通过应用高效的集中清洁供热制冷实现燃煤锅炉近零排放的解决方案

Greater BTH program: Cutting Edge District Clean Heating and Cooling Solutions for Near Zero Emission Future of Jinan City- Case Study in Shandong Province
ASIA CLEAN ENERGY FORUM 2024

Accelerating the Clean Energy Transition and Ensuring Energy Security and Affordability – Time for Urgent Action Now

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Featured Speaker
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1. Project Introduction

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一、项目基本情况

I. General Information of the Project
为实现“碳中和、碳达峰”的目标，2019年9月26日，财政部与亚洲开发银行签订《京津冀地区空气质量改善项目—山东清洁供热供冷项目贷款协议》，用于支持济南市供热供冷行业的清洁生产、节能减排、低碳环保等先进技术和设备的引进与应用。项目包括3个子项目，估算总投资42.11亿元人民币，共计申请亚洲开发银行贷款3.5亿欧元。

In order to achieve the goals of carbon neutrality and peak carbon emissions, 2019, the Ministry of Finance and Asian Development Bank signed a loan agreement for the Shandong Clean Heating and Cooling Project, a project to support the introduction and application of advanced technologies and equipment such as clean production, energy conservation and emission reduction, and low-carbon environmental protection in the heating and cooling industry in Jinan City. Shandong Province includes three sub projects. The estimated total investment for project construction is RMB 4.211 billion, with a total application for a 350 million euros loan from Asian Development Bank.
1. (一) 济南西部外热入济废热利用及多能互补清洁用能项目
   (I) Jinan Western External Heat Input into Jinan Waste Heat Utilization and Multi Energy Complementary Clean Energy Project

2. (二) 商河冬季清洁取暖无煤化示范县项目
   (II) Shanghe Winter Clean Heating and Coal Free Demonstration County Project

3. (三) 济南中央商务区区域能源工程
   (III) Jinan Central Business District Regional Energy Engineering

square meters of heating and cooling area.
二、项目实施的亮点
II. Highlights of Project Implementation
项目探索出了中心镇地热集中供暖模式。同时，在农村清洁取暖方面，商河县为农村安装近3.3万台空气源热泵，助力商河空气质量考核位居济南全市第一。

This project explores the geothermal centralized heating mode in the central town. At the same time, in terms of clean heating in rural areas, Shanghe County has installed nearly 33,000 air source heat pumps for rural areas, helping Shanghe rank first in the air quality assessment of Jinan city.

（一）助力打造全国首个“无煤化”清洁取暖示范县
（I）Assist in Building the First "coal free" Clean Heating Demonstration County in China
（二）助力国内首个同套管网集中供热和供冷示范项目

（II）Assist in the First Domestic Demonstration Project of Centralized Heating and Cooling with the Same Pipeline Network

The centralized cooling and heating system of the Southern Energy Center adopts the same pipeline network system. This is the largest scale in the field of cold and hot co-supply in northern China, setting a benchmark for Shandong to build a low-carbon regional energy.

南部能源中心的集中供冷和供暖采用同一套管网系统，这在中国北方地区冷热同供领域是规模最大的，为山东打造低碳区域能源树立了标杆。
(III) Assist in the Successful Operation of the First Domestic Desulfurization Tower Front Flue Gas Waste Heat Recovery Project
为加快数字化转型进程，能源集团研发了全国同行业首个综合资源管理系统。建设了生产运营中心、工程项目中心、采购管理中心、财务管理中心、行政管理中心、数据治理中心等六大数据中心。

To accelerate the process of digital transformation, Energy Group has developed the first comprehensive resource management system in the same industry in China. We have established six major data centers, including production and operation center, engineering project center, procurement management center, financial management center, administrative center, and data governance center.
(IV) Assist in achieving energy conservation and carbon reduction of heat sources in the central urban area of Jinan, and orderly exit of existing small coal-fired boilers

The project started mid-term adjustments in 2024, added construction contents for large temperature difference renovation project. After the completion of the large temperature difference project in 2026, the coal-fired boilers of Jinan Energy Group will be decommissioned, gradually achieving near zero emissions. The project is in a leading position nationwide and plays a leading and demonstrative role in the heating industry.
On-site construction photos of long-distance pipelines network engineering
三、项目实施后绩效

III. Performance after Project Implementation
项目完成后与项目实施前相比，可减少90%以上的煤炭消耗，减少90%以上的大气污染物排放，具有极大的规模性和示范性。

After project completion, compared to before project implementation, it can reduce coal consumption by more than 90% and air pollutant emissions by more than 90%, which has great scale and demonstration value.
I would like to extend my appreciation to Asian Development Bank for the consistent strong support to Jinan Energy Group. Looking towards to the future, Jinan Energy Group will make reasonable use of Asian Development Bank loan funds and actively promote project construction. The Energy Group will work together from the height of building a community with a shared future for mankind, the breadth of ecological civilization construction, and the depth of harmonious coexistence between humans and nature to seek a path of green, low-carbon, and high-quality development. It will expand consensus, gather strength, and contribute wisdom to accelerate green transformation, and make greater contributions to promote green development.
Thanks very much