿色工厂 Green factory	0.5	1	1.5
27	优化分销系统 Optimization of distribution system	绿色包装 Green packaging	1.5	0	0
28		绿色运输 Green transportation	1	1	1
29		绿色储存 Green storage	0.5	1	0
30		经销商管理 Distributor management	0.5	1	1.5
31	优化使用过程 Optimization of use process	产品能源消耗 Product energy consumption	0.5	2	1.5
32		车内 VOC In-vehicle VOC	0.5	1	0
33		车辆噪声 Vehicle noise	0.5	2	0
34		尾气排放 Exhaust emissions	0.5	1	0
35		绿色设计产品 Products of green design	1	0	1.5
36	优化回收处理 Optimization of recycling and disposal	动力蓄电池溯源 Power battery traceability	0.5	4	4
37		拆解信息公开 Dismantling information disclosure	0.5	0	0
38		可再利用率和可回收利用率 Recyclability rate andrecoverability rate	0.5	1	1.5
39		再制造零部件使用 Use of remanufactured parts	0.5	2	0

（注：0 表示不考核，定性、定量、改善对应数值表示该指标在不同考核项的最高得分）

(Note: 0 means that assessment is not required. Qualitative, quantitative and improvement values stand for the highest score of the indicator in different assessment items)

表 2 汽车零部件企业绿色发展指数核算指标及权重表

Table 2 Automotive Parts Manufacturers' GDI Calculation Indicators and Weights

序号 Serial No	一级指标 Primary Indicators	二级指标 Secondary Indicators	定性 Qualitative	定量 Quantitative	改善 Improvement
1	企业基本信息 Basic information of enterprises	主要产品信息 Main product information	1	0	0
2		企业运营范围 Scope of operation	0.5	0	0
3		企业规模 Enterprise scale	0	2	0
4	发展战略 Development strategies	企业全产业链战略管理 Strategic management of the entire industry chain	2	0	0
5		碳中和 Carbon neutrality	1.5	0	0
6	管理方针 Management guidelines	职业健康安全管理体系 Occupational health and safety management system	1	0	0
7		环境管理体系 Environmental management system	3	0	0
8		能源管理体系 Energy management system	1	0	0
9		绿色供应链管理 Green supply chain management	1	1	1.5
10	新概念技术开发应用 Development and application of new-concept technologies	新技术开发及应用 Development and application of new technologies	0.5	0	0
11	优化生命周期设计 Optimization of life cycle design	产品生命周期碳排放 Carbon emissions during the life cycle of products	1	1	0
12	降低材料环境影响 Reduction of materials' environmental impact	绿色物料 Green materials	0.5	1	0
13		再生材料的使用 Use of renewable materials	0.5	0	0
14		材料有害物质管控 Materials' hazardous substance control	0.5	1	0
15	减少材料用量 Reduction of material consumption	汽车轻量化 Automotive light-weighting	1	1	0
16	优化生产过程 Optimization of production process	能源消耗 Energy consumption	3	1	0
17		能源强度 Energy intensity	0	1	1.5
18		水资源消耗 Water consumption	1	1	0
19		用水强度 Water consumption intensity	0	1	1.5

序号 Serial No	一级指标 Primary Indicators	二级指标 Secondary Indicators	定性 Qualitative	定量 Quantitative	改善 Improvement
20	优化生产过程 Optimization of production process	废水排放 Waste water discharge	0.5	3	0
21		企业温室气体排放 Greenhouse gas emissions	0.5	1	0
22		废气排放 Exhaust emissions	1.5	1	0
23		固废排放 Solid waste discharge	0.5	1	1.5
24		厂界环境噪声 Ambient noise at plant boundary	1	0	0
25		绿色工厂 Green factory	0.5	1	1.5
26	优化分销系统 Optimization of distribution system	绿色包装 Green packaging	1.5	0	0
27		绿色运输 Green transportation	1	1	1
28		绿色储存 Green storage	0.5	1	0
29	优化使用过程 Optimization of use process	产品性能 Product performance	0.5	0	0
30		绿色设计产品 Products of green design	1	0	1
31	优化回收处理 Optimization of recycling and disposal	产品可回收利用率 Recoverability rate of products	0.5	1	1.5
32		产品回收管理 Product recycling management	0.5	0	0

（注：0 表示不考核，定性、定量、改善对应数值表示该指标在不同考核项的最高得分）

(Note: 0 means that assessment is not required. Qualitative, quantitative and improvement values stand for the highest score of the indicator in different assessment items)

2.3 核算方法
Calculation methods

汽车企业绿色发展指数依据《汽车企业绿色发展指数核算方法》实施，汽车零部件企业绿色发展指数依据《汽车零部件企业绿色发展指数核算方法》实施。

Automotive manufacturers' GDI is implemented according to the Automotive Manufacturers' GDI Calculation Methods. Automotive parts manufacturers' GDI is implemented according to the Automotive Parts Manufacturers' GDI Calculation Methods.

2.4 数据来源
Data source

企业绿色发展指数核算方法采用的资料数据来源仅限于企业官网(包含企业官方网站、销售网站、企业所属总公司官网)、工业企业绿色发展报告公示平台、上市企业报告公示平台等。

The data used for GDI calculation methods come only from the official websites of enterprises (including official websites, sales websites and official websites of head offices), the platform for releasing green development reports of industrial enterprises, and the platform for releasing reports of listed companies, etc.

2.5 核算流程
Calculation process

企业绿色发展指数核算方法采用的资料数据来源仅限于企业官网(包含企业官方网站、销售网站、企业所属总公司官网)、工业企业绿色发展报告公示平台、上市企业报告公示平台等。

The data used for GDI calculation methods come only from the official websites of enterprises (including official websites, sales websites and official websites of head offices), the platform for releasing green development reports of industrial enterprises, and the platform for releasing reports of listed companies, etc.

① 确定企业名单并发布通知
Determination of enterprises and release of a notice

按照核算方法要求的核算范围确定核算目标企业，并在汽车工业节能与绿色发展评价中心官网发布核算通知。

Target enterprises are determined according to the scope of calculation required by calculation methods. A notice of calculation is released at the official website of the Energy-saving and Green-development Assessment Center for Automobile Industrial.

2 收集资料
Collection of information

通过企业官网和工业企业绿色发展报告公示平台(网站地址:http://auto-eaca.com/plus/list.php?tid=23)、上市企业报告公示平台收集汽车及零部件企业公开的绿色发展信息。

The green development information disclosed by automotive and automotive parts manufacturers is collected through official websites of enterprises, the platform for releasing green development reports of industrial enterprises (URL: http://auto-eaca.com/plus/list.php?tid=23), and the platform for releasing reports of listed companies.

3 实施核算
Implementation of calculation

基于《汽车企业绿色发展指数核算方法》《汽车零部件企业绿色发展指数核算方法》要求,对收集的信息进行核算,并确定评级结果。

Based on the requirements of the Automotive Manufacturers' GDI Calculation Methods and Automotive Parts Manufacturers' GDI Calculation Methods, the information collected is calculated and the rating results are determined.

4 结果发布
Release of results

按照年度计划发布年度汽车及零部件企业绿色发展指数。

Annual green development indexes of automotive and automotive parts manufacturers are released according to the annual plan.

2.6 核算结果
Calculation results

按照二级指标符合判定要求的考核项得分占所有二级指标考核项总分数的比例进行核算结果计算,即按照以下“GDI指数”计算公式进行计算,总分为百分制,计算结果保留小数点后两位。

Calculation results are figured out according to the proportion of the scores of assessment items of secondary indicators that meet the judgment requirements in the total score of all assessment items of secondary indicators. That is to say, calculation is done as per the following GDI calculation formula. The hundred-mark system is adopted. Calculation results are accurate to two decimal places.

$$\text{GDI指数} = \frac{N_1+N_2+N_3}{M} \times 100$$

N_1

符合定性判定要求的考核项分数

The score of the assessment items that meet the qualitative judgment requirements

N_2

符合定量判定要求的考核项数量

assessment items that meet the quantitative judgment requirements

N_3

符合改善判定要求的考核项分数

The score of the assessment items that meet the improvement judgment requirements

M

所有二级指标的考核项总分数

The total score of the assessment items of all secondary indicators

2.7 评级结果
Rating results

基于企业绿色发展指数得分，依据下表对企业绿色发展信息披露情况进行评级。

Based on enterprises' GDI scores, enterprises are rated in terms of green development information disclosure according to the following table.

表 3 汽车行业绿色发展指数评级要求

Table 3 Automotive industry GDI rating requirements

得分区间 Score range	评价级别 Level rated
得分≥80 分 Score ≥ 80 points	A A A A A
80 分 > 得分≥70 分 80 points > score ≥ 70 points	A A A A
70 分 > 得分≥60 分 70 points > score ≥ 60 points	A A A
60 分 > 得分≥50 分 60 points > score ≥ 50 points	A A
50 分 > 得分≥40 分 50 points > score ≥ 40 points	A
得分 <40 Score＜40 points	无评级 No rated

03

2021年汽车行业绿色发展指数评级情况

Automotive Industry GDI Rating Results in 2021

3.1 汽车企业绿色发展指数评级情况

Automotive manufacturers' GDI rating results

2021年，汽车企业绿色发展信息披露整体呈现两极分化，仅8家获得评级，绝大部分汽车企业未获得评级。其中7家企业获得AAAAA级评级，分别为华晨宝马汽车有限公司、奇瑞控股集团有限公司、浙江吉利控股集团有限公司、沃尔沃汽车（亚太）投资控股有限公司、上海蔚来汽车有限公司、广汽本田汽车有限公司、长安福特汽车有限公司。长城汽车有限公司获得AA级评级。

In 2021, the green development information disclosure of automotive manufacturers polarized generally, with only 8 automotive manufacturers rated while the vast majority of automotive manufacturers not rated. Among them, seven automotive manufacturers, namely BMW Brilliance Automobile Ltd., Chery Holding Group Co., Ltd., Zhejiang Geely Holding Group Co., Ltd., Volvo Cars (Asia Pacific) Investment Holding Co., Ltd., NIO Co., Ltd., GAC Honda Automobile Co., Ltd., and Changan Ford Automobile Co., Ltd., were given an AAAAA level. Great Wall Motors Co., Ltd. was given an AA level.

表 4 2021年汽车企业绿色发展指数评级情况

Table 4 automotive manufacturers' GDI rating results in 2021

得分区间 Score range	评价级别 Level rated	2021 年汽车企业评级情况 Rating results of automotive manufacturers in 2021
得分≥80 分 Score ≥ 80 points	AAAAA	7/48
80 分 > 得分≥70 分 80 points > score ≥ 70 points	AAAA	0/48
70 分 > 得分≥60 分 70 points > score ≥ 60 points	AAA	0/48
60 分 > 得分≥50 分 60 points > score ≥ 50 points	AA	1/48
50 分 > 得分≥40 分 50 points > score ≥ 40 points	A	0/48
得分 <40 分 Score <40 points	无评级 Not rated	40/48

图 1 2021年汽车企业绿色发展指数AAAAA评级

Figure 1 AAAAA-level Automotive manufacturers in terms of GDI in 2021

表 5 2021年汽车企业绿色发展指数AAAAA评级

Table 5 AAAAA-level Automotive manufacturers in terms of GDI in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	华晨宝马汽车有限公司 BMW Brilliance Automobile Ltd.	AAAAA
2	奇瑞控股集团有限公司 Chery Holding Group Co., Ltd.	AAAAA
3	浙江吉利控股集团有限公司 Zhejiang Geely Holding Group Co., Ltd.	AAAAA
4	沃尔沃汽车(亚太)投资控股有限公司 Volvo Cars (Asia Pacific) Investment Holding Co., Ltd.	AAAAA
5	广汽本田汽车有限公司 GAC Honda Automobile Co., Ltd.	AAAAA
6	上海蔚来汽车有限公司 NIO Co., Ltd.	AAAAA
7	长安福特汽车有限公司 Changan Ford Automobile Co., Ltd.	AAAAA

3.2 汽车零部件企业绿色发展指数评级情况

Automotive parts manufactures' GDI rating results

2021年，汽车零部件企业总体绿色发展信息披露水平不如汽车生产企业。经核算分析，共有9家企业获得绿色发展信息披露评级，其中敏实集团有限公司和浦林成山(山东)轮胎公司获得AAA级评级，福耀玻璃工业集团股份有限公司、宁德时代新能源科技股份有限公司和欣旺达电子股份有限公司获得AA级评级，另有贵州轮胎股份有限公司、潍柴控股集团有限公司、广西玉柴机器集团有限公司、惠州亿纬锂能股份有限公司4家零部件企业获得A级评级。汽车零部件企业GDI得分情况如表6-表13所示。

automotive parts manufacturers is not as good as that of automotive manufacturers. After calculation and analysis, totally 9 enterprises were rated in terms of green development information disclosure. Among them, MINTH Group Limited and Prinx Chengshan (Shandong) Tire Company Ltd. were given an AAA level. Fuyao Glass Industry Group Co., Ltd., Contemporary Amperex Technology Co., Ltd. (CATL) and Sunwoda Electronic Co., Ltd. were given an AA level. In addition, 4 automotive parts manufacturers, namely Guizhou Tire Co., Ltd., Weichai Group Holding Limited, Guangxi Yuchai Machinery Group Company and EVE Energy Co., Ltd. were given an A level. The GDI scores of automotive parts manufacturers are shown in Table 6 - Table 13.

表 6 2021年汽车零部件企业绿色发展指数评级情况

Table 6 Automotive parts manufacturers' GDI rating results in 2021

得分区间 Score range	评价级别 Level rated	2021 年汽车企业评级情况 Rating results of automotive manufacturers in 2021
得分≥80 分 Score ≥ 80 points	AAAAA	0/108
80 分 > 得分≥70 分 80 points > score ≥ 70 points	AAAA	0/108
70 分 > 得分≥60 分 70 points > score ≥ 60 points	AAA	2/108
60 分 > 得分≥50 分 60 points > score ≥ 50 points	AA	3/108
50 分 > 得分≥40 分 50 points > score ≥ 40 points	A	4/108
得分 <40 分 Score <40 points	无评级 Not rated	99/108

No.1

敏实集团
MINTH Group Limi

No.2

浦林成山
Prinx Chengshan (Shandong) Tire Company Ltd.

No.3

福耀玻璃
Fuyao Glass Industry Group Co., Ltd.

No.4

宁德时代
Contemporary Amperex Technology Co., Ltd.

No.5

欣旺达
Sunwoda Electronic Co., Ltd.

No.6

贵州轮胎
Guizhou Tire Co., Ltd.

No.7

潍柴控股
Weichai Group Holding Limited

No.8

广西玉柴
Guangxi Yuchai Machinery Group Company

No.9

亿纬锂能
EVE Energy Co., Ltd.

图 2 2021年汽车零部件企业绿色发展指数评级结果
Figure 2 Automotive parts manufacturers' GDI rating results in 2021

表 7 2021年汽车零部件企业绿色发展指数评级结果

Table 7 Automotive parts manufacturers' GDI rating results in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	敏实集团有限公司 MINTH Group Limited	AAA
2	浦林成山（山东）轮胎公司 Prinx Chengshan (Shandong) Tire Company Ltd.	AAA
3	福耀玻璃工业集团股份有限公司 Fuyao Glass Industry Group Co., Ltd.	AA
4	宁德时代新能源科技股份有限公司 Contemporary Amperex Technology Co., Ltd.	AA
5	欣旺达电子股份有限公司 Sunwoda Electronic Co., Ltd.	AA
6	贵州轮胎股份有限公司 Guizhou Tire Co., Ltd.	A
7	潍柴控股集团有限公司 Weichai Group Holding Limited	A
8	广西玉柴机器集团有限公司 Guangxi Yuchai Machinery Group Company	A
9	惠州亿纬锂能股份有限公司 EVE Energy Co., Ltd.	A

表 8 2021年动力系统零部件企业绿色发展信息披露优秀企业

Table 8 Representative power system manufacturers in terms of green development information disclosure in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	潍柴控股集团有限公司 Weichai Group Holding Limited	A
2	广西玉柴机器集团有限公司 Guangxi Yuchai Machinery Group Company	A
3	郑州煤矿机械集团股份有限公司 Zhengzhou Coal Mining Machinery Group Co., Ltd.	——
4	昆明云内动力股份有限公司 Kunming Yunnei Power Co., Ltd.	——
5	中山大洋电机股份有限公司 Zhongshan Broad-Ocean Motor Co., Ltd.	——

表 9 2021年新能源零部件企业绿色发展信息披露代表性企业

Table 9 Representative new energy manufacturers in terms of green development information disclosure in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	宁德时代新能源科技股份有限公司 Contemporary Amperex Technology Co., Ltd.	AA
2	欣旺达电子股份有限公司 Sunwoda Electronic Co., Ltd.	AA
3	惠州亿纬锂能股份有限公司 EVE Energy Co., Ltd.	A
4	合肥国轩高科动力能源有限公司 Hefei Gotion High-tech Power Energy Co., Ltd.	——
5	天津力神电池股份有限公司 Tianjin Lishen Battery Joint-stock Co., Ltd.	——

表 10 2021年综合类零部件企业绿色发展信息披露代表性企业

Table 10 Representative automotive parts manufacturers under the comprehensive category in terms of green development information disclosure in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	敏实集团有限公司 MINTH Group Limited	AAA
2	华域汽车系统股份有限公司 Huayu Automotive Systems Company Limited	——
3	飞龙汽车部件股份有限公司 Feilong Auto Components Co., Ltd.	——
4	万向钱潮股份有限公司 Wanxiang Qianchao Co., Ltd.	——
5	长春一汽富维汽车零部件股份有限公司 Changchun FAWAY Automobile Components Co., Ltd.	——

表 11 2021年轮胎类零部件企业绿色发展信息披露代表性企业

Table 11 Representative automotive parts manufacturers under the tire category in terms of green development information disclosure in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	浦林成山(山东)轮胎公司 Prinx Chengshan (Shandong) Tire Company Ltd.	AAA

2	贵州轮胎股份有限公司 Guizhou Tire Co., Ltd.	A
3	三角轮胎股份有限公司 Triangle Tire Co., Ltd.	——
4	山东玲珑轮胎股份有限公司 Shandong Linglong Tire Co., Ltd.	——
5	赛轮集团股份有限公司 Sailun Group Co., Ltd.	——

表 12 2021年电子类零部件企业绿色发展信息披露代表性企业

Table 12 Representative automotive parts manufacturers under the electronic category in terms of green development information disclosure in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	汽车德昌电机控股有限公司 Auto Johnson Electric Holding Co., Ltd.	——
2	上海保隆汽车科技股份有限公司 Shanghai Baolong Automotive Corporation	——
3	浙江亚太机电股份有限公司 Zhejiang Asia-Pacific Mechanical & Electronic Co., Ltd.	——
4	深圳市航盛电子股份有限公司 Shenzhen Hangsheng Electronics Corp., Ltd.	——
5	惠州市德赛西威汽车电子股份有限公司 Huizhou Desay SV Automotive Co., Ltd.	——

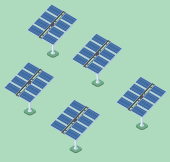
表 13 2021年其他类零部件企业绿色发展信息披露代表性企业

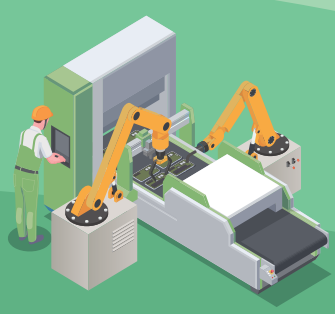
Table 13 Representative automotive parts manufacturers under other categories in terms of green development information disclosure in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	福耀玻璃工业集团股份有限公司 Fuyao Glass Industry Group Co., Ltd.	AA
2	许昌远东传动轴股份有限公司 Xuchang Yuandong Drive Shaft Co., Ltd.	——
3	天润工业技术股份有限公司 Tianrun Industry Technology Co., Ltd.	——
4	江南模塑科技股份有限公司 Jiangnan Mould & Plastic Technology Co., Ltd.	——
5	浙江今飞凯达轮毂股份有限公司 Zhejiang Jinfei Kaida Wheel Co., Ltd.	——

汽车企业信息公开水平分析

Analysis of the Information Disclosure Level of Automotive Manufacturers





04

依据《汽车企业绿色发展指数核算方法》对共计48家汽车企业进行绿色发展情况进行核算，基于核算结果进行研究分析。

According to the automotive manufacturers' GDI Calculation Methods, 48 automotive manufacturers' GDI scores were calculated. Subsequently, research and analysis were conducted based on the calculation results.

总体来看，2021年汽车企业信息披露水平仍然不高，且两级分化严重。其中，上市企业的信息披露情况普遍高于非上市企业。不同系别间，欧系（德国）、美系和自主品牌企业的绿色发展信息披露情况较好。不同指标维度方面，企业绿色发展信息中定性指标的披露程度较高，定量和改善类指标披露程度较低，尤其是改善类指标，得分率仅为定性类指标的50%。具体指标方面，各细分指标的披露程度差异较大，如主要产品信息、企业运营范围、管理方针等企业基础信息披露程度较高；废气排放、绿色工厂、厂界环境噪声、水资源消耗等生产制造类指标次之；产品生命周期碳排放、零部件再制造等产品环保类指标，以及包装、储存、运输等产品物流类指标披露程度较低。

In general, automotive manufacturers' information disclosure level was still not high in 2021 and it polarized seriously. The information disclosure level of listed companies was generally higher than that of unlisted companies. From the perspective of brands, European (German)-brand, American-brand and Chinese-brand automotive manufactures performed well in terms of green development information disclosure. From the perspective of indicator dimensions, the disclosure degree of qualitative indicators in enterprises' green development information was higher while that of quantitative and improvement indicators was lower. Especially, the score rate of improvement indicators was only 50% of that of qualitative indicators. From the perspective of specific indicators, the disclosure degree of different segmented indicators varied greatly. For example, the disclosure degree of basic information of enterprises, such as main product information, scope of operation, and management guidelines, was high, followed by the disclosure degree of production and manufacturing indicators, such as exhaust emission, green factory, industrial enterprises noise at plant boundary, and water consumption; the disclosure degree of products' environmental protection indicators (such as carbon emissions during the life cycle of products and automotive parts remanufacturing) and product logistics indicators (such as packaging, storage and transportation) was low.

4.1 行业整体水平
Overall GDI level of the industry

依据《汽车企业绿色发展指数核算方法》对48家汽车企业的GDI指数进行核算，汽车行业的GDI指数计算方法如下公式所示。

The GDI of 48 automotive manufacturers was calculated in accordance with the automotive manufacturers' GDI Calculation Methods. The GDI in the automotive industry was calculated by using the following formula:

$$\text{汽车行业GDI指数} = \frac{\Sigma \text{企业当年销量} \times \text{企业当年指数}}{\text{所有企业当年总销量}}$$

根据核算，2021年汽车行业GDI指数为35.02。其中，其中GDI指数得分排名前10的企业总销量约占全部核算企业销量的26.8%，排名前20的企业总销量约占全部核算企业销量的68.5%。通过企业销量与得分比较分析，虽然销量规模大小与指数得分高低没有绝对的正相关关系，但绿色发展指数较高的企业大部分集中在销量排名靠前的企业中。

According to calculation, the automotive industry's GDI was 35.02 in 2021. The total sales volume of top 10 enterprises in terms of GDI score accounts for about 26.8% of the sales volume of all enterprises calculated. The total sales volume of top 20 enterprises accounts for about 68.5% of the sales volume of all enterprises calculated. Through the comparative analysis of enterprises' sales volume and score, it is found that though there is no absolute positive correlation between the size of sales volume and the GDI score, most of the enterprises with a high GDI score are top ranking enterprises in terms of sales volume.

2021年汽车行业指数GDI指数略低于2020年。原因在于2021年GDI指数依据新修订的《汽车企业绿色发展指数核算方法》进行核算，与2020年相比，核算指标体系更加科学和完善，要求披露的指标项增多；此外部分2020年发布绿色发展报告的企业在2021年未发布，如广汽丰田、一汽丰田、长安汽车等。

The GDI of the automotive industry in 2021 is slightly lower than that in 2020. The reason is that the GDI in 2021 was figured out according to the newly revised automotive manufacturers' GDI Calculation Methods. The calculation indicator system in 2021 is more scientific and perfect and more indicator items are required compared with 2020; furthermore, some enterprises which released a green development report in 2020, such as Guangqi Toyota, FAW Toyota, Changan Automobile, failed to release a green development report in 2021.

