

# 建设绿色技术银行 推进绿色技术应用

Promote the Development of Green Technology Bank  
Boost the Application of Green Technologies

王震

Wang Zhen

上海科学技术交流中心

Shanghai Science and Technology Exchange Center

绿色技术银行管理中心

Administration Center Green Technology Bank



## CONTENTS

01

### 关于绿色技术银行

About Green Technology Bank

02

### 重点绿色技术项目及推进模式

Key Green Technology Projects and Development Methods

03

### 有关合作设想

Cooperation Concept





/01

## 关于绿色技术银行

About Green Technology Bank



## 2030年可持续发展目标

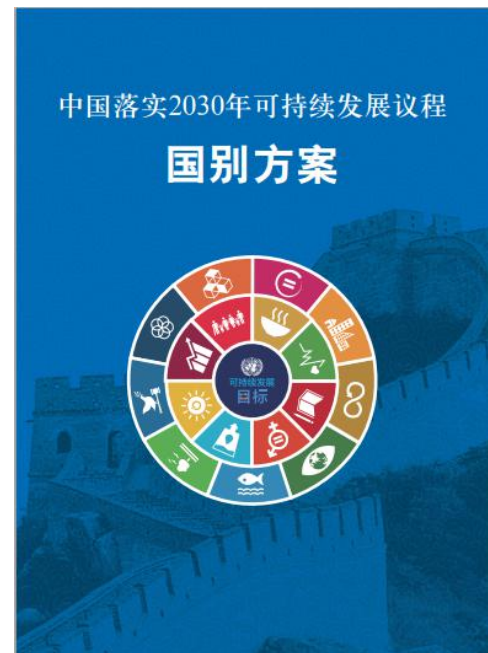
2030 Sustainable Development Goal

——Technology Bank

### 《中国落实2030年可持续发展议程国别方案》

China's National Plan on Implementation of the 2030 Agenda for Sustainable Development

——技术银行：开发、转让、传播和推广环境友好型的技术  
Technology Bank: to Develop, Transfer, Disseminate and Promote Environment-friendly Technologies





## 2016年9月，科技部与上海市人民政府部市专题会商，绿色技术银行在上海先行先试。

In September 2016, the Ministry of Science and Technology held a special consultation with Shanghai Municipal People's Government, and decided that shanghai will take the lead in the reform practice of Green Technology Bank.



## 2017年12月，领导小组第一次会议召开，绿色技术银行正式运行。

In December 2017, the first meeting of the leading group was held and the Green Technology Bank was officially launched.

绿色的技术的银行  
A bank of green technologies



**汇聚先进实用绿色技术，强化科技与金融结合的综合服务平台**

Converge advanced and practical green technologies to strengthen the comprehensive service platform integrating science and technology with finance



