



China, People's Republic of: Heilongjiang Energy Efficient District Heating Project

Project Name	Heilongjiang Energy Efficient District Heating Project		
Project Number	44011-013		
Country / Economy	China, People's Republic of		
Project Status	Closed		
Project Type / Modality of Assistance	Loan		
Source of Funding / Amount			
	Loan 2898-PRC: Heilongjiang Energy Efficient District Heating Project		
	Ordinary capital resources	US\$ 150.00 million	
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth		
Drivers of Change	Gender Equity and Mainstreaming Private sector development		
Sector / Subsector	Energy / Energy utility services		
Gender	Effective gender mainstreaming		
Description	The proposed project will expand and upgrade district heating systems (DHSs) in eight cities of Heilongjiang province to make the systems energy efficient, thereby reducing emission of greenhouse gases and air pollutants. The project will install energy efficient heating sources and heat exchangers, insulated pipelines, and computerized monitoring and control systems.		
Project Rationale and Linkage to Country/Regional Strategy	<p>The PRC has experienced a rapid increase in energy consumption in tandem with sustained economic growth, especially since 2000. By the end of 2010, the primary energy demand in the PRC had increased to more than 3.00 billion tons of standard coal equivalent (btce), compared to 1.39 btce in 2000. The PRC relies heavily on carbon-intensive coal, which provided about 70% of its primary energy in 2010. Electricity generation and heat supplies account for about half of the total coal consumption in the PRC. The Government of the PRC has recognized the challenges posed by the rapid rise in energy consumption and associated emissions. It has committed to achieve 40% 45% carbon intensity reduction by 2020 compared with 2005, primarily by targeting energy intensity reductions. During the Eleventh Five-Year Plan, 2006 2010 the energy intensity was reduced by 19.06% compared with a target of 20.00%. During the Twelfth Five-Year Plan, 2011 2015 the PRC has set a further energy intensity reduction target of 16%, an 8% reduction of sulfur dioxide (SO2), and a 10% reduction of nitrogen oxide (NOx). Heilongjiang province has set corresponding targets of reducing energy intensity by 16.0%, SO2 emission by 2.0% (10,000 tons [t]), and NOx emission by 3.1% (23,000 t) by 2015 compared to 2010.</p> <p>The PRC is the second-largest district heating market in the world, the Russian Federation being the largest. Because of the large demand, 13 provinces, 3 autonomous regions, and two cities have adopted centralized heating. The DHS coverage area is continuously expanding to keep pace with the rapid economic growth and urbanization. Between 2003 and 2010, centralized heating coverage in the PRC increased from 1.9 billion square meters (m2) to 4.4 billion m2. However, DHS still covers only 30% of the total floor area compared to coverage of about 60% in European countries. Coverage is particularly low in low-income urban areas.</p> <p>Heilongjiang is an underdeveloped inland province in the northeastern region of the PRC. Heating service in Heilongjiang, where temperatures fall below 40 C and the heating season lasts for up to 6 months, meets one of the basic human needs and provides essential support to socioeconomic activities. Northeastern provinces, including Heilongjiang, are a source of transboundary air pollution such as acid rain. The centralized heating area in Heilongjiang has increased from 199 million m2 in 2003 to 384 million m2 in 2010. By 2015, the province plans to increase the district heating coverage area by another 200 million m2, which will cover up to 70% of the cities and counties in the province. Many existing heating systems in the province are old and inefficient, and lack modern emission control equipment. Combustion efficiency of existing small heat-only boilers of 55% in many cities is far below the 87% that can be achieved in modern combined heat and power (CHP) plants or large heat-only boilers.</p> <p>The existing inadequate coverage of district heating in low-income urban areas in Heilongjiang compels households to use coal stoves for heating, and these are a major cause of indoor air pollution and respiratory diseases. The poor indoor air quality in households has a disproportionately high effect on women and children, who spend most of their time indoors. There were 18 cases of carbon monoxide (CO) poisoning and 10 fire accidents caused by household stoves from 2008 to 2010 in the project areas. Emissions from existing small and inefficient neighborhood boilers, most of which lack emission control equipment, also worsen outdoor air quality and cause significant cumulative harm to public health. Providing cleaner and reliable district heating services to households and other community areas will (i) reduce cases of respiratory diseases through improved indoor and outdoor air quality, reduce CO poisoning by providing safer district heating services, and improve the medical environment; (ii) improve living conditions; (iii) reduce heating expenditure by switching from individual household stoves and decentralized heating systems to centralized energy efficient heating systems; (iv) provide a better schooling environment during the winter; and (v) increase incomes through job opportunities created during construction and operation. Women and vulnerable people connected to the modern district heating networks will enjoy a cleaner, safer living environment.</p> <p>The project will target selected cities where the poverty ratio is as high as 8.7% (compared to the national average of 7.7%) and district heating coverage is particularly low. The project will demonstrate that significant expansion of energy efficient DHSs to an additional 27 million m2 (270,000 households) can be introduced without increasing net emissions. The project will remove small, inefficient, and polluting neighborhood coal-fired boilers and coal-fired household stoves; and construct centralized district heating networks where heat is supplied by highly energy efficient CHP plants and large boilers, thereby reducing the overall carbon and air pollution footprints of district heating.</p> <p>The project is closely aligned with Strategy 2020, where moving developing member countries onto low-carbon growth paths by improving energy efficiency has been identified as one of the key means of achieving environmentally sustainable growth. The Asian Development Bank (ADB) Energy Policy prioritizes projects on energy efficiency and access to energy for all, including district heating, for energy efficiency improvement and access to modern cleaner heating services for all. The country partnership strategy, 2011 2015 for the PRC identifies environmental sustainability as one of the three pillars of ADB assistance to the PRC.</p>		
Impact	Improved energy efficiency and a cleaner environment in Heilongjiang province		
Project Outcome			
Description of Outcome	Improved air quality and reduced greenhouse gas emissions in six urban areas in Heilongjiang province		
Progress Toward Outcome	Beijing achieved and monitored with support of loan implementation consultants. Actual emission reductions and coal savings will be calculated and included in the PCR to be circulated in 2021.		
Implementation Progress			