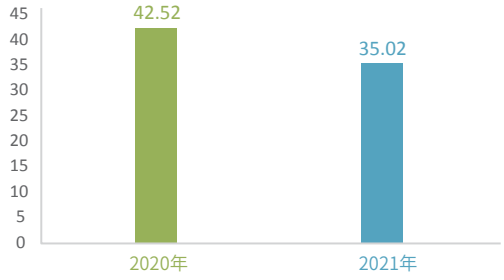


图 3 2020年和2021年GDI指数得分对比情况
Figure 3 Comparison of GDI scores in 2020 and 2021

4.2 企业层面分析

Analysis from the perspective of enterprises

4.2.1

汽车企业GDI指数得分分布

Distribution of GDI scores of automotive manufacturers

大多数汽车企业的绿色发展信息披露工作还处于起步阶段，仅小部分企业具备常态化主动公开保障机制。

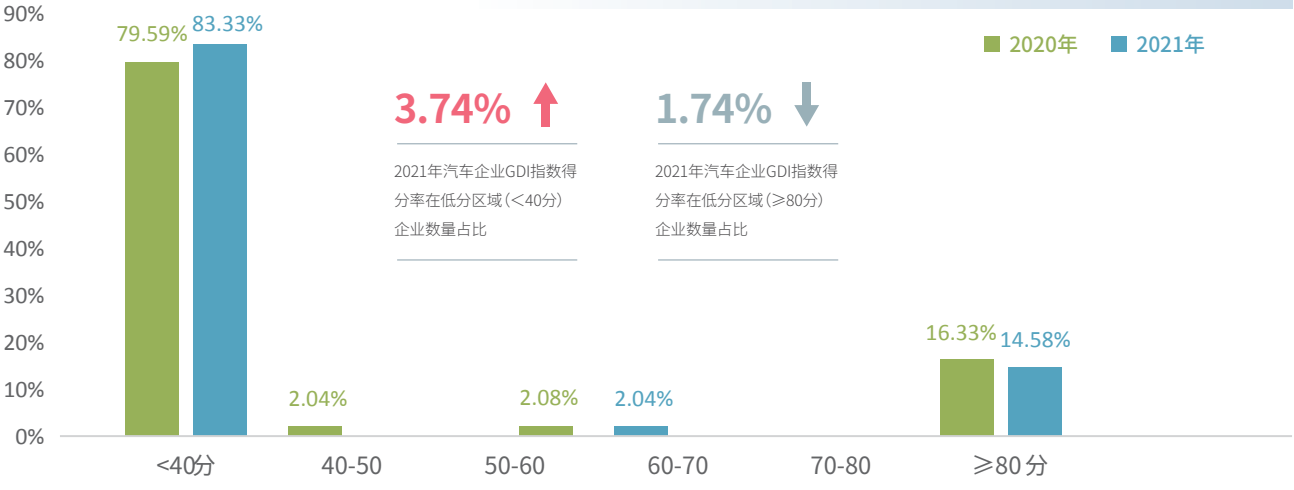
Most of automotive manufacturers are still in the initial stage of green development information disclosure. Only a small number of them have a regular positive disclosure guarantee mechanism.

从图中可以看出，2021年汽车企业GDI指数得分分布呈现两级分化的现象，低分区域企业比重仍较大，说明大多数汽车企业在绿色发展信息披露方面仍然处于起步阶段。相比2020年汽车企业GDI指数得分率，2021年汽车企业GDI指数得分率在低分区域（<40分）的企业数量占比有所升高，比重升高3.74%；2021年汽车企业GDI指数得分率在高分区域（≥80分）的企业数量占比略有降低，比重降低约1.74%。

From the figure, it can be seen that the distribution of GDI scores of automotive manufacturers in 2021 polarized. A large number of automotive manufacturers got a low score, indicating that most of them are still in the initial stage in terms of green development information disclosure. Compared with automotive manufacturers' GDI score rate in 2020, the proportion of enterprises in the low GDI score area (<40) increased by 3.74% in 2021; the proportion of enterprises in the high GDI score area (≥80) decreased slightly by about 1.74% in 2021.

图 4 汽车企业GDI指数得分率分布

Figure 4 Distribution of GDI score rate of automotive manufacturers



4.2.2

汽车企业GDI指数年度得分率变化

Changes in annual GDI score rate of automotive manufacturers

2021年大部分企业绿色发展信息披露情况较上一考核年度降低，与核算方法更新有关。

In 2021, most enterprises' green development information disclosure level was lower than that in the previous year of assessment due to the update of the calculation method.

从企业GDI指数年度得分率变化情况来看，GDI指数得分率上升的企业占比40%，下降企业占比60%。在核算过程中，我们发现，有部分企业官网公开发布的报告、数据等信息长期保持不变，数据更新不及时，造成2021年企业GDI指数得分率下降。

From the perspective of the change in annual GDI score rate of enterprises, 40% of enterprises had a higher GDI score rate while 60% had a lower GDI score rate. During the calculation, we found that some enterprises' information, such as reports and data publicly released on their official websites, remained unchanged in a long period time, and their data were not updated in a timely manner. As a result, their GDI score rate decreased in 2021.

表 14 2021年GDI指数得分率与2020年指数得分率变化情况

Table 14 Changes in the GDI score rates in 2021 and 2020

企业名称	指数得分率变化	企业名称	指数得分率变化	企业名称	指数得分率变化
一汽-大众	▼ -31.96	奇瑞控股	▲ 75.46	神龙汽车	▼ -7.73
上汽大众	▲ 4.97	广汽乘用车	▼ -0.42	北汽新能源	▼ -12.99
上汽通用	▲ 0.21	一汽轿车	▼ -9.32	蔚来汽车	▲ 1.47
东风日产	▼ -11.86	比亚迪	▼ -14.38	广汽菲亚特克莱斯勒	▼ -10.33
吉利控股	▲ 3.57	长安福特	▲ 73.29	上汽大通	▼ -4.12
重庆长安	▼ -70.64	东风悦达起亚	▲ 3.25	华晨鑫源	▼ -5.63
上汽通用五菱	▲ 0.68	沃尔沃汽车(亚太)	▲ 3.57	江铃股份	▲ 2.75
长城汽车	▲ 6.62	特斯拉	▲ 4.28	小鹏汽车	▲ 13.21
东风本田	▼ -3.91	长安马自达	▼ -5.56	福建奔驰	▼ -2.26
广汽本田	▲ 2.52	东风小康	▼ -7.23	东风英菲尼迪	▲ 0.02
一汽丰田	▼ -59.66	东风柳汽	▼ -11.91	威马汽车	▼ -3.10
广汽丰田	▼ -54.32	北汽股份	▲ 13.83	郑州日产	▼ -3.07
北京奔驰	▼ -3.96	广汽三菱	▼ -3.03	观致汽车	▼ -5.16
华晨宝马	▲ 4.13	江淮汽车	▲ 15.39		
北京现代	▼ -1.35	东风乘用车	▼ -15.98	▲ 上升 — 不变 ▼ 下降	
上汽乘用车	▼ -7.21	奇瑞捷豹路虎	▼ -10.38		

注：宝沃汽车、东南汽车、华晨汽车集团、大乘汽车未纳入本年度考核，同时华晨雷诺金杯、宜宾凯翼汽车、合众新能源为本年度新纳入核算对象，在此未作对比。

Note: BORGWARD, Southeast Motor, Brilliance Auto Group and DORCEN were not included in this year's assessment. Meanwhile, Renault Brilliance Jinbei, Yibin COWIN Auto and Hozon New Energy were not compared because they were just taken into consideration in this year's calculation.

4.2.3

汽车企业上市与非上市GDI指数平均得分

Average GDI score of listed and unlisted automotive companies

上市汽车企业绿色发展信息披露管理相对于非上市企业较为完善，披露程度普遍高于非上市企业，指数平均得分相较非上市企业提升54%。主要原因在于中国证券监督管理委员会对企业环境信息披露做出了明确规定。 2021年6月，中国证券监督管理委员会在修订发布《公开发行证券的公司信息披露内容与格式准则第2号—年度报告的内容与格式》《公开发行证券的公司信息披露内容与格式准则第3号—半年度报告的内容与格式》中，新增环境和社会责任章节。将定期报告正文与环境保护、社会责任有关条文统一整合至新增后的“第五节 环境和社会责任”，对于上市公司而言，披露环境和社会责任信息也将成为必选项。

Compared with unlisted automotive companies, listed automotive companies managed their green development information disclosure better. Their information disclosure degree was generally higher than that of unlisted automotive companies. Their average GDI score was 54% higher than that of unlisted automotive companies. The main reason is that China Securities Regulatory Commission has made clear regulations on enterprises' environmental information disclosure. In June 2021, China Securities Regulatory Commission added a new section on environmental and social responsibilities in the revisions of No. 2 Standard on the Content and Format of Information Disclosure by Companies Issuing Securities Publicly - Content and Format of Annual Reports and No. 3 Standard on the Content and Format of Information Disclosure by Companies Issuing Securities Publicly - Content and Format of Semiannual Reports. The provisions related to the text of regular reports, environmental protection and social responsibility were integrated into the new section, i.e. Section V - Environmental and Social Responsibilities. For listed companies, the disclosure of environmental and social responsibility information will also be a mandatory option.

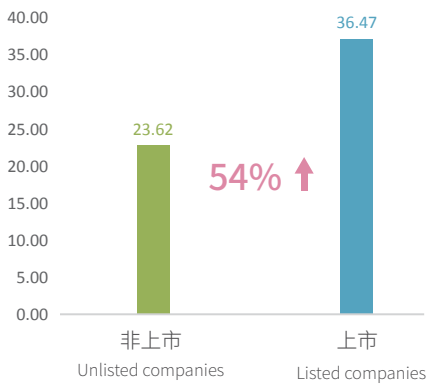


图 5 上市汽车企业与非上市汽车企业GDI指数平均得分情况

Figure 5 Average GDI scores of listed and unlisted automotive companies

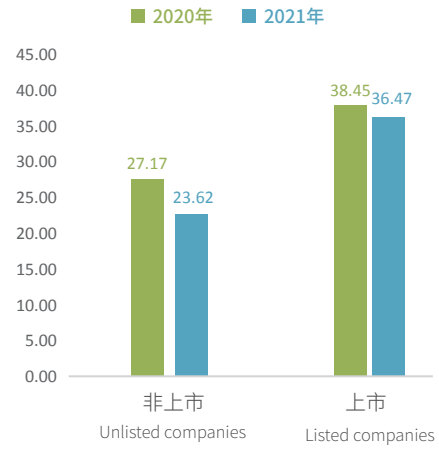


图 6 上市汽车企业与非上市汽车企业GDI指数平均得分率年度变化情况

Figure 6 Annual change in average GDI score rate of listed and unlisted automotive companies

相较于2020年，非上市汽车企业和上市汽车企业的GDI指数得分率均略有降低。

Compared with 2020, the GDI score rate of both unlisted and listed automotive companies decreased slightly.

4.2.4

不同系别汽车企业GDI指数平均得分

Average GDI scores of automotive manufacturers of different brands

各系别企业绿色发展信息披露情况差异较大，欧系（德国）、美系和自主品牌的企业绿色发展信息披露情况较好。

The green development information disclosure varied widely among automotive manufacturers of different brands. European (German)-brand, American-brand and Chinese-brand automotive manufacturers performed well in terms of green development information disclosure.

从车企系别角度分析，2021年核算的48家企业包括自主（23家）、日系（10家）、欧系（德国，5家）、美系（4家）、韩系（2家），其他系别（欧系中的瑞典、意大利、法国、英国）各1家。从整体来看，欧系（德国）、美系的企业绿色发展信息披露情况较好。德系、美系汽车工业起步较早，在信息披露管理方面发展比较成熟。自主品牌车企数量众多，大部分车企信息披露还处于起步阶段，亟需完善信息披露机制，缩小与德系、美系之间的差距。

From the perspective of brand, the 48 automotive manufacturers included in the calculation in 2021 include 23 Chinese-brand automotive manufacturers, 10 Japanese-brand automotive manufacturers, 5 European (German)-brand automotive manufacturers, 4 American-brand automotive manufacturers, 2 Korean-brand automotive manufacturers, and 4 automotive manufacturers of other brands (one Swedish brand, Italian brand, French brand and British brand respectively). From the overall perspective, European (German)-brand and American-brand automotive manufacturers performed well in terms of green development information disclosure. Because the automotive industry started earlier in Germany and the U.S., German-brand and American-brand automotive manufacturers are mature in terms of information disclosure management. There are a large number of Chinese-brand automotive manufacturers. Most of them are still in the initial stage of information disclosure. There is an urgent need for them to improve their information disclosure mechanism to narrow the gap between them and German-brand and American-brand automotive manufacturers.

图 7 2021年核算汽车企业系别分布

Figure 7 Brand distribution of automotive manufacturers covered in the calculation in 2021

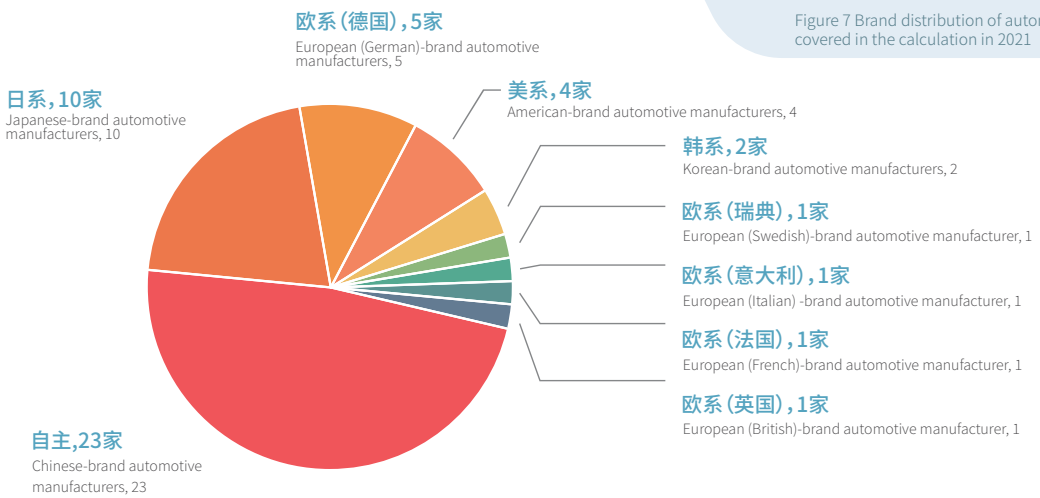
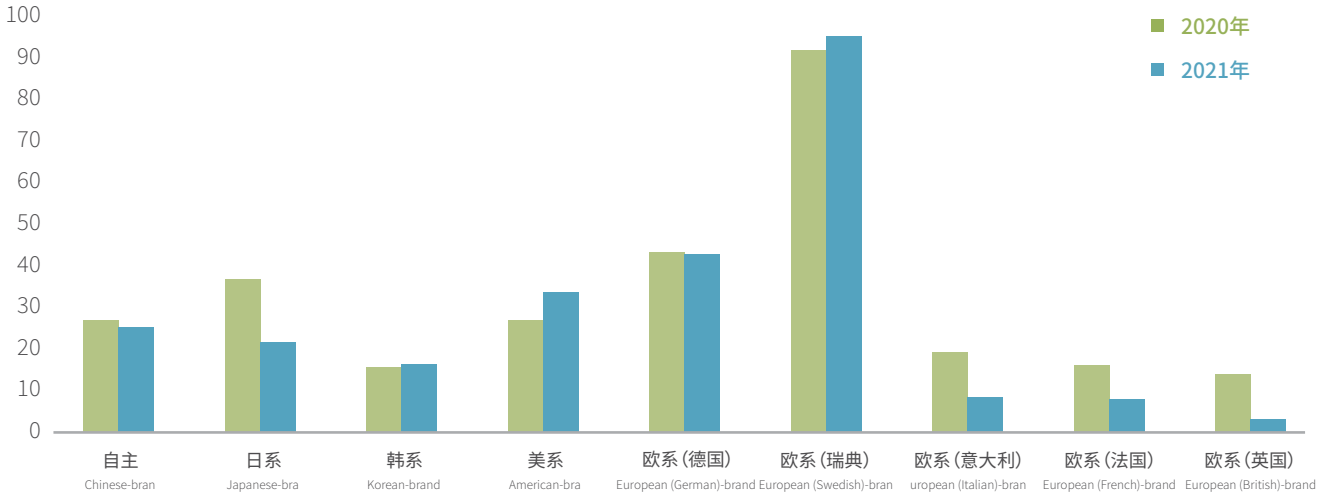


图 8 不同系别车企GDI指数平均得分率年度变化

Figure 8 Annual change in average GDI score rate of automotive manufacturers of different brands



相较于2020年，美系企业GDI指数平均得分率上升明显；自主企业和德系企业GDI指数平均得分率略有下降；日系企业GDI指数平均得分率下降明显，其他系别（欧系中的瑞典、意大利、法国、英国）仅各有1家企业，其GDI指数平均得分率完全取决于各自企业的绿色发展信息披露情况。

Compared with 2020, the average GDI score rate of American-brand automotive manufacturers increased significantly; the average GDI score rate of Chinese-brand automotive manufacturers and German-brand automotive manufacturers decreased slightly; the average GDI score rate of Japanese-brand automotive manufacturers decreased significantly. For the remaining 4 automotive manufacturers of other brands (one Swedish brand, Italian brand, French brand, and British brand respectively), their average GDI score rate depends entirely on the green development information disclosed by them.

4.3 指标层面分析

Analysis from the perspective of indicators

4.3.1

核算指标不同维度得分率

Score rate of different dimensions of calculation indicators

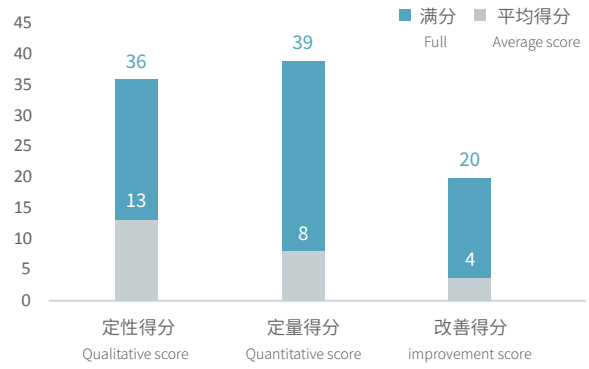


图 9 2021年汽车企业GDI各维度得分

Figure 9 automotive manufacturers' GDI score by dimension in 2021

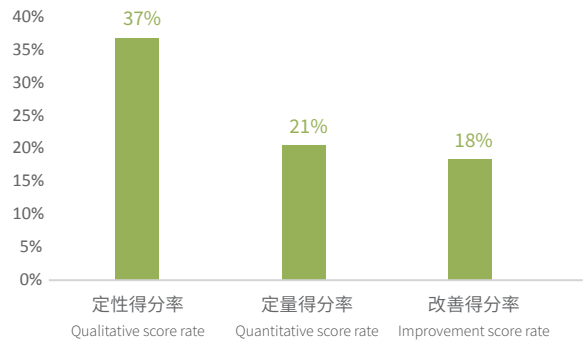


图 10 2021年汽车企业GDI各维度得分率

Figure 10 automotive manufacturers' GDI score rate by dimension in 2021

企业绿色发展信息中定性指标的披露程度较高，定量和改善类指标披露程度较低，尤其是改善类指标，得分率仅为定性类指标的50%。主要原因在于定性信息披露的范围较广，信息比较容易获取，且大多数定性信息属于企业比较常见、基础的信息，企业公开的积极性更大；定量、改善这些数据类的信息，企业的披露意愿和信息完整度表现不如定性信息。

The disclosure degree of qualitative indicators in enterprises' green development information was high while that of quantitative and improvement indicators was low. Especially, the score rate of improvement indicators was only 50% of that of qualitative indicators. The main reason is that the scope of qualitative information disclosure is wide, the information can be easily obtained, most of qualitative information belongs to common and basic information of enterprises, and enterprises are more active in disclosing such information; compared with qualitative information, enterprises are less willing to disclose their quantitative and improvement information and the information disclosed by them is less complete.

4.3.2 具体核算指标得分率

Score rate of specific calculation indicators

具体指标方面，全生命周期各一级指标的披露程度差异明显，如企业基本情况、发展战略、管理方针、新概念技术开发应用等企业基础信息以及优化生产过程披露程度较高。全生命周期各阶段细分指标的披露程度同样差异较大，如主要产品信息、企业运营范围等企业基础信息披露程度较高，但产品生命周期碳排放、零部件再制造等产品环保类指标较低。

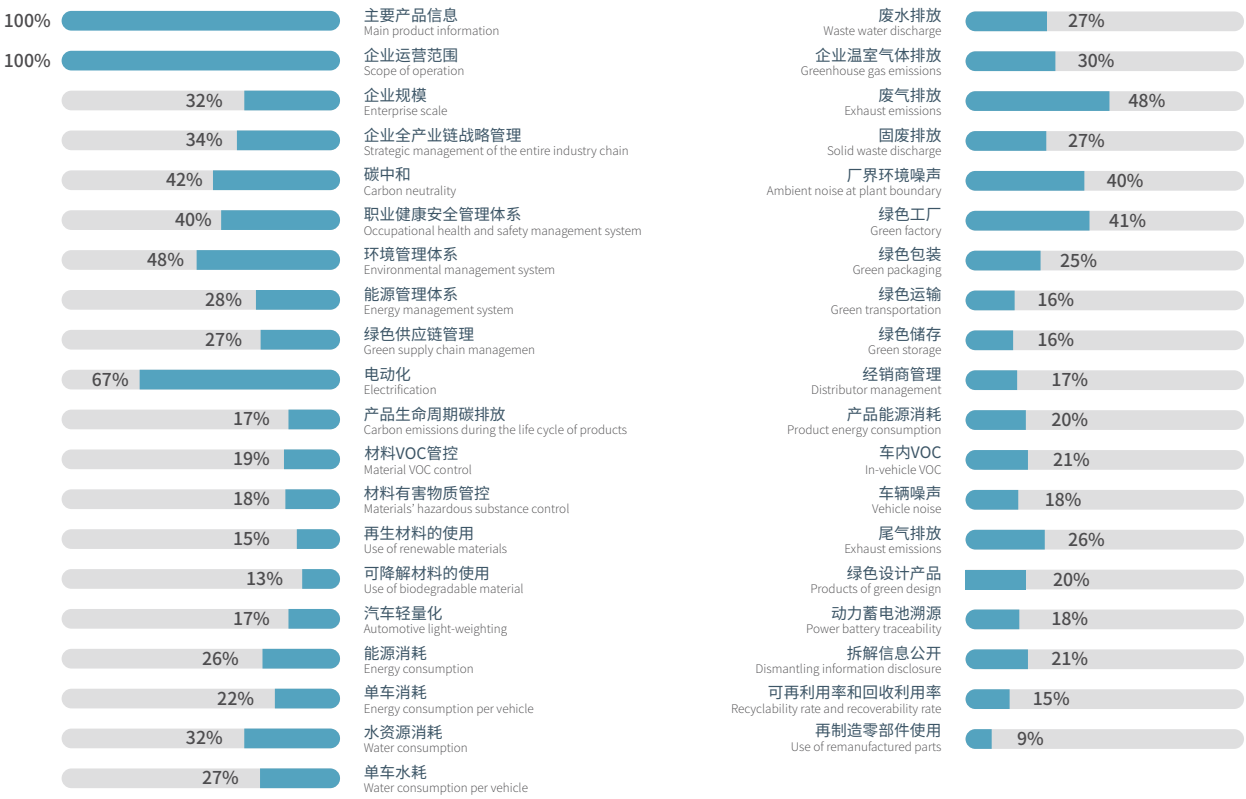
With regard to specific indicators, the disclosure degree of primary indicators during full whole life cycle varied significantly. The disclosure degree of basic information of enterprises, such as company profile, development strategies, management guidelines, development and application of new concept technologies, and optimization of production process was relatively high. Similarly, the disclosure degree of segmented indicators at each stage of the life cycle also varied greatly. The disclosure degree of basic information of enterprises, such as main product information and scope of operation, was high but the disclosure degree of products' environmental protection indicators, such as carbon emissions during the life cycle of products and automotive parts remanufacturing, was low.

生产制造类指标信息披露较高的原因在于生态环境主管部门具有相关要求，且随着《环境信息依法披露制度改革方案》的发布，越来越多的企业认识到披露环境信息的重要性，并开始有意识披露环境管理信息、污染物产生、治理与排放信息。

The reason for a high disclosure degree of production and manufacturing indicators is that competent ecology and environment authorities have raised relevant requirements. Moreover, with the release of the Scheme on the Reform of the System for Disclosing Environmental Information According to Law, more and more enterprises have realized the importance of environmental information disclosure and began to consciously disclose environmental management information, pollutant generation, treatment and emission information.

