



# Initial Poverty and Social Analysis

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## PRC: Geothermal District Heating Project

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Asian Development Bank



## INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	PRC	Project Title:	Geothermal District Heating Project
Lending/Financing Modality:	Project Loan and Equity	Department/ Division:	Private Sector Operations Department/ Private Sector Infrastructure Division 2

<b>I. POVERTY IMPACT AND SOCIAL DIMENSIONS</b>
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<b>A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy</b>
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The proposed loans will finance the design, construction and operation of a series of medium-low temperature geothermal district heating subprojects by Sinopec Green Energy Geothermal Development Co. Ltd. (SGE), based on exclusive agreements with local governments in the PRC. It contributes to the national poverty reduction and inclusive growth strategy identified in the country partnership strategy by fostering the utilization of non-polluting renewable energy resources for heating homes and commercial buildings in northern PRC. In early 2017 the government released three new policies promoting use of geothermal energy. These policies included the release of targets that triple the country's geothermal heating area to 1.3 billion m<sup>2</sup> by 2020; air pollution prevention measures in the Beijing-Tianjin-Hebei area that aim to replace coal-fired heating systems with geothermal-based heating; and the targeted usage of geothermal heating in the Xiong'an New Area national economic zone. The Project also complements EARD's ongoing initiatives to address air pollution through sovereign projects that channel loans through local banks to clean energy projects in Shaanxi province and the greater Beijing-Tianjing-Hebei region. Subprojects will be located in provinces including Gansu, Shaanxi, Shandong, Hebei, and Tianjin where air pollution is acute during winter and where the central government's antipollution drive is most aggressive. Subproject selection criteria includes consideration of the local government's commitment to geothermal development and pollution abatement.

<b>B. Poverty Targeting</b>
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General Intervention  Individual or Household (TI-H)  Geographic (TI-G)  Non-Income MDGs (TI-M1, M2, etc.)

The project presents limited opportunities to directly promote economic and social inclusion of the poor and vulnerable groups or address the income and non-income dimensions of poverty and social exclusion. However by tapping the country's extensive mid-low temperature shallow geothermal energy in underdeveloped provinces that experience higher poverty incidence and air pollution, government can foster more inclusive and sustainable development in some rural but mainly urban and peri-urban areas. By contributing to reductions in coal dependency in new housing developments, government is also improving the quality of living in these areas and thereby enhancing productivity and communal wellbeing.

<b>C. Poverty and Social Analysis</b>
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1. Key issues and potential beneficiaries.  
The expected beneficiaries of the project are endusers of geothermal space heating in residential and commercial buildings in the northern PRC. By the end of 2016, SGE operated 255 geothermal wells (including 65 reinjection wells), 180 heat centrals and 220 kilometers of pipelines, and provided heating service to 26 million m<sup>2</sup> in 25 cities and counties in the PRC. Approximately 70% of customers are residential, with the balance including commercial, industrial and governmental.

2. Impact channels and expected systemic changes.  
The poor and socially excluded will indirectly benefit from the pollution abatement contributions made by the project, however only those living in homes or working in building directly connected to a geothermal heat network will directly benefit from the provision of a renewable energy service. SGE aims to provide its heating service at a cost no greater than that already paid by those connected to coal or gas fired heating services. For those without a centralized heating service, SGE's service will be cheaper than heating spaces with electrical heaters or with coal briquette burners. SGE's expansion plans signal the project will offer some increase in employment opportunities, especially during construction, however the company uses contractors and therefore has little control over scaling employment growth.

3. Focus of (and resources allocated in) the PPTA or due diligence. Due diligence will investigate what opportunities exist for SGE to offer reduced cost heating services to the poor and vulnerable in areas identified as experience higher poverty incidence. Due diligence will assess price differences for heating services across SGE's project portfolio to determine average measures for comparison with other heat sources.

<b>II. GENDER AND DEVELOPMENT</b>
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1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project or program?  
The most relevant gender issue is access to employment on SGE subprojects during construction and operation.

2. Does the proposed project or program have the potential to make a contribution to the promotion of gender equity and/or empowerment of women by providing women's access to and use of opportunities, services, resources, assets, and participation in decision making?

Yes  No Please explain. The project is expected to generate a no gender elements classification due to the limited opportunity it provides to promote gender equity and empowerment. Space heating is an essential service during the four-month heating period in northern PRC, and the project is essentially contributing to meeting this growing service need.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?

Yes  No Please explain. The project is not expected to generate negative gender impacts.

4. Indicate the intended gender mainstreaming category:

GEN (gender equity)  EGM (effective gender mainstreaming)  
 SGE (some gender elements)  NGE (no gender elements)

### III. PARTICIPATION AND EMPOWERMENT

1. Who are the main stakeholders of the project, including beneficiaries and negatively affected people? Identify how they will participate in the project design. The main stakeholders of the project are governments that foster the development of geothermal district heating in their areas of influence and the endusers that will benefit from the use of non-polluting space heating. Each SGE subproject is different and is influenced by two main factors: geothermal resource quality and residential housing development or commercial building design. While endusers are not directly involved in the design of each geothermal district heating system, their needs are captured in building designs, which the project will incorporate. Other stakeholders may be those affected due to construction impacts such as well drilling and pipeline laying. Their views will be accounted for during temporary land access consultations and negotiations.

