技术创新推动绿色能源应用，打造集装箱地板行业“零碳工厂”

Technological innovation promotes the application of green energy, and builds a "zero-carbon factory" in the container flooring industry

中国集装箱行业协会地板健康发展专业委员会

中集新型环保材料股份有限公司

CIMC ECO MATERIAL SUPPLY CO.,LTD.

高级技术顾问：司马驰

Senior Technical Consultant: Si Ma Chi。

目　录

CONTENTS

全球能源形势与环保政策

Global energy situation and environmental protection policy

全球能源形势分析
Analysis of the global energy situation

Fossil energy shortage

全球化石能源储量有限，供应紧张，价格上涨，影响能源安全和经济发展。

Limited global fossil energy reserves, tight supply and rising prices affect energy security and economic development.

Renewable energy on the rise

随着技术进步和成本降低，可再生能源逐渐成为主流，推动能源结构转型。

With technological progress and cost reduction, renewable energy gradually becomes the mainstream, promoting the transformation of the energy structure.

Environmental policies strengthening

各国政府加强环保政策，推动清洁能源发展，减少碳排放，应对气候变化。

Governments have strengthened the environmental policies, promoted the development of clean energy, reduced carbon emissions, and addressed climate change.

欧洲双碳环保政策解读

Interpretation of the European dual-carbon environmental policy

政策背景
Policy background

欧洲为实现碳中和目标，推出双碳政策，旨在减少温室气体排放。

To achieve its carbon neutrality goal, Europe has introduced a two-carbon policy aimed at reducing greenhouse gas emissions.

政策内容
Policy content

政策要求企业减少碳排放，鼓励绿色能源应用，推动可持续发展。

The policy requires enterprises to reduce carbon emissions, encourage the application of green energy, and promote sustainable development.

政策影响
Policy impact

政策将促进绿色能源在集装箱地板行业的应用，助力实现零碳工厂目标。

The policy will promote the application of green energy in the container flooring industry and help achieve the goal of zero carbon plants.

竹、木材加工业能源使用现状

Energy use status in bamboo and wood processing industry

电力和热能使用概况
Power and thermal energy using

电力消耗大
High power consumption

竹、木材加工业大量使用电力，主要用于机械运行和照明等。

Bamboo and wood processing industry uses a lot of electricity, mainly used for mechanical operation and lighting.

热能需求高
High heat demand

竹、木材加工过程中需要热能进行干燥、热压等工艺处理。

Bamboo and wood processing needs heat energy for drying, thermal pressing and other。

能源效率低
Low energy efficiency

当前竹、木材加工业能源利用效率普遍较低，存在浪费现象。

At present, the energy utilization efficiency of bamboo and wood processing industry is generally low, and there is a waste phenomenon.

新型炭、气、电三联产技术

New carbon, gas, electricity triple production technology

技术原理介绍
Technical principle introduction

炭、气、电联产技术
Carbon, gas, electricity combined production technology

利用生物质为原料产生生物炭、生物燃气和生物质发电，实现能源高效利用和减少碳排放。

Using biomass as raw materials to produce biochar, biogas and biomass power generation, to achieve efficient use of energy and reduce carbon emissions

技术优势
Technological superiority

高效能源利用、减少碳排放、降低运营成本、提高能源安全性。

Efficient energy use, reduce carbon emissions, reduce operating costs, and improve energy security.

应用前景
Application prospect

在集装箱地板行业等工业领域有广阔的应用前景，有助于实现零碳工厂的目标。

It has broad application prospects in the container flooring industry and other industrial fields, helping to achieve the goal of zero carbon factory.

技术优势与挑战
Technical advantages and challenges

炭气电三联产技术能同时生产生物炭、生物燃气和生物质发电，实现能源的高效利用。

Carbon gas electric triple production technology can produce biochar, biogas and biomass power at the same time to achieve efficient utilization of energy.

该技术能有效减少碳排放，有助于实现绿色能源应用和零碳工厂的目标。

The technology can effectively reduce carbon emissions and help achieve the goals of green energy applications and zero-carbon plants.

高效能源利用——

Efficient energy utilization

——减少碳排放

Reduce carbon emissions

技术成熟度——

Technology maturity

目前该技术尚处于发展阶段，成熟度有待提高。

At present, the technology is still in the development stage, the maturity needs to be improved.

——投资成本

Investment cost

炭气电三联产技术较传统生物质直接燃烧锅炉的投资成本较高，可能限制其在小规模集装箱地板工厂的广泛应用。

The cost is higher compared with traditional biomass direct combustion boiler, may limit its wide application in small-scale container floor factories.