图 11 汽车企业GDI指数一级指标平均得分率情况
Figure 11 Average GDI score rate of primary indicators of automotive manufacturers

图 12 汽车企业GDI指数二级指标平均得分率情况
Figure 12 Average GDI score rate of secondary indicators of automotive manufacturers



汽车零部件企业信息公开水平分析

Analysis of the Information Disclosure Level of Automotive Parts Manufacturers

5.1行业整体水平
Overall GDI level of the industry

5.2企业层面分析
Analysis from the perspective of enterprises

5.3指标层面分析
Analysis from the perspective of indicators

5.4企业环境处罚情况披露分析
Analysis of disclosure of environmental penalties by enterprises

05

依据《汽车零部件企业绿色发展指数核算方法》对共计108家汽车零部件企业进行核算，覆盖范围包括轮胎企业、新能源企业、电子信息类企业和涵盖多种汽车零部件产品的综合类企业。以下分析内容均基于本次核算结果。

According to the Automotive Parts Manufacturers' GDI Calculation Methods, 108 automotive parts manufacturers, including tire enterprises, new energy enterprises, electronic information enterprises and comprehensive enterprises with multiple automotive part products, were calculated. The following analysis is based on the results of this calculation.

2021年为首次对汽车零部件企业进行绿色发展信息披露情况进行量化核算。总体上，汽车零部件企业信息披露水平不高，两级分化情况较为明显。从上市情况维度上，H股上市企业信息披露情况高于A股企业，上市企业的信息披露情况普遍高于非上市企业；从产品种类维度上，轮胎企业、新能源企业及动力装备企业信息披露得分相对高于均值；从项目类别维度上，定性与定量项目披露分数较为接近，但鲜有企业会对不同年份数据进行对比并公开。披露项集中于基本信息与强制披露的排污信息上，对与产品生产相关联的的上下游阶段（如原材料控制、运输、仓储、回收）的关注度较少。

In 2021, the green development information disclosure of automotive parts manufacturers was calculated quantitatively for the first time. In general, automotive parts manufacturers' information disclosure level was not high and it polarized obviously. Viewing from the dimension of listing, the information disclosure level of H-share listed companies was higher than that of A-share listed companies and the information disclosure level of listed enterprises was generally higher than that of unlisted companies. Viewing from the dimension of product category, the information disclosure score of tire enterprises, new energy enterprises and power equipment enterprises was relatively higher than the average score. Viewing from the dimension of item category, the information disclosure score of qualitative items was close to that of quantitative items. However, enterprises seldom compared the data of different years and made public the results. Disclosure items focused on basic information and emission information that was required to be disclosed forcibly. Less attention was paid to the upstream and downstream stages associated with product production (such as raw material control, transportation, storage, and recycling).

5.1 行业整体水平
Overall GDI level of the industry

$$\text{零部件企业GDI指数（Green Development Index (GDI) of Automotive Parts Manufactures）} = \frac{\Sigma\text{各企业GDI指数（}\Sigma\text{GDI of each company）}}{\text{企业数量（Number of companies）}} = 18.50$$

基于2020年的披露信息，核算名单中的108家汽车零部件企业的GDI指数为18.50。

Based on the information disclosed in 2020, the GDI of the 108 automotive parts manufacturers in the calculation list was 18.50.

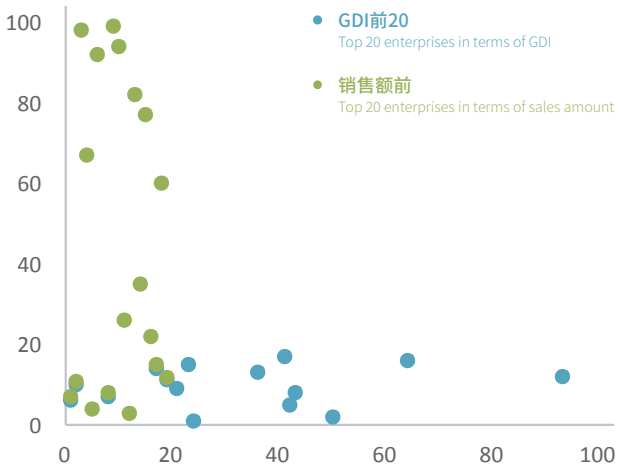


图 13 2021年汽车零部件企业双榜单TOP20分布情况

Figure 13 Distribution of top 20 automotive parts manufacturers in both lists in 2021

其中GDI指数得分排名前10的企业总销售额约占全部核算企业销售额的27.0%，得分前20的企业总销售额约占全部核算企业销售额的43.6%。但是对汽车零部件销售额榜单与GDI得分榜单进行对比，仅有7家企业同时位列双榜单前20名。

The total sales amount of top 10 enterprises in terms of GDI score accounts for about 27.0% of the sales amount of all enterprises calculated. The total sales amount of top 20 enterprises accounts for about 43.6% of the sales amount of all enterprises calculated. However, compared with the List of Automotive Parts Sales Amounts and the GDI Score List, only seven enterprises ranked among top 20 enterprises in both lists at the same time.

从上图可以看出企业销售规模与绿色发展信息披露水平二者存在一定的正相关关系，该关系主要存在于部分头部企业。即销售规模较大的汽车零部件企业有更大的可能性存在披露企业绿色发展相关信息的意愿。但零部件企业中头部效应过于明显，前几名企业的营业额占据绝对优势，导致后续排名企业额波动不会对总体得分情况的影响不明显。

From the above figure, it can be seen that there is a certain positive correlation between enterprises' sales scale and their green development information disclosure level. The relationship mainly existed in some leading enterprises. That is to say, automotive parts manufacturers with larger sales scale have a greater possibility to be willing to disclose green development information. However, the leader effect was too obvious among automotive parts manufacturers. The turnover of several leading enterprises played a dominant role. As a result, the fluctuation of the turnover of the subsequent enterprises could not produce a significant impact on the overall score.

在整体排名中二者关系不明显，主要原因在于：

The relationship between them was not obvious in the overall ranking, mainly because:

01

作为现阶段国家要求的自愿性公开内容，受社会监督情况正处于从低到高的一个上升期，在此背景下相关信息的披露情况更多取决于管理人员的主观意愿。

The social supervision over the contents required to be disclosed voluntarily at the present stage is ascending. In this context, the disclosure of relevant information depends more on the subjective will of managers.

02

部分汽车零部件企业同时存在金融地产、医疗企业等不同行业业务，本次核算仅对零部件业务进行了统计，导致核算体量与企业真实体量存在出入。

Some automotive parts manufacturers also engaged in financial real estate and medical business. Since only automotive parts business was counted in the calculation, the business scale included in the calculation varied from these enterprises' real business scale.

5.2 企业层面分析
Analysis from the perspective of enterprises

5.2.1
企业GDI指数得分分布
Distribution of GDI scores of enterprises

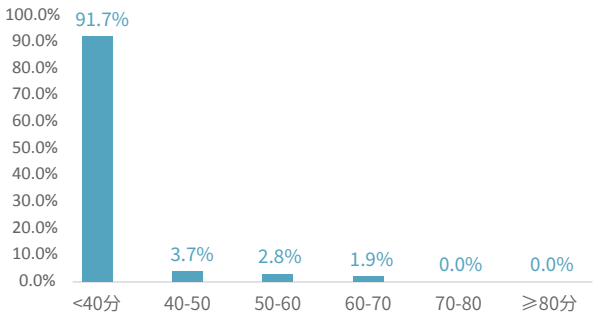


图 14 2021年汽车零部件企业GDI得分分布情况
Figure 14 Distribution of GDI scores of automotive parts manufacturers in 2021

从图中可以看出，部分零部件企业已积极开展环境信息披露行动并取得了一定进展。但大部分汽车零部件企业得分处于“<40分”区间当中，即绿色发展相关信息披露情况仍处于起步阶段。

From the figure, it can be seen that some automotive parts manufacturers have actively taken environmental information disclosure actions and made some progress. However, most of them are in the “<40” range. That is to say, they are still in the initial stage of green development information disclosure.

得分小于20分的企业数量为66家（占全部零部件企业61.1%），处于该区间企业的披露信息往往只涵盖基本信息、企业战略、研发情况、管理体系等核算项，对于污染物、减碳降耗等社会关心的问题披露量较少。同时，部分企业官网信息更新存在较长的滞后情况，给信息获取方了解企业环境保护工作、绿色低碳发展情况带来困难。对于环境监管部门及上市企业监管部门要求的强制披露项，部分该区间企业存在内容不全面、不规范的问题，公开意愿较低。

66 enterprises (accounting for 61.1% of the total number of automotive parts manufacturers) got a score less than 20. The information disclosed by the enterprises in this range often only covers such calculation items as basic information, corporate strategy, R&D, management system. They just disclosed a little information about issues of social concern, e.g. pollutants, carbon reduction, and energy consumption reduction. Meanwhile, the information on the official websites of some enterprises was not updated in a long period of time, making it difficult for information seekers to understand their environmental protection work and green, low-carbon development details. For the mandatory disclosure items required by environmental regulators and listed enterprises’ supervisory departments, some enterprises in this range just provided incomplete and non-standardized contents, with a low willingness to disclose such information.

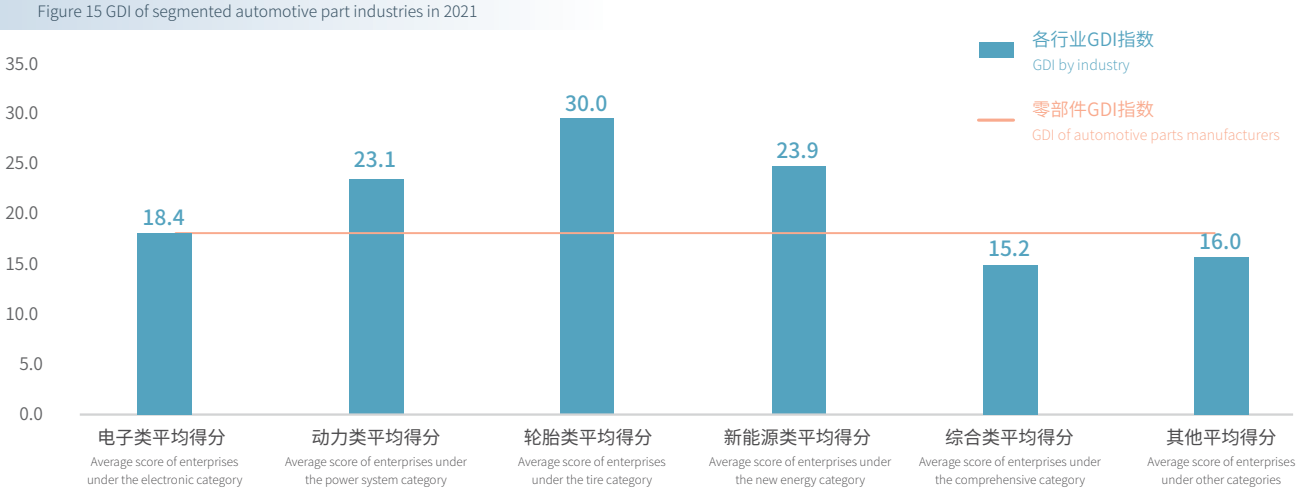
得分在20-40分之间的企业为33家(占全部零部件企业30.6%),处于该区间中的企业已初步开展有关信息披露工作,除上文提及的基本信息外,企业能够披露自身三废(废气、废水及固废)的处理措施及产生总量,公开自身的职业健康安全管理及环境管理体系运行情况,对于绿色发展已有相关认识并开始开展相关工作。但披露项基本都停留在基础的环保工作与污染排放上,对生产污染环节之外的工作(如节能降碳、供应与经销环节管理)亟待开展完善的内容依旧较多。

33 enterprises (accounting for 30.6% of the total number of automotive parts manufacturers) got a score between 20 and 40. The enterprises in this range have initially started relevant information disclosure work. In to disclose their treatment measures and total amount of the three wastes (waste gas; waste water; industrial residue), the information related to their occupational health and safety management. aware of green development and started related work. However, their disclosure items only focused on basic environmental protection work and pollutant discharge. For the work outside production and pollution procedures (such as energy saving, carbon reduction, supply and distribution procedure management), many contents have to be improved.

得分在40分以上的企业共计9家(8.3%),该区间的企业取得了绿色发展信息披露指数评级,但各企业的评分差距相对较大。在3A评级企业中,除去基本信息、环保信息等公开率相对较高的核算项外,企业披露的信息还包含了如原材料有害物质处理、产品轻量化改造、分销系统绿色改造、产品回收,产品全生命周期概念已初步融入企业的战略方针中并能公布给各利益相关方。同时相较于评分标准,其同样存在一些可改善之处,如产品的全生命周期优化设计、产品使用过程中的环境性能设计等。

9 enterprises (accounting for 8.3% of the total number of automotive parts manufacturers) got a score above 40. The enterprises in this range have been given a GDI level but their scores varied greatly. In addition to the calculation items with a relatively high disclosure rate, such as basic information and environmental protection information, the information disclosed by AAA rated enterprises also included such information as disposal of hazardous substances in raw materials, product light-weighting transformation, green transformation of distribution system, and product recycling. The concept of product life cycle has been initially incorporated into these enterprises' strategic guidelines and can be disclosed to all stakeholders. At the same time, compared with the scoring criteria, improvements can also be made in terms of optimized design during the full life cycle of products and environmental performance design during the use of products.

图 15 2021年汽车零部件细分行业GDI指数
Figure 15 GDI of segmented automotive part industries in 2021



5.2.2

细分行业企业平均得分

Average score of enterprises in the segmented industries

从不同行业类别上来看，动力系统零部件企业、新能源类零部件企业及轮胎类零部件企业GDI指数得分相对较高。

Viewing from different industry categories, the GDI score of automotive parts manufacturers under the power system category, automotive parts manufacturers under the new energy category, and automotive parts manufacturers under the tire category is relatively high.

01

轮胎类汽车零部件企业GDI平均得分30.0分，是本次核算过程中表现最突出的零部件行业。废旧轮胎是我国最早一批提出进行综合利用的产品之一，轮胎企业在原材料循环利用上相较于其他零部件生产行业有着明显优势，加之政策引导力度较大、监管体系较为完备，由此整体绿色发展信息披露情况较高。

The average GDI score of automotive parts manufacturers under the tire category is 30.0. Thus tire was the best-performing automotive part industry in the course of the calculation. Waste tire is one of the first products proposed for comprehensive utilization in China. Tire enterprises have obvious advantages over other automotive part production industries in the recycling of raw materials. Moreover, policies strongly guide tire enterprises to reuse waste tires. There is also a complete regulatory system. As a result, the green development information disclosure level is generally high.

02

新能源类汽车零部件企业GDI平均得分23.9分，本次核算的新能源类零部件企业主要指动力电池企业，暂未考虑二级供应商。在目前低碳转型大环境下，我国汽车行业电动化进程加快，动力蓄电池需求量突增，行业监管措施不断严格完备。新能源企业在产品回收与再利用、全生命周期碳排放等领域信息披露情况突出。

The average GDI score of automotive parts manufacturers under the new energy category is 23.9. Automotive parts manufacturers under the new energy category mainly refer to power battery manufacturers. Secondary suppliers are not taken into consideration for the time being. In the context of low-carbon transformation, the electrification process in the automotive industry in China has accelerated. The demand for power batteries has surged. More industrial regulatory measures have been taken. New energy enterprises play a prominent role in information disclosure in such areas as product recycling and reuse and life-cycle carbon emissions.

03

动力系统零部件企业GDI平均得分23.1分,该类主要指发动机及相关配件企业,该类企业的特征是产业规模大、高端技术密集、产品销售额领先,较大的企业规模直接导致了较高的社会关注度与监管力度,使该类企业环境信息披露透明度相对高。

The average GDI score of automotive parts manufacturers under the power system category is 23.1. Enterprises under this category are mainly engine manufacturers and manufacturers of related parts. They are characterized by large industrial scale, intensive high-end technology, and leading product sales amount. Since they are large enterprises, they receive a high social attention and are strictly regulated. Thus the transparency of environmental information disclosure of such enterprises is relatively high.

04

电子类零部件企业GDI平均得分18.4分,该类企业业务主要涵盖电子零部件与汽车软件系统,绿色发展信息披露水平与整体相当。部分企业的公开渠道可获取信息种类较为丰富,但受限于行业特征,企业业务与核算指标重合度相对较低的问题(如软件企业基本不存在工业生产、物流运输等环节),从而限制了整体得分的进一步提升。

The average GDI score of automotive parts manufacturers under the electronic category is 18.4. These enterprises' business of mainly covers electronic components and automotive software systems. Their green development information disclosure level is comparable to the overall level. Some enterprises can obtain a variety of information from open sources. However, due to the characteristics of the industry, the overlap ratio between these enterprises' business and calculation indicators is relatively low (e.g. basically software enterprises have no industrial production, logistics, and transportation procedures). Thus their overall score is restrained from becoming higher.

05

综合类零部件企业GDI平均得分15.2分,该综合类主要指存在多个业务板块的汽车零部件企业,其中以车身金属零部件的加工组装居多。部分企业的生产方式转型缓慢导致了相对较低的企业环境信息公开意愿,但也不排除部分开展绿色行动的企业因其他原因不对有关信息进行公开的情况。

The average GDI score of automotive parts manufacturers under the comprehensive category is 15.2. Automotive parts manufacturers under the comprehensive category are mainly automotive parts manufacturers with multiple businesses, most of which are enterprises engaging in the processing and assembling of metal parts for the car body. Some enterprises change their production methods slowly. As a result, they have a relatively low willingness to disclose their environmental information. However, it is possible that some enterprises that have taken green development actions fail to disclose relevant information for some other reasons.

06

其他分类零部件GDI平均得分16.0分，该类企业为未纳入以上分类的其他零部件企业，业务范围包括内外饰、传动轴、车桥、空调系统等企业。由于该类别中涉及的零部件种类较多，其信息公开水平与整体接近。

The average GDI score of automotive parts manufacturers under other categories is 16.0. Automotive parts manufacturers under other categories are those not included in the above categories. Their business covers interior and exterior trim parts, drive shafts, axles, and air conditioning systems, etc. Since this category involves a variety of automotive parts, its information disclosure level is close to the overall level.

5.2.3 零部件企业上市与未上市GDI指数平均得分

Average GDI score of listed and unlisted automotive parts companies

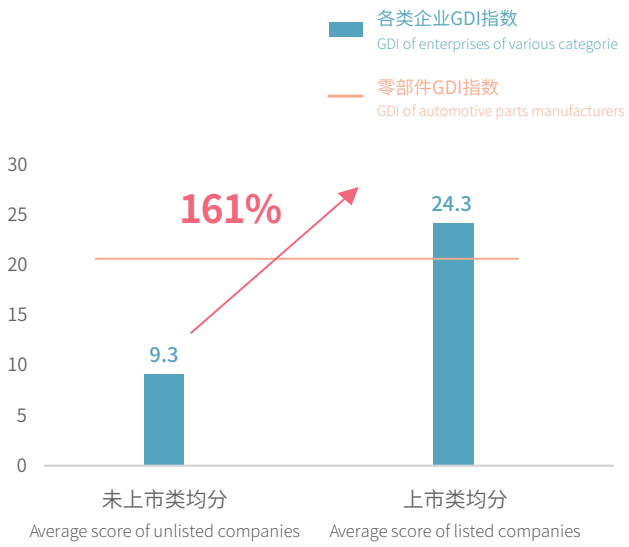


图 16 零部件企业上市与未上市GDI指数平均得分

Figure 16 Average GDI score of listed and unlisted automotive parts companies

在前10名的上市企业中，有8家企业通过发布ESG报告或企业社会责任报告来披露环境信息，前25名中有13家发布ESG报告或企业社会责任报告披露环境信息。总体来看，在大部分报告当中，绿色发展信息不是企业披露的重点内容，相关信息在披露范围、内容质量、量化数据等层面仍然有待提升。

汽车零部件上市企业GDI得分为24.3分，未上市企业平均得分为9.3分。由于监管部门与证券交易所逐步强化对企业环境信息披露要求，上市企业的环境信息披露透明度普遍高于未上市企业。在汽车零部件企业GDI排名中，前25名均为上市企业，前50名中44家为上市企业。

The GDI score of listed automotive parts companies is 24.3 while the average score of unlisted automotive parts companies is 9.3. The environmental information disclosed by listed companies is generally more transparent than that disclosed by unlisted companies because the regulatory authorities and stock exchanges have gradually strengthened the requirements for environmental information disclosure. In the GDI rankings of automotive parts manufacturers, the top 25 are all listed companies and 44 of the top 50 are listed companies.

Among the top 10 listed companies, 8 disclosed environmental information by releasing the ESG report or CSR report. 13 of the top 25 disclosed environmental information by releasing the ESG report or CSR report. Generally, in most of the reports, green development information is not the key content disclosed by enterprises. Relevant information still needs to be improved in terms of disclosure scope, content quality, quantitative data, etc.

5.3 指标层面分析
Analysis from the perspective of indicators

5.3.1
核算指标不同维度得分率
Score rate of different dimensions of calculation indicators

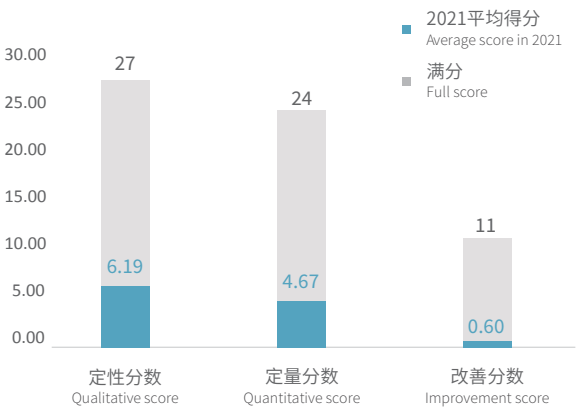


图 17 2021年汽车零部件企业GDI各维度得分
Figure 17 GDI scores of automotive parts manufacturers by dimension in 2021

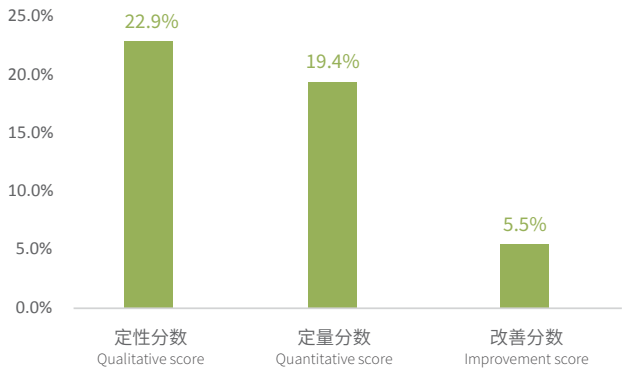


图 18 2021年汽车零部件企业GDI各维度得分率
Figure 18 GDI scores of automotive parts manufacturers by dimension in 2021

企业绿色发展信息披露项上，定性指标得分率略高于定量指标，二者明显高于改善类指标，即相关信息主体企业大未多重视对同一指标在不同年度之间的变化情况。但总体而言，三者都存在较大的上升空间。

With respect to enterprises' green development information disclosure items, the score rate of qualitative indicators is slightly higher than that of quantitative indicators. The score rate of both qualitative indicators and quantitative indicators is significantly higher than that of improvement indicators, that is, most of the relevant information providers failed to pay much attention to the change of the same indicator between different years. However, in general, there is a large room for improvement for all the three kinds of indicators.

定性信息披露一般范围较广，且大多数信息属于企业的常规与基础信息，企业的公开积极性更大；但对于定量信息及改善类信息，部分企业尚未建成有关数据的监测体系，在已有数据中也存在标准、范围与计算方式不清晰、不规范、不统一的的问题，导致该类信息披露程度相对不高。

Generally, qualitative information to be disclosed has a broad scope. Moreover, most of such information belongs to the routine and basic information of enterprises. Thus enterprises are more active to disclose it. However, for quantitative information and improvement information, some enterprises have not established a monitoring system for relevant data. Existing data also face some problems, e.g. unclear, non-standardized and non-uniform standards, scope and calculation methods. As a result, the disclosure degree of this type of information is relatively low.

5.3.2

具体核算指标得分率

Score rate of specific calculation indicators

图 19 汽车零部件企业GDI指数一级指标平均得分率情况
Figure 19 Average GDI score rate of primary indicators of automotive parts manufacturers

图 20 汽车零部件企业GDI指数二级指标平均得分率情况
Figure 20 Average GDI score of secondary indicators of automotive parts manufacturers

从细分指标上看，可将汽车零部件企业的绿色发展信息披露水平分为三个梯队：

From the perspective of segmented indicators, the green development information disclosure level of automotive parts manufacturers may be divided into three echelons:

第一梯队为得分率大于40%的指标项

主要集中于企业基本信息与研发信息。包括产品信息、运营范围、企业规模、企业全产业链战略管理、环境与职业健康管理、新技术开发与应用。

In the first echelon are the indicator items with a score rate of more than 40%, mainly basic information of enterprises and R&D information, including product information, scope of operation, enterprise scale, strategic management of the entire industrial chain, environmental and occupational health management, and development and application of new technologies.

