ASIAN INFRASTRUCTURE INVESTMENT BANK

Project Completion Note

Prepared on 12/26/25

SBF Project Completion Note

China: Beijing-Tianjin-Hebei Low Carbon Energy Transition and Air Quality Improvement Project

1. Project Information

Project ID:	P000323
Responsible department:	PSC2
Borrower:	People's Republic of China
Implementing Agency:	Beijing Gas Group Company Limited
Financing type:	Sovereign-Backed Financing
Instrument type:	Loan
Member:	China
Sector:	Energy
E&S category:	A

Overall rating:	Highly successful
Effectiveness Assessment:	Highly effective
Relevance Assessment:	Highly relevant
Efficiency Assessment:	Highly efficient
Sustainability Assessment:	Likely sustainable

2. Project Development Objectives

To promote the low carbon energy transition and accelerate air quality improvement in the region of Beijing, Tianjin and Hebei (the BTH region). Upon completion, the Project will greatly reduce coal consumption through replacing coal with natural gas in the BTH region, thereby reducing coal combustion-related emissions such as CO2, SO2, NOx and particulate matters.

3. Key Dates

Approval:	12/12/19	Signing:	06/29/20
Effective:	10/21/20	Restructured (if any):	
Orig. Closing:	06/30/25	More Restructured dates (if any)	
Rev. Closing:			

4. Financial Summary (US Dollar million)

Currency:	US Dollar		
Committed:	500.00	Cancelled:	0.00
Disbursed:	500.00	Undisbursed:	0.00

5. Overall rating

Overall rating:	Highly successful

Executive summary of the completion note:

ASIAN INFRASTRUCTURE INVESTMENT BANK

Project Completion Note

Prepared on 12/26/25

Executive Summary: Beijing–Tianjin–Hebei Low Carbon Energy Transition & Air Quality Improvement Project

Project Overview The objective of the Project is to increase the availability of natural gas to help reduce coal consumption and related emissions in the region of Beijing, Tianjin and Hebei (the BTH region). The Project comprised two components: (a) construction of LNG receiving, storage and regasification facilities with an annual handling capacity of 5 million tons of LNG; and (b) construction of unloading wharf. AIIB's USD 500 million sovereign-backed loan financed two EPC packages under Component 1 covering the Phase I LNG storage tanks and the receiving and regasification terminal. The remaining activities under Component 1 and all of Component 2 were financed by project counterparts and other financiers, including Beijing Municipality, and Beijing Gas Group (BGG), with a loan later provided by the New Development Bank. At full operation, the Project supports the displacement of approximately 11.9 million tons of coal annually, with corresponding emission reductions of CO_2, SO_2, NO_x, and $PM_{2.5}$ (The calorific value of coal is assumed at 5,000 kcal/kg on average).

Implementation and Performance The Project successfully achieved its objective of increasing the availability of natural gas to support coal reduction and improving the air quality in the BTH region. The LNG terminal, comprising the unloading wharf, storage tanks and regasification system, has been fully completed and is operational, achieving its design capacity of 5 million tonnes per annum (Mtpa). It now forms a core component of the region's gas supply security system, providing critical emergency reserves for peak energy demand in winter. While the terminal's full design capacity has been established, actual LNG throughput during the initial operating period reflected seasonal demand patterns and prevailing market conditions, consistent with the terminal's dual roles as both a supply facility and a strategic reserve. Achievement of the Project Development Objective is assessed based on the realization of designed LNG capacity, which enables coal-to-gas substitution and associated emissions reductions as utilization increases over time. Project construction was completed efficiently, with total investment costs within ±3% of the approved budget envelope. Through a technology-neutral procurement approach and carefully structured quality- and cost-based scoring method, the Project enabled the adoption of large-scale membrane-type LNG storage tanks, the first and largest of their kind in China, improving technical performance and cost-effectiveness. The terminal incorporates advanced digital systems, including digital twin, real-time monitoring, predictive maintenance, robotic inspections, Beidou-based staff and equipment tracking, and AI-enabled safety systems, making it one of AIIB's most digitally advanced operations. Environmental and social implementation was robust, with full compensation provided, effective grievance mechanisms, and biodiversity restocking at the Beidagang wetland and the adjacent coastal waters near the terminal. Institutional capacity at BGG significantly improved, with ESF-aligned practices now ready and recommended for systemic adoption across the organization. The Project's operational model, combining public-service obligations with market-based commercial services (such as bonded storage, cool-down operations, and third-party LNG processing), supports long-term financial and institutional sustainability.