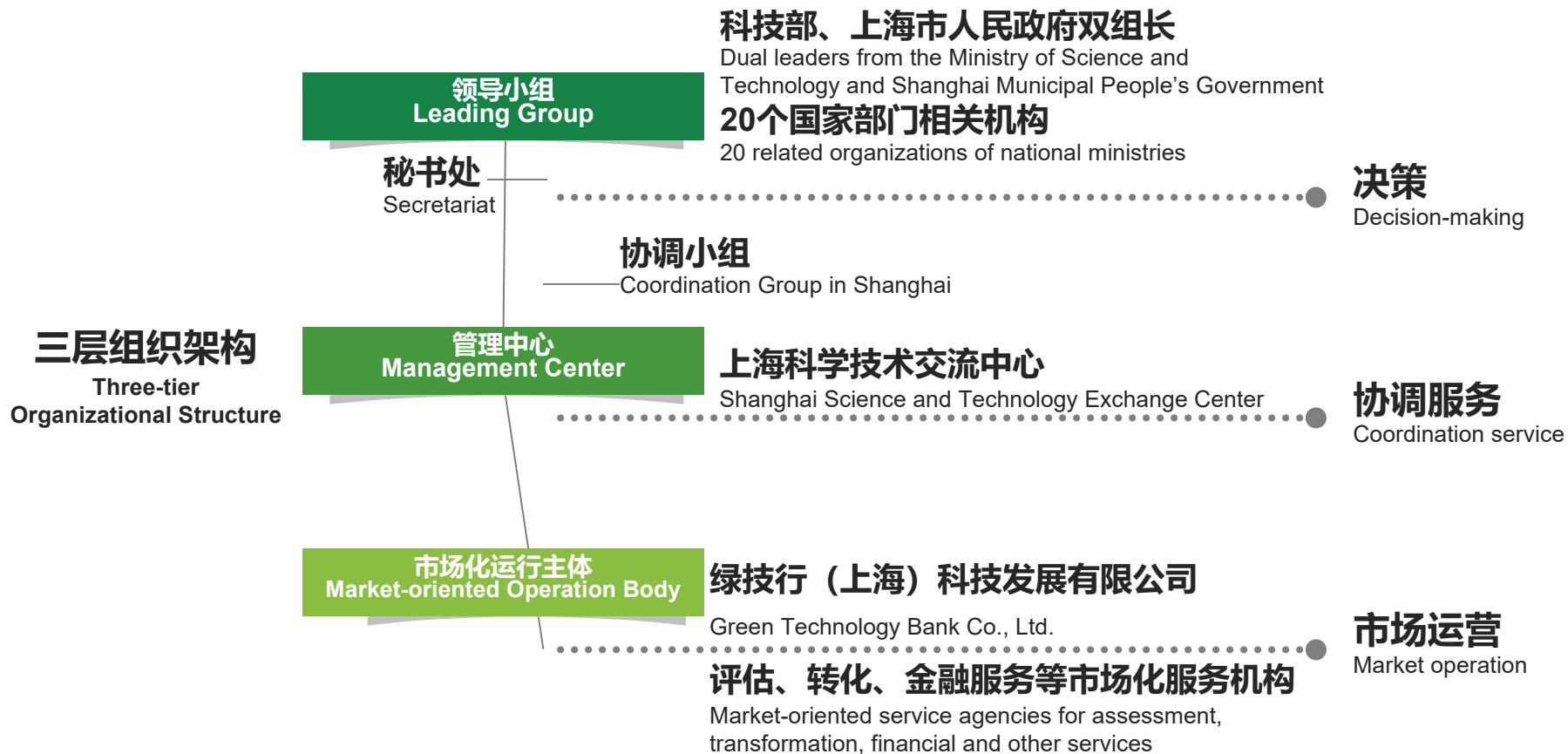
**提供绿色发展领域“技术+人才+资金”的系统性解决方案和可复制、可推广的绿色技术创新与发展的经验模式**

