

Desertification Control and Land Restoration

Inspiring Solutions from Chinese Enterprises

荒漠化防治与土地恢复
——来自中国企业的解决方案

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For Land, and For the Future

土地即未来

Business draws its strength from the land to grow, and should enable the land to thrive in return—

商业从土地汲取发展的力量，也应让土地因商业而生生不息——

for the future of our planet and the prosperity of humanity.

为了地球的未来，也为了人类的繁荣。

Desertification Control and Land Restoration — Inspiring Solutions from Chinese Enterprises



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Engaging the Private Sector for a Sustainable Land Future

Land is the bedrock of human survival and development—it underpins ecosystem stability, food security, and climate resilience. Yet, land degradation, desertification, and drought are intensifying at an alarming rate. These interconnected crises are eroding the ecological, economic, and social fabric of communities across the globe, posing a direct threat to our collective sustainable future.

In response to this shared challenge, land restoration is no longer a standalone task within ecological conservation, but requires collective action from governments, social organizations, research institutions and the private sector. As key drivers of the global economy, companies are not only major users of land and resources, but also pivotal forces in technological innovation, industrial transformation, and solution development. By optimizing production, boosting resource efficiency, innovating in business models, and integrating land and nature considerations into strategic decision-making and value chain management, they can play a critical role in curbing land degradation, advancing restoration and driving sustainable development.

In recent years, the international community has increasingly recognized this corporate potential. Launched by the United Nations Convention to Combat Desertification (UNCCD), the Business4Land (B4L) initiative provides a vital platform for this engagement. B4L encourages companies to integrate land considerations into business decisions by reducing land degradation risks, transforming value chains, funding restoration projects, and sharing innovative practices, thereby contributing to global land restoration goals.

As one of the countries facing significant challenges in combating desertification and land degradation, China has forged its own distinct path through decades of practice. From major ecological projects such as the Three-North Shelterbelt Forest Program (TNSFP) to green innovations in renewable energy, infrastructure, mine restoration, and industrial transformation, China is exploring a systematic pathway from restoring degraded land to fostering harmony between humanity and nature.

Against this backdrop, an increasing number of Chinese enterprises are integrating nature conservation and sustainable land management into their development strategies. Businesses are no longer merely subjects of ecological impact management, but are becoming vital providers of land restoration solutions. These solutions embody the core B4L vision: corporate action is reflected not only in restoring degraded land, but also in transforming production models, optimizing value chains, reducing future land degradation risks, and creating new pathways for shared value between people and nature.

Since its launch in 2020, the GoldenKey—SDG Solutions initiative has collected over 2,700 innovative solutions from Chinese enterprises advancing the United Nations Sustainable Development Goals (SDGs). Its "Nature Positive" track has continuously identified and shared corporate solutions in ecological

protection, biodiversity conservation, nature-positive business models, and sustainable resource management. It serves as a vital platform for discovering and promoting nature-based solutions by Chinese enterprises.

The solutions in this collection are drawn from outstanding entries of the GoldenKey—SDG Solutions, selected and organized to align with UNCCD priorities on land restoration and sustainable land management. Together, they map out six pathways for Chinese enterprises to combat desertification and restore land. Through these solutions, we illustrate how Chinese enterprises embed sustainable land and water management across energy transition, infrastructure development, resource utilization, industrial upgrading, and ecological restoration, showcasing diverse approaches and proven frameworks for corporate engagement in global land governance.

The selected solutions highlight four key takeaways for the global community:

First, incorporate land considerations into corporate strategies and business practices. Rather than viewing land restoration as isolated philanthropic initiatives, these companies integrate it into project planning, investment decisions, operations, and value chains, achieving synergy between ecological and commercial goals.

Second, advance land restoration via technological and business model innovation. From desertification control through renewable energy and ecological conservation along linear infrastructure, to mine restoration, green industrial transition, and integrated land management, these solutions demonstrate how companies leverage technological and model innovations to deliver new solutions for land restoration.

Third, deliver integrated ecological, economic, and social value. Outstanding solutions focus not only on ecosystem improvement, but also on industrial development, community well-being, and long-term sustainable operations, reflecting a shift in land restoration from "ecological remediation" toward "ecological regeneration" and "shared value creation."

Fourth, generate globally replicable experiences. While land degradation challenges vary across regions, the approaches adopted by these companies — including green transformation, nature-positive innovation, and multi-stakeholder collaboration in land governance — are universally applicable.

Land restoration is a global endeavor with a future-focused vision. We hope this collection bridges Chinese corporate solutions with international land governance, inspiring businesses worldwide to channel innovation toward desertification control, land restoration, and sustainable development. We look forward to more companies joining this movement, and, together, we can build a future where land thrives, ecosystems flourish, and people live in harmony with nature.

序言

携手企业力量 共创土地未来

土地是人类生存和发展的基础，也是维系生态系统稳定、保障粮食安全、应对气候变化的重要资源。然而，全球土地退化问题仍在持续加剧。荒漠化、干旱和土地退化正在影响越来越多地区的生态安全、经济发展和民生福祉，成为全球可持续发展面临的重要挑战。

面对这一共同挑战，土地恢复已不再只是生态保护领域的单一任务，而需要政府、社会组织、科研机构以及企业等多元主体共同参与。企业作为全球经济活动的重要推动者，既是土地利用和资源消耗的重要参与者，也是技术创新、产业转型和解决方案供给的重要力量。企业通过优化生产方式、提升资源利用效率、创新商业模式，并将土地和自然相关议题融入战略决策和价值链管理，可以在避免土地退化、促进土地恢复和推动可持续发展中发挥关键作用。

近年来，国际社会越来越重视企业在全球土地治理中的作用。联合国防治荒漠化公约（UNCCD）发起的 Business for Land（B4L）倡议，正是推动企业参与全球土地行动的重要平台。B4L 倡导企业将土地议题纳入商业决策，通过降低土地退化风险、推动价值链转型、投资土地恢复行动以及分享创新实践，为实现全球土地恢复目标贡献企业力量。

中国作为世界上荒漠化和土地退化防治任务较重的国家之一，在长期实践中探索形成了一系列具有中国特色的土地治理经验。从“三北”工程等重大生态工程，到新能源开发、基础设施建设、矿山修复、产业绿色转型等领域的创新实践，中国正在探索从“治理退化土地”到“推动人与自然和谐共生”的系统路径。

在这一过程中，越来越多中国企业开始将自然保护和土地可持续管理融入自身发展战略。企业不再只是生态影响的管理对象，而逐渐成为土地恢复解决方案的重要提供者。这些实践体现了 B4L 倡导的核心理念：企业行动不仅体现在修复已经退化的土地，也体现在改变生产方式、优化价值链、降低未来土地退化风险，并创造人与自然共享价值的新路径。

“金钥匙——面向 SDG 的解决方案”自 2020 年启动以来，已征集超过 2700 项中国企业创新贡献联合国可持续发展目标的解决方案。其中，“自然增益 / 礼遇自然”

类别持续挖掘和传播企业在生态保护、生物多样性保护、自然友好型商业模式以及可持续资源管理方面的探索，为发现和推广中国企业自然行动提供了重要平台。

本案例集所收录的实践，主要来源于“金钥匙——面向 SDG 的解决方案”中的优秀企业案例，并结合 UNCCD 关于土地恢复和可持续土地管理的关注方向进行筛选和整理，重点展现中国企业参与荒漠化治理与土地恢复的六类行动路径。我们希望通过这些实践案例，展示中国企业如何将土地与水资源可持续管理议题融入能源转型、基础设施建设、资源开发、产业升级和生态修复全过程，呈现企业参与全球土地治理的多元路径，以及经过验证的行动框架。

入选案例具有以下共同特点：

一是，将土地议题融入企业战略与业务实践。这些企业并非将土地恢复作为孤立的公益行动，而是将其融入项目规划、投资决策、生产运营和价值链管理之中，实现生态目标与商业发展的协同。

二是，以创新技术和商业模式推动土地恢复。从新能源治沙、线性基础设施生态保护，到矿山修复、产业绿色转型和土地综合治理，这些实践展示了企业如何通过技术创新和模式创新，为土地恢复提供新的解决方案。

三是，实现生态价值、经济价值和社会价值的融合。优秀实践不仅关注生态系统改善，也关注产业发展、社区福祉和长期可持续运营，体现了土地恢复从“生态修复”向“生态再生”和“共享价值创造”的转变。

四是，具有全球推广和借鉴意义。不同国家和地区面临不同的土地退化挑战，但企业通过绿色转型、自然友好型创新和多方合作参与土地治理的路径具有普遍意义。

土地恢复是一项面向未来的全球行动。希望本案例集能够成为连接中国企业实践与国际土地治理的重要桥梁，为全球企业探索如何通过商业创新参与荒漠化防治、土地恢复和可持续发展提供启发。面向未来，我们也期待众多企业成为土地恢复的重要行动者，共同推动一个土地健康、生态繁荣、人与自然和谐共生的未来。

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新能源 / 光伏治沙

Harnessing Renewable Energy for Land Restoration and Pastoral Green Transition
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Renewable Energy
/ PV for
Desertification Control
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Desertification Control
Along Transmission Lines
输电线路治沙

Engineering Construction
and Land Protection
工程建设与土地保护

Mine Land Restoration
and Rehabilitation
矿山修复与土地利用

Land Restoration
and Water Management
土地修复与水资源管理

Green Industrial
Transition and Sustainable
Land Management
产业绿色转型
与可持续土地管理

01

How Can Renewable Energy Drive Land Restoration?

Desertification-prone areas face multiple challenges, including fragile ecosystems, land degradation, and limited drivers for development. As the renewable energy industry expands, photovoltaic (PV) projects are moving beyond traditional energy development models by integrating energy production with land restoration, offering a new pathway for combating desertification.

This approach demonstrates how companies can integrate nature and land considerations into business decision-making. Through science-based planning, ecological development, and long-term operations, renewable energy infrastructure can evolve from facilities focused solely on power generation into integrated platforms that support ecological restoration and regional development.

From "PV for desertification control" to "PV-pastoral synergy," companies are exploring a collaborative model that integrates renewable energy development, land restoration, industrial integration, and community benefits. By transforming degraded land into spaces that generate energy, ecological, and economic value, this approach offers practical insights for advancing land restoration and green development in arid and semi-arid regions around the world.





01

新能源开发如何成为 土地恢复的新动力？

荒漠化地区面临生态脆弱、土地退化和发展动力不足等多重挑战。随着新能源产业发展，光伏项目正在突破传统能源开发模式，将能源生产与土地恢复结合起来，成为推动荒漠化治理的新路径。

这一实践体现了企业将自然和土地因素融入商业决策，通过科学规划、生态建设和长期运营，使新能源基础设施从单一能源生产设施转变为支持生态恢复和区域发展的综合平台。

从“光伏治沙”到“牧光互补”，企业探索形成“新能源开发—土地恢复—产业融合—社区受益”的协同模式，将退化土地转化为兼具能源、生态和经济价值的发展空间，为全球干旱和半干旱地区实现土地恢复与绿色发展提供实践经验。



Harnessing Renewable Energy for Land Restoration and Pastoral Green Transition

BOE Energy's 200MW Pasture and PV-Storage + Sand Control Comprehensive Project

以新能源开发赋能土地恢复与牧区绿色转型

京东方能源 20 万千瓦牧光储 + 治沙综合项目

Keywords

- Renewable energy transition
- Land restoration
- PV-pastoral synergy
- Ecological-industrial synergy

Key Messages

Desertification-prone areas often face overlapping challenges, including fragile ecosystems, limited industrial development, and the need for an energy transition. Renewable energy development can provide new economic momentum for restoring degraded land. By developing innovative business models that integrate energy investment with ecological restoration and community development, manufacturing companies can help transform these areas from sites of resource extraction into spaces where ecological and economic value are created together.

Corporate Solution

The 200MW Pasture and PV-Storage + Sand Control Comprehensive Project of BOE Energy Technology Co., Ltd. is located in Sunite Right Banner, Xilingol League, Inner Mongolia. The project is developing an integrated model that combines PV, energy storage, desertification control and pastoral activities. Ecological functions are considered throughout

PV development. Raising panel height enables both power generation above and grazing below. The shade and windbreak effects of the panels improve the surface microclimate, promoting vegetation recovery while advancing renewable energy development and desertification control in tandem. The project also includes an energy storage system to improve renewable energy accommodation. Through operations and maintenance services and pastoral integration, it creates local jobs and promotes the coordinated development of ecological restoration and pastoral industries.

Innovative Approaches

Breaking with the traditional divide between renewable energy and ecological restoration, this project integrates land restoration across the full lifecycle, from planning and construction to operation. It represents a shift from "minimizing land impacts" to "generating land gains." In this model, renewable energy becomes more than a clean power source—it serves as a lasting engine for ecological restoration and sustainable development in desertification-prone areas.

Global Implications

BOE Energy incorporates nature and land considerations into business decisions, using innovative technologies and value chain models to reduce land degradation risks while creating shared value for people and nature. For arid and semi-arid regions worldwide, this integrated model of "renewable energy development + land restoration + livelihood improvement" offers a replicable pathway for private sector engagement in global land restoration efforts.