经济性基本模型分析

Analysis of basic economic model

投资成本与回报预测
Investment cost and return forecast

包括设备购置、技术研发、工厂改造等费用，需进行详细评估。

Including equipment purchase, technology research and development, factory transformation and other costs, need to be evaluated in detail.

初始投资成本

Initial investment cost

通过模拟分析，预测绿色能源应用带来的长期经济效益，包括节能成本、减排奖励等。

Through simulation analysis, predict the long-term economic benefits brought by the application of green energy, including energy saving cost, emission reduction reward, etc.

长期回报预测

Long-term return forecast

分析投资过程中可能面临的风险，如技术风险、市场风险等，并寻求风险与收益的平衡点。

Analyze the possible risks in the investment process, such as technical risk, market risk, etc., and seek the balance between risk and return.

风险与收益平衡

Balance of risk and benefit

风险与收益平衡分析
Risk and benefit balance analysis

技术创新风险
Technological innovation risk

技术创新带来的不确定性，包括技术可行性、市场接受度等。

The uncertainty brought about by technological innovation includes technical feasibility, market acceptance, etc.

绿色能源投资成本
Investment cost of green energy

绿色能源技术的初期投资成本较高，需要评估其长期经济效益。

The initial investment cost of green energy technology is relatively high, and its long-term economic benefits need to be evaluated.

长期收益预测
Long-term earnings forecast

通过模型分析，预测绿色能源应用带来的长期经济收益和环境效益。

Through the model analysis, the long-term economic benefits and environmental benefits brought by the green energy application are predicted.

零碳工厂申报与政策

Zero-carbon plant declaration and policy

零碳工厂申报流程与标准

Zero-carbon factory declaration process and standards

申报流程

Declaration process

提交申报材料、审核、现场核查、公示、授牌

Submit application documents, review, on-site verification, publicity, licensing

政策支持

Policy support

政府提供资金、税收、技术等方面的支持，鼓励企业申报零碳工厂

The government will provide financial, tax, technical and other support to encourage enterprises to apply for zero-carbon factories

申报标准

Declaration criteria

能源消耗、温室气体排放、环保管理、技术创新等

Energy consumption, greenhouse gas emissions, environmental protection management, technological innovation, etc

政策与市场应用的互动关系

The interaction between policy and market application

——政策引导市场应用

Policies urge market application

政府出台相关政策，鼓励企业采用绿色能源技术，推动零碳工厂的建设。

Governments issued relevant policies to encourage enterprises to adopt green energy technologies and promote the construction of zero-carbon factories.

——市场应用推动政策完善

Market application drives policy improvement

随着零碳工厂的市场应用逐渐普及，政府不断完善相关政策，以更好地支持绿色能源发展。

With the gradual popularization of zero-carbon factories, government continues to improve relevant policies to better support the development of green energy.

——政策与市场相互促进

Policy and market reinforce each other

政策与市场应用之间形成良性互动，共同推动绿色能源在集装箱地板行业的广泛应用。

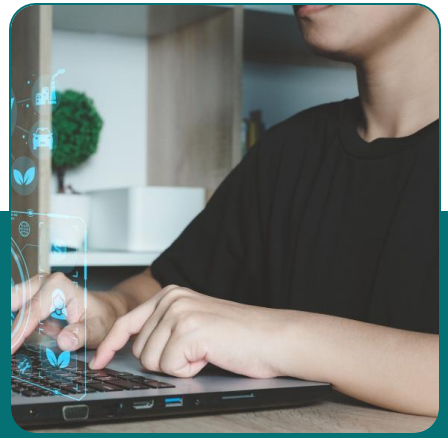
The formation of a positive interaction between policy and market application, and jointly promote the wide application of green energy in the container floor industry.

市场应用与前景展望

Market application and prospect

零碳工厂在集装箱地板行业的应用

Application of the zero-carbon factory in the container flooring industry



减少碳排放
Reduce carbon emissions

零碳工厂通过技术创新，减少集装箱地板生产过程中的碳排放，实现环保目标。

Zero carbon factory through technological innovation, reduce the carbon emissions in the production process of container floor, to achieve environmental goals.

提高生产效率
Improve production efficiency

零碳工厂采用先进的生产技术和设备，提高集装箱地板的生产效率，降低成本。

Zero-carbon factory utilizes cutting-edge production technology and equipment to enhance the efficiency of container floor production and reduce operational costs.