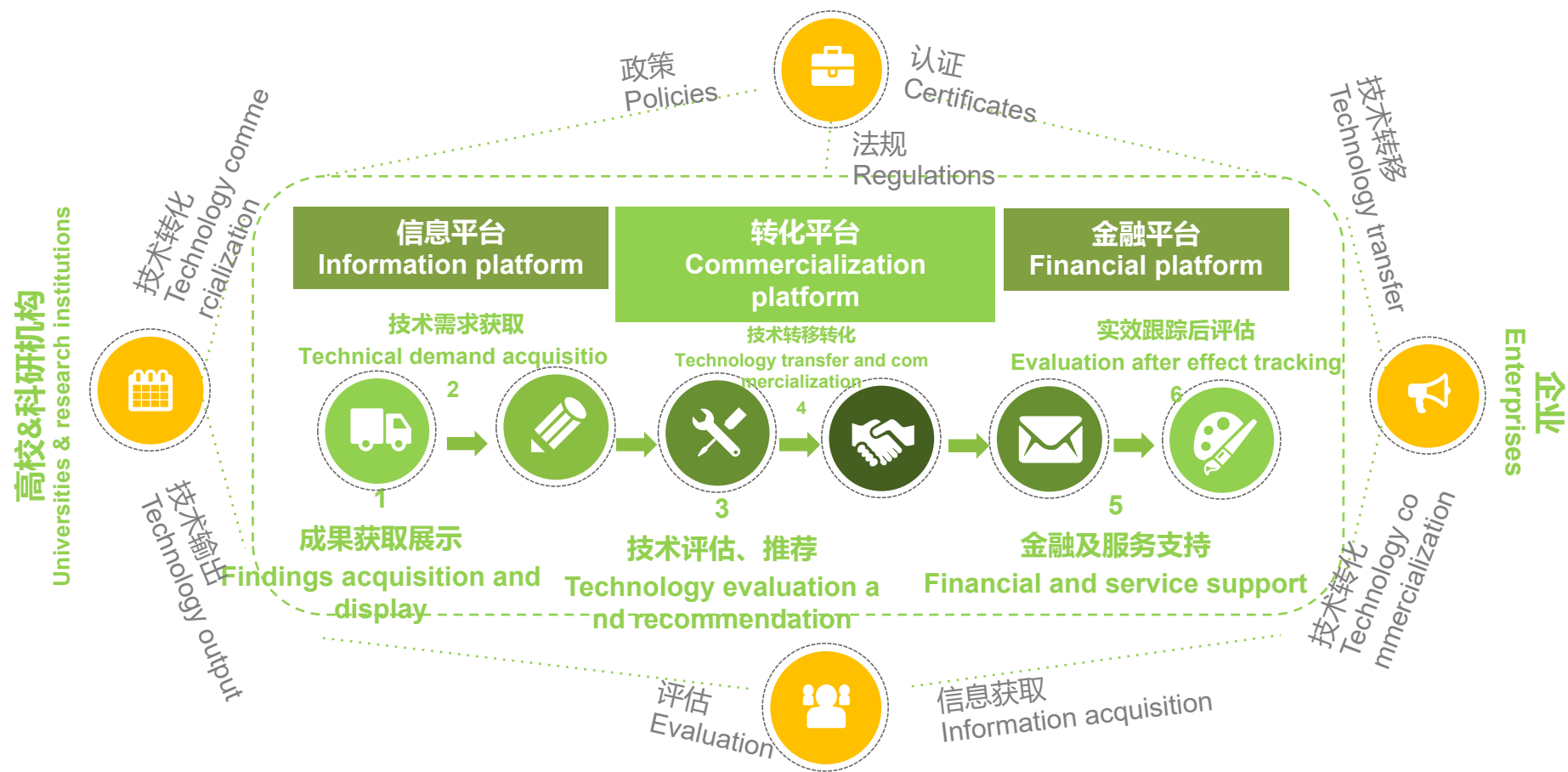
Provide systematic solutions for “technology + talent + capital” and empirical model that can be replicated and promoted in the field of green development



**同步服务于国内可持续发展和绿色技术领域南南合作**

Service for domestic sustainable development and South-South Cooperation in the field of green technology







- 实现项目的收储、筛选、集成、检索匹配

Realize the storage, screening, integration, and retrieval matching of warehoused items

- 制定绿色技术标准体系，实现分级分类管理

Develop a green technology standard system to achieve hierarchical and classified management

- 入库项目8104项，形成多项成套技术解决方案

8,104 warehoused items, forming sets of technical solutions



■ 设立**35亿元**绿色技术成果转化基金

Established a CNY 3.5 billion green technology achievement commercialization fund



■ 成立绿色技术金融协同创新联盟，集聚工商银行总行等30余家核心金融机构。

Established the Green Technology Finance Collaborative Innovation Alliance, which has gathered more than 30 core financial institutions including ICBC Head Office.

绿技行（上海）科技发展有限公司

Green Technology Bank (Shanghai) Science and Technology Development Co., Ltd.

- 股权结构： 国资48%， 民营47%， 运营团队5%

Ownership structure: state-owned 48%, private 47%, operation team 5%

- 股东构成：

Shareholder composition:

上海绿色技术创业投资管理有限公司

Shanghai Green Technology Venture Capital Management Co., Ltd.

上海北外滩（集团）有限公司

Shanghai North Bund (Group) Co., Ltd.

上海申能诚毅股权投资有限公司

Shanghai ICY Capital Co., Ltd

上海久事投资管理有限公司

Shanghai Jiushi Investment Management Co., Ltd.

.....