关键词

· 新能源转型 · 土地恢复 · 牧光互补 · 生态与产业协同

🔍 核心观点

荒漠化地区往往同时面临生态脆弱、产业发展受限和能源转型需求等挑战。新能源开发为退化土地恢复提供了新的经济动力。制造业企业通过创新商业模式，将能源投资与生态修复、社区发展相结合，可以推动土地从“资源利用空间”转变为“生态与经济价值共创空间”。

📋 企业实践

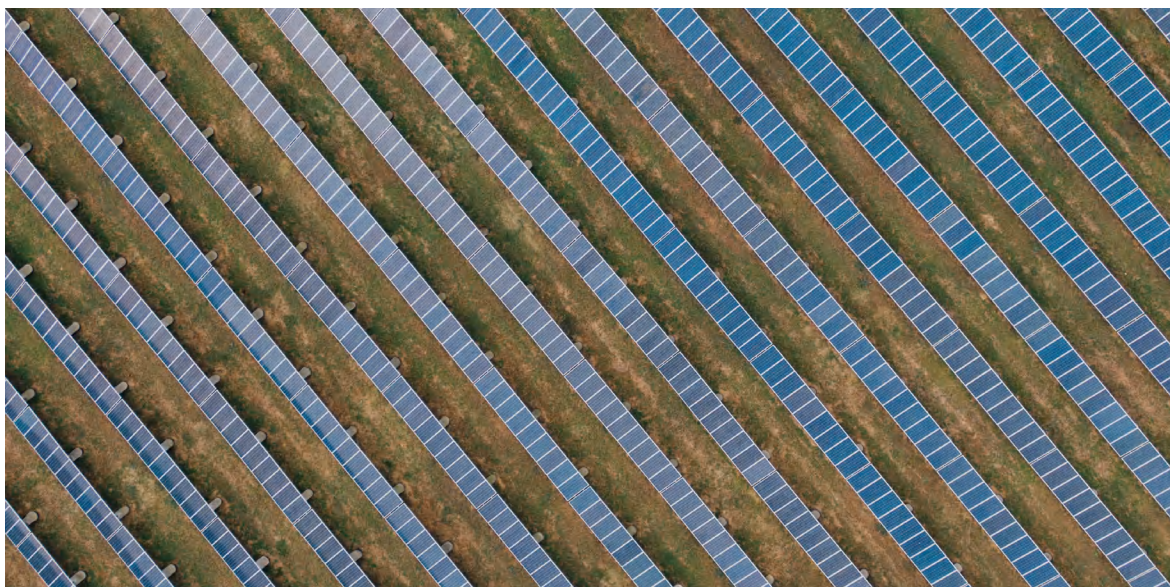
位于内蒙古锡林郭勒盟苏尼特右旗的京东方能源 20 万千瓦牧光储能 + 治沙综合项目，探索形成“光伏 + 储能 + 治沙 + 牧业”融合模式。项目在光伏建设过程中同步考虑土地生态功能，通过提升光伏支架高度，实现“板上发电、板下放牧”，利用光伏板形成的遮阴和防风效应改善地表微环境，促进植被恢复，实现新能源开发与荒漠化治理协同推进。同时，项目配套储能系统提升新能源消纳能力，并通过发展运维服务、牧业融合等方式，为当地创造就业机会，推动生态治理与牧区产业发展相结合。

💎 模式亮点

该实践突破了传统新能源项目与生态治理相分离的模式，将土地恢复理念融入项目规划、建设和运营全过程，实现从“减少土地影响”到“创造土地增益”的转变。新能源产业不仅提供清洁能源，也成为支持荒漠化地区生态恢复和可持续发展的长期动力。

💡 全球启示

京东方能源将自然和土地因素融入商业决策，通过创新技术和价值链模式降低土地退化风险，并创造人与自然共享价值。对于全球干旱和半干旱地区而言，“新能源开发 + 土地恢复 + 生计改善”的融合模式，为企业参与全球土地恢复行动提供了可复制的实践路径。



PV-Powered Desert Ecosystem Restoration

Delivering Nature-Positive Gains Through Renewable Energy Infrastructure

“光伏治沙” 推动荒漠生态系统恢复

以新能源基础设施创造自然增益的实践



Keywords

- PV for desertification control
- Desert ecosystem restoration
- Renewable energy
–ecological restoration nexus
- Multifunctional land use

Key Messages

Desert regions are not only sources of energy potential but also important areas for ecological restoration. By integrating renewable energy development with ecological recovery, companies can help restore degraded land and advance the energy transition while generating nature-positive outcomes.

Corporate Solution

China Longyuan Power Group Co., Ltd., a subsidiary of CHN Energy, has developed a large-scale PV base in the Tengger Desert, Ningxia, exploring an integrated model of "renewable energy + ecological restoration." The project improves the desert environment through measures such as straw checkerboard barriers for sand stabilization, drought-tolerant vegetation, and ecological monitoring. It also adopts a three-tier land-use system—power generation above the panels, cultivation between them, and ecological restoration beneath them. Measures, such as raising PV modules and optimizing mounting structures, reduce surface evaporation, improve the microclimate, and support the recovery of sand-adapted vegetation. Afforestation, grassland restoration and agricultural trials are also underway to enhance the overall land value.

Innovative Approaches

The project moves beyond the conventional separation of renewable energy development from ecological protection by turning green infrastructure into a vehicle for land restoration. It establishes a coordinated pathway linking "energy production, ecological restoration, and land value enhancement," offering a new approach to sustainable land management in desert regions.

Global Implications

Confronting land degradation and climate pressures, energy companies can integrate energy infrastructure development with ecosystem restoration through green investment, technological innovation, and long-term operations. The Tengger model provides a replicable reference for arid and semi-arid regions seeking to align economic development with ecological restoration.

核心观点

荒漠地区不仅是能源资源空间，也是生态恢复的重要载体。企业通过融合新能源开发与生态治理，可以推动退化土地恢复，实现能源转型与自然增益协同。

企业实践

国家能源集团龙源电力在宁夏腾格里沙漠建设大型光伏基地，探索“新能源+生态治理”模式。项目通过草方格固沙、耐旱植物种植、生态监测等措施改善沙地环境，并创新“板上发电、板间种植、板下修复”的立体利用方式。通过抬高光伏组件、优化支架设计，降低地表蒸发，改善局部微环境，促进沙生植物恢复，同时开展林草种植、农业实验等探索，提升土地综合利用价值。

模式亮点

项目突破新能源开发与生态保护割裂的传统模式，将绿色基础设施转化为土地恢复载体，形成“能源生产—生态修复—土地价值提升”的协同路径，为荒漠地区可持续土地管理提供新方案。

全球启示

面对土地退化与气候变化挑战，能源企业可通过绿色投资、技术创新和长期运营，将能源基础设施建设融入生态系统恢复。腾格里里实践为干旱和半干旱地区探索发展与生态恢复协同提供了实践参考。



关键词

· 光伏治沙 · 荒漠生态恢复 · 新能源 + 生态治理 · 土地多功能利用



Unlocking Desertified Land Value Through PV Infrastructure

Ecological Restoration at the Mobei PV-Energy Storage Power Station

光伏基础设施赋能荒漠化土地增值

漠北光储电站生态治理实践

Keywords

- Renewable energy bases in desert, Gobi and other arid regions
- Ecosystem restoration
- Renewable energy infrastructure
- Multifunctional land use

Key Messages

Renewable energy infrastructure offers more than clean power. It can also be a vehicle for restoring degraded land and supporting sustainable use. By optimizing project design, improving local ecological conditions, and integrating ecological industries, companies can convert energy development areas into restoration assets, aligning land function recovery with green energy production.



Corporate Solution

The Mengxi Branch of Guohua Energy Investment Co., Ltd. has developed a 100MW PV-energy storage power station in the Ulan Buh Desert in Inner Mongolia, piloting an integrated model combining PV with ecological restoration. In partnership with research institutions, the project tailors its approach to the desert conditions by using PV panel shading, windbreak effects,

and drip irrigation to improve the local microclimate. Drought-tolerant species such as alfalfa and honeysuckle are cultivated between panel rows to support the restoration of desertified land. Its smart operations and maintenance system also improves renewable energy efficiency, enabling coordinated progress in energy generation, land restoration, and resource utilization.



Innovative Approaches

The project redefines the conventional single-purpose function of renewable energy facilities by turning PV infrastructure into a platform for ecological restoration and establishing a multifunctional land-use model. Through microclimate improvement via PV panels, the project promotes vegetation recovery while capturing economic value from ecological planting, delivering a virtuous cycle of land greening, business gains, and resource value uplift.



Global Implications

Across arid and semi-arid regions around the world, land degradation and the need for an energy transition often occur simultaneously. The Mobei model demonstrates how companies can use green infrastructure investment to integrate energy development with ecological restoration and sustainable land use, enhancing the overall value of land. It provides a practical reference for exploring innovative approaches in desert regions that advance climate action, ecological recovery, and community development together.



关键词

· 沙戈荒基地 · 生态系统恢复 · 新能源基础设施 · 土地多功能利用

核心观点

新能源基础设施不仅可以提供清洁能源，也能够成为退化土地恢复和可持续利用的平台。通过优化项目设计、改善局部生态条件并融合生态产业，企业可以将能源开发空间转化为生态治理空间，实现土地功能提升与绿色能源生产协同发展。

企业实践

国华投资蒙西分公司在内蒙古乌兰布和沙漠建设 10 万千瓦光伏电站，探索“光伏+生态治理”模式。项目与科研机构合作，根据荒漠环境特点，通过光伏组件遮阴、风障效应和滴灌技术改善局部微环境，在光伏板间开展苜蓿、金银花等耐旱植物种植，推动沙化土地恢复。同时，项目结合智慧化运维体系，提高新能源生产效率，实现能源开发、土地治理和资源利用协同推进。

模式亮点

项目突破了新能源项目单一能源生产功能，将光伏设施转化为生态治理载体，形成“一地多用”的土地管理模式。通过光伏板改善微气候条件，促进植被恢复，并探索生态植物种植带来的经济价值，实现“土地增绿、企业增效、资源增值”的良性循环。

全球启示

在全球干旱和半干旱地区，土地退化与能源转型需求往往同时存在。漠北实践表明，企业可以通过绿色基础设施投资，将能源开发与生态恢复、土地可持续利用结合起来，提高土地综合价值，为荒漠地区探索兼顾气候行动、生物恢复和社区发展的创新路径提供参考。

Renewable Energy
/ PV for Desertification Control
新能源 / 光伏治沙

Desertification Control
Along Transmission Lines
输电线路治沙

Engineering Construction
and Land Protection
工程建设与土地保护

Mine Land Restoration
and Rehabilitation
矿山修复与土地利用

Land Restoration
and Water Management
土地修复与水资源管理

Green Industrial
Transition and Sustainable
Land Management
产业绿色转型
与可持续土地管理

02

How Can Transmission Lines Become “Green Corridors” Across Arid Lands ?

As wind and solar power projects expand into deserts, Gobi, and other arid regions, renewable energy development and long-distance transmission are reshaping land use. The pressing question is: how can we ensure reliable power delivery while turning transmission infrastructure into a platform for windbreaks, sand fixation, vegetation restoration, and land rehabilitation? This marks a new corporate approach to desertification control and an emerging focus amid the global energy transition.

State Grid Corporation of China's "Green Corridor" project targets areas surrounding key power facilities—transmission lines and substations—in desertification-prone regions, particularly in Ningxia, Gansu, eastern Inner Mongolia, and Liaoning. Through systematic desert management and ecological restoration, including afforestation, sand stabilization, and vegetation recovery, the project strengthens ecological defenses while ensuring the safe and stable operation of power infrastructure. It has created a multi-benefit public welfare model that "greens the desert, protects the lines, restores the ecology, and improves local livelihoods", building a green corridor across the sands that integrates ecological, operational, and social benefits.

Protecting nature means protecting the foundation of energy security—and the future of civilization. State Grid's sand-control efforts along transmission lines represent a new frontier in linear infrastructure-based desertification management, following China's earlier practices along railways and highways. It is a journey where energy and nature move forward together, and where development and ecology grow in sync.





02

如何让输电线路 成为沙戈荒上的“绿色走廊”

随着风电、光伏加快向沙漠、戈壁和荒漠地区布局，新能源开发及远距离输送正在重塑土地利用方式。如何在保障能源输送的同时，将输电基础设施转化为防风固沙、植被恢复和土地治理的载体，使能源基础设施同时承载土地恢复功能，是企业参与荒漠化防治的新探索，也是全球能源转型背景下值得关注的新方向。

中国国家电网公司的“绿色走廊”项目聚焦中国荒漠化地区输电线路、变电站等关键电力设施周边区域，特别是在宁夏、甘肃、内蒙古东部及辽宁等地，系统性地开展荒漠综合治理与生态修复工作，通过植树造林、固沙防沙、植被恢复等技术手段，在筑牢沙漠地区生态安全屏障的同时，守护电力设施安全稳定运行，探索出“绿沙漠、护线路、促生态、利民生”的多方共赢绿色示范公益模式，在沙漠中建设出一条“绿色走廊”，实现了生态效益、安全效益与民生效益的有机统一。

守护自然，就是守护能源安全的根基，守护人类文明的未来。国家电网输电线路治沙的行动与经验，是中国继铁路治沙、公路治沙之后又一项线性基础设施治沙的积极探索，是一场能源与自然的双向奔赴，也是发展与生态的同频共振。



From Sand to Green

A Three-Way Collaborative Governance Model

“三联合” 共治实现 “沙退绿进”

Keywords

- Tower-based desertification control
- Vegetation-based sand stabilization
- Community stewardship
- Co-benefits

Q Key Messages

China's western desert, Gobi, and other arid regions are key hubs for large-scale renewable energy generation and transmission. To address wind-sand hazards to transmission infrastructure and turn towers into platforms for desertification control, State Grid Ningxia Electric Power Company has developed a "tripartite collaboration" model for sand control over the past decade. Through joint assessment, governance, and maintenance involving the company, local governments, and communities along the transmission corridor, the project has created a virtuous cycle where sand retreats, greenery advances, and green power delivers shared benefits.