推动行业可持续发展
Promote the sustainable development of the industry

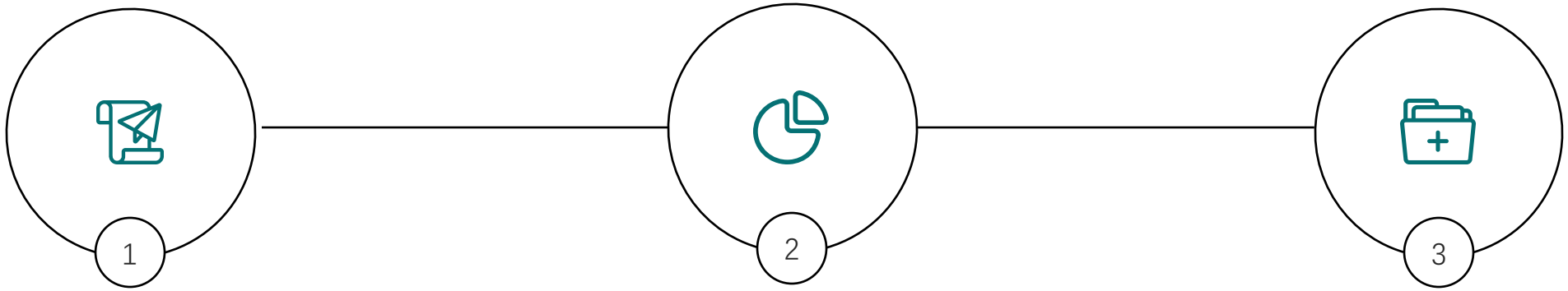
零碳工厂的建设将推动集装箱地板行业的可持续发展，为行业的未来发展奠定基础。

The construction of zero-carbon factories will promote the sustainable development of the container flooring industry.

技术创新与可持续发展

Technological innovation and sustainable development

技术创新对行业的影响
The impact of technological innovation on the industry



提高生产效率
Improve production efficiency

技术创新通过自动化、智能化等手段，提高集装箱地板行业生产效率，降低能耗。

Technological innovation improves the production efficiency of the container flooring industry and reduces energy consumption through automation, intelligence and other means.

促进产业升级
Promote industrial upgrading

技术创新推动集装箱地板行业向高端化、智能化、绿色化方向发展，提升产业竞争力。

Technological innovation promotes the container flooring industry to the high-end, intelligent and green direction, and enhances the competitiveness of the industry.

助力可持续发展
Contribute to sustainable development

技术创新为集装箱地板行业实现零碳生产提供可能，推动行业可持续发展。

Technological innovation provides the possibility for the container flooring industry to achieve zero-carbon production and promotes the sustainable development of the industry.

未来发展方向与战略思考
Thoughts on Future Development Directions and Strategies

——技术创新驱动
Technological innovation-driven

通过不断的技术创新，推动绿色能源在集装箱地板行业的广泛应用。

Through ongoing technological innovation, aim to promote the widespread adoption of green energy in the container flooring industry.

——可持续发展战略
Strategy of sustainable development

制定并实施可持续发展的战略，确保企业在追求经济效益的同时，也注重环境保护和社会责任。

Develop and implement sustainable development strategies to ensure that companies pay attention to environmental protection and social responsibility while pursuing economic benefits.

——零碳工厂建设
The construction of a zero-carbon factory

致力于建设零碳工厂，通过技术创新和绿色能源应用，实现生产过程中的碳排放减少和能源效率提升。

Committed to building zero-carbon factories, reducing carbon emissions and improving energy efficiency in the production process through technological innovation and green energy application.

呼吁与行动倡议

Calls and initiatives for action

呼吁与行动倡议
Calls and initiatives for action

——倡导绿色能源应用
Advocate for the application of green energy

呼吁集装箱地板行业积极采用绿色能源技术，推动行业向零碳生产转型。

Calls on the container floor industry to actively adopt green energy technology to promote the industry's transition to zero-carbon production.

——加强技术创新
Strengthen technological innovation

强调技术创新在推动绿色能源应用中的重要性，鼓励企业加大研发投入，提升技术创新能力。

Emphasize the importance of technological innovation in promoting the application of green energy, encourage enterprises to increase investment in research and development, and enhance technological innovation capabilities.

——共同构建零碳未来
Working together to shape a zero-carbon future

呼吁全行业共同努力，携手构建零碳未来，为地球环境保护贡献一份力量。

Calls on the whole industry to work together to build a zero-carbon future and contribute to the environmental protection.

谢谢　THANKS