第二梯队为得分率在10%至40%的指标项

以企业生产环境污染信息为主，包括碳中和举措、能源消耗、能源强度、废水排放、废气排放、固废排放、厂界噪声、绿色工厂等披露项。由于部分核算企业属于重点排污单位，需强制披露环境污染排放信息，且管理政策已经多年发展逐渐完备，该部分的得分情况高于其他信息项。

In the second echelon are the indicator items with a score rate of 10% to 40%, mainly enterprises' production environment pollution information, including carbon neutrality measures, energy consumption, energy intensity, waste water emission, waste gas emission, solid waste discharge, noise at plant boundary, green factory and other disclosure items. Since some enterprises covered in the calculation belong to key pollutant discharging entities, they were required compulsorily to disclose environmental pollution and emission information. Complete management policies have been available after years' development. As a result, the score of these items is higher than that of other information items.

第三梯队为得分率小于10%的指标项

该部分披露情况与理想值有一定差距，包括绿色设计产品、绿色供应链管理、绿色分销系统、再生物料使用、轻量化、产品回收利用等。随着监管力度的逐渐增强与社会关注度的上升，其公开水平将会迎来一个上升期，具有较高的提升空间。

In the third echelon are the indicator items with a score rate of less than 10%, including green design products, green supply chain management, green distribution system, use of renewable materials, light-weighting, product recycling. The disclosure of these items has a certain gap with expectations. With the gradual increase of regulatory efforts and the rise of social concern, their disclosure level will go into an upward period. There is room for their improvement.

5.4 企业环境处罚情况披露分析

Analysis of disclosure of environmental penalties by enterprises

在汽车零部件企业核算名单中，共有55家企业披露了报告期内因环境问题受到行政处罚或重大污染事故情况。该信息的披露源于中国证券监督管理委员会在2021年更新的《公开发行证券的公司信息披露内容与格式准则》，对上市公司的要求在企业年报/半年报中对重点排污单位的排污及环境处罚情况进行强制披露。上市公司的非重点排污单位中，部分企业主动履行社会责任，开展了环境处罚信息披露。但在非上市公司中基本无企业主动对该项进行披露。根据核算范围中的公开信息整理，发现部分企业存在因环境问题受处罚情况，结合第三方平台公开的信息，共发现3家企业（其中1家为上市企业）及关联公司在报告期内有上述处罚，但未主动实施公开。总体上公开水平有一定的提升空间。

In the list of automotive parts manufacturers covered in the calculation, 55 enterprises disclosed their environment-related administrative punishment information or major pollution accidents during the reporting period. Such information was disclosed because the Standard on the Content and Format of Information Disclosure by Companies Issuing Securities Publicly, updated by China Securities Regulatory Commission in 2021, required listed companies to disclose key pollutant discharging entities' emissions and environment-related punishment information in their annual/semi-annual reports. Some non-key pollutant discharging entities of listed companies took the initiative to fulfill their social responsibility and disclosed environment-related administrative punishment information. However, basically none of non-listed companies took the initiative to disclose information of this item. According to the collation of public information within the scope of calculation, it is found that some enterprises were punished for environment-related problems. In combination with the information disclosed by third-party platforms, it is found that three enterprises (including one listed company) and affiliates received the above-mentioned punishment during the reporting period but they did not take the initiative to disclose such information. Generally, there is room to increase the disclosure level.

55家
企业披露处罚事故情况

3家
企业处罚未主动实施公开

汽车企业绿色发展先进经验

Advanced Experience in Green Development of Automobile Enterprises

6.1企业应对气候变化
Corporate response to climate change

6.2产品生命周期碳排放管理
Product life cycle carbon emissions management

6.3绿色制造体系建设
Green manufacturing system construction

6.4绿色回收利用
Green recycling

06

基于2021年核算期内汽车企业披露的绿色发展信息来看，当前我国部分汽车企业在绿色低碳发展中表现突出，本部分将整理部分优秀企业在战略规划、产品生命周期碳排放管理、绿色制造体系建设(绿色工厂创建、绿色供应链管理、绿色设计产品开发)、运输物流、产品回收处理等方面的先进经验，供行业参考借鉴。本部分内容由汽车企业公开发布的《绿色发展报告》及企业官网信息汇总整理而成。

Based on the green development information disclosed by automotive enterprises in the accounting period of 2021, some of the automotive enterprises in China have outstanding performance in green and low-carbon development, and this part will provide some of the outstanding enterprises' experiences in strategic planning, product life-cycle carbon emission management, green manufacturing system construction (green factory creation, green supply chain management, green design product development), transportation logistics, product recycling and disposal, etc for industry reference. The contents of this part are a summary of the Green Development Reports publicly released by automotive enterprises and information from their official websites.

6.1 企业应对气候变化

Corporate response to climate change

面对碳中和的行业大势，部分跨国企业和自主品牌企业纷纷提出各自实现全生命周期“碳中和”或“零排放”的时间表。部分优秀企业的亮点工作如下：

Faced with the industry trend of carbon neutrality, some multinational enterprises and independent Chinese brand enterprises have put forward their respective timetables for achieving "carbon neutrality" or "zero emission" throughout their life cycle. The highlights of some outstanding enterprises are as follows:

国际车企和自主品牌车企碳中和时间

2039	2040	2045	2050
Mercedes-Benz, Jaguar	Volvo, GM	长城汽车, 吉利汽车 GEELY AUTO, Hyundai Motor Group	BMW, Volkswagen, Renault, Audi, Toyota, Honda The Power of Dreams, Nissan Motor Corporation, Mazda, Ford, 广汽集团 GAC Group

图 21 国际车企和自主品牌车企碳中和时间(来源：企业官网或相关报告)

Figure 21 Carbon neutrality time of international and independent Chinese brand automobile enterprises (Source: Enterprise official website or reports)

6.1.1 宝马 BMW

宝马集团计划到2021年底全球工厂生产将实现碳中和。

The BMW Group plans to achieve carbon neutrality in global factory production by the end of 2021.

2050年达成全价值链气候中和的目标。

It will reach the goal of full value chain climate neutrality by 2050.

2021年9月3日，宝马集团宣布到2030年平均单车全生命周期碳排放较2019年降低40%（此前为降低三分之一），其中供应链端降低20%、生产层面降低80%、使用阶段降低50%（此前为降低40%）。

On September 3, 2021, the BMW Group announced a 40% reduction in average single-vehicle life cycle carbon emissions by 2030 compared to 2019 (previously one-third reduction), including 20% reduction at the supply chain end, 80% reduction at the production level and 50% reduction at the use stage (previously 40% reduction).

6.1.2 沃尔沃 Volvo

沃尔沃依据”2040环境计划“，力求在2040年之前分阶段逐步降低碳排放，最终成为气候零负荷标杆企业。措施：在制造、运营、供应链及原材料的回收和再利用等多方面形成合力。不仅通过全面电气化电气化战略来解决尾气排放问题，还将通过全球化制造网络、企业运营、供应链以及原材料的回收和再利用来应对碳排放挑战。

According to its "2040 Environmental Plan", Volvo strives to reduce carbon emissions in stages by 2040, and eventually become a zero-load climate benchmark. Measures: The company will make concerted efforts in manufacturing, operations, supply chain and recycling and reuse of raw materials. It will address exhaust emissions through a comprehensive electrification strategy; moreover, it will also address the carbon emissions challenge through its global manufacturing network, corporate operations, supply chain, and recycling and reuse of raw materials.

6.1.3 长城汽车 Great Wall Motor

长城汽车发布2045年碳中和规划，按照计划，为达成这一目标，长城汽车将在制造端，通过能源结构调整及低碳工艺应用，在2023年实现首个“零碳工厂”。并将围绕碳排放的全生命周期，建立汽车产业链条的循环再生体系，实现经济、环境以及社会效益最大化。除了“零碳工厂”，在产品端，长城也公布了针对“碳中和”目标的“五年计划”：到2025年之前，长城将推出51款新能源车型，以实现长城汽车年销量的80%为新能源车的目标。未来，在技术路线上将沿着纯电动、氢能、混动三条路线投入，进行完整的产业链布局。

Great Wall Motor has released its 2045 Carbon Neutrality Plan. In order to reach this goal, Great Wall Motor will achieve the first "zero carbon factory" in 2023 through energy restructuring and low carbon process application at the manufacturing end. It will also establish a recycling system for the automotive industry chain around the life cycle of carbon emissions to maximize economic, environmental, and social benefits. In addition to the "Zero Carbon Factory", Great Wall Motor has also announced its "Five-Year Plan" for the "Carbon Neutrality" goal: By 2025, it will launch 51 new energy models to achieve the goal of increasing the share of NEV annual sales to 80%. In the future, a complete industrial chain will be laid out along three technical routes: pure electric, hydrogen and hybrid.

6.2 产品生命周期碳排放管理
Product life cycle carbon emissions management

在产品层面，诸多企业都发布并开展了碳减排工作。部分优秀企业的亮点工作如下：

At the product level, many enterprises have released and implemented their carbon emission reduction measures. The highlights of some outstanding enterprises are as follows:

6.2.1 本田汽车
Honda Motor

Honda产品在生命周期内的CO_2排放量中，“产品使用时”的排放量约占整体的80%。进而，Honda始终致力于削减所有产品使用时的CO_2排放量，力求达到生产、销售兼顾到保护地球环境的终极目标。

Emissions from “use of products” account for approximately 80% of CO_2 emissions from Honda’s entire product life cycle. In light of this, Honda works to reduce CO_2 emissions during usage in all of its products, and manufactures and sells items that can be supplied with confidence as environmentally friendly products.

一直以来，本田汽车在扩大全球范围内的生产和销售的同时，通过以下三项措施来推动实现产品CO_2排放强度削减目标。

To date, Honda has carried out the following three initiatives to realize its 2020 Product CO_2 Emissions Reduction Targets while expanding production and sales globally.

1

通过提高内燃机效率来推动产品的CO_2减排；

Reducing CO_2 emissions through efficiency improvements of internal combustion engines.

2

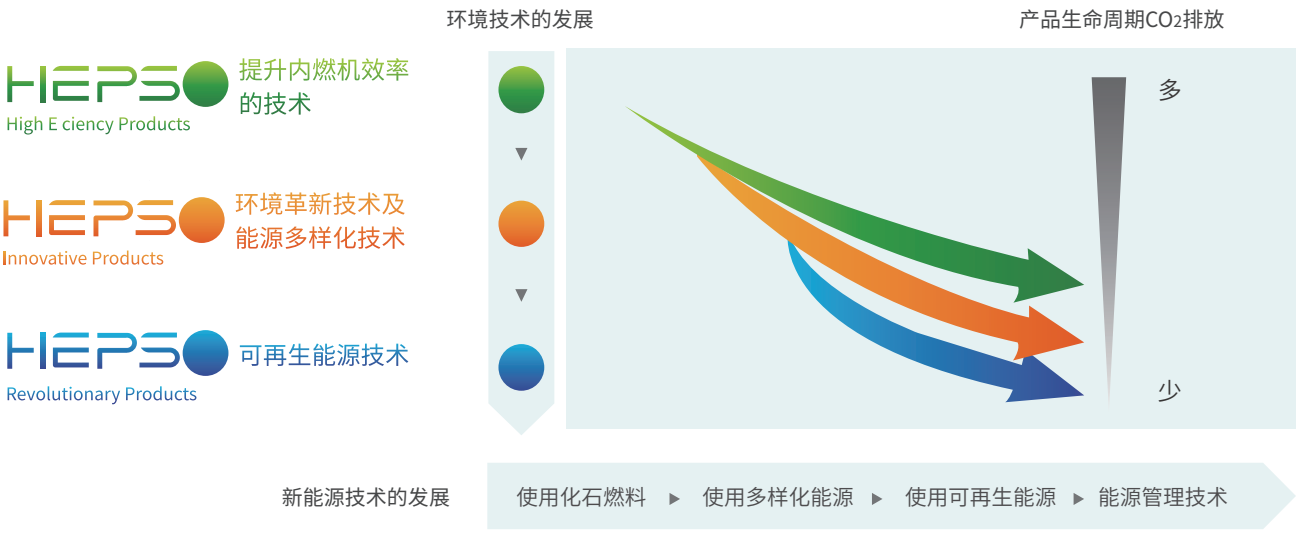
通过引入创新型环保技术以及多元化的能源策略来推动产品的CO_2减排；

Reducing CO_2 emissions by introducing environmentally innovative technologies and diversifying energy sources.

3

通过加强可再生能源的应用以及总能量控制来推动产品实现 CO_2零排放。

Eliminating CO_2 emissions through the use of renewable energy and total energy management.



■ High E ciency Products

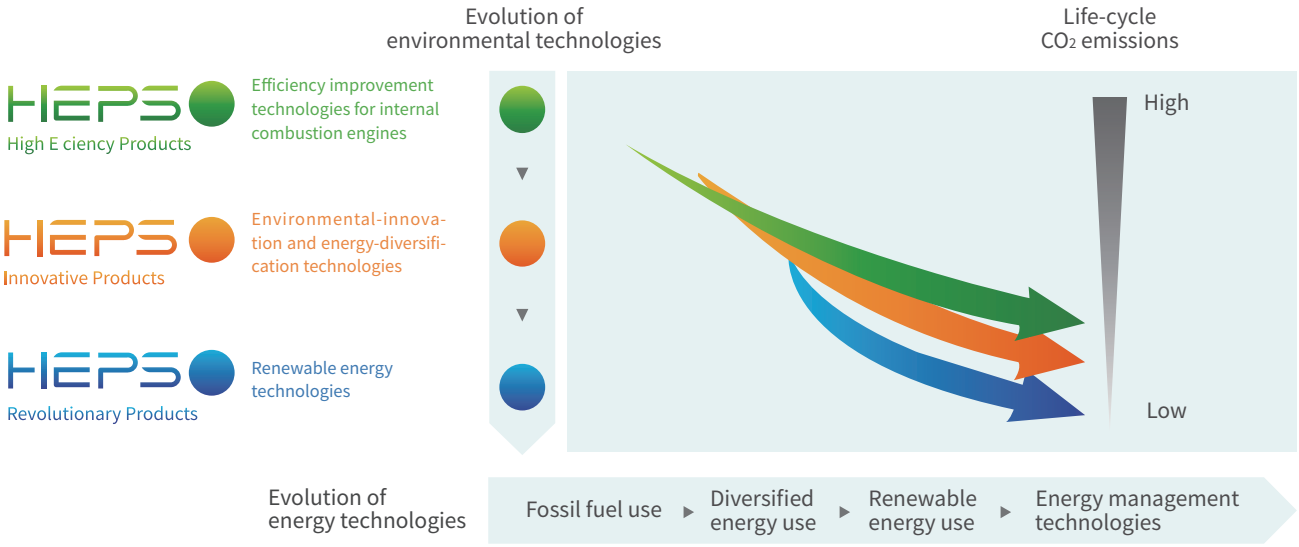
包括采用了提高发动机燃烧效率、提高驱动效率、减少发动机内部摩擦的低磨损技术的产品，对使用过程中CO_2排放量相较过去产品的减排程度进行合适的基准规定。

■ Innovative Products

是指通过采用环境革新技术和能源多样化对策减少CO_2排放量的产品。从环境革新技术来看，包括采用Honda独家怠速停止系统技术的摩托车产品、采用了混合动力技术和直喷发动机技术的汽车产品、采用了FI（燃料喷射装置）的通用产品，从能源多样化对策来看，包括可使用乙醇燃料的摩托车、汽车产品以及可使用燃气燃料的通用产品等。对使用过程中 CO_2排放量相较过去产品的减排程度进行合适的基准规定。

■ Revolutionary Products

是指通过发展可再生能源和推动综合能源管理，实现CO_2零排放的产品。包括采用了电动化技术和可再生能源使用技术的产品。



High E ciency Products

Products that emit less CO_2 emissions because of improved internal combustion engine efficiency. This category includes products that incorporate technologies for improving fuel combustion and transmission efficiency and reducing friction between engine parts. Compliance is determined based on how well a product reduces or helps reduce CO_2 emissions during use compared with preceding models.

Innovative Products

Products that emit less CO_2 because they use an environmentally innovative technology or an alternative energy source. This category includes motorcycles that incorporate Honda's patented Idling Stop System, automobiles that incorporate hybrid technologies or direct injection engine technologies, and power products with electronic fuel injection (FI). Alternative energy technologies include motorcycles and automobiles that can run on ethanol and power products that can run on gaseous fuels. Compliance is determined based on how well a product reduces or helps reduce CO_2 emissions during use compared with preceding models.

Revolutionary Products

Products that reduce or eliminate CO_2 emissions by harnessing renewable energies or facilitating total energy management. This category includes products that incorporate electromotive technologies or technologies for using renewable energy.

图 22 Honda针对气候变暖及能源问题的对策(图源:Honda可持续发展报告2021)

Figure 22 Honda's countermeasures to climate warming and energy issues (Source: Honda Sustainability Report 2021)

6.2.2 沃尔沃
Volvo

沃尔沃依据”2040环境计划“，力求在2040年之前分阶段逐步降低碳排放，最终成为气候零负荷标杆企业。措施：在制造、运营、供应链及原材料的回收和再利用等多方面形成合力。不仅通过全面电气化电气化战略来解决尾气排放问题，还将通过全球化制造网络、企业运营、供应链以及原材料的回收和再利用来应对碳排放挑战。

Volvo Cars has a long history of comprehensive environmental impact assessment. Volvo Cars uses a simplified life cycle assessment (LCA) to analyze all its models and continuously improves its assessment methods. In recent years, the company has further strengthened this work. Volvo Cars believes that it should be open and transparent about the complete carbon impact of its electric vehicles. Volvo Cars has therefore conducted an LCA of the carbon footprint of its first all-electric model, the XC40 Recharge, and compared the results with the XC40's fuel model. In the future, Volvo Cars will carry out an LCA of all of its all-electric models.

然而，仅仅通过生产纯电动汽车（如XC40 Recharge）并不足以消除汽车行业的气候影响。目前，生产电动汽车的碳排放强度比生产燃油汽车更高；而在电动汽车的使用环节，需要驾驶多少里程才能使其碳排放低于燃油车，取决于给它充电所用的电力来源。无论采用何种来源的电力，在其全生命周期范围之内，纯电动汽车的碳足迹均小于燃油车。

Producing fully electric vehicles (such as the XC40 Recharge) alone will not address the car industry's impact on the climate. Electric vehicle production is currently more carbon intensive than producing an ICE-engine vehicle. And the distance they need to be driven to have a lower carbon impact than an ICE vehicle is dependent on how the electricity is generated to power them. However, over their lifetime the carbon footprint of a fully electric vehicle is less than an ICE, irrespective of the electricity source.

沃尔沃汽车还通过全生命周期评估更好地管控企业运营和供应链中的碳密集型材料和相关工艺。

LCAs also enable us to work within Volvo Cars' own operations and supply chain to target carbon intensive materials and processes.

全生命周期评估

Life cycle assessment (LCA)

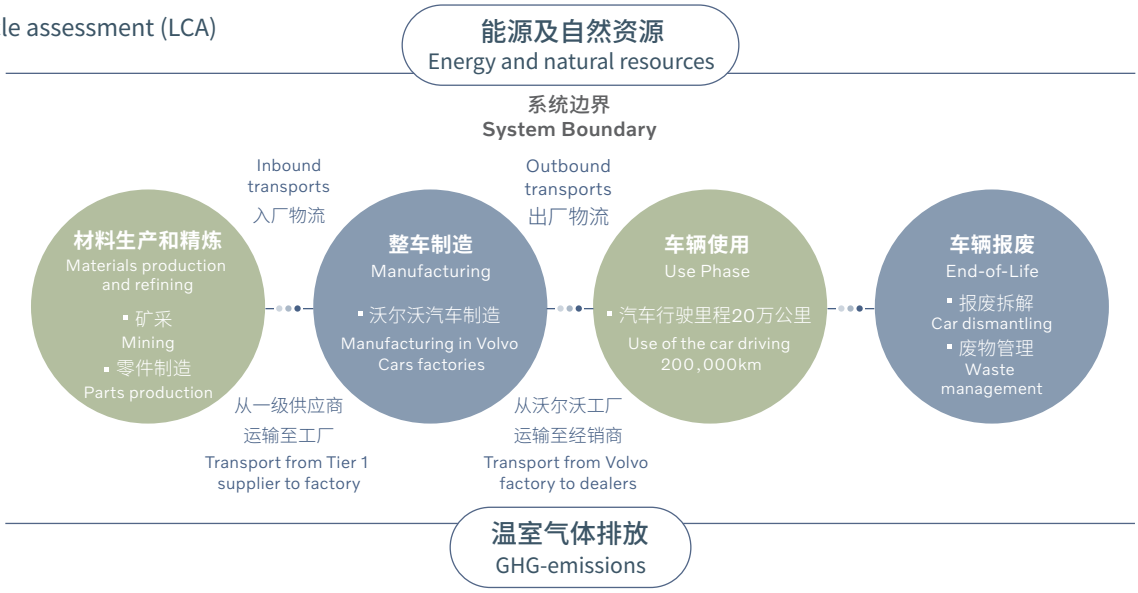


图 23 沃尔沃全生命周期评估流程(图源:沃尔沃汽车(亚太)2020年绿色发展报告)

Figure 23 Volvo's LCA process (Source: Volvo Cars (Asia Pacific) 2020 Green Development Report)

XC40燃油版及纯电版全生命周期碳足迹

Carbon footprint for XC40 ICE and XC40 recharge

▪ 纯电版基于不同的能源结构充电

With different electricity-mixes used for the XC40 Recharge

▪ 结果换算为每个功能单元的吨二氧化碳当量排放

Results are shown in tonne CO_2-equivalents per functional unit

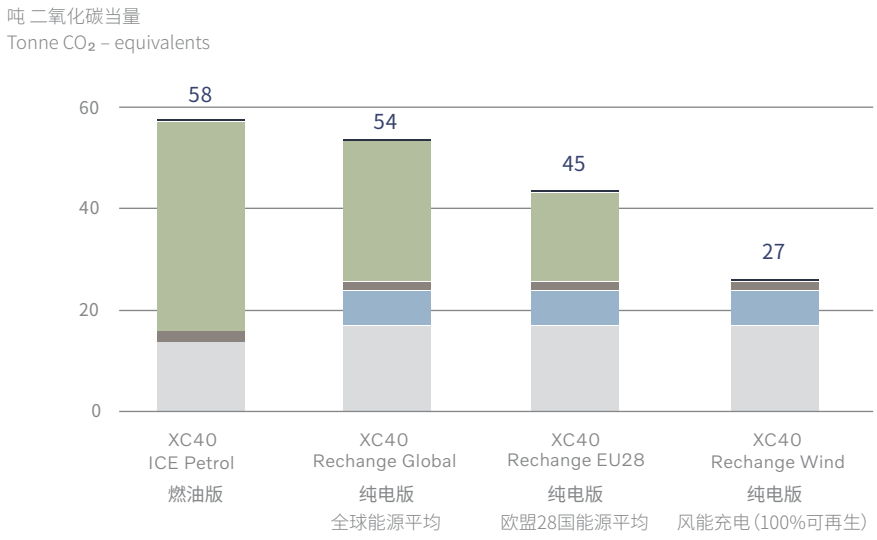


图 24 沃尔沃XC40全生命周期碳足迹(图源:沃尔沃汽车(亚太)2020年绿色发展报告)

Figure 24 Volvo XC40 life cycle carbon footprint (Source: Volvo Cars (Asia Pacific) 2020 Green Development Report)

6.3 绿色制造体系建设

Green manufacturing system construction

按照《绿色制造工程实施指南(2016-2020年)》《工业和信息化部办公厅关于开展绿色制造体系建设的通知》相关要求，汽车企业以促进全产业链和产品全生命周期绿色发展为目的，积极打造绿色工厂、研发绿色产品、建设绿色园区及绿色供应链，全面推进绿色制造体系建设。“十三五”期间，汽车行业创建312家绿色工厂、52家绿色供应链企业、开发129种绿色设计产品。部分优秀企业在绿色制造体系方面下亮点工作如下：

In accordance with the Green Manufacturing Project Implementation Guide (2016-2020) and the Notice of the General Office of the Ministry of Industry and Information Technology on the Construction of Green Manufacturing System, automotive enterprises have been actively building green factories, developing green products, building green parks and green supply chains with the aim of promoting the green development across the industrial chain and throughout the life cycle of products, and comprehensively promoting the construction of green manufacturing system. During the "13th Five-Year Plan" period, the automotive industry created 312 green factories, 52 green supply chain enterprises and developed 129 green design products. Some of the outstanding enterprises in the green manufacturing system under the highlights of work are as follows:

广汽本田

GAC Honda

2019年获得广州市绿色供应链管理企业称号，2020年获得工信部绿色供应链管理企业。打造资源节约、环境友好为导向的采购、生产、营销、回收及物流体系，推动上下游企业共同提升资源利用效率，改善环境绩效，达到资源利用高效化、环境影响最小化。

Guangzhou Green Supply Chain Management Enterprise in 2019 and Green Supply Chain Management Enterprise of the Ministry of Industry and Information Technology in 2020. Create a resource-saving and environment-friendly-oriented procurement, production, marketing, recycling and logistics system, promote upstream and downstream enterprises to jointly enhance resource utilization efficiency and improve environmental performance to achieve efficient resource utilization and minimize environmental impact.