Corporate Solution

In Ningxia, 45 towers and some 22 km of the ± 660 kV Yindong HVDC Transmission Line traverse the Tengger Desert and Mu Us Sandy Land. State Grid Ningxia has integrated grid safety with desertification control, tailoring its approach to local terrain and ecology. Under its vegetation-based sand fixation approach, straw checkerboards are used to stabilize mobile dunes, followed by the seeding of plants such as *Artemisia*

ordosica to restore vegetation around towers. The project also engages local farmers and herders as "rangers," trained in planting and vegetation maintenance while creating new income opportunities for communities. In addition, drone-based surveying technology is used to accurately measure the area covered by straw checkerboards beneath transmission corridors, while a visualization system enables remote monitoring of line corridors and digital management of the restoration process. Over the past decade, nearly 450,000 square meters of desert have been restored, with vegetation coverage along the corridor rising from under 3% to over 75%.



Innovative Approaches

The model is built on a "three-in-one" collaboration among the power company, local governments, and communities along the transmission corridor. It operates through a cooperative framework in which companies set standards, governments build platforms, villagers take the lead, and benefits are shared—transforming local farmers and herders from passive bystanders and victims of desertification into active guardians and direct beneficiaries of ecological restoration. This approach has greatly strengthened the sustainability of desert management efforts.



Global Implications

When transmission lines evolve into "green corridors" for desert restoration, they exemplify the B4L principle that companies should generate positive land outcomes. Built on a governance logic of low-cost adaptation, high participation, and strong resilience, this approach offers a replicable model for ecological protection along linear infrastructure like power lines and pipelines in arid and desertification-prone regions.



关键词

· 铁塔治沙 · 生物固沙 · 社区参与 · 利益共享

核心观点

中国西部沙戈荒区域是大规模可再生能源的重要生产基地和输送通道。为降低风沙对输电设施的安全威胁，并依托输电铁塔开展荒漠化治理，国网宁夏电力有限公司历经十余年探索，形成公司与当地政府、沿线百姓联合评估、治理和维护的“三联合”铁塔治沙、固沙、防沙模式，实现“沙退绿进、绿电生金”的良性循环。

企业实践

±660 千伏银东直流输电线路宁夏段有 45 基铁塔、约 22 公里都处于腾格里沙漠和毛乌素沙地之中。国网宁夏电力将电网安全运行与荒漠化防治深度融合，针对不同地形和生态特点，制定差异化治沙策略：采取生物治沙模式，用草方格把流动沙丘改造成固定或半固定沙地，再撒播沙蒿等植物种子，逐步恢复塔下植被；吸纳当地农牧民为“护林护线员”，教授栽植技术，协助养护林草。拓展当地群众增收渠道；利用无人机测量技术，精准测绘线路下方草方格面积，利用输电线路可视化系统远程监控线下通道，实现治理过程数字化管控。十余年来，累计治理面积近 45 万平方米，沿线植被覆盖率从不足 3% 提升至 75% 以上。

模式亮点

突出电力公司与当地政府、沿线百姓的“三位一体”协同创新，在权责机制上探索出“企业建标准、政府搭平台、村民当主体、收益可共享”合作路径，使农牧民从沙漠治理旁观者、受害者转变为受益者与守护者，显著增强沙漠治理的可持续性。

全球启示

当输电走廊成为荒漠生态修复的“绿色廊道”，体现的正是 B4L 所倡导的企业需要转向创造土地正向价值，其探索的“低成本适配、高参与度、强韧性”的治理逻辑，对于旱区及荒漠化区域的电网、油气管道等线性工程生态防护则具有直接借鉴价值。





Transforming into Regional Land Ecological Stewards 向区域土地生态管护者转型

Keywords

- Desert transmission corridors
- Full-cycle governance
- Engineering-based sand fixation
- Ecological stewardship

Key Messages

Persistent wind-sand erosion accelerates land desertification and poses a serious threat to the stable operation of UHV and EHV transmission lines. To address this, State Grid Gansu Electric Power Company has embedded desertification control into the entire lifecycle of transmission line construction and operation. This sustainable governance model ensures reliable energy delivery while restoring sandy lands, harmonizing energy infrastructure with environmental protection.



Corporate Solution

To combat the erosion risks from the Tengger, Badain Jaran, and Kumtag deserts, State Grid Gansu Electric Power Company has developed a full-lifecycle control model: First, implement green construction. The company integrates soil, water, and ecosystem protection during construction, applying measures like oil leakage prevention and surface dust control. Post-construction restoration employs a layered approach—integrating stone grids, straw checkerboards, and vegetation—to create effective windbreak and sand fixation barriers along the corridors. Second, conduct routine sand fixation. Manual and drone-based inspections are stepped up in desert areas to monitor desertification. Furthermore, technical upgrade funds are directed toward installing gravel cushion layers beneath tower foundations to reduce physical erosion and enhance foundation stability. Third, build green corridors. Collaborating with local governments, NGOs, and environmental institutions, the company drives sand fixation and desert greening initiatives, creating a collaborative governance model that protects infrastructure, restores ecosystems, and improves local livelihoods.





Innovative Approaches

Extending desertification control across the full lifecycle of transmission line planning, construction, and operations, the company combines ecological management during construction, engineering-based sand fixation during operations, and collaborative societal initiatives. While securing transmission corridors, this approach restores degraded sandy land. Ultimately, it enables the company to evolve from a traditional infrastructure developer into a long-term regional ecological steward, fully embodying B4L's core principle of "integrating nature into business decision-making."



Global Implications

Transmission projects in ecologically sensitive desert regions must balance energy security with desertification control. State Grid Gansu demonstrates that combining full-lifecycle management, engineering-based sand fixation, vegetation restoration, and multi-stakeholder collaboration can simultaneously enhance grid reliability and restore desert ecosystems. This offers a practical, replicable model for energy infrastructure development in arid regions worldwide.

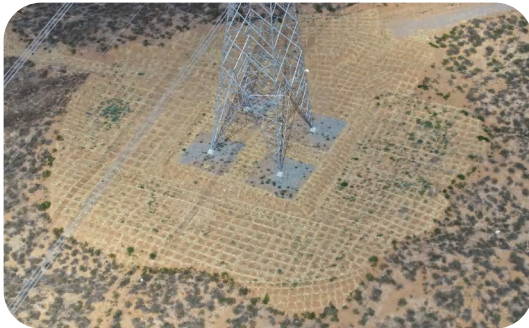


核心观点

沙漠风沙持续侵袭，既加剧了土地荒漠化，也严重威胁超特高压输电线路稳定运行。国网甘肃省电力公司将荒漠化防治嵌入输电线路建设、运维全流程，同步保障能源输送与沙地生态修复，探索荒漠输电走廊可持续生态治理路径，实现能源基础设施建设与生态保护协同发展。

关键词

- 荒漠输电走廊
- 全周期治理
- 工程固沙
- 生态管护



企业实践

针对腾格里沙漠、巴丹吉林沙漠、库姆塔格三大沙漠的风沙对输电设施的侵蚀危害，国网甘肃省电力公司在超特高压输电线路建设、运行全过程打造荒漠化防治新模式。一是落实绿色施工。施工全过程落实水土与生态保护要求，施工阶段配套油污防渗、地表防尘等环保措施，完工后采用石方格、草方格与植被结合的分层方案开展生态修复，构筑线路沿线防风固沙屏障。二是开展常态化固沙。加密沙漠区段人工、无人机巡检，持续监测沿线沙化动态；依托技改资金为铁塔基座铺设碎石垫层，依靠物理防护减弱风沙冲刷侵蚀，大幅提升塔基稳固程度。三是共建绿色廊道。联动地方政府、公益组织、环保机构开展固沙防沙、沙漠绿化公益行动，形成兼顾线路防护、生态修复与民生改善的协同治理模式。



模式亮点

将荒漠化治理覆盖输电线路规划、施工、运维完整周期，依靠施工生态管控、运维工程固沙、社会联合生态共建多重举措，在保障输电通道安全的同时修复沿线退化沙地，推动企业从单纯工程建设者转型为区域长期土地生态管护者，契合 B4L “将自然纳入商业决策” 核心理念。



全球启示

荒漠生态敏感区的输电工程需平衡能源输送安全与荒漠化治理需求。国网甘肃实践证明，依托工程全周期管理，融合工程固沙、植被修复、多元主体协同治理，可同步保障电网稳定、修复荒漠生态，为全球干旱荒漠地区能源基础设施建设提供可落地实践方案。



A Long-Term Governance System for Grid Ecological Protection in Sandy Areas

系统构建沙区电网生态防护长效治理体系

Keywords

- Power grids in sandy areas
- Shared responsibility and governance
- Benefit linkages
- Long-term governance

🔍 Key Messages

Wind and sand hazards threaten power grid security, while ecological degradation restricts local development. Located in the heart of China's largest sandy land—the Horqin Sandy Land—Tongliao faces the challenge of balancing grid stability with ecological conservation. State Grid Tongliao Power Supply Company has integrated daily grid maintenance into ecological governance, establishing a long-term protection system for power grids in sandy areas.



Corporate Solution

The company deeply integrates power infrastructure and ecological governance. Pioneering the initiative of “carrying grass seeds during transmission line patrols,” it leverages an integrated “forest-grassland-power grid” map to align restoration needs with grid protection. By decentralizing governance responsibilities, the company collaborates with local governments to clarify land rights and encourages farmers and herders to participate through labor, stewardship, and benefit-sharing. To date, straw checkerboard installation and seed sowing have been completed along 14 km of transmission corridors, restoring over 38 hectares of land. These efforts have effectively reduced wind erosion, increased vegetation coverage, improved local livelihoods, and resolved operational challenges like unstable tower foundations, ensuring stable grid operations.



Innovative Approaches

A three-dimensional collaborative mechanism has been established, featuring “banner-level coordination, co-governance based on confirmed rights, and large-scale promotion.” First, banner-level coordination breaks down administrative barriers to form a joint governance platform involving local governments, forestry authorities, the power grid and village collectives. Second, co-governance based on confirmed rights clarifies responsibilities by defining the specific roles of companies in construction, villagers in maintenance, and governments in supervision, alongside clear benefit-sharing rules. Finally, large-scale promotion improves governance efficiency through professional technical guidance, capacity-building training, and digital monitoring platforms.



Global Implications

This solution offers a Chinese approach for ecologically sound infrastructure operation in arid and semi-arid regions worldwide. Through institutional innovation that activates grassroots governance, it transforms sand control from isolated technical projects into integrated social systems. The underlying governance logic—clear ownership, interest alignment, and value sharing—offers a replicable, assessable, and scalable model for government-enterprise-community collaboration in green infrastructure maintenance across desertification-prone countries.

关键词

- 沙区电网
- 权责共管
- 利益联结
- 长效治理



核心观点

风沙威胁电网安全、生态制约民生发展。通辽市地处中国面积最大的沙地——科尔沁沙地腹地，如何实现沙区电网稳定运行与生态保护协同推进，是这里面临的现实挑战。国网通辽供电公司将电网日常运维融入生态治理，系统构建沙区电网生态防护长效治理体系。



企业实践

国网通辽供电公司推动电力基础设施与生态治理深度融合，以“带着草籽去巡线”为起点探索沙区电网生态防护路径，依托“林草—电网”一张图，精准匹配生态修复与电网防护需求，同步推动治理权属下沉，联合地方政府确权划界，引导农牧民以劳务参与、责任守护、成果分成等方式共建共管，累计完成 14 公里线路走廊草方格轧制及种子播撒，治理面积突破 570 亩，在有效防风固沙，提高植被覆盖率，增进当地生计的同时，解决了塔基不稳、倒塔断线等运维难题，助力电网稳定运行。



模式亮点

构建起“一旗联动、确权共管、规模推进”三维协同的长效治理机制：“一旗联动”，打破条块分割，形成政府、林草部门、电网企业、村集体治理联合体；“确权共管”，厘清沙地治理权责边界，明确企业建管、村民养护、政府监管的权责清单与收益分配规则；“规模推进”，依托专业技术指导、赋能培训以及数字化监测平台，提升治理效率。



全球启示

该实践为全球干旱半干旱地区基础设施生态化运营提供了中国方案，通过机制创新激活基层治理动能，将治沙与生态修复从技术工程升维为社会系统工程；其“产权明晰—利益绑定—价值共享”的治理思路，为沙化国家基础设施绿色运维提供了可复制、可评估、可推广的政企民协同范式。



Site-Adapted Sand Control for Business and Ecological Gains

因地制宜，差异化固沙实现业务与生态双增益



Keywords

- Distribution grid-based sand control
- Differentiated restoration
- Native vegetation
- Ecological and business synergies

Key Messages

Fuxin, a frontline area for desertification control in northwestern Liaoning, China, also serves as a critical node in regional power transmission. To address potential conflicts between traditional sand control methods and power facility maintenance, State Grid Fuxin Power Supply Company has embedded ecological restoration into its distribution network operations in urban and rural areas. Through tree planting for windbreaks, grass seeding for sand stabilization, and other restoration measures, the company advances desertification control while maintaining safe and reliable power operations in sandy environments.