Description of Project Outputs	Coverage of the district heating system in six project cities without net increase in emissions expanded Energy efficient heat generation capacity in three project cities improved Private sector participation in district heating in two project cities promoted
Status of Implementation Progress (Outputs, Activities, and Issues)	All activities under the project were completed. The loan account was actually closed in December 2019.
Geographical Location	Harbin, Jiagedaqi, Jiamusi, Jidong Xian, Jixi, Qitaihe Shi, Raohe, Tangwanghe Qu, Tongjiang, Xinqing Qu, Yichun

Safeguard Categories	
Environment	B
Involuntary Resettlement	C
Indigenous Peoples	C

Summary of Environmental and Social Aspects	
Environmental Aspects	HPG and the implementing agencies shall ensure that the project is designed, constructed, and operated in accordance with the national and local government environmental laws, regulations, procedures, and guidelines: ADB's Safeguard Policy Statement (2009), Environmental Assessment Guidelines (2003), and the project initial environmental examination. HPG will ensure the boilers constructed under the project comply with gas emissions standards stipulated in the World Bank Pollution Prevention and Abatement Handbook. Environmental monitoring reports will be submitted to ADB two times per year during construction and annually for 2 years during operation. The environment management plan (EMP) with mitigation measures, monitoring plan, and institutional arrangements, will be updated during engineering design and incorporated in the bidding documents and civil works contracts.
Involuntary Resettlement	There will only be temporary occupation of existing roads and sidewalks when laying heating pipelines. Three subprojects will upgrade district heating plants within the existing premises of the implementing agencies.
Indigenous Peoples	The project has no adverse or significant impact on ethnic minorities.

Stakeholder Communication, Participation, and Consultation	
During Project Design	A total of 15 communities, 16 community clinics, 58 local government agencies and social institutions, and 390 households in the subproject areas were consulted through 11 consultation meetings, focused group discussions, and household surveys.
During Project Implementation	The public disclosure of all project documents has been done at the project management office and on the Asian Development Bank website, including the project information document; and consolidated environmental impact assessment. Continuous consultation will be conducted with relevant stakeholders during detailed design and construction stages by the executing and implementing agencies.

Business Opportunities	
Consulting Services	To expedite project implementation, HPG has requested advance contracting and retroactive financing. This will include the procurement of goods, civil works, and the recruitment of consulting services. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement Guidelines (2010, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2010, as amended from time to time). The amount to be retroactively financed will not exceed \$30 million (equivalent to 20% of the ADB loan) and may finance costs incurred before loan effectiveness but not more than 12 months before the signing of the loan agreement. The issuance of invitations to bid, under advance contracting and retroactive financing, will be subject to ADB approval. The borrower, executing and implementing agencies have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.
Procurement	All procurement of goods and works shall be carried out in accordance with ADB's Procurement Guidelines (2010, as amended from time to time). ADB-financed civil works contracts, costing \$10 million or more, and goods contracts costing \$1 million or more, will be procured through international competitive bidding procedures using ADB's standard bidding documents. Goods contract packages costing more than \$100,000 and less than \$1 million will be procured using national competitive bidding, as will civil works contracts costing more than \$100,000 and less than \$10 million. Civil works and goods contract packages costing less than \$100,000 will be procured using shopping procedures. The relevant sections of ADB's Anticorruption Policy (1998, as amended to date) will be included in all documents and contracts. An 18-months procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and NCB guidelines are included as a linked document

Responsible ADB Officer	Liu, Xinjian
Responsible ADB Department	East Asia Department
Responsible ADB Division	PRC Resident Mission
Executing Agencies	Heilongjiang Provincial Government People's Republic of China

Timetable	
Concept Clearance	15 Dec 2010
Fact Finding	22 Nov 2011 to 02 Dec 2011
MRM	28 Feb 2012
Approval	25 Sep 2012
Last Review Mission	-
Last PDS Update	06 Mar 2020

Loan 2898-PRC

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
25 Sep 2012	26 Feb 2013	24 Apr 2013	30 Jun 2018	30 Jun 2019	29 Nov 2019

Financing Plan	Loan Utilization
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	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	353.00	Cumulative Contract Awards			
ADB	150.00	17 Jun 2022	132.98	0.00	100%
Counterpart	203.00	Cumulative Disbursements			
Cofinancing	0.00	17 Jun 2022	132.98	0.00	100%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	Satisfactory	Satisfactory	Unsatisfactory	Satisfactory	-

Project Page	https://www.adb.org/projects/44011-013/main
Request for Information	http://www.adb.org/forms/request-information-form?subject=44011-013
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