Outcomes and Impact The Project successfully passed completion acceptance inspection and achieved its designed capacity of 5 Mtpa, with 10 LNG tanks commissioned. As of 31 December 2024, the terminal has received a total unloading volume of 2.23 million tons, significantly strengthening seasonal balancing capacity and emergency reserves of gas supply in the BTH region. The operation also delivered strong demonstration effects through the adoption of China's first large-scale membrane-type tanks and the integration of advanced digital technologies.

Evaluation Rated "highly successful" overall, the Project was highly relevant to BTH's clean-air and energy-transition priorities, highly effective in delivering enabling LNG capacity and emissions reductions, and highly efficient in implementation through phased commissioning within budget envelopes. The Project's reliable performance, robust governance, and viable financial structure collectively ensure the long-term sustainability of its intended benefits. AIIB and the Implementing Agency's performances were also satisfactory.

Conclusion The Project delivered the intended enabling gas infrastructure and early operational results within the original implementation window. With assets fully commissioned, a capable operator (Beijing Gas Tianjin LNG Co., Ltd., hereafter referred as the "Operator") in place and compliance systems carried into operations, benefits are

expected to endure operationally, financially, and institutionally.

Section I. Effectiveness

Effectiveness Assessment:	Highly effective

Overall assessment of effectiveness:

The Project Development Objective is to increase the availability of natural gas in the BHT region through the establishment of LNG receiving, storage, and regasification capacity. As of end-2024, all 10 LNG storage tanks had been commissioned and the terminal reached 5.0 mtpa nameplate capacity The Project has therefore fully achieved its intended enabling objective. Overall, the Project supported coal-to-gas substitution, while strengthening seasonal gas reserve capacity, through a municipal requirement to maintain at least an 80% tank fill level during the winter period, enhancing energy supply resilience under peak-demand conditions.

Project Objective Indicators

Monitoring end year：2025

Indicator Name	Unit of Measure	Baseline	Actual (Current)	End Target
Annual coal consumption avoided	Tonnes	0	11.9	11.9
Annual CO2 avoided	Tonnes/year	0	7.5	7.5
Annual PM avoided	tons	0	67,000	67,000
Annual SO2 avoided	Tonnes	0	27000	27,000
NOx avoided	Tonnes	0	78000	78,000

Comments:

2025 is the first year of full commercial operation, The designed capacity has been fully established in 2024 . The Project is expected to deliver the intended impact. Furthermore, the actual utilization level depends on demand from Beijing, Tianjin, and Hebei province and prevailing market conditions.

Intermediate Result Indicators

Monitoring end year：2025

Indicator Name	Unit of Measure	Baseline	Actual (Current)	End Target
Increase in LNG unloading capacity	Million tons	0	5.0	5.0
LNG storage tanks (200,000 m3 each)	number	0	10	10

Comments:

Achievement of Project Results - Component {x}:

Both intermediate results targets were achieved, including the 10 LNG storage tanks, the receiving and regasification facilities and wharf (financed by counterpart financing). These directly translate into the Project's outcomes by creating verified technical capacity and send-out capability for seasonal balancing, emergency reserves, and enabling coal-to-gas substitution in power, industry and district heating.

Section II. Relevance

Relevance Assessment:	Highly relevant

Alignment with AIIB's Strategic Priorities:

The Project remained strongly aligned with AIIB's corporate and energy sector strategies. It advances the green priority by enabling coal-to-gas switching and air-quality improvement, supports Sustainable Infrastructure through a modern LNG terminal and storage system, and contributes to resilience/energy security by adding seasonal balancing and emergency reserve capacity. The design and implementation were consistent with AIIB's Paris-aligned approach and sector emphasis on facilitating a lower-carbon energy mix while safeguarding reliability.