Corporate Solution

To tackle loose sandy soils and the vulnerability of pole foundations to wind, sand, and rain erosion, State Grid Fuxin has adopted context-specific measures. First, it reinforces tower foundations to improve wind-sand resilience. Second, differentiated sand-control strategies are applied across dunes, forestland, farmland, and nature reserves—using straw checkerboards with layered shrub-herb planting on dunes, interplanting drought-tolerant medicinal plants in forestland for soil stabilization and income, leveraging crops for soil retention on farmland, and restoring native vegetation in reserves. Third, the company engages communities in long-term voluntary tree planting along transmission corridors. Fourth, it strengthens irrigation power supply while using Beidou navigation and drone-based monitoring to track line conditions and ecological changes in sandy areas.



Innovative Approaches

The company has developed a county-level sand control system integrating tower reinforcement, scenario-based ecological restoration and long-term government-enterprise-community planting. Leveraging the distribution network's proximity to villages and farmland, the approach safeguards power line safety, restores sandy land, and improves rural ecology and livelihoods, delivering nature-positive outcomes.



Global Implications

By integrating ecological restoration into its core business safety framework, the company provides a model for corporate engagement in desertification control and land restoration. The approach shows how business operations can empower ecological recovery, while ecological gains reinforce business performance, delivering shared benefits for both ecosystems and infrastructure.



核心观点

阜新作为中国辽宁西北荒漠化治理的前沿地区，同时承载着区域电力输送的重要任务。面对传统治沙模式可能与电力设施运维产生空间冲突的挑战，国网辽宁省电力有限公司阜新供电公司立足城乡配网运维场景，通过植树造林建立防风防沙屏障，通过播撒草籽等开展沙化治理和生态修复，沙地环境中电力设施同步实现安全可靠运行。



企业实践

针对沙地土质疏松、杆基易受风沙雨水侵蚀的问题，国网辽宁省电力有限公司阜新供电公司因地制宜：一是工程加固杆塔基座，强化杆塔抗风沙倾覆能力。二是结合沙丘、林地、农田、自然保护区四类地块特点，实施差异化生态固沙：沙丘采用草方格搭配灌木、草本分层固沙；林地套种耐旱药用植物，兼顾固土与经济收益；耕地依靠农作物辅助稳沙；保护区成片培育原生绿植修复生态。三是长期联动本地开展义务植树，设立专属志愿服务林，持续推进沿线植绿护绿。四是配套完善林地灌溉供电保障，并依托北斗、无人机数字化巡检，动态监测线路与沙地生态变化。



模式亮点

搭建“杆塔工程加固+分场景生态修复+政企民长效植绿”县域沙地治理体系。依托贴近村镇农田的配网布局，同步保障线路安全、修复退化沙地、改善乡村生态民生，实现自然增益。



全球启示

国网阜新供电公司将生态修复与企业核心业务安全深度绑定，为企业参与荒漠化防治与土地恢复提供了“业务赋能生态、生态反哺业务”的实践样本，实现生态效益与设施安全的双向增益。

关键词

· 配网治沙 · 差异化修复 · 乡土植被 · 生态业务协同

Renewable Energy
/ PV for Desertification Control
新能源 / 光伏治沙

Desertification Control
Along Transmission Lines
输电线路治沙

Engineering Construction
and Land Protection
工程建设与土地保护

Mine Land Restoration
and Rehabilitation
矿山修复与土地利用

Land Restoration
and Water Management
土地修复与水资源管理

Green Industrial
Transition and Sustainable
Land Management
产业绿色转型
与可持续土地管理

03

How Can Engineering Construction Coexist with Natural Ecosystems?

Engineering construction underpins economic and social development, yet it can disturb land and affect ecosystems. To maintain the ecological functions of land while meeting development needs, companies must integrate ecological protection into project decision-making and throughout the entire construction process.

The coupling of engineering construction with land protection reflects a corporate shift from "post-hoc restoration" to whole-process ecological management. By optimizing design, limiting disturbance, restoring land in step with construction and stewarding it long term, companies embed land protection into the full lifecycle of infrastructure, thus lowering ecological risks and aligning development with nature conservation. This approach echoes the vision behind B4L: companies should move beyond restoration to proactively avoid and mitigate land-degradation risks.

The evidence shows that companies can turn engineering construction from a source of ecological impact into an actor in land protection through eco-friendly design, green construction, long-term monitoring and multi-stakeholder collaboration. This opens new models where infrastructure construction, ecological restoration and community development benefit together, and offers practical experience for green infrastructure development worldwide.





03

工程建设如何实现 与自然生态共生？

工程建设是经济社会发展的重要基础，但也可能带来土地扰动和生态影响。如何在满足发展需求的同时维护土地生态功能，需要企业将生态保护前置到项目决策和建设全过程。

工程建设与土地保护体现了企业从“事后修复”向“全过程生态管理”的转变。通过优化设计、减少扰动、同步修复和长期管护，企业将土地保护融入基础设施建设全生命周期，降低生态风险，实现工程发展与自然保护协同。这一实践呼应了 Business for Land (B4L) 倡导的理念，即企业不仅要修复生态影响，更要主动避免和减少土地退化风险。

实践表明，企业可以通过生态友好型设计、绿色施工技术、长期监测管理和多方协同机制，将工程建设从生态影响源转变为土地保护行动者，探索形成基础设施建设与生态恢复、社区发展共赢的新模式，为全球绿色基础设施建设提供实践经验。



“Planting” a World-Class Project in Rice Paddies

Restoring Land Functions During Major Infrastructure Construction

把世界级工程“种”进稻田里

重大基础设施建设中的土地功能恢复实践

Keywords

- Green infrastructure
- Land function restoration
- Full-lifecycle management
- Nature positive
- Community co-benefits

🔍 Key Messages

Major infrastructure projects often disturb land and affect ecosystems. Achieving alignment between project development and land protection is a defining challenge for sustainable infrastructure worldwide. Engineering companies are showing that they can factor the ecological value of land into every stage of project decision-making. Through planning optimization, ecological restoration and stakeholder collaboration, they shift infrastructure development from "reducing environmental impact" to "generating nature-positive gains."



关键词

· 绿色基础设施 · 土地功能恢复 · 全生命周期管理 · 自然增益 · 社区共益



Corporate Solution

The Hangzhou Lin'an grounding electrode project—part of the Gansu-Zhejiang ultra-high voltage direct current (UHV DC) transmission line—was implemented by State Grid Hangzhou Lin'an Power Supply Company under a full-lifecycle green construction model. Ecological protection was embedded into planning, design, construction as well as operation and maintenance. The project refined the grounding electrode design to minimize land footprint, and used layered soil stripping, layered backfilling and soil improvement techniques to restore 100% of the temporary land (about 23 hectares) to farmland and vegetation. A carbon sink monitoring system was also introduced to strengthen soil carbon sequestration. Through a farmer liaison mechanism, local hiring and green agriculture integration, the project aligned infrastructure development with regional development.



Innovative Approaches

The project breaks with the conventional "build first, restore later" path, treating land as a natural asset that requires long-term stewardship. It establishes a closed-loop model of construction, land restoration, ecological gain and community benefits. Through full-lifecycle management, major energy projects transcend impact mitigation: they become platforms for improving land function and creating green value.



Global Implications

As infrastructure expands rapidly worldwide, companies must redefine the relationship between engineering and nature. The solution of State Grid Lin'an shows that by factoring nature into infrastructure planning and operational decisions—through ecological design, land restoration, and partnerships—infrastructure can be transformed from an environmental burden into a vehicle for nature-positive gains. This offers a replicable Chinese model for sustainable infrastructure development globally.



核心观点

重大基础设施建设往往伴随土地扰动和生态影响，如何实现工程发展与土地保护协同，是全球可持续基础设施建设面临的重要挑战。工程建设型企业的探索表明，企业可以将土地生态价值纳入工程决策全过程，通过规划优化、生态修复和利益相关方协同，使基础设施建设从“减少环境影响”走向“创造自然增益”。



企业实践

由国网临安供电公司实施的甘浙特高压直流工程杭州临安接地极项目，创新采用全生命周期绿色建造模式，将生态保护融入规划、设计、施工和运维全过程。项目通过优化接地极结构设计，减少土地占用；采用分层取土、分层回填和土壤改良技术，实现 345 亩临时用地 100% 复耕复绿；引入碳汇监测体系，提升土壤固碳能力。同时，通过农户沟通机制、本地就业和绿色农业融合，推动工程建设与区域发展协同。



模式亮点

项目突破传统工程“建设完成后再修复”的路径，将土地视为需要长期维护的自然资产，形成“工程建设—土地恢复—生态增益—社区共享”的闭环模式。通过全生命周期管理，重大能源工程不仅降低生态影响，更成为促进土地功能提升和绿色价值创造的平台。



全球启示

面对全球基础设施快速发展的趋势，企业需要重新定义工程与自然的关系。国网浙江临安供电公司的实践表明，将自然因素纳入基础设施规划和运营决策，通过生态设计、土地恢复和伙伴协作，可以推动基础设施从环境负荷转变为自然增益载体，为全球可持续基础设施建设提供中国经验。



Smart Stewardship with Zero Footprint

Reshaping Infrastructure in Composite Ecologically Sensitive Areas

智护山海，绿建无痕

以主动生态治理重塑复合型生态敏感区基础设施建设

Keywords

- Composite ecologically sensitive areas
- Infrastructure development
- Whole-process ecological stewardship
- Smart monitoring
- Synchronized restoration

Key Messages

As the global energy transition and infrastructure expansion accelerate, more projects are entering ecologically sensitive areas. Reducing ecological disturbance and maintaining ecosystem stability while meeting development needs has become a defining question for green infrastructure. Shifting ecological protection from post-construction remediation to proactive, full-cycle stewardship is key to aligning infrastructure construction with nature conservation.



Corporate Solution

Power transmission and transformation projects often traverse composite ecologically sensitive areas, including ecological conservation red lines, drinking water source areas, wetlands and scenic areas. To address that challenge, State Grid Zhejiang Electric Power Co., Ltd. Construction Company and State Grid Taizhou Luqiao Power Supply Company established a whole-

process ecological stewardship system covering construction, management, control and restoration. Ecological baseline surveys and risk grading moved risk identification forward into the planning stage. A smart monitoring platform—integrating remote sensing, drones, IoT, and AI analytics—enables dynamic early warning and precise control during construction. Oily wastewater treatment, resource recovery from spoil, and native vegetation restoration proceed alongside the works, aligning ecological recovery with construction progress.



Innovative Approaches

The project moves ecological risk identification forward into planning, applies digital technologies for dynamic control throughout, curbs disturbance through resource recycling, and carries out ecological restoration in step with construction. Ecological protection thus shifts from after-the-fact remediation to whole-process prevention, precise management and proactive recovery, offering a model of "Proactive Ecological Stewardship throughout the Project Lifecycle" for major infrastructure in ecologically sensitive areas.



Global Implications

Faced with the ecological pressures of expanding energy infrastructure worldwide, companies embed ecological stewardship throughout the full project lifecycle. Front-loaded risk assessment, digital enablement, resource recycling, and synchronized restoration enable infrastructure construction and ecological protection to advance together, supporting land restoration and stronger ecosystem resilience.



关键词

- 复合型生态敏感区
- 基础设施建设
- 全过程生态治理
- 智慧监测
- 同步修复



🔍 核心观点

随着全球能源转型和基础设施建设加速推进，越来越多工程项目进入生态敏感区域。如何在满足发展需求的同时降低生态扰动、维护生态系统稳定性，成为基础设施绿色发展的重要课题。推动生态保护从建设后的补救措施转向全过程主动治理，是实现工程建设与自然保护协同发展的关键路径。

📋 企业实践

面对输变电工程穿越生态保护红线、饮用水水源地、湿地及风景名胜等复合型生态敏感区域带来的挑战，国网浙江建设公司与国网路桥创新构建“建—管—控—修”全过程生态治理体系。项目通过生态本底调查与风险分级，将生态风险识别前移至规划阶段；依托遥感、无人机、物联网和AI分析等技术，建设智慧监测平台，实现施工过程动态预警和精准管控；同步实施含油废水处理、渣土资源化利用、乡土植被恢复等措施，推动生态修复与工程建设协同实施。



💡 模式亮点

项目将生态风险识别前移至规划阶段，利用数字化技术实现全过程动态管控，以资源循环利用减少工程扰动，并推动生态修复与工程建设同步实施，实现生态保护从事后补救向全过程预防、精准管理和主动恢复转变，为生态敏感区重大基础设施建设提供了一套“全过程主动生态治理”（Proactive Ecological Stewardship throughout the Project Lifecycle）模式。

💡 全球启示

面对全球能源基础设施扩张带来的生态挑战，企业可将生态治理纳入项目全生命周期，通过风险前置、数字赋能、资源循环和同步修复，实现基础设施建设与生态保护协同发展，助力土地恢复和生态系统韧性提升。



Rebuilding the Red-Soil Ecological Shield

Coordinating Infrastructure with Ecological Restoration on Fragile Soils

重塑红壤生态屏障

脆弱土壤地区基础设施建设与生态修复协同实践

Keywords

- Red soil restoration
- Infrastructure construction
- Soil health
- Native vegetation
- Ecological shield

Q Key Messages

Red soil is widely distributed across tropical and subtropical regions, where it is highly acidic, nutrient-poor, and erosion-prone, making it a major challenge in ecological restoration. As infrastructure expands further into ecologically sensitive areas, reducing construction disturbance to red-soil ecosystems while aligning land use with ecological recovery has become a critical challenge for green infrastructure development.