/02

## 重点绿色技术项目及推进模式

Key Green Technology Projects and Development Methods

## 构建了三级绿色技术分类体系

共设 5 个一级指标（**环境质量、资源利用、能源利用、生命健康、生态安全**）、25 个二级指标、84 个三级指标。

**A three-level green technology classification system was established**

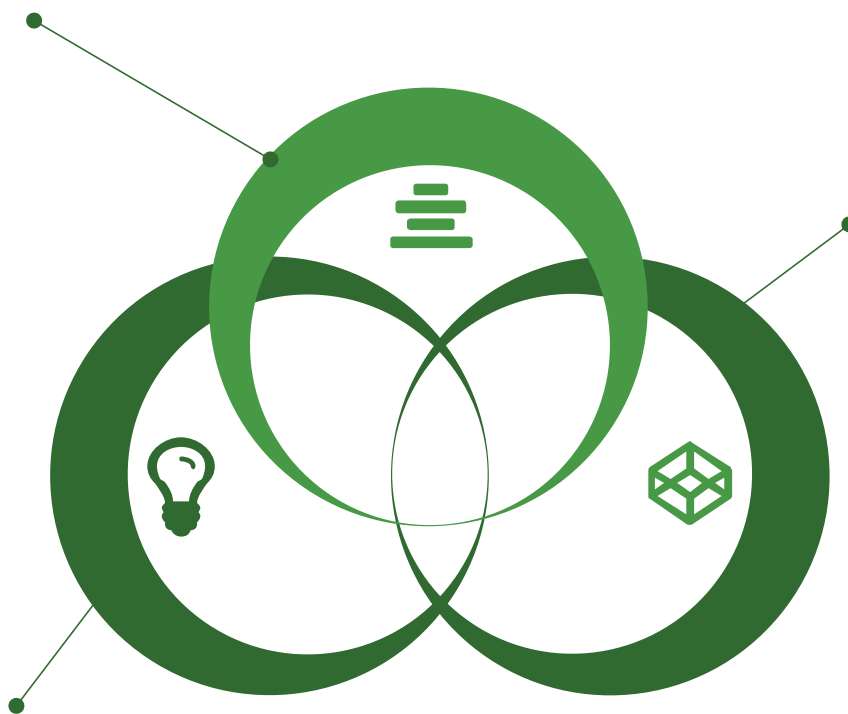
five first-level indicators (**environmental quality, resource, utilization, energy utilization, life health**, and ecological safety), 25 second-level indicators, and 84 third-level indicators.

## 形成了绿色技术评价体系

包括**绿色技术评价导则**和**绿色技术筛选评估规范**，分别用于评价技术的绿色性和已判定为绿色技术的项目转化价值。

**Form the evaluation system of green technology**

including **Green Technology Evaluation Guideline** and **Green Technology Screening Evaluation Specification**, respectively for judging green attributes and evaluating the value of achievements of technology.



**筛选出一批具有应用、推广价值的绿色技术项目**  
Select a batch of green technology projects with application and promotion values.

重点围绕技术的**绿色属性**、技术的**先进性与成熟度**、技术的**经济性**、**市场需求与容量**、**团队状况**等5个方面进行评价。

The evaluation will be conducted based on the **"green" property** of the technology, the **maturity and progressiveness, financial potential, market demand and market scale and team status.**

模式  
—  
Model 1



使用绿色技术创业投资基金进行直接股权投资。

Conduct direct investment in equity with the Green Technology Venture Capital Fund

**对象：**项目持有方是成熟的市场主体，拥有领域内其他成熟技术项目及较大市场占有率，投资回报预期较好，进行股权投资以支持其往新领域拓展，开展新领域关键技术研发。

**案例：**清洁能源领域——风能发电

**Object:** The supplier shall be a mature market entity, which owns mature technology projects in the field and holds a large market share with a good ROI percentage. Equity investment is carried out to support its expansion into new areas and the R&D of key technologies.

**Case:** Clean Energy – Wind Power Project





### 清洁能源领域 Clean Energy

**深远海域风电项目：**项目方为上海“绿能”环保公司，拥有完整的风能发电技术和项目研发、运行维护、市场开拓的专业队伍，由上海绿色技术创业投资基金投资3.5亿，带动社会资本4.5亿元，形成共8亿元资金规模，支撑其开展深远海域风能发电关键技术研发。

**Pelagic Offshore Wind Power Project:** The project supplier is Shanghai Green Energy Environmental Protection Co., Ltd. It has a professional team of wind power generation technology responsible for technology R&D, operation, maintenance and market development. The Shanghai Green Technology Venture Capital Fund invested 350 million, and introduced another 450 million yuan of social capital, in total of 800 million yuan, to support the development of key technologies for wind power generation in pelagic areas.

模式二



Model 2

利用政府资金撬动社会资本，帮助企业形成“1: 1: 1”的资金组合模式，共同参与技术应用与示范，加速技术与金融的融合。

Use government funds to leveraging social capital. Help enterprises to form a capital portfolio of “1:1:1”. Active participation in technology application and demonstration.