2. How can the project contribute (in a systemic way) to engaging and empowering stakeholders and beneficiaries, particularly, the poor, vulnerable and excluded groups? What issues in the project design require participation of the poor and excluded? The project presents limited opportunities for empowering stakeholders to participate in project design beyond the definition of needs by government for district heating services and by developers for a specific service type and level.

3. What are the key, active, and relevant civil society organizations in the project area? What is the level of civil society organization participation in the project design?

Information generation and sharing (L)  Consultation (L)  Collaboration (N)  Partnership (N)

4. Are there issues during project design for which participation of the poor and excluded is important? What are they and how shall they be addressed?  Yes  No Please explain. SGE is delivering an essential service at a cost to endusers set by government, in locations defined by government based on planning studies. All key points at which public and CSO participation could influence project design would precede the point at which SGE is awarded a concession to provide district heating services.

### IV. SOCIAL SAFEGUARDS

**A. Involuntary Resettlement Category**  A  B  C  FI

1. Does the project have the potential to involve involuntary land acquisition resulting in physical and economic displacement?  Yes  No SGE typically builds all subproject infrastructure within a development zone; the land for which has already been converted for building residential, commercial or governmental buildings. SGE does however also occasionally access land outside these developments zones for drilling wells and laying pipelines, and this land access is undertaken following government procedures. All surface damage is rectified after use and restored to an agreed state. Pipelines are laid underground immediately after a well head is capped and typically run only a few hundred meters to a heat central. Due diligence will investigate land use arrangements provided to SGE by developers and inspect a current pipelay in an urban area to understand procedures followed and arrangements made with any affected community members. In addition to local laws and regulations, SGE follows the Environmental and Social Management System (ESMS) of its parent company Sinopec Group. Due diligence will also assess any land acquisition procedures set out in this ESMS for compliance gaps with ADB's SPS.

2. What action plan is required to address involuntary resettlement as part of the PPTA or due diligence process?

Resettlement plan  Resettlement framework  Social impact matrix  
 Environmental and social management system arrangement  None

**B. Indigenous Peoples Category**  A  B  C  FI

1. Does the proposed project have the potential to directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples?  Yes  No
2. Does it affect the territories or natural and cultural resources indigenous peoples own, use, occupy, or claim, as their ancestral domain?  Yes  No Prior to due diligence, the project team understands that preexisting subprojects are located in urban and peri-urban areas where no distinct or vulnerable ethnic minority groups have been adversely or beneficially affected. Due diligence will confirm if future subprojects will maintain this siting trend.
3. Will the project require broad community support of affected indigenous communities?  Yes  No
4. What action plan is required to address risks to indigenous peoples as part of the PPTA or due diligence process?
- Indigenous peoples plan  Indigenous peoples planning framework  Social Impact matrix  
 Environmental and social management system arrangement  None

**V. OTHER SOCIAL ISSUES AND RISKS**

1. What other social issues and risks should be considered in the project design?
- Creating decent jobs and employment  Adhering to core labor standards (L)  Labor retrenchment  
 Spread of communicable diseases, including HIV/AIDS  Increase in human trafficking  Affordability (M)  
 Increase in unplanned migration  Increase in vulnerability to natural disasters  Creating political instability  
 Creating internal social conflicts  Others, please specify \_\_\_\_\_
2. How are these additional social issues and risks going to be addressed in the project design? Affordability will be assessed through due diligence not just with regards to pricing and exacerbating poverty, but because SGE collects full payments directly from end-users at the beginning of the four-month long heating season. Due diligence will assess what policies are in place to manage heating connections of individual delinquent accounts. Heating tariffs are however set by local governments, and tariffs enable SGE to make a reasonable profit on service delivered, but some concessions will deliver heat that is more costly to produce than others due to the quality of the geothermal resource and the scale of each heating system. Once a subproject is commissioned, SGE will receive from new customers a one-off connection fee equal to about 40% of total capex. During the contract period, SGE is responsible for operation and maintenance of the geothermal heating facilities and receives from end-users an annual payment of heating tariffs. During operations, tariffs are periodically adjusted by municipal authorities to account for higher operating costs, with reference to national regulatory guidelines on pricing. Guidelines issued by the National Development and Reform Commission state that tariffs should be adjusted to ensure the operator achieves reasonable rates of return.

**VI. DUE DILIGENCE RESOURCE REQUIREMENT**

1. Do the terms of reference for the due diligence contain key information needed to be gathered during due diligence process to better analyze (i) poverty and social impact; (ii) gender impact, (iii) participation dimensions; (iv) social safeguards; and (v) other social risks. Are the relevant specialists identified?
- Yes  No
2. What resources (e.g., consultants, survey budget, and workshop) are allocated for conducting poverty, social and/or gender analysis, and participation plan during the due diligence? Terms of reference (TOR) for an environmental and social due diligence include a corporate audit of the borrower's ESMS and inspection of existing geothermal district heating facilities. A lender's technical adviser has been contracted to fulfil the TOR scope and will report on SPS compliance, community health and safety, land acquisition, ethnic minorities, poverty, gender, labor and stakeholder engagement.

Sources: ADB. 2016. *Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020*. Manila; PRC State Council. 2016. *The National Thirteen Five-Year Plan for Environmental Protection (2016-2020)*. Beijing.