Corporate Solution

During transmission line construction, red soil disturbance often triggers soil erosion, degradation, and slow vegetation recovery. In response, State Grid Quzhou Power Supply Company, together with research partners, developed an integrated restoration framework combining soil remediation, vegetation optimization, and process coordination. The project developed a soil amendment package to improve red-soil micro-ecology.

It selected native plants to establish adapted communities, accelerating vegetation recovery and biodiversity enhancement. A "no-strip backfill" technique was also introduced to integrate soil improvement, engineering backfill, and revegetation in a single operation, minimizing construction disturbance. Long-term monitoring and collaborative maintenance mechanisms were also established to ensure sustained restoration outcomes.



Innovative Approaches

Unlike the traditional re-greening model that favors vegetation over soil, the project places soil health restoration at the core of ecological recovery. Through integrated efforts in soil improvement, native species selection, construction process optimization, and long-term monitoring, it accelerates the recovery of fragile ecosystems, offering a replicable pathway for infrastructure development in red-soil and similar vulnerable regions, and establishing a soil health-driven ecological restoration model.



Global Implications

Soil is the foundation of ecosystem recovery. In fragile-soil regions such as red-soil areas, companies should embed soil health throughout the construction cycle—because restoring soil function drives revegetation, biodiversity recovery and ecosystem stability. This enables infrastructure development and natural restoration to advance in tandem, offering a replicable pathway for fragile land governance worldwide.



Before restoration

恢复前



After restoration

恢复后

关键词

· 红壤修复 · 基础设施建设 · 土壤健康 · 乡土植被 · 生态屏障

核心观点

红壤广泛分布于全球热带、亚热带地区，具有酸性强、养分贫瘠、易侵蚀等特点，是生态修复领域的重点难题。随着基础设施建设不断向生态敏感区域延伸，如何降低工程扰动对红壤生态系统的影响，实现土地利用与生态恢复协同发展，成为绿色基础设施建设的重要课题。

企业实践

针对输电工程建设过程中红壤扰动易引发水土流失、土壤退化和植被恢复缓慢等问题，国网浙江衢州供电公司联合科研机构创新构建“土壤修复—植被优育—工艺协同”一体化修复体系。项目以提升土壤健康为基础，研发红壤改良生态包，改善土壤微生态环境；优选乡土植物构建适生群落，促进植被恢复和生物多样性提升；创新“免剥回填”工艺，将土壤改良、工程回填与生态复绿同步实施，减少施工扰动。同时建立长期监测与协同管护机制，实现生态修复效果持续提升。

模式亮点

项目突破传统工程复绿重植被、轻土壤的思路，将恢复土壤健康作为生态修复起点，通过土壤改良、乡土植物配置、施工工艺优化和长期监测协同发力，加快脆弱生态系统恢复，为红壤及类似脆弱土壤地区基础设施建设提供了可复制的修复路径，形成土壤健康驱动生态修复模式（Soil Health-driven Ecological Restoration Model）。

全球启示

土壤是生态系统恢复的基础。对于红壤等脆弱土壤地区，企业应将土壤健康纳入工程建设全过程，通过恢复土壤功能带动植被重建、生物多样性恢复和生态系统稳定，实现基础设施建设与自然恢复协同发展，为全球脆弱土地治理提供可借鉴的实践路径。



Reusing Existing Corridors to Minimize Land Disturbance

Land Conservation in Energy Infrastructure Upgrades

复用既有廊道，减少土地扰动

能源基础设施升级中的土地保护实践

Keywords

- Corridor reuse
- Minimal land disturbance
- Native vegetation
- Soil conservation

Q Key Messages

Infrastructure upgrades do not necessarily require new land. In erosion-prone and ecologically sensitive areas, green infrastructure should minimize its land footprint and ecological impact while meeting development needs. Crucially, land degradation risks must be mitigated at the planning and design stage, rather than through post-construction restoration, to align infrastructure development with land conservation.

关键词

· 廊道复用 · 最小土地扰动 · 乡土植被 · 土壤保育

Corporate Solution

To mitigate soil erosion and land disturbance risks from infrastructure development in the hilly areas along the Yangtze River, State Grid Zhenjiang Power Supply Company has integrated land protection into project planning and construction. Relying on the Yangzhou-Zhenjiang DC Transmission Project, the company carried out line upgrading via China's first "AC-to-DC conversion" scheme, reusing the original cross-river corridor to avoid additional land occupation while increasing transmission capacity by 2.4 times. Route layout was optimized by incorporating ecological red lines and soil erosion risks into engineering design, thereby reducing disturbances to sensitive areas. Tall arbors were partly replaced with low-growing tea bushes, maintaining surface vegetation cover, meeting safety clearance requirements, and supporting the local tea industry. A digital platform was also deployed to integrate data on sensitive areas, vegetation, and transmission lines, enabling dynamic ecological risk management during both construction and operation.

Innovative Approaches

The "Avoid—Reduce—Manage" principle runs throughout the upgrade process. By reusing existing corridors to minimize new land occupation and managing native vegetation to reduce soil erosion, the project establishes a land conservation model based on spatial reuse and ecological adaptation, ensuring that infrastructure upgrades need not expand the land footprint.

Global Implications

As global energy infrastructure undergoes rapid modernization, controlling new land occupation and ecological disturbance is more important than ever. This solution shows that companies can repurpose existing infrastructure assets and tailor engineering designs to local ecology to reduce land degradation at the source. Integrating land conservation into planning and design is a key strategy for infrastructure companies to prevent land degradation and raise land-use efficiency.

核心观点

基础设施升级并不必然意味着新增土地占用。对于土壤易侵蚀、生态敏感的地区，绿色基础设施建设的重要方向，是在满足发展需求的同时减少土地足迹和生态扰动，将土地退化风险防控从“建设后修复”前移至规划设计阶段，实现基础设施发展与土地保护协同推进。

企业实践

针对长江沿岸丘陵地区土壤易受侵蚀、基础设施建设可能增加土地扰动的问题，国网镇江将土地保护前置到工程规划与建设环节。依托扬镇直流输电工程，采用全国首个落地的“交流改直流”方式升级既有输电线路，复用原有跨江廊道，在避免新增输电通道及土地占用的同时，使输电能力提升了2.4倍；优化线路布局，将生态红线和土壤侵蚀风险纳入工程设计，减少敏感区域扰动；用低矮适生茶树替代部分高杆乔木，在满足线路安全运行距离要求的同时保持地表植被覆盖，并兼顾地方茶产业发展；同时利用数字平台整合生态敏感区、植被和线路信息，对建设和运营过程中的生态风险进行动态识别与管理。

模式亮点

项目将“避免—减少—管理”贯穿基础设施升级过程，以存量廊道复用减少新增占地，以乡土适生植被管理降低土壤侵蚀风险，形成“空间复用+生态适配”的土地保护模式，使基础设施提质不必以扩大土地足迹为代价。

全球启示

随着全球能源基础设施加速升级，控制新增土地占用和生态扰动日益重要。该实践表明，企业可优先盘活既有基础设施空间，并根据当地生态条件优化工程设计和植被管理，从源头降低土地退化风险。将土地保护前置到规划设计阶段，是基础设施企业预防土地退化、提升土地利用效率的重要路径。

Renewable Energy
/ PV for Desertification Control
新能源 / 光伏治沙

Desertification Control
Along Transmission Lines
输电线路治沙

Engineering Construction
and Land Protection
工程建设与土地保护

**Mine Land Restoration
and Rehabilitation**
矿山修复与土地利用

Land Restoration
and Water Management
土地修复与水资源管理

Green Industrial
Transition and Sustainable
Land Management
产业绿色转型
与可持续土地管理

04

How Does Mine Restoration Drive Land Regeneration?

Mineral exploitation fuels economic growth, yet, it often causes land degradation, ecosystem deterioration, and declining land functionality. To balance resource extraction with ecological conservation, mine restoration is evolving from traditional reclamation toward ecosystem recovery and land revitalization.

Mine restoration offers a practical pathway for companies to regenerate degraded land. Through ecological restoration, functional recovery, and beneficial reuse, companies can transform damaged sites into assets of ecological, economic, and social value. This approach aligns with the "restore and regenerate" vision of B4L, which calls on companies not only to mitigate land degradation, but also to drive restoration and enhance land value through innovation.

The evidence shows that resource-based companies can weave land restoration into their full resource development lifecycle. Through technological innovation, resource recycling, and industrial integration, they can achieve a transition from "ecological restoration" to "land regeneration," offering practical insights for the green transformation of resource-dependent regions worldwide.



绿色发展



04

矿山修复如何推动 受损土地再生？

矿产资源开发支撑了经济发展，但也可能带来土地损毁、生态退化和土地功能下降。面对资源开发与生态保护的挑战，矿山修复正从传统土地复垦转向生态系统恢复和土地价值重塑。

矿山修复体现了企业推动退化土地再生的实践路径。通过生态修复、土地功能恢复和修复后合理利用，企业能够将受损土地转化为兼具生态、经济和社会价值的发展空间。这一实践契合 Business for Land (B4L) 倡导的“恢复与再生”理念，即企业不仅要减少土地退化影响，更要通过创新方式促进土地恢复和价值提升。

实践表明，资源型企业可将土地恢复融入资源开发全过程，通过技术创新、资源循环和产业融合，实现从“生态修复”到“土地再生”的转变，为全球资源型地区绿色转型提供实践经验。

From “Asia's Deepest Open-Pit Mine” to a “Green Eco-Park”

A Century-Old Mine's Land Regeneration and Resource Recycling Model

从“亚洲最深露天矿”到“绿色生态园”

百年矿山土地再生与资源循环利用模式

Keywords

- Mine restoration
- Land regeneration
- Resource recycling
- Tailings valorization
- Ecological value regeneration

Q Key Messages

Mine closure is not an end, but an opportunity to reshape land functions and regenerate ecological value. Despite challenges like land degradation, ecosystem decline, and inefficient land use from prolonged extraction, systematic restoration offers a critical pathway for the green transition of resource-dependent regions.

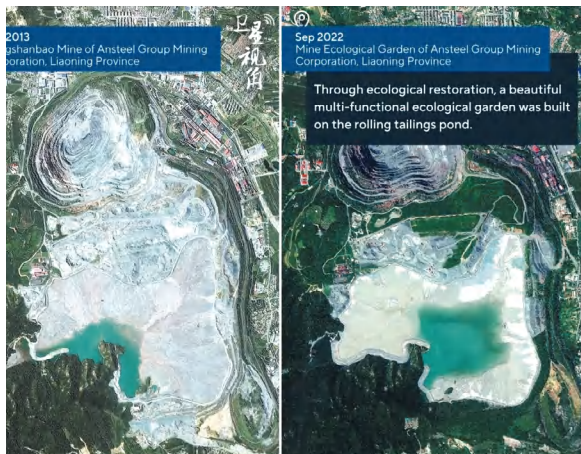


Corporate Solution

At the century-old Dagushan Iron Mine, Ansteel Group Corporation Limited is actively addressing historical issues—deep open pits, waste rock dumps, and tailings storage facilities—to drive ecological restoration and land reuse. The project pioneered techniques, including artificial ecological soil and wicker basket planting, to restore vegetation. It also utilized industrial solid waste, including tailings and waste



rock, for cemented backfilling to restore open pits and reduce tailings dam footprint. The restored mining area has been transformed into an eco-park integrating ecological agriculture, science education, and eco-tourism. Tailings-based soilization technologies have also been applied to improve saline-alkali land, achieving waste recycling and land value creation.



Innovative Approaches

Moving beyond the traditional "revegetation-only" approach, this project integrates ecological restoration, resource recycling, land reuse, and industrial transformation. It establishes a systematic model of "land regeneration through circular resource utilization." Having regained its ecological functions, the mine now serves as a new platform for green industries, public education, and tech innovation, shifting land value from single-purpose resource extraction to integrated ecological, economic, and social value.

Global Implications

Mine restoration is not merely about ecological recovery, but also about reshaping land value. By valorizing industrial solid waste, reshaping land functions, and fostering green industries, Ansteel has transformed degraded land from an "ecological liability" into a "natural asset." Its solution offers a valuable Chinese approach for resource-dependent regions worldwide in advancing mine restoration and sustainable land use.