Accelerate the integration of technology and finance.

**对象：** 技术项目面向市场需求量大、政府有明确指标要求的行业，新技术应用所产生的效益可以标准化、金融化，金融机构参与积极性高。

**案例1：** 节能领域——数据中心节能降耗

**Object:** Investment is open to the industries which have strong market demands and are clearly required by the government. The positive effects and benefits should be able to quantified and standardized to drive the motivation of the financial institutions.

**Case 1:** Energy-saving – Energy Saving and Consumption Reduction Project of the Internet Data Center







## 节能领域 Energy-saving

**数据中心节能降耗：**绿色技术银行牵头技术企业，根据政府对电源使用效率（PUE）指标要求，为有新建和升级需求的互联网数据中心企业提供节能降耗技术支撑，采用新合同能源管理模式，吸引金融资本参与，该项目在上海张江高新区进行示范。随着信息技术的发展，数据中心建设拥有巨大的市场需求，后期可将示范成果通过复制、推广，为国内大量数据中心企业提供服务。

**Energy Saving and Consumption Reduction Project of the Internet Data Center:** According to the government's requirements for power usage efficiency (PUE), Green Technology Bank takes the lead with technology enterprises to provide energy-saving and consumption-reducing technical support for enterprises in the Internet Data Center. The new model of energy management contract is adopted and more financial capitals are involved in. The pilot project was operated in Shanghai Zhangjiang High-tech Park. With the development of Information Technology, data centers has enormous market potential. In the later stage, the pilot project can be replicated and promoted. As a model project, it can provide services for a large number of data centers in China.

模式二



Model 2

利用政府资金撬动社会资本，帮助企业形成“1: 1: 1”的资金组合模式，共同参与技术应用与示范，加速技术与金融的融合。

Use government funds to leveraging social capital. Help enterprises to form a capital portfolio of “1:1:1”. Active participation in technology application and demonstration. Accelerate the integration of technology and finance.

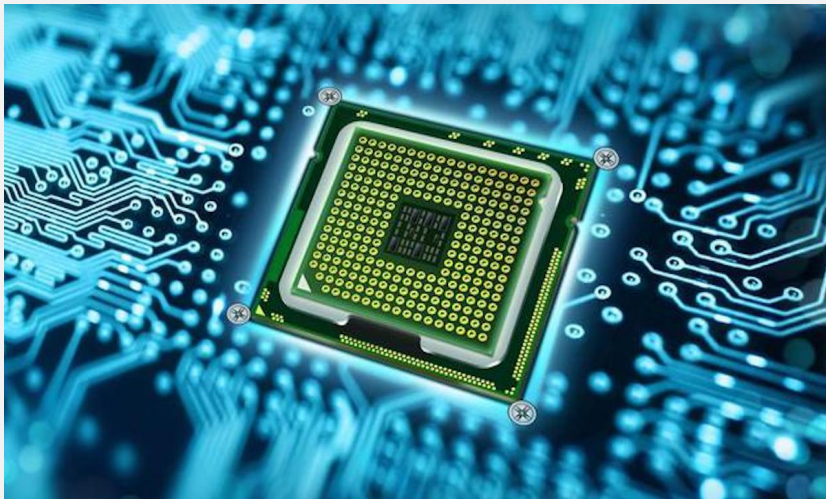
**对象：** 技术项目面向市场需求量大、政府有明确指标要求的行业，新技术应用所产生的效益可以标准化、金融化，金融机构参与积极性高，可以采用新合同能源管理模式。

**案例2：** 资源高度循环利用领域——集成电路产业废水回用

**Object:** Investment is open to the industries which have strong market demands and are clearly required by the government. The positive effects and benefits should be able to quantified and standardized to drive the motivation of the financial institutions.