Alignment with Member policies, subnational planning and stakeholder needs, including changes to project objective and design:

The operation is consistent with national and subnational policy priorities, including the Beijing Municipal Clean Heating Plan and the Beijing-Tianjin-Hebei Air Pollution Prevention and Control Action Plan By commissioning 5.0 Mtpa receiving capacity and 10 tanks, the Project closes service gaps for end-users through (i) more reliable gas supply for power, industry and district heating, (ii) strengthened emergency reserves to manage peak demand and shocks, and (iii) measurable reductions in local pollutants and CO_2 as utilization ramps. These benefits directly support municipal and provincial air-quality and public-health goals in the BTH region.

Section III. Efficiency

Efficiency Assessment:	Highly efficient

Achievement of efficiency, including implementation delays, cost overruns and savings:

The Project was highly efficient, implemented without any delays or cost overruns. Despite early COVID-19 disruptions, the project construction was smooth and on schedule and delivered ahead of milestones in most phases. AIIB financed components were implemented through two large EPC contracts (tanks and terminal) -- a structure that reduced interface risks and enabled smoother coordination. Phased commissioning (Phase 1: Sep 2023; Phase II: June 2024; Phase III: Nov 2024) kept the Project on track, with trial operation in 2024 preceding full production. Overall, the project achieved delivery within and ahead of the scheduled timing without any delay.

Final construction costs were within ±3% of the approved budget envelope. This outcome was driven by early and competitive procurement, strong cost control and design optimization, most notably the adoption of membrane-type tanks, selected through performance- and quality-based procurement, which provided roughly 10% higher effective storage capacity at a similar cost. An accelerated construction schedule further limit exposure to inflationary pressures. As a result, the Project was completed within approved budget ceilings and without cost overruns, an outcome that is relatively uncommon for infrastructure projects of this scale and complexity, reflecting robust project management, disciplined expenditure control, and effective coordination between AIIB and the client. These measures go beyond standard on-time and on-budget delivery, and contributed to improved constructability, reduced lifecycle costs, and enhanced operational performance compared to conventional LNG terminal designs.

In 2024, actual gas volumes processed and supplied and estimated coal displacement were below the project's nameplate capacity. This outcome is consistent with the Project's dual roles: besides supplying cleaner energy to the Beijing-Tianjin-Hebei region, the LNG storage tanks also serve as a strategic emergency reserve facility, ensuring supply security during extreme weather or market disruptions. Given this role, it is neither expected nor desirable for the terminal to operate continuously at full capacity. Utilization levels also reflected short-term fluctuations in international LNG prices and domestic demand. Owing to higher international LNG prices amid recent geopolitical and market uncertainties, pipeline gas was prioritized by Beijing Gas at present. Furthermore, the 2023-2024 season was a warm winter, which reduced natural gas demand during the heating season. Overall, the facility remains fully operational, technically sound, and positioned to deliver its intended environmental and resilience benefits as market conditions and off-take volumes expand.

Section IV. Sustainability

Sustainability Assessment:	Likely sustainable

Implementation of project-specific Environmental and Social (E&S) instruments, such as the Environmental and Social Action Plan (ESAP), including the establishment and operation of a project-level Grievance Redress Mechanism:

Environmental and social implementation was strong throughout construction and early operation and the project complied fully with national regulations as well as AIIB's Environmental and Social Framework (ESF) requirements for a Category A operation. The ESMP was implemented effectively, supported by third-party supervision and regular monitoring that continued into the operation period, with no major non-compliance issues identified.

•A project-level GRM was established, disclosed in both Chinese and English, and maintained in accordance with AIIB requirements, and no grievances were received until now.

•Biodiversity & Sensitive Areas: The Project incorporated targeted biodiversity measures for works near the Beidagang Wetland, including seasonal construction timing, noise and light reduction measures, and specialized installation methods. Biodiversity restocking activities in the wetland and adjacent marine area were completed, and post-construction ecological surveys confirmed no adverse ecological impacts.

•Land Acquisition & Resettlement: Land acquisition and resettlement were conducted in line with the approved Resettlement Action Plan (RAP), and compensation was provided at or above RAP standards. All permanent and temporary land use impacts have been properly addressed, and resettlement and livelihood restoration have been successfully completed.

•Construction and OHS performance were strong, with zero lost-time accidents reported. Use of digital tools, such as automated emergency shutdown systems, robot patrol, and digital twin monitoring, enhanced safety management during construction and operation.

•The Project also generated important institutional benefits. BGG strengthened its internal E&S capacity and is ready to apply ESF-aligned practices more broadly across its operations.