核心观点

矿山关闭并不意味着土地价值终结，而是推动土地功能重塑和生态价值再生的重要契机。面对长期资源开发带来的土地损毁、生态退化和空间利用挑战，如何通过系统治理实现矿区生态恢复与土地价值提升，是资源型地区绿色转型的重要课题。

企业实践

针对百年开采形成的深凹采坑、排岩场和尾矿库等历史遗留问题，鞍钢集团以大孤山铁矿为载体，持续推进矿山生态修复与土地再利用。项目研发人工生态土、柳条筐固坑栽植等技术，促进矿区植被恢复；利用尾矿、废石等工业固废开展尾砂胶结回填，修复露天采坑，减少尾矿库占地。同时，推动修复后的矿区转型为集生态农业、科普研学、生态旅游于一体的生态空间，并将尾矿土壤化技术应用于盐碱地改良，实现废弃资源循环利用和土地价值再创造。

模式亮点

项目突破传统“矿山修复止于复绿”的治理模式，将生态修复与资源循环、土地再利用和产业转型统筹推进，形成“生态修复—资源循环—土地再生—价值创造”（Land Regeneration through Circular Resource Utilization）的系统模式。矿山不仅恢复了生态功能，更成为绿色产业、公众教育和技术创新的新载体，实现土地价值由单一资源开发向生态、经济和社会综合价值的持续提升。

全球启示

矿山修复不仅是恢复生态，更是重塑土地价值。鞍钢集团通过工业固废资源化、土地功能重构和绿色产业培育，实现受损土地由“生态负债”向“自然资产”转变，为全球资源型地区推进矿山修复与土地可持续利用提供了具有借鉴意义的中国方案。

关键词

· 矿山修复 · 土地再生 · 资源循环利用 · 尾矿资源化 · 生态价值重塑

From “Earth Scars” to “Green Gardens”

An Ecological Restoration and Multifunctional Land Use Model for Coal Mining Subsidence Zones

从“地球伤疤”到“绿色花园”

采煤塌陷区生态修复与多功能土地利用模式

Keywords

- Mine restoration
- Coal mining subsidence zones
- Ecosystem restoration
- Multifunctional land use
- Collaborative regional governance

Key Messages

Coal mining subsidence zones are typical degraded ecosystems, often facing compounding challenges such as declining land functionality, disrupted water ecosystems, and biodiversity loss. Achieving coordinated progress in land restoration, ecological enhancement, and regional sustainability through systematic governance is a critical undertaking for the green transition of resource-dependent regions.

Corporate Solution

To tackle land fragmentation, disrupted water systems, and ecological degradation caused by coal mining subsidence, State Grid Jiawang County Electric Power Supply Company collaborates with governments, universities, and communities on systematic ecological restoration. The project adopts tailored, integrated strategies. On land, it reclaims farmland, improves soil, and develops high-standard farmland to restore productivity. In aquatic zones, it reshapes lakes, builds wetlands, and connects water systems to enhance aquatic resilience.

Meanwhile, it restores native vegetation, builds ecological islands and artificial bird nests to support biodiversity, and leverages smart monitoring for better management. Ultimately, this ecological foundation paves the way for green industries like ecological agriculture and wetland tourism, boosting both the ecological and economic value of land.

Innovative Approaches

Moving beyond the traditional reclamation that targets restoring a single land-use function, this project reimagines coal mining subsidence zones as integrated landscape systems. Through coordinated efforts in farmland restoration, water system reconstruction, wetland development, biodiversity conservation, and green industry cultivation, it synergizes ecological, production, and living functions. This offers a replicable pathway for resource-dependent regions to transition from mining to ecological landscapes—a scalable landscape regeneration model.

Global Implications

Across the globe, many resource-dependent regions face land degradation and transformation challenges following mine closures. Companies can go beyond land restoration alone by integrating mine rehabilitation with ecosystem recovery, community development, and green industry cultivation. They can restore ecological functions, revitalize land, and expand sustainable livelihoods, thereby advancing ecological restoration and regional revitalization simultaneously, and providing practical pathways for mining regions to achieve long-term resilient development.



关键词

· 矿山修复 · 采煤塌陷区 · 生态系统恢复 · 多功能土地利用 · 区域协同治理

核心观点

采煤塌陷区作为典型受损生态系统，往往面临土地功能下降、水生态失衡、生物多样性降低等复合问题。如何通过系统性治理实现受损土地恢复、生态功能提升与区域可持续发展协同推进，是资源型地区绿色转型的重要课题。

企业实践

针对采煤塌陷造成的土地破碎、水系失衡和生态退化问题，国网徐州市贾汪区供电公司联合政府、高校、社区等多方主体，开展系统化生态修复实践。项目坚持分类施策、综合治理：在陆域实施耕地复垦、土壤改良和高标准农田建设，恢复土地生产能力；在水域推进湖泊重塑、湿地营建和水系连通，提升水生态稳定性；同步恢复乡土植被、建设生态岛和人工鸟巢，促进生物多样性恢复，并依托智慧监测提升生态管理水平。在生态修复基础上，进一步发展生态农业、湿地旅游等绿色产业，实现土地生态价值与经济价值协同提升。

模式亮点

项目突破传统矿山复垦以恢复单一土地利用功能为目标的思路，将采煤塌陷区作为完整景观系统进行重塑，统筹推进耕地恢复、水系重构、湿地营建、生物多样性保护和绿色产业培育，实现生态、生产与生活功能协同提升，为资源型地区从矿业景观向生态景观转型提供了可复制的系统性路径和可推广的景观再生模式（Landscape Regeneration Model）。

全球启示

全球众多资源型地区都面临矿山关闭后的土地退化和发展转型挑战。企业可突破“修复土地”的单一目标，将矿山修复与生态系统恢复、社区发展和绿色产业培育相结合，通过恢复生态功能、重塑土地价值和拓展可持续生计，实现生态修复与区域振兴协同推进，为矿业地区实现长期韧性发展提供可借鉴的实践路径。



From Land Reclamation to Ecosystem Restoration

Sustainable Land Management in Mining Areas

从土地复垦到生态系统恢复

矿山区域可持续土地管理实践



Keywords

- Mine restoration
- Land reclamation
- Ecosystem restoration
- Sustainable land management

Key Messages

Mineral extraction often degrades land and ecological functions. Land restoration requires not just recovering productive capacity but rebuilding ecosystem structures and functions. By weaving ecological restoration across the entire production cycle, resource-based companies can rehabilitate degraded lands, aligning resource extraction with sustainable land use.

Corporate Solution

To address landscape disturbance, soil degradation, and ecological decline from open-pit mining, China Coal Pingshuo Group Co., Ltd., in collaboration with research institutions, has innovatively proposed a systematic framework featuring landform reshaping, soil reconstruction, vegetation restoration, landscape revival, and biodiversity reestablishment and conservation. The company integrates reclamation into the entire mining lifecycle, managing "stripping, extraction, disposal, and reclamation" as a whole. Through optimized dump design, soil improvement, and mixed grass-shrub-tree vegetation, it gradually restores the mining environment, while seedling cultivation and agricultural use add value to reclaimed land.

Innovative Approaches

This solution shifts from traditional mine reclamation focused on "restoring land use" to long-term management centered on ecosystem restoration. By combining engineering and ecological approaches, the company has transformed degraded mining areas from production-oriented spaces into multifunctional landscapes with both ecological and productive value.

Global Implications

Mine land restoration is vital for global land degradation governance. This solution indicates that companies can embed restoration principles into the resource development lifecycle. Technological innovation and long-term management can mitigate degradation while creating new ecological value. This model offers a replicable pathway for the green transition of mining in arid and semi-arid regions.

关键词

- 矿山修复
- 土地复垦
- 生态系统恢复
- 可持续土地管理

核心观点

矿产资源开发往往伴随土地损毁和生态功能退化。土地恢复不仅需要恢复土地利用能力，更需要重建生态系统结构与功能。资源型企业通过将生态修复融入生产全过程，可以推动受损土地恢复生态价值，实现资源开发与土地可持续利用协同发展。

企业实践

针对露天采矿造成的地貌破坏、土壤退化和生态功能下降问题，中煤平朔集团联合科研机构，创新提出“地貌重塑、土壤重构、植被重建、景观重现、生物多样性重组与保护”的系统理论。企业将土地复垦纳入采矿全过程，实施“剥离—采掘—排弃—复垦”一体化管理，通过优化排土场设计、改善土壤条件、构建草灌乔结合的植被体系，逐步恢复矿区生态环境。同时，结合苗木培育、农业利用等方式，提高复垦土地综合价值。

模式亮点

该实践突破了传统矿山复垦以“恢复土地使用”为目标的模式，转向以生态系统恢复为导向的长期管理。通过工程措施与生态措施协同，中煤平朔集团推动受损矿区从生产空间转变为兼具生态功能和利用价值的复合空间。

全球启示

矿山土地恢复是全球退化土地治理的重要领域。该实践表明，企业可将土地恢复理念融入资源开发生命周期，通过技术创新和长期管理降低土地退化影响，并创造新的生态价值，为干旱和半干旱地区矿业绿色转型提供可借鉴路径。

Renewable Energy
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05

How to Advance Systemic Restoration to Address Land Degradation and Water Scarcity?

Land degradation and water scarcity are deeply intertwined, with salinization emerging as a major barrier to global land restoration. Reversing this trend requires a shift from isolated governance models to integrated strategies that combine water management, ecological restoration, and long-term maintenance to recover land functions and productivity.

Companies are leveraging their technological, energy, and industrial strengths to drive land restoration. Through digital management, green energy, soil improvement, and green infrastructure solutions, they are regarding land, water, and ecosystems as interconnected natural assets, advancing land governance from short-term remediation toward long-term sustainability.

The evidence indicates three pathways for companies: leveraging digital technologies and energy infrastructure to enhance precision management of saline-alkali land; restoring land productivity through coordinated soil and water management; and advancing watershed ecosystem restoration via green infrastructure. These solutions reflect the B4L vision of integrating nature's value into business decision-making, offering valuable approaches for restoring saline and degraded lands worldwide.





05

面对土地退化与水资源压力， 企业如何探索系统性恢复路径？

土地退化与水资源失衡相互交织，盐碱化正成为全球土地恢复面临的重要挑战。推动退化土地恢复，需要突破单一治理模式，通过水资源管理、生态修复和长期运维，恢复土地生态功能和生产能力。

企业正在利用自身技术、能源和产业优势参与土地恢复。通过数字化管理、绿色能源、土壤改良和绿色基础设施等方式，企业将土地、水资源和生态系统作为相互关联的自然资产进行协同管理，推动土地治理从阶段性修复走向长期可持续管理。

实践表明，企业主要探索了三类路径：以数字技术和能源基础设施提升盐碱地精准管理能力；以土壤改良和水资源协同恢复土地生产功能；以绿色基础设施推动流域生态系统恢复。这些实践体现了 B4L 倡导的自然价值融入商业决策理念，为全球盐碱化和退化土地恢复提供了可借鉴路径。



Powering Land Restoration The Yucheng Model for Sustainable Saline-Alkali Land Management

以电破局、向地重生
电力赋能盐碱地可持续土地管理的禹城模式

Keywords

- Saline-alkali land restoration
- Digital land management
- Green energy
- Water-salt synergistic regulation

Key Messages

Salinization is a major driver of global land degradation, threatening food security, ecosystem stability, and sustainable land use. Traditional saline-alkali land restoration often faces challenges such as long restoration cycles, high resource inputs, and difficulties in long-term maintenance. Leveraging digital technologies and green energy to sharpen land management precision and support the continuous restoration and long-term stewardship of degraded land represents a critical pathway to sustainable land use.



关键词

· 盐碱地恢复 · 数字化土地管理 · 绿色能源 · 水盐协同调控

Corporate Solution

Saline-alkali lands in the Huang-Huai-Hai Plain face persistent challenges, including salt reaccumulation, inefficient water use, high restoration costs, and inadequate long-term maintenance. In response, State Grid Yucheng Power Supply Company has developed a digital management system covering the entire process of monitoring, irrigation, salt removal, and operations and maintenance. Leveraging agricultural power grids, power IoT, and green energy, the system enables intelligent monitoring of soil salinity, moisture, and groundwater levels, supporting precision irrigation and dynamic salt removal. Green electricity powers low-carbon restoration throughout the process. Combined with grid-based maintenance mechanisms, the project has established a long-term monitoring and management system, shifting saline-alkali land restoration from one-off interventions into long-term and stable management.

Innovative Approaches

Continuous efforts have led to stable improvements in the region's saline-alkali land, marked by enhanced soil quality, higher grain yields, and rising water efficiency—all powered by green energy throughout the restoration process. This integrated approach has produced a sustainable land management model combining energy infrastructure, digital management, and ecological restoration. The company, in turn, has evolved from a traditional energy provider into a significant contributor to land restoration.

Global Implications

Land restoration requires more than engineering solutions; it also requires long-term and systematic management capabilities. The Yucheng solution demonstrates that companies can integrate energy, digital technologies, and land management to improve the long-term stability of restoration efforts through continuous monitoring, precise regulation, and green energy applications. Aligned with B4L's vision of integrating nature into business decisions and creating nature-

positive outcomes, this model offers a replicable Chinese approach for saline-alkali regions globally exploring corporate engagement in sustainable land management.