吉利汽车

Geely Auto

积极打造绿色制造体系，截止2020年底，申报并认定成功国家级绿色工厂基地共计5家，累计共有15款车型产品入选国家绿色设计产品名单，充分证明了吉利在绿色设计方面的研发能力水平。

The company is committed to building a green manufacturing system. By the end of 2020, 5 of its factories have been successfully recognized as national green factory bases, and a total of 15 model products have been included into the national green design products list, which fully proves the level of Geely's R&D capability in green design.

奇瑞汽车

Chery Holding

在打造绿色制造体系方面持续发力，旗下2家生产基地获评国家级绿色工厂，2款车型产品入选绿色设计产品名单。

The company continues to make efforts in building a green manufacturing system, and two of its production bases have been rated as national green factories, and two model products have been included into the list of green design products.

6.3.1

绿色工厂创建

Green factory building

企业能源管理

Enterprise energy management

“节能”是我国碳达峰碳中和工作的重要内容，行业内普遍重视对企业的能源管理。制定能源管理目标，搭建能源管理体系，建设能源在线管理系统，是行业内的普遍做法。2021年汽车企业AAAAA级企业，即华晨宝马、奇瑞汽车、吉利汽车、沃尔沃(亚太)、广汽本田、蔚来汽车、长安福特均建立了能源在线管理系统，实现了能源使用完整计量、一体化监控、高效管理，为企业节约成本、提升效率。部分优秀企业在能源管理方面下亮点工作如下：

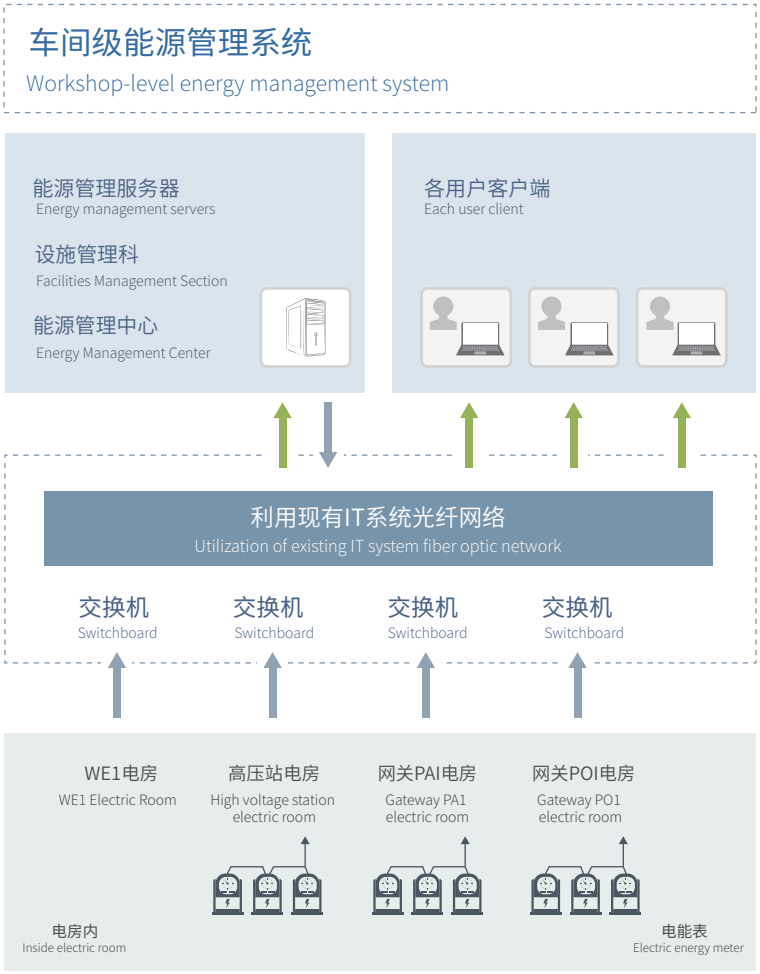
"Energy saving" is an important part of China's ambitions to achieve peak carbon emissions and carbon neutrality, and the industry generally attaches importance to the energy management of enterprises. It is a common practice in the industry to set energy management targets, build energy management systems and create online energy management systems. 2021 AAAAA-level automotive enterprises, namely BMW Brilliance, Chery Automobile, Geely Auto, Volvo (Asia Pacific), GAC Honda, Nio Automobile and Changan Ford, have all established their own online energy management systems to achieve complete measurement, integrated monitoring and efficient management of energy use, saving costs and improving efficiency for the enterprises. Some outstanding enterprises' performance in energy management are highlighted as follows:

广汽本田

GAC Honda

建立能源管理中心，实时监测各用能单位的使用情况，实现能源消耗可视化及能源使用合理化；以客观的能源数据为依据，通过提升能源管理效率，科学地挖掘节能潜力，促进节能减碳工作的持续开展。

The company has established an energy management center to monitor the use of each energy-using unit in real time, to visualize energy consumption and rationalize energy use; based on objective energy data, it promotes the continuous progress in energy conservation and carbon reduction by improving energy management efficiency and scientifically tapping the energy-saving potential.



由能源管理服务器、耗源管理软件组成，实现数据记录分析、报表、报警等功能。

It is composed of energy management servers and consumption management software, which realize the functions of data record & analysis, report and alarm.

指现场监控层设备与系统管理层主机系统实现数据交换的通讯设备和通讯链路，包括以太网关、以太网交换机、光纤收发机以及光缆、通讯电缆等。

It refers to the communication equipment and communication links for data exchange between the field monitoring layer equipment and the system management layer host system, including Ethernet gateway, Ethernet switchboard, fiber optic transceiver, and fiber optic cable, communication cable, etc.

通过现场安装的智能仪表和装Alt完成测量、监视、通讯等功能。

The measurement, monitoring, and communication functions are completed by the smart meters and Alt installed on site.

图 25 广汽本田车间级能源管理系统（图源：广汽本田2020年绿色发展报告）
Figure 25 Workshop-level energy management system of GAC Honda (Source: GAC Honda 2020 Green Development Report)

■ 节能技术改造
Energy-saving technology transformation

广汽本田
GAC Honda

不断升级设备设施，降低生产能耗，减少碳排放。

The company continuously upgrade equipment and facilities to reduce production energy consumption and carbon emissions.

节能案例:RTO废气余热回收利用

Energy saving case : Recovery and utilization of waste heat from RTO waste gas

项目背景

Project background

开发区工厂涂装四科更换新RTO炉,末端废气达到140°C,直接从屋顶RTO排气筒排出。结合现场经验和检证,通过一系列的自主改造,将RTO排气热量引入电泳/中上涂/保险杠炉的出入口排气进行预加热后汇入新风,最后加热热水引入前处理温水加热器中,减少LNG和蒸汽的用量,实现有效节约能源。

The Coating Section 4 in the development zone factory replaced the old RTO furnace with a new one, and the end exhaust gas with a temperature of 140 ℃ was directly discharged from the roof RTO exhaust funnel. Combined with the on-site experience and inspection, the company has made a series of independent transformations: the RTO exhaust heat is introduced into the inlet and outlet exhaust of the electrophoresis/intermediate and top coating/bumper furnace for pre-heating and then sinks into the fresh air. Then, the heated hot water is introduced into the pre-treatment wet water heater to reduce the consumption of LNG and steam and achieve effective energy saving.

项目目标

Project goals

☑ 节约LNG用量66510 m^3/年,整齐1526 t/年。

Save LNG usage by 66,510m3/year and steam by 1,526t/year.

推进措施

Promotion measures

将RTO路废气热量回收,废气从140°C→85°C:

Heat recovery of RTO furnace exhaust gas from 140 ℃→85 ℃:

- 引入电泳/中上涂/保险杠炉的出入口排气进行预加热,减少LNG用量。

  Introduce the waste gas into the inlet and outlet exhaust of the electrophoresis/intermediate and top coating/bumper furnace for pre-heating to reduce LNG usage.

- 加热热水引入前处理温水加热器中,代替部分蒸汽进行加热。

  Introduce the heated hot water into the pre-treatment wet water heater to replace part of the steam for heating.

改造实施
Transformation Implementation

实施效果
Implementation Effects

- LNG削减1.1 m³/台
  LNG reduction by 1.1 m³/unit
- 单台能耗消减3.8 kgce/台
  Reduction of energy consumption of single unit by 3.8kgce/unit
- 蒸汽削减0.026 t/台
  Steam reduction by 0.026t/unit
- co_2 削减量:275 t/年
  CO_2 reduction by 275t/year

图 26 广汽本田RTO废气余热回收利用(图源:广汽本田2020年绿色发展报告)
Figure 26 Recovery and utilization of waste heat from RTO exhaust gas at GAC Honda (Source: GAC Honda 2020 Green Development Report)

奇瑞汽车
Chery Automobile

通过关停自备电厂、加大分布式光伏电站的应用和推进节能新技术等措施进一步降低能源消耗。

The company further reduces energy consumption by shutting down captive power plants, deploying more distributed photovoltaic power plants and promoting new energy-saving technologies.

奇瑞汽车与淮河能源控股集团签订战略合作协议。双方将创新能源供需商业模式,以奇瑞汽车芜湖基地“冷热电气”综合能源供应为切入点,在天然气分布式能源站等方面开展全方位战略合作,为实现“碳达峰、碳中和”目标贡献可践行、可推广的解决方案。

Chery Automobile and Huaihe Energy (Group) Co., Ltd. signed a strategic cooperation agreement. The two sides will innovate the business model of energy supply and demand, take the integrated energy supply of "cooling, heat, electricity and gas" of Chery Automobile Wuhu Base as the starting point, and carry out all-round strategic cooperation in natural gas distributed energy stations, etc., so as to contribute to the realization of the goal of achieving "peak emissions and carbon neutrality".

奇瑞将关停自备电厂(通过煤炭发电),在原自备电厂站址改造建设芜湖长江LNG内河接收(转运)站配套奇瑞天然气分布式能源站、LNG供应站、LNG/CNG加气站(企业自用)等项目,保障公司生产电力、蒸汽。(分布式能源站项目总装机规模37.68 MW(燃气发电5.4 MW,光伏32.28 MW):1座5.4MW级天然气分布式能源站(含1台12.5t/h无补燃单压余热锅炉)、1座供气量为10,000m³/h的LNG气化站、32.28 MW分布式光伏发电系统)。

Chery will shut down its captive power plant (generating power through coal), and transform and build Wuhu Yangtze LNG inland river receiving (transfer) station at the site of the original captive power plant to support Chery's natural gas distributed energy station, LNG supply station and LNG/CNG refueling station (for corporate use) to ensure the production of electricity and steam. (The total installed capacity of the distributed energy station project is 37.68 MW (5.4 MW gas-fired power generation, 32.28 MW PV power): a 5.4 MW natural gas-fired distributed energy station (including a 12.5 t/h single-pressure waste heat boiler without supplementary combustion), an LNG gasification station with a gas supply capacity of 10.000 m³/h, and a 32.28 MW distributed PV power generation system).

图 27 奇瑞汽车自备电厂改造项目(图源:奇瑞控股2020年绿色发展报告)

Figure 27 Chery Automobile captive power plant renovation project (Source: Chery Holding 2020 Green Development Report)

6.3.2

企业清洁生产

Clean production in enterprises

企业通过导入先进的设备、技术，对工厂废水、废气、固废及噪声进行防治、监测及管控。部分优秀企业在清洁生产方面下的亮点工作如下：

Enterprises prevent, monitor and control factory wastewater, waste gas, solid waste and noise by introducing advanced equipment and technology. Some outstanding enterprises' performance in clean production are highlighted as follows:

废气管理

Exaust Gas Management

废气管理方面，广汽本田导入VOCs在线监测系统，实时监测排放气体的VOCs浓度；沃尔沃成都工厂通过引进先进减排设施，VOCs排放降低了近16%；奇瑞汽车从车间末端控制大气污染物的排放，涂装车间改造后满产情况下，VOCs年排放量减排约2900t。

沸石转轮+RTO焚烧
Zoolite runner+RTO combustion

In terms of exhaust gas management, GAC Honda has introduced VOCs online monitoring system to monitor the VOCs concentration of the emitted gas in real time; Volvo Chengdu plant has reduced VOCs emission by nearly 16% by introducing advanced emission reduction facilities; Chery Automobile has controlled the emission of air pollutants from the end of the workshop, and the annual VOCs emission reduction is about 2,900t under the full production condition after the transformation of the painting workshop.

图 28 广汽本田废气处理装置（图源：广汽本田2020年绿色发展报告）
Figure 28 GAC Honda exhaust gas treatment plant (Source: GAC Honda 2020 Green Development Report)

废水管理

Wasterwater Management

废水管理方面，广汽本田投入巨资，在增城工厂导入先进的环境技术“膜处理技术”，实施100%回收重新利用，实现“废水零排放”；沃尔沃成都基地2020年工业废水排放量同比减少了13%。

In terms of wastewater management, GAC Honda has invested heavily in introducing advanced environmental technology "membrane treatment technology" at its Zengcheng plant, implementing 100% recycling and reuse to achieve "zero wastewater discharge"; the industrial wastewater discharge from Volvo's Chengdu base in 2020 was reduced by 13% year-on-year.

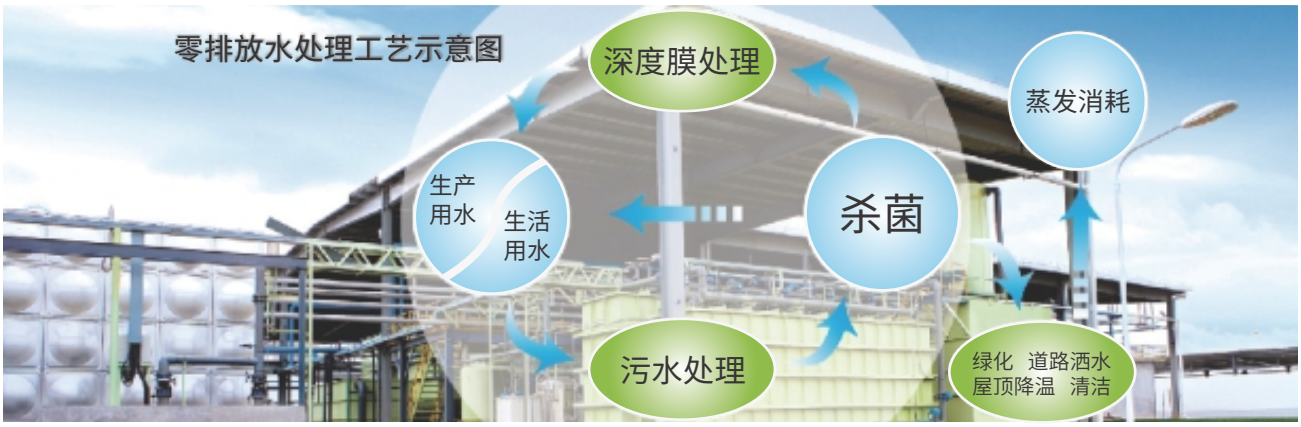


图 29 广汽本田废水处理工艺（图源:广汽本田2020年绿色发展报告）

Figure 29: GAC Honda's wastewater treatment process (Source: GAC Honda 2020 Green Development Report)

6.3.3

绿色供应链管理

Green supply chain management

绿色供应链作为一种创新型环境管理方式，在传统供应链管理中融入了全生命周期、生产者责任延伸等理念。2021年汽车企业绿色发展指数AAAAA级企业在供应链管理展现了较多先进经验，包括建立企业内部的管理框架、发布管理实施文件等，对供应商筛选准入、监察考核、淘汰退出等多方面制定了与企业发展相匹配的规章制度，提升企业绿色供应链管理水平。

As an innovative environmental management approach, green supply chain incorporates the concepts of whole life cycle and extended producer responsibility in traditional supply chain management. The AAAAA-ranked enterprises in the Green Development Index for Automotive Enterprises in 2021 have shown more advanced experiences in supply chain management, including the establishment of an internal management framework, the release of management implementation documents, and the formulation of rules and regulations commensurate with the development of the enterprise in various aspects such as supplier screening and access, monitoring and assessment, and elimination and withdrawal, as well as the improvement of the management level of green supply chain.

广汽本田

GAC Honda

与零部件供应商一直共同开展绿色采购活动，从2011年开始，推行在产品的整个生命周期中，削减温室效应气体排放。

The company has been pursuing green procurements with its parts suppliers, and since 2011 has been promoting the reduction of greenhouse gas emissions throughout the life cycle of its products.

具体包括:倡导供应商进行ISO 14001环境管理体系认证、每年在供应商大会上向供应商公布年度绿色采购目标、优先选择通过中国环境标志认证的产品、要求供应商禁止/限制使用有害物质和实施CO_2减排管理等活动。为此,广汽本田导入本田全球CO_2减排管理系统(SLIMOFFICE),把握供应商减排实绩,并对供应商进行现地检证,确认并指导供应商在节能减排措施、环境体制建设、可视化管理等方面进行优化改善。

Specific activities include advocating ISO 14001 environmental management system certification for suppliers, announcing annual green procurement targets to suppliers at the annual supplier conference, giving priority to products certified with the China Environmental Labelling, requiring suppliers to ban/restrict the use of hazardous substances and implementing CO2 reduction management. To this end, GAC Honda has introduced the Honda Global CO2 Emission Reduction Management System (SLIMOFFICE) to keep track of suppliers' emission reduction performance, and conduct on-site verification of suppliers to compel and guide them in improving energy-saving and emission reduction measures, environmental institutional construction, and visual management.

华晨宝马

BMW Brilliance

2020年,宝马集团成为首家为供应链制定明确二氧化碳排放目标的汽车制造商。基于宝马集团采购部的供应链可持续发展管理策略,华晨宝马制定了基于中国现状的整体管理策略,致力于打造全方位的供应链可持续发展战略。并发起了“供应链气候变化行动倡议”,将帮助其在供应商网络中识别出最有效的减少二氧化碳排放量的方式,并将进一步提高供应链碳排放信息披露和报告的透明度。

In 2020, the BMW Group became the first automobile manufacturer to set concrete targets for CO_2 emission reduction in its supply chain. Based on BMW Group's supply chain sustainability management strategy, BMW Brilliance has developed targeted plans for the Chinese market, with the aim to formulate a holistic supply chain sustainability management strategy. It has also launched the Supply Chain Climate Change Initiative to identify the most effective levers in its supplier network to reduce CO2 emissions, and to improve its transparency in CO2 emission disclosures and reporting.

过去一年中,华晨宝马在提高供应链碳排放量的透明度上取得了显著的成果。在试点项目中,华晨宝马为供应商伙伴开发了定制化的工具包并提供一对一培训,帮助他们在碳披露项目(CDP)平台上披露碳排放相关数据。2020年的试点项目中共涵盖了20家供应商,使其有能力在将来更清晰的披露碳排放相关数据。

Over the last year, BMW Brilliance has made significant progress in improving our supply chain CO2 emissions transparency. As a pilot project, BMW Brilliance developed customised toolkits and offered one-on-one training to support our suppliers in disclosing their carbon emissions data on the Carbon Disclosure Platform(CDP). BMW Brilliance enrolled 20 suppliers in the 2020 pilot project, who has been well prepared for further CO2 emissions transparency in the future.

6.3.4 绿色设计产品开发
Green design product development

再生材料选用
Recycled material selection

近年来吉利研究院牵头开展再生材料开发应用工作，在保障产品性能和安全的前提下，积极研发推广再生材料应用技术。他们在合适的部件中，引入和使用消费后可再循环材料（PCR）、工业使用后可再循环材料（PIR）、天然材料等进行研究开发。包括回收金属（钢铝），回收塑料（PP,PA,ABS等），回收纱线，麻纤维等循环、再生材料的开发和应用。回收金属主要用于车身钣金件、铸铝件等件；回收塑料主要用于保险杠、发动机装饰罩、饰条饰板等件；回收纱线主要用于内饰织物面料；麻纤维材料用于座椅后背板。预计到2023年整车质量中回收钢比例15%，回收铝比例25%，回收塑料比例15%。

In recent years, Geely Research Institute has taken the lead in the development and application of recycled materials and actively researched and promoted the applied technology of recycled material while ensuring product performance and safety. They introduce and use post-consumer recyclable (PCR) materials, post-industrial recyclable (PIR) materials, and natural materials for the research and development of appropriate components. This includes the development and application of recycled materials such as recycled metals (steel and aluminum), recycled plastics (PP, PA, ABS, etc.), recycled yarns, and hemp fibers. Recycled metal is mainly used for body stamping parts, cast aluminum parts and other parts; recycled plastic is mainly used for bumpers, engine trim covers, trim strips and panels and other parts; recycled yarn is mainly used for interior fabric; hemp fiber materials are used for seat back panels. It is expected that by 2023 the proportion of recycled steel in the whole vehicle mass will be 15%, the proportion of recycled aluminum 25% and the proportion of recycled plastic 15%.

车辆噪声控制
Vehicle noise control

瑞虎8Plus坐拥完善的整车风噪和声学包正向开发体系，油泥阶段概念设计多种方案的验证和优化；设计前期数字样车的CAE多轮分析和设计校核；开发初期又利用先进3D声源识别技术对风噪源进行识别；实车阶段搭配合理的声学包方案，整车60km/h匀速噪声达到53.7dBA，已远超同行水平，实现了深海静音般的驾乘体验，在2020年中国生态汽车认证中被评为“白金牌”车型。

The TIGGO 8 Plus is equipped with a complete forward development system for vehicle wind noise and acoustic package, the verification and optimization of multiple solutions of the conceptual design in the plastocene model; CAE multi-round analysis and design verification of the digital prototype in the pre-design stage; the identification of wind noise sources using advanced 3D sound source identification technology in the early development stage; a reasonable acoustic package solution in the real vehicle stage. The car has a speed noise of 53.7dBA at a uniform speed of 60km/h, which is well above the peer level, and delivers a deep-sea silent driving experience. It was rated as a "Platinum" model in the 2020 China Eco-car Certification.

产品使用能耗控制
Energy consumption control in product use

蔚来汽车在降低整车能耗方面不遗余力，企业车型能耗逐年下降。2018年第一款ES8车型单车能耗为21.0kWh/100km(工况法)，2020年ES8、EC6两个车型单车能耗17.5kWh/100km左右。到2021年，基于全新平台开发的ET7,最低能耗已下降到15.2kWh/100km，相较上年， 平均下降幅度达到10%。

Rio Automobile has spared no effort in reducing the energy consumption of the complete vehicle, and the energy consumption of its models has been decreasing year by year. In 2018, the energy consumption of the first ES8 model was 21.0kWh/100km (working condition method), and in 2020, the energy consumption of the ES8 and EC6 models was around 17.5kWh/100km. By 2021, the minimum energy consumption of ET7, a model based on the new platform, was reduced to 15.2kWh/100km, with an average decrease of 10% compared to the previous year.

6.4 绿色回收利用
Green recycling

2021年4月份，国家发展改革委、工信部、商务部、海关总署、环境部、交通运输部、国家市场监管总局、银保监会等八部委联合印发了《汽车零部件再制造规范管理暂行办法》，为规范汽车零部件

再制造行为和市场秩序，保障再制造产品质量，推动再制造产业规范化发展做出指导。目前，已有多家汽车企业开展零部件再制造工作，并取得丰硕成果。

In April 2021, eight ministries and commissions including the National Development and Reform Commission, the Ministry of Industry and Information Technology, the Ministry of Commerce, the Central Administration of Customs, the Ministry of Environment, the Ministry of Transport, the State Administration for Market Regulation, and the China Banking and Insurance Regulatory Commission (CBIRC) jointly issued the Interim Measures for the Regulation and Management of Automotive Parts Re-manufacturing to regulate the practice and market of automotive parts re-manufacturing, protect the quality of re-manufactured products, and guide the standardized development of the remanufacturing industry. At present, a number of automobile enterprises have carried out parts re-manufacturing projects, and achieved fruitful results.

华晨宝马

BMW Brilliance

2020年，华晨宝马进一步扩大了再制造零配件产品线，推出了电子助力转向器、音响主机和变速箱阀板三类全新的再制造产品。华晨宝马还丰富了再制造自动变速箱的产品组合，发布了更多型号的再制造自动变速箱以满足更多宝马车型的需求。并且，华晨宝马启动了分动箱再制造项目。同时，为进一步扩充再制造产品线，华晨宝马正积极提升自身旧件返还能力。在2020年，华晨宝马将旧件返还范围扩大到客户自付费的零配件。

In 2020, BMW Brilliance further expanded its re-manufactured parts product line and launched three new types of re-manufactured products: electronic power-assisted steering, audio mainframe and gearbox valve plate. BMW Brilliance also enriched its portfolio of re-manufactured automatic gearboxes, releasing more models of re-manufactured automatic gearboxes to meet the needs of more BMW models. Moreover, BMW Brilliance launched the re-manufacturing project of transfer case. Meanwhile, in order to further expand the re-manufacturing product line, BMW Brilliance is actively improving its capability to return self-provided used parts. In 2020, BMW Brilliance extended the scope of used parts return to parts paid for by customers.