•The Project's improvements in air quality, winter heating reliability, and energy security benefit a wide range of end-users, including women and girls, who are often disproportionately affected by air pollution and heating disruptions. By enhancing cleaner and more reliable energy services in the BTH region, the Project generates indirect but meaningful benefits for these groups.

Investment Sustainability (operational, financial/commercial, institutional):

The Project's long-term sustainability is supported by a balanced operating model that combines public-service obligations for gas supply security with an increasing degree of market-based operations. The Project is assessed to be sustainable across the following three dimensions:

1.Operational: The LNG terminal operates reliably with demonstrated capability in unloading, storage, regasification, and send-out. Advanced digital systems, including digital twin monitoring, AI-driven risk detection, and robotic inspection, improve safety and reduce O&M costs.

2.Institutional: The terminal's primary mandate is to safeguard winter gas supply for the BTH region, particularly Beijing. Governance and operational responsibilities are clearly defined within BGG. Aligned with the project's commercial operation, BGG has established separate entities to manage different aspects of the project's operational and commercial activities, reflecting its sophistication of its business model.
(a) Tianjin LNG subsidiary manages O&M of the receiving terminal and regasification facility and service provision;
(b) Trading company procures LNG from global markets; and
(c) Sales company manages domestic LNG/natural gas sales

This separation of functions enables the Project to fulfill public-service obligations while expanding commercial activities such as bonded storage, LNG carrier cooldown services, and third-party LNG processing. Municipal policies, including coal-to-gas transition enforcement, tariff regulation, and fiscal support, further anchor sustainability by aligning the Project with regional energy security and climate priorities.

3. Financial: Revenues are generated from LNG handling/processing services and downstream gas sales across BGG's business entities. While utilization, and therefore realized margins, is influenced by market conditions, early operating results indicate a solid base for cost recovery and benefit scaling as throughput increases. Early operating results indicate that O&M costs are being covered at the operating subsidiary level, while overall financial performance remains sensitive to LNG market conditions and utilization levels.

4.Besides operational revenues of the Tianjin LNG subsidiary, which currently cover the project's O&M expenses, a large chunk of the commercial gains related to the Project are reflected in the trading and sales companies' balance sheets. Therefore, BGG, as the parent, assumes responsibility for asset depreciation, which demonstrates a financially sophisticated and resilient business model that supports long-term sustainability of the Project investment.

5. Overall: With the terminal fully commissioned and reliably operated by a technically capable and financially resilient utility, supported by a governance structure that separates public-service obligations from commercial activities, and early revenues demonstrating O&M cost coverage with further upside as utilization grows, the Project is assessed to be sustainable operationally, institutionally, and financially over the long term.

Any Outstanding issues and Follow-up actions, if applicable:
N/A

Lessons Learned

Lesson 1.

Category	Procurement
What had AIIB planned would happen?	The client would apply MDB rules smoothly across finance, engineering, and E&S functions.
What happened during implementation?	A learning curve on MDB procedures (combined with bilingual documentation and cross department coordination) increased transaction time in early phases.
Why was there a difference between what was planned and what happened?	Limited upfront orientation and staff rotation affected continuity.
What can AIIB do differently in the next project?	Budget a small front-end TA/onboarding package (training, bilingual templates, early E&S/ FM clinics) and encourage the client to assign a single consolidation focal point from their side.

Lesson 2.

Category	Project Design
What had AIIB planned would happen?	Procure LNG storage on a technology neutral, performance-based basis.
What happened during implementation?	Competitive bidding led to adoption of membrane-type tanks, delivering ~10% effective capacity gain at cost parity and smoother constructability. Technology became a project highlight.
Why was there a difference between what was planned and what happened?	Market pricing and performance criteria revealed membrane tanks as the superior value option versus 9%-Nickel steel tanks.
What can AIIB do differently in the next project?	Continue performance-based specifications, require structured post-award technology reviews, and disseminate a short engineering note on membrane-tank lessons for replication

Lesson 3.

Category	Financial
What had AIIB planned would happen?	Utilize flexible disbursement and potential currency options to reduce the borrower's FX/cash flow burden.
What happened during implementation?	Sovereign procedures funneled funds through municipal finance department with USD conversion and expost reimbursement, limiting flexibility and increasing transaction costs for the implementing agency.