**Case 2:** High-level Recycling of Resources - Wastewater Reuse in Integrated Circuit Industry





### 资源高度循环利用领域 High-level Recycling of Resources

**集成电路产业废水回用：**牵头组织技术团队，针对集成电路行业普遍存在的水耗高、工业废水量大等问题，聚焦中水回用，致力于将回用率从30%提升到65%，二期提升至90%，并降低单位处理成本，该项目将在上海张江高新区示范；同时，工程实施方采用合同能源管理模式承担工程投资、项目施工及运营。

**Wastewater Reuse in Integrated Circuit Industry:** GTB organizes the technical team, focusing on the issues of high water consumption and large amount of industrial wastewater in the integrated circuit industry. The team focuses on the recycle of wastewater, and is committed to increasing the recycling rate from 30% to 65%, and to 90% in the second phase. The unit processing cost will be reduced as well. The project will be pilot demonstrated in Shanghai Zhangjiang High-tech Park. At the same time, the contract energy management model will be adopted by the project implementer to cover the project investment, project construction and operation.

模式三

Model 3



牵头集成若干项目团队，形成整体技术方案，承接区域治理需求。

Fulfill its duty as a leader in integrating several project teams to develop a comprehensive technical solution with an aim to meet the requirements brought on by regional governance

**对象：**通常面向地方政府或大型企业等需求方，解决某一类环境治理问题，由绿技行牵头若干家技术公司，形成整体技术方案，以代甲方的方式承接项目。

**案例：**环境治理领域——土壤修复

**Object:** It is designed to provide prompt and effective assistance to local governments, large enterprises and other demand sides with an aim to address certain types of environmental governance issues. GTB Co., Ltd. will fulfill its duty as a leader in organizing a number of technology companies to develop a comprehensive technical solution and take on projects on behalf of Party A.

**Case:** Environmental Governance - Soil Remediation





## 环境治理领域 Environmental Governance

**南通土壤修复：**项目由绿技行公司牵头，集合多家技术团队，从物理、生物、化学等多种手段为南通某地块提供土壤修复方案。项目采用IPMT（项目管理团队）+EPC（项目总承包商）一体化方式进行合作。

**Nantong Soil Remediation:** Led by GTB Co., Ltd. , this project brings together a number of technical teams to provide soil remediation solutions for a plot in Nantong by using physical, biological, chemical and other methods. This project adopts an integrated approach of IPMT (Project Management Team) + EPC (Project General Contractor) for coordination.

模式四

Model 4



关注热点、难点领域新技术，进行推广、培育。

Focus on incubating and popularizing new technologies in hot-spots and tough areas

**对象：**项目持有方尚没有成熟市场主体，但聚焦某一特定领域持续进行研发，解决某项关键难题，可大幅度降低技术应用成本，有较大市场培育价值。

**案例：**资源利用领域——热等离子体固体废物处理技术

**Object:** The project holder currently does not have mature market players. However, it focuses on a certain area and continually develops and incubates new technologies to address certain key challenges with an aim to significantly reduce the cost of technology application. These technologies have great potential and broad prospects.

**Case:** Resource Utilization -- Thermal Plasma Technologies for Solid Waste Treatment





## 资源利用领域 Resource Utilization

**热等离子体固体废物处理技术：**在今年绿色优秀案例征集活动中，发现由先竞等离子体技术研究院、复旦大学组成的技术团队提供的热等离子体固废处理及资源化技术以及核心产品——高功率等离子体炬及气化炉，能解决传统固废焚烧产生的飞灰无法处理的问题，可将固废直接熔融为玻璃体进行资源化，实现固废完全无害化处理及高效资源化。具有综合效率高、成本低等优势。首台套中试样机PET-6-2热等离子体固体废物熔融处置炉已研制完成。

**Thermal plasma technologies for solid waste treatment technology:** In this year's Green Case Champion, we found the thermal plasma technology for solid waste treatment and recovery and its core product (high-power plasma torch and gasifier) provided by the technical team composed of experts from the Xianjin Plasma Technology Research Institute and Fudan University. ) can help to address the issues arising from fly ash produced by traditional solid waste incineration. This technology can directly melt solid waste into a vitreous body for reuse and recycling, thereby achieving harmless treatment and effective recycling of solid waste. This technology is featured with high efficiency and low cost. The first prototype PET-6-2 thermal plasma furnace for solid waste treatment has been completed in October this year.



### 市场基础 Market Basis

从2001年到2007年，与**新疆天业**共同开发了2MW、5MW氢等离子体煤裂解制乙炔关键技术，并建成了国际首套5MW等离子体裂解煤制乙炔示范装置。

From 2001 to 2007, we jointly developed some key technologies for 2MW and 5 MW hydrogen plasma coal cracking acetylene with Xinjiang Tianye, and built a first-of-its-kind demonstration device for 5MW plasma cracking coal acetylene.