2020年，华晨宝马共计回收了总重量超过669吨的108,070个零配件。经过层层分拣，其中超过300台自动变速箱、600个转向器、2,000台空调压缩机、100个音响主机以及100个变速箱阀板进入到我们的再制造流程，减少各类原材料消耗近40吨。

In 2020, BMW Brilliance recycled a total of 108,070 parts and components with a total weight of over 669 tons. Through rounds of sorting, the company has incorporated more than 300 automatic gearboxes, 600 steering gears, 2,000 air conditioning compressors, 100 audio mainframes and 100 gearbox valve plates into its re-manufacturing process, reducing the consumption of various raw materials by nearly 40 tons.

2020年，华晨宝马零配件回收与拆解中心—沧州逆向物流回收中心 (RLP)全面投入使用。华晨宝马进一步提高了零配件从经销商门店，经过物流中心和售后零件配送中心，最终到逆向物流回收中心的全程可追溯性。2020年5月，华晨宝马推出了经销商端旧件跟踪系统(ECDF)。通过该系统的实施，显著提高了包括零配件信息、物流状态以及其他相关信息等整体逆向物流流程的透明度。

In 2020, the BMW Brilliance Parts Recycling and Dismantling Center -- Cangzhou Reverse Logistics Recycling Center (RLP) became fully operational. BMW Brilliance further improves the end-to-end traceability of spare parts from dealer stores, through logistics centers and after-sales parts distribution centers, and finally to the Reverse Logistics Recycling Center. In May 2020, BMW Brilliance launched the dealer-side used parts tracking system (ECDF). The implementation of this system has significantly improved the transparency of the overall reverse logistics process, including parts information, logistics status and other related information.

沃尔沃

Volvo

沃尔沃汽车的再制造项目将更换的零件性能恢复到其初始水平，以实现环境和经济效益。与生产全新零件相比，再制造零件最多可节省85%的原材料和80%的能源消耗。2020年，沃尔沃汽车全球再制造项目共节省约271吨钢材和126吨铝材，节省的能源相当于每年减少4,116吨的二氧化碳排放。

Volvo Cars' re-manufacturing program restores the performance of replacement parts to their initial levels to achieve environmental and economic benefits. Compared to producing new parts, re-manufactured parts can save up to 85 percent in raw materials and 80 percent in energy consumption. In 2020, Volvo Cars' global re-manufacturing program saved a total of approximately 271 tons of steel and 126 tons of aluminum, and the energy savings were equivalent to an annual reduction of 4,116 tons of CO2 emissions.

沃尔沃汽车全球再制造 Re manufacturing in Volvo Car Group	2020	2019	2018	2017	2016
沃尔沃汽车全球再制造 Re manufacturing in Volvo Car Group	126,181	143,798	219,472	264,507	292,569
沃尔沃汽车全球再制造 Re manufacturing in Volvo Car Group	270,606	340,748	424,498	541,548	602,174
沃尔沃汽车全球再制造 Re manufacturing in Volvo Car Group	4,116,399	3,321,439	4,761,228	5,879,451	6,505,476
沃尔沃汽车全球再制造 Re manufacturing in Volvo Car Group	39,828	49,408	67,276	88,590	90,828

二氧化碳排放量降低的主要原因，是由Sphera提供的全生命周期评估建模软件Gabi中，二氧化碳排放因子的变化造成的。
The main reason for the increased CO savings is due to changer in the CO emission factors from Sphera s LCA modelling software Gabi.

表 15 沃尔沃汽车全球再制造项目汇总(表源：沃尔沃汽车(亚太)2020年绿色发展报告)
Table 15 Summary of Volvo Cars' global re-manufacturing projects (Source: Volvo Cars (Asia Pacific) 2020 Green Development report)

奇瑞汽车

Chery Automobile

奇瑞控股集团有限公司成立子公司安徽瑞赛克再生资源技术股份有限公司，公司为安徽省商务厅批准的奇瑞内部报废汽车回收拆解企业、国家发改委批准的汽车零部件再制造试点企业之一。经过十几年的长足发展，公司已由原先的回收性企业逐步转变为集回收、再加工和再制造为一体的综合性再生资源公司，逐步形成了以再生资源回收利用、报废汽车拆解、汽车产业链相关资源循环利用为核心业务的三轮驱动模式，进一步提升了公司的核心能力。

Chery Holdings Group Co., Ltd established a subsidiary Anhui Recycling Resources Technology Co., Ltd. The company is one of the Chery internal scrap car recycling and dismantling enterprises approved by the Department of Commerce of Anhui Province and one of the pilot enterprises of automotive parts re-manufacturing approved by the National Development and Reform Commission. After more than ten years of development, the company has gradually transformed from a recycling enterprise to a comprehensive recycling company integrating recycling, reprocessing and re-manufacturing. It has also gradually explored a three-wheel-drive model with renewable resources recycling and reuse, scrap car dismantling and recycling of resources related to the automobile industry chain as its core business, further enhancing its core capacity.

公司再制造产品种类涵盖：奇瑞发动机系列、变速器系列以及发电机、起动机等总成及辅件。

The company's re-manufactured product categories range from Chery engine series, transmission series, as well as generator, starter and other assemblies and auxiliary parts.

图 30 奇瑞控股再制造产品汇总(图源：奇瑞控股2020年绿色发展报告)

Figure 30 Summary of Chery Holdings' re-manufactured products (Source: Chery Holdings 2020 Green Development Report)

汽车零部件企业绿色发展先进经验

Advanced Experience in Green Development of Automotive Parts Enterprises

07

本部分内容基于2021年核算期内汽车零部件企业公开的绿色发展信息，总结分析行业目前先进做法和管理经验，为行业提供参考借鉴。

This part is based on the publicly available green development information of automotive partsparts enterprises in the accounting period of 2021, and summarizes and analyzes the current advanced practices and management experiences of the industry to provide reference for the industry.

基于2021年汽车零部件披露的绿色发展信息来看，当前我国已有部分零部件企业在绿色低碳发展推进中表现突出。本报告整理了企业在应对气候变化、碳排放管理、能源管理与节能降耗、供应商管理、绿色制造体系建设、降低污染物排放等方面的先进经验，供行业参考借鉴。

Based on the green development information disclosed by automotive parts industry in 2021, some of China's current parts enterprises have made outstanding performance in the promotion of green and low-carbon development. This report collates the advanced experiences of enterprises in coping with climate change, carbon emission management, energy management and energy saving, supplier management, green manufacturing system construction and pollutant emission reduction, etc., for the reference of the industry.

7.1 企业应对气候变化
Corporate response to climate change

气候变化问题是21世纪人类共同面临的严峻挑战，积极应对将激发企业发展的新势能。为响应国家“3060”双碳目标，福耀集团在加大清洁能源使用、提高资源利用、绿色产品转型升级之外，还开展了气候变化风险和机遇的识别，全面分析了对公司未来业务发展影响重大的因素，并制定了应对策略。

Climate change is a grave challenge faced by mankind in the 21st century, and active response will provide new momentum for enterprise development. In response to the national "2030 and 2060" dual-carbon goal, Fuyao Group has identified climate change risks and opportunities, analyzed the factors that will have a significant impact on the company's future business development, and formulated strategies to address them while working to increase the use of clean energy, improve the utilization of resources, and promote green product transformation and upgrading.

实体风险
Entity risks

识别 Identificatio

急性风险:公司总部及部分工厂所在地位于台风高发地区,极端天气频发将造成总部机械损耗、电力中断,增加运营成本。

慢性风险:公司总部及部分工厂位于近海、台风高发地区,气候变化将导致水灾、暴雨的频率提高。

Acute risk: The company's headquarters and some of its factories are located in areas with a high incidence of typhoons, and the frequency of extreme weather will cause mechanical wear and tear and power interruptions at the headquarters, which will increase operating costs.

Chronic risk: The headquarters and some factories of the company are located in offshore areas with high typhoons. Climate change will increase the frequency of floods and rainstorms.

应对 Response

针对福耀集团总部及福建工厂,公司成立应急处置工作领导小组,建立健全环境风险应急回应机制,规范生产安全事故预防,提高应急救援水准,在第一时间采取措施控制事态发展,将对公司的影响降到最低。

For Fuyao Group headquarters and Fujian plant, the company has set up an emergency response leading group, established a sound environmental risk emergency response mechanism, standardized production safety accident prevention, improved emergency rescue standards, and taken measures to control the development at the first time to minimize the impact on the company.

转型风险
Transformation risk

识别 Identificatio

政策风险:政府主检加强能耗管控,下达能源消费总量和能耗强度的双控目标,如未能达标将无法享受利好政策补贴,将对公司生产成本造成负面影响。

科技风险:全球气候变化趋势下,汽车厂商对玻璃产品的性能提出了更高要求,随着科技快速发展和原环保产品的快速普及,公司能否快速回应市场要求、进行产品技术革新则成为关键因素。

声誉风险:公司参与中国绿色制造评选,如未能成功打造绿色品牌,将对公司声誉造成损失。

Policy risk: The government has strengthened the control of energy consumption and issued a double control target for total energy consumption and energy intensity. If the company fails to meet the target, it will not be able to enjoy the favorable policy subsidies, which will have a negative impact on the company's production cost.

Technology risk: Under the trend of global climate change, automobile manufacturers have put forward higher requirements on the performance of glass products. With the rapid development of technology and the rapid adoption of the environmental products, whether the company can quickly respond to market requirements and product technology innovation has become a key factor.

Reputation risk: If the company fails to build a green brand after participating in the selection of China Green Manufacturing Factory, it will suffer losses to the company's reputation.

应对 Response

为应对以上多种风险，福耀集团密切关注市场动向，了解政府及消费者诉求，加大对环保产品研发的投入，不断提高生产过程能效管理精细化水准，打造产品绿色品牌。

In order to cope with these various risks, the Fuyao Group pays close attention to market trends, understands government and consumer demands, invests heavily in research and development of environment-friendly products, and keeps refining its energy efficiency management in production processes, so as to build a green brand for its products.

图 31 福耀集团应对气候变化风险识别(图源：福耀集团2020年ESG报告)

Figure 31 Fuyao Group's Climate Change Risk Identification (Source: Fuyao Group 2020 ESG Report)

7.2 碳排放管理

Carbon emission management

自2020年国家提出“3060”双碳目标后，碳排放管理已成为企业未来实现长足发展的重要工作。各国际组织、政府机构、供应链上下游及其他利益相关方都在对企业提出气候变化方面的要求。

Since the country proposed the "2030 and 2060" dual-carbon goal in 2020, carbon emission management has become an important task for enterprises to achieve long-term development in the future. International organizations, government agencies, upstream and downstream supply chain players, and other stakeholders are all demanding climate change from enterprises.

敏实集团
MINTH Group

在2020年，敏实集团跟进中国碳中和目标，制定了其碳减排路线图，以确保2030年碳排放量达到峰值，2050年实现碳中和。敏实集团计划在2021-2025年中使集团的碳排放强度逐年递减2%。在2021年通过引入绿色电力、增加回收材料使用量以及加大环保相关工艺升级与设施改造，从而开启集团的“碳元年”。

Following up on China's carbon neutrality target in 2020, MINTH Group has set out its carbon reduction roadmap to ensure that the company achieve peak carbon emissions by 2030 and carbon neutrality by 2050. MINTH Group plans to reduce the Group's carbon intensity by 2% per year from 2021 to 2025. In 2021, the Group will launch its "Year of Carbon" by introducing green power, increasing the use of recycled materials and enhancing environmental-related process upgrades and facility renovations.

图 32 敏实集团2050碳中和路线图（来源：敏实集团2020年ESG报告）
Figure 32 MINTH Group 2050 Carbon Neutrality Roadmap (Source: MINTH Group 2020 ESG Report)

浦林成山
Prinx Chengshan

在轮胎制造生命周期的各个环节均考虑其对环境的影响。在规划阶段确保橡胶配方和结构设计完全符合REACH和ECE R117法规中的要求，从而实现使用过程中的节能减排。并且将本公司的废旧轮胎进行回收用于再生橡胶的生产，以此来减少环境污染。通过生命周期评价（LCA）数据收集与建模，定期评估由购置、生产、运输、销售、使用到原材料处置各阶段对环境的影响。

Consider the environmental impact of tire manufacturing at all stages of its life cycle. At the planning stage, the company ensures that the rubber formulation and structural design fully comply with the requirements in REACH and ECE R117 regulations, thereby achieving energy conservation and emission reduction during use. It also reduces environmental pollution by recycling its scrap tires for use in the production of recycled rubber. Through Life Cycle Assessment (LCA) data collection and modeling, the company regularly assesses the environmental impact of each stage from acquisition, production, transportation, distribution, use to raw material disposal.

7.3 能源管理与节能降耗
Energy management and energy saving and consumption reduction

零部件企业主要使用能源类型包括电力、天然气、汽柴油等，为响应国家双碳目标与节能减排号召，落实清洁生产要求，从披露的信息来看行业内普遍对厂区的能源消耗进行管理，搭建能源管理体系，建设在线管理系统，部分企业已通过ISO 50001能源管理体系认证。

The main types of energy used by component companies include electricity, natural gas, gasoline and diesel fuel, etc. Publicly available information shows that, in order to respond to the national dual-carbon goal and calls for energy saving and emission reduction, and to implement the requirements of clean production, the industry generally manages the energy consumption of plants, builds energy management system and online management system, and some enterprises have passed ISO 50001 energy management system certification.

在清洁能源使用方面，大多企业的首要做法是投资光伏能源来获取绿色电力,提高清洁能源的占比（如建设光伏发电园区、太阳能热水器、屋顶搭建光伏板）。宁德时代与供应商共建光伏发电设备，将产出的电能用于生产、研发及办公，并通过不断扩大光伏发电设备面积来降低单位产品温室气体排放。2020年光伏发电2258万kWh，相较于2019年减少了碳排放量9,413吨，同比提升84.3%。

In terms of clean energy use, the primary practice of most enterprises is to invest in PV energy to obtain green power and increase the proportion of clean energy (such as building PV power parks, solar water heaters, and building PV panels on rooftops). CATL is building PV power generation facilities together with its suppliers, using the electricity produced for production, R&D and office use, and reducing greenhouse gas emissions per unit of product by continuously expanding the area of PV power generation facilities. With 22.58 million kWh of PV power generation in 2020, the company has reduced carbon emissions by 9,413 tons compared to 2019, an 84.3% improvement year-on-year.

同时，宁德时代也通过不同生产过程改造与节能技术的引进来降低能源消耗。2020年生产过程中共回收利用过万吨可用溶剂，将用过的溶剂通过回收机加真空减压系统进行再利用，减少约90%的溶剂生产消耗能源。

At the same time, CATL also reduces energy consumption through the transformation of different production processes and the introduction of energy-saving technologies. A total of more than 10,000 tons of usable solvents were recycled in the production process in 2020, and the used solvents were reused through the recycling machine plus vacuum pressure reduction system, reducing about 90% of the energy consumed for solvent production.

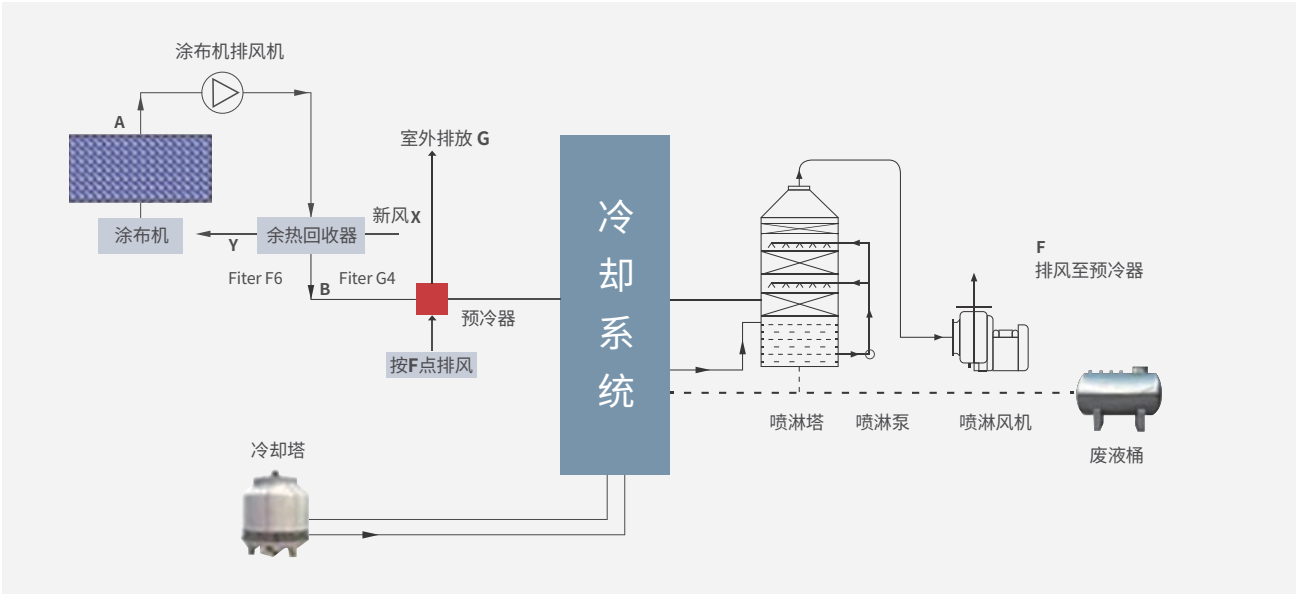


图 33 宁德时代NMP回收利用（图源：宁德时代2020年社会责任报告）

Figure 33 Recycling of NMP by CATL (Source: CATL 2020 CSR Report)

7.4 供应商管理
Supplier management

绿色供应链管理是企业绿色发展战略中必不可少的一部分，该管理模式旨在有效提高资源使用效率、降低生态环境破坏程度，以此为企业建立可持续的竞争优势，创造新的市场机会。同时绿色供应链管理还能够帮助企业规避可能会在供应商方面出现的环境、气候、质量等问题，从而使企业在采购上以较低的成本获得较大的权益。

Green supply chain management is an essential part of an enterprise's green development strategy. This management model aims to effectively improve the efficiency of resource use and reduce the degree of ecological and environmental damage, so as to build up sustainable competitive advantages for enterprises and create new market opportunities. At the same time, green supply chain management can also help enterprises avoid environmental, climate, quality and other problems that may arise on the supplier side, so that enterprises can acquire greater benefits in procurement at lower costs.

浦林成山
Prinx Chengshan

开发了供应商信息在线管理系统对供应商质量、环保、合规等多方面进行监控，并通过集团《供应商手册》等一系列文件对供应商必须符合ISO14001和ISO 45001规定进行约束，以年度审计的方式保障供应体系的安全。

The company has developed an online supplier information management system to monitor supplier quality, environmental protection, compliance and other aspects. It also subject the suppliers to the ISO 14001 and ISO 45001 regulations through a series of documents such as the Group's Supplier Manual to ensure the security of the supply system by means of annual audits.

福耀玻璃
Fuyao Glass

建立了绿色供应链管理体系并成立了绿色供应链领导小组，以引导公司向可持续方向进行转型，同时向供应商提出相关责任标准如《福耀供应商社会责任行为准则》，并组织开展供应商可持续发展培训。在其报告期内，福耀玻璃与供应商的可持续采购章程超过了70%，同时其公司内部的所有采购人员都通过了可持续培训，集团顺利获评工信部国家级绿色供应链管理企业。

Fuyao Glass has established a green supply chain management system and set up a green supply chain leadership group to guide the company's transition toward sustainability, while proposing relevant responsibility standards to suppliers such as the Fuyao Supplier CSR Code of Conduct and organizing supplier sustainability training. During its reporting period, Fuyao Glass' sustainable procurement charter with suppliers exceeded 70%, while all of its internal procurement staff passed sustainability training, and the Group was successfully awarded as a national green supply chain management enterprise by the Ministry of Industry and Information Technology.

7.5 绿色制造体系
Green manufacturing system

按照《工业和信息化部办公厅开展绿色制造评价体系建设的通知》相关要求，部分汽车零部件企业积极开展绿色工厂、绿色设计产品等绿色制造体系建设。截止核算完成期，在核算名单中共有27家企业获评国家级绿色工厂，8家企业产品获评国家级绿色设计产品。

In accordance with the Notice of the General Office of the Ministry of Industry and Information Technology on the Creation of a Green Manufacturing Evaluation System, some automotive parts enterprises actively carry out green factory, green design products and other green manufacturing system construction. As of the accounting completion period, a total of 27 enterprises in the accounting list have been rated as national green factories and 8 enterprises' products have been rated as national green design products.

7.6 降低污染物排放
Reducing pollutant emissions

降低污染物排放是生产企业应尽的环保责任与义务，也是我国环境信息披露要求中的重点内容。在汽车零部件企业当中，污染物排放管理主要通过工艺改造与处理设施升级两种路径进行，同时对各种排放进行在线监控并同步至监管部门信息公开系统。

Reducing pollutant emissions is the environmental responsibility and obligation of manufacturing enterprises, and also a key element of China's environmental information disclosure requirements. Among automotive parts enterprises, pollutant emission management is mainly realized through two paths: process transformation and treatment facility upgrade. At the same time, various emissions are monitored online and synchronized to the information disclosure system of regulatory authorities.

敏实集团
MINTH Group

根据污水性质和场地情况，增加了在线监控系统，用且采用AO生化工艺与MBR膜进行过滤，确保生活污水达标排放。

According to the nature of sewage and site conditions, an online monitoring system is provided, and AO biochemical process with MBR membrane is used for filtration to ensure that domestic sewage meets the standard for discharge.

玉柴股份
Yuchai Group

改造加装污泥低温干化机。该设备投用后，不仅可将含油污泥含水率降至30%-50%，大大降低了含油污泥的处理成本，而且还能有效降低含油污泥装袋转移处理过程的泄漏风险，践行企业的环保责任。

The company retrofitted sludge low temperature dryer. After the equipment is put into use, it can not only reduce the water content of oily sludge to 30%-50%, thus greatly reducing the treatment cost of oily sludge, but also effectively reduces the risk of leakage in the process of bagging and transferring oily sludge for treatment.The company has practiced the its corporate environmental responsibility in this way.