Why was there a difference between what was planned and what happened?	When the loan was approved in December 2019, the Bank did not have RMB currency operation for the client to select at that time. Later when AIIB had the option for the client, national/municipal policies and approval thresholds constrained modality changes (e.g., RMB conversion agreement).
What can AIIB do differently in the next project?	Negotiate modality choices up front (including RMB conversion/netting where feasible), include an FX scenario memo at appraisal, and conduct a readiness check with all finance authorities before first disbursement.

6. Client feedback

The client provided positive feedback on this Project. Survey responses are annexed to this PCN.

Annex: Client Feedback on the Project

P000323_China: Beijing-Tianjin-Hebei Low Carbon Energy Transition and Air Quality Improvement Project

The questionnaire was originally provided by the client in Chinese and subsequently translated into English. The original answers in Chinese also remained for reference.

Are the services and support provided by the Project Team professional, sufficient and in time, during project preparation and project implementation? [please provide some specifics or examples as an illustration.]

Yes, during the implementation of the Project, the AIIB team provided timely and professional replies and support to the questions raised by the project units, such as the preparation of reports, loan repayment, and loan currency conversion policies.
(是的，亚投行团队在项目实施过程中，对项目单位提出的问题都给予及时的专业的回复和支持，如报告的编制、贷款的偿还、贷款币种转换方面的政策等各方面)

Did you find it convenient to access to the Project Team's services and support? [please provide some specifics or examples as an illustration.]

Yes, there are no obstacles in the process of communication with the AIIB team, whether it is meeting, online meetings, emails and other communication methods, it is very smooth and flexible.
是的，与亚投行团队在沟通交流的过程中，没有任何阻碍，无论是见面、还是线上会议、邮件等交流方式，都很畅通灵活。

Did the Project Team demonstrate flexibility and efficiency during project preparation and project implementation? [please provide some specifics or examples as an illustration.]

Yes. During the construction of the Project, the AIIB project team visited the site many times to provide guidance on the preparation of bank financial statements and the interpretation of various reports and improved the preparation requirements to make them more in line with the actual situation of the Project during the construction period. After each meeting, the project team can quickly provide a clear and complete list of information and clarify the requirements and purposes of each piece of information. Use electronic documents, video conferencing and other tools to speed up document delivery and decision-making; As the general docking person of the Project, the project manager is responsible for internal coordination, efficient organization and arrangement to promote various communication work, and greatly improve the overall work efficiency.
是的。在项目建设期间，亚投行项目团队多次莅临现场进行银行财务报表的编制指导及各项报告的释义，并完善编制要求，使其更符合建设期项目的实际情况；每次会议后，项目团队能迅速提供一份清晰、完整的资料清单，并明确各项资料的要求和目的；使用电子文档、视频会议等工具，加快文件传递和决策速度；项目经理作为项目总对接人，负责内部协调，高效的组织安排推进各项沟通工作，大幅提高整体工作效率。

What is your assessment of value addition of AIIB's financing in the Project?

Yes. This is the first time that Beijing Gas has cooperated with the AIIB on a national sovereign guarantee project, and it is also a project that has obtained loans from two international financial organizations, which has laid a solid foundation for the deepening of friendly and cooperative relations between the two sides and accumulated valuable experience for the expansion of financing channels and the exploration of financing methods in the future. In the process of project implementation, I learned a lot of relevant policies and knowledge at home and abroad (including procurement bidding, environmental and social security, financing and other aspects).
是的。这是北燃首次与亚投行对国家主权担保项目进行合作，也是获得两家国际金融组织贷款的项目，为双方深化友好合作关系奠定了坚实的基础，为今后北燃在融资渠道方面的拓展及融资方式的探索积累了宝贵的经验。

Will you consider working with the AIIB again in infrastructure development? Please provide a few specific reasons.

Yes. If there are suitable projects in the future, we will continue to cooperate. This is mainly because the AIIB project team

has a rigorous and standardized workflow and a mature loan management model. During the implementation of the Project, the communication and cooperation with the AIIB project team was very smooth, reflecting professionalism and service spirit.
是的。如果未来有合适项目会继续合作。主要因为 AIIB 项目团队拥有严谨规范的工作流程，贷款管理模式成熟。在项目实施过程中，与 AIIB 项目团队的沟通与合作非常顺利，体现了专业精神、服务精神。

Do you have any suggestion to the Project Team and/or the AIIB for them to improve their operations in the future?
No 无

What are the medium/long-term impacts observed/anticipated from the project?

