

## 2024年度中国宝武低碳冶金创新基金项目指南发布

## 一、2024年度中国宝武低碳冶金创新基金项目指南

## 1. 炼铁用绿色炉料技术研究

- ◆ 非化石能源零碳造块技术开发
- ◆ 低碳冶金用炉料冶炼行为解析

## 2. 电熔分渣技术研究

- ◆ 中低品位金属炉料熔分技术研究
- ◆ 电熔分渣渣系研究
- ◆ 铁水质量调控技术研究

## 3. 冶金过程电加热技术研究

- ◆ 铁矿石电加热造块技术研究
- ◆ 电加热炼焦技术研究
- ◆ 入炉料高温(1000-1400℃)电加热技术

## 未开发

## ◆ 钢坯和中间材电加热技术研究

- ◆ 4. 流态化全氧还原技术研究
- ◆ 铁矿粉流态化还原预处理技术研究
- ◆ 铁矿粉粘附机理及抑制技术研究
- ◆ 铁矿粉流态化还原能效优化技术研究

## 5. 冶金流程协同固废减碳技术研究

- ◆ 钢铁厂内含铁、含碳、含氢资源高效循

## 循环利用技术

- ◆ 城市有机废弃物资源循环利用技术

## 6. 炼铁过程中化石燃料减量技术研究

- ◆ 提升化石燃料利用效率的预处理技术
- ◆ 冶炼过程化石能源的极致利用技术

## 7. 农林生物质协同钢铁降碳技术研究

## ◆ 农林生物质高效低耗提质及副产物高

- ◆ 值化利用技术研究
- ◆ 钢铁冶炼工序高效使用高品质生物质
- ◆ 炭技术研究

## 8. 电炉全废钢冶炼高等级钢材技术研究

- ◆ 电炉冶炼过程钢水纯净度调控技术研究
- ◆ 炉外精炼钢水纯净度调控技术研究

9. 钢铁源CO<sub>2</sub>制备大宗高值化学品技术研究

- ◆ 钢铁源CO<sub>2</sub>捕集转化一体化技术研究
- ◆ 钢铁源CO<sub>2</sub>制大宗高值化学品(芳烃/
- ◆ 烯炔等)的工艺技术开发

## 10. 青年项目

- ◆ 研究方向为低碳冶金基础与应用基础

## 研究

- ◆ 选题不受本次指南方向限制
- ◆ 项目组全部成员(项目负责人、项目团
- ◆ 队成员、项目顾问、指导专家等)均要求年龄
- ◆ 为35岁以下,即1990年1月1日以后出生。

## 二、项目申报与联系方式

1. 《中国宝武低碳冶金创新基金项目申报和管理指南》与《中国宝武低碳冶金技术创新基金项目申请书》下载方式: 中国宝武众研平台低碳基金栏目 网址: <http://rd.baosteel.com/>
2. 申请书提交方式: 登录中国宝武众研平台,注册个人账号,在低碳基金栏目填写和

递交项目申请资料。网址: <http://rd.baosteel.com/>

3. 低碳基金项目申请系统开放时间(北京时间):2024年12月1日8:00—12月31日17:00,超过截止时间后系统关闭,不再接受申请。

4. 联系人:卢正东

5. 咨询电话:021-26641446

备注:对于前面三年指南已经资助过的研究内容,低碳基金不再资助,请各位项目申请人知晓。

中国宝武钢铁集团有限公司将根据项目申请与评审情况择优资助。

Source CO<sub>2</sub>

- ◆ Research on integrated technology of CO<sub>2</sub> capture and conversion from steel sources
- ◆ Development of process technology for producing high-value bulk chemicals (aromatics/olefins, etc.) from steel source CO<sub>2</sub>

## 10. Projects for young researchers

- ◆ Research direction is the fundamental and applied fundamental research of low-carbon metallurgy
- ◆ Topics are not subject to the directions in the project guideline
- ◆ All members of the project team shall be born after January 1, 1990.

## II. Project Application and Contact Information

1. Applicants can download the "Project Application and Management Guideline of China Baowu Low-Carbon Metallurgy Innovation Fund" and the "Project Application for China Baowu Low-Carbon Metallurgy Innovation Fund" from the official website of BAOWU OPEN INNOVATION at <http://rd.baosteel.com/>2. Application submission method: Log in the BAOWU OPEN INNOVATION, register personal account and submit project application materials in the Low Carbon Fund section. Website: <http://rd.baosteel.com/>

3. Opening time of the low-carbon fund project application system(Beijing Standard Time): From 8:00 a.m. on 1 December, 2024 to 17:00 p.m. on 31 December, 2024. The system will shut down and applications will no longer be accepted after the deadline.

4. Contact Person: Lu Zhengdong

5. Tel: 021-26641446

Note: Please note that, in principle, research that has been funded by the guidelines in the previous three years will not be funded by the Low-Carbon Fund.