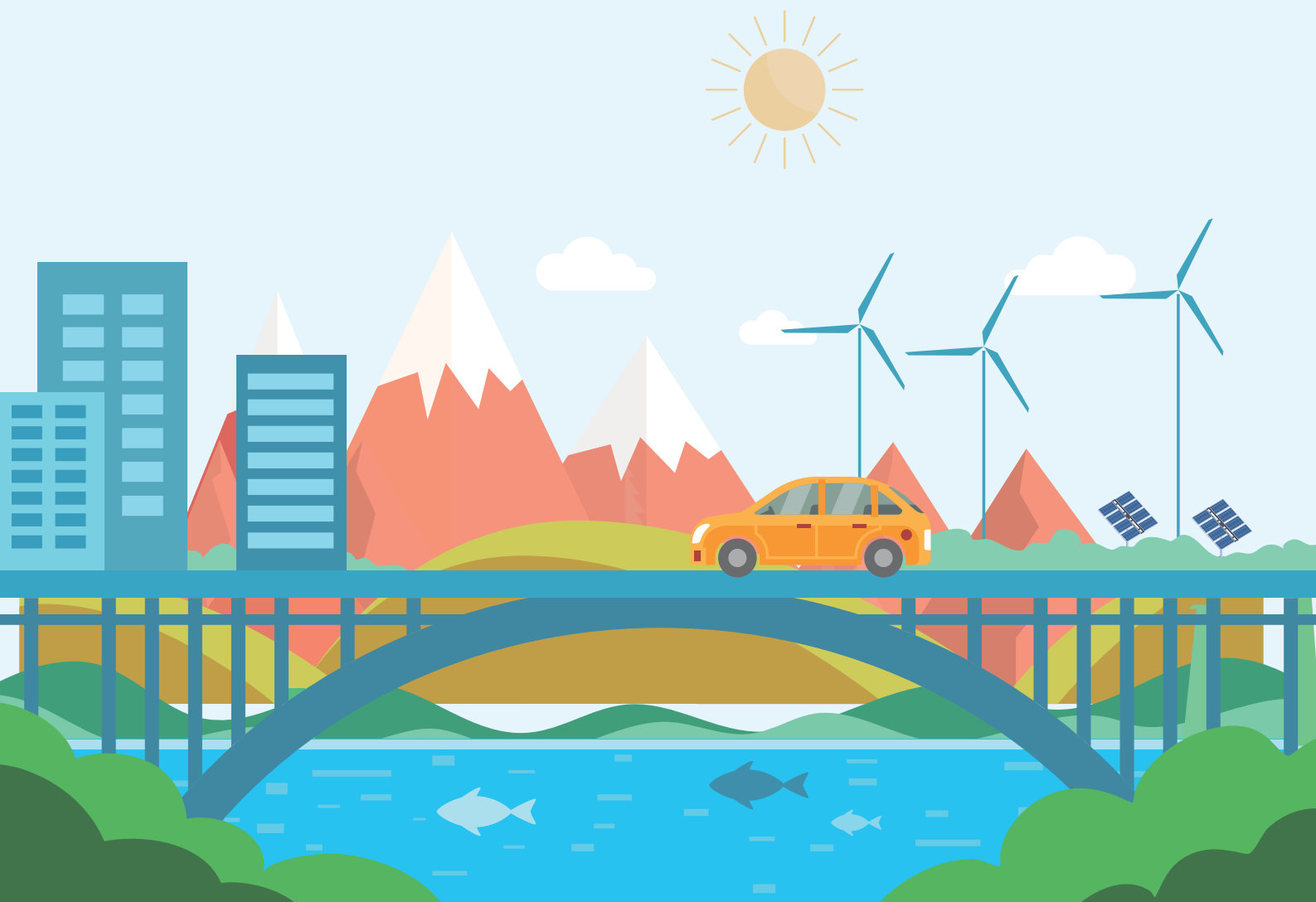
27家
企业获评国家级绿色工厂

8家
企业产品获评国家级绿色设计产品

08

总结及建议

Summary and Recommendations

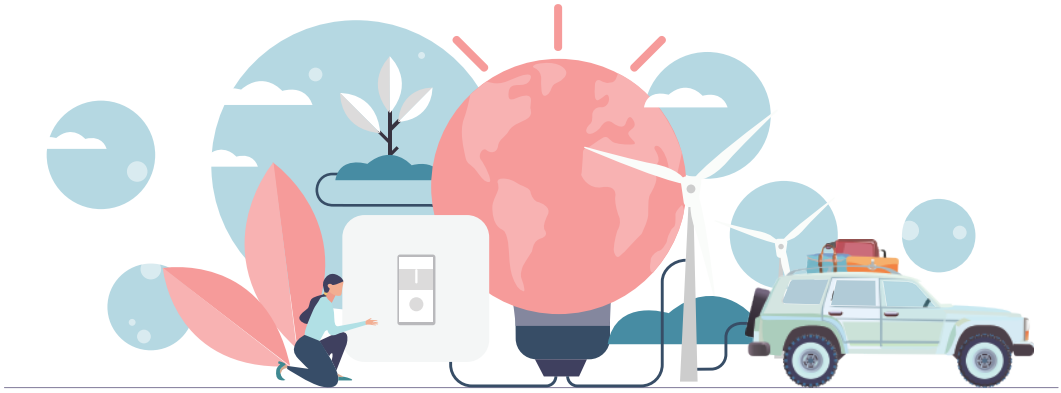


根据2021年企业绿色发展指数核算结果分析，汽车企业及零部件企业在绿色发展信息披露程度上均比较低，且均呈现两级分化现象，大多数企业的绿色发展信息披露工作还处于起步阶段，仅小部分头部企业具备常态化主动公开保障机制。上市企业绿色发展信息披露管理相对于非上市企业较为完善，披露程度普遍高于非上市企业。主要原因在于证券市场对于上市企业信息披露有一定的要求。指标层面，企业绿色发展信息中定性指标的披露程度较高，定量和改善类指标披露程度较低，企业的披露意愿和信息完整度表现不如定性信息。

According to the analysis of the 2021 Enterprise Green Development Index accounting results, both automotive enterprises and component enterprises disclose relatively little information on green development, and conditions vary greatly different enterprises: most of them just start to prepare for the disclosure of information on green development, while only a small number of leading enterprises have a regular active disclosure guarantee mechanism in place. Listed enterprises are better at managing green development information disclosures than listed enterprises, and such enterprises generally disclose more information than non-listed enterprises. The main reason is the securities market have certain requirements for the information disclosure on listed enterprises. At the indicator level, the degree of disclosure of qualitative indicators in enterprise green development information is high, while the degree of disclosure of quantitative and improvement-related indicators is low, and the score of enterprises' willingness to disclose and information completeness is not as well as qualitative information.

汽车企业在主要产品信息、企业运营范围、管理方针等企业基础信息披露程度较高；废气排放、绿色工厂、厂界环境噪声、水资源消耗等生产制造类指标次之；产品生命周期碳排放、零部件再制造等产品环保类指标，以及包装、储存、运输等产品物流类指标披露程度较低。

Automobile enterprises disclose more information about basic corporate facts such as main product information, enterprise operation scope and management policy; followed by production and manufacturing-related indicators such as exhaust gas emission, green factory, environmental noise at factory boundary and water consumption; they disclose less information about product environmental indicators such as product life cycle carbon emission and parts re-manufacturing, as well as product logistics indicators such as packaging, storage and transportation.



汽车零部件企业中头部企业已在开展绿色发展信息披露行动上取得了一定成效，能够主动披露企业管理与生产活动的有关信息，但是在产品的原材料、分销、回收等除生产之外的其他周期上信息还存有一定的提升空间。对于核算名单的全部企业，得分情况主要集中在企业基本信息及强制性的污染排放信息中，自愿披露信息较少，企业信息披露对公司治理的重要性尚未得到重视。

Some leading automotive parts enterprises have achieved some success in carrying out green development information disclosures and can actively disclose information about enterprise management and production activities, but there is still some room for improvement on other steps other than production, such as raw materials preparation, distribution and recycling of products. For all the enterprises in the accounting list, the scores are mainly concentrated in the basic enterprise information and mandatory pollution emission information, and less information is disclosed on a voluntary basis, and enterprises have yet to recognize the importance of enterprise information disclosures in corporate governance.

上市企业的信息披露情况明显高于未上市企业，2021年6月，中国证券监督管理委员会发布公告，自2021年半年报开始，“环境与社会责任”内容成为A股重点排污单位企业的强制披露项。但是在信息披露工作刚起步的背景下，部分企业在实际发布文本中将应披露信息内容进行了简化处理，披露意愿较低。

Listed enterprises apparently disclose more information than non-listed enterprises. In June 2021, the China Securities Regulatory Commission issued an announcement, according to which information about"environmental and social responsibility" has become a mandatory disclosure item for A-share major pollutant discharge enterprises starting from 2021 semiannual reports. However, in the initial phase of information disclosure, some enterprises have simplified the information to be disclosed in their actual release text and are less willing to disclose more information.

汽车行业企业的绿色发展信息披露总体处于起步阶段，存在大量工作亟待完成，但随着政策引导力度的不断加大及公众需求的增加，预计信息披露量将出现一个迅速上升期。

Overall, in the initial stage, automobile enterprises still have much work to do in terms of the disclosure of green development information. Nevertheless, with growing policy guidance and public demand, it is expected that there will be a rapid rise in the amount of information disclosure.

为进一步提升汽车行业环境信息披露水平，需要政府、企业与其他利益相关方的共同努力：

To further improve the level of environmental information disclosure in the automotive industry, the joint efforts of the government, enterprises and other stakeholders are needed:

政府层面 Government level

加大对企业环境信息披露的的引导，出台标准规范等指导，研究探索激励政策及不合格企业的处罚政策，将企业环境信息披露质量作为绿色低碳转型支撑政策、引领金融投资与市场消费的量化评价工具之一。

Step up the guidance on enterprise environmental information disclosure, introduce standards and norms and other guidance, study and explore incentive policies and penalty policies for non-conforming enterprises, and use the quality of enterprise environmental information disclosure as one of the quantitative evaluation tools to support green low-carbon transformation policies and steer financial investment and market consumption.

企业层面 Enterprise level

贯彻落实《环境信息依法披露制度改革方案》《企业环境信息依法披露管理办法》等相关要求，建立完善的企业绿色发展管理体系与环境信息披露机制。同时，以汽车企业为中心，将环境信息披露要求纳入供应商管理体系中，带动供应链企业开展环境信息披露，以增强低碳转型背景下政府与市场对企业的信赖度。

Implement the Reform Program of Environmental Information Disclosure System According to Law, Management Measures of Enterprise Environmental Information Disclosure According to Law and other related requirements, and establish a sound enterprise green development management system and environmental information disclosure mechanism. At the same time, centering on automobile enterprises, incorporate environmental information disclosure requirements into the supplier management system and drive supply chain enterprises to disclose environmental information in order to enhance the trust of the government and the market on enterprises in the context of low-carbon transition.

利益相关方 Shareholders

绿色金融机构等积极关注并采纳企业环境信息披露相关成果，将企业环境信息披露质量作为企业投资的参考依据之一，优先选择环境信息披露透明度较高（如GDI得分较高）的企业以降低投资风险，推动社会资源向优质企业聚集。

Green financial institutions should actively follow on and adopt the practice of environmental information disclosure of enterprises, take the quality of environmental information disclosure of enterprises as one of the reference bases for enterprise investment, give priority to enterprises with higher transparency of environmental information disclosure (e.g. higher GDI score) to reduce investment risks, and facilitate the convergence of social resources to high-quality enterprises.

09

2021年汽车行业绿色发展指数发布会

Launch of 2021 Automotive Industry Green Development Index

9.1 2021年汽车行业绿色发展指数发布

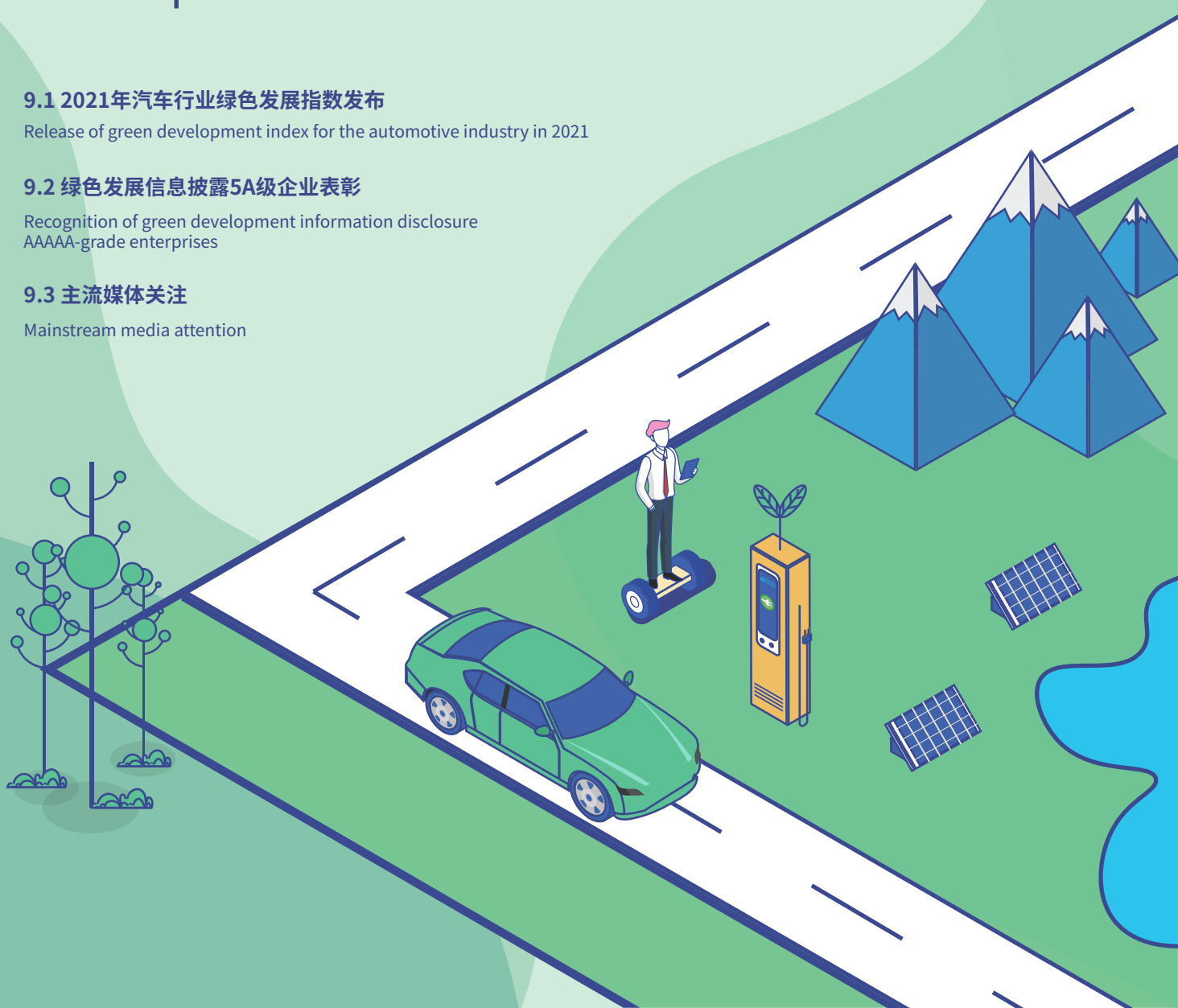
Release of green development index for the automotive industry in 2021

9.2 绿色发展信息披露5A级企业表彰

Recognition of green development information disclosure AAAAA-grade enterprises

9.3 主流媒体关注

Mainstream media attention



2021年12月23日，中汽数据有限公司在天津成功召开“2021年汽车工业节能与绿色发展评价中心年度成果分享会”。工业和信息化部节能与综合利用司、国家市场监督管理总局认证监督管理司、生态环境部综合司生态环境政策处、中国消费品质量安全促进会相关部门领导在云端，同30多家汽车企业代表、50家媒体代表，共同见证了2021年中国汽车及零部件企业绿色发展指数研究成果发布，并为绿色发展指数AAAAA级企业颁奖。

Automotive Data of China Co., Ltd successfully held the "2021 Annual Results Sharing Meeting of the Evaluation Center for Energy Saving and Green Development in the Automotive Industry" in Tianjin on December 23, 2021. Leaders from relevant departments including the Department of Energy Conservation and Comprehensive Utilization of the Ministry of Industry and Information Technology, the Department of Certification Supervision and Management of the State Administration for Market Regulation, the Ecological Environment Policy Division of the Comprehensive Department of the Ministry of Ecology and Environment, and the China Association for Consumer Products Quality and Safety Promotion (CACPQSP) met in the cloud, along with representatives from more than 30 automotive enterprises and 50 media representatives, to witness the release of the research results of the 2021 China Automotive and Parts Enterprise Green Development Index and to present awards to the AAAAA-rated enterprises of the Green Development Index.

9.1 2021年汽车行业绿色发展指数发布

Release of green development index for the automotive industry in 2021

图 34 GDI指数发布会现场
Figure 34 GDI index launch site

图 35 中国汽车技术研究中心有限公司副总经理吴志新致辞

Figure 35 Speech by Wu Zhixin, Deputy General Manager of China Automotive Technology and Research Center Co.,Ltd.

图 36 2021年汽车及零部件企业绿色发展指数研究成果发布

Figure 36 Release of the research results of the Green Development Index for Automotive and Parts Enterprises in 2021

9.2 绿色发展信息披露5A级企业表彰

Recognition of green development information disclosure AAAAA-grade enterprises

华晨宝马汽车有限公司、奇瑞控股集团有限公司、浙江吉利控股集团有限公司、沃尔沃汽车(亚太)投资控股有限公司、广汽本田汽车有限公司、上海蔚来汽车有限公司、长安福特汽车有限公司7家企业获得AAAAA评级，零部件企业本年度最高评级为AAA。

Seven enterprises including BMW Brilliance Automotive Co., Ltd., Chery Holding Group Co., Ltd., Zhejiang Geely Holding Group Co., Ltd., Volvo Cars (Asia Pacific) Investment Holdings Co., Ltd., GAC Honda Motor Co., Ltd., Shanghai Nio Automobile Co., Ltd., and Changan Ford Motor Co., Ltd. were awarded AAAAA ratings, and the highest rating for parts enterprises this year was AAA.

图 37 华晨宝马获颁绿色发展指数5A评级

Figure 37 BMW Brilliance named 5A level enterprise in Green Development Index

图 38 奇瑞控股获颁绿色发展指数5A评级

Figure 38 Chery Holding named 5A level enterprise in Green Development Index

图 39 沃尔沃汽车(亚太)获颁绿色发展指数5A评级

Figure 39 Volvo Cars (Asia Pacific) named 5A level enterprise in Green Development Index

图 40 广汽本田获颁绿色发展指数5A评级

Figure 40 GAC Honda named 5A level enterprise in Green Development Index

图 41 蔚来汽车获颁绿色发展指数5A评级

Figure.41 Nio Automobile named 5A level enterprise in Green Development Index

图 42 长安福特获颁绿色发展指数5A评级

Figure 42 Changan Ford named 5A level enterprise in Green Development Index

附录
Appendixes

附表一：2021年汽车及零部件企业GDI指数核算名单
Exhibit 1: GDI index accounting list for automotive and parts enterprises in 2021

2021年汽车企业绿色发展指数核算名单
Accounting List of Green Development Index of Automotive Enterprises in 2021

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
1	一汽 - 大众汽车有限公司 FAW-Volkswage Automotive Co., Ltd.	汽车企业 Automobile Enterprises
2	上汽大众汽车有限公司 SAIC Volkswagen Automotive Co., Ltd.	汽车企业 Automobile Enterprises
3	上汽通用汽车有限公司 SAIC General Motors Automotive Co., Ltd.	汽车企业 Automobile Enterprises
4	东风汽车有限公司东风日产乘用车公司 Dongfeng Nissan Passenger Vehicle branch of Dongfeng Motor Co., Ltd.	汽车企业 Automobile Enterprises
5	浙江吉利控股集团有限公司 Zhejiang Geely Holding Group Co., Ltd.	汽车企业 Automobile Enterprises
6	重庆长安汽车股份有限公司 Chongqing Changan Automobile Co., Ltd.	汽车企业 Automobile Enterprises
7	上汽通用五菱汽车股份有限公司 SAIC General Wuling Automobile Co., Ltd.	汽车企业 Automobile Enterprises
8	长城汽车股份有限公司 Great Wall Motor Co., LTD.	汽车企业 Automobile Enterprises
9	东风本田汽车有限公司 Dongfeng Honda Automobile Co., LTD.	汽车企业 Automobile Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
10	广汽本田汽车有限公司 GAC Honda Automobile Co., Ltd.	汽车企业 Automobile Enterprises
11	一汽丰田汽车有限公司 FAW Toyota Automobile Co., LTD.	汽车企业 Automobile Enterprises
12	广汽丰田汽车有限公司 GAC TOYOTA MOTORCO.,LTD.	汽车企业 Automobile Enterprises
13	北京奔驰汽车有限公司 Beijing Benz Automotive Co., Ltd. (BBAC)	汽车企业 Automobile Enterprises
14	华晨宝马汽车有限公司 BMW Brilliance Automobile Ltd.	汽车企业 Automobile Enterprises
15	北京现代汽车有限公司 Beijing Hyundai Motor Co., LTD.	汽车企业 Automobile Enterprises
16	上海汽车集团股份有限公司乘用车分公司 Passenger Vehicle branch of SAIC Motor Group Co., Ltd.	汽车企业 Automobile Enterprises
17	奇瑞控股集团有限公司 Chery Holding Group Co., Ltd.	汽车企业 Automobile Enterprises
18	广汽乘用车有限公司 GAC Passenger Vehicle Co., Ltd.	汽车企业 Automobile Enterprises
19	一汽轿车股份有限公司 FAW Car Co., Ltd.	汽车企业 Automobile Enterprises
20	比亚迪汽车有限公司 BYD Auto Co., Ltd.	汽车企业 Automobile Enterprises
21	长安福特汽车有限公司 Changan Ford Automobile Co., Ltd.	汽车企业 Automobile Enterprises
22	东风悦达起亚汽车有限公司 Dongfeng Yueda Kia Motors Co., Ltd.	汽车企业 Automobile Enterprises
23	沃尔沃汽车(亚太)投资控股集团有限公司 Volvo Cars (Asia Pacific) Investment Holding Group Co., Ltd.	汽车企业 Automobile Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
24	特斯拉（上海）有限公司 Tesla (Shanghai) Co., Ltd.	汽车企业 Automobile Enterprises
25	长安马自达汽车有限公司 Changan Mazda Automobile Co., Ltd.	汽车企业 Automobile Enterprises
26	东风小康汽车有限公司 Dongfeng Xiaokang Automobile Co., Ltd.	汽车企业 Automobile Enterprises
27	东风柳州汽车有限公司 Dongfeng Liuzhou Automobile Co., Ltd.	汽车企业 Automobile Enterprises
28	北京汽车股份有限公司 BAIC Motor Corporation., Ltd.	汽车企业 Automobile Enterprises
29	广汽三菱汽车有限公司 GAC Mitsubishi Motors Co., Ltd.	汽车企业 Automobile Enterprises
30	安徽江淮汽车集团股份有限公司 Anhui Jianghuai Automobile Group Co., Ltd.	汽车企业 Automobile Enterprises
31	东风汽车集团股份有限公司乘用车公司 Passenger Vehicle branch of SAIC Motor Group Co., Ltd.	汽车企业 Automobile Enterprises
32	奇瑞捷豹路虎汽车有限公司 Chery Jaguar Land Rover Automotive Co., Ltd.	汽车企业 Automobile Enterprises
33	神龙汽车有限公司 Dongfeng Peugeot-Citroen Automobile Co., Ltd.	汽车企业 Automobile Enterprises
34	北京新能源汽车股份有限公司 Beijing New Energy Vehicle Co., Ltd.	汽车企业 Automobile Enterprises
35	上海蔚来汽车有限公司 NIO Co., Ltd.	汽车企业 Automobile Enterprises
36	广汽菲亚特克莱斯勒汽车有限公司 GAC Fiat Chrysler Automobiles Co., Ltd.	汽车企业 Automobile Enterprises
37	上汽大通汽车有限公司 SAIC MAXUS Automotive Co., Ltd.	汽车企业 Automobile Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
38	华晨鑫源重庆汽车有限公司 Brilliance Xinyuan Chongqing Automobile Co., Ltd.	汽车企业 Automobile Enterprises
39	江铃汽车股份有限公司 Jiangling Automobile Co., Ltd.	汽车企业 Automobile Enterprises
40	广州小鹏汽车科技有限公司 Guangzhou Xiaopeng Automobile Technology Co., Ltd.	汽车企业 Automobile Enterprises
41	福建奔驰汽车有限公司 Fujian Benz Automotive Co., Ltd.	汽车企业 Automobile Enterprises
42	东风英菲尼迪汽车有限公司 Dongfeng Infiniti Automobile Co. Ltd.	汽车企业 Automobile Enterprises
43	华晨雷诺金杯汽车有限公司 Renault Brilliance Jinbei Automobile Co., Ltd.	汽车企业 Automobile Enterprises
44	威马汽车技术有限公司 WM Motor Automotive Technology Co., Ltd.	汽车企业 Automobile Enterprises
45	宜宾凯翼汽车有限公司 Yibin Kaiyi Automobile Co., Ltd.	汽车企业 Automobile Enterprises
46	郑州日产汽车有限公司 Zhengzhou Nissan Automobile Co. Ltd.	汽车企业 Automobile Enterprises
47	浙江合众新能源汽车有限公司 Zhejiang Hezhong New Energy Automobile Co., Ltd.	汽车企业 Automobile Enterprises
48	观致汽车有限公司 Qoros Automobile Co., Ltd.	汽车企业 Automobile Enterprises