The first LNG project to be approved at the same time as the receiving station, terminal and export pipeline in less than two years. The first project to receive national sovereign loans from two emerging multilateral development institutions. The first large-scale LNG storage tank project to be built using membrane tank technology in China. Remarkable achievements have been made in technological innovation, equipment localization, management innovation, and digital construction.
第一个用不到两年时间获得接收站、码头与外输管道同期核准批复的液化天然气项目。第一个先后获得两家新兴多边开发机构国家主权贷款的项目。第一个在国内采用薄膜罐体技术建造大型 LNG 储罐项目。在技术创新、设备国产化、管理创新、数字化建设等方面取得显著成果。
As the world's largest 220,000 cubic meter LNG film tank independently designed, built and operated for our country, this project has set an industry benchmark in technological innovation and localization breakthroughs. Its core highlights include: through modular design and factory prefabrication, the construction cost is reduced by about 3% compared with the traditional 9 nickel tank, the construction period is shortened by 2 months, and the steel consumption of the inner tank is sharply reduced by 90% to 200 tons/can, significantly reducing the dependence on the international steel market; For the first time, the localization of the core materials of film tanks has been realized, filling the domestic gap, and related products have been extended to LNG shipbuilding and other fields. Innovatively adopts 12 domestic pioneering technologies such as foldable LNG storage tank ceiling, large space temperature and humidity precise control system, hard cold insulation layer and special-shaped prestressed concrete outer tank, among which the special-shaped compressive ring structure optimizes stress distribution and improves structural stability; The LNG material consumption in the precooling stage is only 500 tons, which is 50% less than the traditional storage tank, 27% lower than the carbon emission, and the temperature drop rate reaches 15°C/h, which greatly shortens the precooling cycle. At the same time, the Project independently developed hydraulic test technology, concrete internal air barrier and standardized operation process, formed 1 national standard, 19 enterprise standards and 1 industry standard, and built a complete technical system. The successful implementation of the Project not only promotes the localization process of LNG storage technology, drives the coordinated development of high-end equipment manufacturing, new materials and other industrial chains, but also provides key technical support for energy structure transformation, carbon emission reduction and national energy security through the efficient storage and utilization of clean energy, marking that our country has ranked among the top in the world in the field of LNG engineering.
本项目作为我国首次自主设计、建造与运行的全球最大 22 万立方米 LNG 薄膜罐，在技术创新与国产化突破上树立了行业标杆。其核心亮点包括：通过模块化设计与工厂化预制，将建造成本较传统 9 镍罐降低约 3%，工期缩短 2 个月，内罐用钢量锐减 90%至 200 吨/罐，显著降低对国际钢材市场的依赖；首次实现薄膜罐核心材料的国产化研发与应用，填补国内空白，相关产品已延伸至 LNG 造船等领域；创新采用可折叠式 LNG 储罐吊顶、大空间温湿度精准控制系统、硬质保冷层及异形预应力混凝土外罐等 12 项国内首创技术，其中异形抗压环结构优化了应力分布，提升结构稳定性；预冷阶段 LNG 物料消耗仅 500 吨，较传统储罐减少 50%，碳排放降低 27%，且温降速率达 15°C/h，大幅缩短预冷周期；同时，项目自主开发水压试验技术、混凝土内部隔气层及标准化操作流程，形成 1 项国家标准、19项企业标准及 1 项行业标准，构建了完整的技术体系。该项目的成功实施，不仅推动了 LNG 存储技术的国产化进程，带动了高端装备制造、新材料等产业链协同发展，更通过清洁能源的高效存储与利用，为能源结构转型、碳排放削减及国家能源安全提供了关键技术支撑，标志着我国在 LNG 工程领域已跻身世界前列。
Through innovative burner flow field optimization and low-nitrogen combustion design, NOx emissions have been reduced by more than 30% compared with similar international products, and the first "thermal efficiency reverse balance double benchmark average method"