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## Release of the 2024 Project Guideline of China Baowu Low-Carbon Metallurgy Innovation Fund



## Research on Collaborative Disposal of Solid Waste and Carbon Reduction Technology in Metallurgical Processes

- ◆ Efficient recycling technology for iron, carbon, and hydrogen resources in steel plants
- ◆ Urban organic waste resource utilization technology

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## 6. Research on Fossil Fuel Reduction Technology in Ironmaking Process

- ◆ Pre treatment technology for improving the efficiency of fossil fuel utilization
- ◆ The ultimate utilization technology of fossil energy in the smelting process

## 7. Research on Carbon Reduction Technology of Steel Making Process with Agriculture and Forestry Biomass

- ◆ Research on High Efficiency, Low Consumption, and Quality Improvement of Agricultural and Forestry Biomass, as well as High Value Utilization Technology of By products
- ◆ Research on Efficient Use of High Quality Biochar Technology in Steel Smelting Processes

## 8. Research on the Technology of Smelting High Grade Steel from Whole Scrap Steel in Electric Furnace

- ◆ Research on Purity Control Technology of Molten Steel in Electric Furnace Smelting Process
- ◆ Research on Purity Control Technology of Refining Steel Outside the Furnace

## 9. Research on the Technology of Producing Bulk High Value Chemicals from Steel

- ◆ Research on integrated technology of CO<sub>2</sub> capture and conversion from steel sources
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- ◆ Development of zero carbon block making technology for non fossil energy sources
- ◆ Analysis of Smelting Behavior of Low Carbon Metallurgical Furnace Materials

## 2. Research on Electric Melting Separation Technology

- ◆ Research on Melting and Separating Technology of Medium and Low Grade Metal Furnace Materials
- ◆ Research on Electric Melting Slag Separation System
- ◆ Research on Quality Control Technology of Molten Iron

## 3. Research on Electric Heating Technology in Metallurgical Processes

- ◆ Research on electric heating block making technology for iron ore
- ◆ Research on Electric Heating Coking Technology
- ◆ Development of high-temperature (1000-1400 °C) electric heating technology for furnace materials
- ◆ Research on electric heating technology for steel billets and intermediate materials

## 4. Research on Fluidized Hydrogen Reduction Technology

- ◆ Research on fluidized reduction pretreatment technology for iron ore powder
- ◆ Research on the Bonding Mechanism and Inhibition Technology of Iron Ore Powder
- ◆ Research on Energy Efficiency Optimization Technology for Fluidized Reduction of

## Research on Collaborative Disposal of Solid Waste and Carbon Reduction Technology in Metallurgical Processes

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## Research on Collaborative Disposal of Solid Waste and Carbon Reduction Technology in Metallurgical Processes

- ◆ Efficient recycling technology for iron, carbon, and hydrogen resources in steel plants
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China Baowu has set up the Low-Carbon Metallurgy Innovation Fund since 2021, which provides RMB 35 million annually mainly to the fundamental and applied fundamental research of low-carbon metallurgy, promoting green and low-carbon development. The 2024 Project Guideline of China Baowu Low-Carbon Metallurgy Innovation Fund has been released at the Global Low-Carbon Metallurgical Innovation Forum on October 23, 2024.

The Low-Carbon Metallurgy Innovation Fund (hereinafter referred to as the Low-Carbon Fund), established by China Baowu, aims to focus on the green and low-carbon metallurgical processes and technologies, subsidize the fundamental and applied fundamental research of low-carbon metallurgy and the exploration, major innovations and practices of low-carbon metallurgical processes and technologies, and support the progress in low-carbon metallurgy technologies and industrial transformation and upgrading.

In September 2024, China Baowu Low-Carbon Metallurgy Innovation Center (hereinafter referred to as the Low-Carbon Center) started to compile the 2024 Project Guideline of the Low-Carbon Fund. It collected opinions from all sectors of society on the project guideline, receiving 111 suggestions in total. After expert evaluation, 10 guideline directions have been finally determined and has been released on the Global Low-Carbon Metallurgy Innovation Forum 2024 on October 23.

This year's project guideline focuses on areas like the green raw material of low-carbon metallurgy, low-carbon fuel, biomass energy, comprehensive utilization of metallurgical resources, and carbon capture, utilization and storage (CCUS). It encourages the fundamental and applied fundamental research of new materials, new products, new technologies, and new processes in steel and related fields.

In the meantime, in response to the call of the Central Committee of the Communist Party of China (CPC) to strengthen the cultivation and utilization of young scientific and technological talents, China Baowu will continue to set up "youth projects" in this year's low-carbon fund project guide. The Youth Program focuses

es on the fundamental and applied fundamental research of low-carbon metallurgy, and its topics are not subject to the directions in the project guideline. Only young people under 35 years old are qualified for application. Aiming to encourage young scientific and technological talents to shoulder the responsibility and take the lead, the Youth Program guides young people to pay close attention to the national carbon peaking and carbon neutrality strategy and the demands of the steel industry and to contribute wisdom to achieving the carbon neutrality goal of the steel industry.

The 2024 Low-Carbon Fund will accept applications from 8:00 a.m. on 1 December, 2024 to 17:00 p.m. on 31 December, 2024 (Beijing Standard Time).

China Baowu Low-Carbon Metallurgy Innovation Fund is administered by the Low-Carbon Metallurgy Innovation Center of China Baowu Steel Group Corporation. According to the Guidelines for Application and Management of China Baowu Low Carbon Metallurgical Innovation Fund Projects, project applicants and supporting units should ensure that the project application materials, evaluation process, and operation process after receiving funding comply with scientific research integrity, academic norms, and ethical requirements.

For projects that engage in research misconduct, if the project is in the application or review stage, China Baowu has the right to withdraw the project application; If the project is currently being implemented or has already been completed, China Baowu has the right to revoke the original funding decision and recover the allocated funds. The final interpretation of the investigation and handling opinions on academic misconduct belongs to China Baowu, and social supervision is welcome.

The project guideline and application method are listed as follows:

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