### 应用于电镀污泥处置 Used in the Electroplating Sludge Disposal

2020年，PET-6-2热等离子体固体废物熔融处置炉将用于浙江之恩环保产业园的电镀污泥处置。

PET-6-2 thermal plasma furnace for solid waste treatment will be used in the electroplating sludge disposal in Zhi'en Environmental Protection Industrial Park in Zhe Jiang Province.



模式五

Model 5



协助走向“一带一路”沿线国家。

Assisting companies to enter the markets of countries along the routes of the “One Belt, One Road” initiative.

**对象：**项目持有方在国内已有成熟应用，在海外拥有一定的市场需求，绿色技术银行利用国际合作渠道，帮助开拓海外市场。

**案例：**环境质量领域——绿色包装新材料整体解决方案

**Object:** The project holders have already had mature application cases in China and have certain market potentials overseas. GTB will use international cooperation channels to help these enterprises to open up overseas markets.

**Case:** Environmental Quality – Integrated Solutions for Green Packaging New Materials





Portfolio of Packaging Technology:

MATERIALS	GREEN	AVAILABLE IN REGION**	PROVEN	FABRICATION EASE
Bamboo	✓	✗	✓	✗
Mushroom	✓	✗	✓	✗
Air Paq	✓	✓	✓	✓
HDPE	✓	✓	✓	✗
PE	✗	✓	✓	✗
ARCEL	✗	✗	✓	✓
STYROFOAM	✗	✓	✓	✓
CORRUGATE/SBS	✓	✓	✓	✓

\*\* Regions: Brazil, India, Mexico

## 环境质量领域 Environmental Quality

**绿色软包装新材料整体解决方案：**以可降解的新型生物基材料为核心，提供一体化的绿色软包装设计制造解决方案。已广泛应用于快递、电商、电子工业品、消费品、生鲜冷链包装等十多个行业及戴尔、华为等国际知名企业。与市场上其他缓冲结构包装技术相比具有材料可降解、场地利用率高等优势。绿色技术银行与荷兰欧中基金会建“中-荷联合项目办公室”，将该项目向荷兰进行推广。

### A total solution based on innovative green and flexible packaging materials :

We offer an integrated green and flexible packaging solution based on biodegradable materials widely used in over 10 industries including express delivery, e-commerce, industrial electronics, consumer goods, cold chain packaging and by world renowned corporations such as Dell and Huawei. This solution offers the benefits of material degradation and high site utilization in comparison with other available buffer structure packaging technologies.



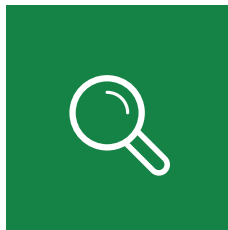
/03

**有关合作设想**

Cooperation Concept

# 合作设想

## Cooperation Concept



### 项目层面 Project Level

企业如对某一技术有需求，可提出需求，进行供需对接、洽谈。

Please contact us if you are interested in a technology. We can arrange meetings between supply and demand sides.



### 战略层面 Strategic Level

与高新园区、地方政府合作，根据当地产业特点，从绿色发展规划、绿色技术供给、平台共建等方面支撑区域可持续发展。

GTB will work with high-tech parks and regional governments to help both parties address all the issues to the regional sustainable development including with green development planning, the provision of technologies and building platform.



### 海外辐射 Overseas Level

依托合作的国际组织，将绿色技术进一步向“一带一路”沿线国家进行推广、应用和示范。

Relying on the the international organization, green technologies will be promoted to countries along “one belt one road”.



- **若有合作意向，可以向本国政府外交部、科技部等部门提出申请;与我国外交部或科技部联系具体事宜;**

Those who have intentions to cooperate can apply to the Ministry of Foreign Affairs, the Ministry of Science and Technology et al. of your local government, and can contact the Ministry of Foreign Affairs or the Ministry of Science and Technology of China for specific affairs;

- **合作模式：成套技术的转移转化，PPP或其他合作模式;**

**Cooperation mode:** transfer and commercialization of complete sets of technology, PPP or other cooperation modes;

- **联系方式 Contact information:** [www.greentechbank.com](http://www.greentechbank.com)

**Tel: +86 21-24197932**

**Email: greentechbank @sstec.org.cn**

**Thanks**