has made the thermal efficiency of the whole machine reach more than 99%. The electronic proportional adjustment valve group and intelligent air-fuel ratio dynamic control technology are used to stabilize combustion and reduce the power consumption of the fan by 15% under variable working conditions, breaking through the barriers to localization of key components, promoting the price reduction of 200t/h equipment by more than 40%; Combined with thermal efficiency improvement, excess air coefficient optimization and NOx emission reduction, fuel gas and alkali consumption and full life cycle operating costs are reduced by more than 25% compared with imported equipment, forming a low-emission, energy-efficient and low-cost localized technology system.
通过创新燃烧器流场优化与低氮燃烧设计，实现 NOx 排放较国际同类产品降低超 30%，同时首创"热效率反平衡双基准平均法"使整机热效率达 99%以上；采用电子比例调节阀组与智能空燃比动态控制技术，在变工况下稳定燃烧并降低风机功耗 15%；突破关键部件国产化壁垒，推动 200t/h 设备价格降幅超 40%；结合热效率提升、过量空气系数优化及 NOx 减排，实现燃料气、碱液消耗及全生命周期运行成本较进口设备降低 25%以上，形成低排放、高能效、低成本的国产化技术体系。

Were all stakeholders effectively engaged during the project? Please summarize how the complaints or issues raised by stakeholders were handled and solved?

The receiving station and wharf project permanently covers an area of 52 hectares, which is formed for land reclamation and does not involve land acquisition and demolition. The permanent land area of the export pipeline project is 140.87 acres, of which 106.27 acres of collective land are expropriated and 34.60 acres of state-owned land are used. Collective land expropriation involves a total of 8 districts (counties), 15 towns (townships/streets), and 16 villages (communities), affecting 42 households and 131 people. At present, all 14 cases involving collective land expropriation have been completed at the distribution station, liaison station and valve room, and the compensation has been paid to the village. The social security arrangements for the affected villagers have been completed.
接收站及码头工程永久占地 52 公顷，为填海造陆形成，不涉及征地拆迁。外输管道工程永久用地面积 140.87 亩，其中征收集体土地 106.27 亩，使用国有土地 34.60 亩。集体土地征收共涉及 8 个区（县）15 个镇（乡/街道），16 个村（社区），影响 42 户，131 人。目前，所有 14 宗涉及集体土地征收的分输站、联络站和阀室征地已完成，补偿款已支付到村。受影响村民的社保安置已完成。
As of the completion of the Project, the total area of temporary land for the export pipeline project is 8,580.54 acres, of which 2,329.66 acres are state-owned, affecting 8 enterprises or units. The collective land is 6,250.88 mu, affecting a total of 26 towns (townships/streets), 149 villages (communities), 5,793 households, and 18,967 people. The temporary land use compensation, seedling attachment compensation, land reclamation, and landform restoration have been completed.
截止项目完工，外输管道工程临时用地总面积 8,580.54 亩，其中，国有土地 2,329.66 亩，影响 8 家企业或单位。集体土地 6,250.88 亩，共影响 26 个镇（乡/街道），149 个村（社区），5,793 户，18,967 人。项目临时用地补偿、青苗附着物补偿、土地复垦，地貌恢复已完成。
The implementation area involves 8 districts and counties involving Tianjin, Langfang City and Beijing City, and each city and county implements the compensation standard within its administrative region. As of the completion of the project, the total resettlement cost of the project is 1127.0834 million yuan. Among them, the compensation fee for permanent land acquisition was 14.1127 million yuan, the social security purchase fee was 3.3597 million yuan, the compensation fee for temporary land use and seedling attachments was 1037.6057 million yuan, the compensation fee for infrastructure on state-owned land was 43.3654 million yuan, and the non-residential demolition cost was 28.6399 million yuan.
实施区域内涉及天津市、河北省廊坊市和北京市的 8 个区县，各市县区分别执行本行政区域内的补偿标准，移民安置政策和 RAP 相比没有变化，补偿标准同 RAP 一致或更高。截至项目完工，项目移民安置费用共 112,708.34 万元。其中，永久征地补偿费用 1,411.27 万元，社保安置费 335.97 万元，临时用地和青苗附着物补偿费 103,760.57 万元，国有土地上基础设施补偿费用 4,336.54 万元，非住宅拆迁费用 2,863.99 万元。

Any other comments, on the reporting requirements, approval of project changes, etc.

No 无