核心观点

盐碱化是全球土地退化的重要表现之一，对粮食安全、生态系统稳定和土地可持续利用构成长期挑战。传统盐碱地治理往往面临治理周期长、资源投入高、后期管护难等问题。如何借助数字技术和绿色能源提升土地治理精准性，实现退化土地的持续恢复与长期管理，是推动土地可持续利用的重要方向。

企业实践

针对黄淮海平原盐碱地长期存在的返盐反碱、水资源利用效率低、治理成本高和后期管护不足等问题，国网山东禹城市供电公司依托农田电网、电力物联网和绿色能源，构建覆盖监测、灌溉、排盐和运维全过程的数字化治理体系。项目通过智能监测土壤盐分、墒情和地下水位，实现精准灌溉和动态排盐；利用绿色电力支撑治理过程低碳运行；结合电网网格化运维机制，建立长期监测和持续管护体系，推动盐碱地治理由“一次改良”向长期稳态管理转变。

模式亮点

经过持续探索，当地盐碱地实现稳定改良，耕地质量和粮食产能显著提升，水资源利用效率持续提高，绿色能源全面支撑治理过程，形成了“能源基础设施+数字化管理+生态修复”相结合的可持续土地管理模式。企业由传统能源保障者转变为土地恢复的重要参与者。

全球启示

土地恢复不仅需要工程治理，更需要长期、系统的管理能力。禹城实践表明，企业可将能源、数字技术与土地管理深度融合，通过持续监测、精准调控和绿色能源应用，提升退化土地恢复的长期稳定性。这一模式契合 B4L 倡导的将自然融入商业决策和创造自然增益理念，为全球盐碱化地区探索企业参与可持续土地管理提供了可借鉴的中国经验。



From Wasteland to Farmland

An Integrated Model for Saline-Alkali Land Restoration and Soil-Water Management

从“盐碱荒地”到“高产良田”

探索盐碱地修复与水土协同治理模式



Keywords

- Saline-alkali land restoration
- Water management
- Nature-based solutions (NbS)
- Sustainable land management

Key Messages

Salinization is a key contributor to global land degradation, reducing land productivity and increasing pressure on water resources. As saline-alkali land management involves complex trade-offs among soil improvement, water-salt regulation, and agricultural production, restoring land functionality while ensuring agricultural sustainability through integrated solutions remains a critical challenge.



Corporate Solution

Facing high salinity, alkalinity, and poor fertilizer use efficiency, Dabeinong Technology Group Company (DBN Group) partnered with South China Agricultural University to develop acidified liquid fertilizers. Combined with mulched drip irrigation and ridge-furrow plastic film mulching, this approach establishes a precision water-fertilizer management system. It optimizes the root-zone microenvironment, regulates water-salt migration, and improves soil structure to boost productivity and fertilizer use efficiency. The technology has been applied across over 133,333 hectares in Inner Mongolia and Xinjiang, securing stable yields for crops like potatoes and corn while reducing agricultural water use and ammonia volatilization.



Innovative Approaches

Rather than relying on conventional salt leaching or a single soil amendment, this project integrates soil restoration, precision irrigation, and agricultural production in a way that aligns with natural water-salt dynamics to recover land functions. The result is a simultaneous improvement in fertilizer efficiency, water productivity, and land restoration, offering a replicable nature-based solution for arid and semi-arid regions.



Global Implications

Salinization has become a major threat to global land productivity and food security, particularly in arid and semi-arid regions where land restoration and water management must be pursued in tandem. DBN Group's experience demonstrates that aligning soil health, water management, and agricultural production can forge a virtuous cycle between land restoration and agricultural development. This model offers a replicable pathway for restoring degraded land, strengthening agricultural ecosystem resilience, and advancing sustainable land use globally.



核心观点

盐碱化是全球土地退化的重要表现形式之一，降低土地生产力，并加剧水资源利用压力。由于盐碱地治理涉及土壤改良、水盐调控和农业生产等多重因素，如何通过系统化技术手段修复土地功能、提升农业可持续性，是土地恢复领域的重要挑战。



企业实践

针对盐碱地高盐、高碱、肥料利用效率低等问题，大北农集团联合华南农业大学研发酸性液体配方肥，并结合膜下滴灌、起垄覆膜等技术，构建土壤改良与精准水肥管理体系。通过调节根区微环境、优化水盐运移、改善土壤结构，提升土壤生产力和肥料利用效率。相关技术已在内蒙古、新疆等地推广应用超过 200 万亩，实现马铃薯、玉米等作物稳定增产，降低农业用水和氨挥发。



模式亮点

项目突破传统依赖大水洗盐或单一改良剂的治理方式，构建“土壤修复—精准灌溉—农业生产”协同模式，顺应自然水盐循环规律恢复土地功能，实现盐碱地修复、肥料及水资源高效利用同步推进，为干旱和半干旱地区盐碱地治理提供了可复制的基于自然的解决方案。



全球启示

盐碱化已成为全球土地退化和粮食安全面临的重要挑战，尤其是在干旱和半干旱地区，土地修复与水资源管理需要统筹推进。大北农集团的实践表明，企业可将土壤健康、水资源管理和农业生产协同考虑，实现土地恢复与农业发展的良性循环。这一模式为推动退化土地恢复、增强农业生态系统韧性和提升土地可持续利用能力提供了可复制的实践路径。

关键词

· 盐碱地修复 · 水资源管理 · 基于自然的解决方案（NbS） · 可持续土地管理

Green Infrastructure for Land-Water Restoration

Corporate Engagement in Watershed Recovery

以绿色基础设施重塑土地与水的生态连接

企业参与流域生态系统恢复实践

Keywords

- Watershed ecosystem restoration
- Green infrastructure
- Integrated land-water management
- Multi-stakeholder partnerships

Key Messages

Watershed ecosystems link land, water, biodiversity, and community development, making them vital spatial units for sustainable regional governance. Yet intensified riverfront development and resource use have generated overlapping pressures—habitat loss, resource strain, and community transformation. Integrated management that balances ecological conservation, green development, and community well-being is thus central to effective watershed restoration.



Corporate Solution

Facing mounting ecological pressures from riverfront development and fisheries decline, State Grid Jiangyin Power Supply Company, built on its energy infrastructure, partnered with governments, industry players, and NGOs to pioneer new corporate pathways for watershed restoration.



Innovative Approaches

Transcending the traditional view of green infrastructure as merely an energy provider, this project harnesses its ecological value by integrating green energy, shoreline management, ecological industries, and community participation. It establishes a "Green Infrastructure + Ecological Industries + Partnership" model for watershed restoration, delivering enhanced synergies among ecological conservation, industrial development, and community resilience.



Global Implications

Confronted with watershed degradation and resource constraints, companies can go beyond reducing their ecological footprint. Through green infrastructure and multi-stakeholder partnerships, they can drive the integrated governance of land, water, biodiversity, and communities, offering a replicable, scalable pathway for global watershed restoration.



关键词

· 流域生态系统恢复 · 绿色基础设施 · 土地—水协同治理 · 伙伴协作

核心观点

流域生态系统连接土地、水资源、生物多样性和社区发展，是推动区域可持续治理的重要空间单元。随着沿江开发和资源利用强度增大，流域生态系统面临生境退化、资源压力增加和社区发展转型等复合挑战。如何通过系统治理实现生态保护、绿色发展与社区福祉协同提升，是流域生态恢复的重要方向。

企业实践

针对沿江开发带来的生态压力和渔业资源衰退问题，国网江苏江阴供电公司依托能源基础设施优势，联合政府、产业伙伴和社会组织，探索企业参与流域生态恢复的新路径。项目以绿色能源应用为切入点，在沿江港口推广岸电和绿电应用，建设绿色能源网络，降低航运及岸线活动生态影响；依托稳定电力保障，支持退捕渔民发展电气化生态养殖，推动绿色生计转型；联合多方建设公益码头，开展增殖放流和公众参与行动，促进水生生物栖息地恢复，推动生态保护与区域发展协同推进。

模式亮点

项目突破将绿色基础设施局限于能源供给的传统思路，充分发挥其生态赋能作用，将绿色能源、岸线治理、生态产业和社区参与有机结合，形成“绿色基础设施+生态产业+伙伴协作”的流域生态系统恢复模式，实现生态保护、产业发展和社区韧性协同提升。

全球启示

面对流域生态退化和资源利用压力，企业不仅可以减少生产活动对生态系统的影响，还能够依托绿色基础设施建设和跨部门伙伴合作，推动土地、水资源、生物多样性和社区发展的协同治理，为流域生态系统恢复提供可复制、可推广的实践路径。

Renewable Energy
/ PV for Desertification Control
新能源 / 光伏治沙

Desertification Control
Along Transmission Lines
输电线路治沙

Engineering Construction
and Land Protection
工程建设与土地保护

Mine Land Restoration
and Rehabilitation
矿山修复与土地利用

Land Restoration
and Water Management
土地修复与水资源管理

Green Industrial
Transition and Sustainable
Land Management
产业绿色转型
与可持续土地管理

06

How Can Green Transition Curb Land Degradation?

Land degradation stems not only from land use practices, but also from industrial production and resource consumption patterns. Advancing green industrial transition is therefore a vital pathway to easing land pressure and enhancing sustainable land use.

This transformation marks a shift from "reducing ecological impacts" to "creating value for nature." By integrating land and ecological elements into corporate strategies, operations, and value chains, companies can align production with ecological conservation. This mirrors the B4L vision: companies should not only restore degraded land, but also reduce land degradation risks at the source through innovative business models and production approaches.

The solutions in this chapter highlight three pathways for advancing sustainable land management. First, circular agriculture and ecological farming create synergies between industrial development and ecosystem restoration. Second, optimizing production methods and incentive mechanisms promotes the sustainable use of ecosystems such as grasslands. Third, green manufacturing and resource efficiency reduce pressure on natural resources across value chains. The evidence shows that companies are emerging as a vital force in shifting land governance from end-of-pipe remediation toward source prevention.





06

企业如何通过绿色转型 降低土地退化风险？

土地退化不仅源于土地利用方式，也与产业生产模式和资源消耗方式密切相关。推动产业绿色转型，是降低土地退化压力、提升土地可持续利用能力的重要路径。

产业绿色转型体现了企业从“减少生态影响”向“创造自然价值”的转变。通过将土地和自然因素融入战略、运营和价值链管理，企业能够推动生产活动与生态保护协同发展。这与 B4L 倡导的理念一致，即企业不仅要修复受损土地，更应通过创新商业模式和生产方式，从源头降低土地退化风险。

本章案例展示了企业推动可持续土地管理的三种路径：通过循环农业和生态种养，实现产业发展与生态恢复协同；通过优化生产方式和激励机制，促进草原等生态系统可持续利用；通过绿色制造和资源效率提升，降低产业链对自然资源的压力。实践表明，企业正在成为推动土地治理从末端修复走向源头预防的重要力量。



A "Desert Organic" Model for Ecosystem Regeneration

Aligning Desert Ecology with Industrial Growth

以有“沙漠有机”产业模式推动荒漠生态再生

探索沙漠生态与产业协同发展

Keywords

- Industrial desertification control
- Circular agriculture
- Sustainable land management
- Value chain transformation

Key Messages

Land restoration needs not only ecological engineering, but also economic models capable of sustaining ecological gains. Through production model transformation, resource recycling, and value chain transformation, companies can emerge as key drivers of restoration. Linking ecological governance with industrial development can turn degraded land from a restoration target into a lasting asset for sustainable use.



Corporate Solution

Confronting the fragile ecology and severe desertification of the Ulan Buh Desert, China Shengmu Organic Milk Limited built on ecological restoration to develop a model integrating ecological restoration, organic agriculture and circular industry. The company planted more than 98 million drought-tolerant trees and desert shrubs, creating a three-tier protection system of trees, shrubs and grasses that has greened over 220 square kilometers and improved the regional environment. It also established an integrated crop-livestock organic circular chain in the desert: growing forage, recycling cattle manure into fertilizer, and returning it to the fields, forming a grass-livestock-fertilizer-field-grass cycle that advances resource recycling alongside land function restoration.



Innovative Approaches

China Shengmu has charted a sustainable land management path in which industry gives back to ecology—a production system adapted to natural conditions makes business operations a force for healthier land. The model breaks with the conventional "restore and exit" logic of ecological remediation, embedding land restoration into production, supply chain management and business value creation, marking a shift from using land to cultivating its value.



Global Implications

In arid and semi-arid regions, land restoration requires ecological protection and industrial development to advance together. Companies should integrate land and nature into business decisions, easing ecological pressure through the circular economy and value chain innovation, and shifting from "reducing losses" to "creating nature-positive gains." China Shengmu's "Desert Organic" model offers a replicable reference for aligning ecological recovery with industrial growth globally.