2021年汽车零部件企业绿色发展指数核算名单

2021 Accounting List of Green Development Indexes for Automotive Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
1	潍柴控股集团有限公司 Weichai Group Holding Limited	汽车零部件企业 Automotive Parts Enterprises
2	华域汽车系统股份有限公司 Huayu Automotive Systems Company Limited	汽车零部件企业 Automotive Parts Enterprises
3	北京海纳川汽车部件股份有限公司 Beijing Hainachuan Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
4	宁波均胜电子股份有限公司 Ningbo Joyson Electronics Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
5	宁德时代新能源科技股份有限公司 Contemporary Amperex Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
6	中国航空汽车系统控股有限公司 China Aviation Automotive Systems Holdings Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
7	广汽零部件有限公司 Guangzhou Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
8	广西玉柴机器集团有限公司 Guangxi Yuchai Machinery Group Company	汽车零部件企业 Automotive Parts Enterprises
9	中策橡胶集团有限公司 Zhongce Rubber Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
10	中信戴卡股份有限公司 CITIC Dicastal Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
11	陕西法士特汽车传动集团有限责任公司 Shaanxi Faster Auto Drive Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
12	福耀玻璃工业集团股份有限公司 Fuyao Glass Industry Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
13	东风汽车零部件(集团)有限公司 Dongfeng Automotive Parts (Group) Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
14	宁波继峰汽车零部件股份有限公司 Ningbo Jifeng Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
15	长春一汽富维汽车零部件股份有限公司 Changchun FAWAY Automobile Components Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
16	山东玲珑轮胎股份有限公司 Shandong Linglong Tire Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
17	宁波华翔电子股份有限公司 Ningbo Huaxiang Electronics Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
18	汽车德昌电机控股有限公司 Auto Johnson Electric Holding Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
19	北方凌云工业集团有限公司 North Lingyun Industrial Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
20	郑州煤矿机械集团股份有限公司 Zhengzhou Coal Mining Machinery Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
21	一汽解放汽车有限公司发动机事业部 Engine Division of FAW Jiefang Automobile Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
22	赛轮集团股份有限公司 Sailun Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
23	敏实集团有限公司 MINTH Group Limited	汽车零部件企业 Automotive Parts Enterprises
24	诺博汽车系统有限公司 Nobo Automotive Systems Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
25	精诚工科汽车系统有限公司 Exquisite Automotive Systems Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
26	安徽中鼎密封件股份有限公司 Anhui Zhongding Sealing Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
27	万丰奥特控股集团有限公司 Wanfeng Auto Holding Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
28	广西汽车集团有限公司 Guangxi Automobile Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
29	安徽环新集团有限公司 Anhui ARN Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
30	万向钱潮股份有限公司 Wanxiang Qianchao Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
31	富奥汽车零部件股份有限公司 Fuao Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
32	陕西汉德车桥有限公司 Shaanxi HanDe Axle Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
33	亚普汽车部件股份有限公司中国 YAPP Automotive Systems Co., Ltd. (China)	汽车零部件企业 Automotive Parts Enterprises
34	无锡威孚高科技集团股份有限公司 Wuxi Weifu High-Tech Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
35	三角轮胎股份有限公司 Triangle Tire Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
36	瑞立集团有限公司 Ruili Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
37	东北工业集团有限公司 Northeast Industries Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
38	广东富华重工制造有限公司 Guangdong Fuhua Heavy Industry Manufacturing Co. Ltd.	汽车零部件企业 Automotive Parts Enterprises
39	三环集团有限公司国汽车 Tri-Ring Group Co., Ltd. State Automobile	汽车零部件企业 Automotive Parts Enterprises
40	昆明云内动力股份有限公司 Kunming Yunnei Power Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
41	贵州轮胎股份有限公司 Guizhou Tire Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
42	常州星宇车灯股份有限公司 Changzhou Xingyu Car Light Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
43	青特集团有限公司 Qingte Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
44	风神轮胎股份有限公司 Aeolus Tire Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
45	山东浩信机械有限公司 Shandong Haoxin Machinery Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
46	广东鸿图科技股份有限公司 Guangdong Hongtu Technology (Holdings) Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
47	浦林成山（山东）轮胎公司 Prinx Chengshan (Shandong) Tire Company Ltd.	汽车零部件企业 Automotive Parts Enterprises
48	浙江银轮机械股份有限公司 Zhejiang Yinlun Machinery Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
49	惠州市德赛西威汽车电子股份有限公司 Huizhou Desay SV Automotive Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
50	江南模塑科技股份有限公司 Jiangnan Mould & Plastic Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
51	宁波拓普集团股份有限公司 Ningbo Tuopu Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
52	浙江万里扬股份有限公司 Zhejiang Wanliyang Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
53	深圳市航盛电子股份有限公司 Shenzhen Hangsheng Electronics Corp., Ltd.	汽车零部件企业 Automotive Parts Enterprises
54	重庆平伟汽车科技股份有限公司 Chongqing Pingwei Automotive Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
55	上海岱美汽车内饰件股份有限公司 Shanghai Daimei Automobile Interior Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
56	锦州万得汽车集团有限公司 Wonder Auto Group Limited Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
57	北京京西重工有限公司 Beijing Jingxi Heavy Industry Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
58	国轩高科股份有限公司 Guoxuan High-Tech Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
59	宁波双林汽车部件股份有限公司 Ningbo Shuanglin Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
60	海力达汽车系统(常熟)有限公司 Hilite Automotive Systems (Changshu) Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
61	许昌远东传动轴股份有限公司 Xuchang Yuandong Drive Shaft Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
62	华达汽车科技股份有限公司 Huada Automotive Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
63	青岛双星股份有限公司 Qingdao Doublestar Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
64	安徽全柴动力股份有限公司 Anhui Quanchai Engine Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
65	上海柴油机股份有限公司 Shanghai Diesel Engine Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
66	新乡市新航机电科技有限公司 Xinxiang Xinhang Electromechanical Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
67	阜新德尔汽车部件股份有限公司 Fuxin Dare Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
68	北京威卡威汽车零部件股份有限公司 Beijing WKW Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
69	深圳市得润电子股份有限公司 Shenzhen DEREN Electronics Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
70	天润工业技术股份有限公司 Tianrun Industry Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
71	上海加冷松芝汽车空调股份有限公司 SongZ Automobile Air Conditioning Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
72	江苏通用科技股份有限公司 Jiangsu General Science Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
73	上海保隆汽车科技股份有限公司 Shanghai Baolong Automotive Corporation	汽车零部件企业 Automotive Parts Enterprises
74	广州中新汽车零部件有限公司 Guangzhou Zhongxin Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
75	上海新朋实业股份有限公司 Shanghai Xinpeng Industrial Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
76	奥特佳新能源科技股份有限公司 Aotecar New Energy Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
77	诸城市义和车桥有限公司 Zhucheng Yihe Axle Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
78	重庆青山工业有限责任公司 Chongqing Tsingshan Industrial Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
79	惠州市华阳集团股份有限公司 Huizhou ADARYO Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
80	江苏新泉汽车饰件股份有限公司 Jiangsu Xinquan Automotive Trim Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
81	湖北恒隆汽车系统集团有限公司 Hubei Henglong Automotive Systems Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
82	深圳市比克动力电池有限公司 Shenzhen BAK Power Battery Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
83	芜湖伯特利汽车安全系统股份有限公司 Bethel Automotive Safety Systems Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
84	浙江亚太机电股份有限公司 Zhejiang Asia-Pacific Mechanical & Electronic Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
85	浙江今飞凯达轮毂股份有限公司 Zhejiang Jinfei Kaida Wheel Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
86	海联金汇科技股份有限公司 Hailian Jinhui Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
87	科博达技术股份有限公司 Keboda Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
88	中山大洋电机股份有限公司 Zhongshan Broad-Ocean Motor Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
89	飞龙汽车部件股份有限公司 Feilong Auto Components Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
90	爱柯迪股份有限公司 IKD Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
91	浙江双环传动机械股份有限公司 Zhejiang Shuanghuan Transmission Machinery Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
92	陕西万方汽车零部件有限公司 Shaanxi Wanfang Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
93	北京四维图新科技股份有限公司 Beijing NavInfo New Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
94	浙江万安科技股份有限公司 Zhejiang Wan'an Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
95	贵州贵航汽车零部件股份有限公司 Guizhou Guihang Automotive Parts Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
96	河南中轴控股集团股份有限公司 Henan Zhongzhou Holding Group Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
97	沈阳航天三菱汽车发动机制造有限公司 Shenyang Aerospace Mitsubishi Motors Engine Manufacturing Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

序号 Serial No	企业名称 Enterprise Name	企业类型 Business Type
98	陕西德仕汽车部件(集团)有限责任公司 Shaanxi Deshi Automotive Parts (Group) Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
99	四川建安工业有限责任公司 Sichuan Jian'an Industry Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
100	哈尔滨东安汽车动力股份有限公司 Harbin Dong'an Automobile Engine Manufacturing Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
101	惠州比亚迪电池有限公司 Huizhou BYD Battery Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
102	天津力神电池股份有限公司 Tianjin Lishen Battery Joint-stock Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
103	中航锂电(洛阳)有限公司 AVIC Optoelectronics (Luoyang) Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
104	惠州亿纬锂能股份有限公司 EVE Energy Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
105	欣旺达电子股份有限公司 Sunwoda Electronic Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
106	孚能科技(赣州)有限公司 Farasis Energy(Ganzhou)Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
107	塔菲尔新能源科技有限公司 Tafel New Energy Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises
108	广州鹏辉能源科技股份有限公司 Guangzhou Great Power Energy Technology Co., Ltd.	汽车零部件企业 Automotive Parts Enterprises

注 汽车企业为2020年销量超过1万辆或受到社会广泛关注的企业，共48家；

Automotive enterprises are those with a sales of more than 10,000 units in 2020 or those receiving extensive social attention, 48 in total.

汽车零部件企业为《中国汽车报》发布的2020中国汽车零部件企业百强榜单，以及受到广泛关注的动力蓄电池生产企业，共108家。

Automotive parts enterprises are those on the list of Top 100 Chinese Automotive Parts Enterprises in 2020 released by China Automotive News, and power battery manufacturers that have received wide attention, 108 in total.

附表二:2021年汽车及零部件企业GDI指数评级结果

Exhibit 2: GDI index rating results of automotive and parts enterprises in 2021

2021年汽车企业绿色发展指数评级结果

Green Development Index Rating Results for Automobile Enterprises in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	华晨宝马汽车有限公司 BMW Brilliance Automobile Ltd.	AAAAA
2	奇瑞控股集团有限公司 Chery Holding Group Co., Ltd.	AAAAA
3	浙江吉利控股集团有限公司 Zhejiang Geely Holding Group Co., Ltd.	AAAAA
4	沃尔沃汽车(亚太)投资控股有限公司 Volvo Cars (Asia Pacific) Investment Holding Co., Ltd.	AAAAA
5	广汽本田汽车有限公司 GAC Honda Automobile Co., Ltd.	AAAAA
6	上海蔚来汽车有限公司 NIO Co., Ltd.	AAAAA
7	长安福特汽车有限公司 Changan Ford Automobile Co., Ltd.	AAAAA
8	长城汽车股份有限公司 Great Wall Motor Co., LTD.	AA
9	广汽丰田汽车有限公司 GAC TOYOTA MOTORCO.,LTD.	——
10	福建奔驰汽车有限公司 Fujian Benz Automotive Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
11	宜宾凯翼汽车有限公司 Yibin Kaiyi Automobile Co., Ltd.	——
12	一汽 - 大众汽车有限公司 FAW-Volkswage Automotive Co., Ltd.	——
13	安徽江淮汽车集团股份有限公司 Anhui Jianghuai Automobile Group Co., Ltd.	——
14	北京汽车股份有限公司 BAIC Motor Corporation., Ltd.	——
15	上汽大众汽车有限公司 SAIC Volkswagen Automotive Co., Ltd.	——
16	东风本田汽车有限公司 Dongfeng Honda Automobile Co., LTD.	——
17	一汽丰田汽车有限公司 FAW Toyota Automobile Co., LTD.	——
18	北京现代汽车有限公司 Beijing Hyundai Motor Co., LTD.	——
19	上汽通用汽车有限公司 SAIC General Motors Automotive Co., Ltd.	——
20	北京奔驰汽车有限公司 Beijing Benz Automotive Co., Ltd. (BBAC)	——
21	比亚迪汽车有限公司 BYD Auto Co., Ltd.	——
22	重庆长安汽车股份有限公司 Chongqing Changan Automobile Co., Ltd.	——
23	广州小鹏汽车科技有限公司 Guangzhou Xiaopeng Automobile Technology Co., Ltd.	——
24	东风汽车集团股份有限公司乘用车公司 Passenger Vehicle branch of SAIC Motor Group Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
25	上汽通用五菱汽车股份有限公司 SAIC General Wuling Automobile Co., Ltd.	——
26	江铃汽车股份有限公司 Jiangling Automobile Co., Ltd.	——
27	东风悦达起亚汽车有限公司 Dongfeng Yueda Kia Motors Co., Ltd.	——
28	东风汽车有限公司东风日产乘用车公司 Dongfeng Nissan Passenger Vehicle branch of Dongfeng Motor Co., Ltd.	——
29	特斯拉(上海)有限公司 Tesla (Shanghai) Co., Ltd.	——
30	广汽乘用车有限公司 GAC Passenger Vehicle Co., Ltd.	——
31	华晨鑫源重庆汽车有限公司 Brilliance Xinyuan Chongqing Automobile Co., Ltd.	——
32	广汽三菱汽车有限公司 GAC Mitsubishi Motors Co., Ltd.	——
33	广汽菲亚特克莱斯勒汽车有限公司 GAC Fiat Chrysler Automobiles Co., Ltd.	——
34	神龙汽车有限公司 Dongfeng Peugeot-Citroen Automobile Co., Ltd.	——
35	上海汽车集团股份有限公司乘用车分公司 Passenger Vehicle branch of SAIC Motor Group Co., Ltd.	——
36	东风柳州汽车有限公司 Dongfeng Liuzhou Automobile Co., Ltd.	——
37	东风小康汽车有限公司 Dongfeng Xiaokang Automobile Co., Ltd.	——
38	长安马自达汽车有限公司 Changan Mazda Automobile Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
39	郑州日产汽车有限公司 Zhengzhou Nissan Automobile Co. Ltd.	——
40	一汽轿车股份有限公司 FAW Car Co., Ltd.	——
41	观致汽车有限公司 Qoros Automobile Co., Ltd.	——
42	上汽大通汽车有限公司 SAIC MAXUS Automotive Co., Ltd.	——
43	浙江合众新能源汽车有限公司 Zhejiang Hezhong New Energy Automobile Co., Ltd.	——
44	奇瑞捷豹路虎汽车有限公司 Chery Jaguar Land Rover Automotive Co., Ltd.	——
45	北京新能源汽车股份有限公司 Beijing New Energy Vehicle Co., Ltd.	——
46	东风英菲尼迪汽车有限公司 Dongfeng Infiniti Automobile Co. Ltd.	——
47	威马汽车技术有限公司 WM Motor Automotive Technology Co., Ltd.	——
48	华晨雷诺金杯汽车有限公司 Renault Brilliance Jinbei Automobile Co., Ltd.	——

2021年汽车零部件企业绿色发展指数评级结果

Green Development Index Rating Results for Automotive Parts Enterprises in 2021

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
1	敏实集团有限公司 MINTH Group Limited	AAA
2	浦林成山（山东）轮胎公司 Prinx Chengshan (Shandong) Tire Company Ltd.	AAA
3	福耀玻璃工业集团股份有限公司 Fuyao Glass Industry Group Co., Ltd.	AA
4	宁德时代新能源科技股份有限公司 Contemporary Amperex Technology Co., Ltd.	AA
5	欣旺达电子股份有限公司 Sunwoda Electronic Co., Ltd.	AA
6	贵州轮胎股份有限公司 Guizhou Tire Co., Ltd.	A
7	潍柴控股集团有限公司 Weichai Group Holding Limited	A
8	广西玉柴机器集团有限公司 Guangxi Yuchai Machinery Group Company	A
9	惠州亿纬锂能股份有限公司 EVE Energy Co., Ltd.	A
10	郑州煤矿机械集团股份有限公司 Zhengzhou Coal Mining Machinery Group Co., Ltd.	——
11	华域汽车系统股份有限公司 Huayu Automotive Systems Company Limited	——
12	汽车德昌电机控股有限公司 Auto Johnson Electric Holding Co., Ltd.	——
13	飞龙汽车部件股份有限公司 Feilong Auto Components Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
14	三角轮胎股份有限公司 Triangle Tire Co., Ltd.	——
15	山东玲珑轮胎股份有限公司 Shandong Linglong Tire Co., Ltd.	——
16	赛轮集团股份有限公司 Sailun Group Co., Ltd.	——
17	许昌远东传动轴股份有限公司 Xuchang Yuandong Drive Shaft Co., Ltd.	——
18	昆明云内动力股份有限公司 Kunming Yunnei Power Co., Ltd.	——
19	青岛双星股份有限公司 Qingdao Doublestar Co., Ltd.	——
20	天润工业技术股份有限公司 Tianrun Industry Technology Co., Ltd.	——
21	万向钱潮股份有限公司 Wanxiang Qianchao Co., Ltd.	——
22	长春一汽富维汽车零部件股份有限公司 Changchun FAWAY Automobile Components Co., Ltd.	——
23	中山大洋电机股份有限公司 Zhongshan Broad-Ocean Motor Co., Ltd.	——
24	国轩高科股份有限公司 Guoxuan High-Tech Co., Ltd.	——
25	上海保隆汽车科技股份有限公司 Shanghai Baolong Automotive Corporation	——
26	陕西法士特汽车传动集团有限责任公司 Shaanxi Faster Auto Drive Group Co., Ltd.	——
27	一汽解放汽车有限公司发动机事业部 Engine Division of FAW Jiefang Automobile Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
28	富奥汽车零部件股份有限公司 Fuao Automotive Parts Co., Ltd.	——
29	安徽环新集团有限公司 Anhui ARN Group Co., Ltd.	——
30	广东鸿图科技股份有限公司 Guangdong Hongtu Technology (Holdings) Co., Ltd.	——
31	江南模塑科技股份有限公司 Jiangnan Mould & Plastic Technology Co., Ltd.	——
32	浙江亚太机电股份有限公司 Zhejiang Asia-Pacific Mechanical & Electronic Co., Ltd.	——
33	浙江今飞凯达轮毂股份有限公司 Zhejiang Jinfei Kaida Wheel Co., Ltd.	——
34	浙江双环传动机械股份有限公司 Zhejiang Shuanghuan Transmission Machinery Co., Ltd.	——
35	宁波继峰汽车零部件股份有限公司 Ningbo Jifeng Automotive Parts Co., Ltd.	——
36	浙江银轮机械股份有限公司 Zhejiang Yinlun Machinery Co., Ltd.	——
37	深圳市航盛电子股份有限公司 Shenzhen Hangsheng Electronics Corp., Ltd.	——
38	万丰奥特控股集团有限公司 Wanfeng Auto Holding Group Co., Ltd.	——
39	天津力神电池股份有限公司 Tianjin Lishen Battery Joint-stock Co., Ltd.	——
40	惠州市德赛西威汽车电子股份有限公司 Huizhou Desay SV Automotive Co., Ltd.	——
41	宁波拓普集团股份有限公司 Ningbo Tuopu Group Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
42	奥特佳新能源科技股份有限公司 Aotecar New Energy Technology Co., Ltd.	——
43	风神轮胎股份有限公司 Aeolus Tire Co., Ltd.	——
44	上海加冷松芝汽车空调股份有限公司 SongZ Automobile Air Conditioning Co., Ltd.	——
45	哈尔滨东安汽车动力股份有限公司 Harbin Dong'an Automobile Engine Manufacturing Co., Ltd.	——
46	上海岱美汽车内饰件股份有限公司 Shanghai Daimei Automobile Interior Parts Co., Ltd.	——
47	爱柯迪股份有限公司 IKD Co., Ltd.	——
48	浙江万里扬股份有限公司 Zhejiang Wanliyang Co., Ltd.	——
49	安徽全柴动力股份有限公司 Anhui Quanchai Engine Co., Ltd.	——
50	阜新德尔汽车部件股份有限公司 Fuxin Dare Automotive Parts Co., Ltd.	——
51	深圳市比克动力电池有限公司 Shenzhen BAK Power Battery Co., Ltd.	——
52	北京威卡威汽车零部件股份有限公司 Beijing WKW Automotive Parts Co., Ltd.	——
53	江苏通用科技股份有限公司 Jiangsu General Science Technology Co.，Ltd.	——
54	惠州市华阳集团股份有限公司 Huizhou ADARYO Group Co., Ltd.	——
55	北京四维图新科技股份有限公司 Beijing NavInfo New Technology Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
56	安徽中鼎密封件股份有限公司 Anhui Zhongding Sealing Parts Co., Ltd.	——
57	贵州贵航汽车零部件股份有限公司 Guizhou Guihang Automotive Parts Co., Ltd.	——
58	沈阳航天三菱汽车发动机制造有限公司 Shenyang Aerospace Mitsubishi Motors Engine Manufacturing Co., Ltd.	——
59	孚能科技(赣州)有限公司 Farasis Energy(Ganzhou)Co., Ltd.	——
60	宁波华翔电子股份有限公司 Ningbo Huaxiang Electronics Co., Ltd.	——
61	亚普汽车部件股份有限公司中国 YAPP Automotive Systems Co., Ltd. (China)	——
62	重庆平伟汽车科技股份有限公司 Chongqing Pingwei Automotive Technology Co., Ltd.	——
63	广州鹏辉能源科技股份有限公司 Guangzhou Great Power Energy Technology Co., Ltd.	——
64	东北工业集团有限公司 Northeast Industries Group Co., Ltd.	——
65	北京京西重工有限公司 Beijing Jingxi Heavy Industry Co., Ltd.	——
66	科博达技术股份有限公司 Keboda Technology Co., Ltd.	——
67	宁波均胜电子股份有限公司 Ningbo Joyson Electronics Co., Ltd.	——
68	精诚工科汽车系统有限公司 Exquisite Automotive Systems Co., Ltd.	——
69	陕西汉德车桥有限公司 Shaanxi HanDe Axle Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
70	青特集团有限公司 Qingte Group Co., Ltd.	——
71	上海新朋实业股份有限公司 Shanghai Xinpeng Industrial Co., Ltd.	——
72	芜湖伯特利汽车安全系统股份有限公司 Bethel Automotive Safety Systems Co., Ltd.	——
73	无锡威孚高科技集团股份有限公司 Wuxi Weifu High-Tech Group Co., Ltd.	——
74	常州星宇车灯股份有限公司 Changzhou Xingyu Car Light Co., Ltd.	——
75	宁波双林汽车部件股份有限公司 Ningbo Shuanglin Automotive Parts Co., Ltd.	——
76	四川建安工业有限责任公司 Sichuan Jian'an Industry Co., Ltd.	——
77	惠州比亚迪电池有限公司 Huizhou BYD Battery Co., Ltd.	——
78	海联金汇科技股份有限公司 Hailian Jinhui Technology Co., Ltd.	——
79	河南中轴控股集团股份有限公司 Henan Zhongzhou Holding Group Co., Ltd.	——
80	深圳市得润电子股份有限公司 Shenzhen DEREN Electronics Co., Ltd.	——
81	江苏新泉汽车饰件股份有限公司 Jiangsu Xinquan Automotive Trim Co., Ltd.	——
82	东风汽车零部件（集团）有限公司 Dongfeng Automotive Parts (Group) Co., Ltd.	——
83	广西汽车集团有限公司 Guangxi Automobile Group Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
84	诺博汽车系统有限公司 Nobo Automotive Systems Co., Ltd.	——
85	海力达汽车系统(常熟)有限公司 Hilite Automotive Systems (Changshu) Co., Ltd.	——
86	华达汽车科技股份有限公司 Huada Automotive Technology Co., Ltd.	——
87	中航锂电(洛阳)有限公司 AVIC Optoelectronics (Luoyang) Co., Ltd.	——
88	陕西德仕汽车部件(集团)有限责任公司 Shaanxi Deshi Automotive Parts (Group) Co., Ltd.	——
89	塔菲尔新能源科技有限公司 Tafel New Energy Technology Co., Ltd.	——
90	诸城市义和车桥有限公司 Zhucheng Yihe Axle Co., Ltd.	——
91	广东富华重工制造有限公司 Guangdong Fuhua Heavy Industry Manufacturing Co. Ltd.	——
92	中国航空汽车系统控股有限公司 China Aviation Automotive Systems Holdings Co., Ltd.	——
93	湖北恒隆汽车系统集团有限公司 Hubei Henglong Automotive Systems Group Co., Ltd.	——
94	中信戴卡股份有限公司 CITIC Dicastal Co., Ltd.	——
95	北方凌云工业集团有限公司 North Lingyun Industrial Group Co., Ltd.	——
96	三环集团有限公司国汽车 Tri-Ring Group Co., Ltd. State Automobile	——
97	陕西万方汽车零部件有限公司 Shaanxi Wanfang Automotive Parts Co., Ltd.	——

序号 Serial No	企业名称 Enterprise Name	评级 Level Rated
98	北京海纳川汽车部件股份有限公司 Beijing Hainachuan Automotive Parts Co., Ltd.	——
99	中策橡胶集团有限公司 Zhongce Rubber Group Co., Ltd.	——
100	锦州万得汽车集团有限公司 Wonder Auto Group Limited Co., Ltd.	——
101	新乡市新航机电科技有限公司 Xinxiang Xinhang Electromechanical Technology Co., Ltd.	——
102	浙江万安科技股份有限公司 Zhejiang Wan'an Technology Co., Ltd.	——
103	瑞立集团有限公司 Ruili Group Co., Ltd.	——
104	山东浩信机械有限公司 Shandong Haoxin Machinery Co., Ltd.	——
105	上海柴油机股份有限公司 Shanghai Diesel Engine Co., Ltd.	——
106	广州中新汽车零部件有限公司 Guangzhou Zhongxin Automotive Parts Co., Ltd.	——
107	广汽零部件有限公司 Guangzhou Automotive Parts Co., Ltd.	——
108	重庆青山工业有限责任公司 Chongqing Tsingshan Industrial Co., Ltd.	——

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