核心观点

土地恢复不仅需要生态工程投入，也需要建立能够长期维持生态改善的经济模式。企业通过改变生产方式、优化资源循环和重构价值链，可以成为土地恢复的重要推动力量。将生态治理与产业发展相结合，有助于推动退化土地从恢复治理走向可持续利用。



企业实践

针对乌兰布和沙漠生态脆弱、土地沙化严重等问题，中国圣牧以生态修复为基础，探索“生态修复+有机农业+循环产业”融合模式。中国圣牧通过种植超过 9800 万株旱生乔木和沙生灌木，建设“乔、灌、草”立体防护体系，绿化超过 220 平方公里，改善区域生态环境。在此基础上，中国圣牧构建“种养一体化”沙漠有机循环产业链，种植有机饲草，以牛粪生产有机肥还田，形成“草—畜—肥—田—草”循环体系，实现资源循环利用与土地生态功能恢复协同推进。



模式亮点

中国圣牧探索了一条“产业反哺生态”的土地可持续管理路径：通过建立与自然条件相适应的生产体系，使企业经营活动成为改善土地健康的重要力量。这一模式突破了传统“治理—退出”的生态修复逻辑，将土地恢复融入企业生产、供应链管理和商业价值创造全过程，实现从“利用土地”到“培育土地价值”的转变。



全球启示

在干旱和半干旱地区，土地恢复需要推动生态保护与产业发展协同。企业应将土地和自然因素纳入商业决策，通过循环经济和价值链创新降低生态压力，实现从“减少损失”向“创造自然增益”转变。中国圣牧“沙漠有机”模式为全球探索生态恢复与产业发展协同提供了实践参考。

关键词

· 产业治沙

· 循环农业

· 可持续土地管理

· 价值链转型

Reducing Grassland Pressure Through Industrial Symbiosis

A Model for Sustainable Cashmere Production

减少草原压力，推动产业共生 推动草原可持续利用与羊绒产业绿色转型模式

Keywords

- Grassland conservation
- Sustainable land management
- Cashmere industry transition
- Green supply chain
- Community engagement

Key Messages

Grassland ecosystems are highly fragile, and conventional livestock production that prioritizes output often exceeds carrying capacity—jeopardizing both ecosystem health and industry sustainability. Transforming production models and embedding ecological requirements into value chain management is therefore a key pathway to aligning grassland protection with pastoral development.



Corporate Solution

To shift the cashmere industry from a "quantity over quality" growth model, Inner Mongolia Erdos Resources Co., Ltd. draws on its full-value-chain position to steer herders toward science-based, precision husbandry through market mechanisms, technical support and standards development. A premium pricing scheme for quality cashmere rewards better fiber, driving improvements in husbandry and easing

the ecological pressure of extensive expansion. At its source ranches, Erdos has built "shared prosperity communities" that raise herders' production capacity through shared access to quality breeding sheep, training in science-based husbandry, digital management and modern facilities. Working with research institutions, the company refines husbandry protocols and supports animal welfare certification and international cashmere standards, embedding sustainability at the source of the value chain.



Innovative Approaches

The project redefines corporate procurement, turning supply chain capacity into a tool for ecological governance—building a grassland sustainability model that combines market incentives with community empowerment. By reshaping production incentives, it improves land-use efficiency and enables industrial development and ecological protection to reinforce each other.



Global Implications

Many arid and semi-arid regions worldwide face the challenge of balancing livestock development with land conservation. Erdos' solution shows that companies can leverage supply chain influence, technological innovation and partnerships to steer production toward a green transition, lifting land protection, industrial development, and community resilience together. This offers a replicable model for sustainable land management globally.



关键词

· 草原生态保护 · 可持续土地管理 · 羊绒产业转型 · 绿色供应链 · 社区共建

核心观点

草原生态系统具有较强脆弱性，传统牧业发展中过度追求产量增长，容易增加草场承载压力，影响产业长期可持续发展。推动牧业生产方式转型，将生态保护要求融入产业链管理，是实现草原保护与牧区发展协同的重要路径。

企业实践

针对羊绒产业中“重数量、轻质量”的发展模式，鄂尔多斯依托全产业链优势，通过市场机制、技术支持和标准建设，引导牧民向科学化、精细化养殖转型。通过建立“优质优价”收购机制，以羊绒品质提升带动养殖方式优化，降低粗放扩张带来的生态压力；依托源牧场建设“共富社区”，通过优质种羊共享、科学养殖培训、数字化管理和现代化设施建设，提升牧民生产能力。同时，联合科研机构完善养殖规范，推动动物福利认证和羊绒国际标准建设，将可持续理念融入产业链源头。



模式亮点

项目突破传统企业采购模式，将供应链能力转化为生态治理能力，构建“市场激励+社区赋能”的草原可持续管理模式。通过改变生产激励机制，提高土地资源利用效率，实现产业发展与生态保护相互促进。

全球启示

全球许多干旱和半干旱地区面临畜牧业发展与土地生态保护的平衡挑战。鄂尔多斯集团实践表明，企业可通过供应链影响力、技术创新和伙伴协作，引导生产方式绿色转型，实现土地保护、产业发展与社区韧性的协同提升，为全球可持续土地管理提供实践参考。



From “End-of-Pipe Treatment” to “Easing Pressure at the Source”

The Role of Energy Services in Green Industrial Transition

从“末端治理”拓展到“源头减压”

能源服务驱动产业绿色转型

Keywords

- Green industrial transition
- Resource recycling
- Source control
- Value chain empowerment



Key Messages

Land degradation is associated with both land use practices and resource-intensive production models. Driving green industrial transition and improving resource efficiency is a key pathway for companies to ease ecological pressure and engage in sustainable land management.

Corporate Solution

Traditional hardware manufacturing is energy-intensive and leaves industrial waste heat underused. In response, State Grid Yongkang Power Supply Company applied energy data analytics, efficiency diagnostics and integrated energy services to help manufacturers recover waste heat, optimize energy use and upgrade to green production, raising resource efficiency and easing the environmental burden of production.

Innovative Approaches

This solution integrates land considerations into corporate energy management and value chain optimization. By improving energy efficiency and shifting production models, it alleviates the pressure of economic activity on land and ecosystems at source, establishing an “energy-driven land pressure reduction model” and offering a new pathway for corporate engagement in sustainable land management.

Global Implications

Land protection requires not only restoring degraded areas but also reducing the persistent pressure of production on land. Through green technology, resource efficiency gains and value chain optimization, companies can factor land into business decisions and align industrial transition with ecological protection, offering a practical path for sustainable land management worldwide.



关键词

· 产业绿色转型 · 资源循环利用 · 源头治理 · 价值链赋能

核心观点

土地退化不仅与土地利用方式有关，也与资源消耗型生产模式密切相关。推动产业绿色转型、提升资源利用效率，是企业降低生态压力、参与可持续土地管理的重要路径。

企业实践

针对传统五金制造业能源消耗较高、工业余热利用不足等问题，国网永康供电公司通过能源数据分析、能效诊断和综合能源服务，推动企业开展余热回收、能源优化和绿色生产改造，提高资源利用效率，降低生产过程中的环境压力。

模式亮点

该实践将土地议题融入企业能源管理和价值链优化，通过提升能源效率、推动生产方式转型，从源头降低经济活动对土地和生态系统的压力，形成“能源赋能型土地减压模式”，拓展了企业参与土地可持续管理的新路径。

全球启示

土地保护不仅需要修复退化土地，也需要减少生产活动对土地的持续压力。企业可通过绿色技术应用、资源效率提升和价值链优化，将土地因素纳入商业决策，实现产业转型与生态保护协同，为全球可持续土地管理提供实践路径。



About “GoldenKey — SDG Solutions”

金钥匙——面向SDG的解决方案

To implement the assertion that sustainable development is the “golden key” to solving current global problems proposed by Chinese President Xi Jinping and to respond to the United Nations Decade of Action, “GoldenKey – SDG Solutions” (GoldenKey) was launched by China Sustainability Tribune in October 2020. The initiative aims to identify, shape, and promote outstanding corporate SDG solutions in China, tackle humanity’s greatest challenges and drive sustainable development in China and beyond. In 2021, the GoldenKey was selected as the UN SDG Good Practices (#SDGAction33560).

As one of China’s most influential platforms for sustainable development, GoldenKey has been held for six consecutive

sessions. A total of 2,365 corporate SDG solutions have been collected, with 1,054 selected as GoldenKey solutions. These solutions span areas such as climate action, well-being for all, rural vitalization, tech4SDG, quality education, action4nature, and zero waste. They stand out for their clear problem definition, outstanding innovation, strong replicability, and significant integrated value, demonstrating the capability and innovation of Chinese enterprises in advancing the SDGs.

Participating enterprises range from central state-owned enterprises and foreign-invested companies to private enterprises of all sizes and sectors. GoldenKey has become one of China’s most influential and internationally recognized platforms for corporate sustainability exchange and evaluation.



From 2022 to 2025, GoldenKey and State Grid Corporation of China (SGCC or State Grid) co-hosted the “GoldenKey · SGCC Special” for four consecutive years. The event collects innovative solutions on topics such as low-carbon transformation and green grids, and has identified and promoted numerous exemplary practices within the power sector. In 2025, GoldenKey launched the “GoldenKey · Power Sector Special” in partnership with the China Electricity Council (CEC) to further collect and showcase breakthroughs by power enterprises in SDGs.

GoldenKey continues to optimize and upgrade China's corporate SDG solutions. Through a series of initiatives,

including publications, academic forums, field research, international launches, and demonstration projects, GoldenKey showcases and promotes these solutions on domestic and global platforms such as the China International Import Expo, China International Consumer Products Expo, UN Climate Change Conferences, and IUCN World Conservation Congress. This provides replicable models for more regions worldwide and supports the implementation of the SDGs.



About China Sustainability Tribune

China Sustainability Tribune (CST; Journal No.: CN10-1603/F, ISSN 2096-6520), supervised by the Ministry of Commerce of the People's Republic of China (MOFCOM), is a business management journal focusing on corporate social responsibility (CSR) and sustainable development. Founded in January 2019, it has become a flagship publication in China in the field of CSR and sustainable development.

Guided by the motto of "Global Vision, Win-Win Cooperation" and a commitment to "future-oriented thinking and action," CST strives to build a think tank and action network for sustainable development. It gathers and disseminates information and insights on sustainability, identifies and amplifies impactful practices, and works to embed sustainability into core business strategies, while fostering social awareness and shaping collective choice.

About "GoldenKey—SDG Solutions"

Launched in 2020 by China Sustainability Tribune, the GoldenKey—SDG Solutions initiative (GoldenKey) is dedicated to identifying, refining, and disseminating innovative solutions by Chinese enterprises that contribute to the UN Sustainable Development Goals (SDGs). Over the past six years, it has evolved into a platform that not only collects and evaluates corporate SDG solutions but also helps transform them from standalone actions into replicable and scalable solutions. Through international exchanges and communication via UN platforms, GoldenKey has gathered over 2,700 SDG solutions to date, building a bridge that connects businesses, governments, academia, experts, and international organizations. GoldenKey serves as a gateway for Chinese enterprises to engage in global sustainable development through experience sharing, capacity building, and value communication.

Disclaimer

This report has been prepared to present the experiences and practices of Chinese enterprises in combating desertification and restoring land, with the aim of enhancing understanding of the linkages between business activities and land, as well as the principles and action framework of the Business for Land (B4L) initiative under the United Nations Convention to Combat Desertification (UNCCD). The information contained in this report is based on data and materials provided by enterprises concerned, supplemented by publicly available information. The editorial team has synthesized and analyzed the approaches, models, and implications of the solutions presented. While due diligence has been exercised in verifying the data and factual information sourced from enterprises or public channels, the editors assume no independent responsibility for their completeness or accuracy.

Certain details and data may not be fully covered due to the scope and timeline of this report. For further inquiries, please contact: xiangnan@sdg-china.net.

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关于《可持续发展经济导刊》

《可持续发展经济导刊》（期刊号：CN10-1603/F，ISSN 2096-6520）是由中华人民共和国商务部主管的聚焦企业社会责任和可持续发展的商业管理类期刊，创刊于 2019 年 1 月，是中国在企业社会责任和可持续发展领域的一面旗帜。

《可持续发展经济导刊》以“全球视野，合作共赢”为宗旨，定位于“面向未来的思想和行动”致力于建设可持续发展的思想智库和行动网络，汇聚并传递可持续发展信息和思想，发现并提升以可持续发展为目标的实践行动价值，推动可持续发展成为商业核心理念和行动，成为社会共同意识和选择。

关于“金钥匙——面向 SDG 的解决方案”

“金钥匙——面向 SDG 的解决方案”（曾用名“金钥匙——面向 SDG 的中国行动”）由《可持续发展经济导刊》于 2020 年发起，致力于发现、提炼和传播中国企业面向联合国 2030 年可持续发展目标（SDG）的创新实践。六年多来，金钥匙持续开展企业可持续发展实践征集、评价与能力提升，推动优秀实践从“企业行动”向“可借鉴、可推广的解决方案”转化，并通过联合国相关平台开展国际交流与传播。目前，平台已汇聚超过 2700 项企业实践，逐步形成连接企业、政府、高校、专家及国际组织的可持续发展解决方案平台，为中国企业参与全球可持续发展提供实践交流、能力提升与价值传播的桥梁。

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本报告旨在通过案例分析与经验提炼，呈现中国企业参与荒漠化防治与土地恢复的探索与实践，帮助企业更好地理解商业活动与土地之间的关系，以及联合国《防治荒漠化公约》（UNCCD）发起的“商业促进土地可持续发展”（Business for Land，B4L）倡议所倡导的理念与行动方向。

本报告主要基于相关企业提供的资料和数据，并结合公开信息整理，报告编写者在此基础上对案例的行动路径、实践模式及启示进行了归纳和编辑。相关数据及事实信息由案例企业提供或来源于公开资料，报告编写者已尽合理努力进行核实，但不对其完整性和准确性作独立保证。

受报告篇幅和编写时间所限，部分案例细节和数据未能全部呈现，如需进一步了解相关案例，请联系 xiangnan@sdg-china.net。

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GoldenKey — SDG Solutions



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