

World Bank Financed  
Liaoning Medium Cities Infrastructure Project  
(LMCIP)

Urban Energy Component

# Resettlement Action Plan

(Summary)



**URBAN PLANNING AND DESIGN INSTITUTE OF LIAONING PROVINCE**

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Liaoning Medium Cities Infrastructure Project  
(LMCIP)  
Urban Energy Component  
**Resettlement Action Plan**  
(Executive Summary)

President	Zeng Juequn
Vice President	Cheli
General Engineer	Wang Guoqing
Director	Dong Youju
Persons in Charge	Qin Dayong
	Wang Xianming
Team Member	Guo weijiang Zhao xiyuan Liu yimin
	Yan Guanhua Sun Yunquan Yanming

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# Introduction to the Project

## Objectives of the Project

In recent years, especially after the northeast old industry base revitalization strategy was put forward by the Central Committee of the Communist Party of China and State Council, social economy and urban construction in Liaoning developed quickly. However, along with the development of various projects and urban construction, the problem of lagging infrastructure development is increasingly serious: presently, most buildings of every city are heated by scattered small and middle-sized boiler rooms, which is inefficient with many chimneys, behindhand dedusting equipments and severe pollution; most boiler rooms adopt intermission heat supply, which makes a huge pollution to the city zone environment, increases traffic pressure and emitting pollution from the transporting cars, and occupied large amount of construction land and urban greenbelts, affecting the cities' urban sight and environment quality severely.

In order to accelerate the economy development of Liaoning and alleviate the infrastructure bottle-neck restriction to the quick economy development in Liaoning, Liaoning planed to apply the loan from World Bank to assist the infrastructure construction. Approved by State Council, Liaoning planed to apply 600 million dollars to Liaoning Urban Infrastructure Project (LUIP) from fiscal year 2005 to 2007(July 1, 2006-June 30, 2007). The project has three parts: 1) Liaoning Urban Environment Infrastructure Project (LUEIP) which contains urban water supply, sewage treatment, wetland protection and garbage treatment; 2) Liaoning Urban Traffic Infrastructure Project (LUTIP) which contains urban traffic rebuilding, roadway protection establishment and traffic management; 3) Liaoning Urban Heat and Gas Supply Infrastructure Project which contains urban centralized heat supply and urban gas project.

Therefore, Fushun, Anshan, Benxi, Yingkou Liaoyang and Huludao, based on their present heat and gas supply situation, all put forward plans to apply the loan from World Bank to the project, and their project proposals have been approved by Liaoning Development and Reform Committee.

## Components of the Project

Liaoning Energy Project (LEP) funded by World Bank involves 6 cities (Fushun, Anshan, Benxi, Yingkou, Liaoyang and Huludao. Every subproject shows in Chart1-

1.The construction content of the project is 11 subprojects including heat and gas supply. In this project there are newly-built 9 heat sources and 1 gas sources, 362 large heating converting stations, 8 pump stations, 23 building converting stations (among which the land property of 129 large heating converting stations, 5 pump stations and 23 building heating converting stations is not defined), newly-built first level heat supplying pipes 324.88km and some second level pipes and gas supply pipes 57.8Km. The detail contents and main impacts of land acquisition could be seen in Table 0-1.

. 5 subprojects involve land acquisition and house demolition. The 5 subprojects are Haicheng central heating project, Benxi central heating project (No.2 phase), Benxi Nanfen central heating project, Yangjiazhangzi mining area central heating project and Dashiqiao District central heating project of Yingkou City. Short resettlement action plans are necessary for the 5 subprojects. The other 6 subprojects have no land acquisition and house demolition, so the resettlement action plan is not needed. See details in the annexes.

Chart 0-1 Sketch map of every subprojects distributing

世界银行贷款辽宁中等城市  
基础设施项目 / 供气供暖项目分布图

Distribution Map of Gas support and  
Hit support of city Infrastructure  
Project in Liaoning province



**Table 0-1 List of project components, land acquisition and house demolition**

No.	Subproject	City/Dist	Project contents	Land acquisition impact			Temporary land occupation		House demolition impact		Affected population				Remarks
				State-owned land□mu□	Collective land□mu□	Property undefined land□mu□	State-owned land□mu□	Collective land□mu□	Residential houses□m2□	Enterprise houses	Land acquisition□households/persons□	House demolition□households/persons□	House demolition□enterprises/persons□	Total□persons□	
1	Fushun Power Plant heat supply unit (2*300MW) enlarging project and heat network construction	Fushun	1. Build 63 heating converting stations and 2 heating computation stations	17.12	0	6.29	0	0	0	0	0	0	0	NO RAP	
			2. Build 30km first-level pipeline network	0	0	0	79.23	0	0	0	0	0	0		0
2	Haicheng central heating project	Haicheng	1. Construct 1 set of centralize heating supply boiler room, the scale of which is 3 hot-water boilers(58MW)	0	41.9	0	0	0	0	0	4 households / 8 persons	0	0	8	RAP
			2. Build 26 heating converting stations	4.99	0	3.37	0	0	0	0	0	0	0	0	
			3. Pave 19.63km first-level hot water pipeline network	0	0	0	44.89	0	0	0	0	0	0	0	



No.	Subproject	City/Dist	Project contents	Land acquisition impact			Temporary land occupation		House demolition impact		Affected population				Remarks	
				State-owned land□mu□	Collective land□mu□	Property undefined land□mu□	State-owned land□mu□	Collective land□mu□	Residential houses□m2□	Enterprise houses	Land acquisition□households/persons□	House demolition□households/persons□	House demolition□enterprises/persons□	Total□persons□		
3	Benxi second Phase central heating project	Benxi	1. Construct 3 heat sources: Caitun heat source factory (2X58MW Circulating fluidized bed boiler), Xihu heat source factory; build 3*58MW hot water boiler, and Wolong heat source factory; build 2*29MW hot water boilers	115.05	0	0	0	0	1038.11	209	0	30 Households / 88 persons	1 enterprise / 0 persons	88	RAP	
			2. Build 45 heating converting stations	2.16	0	8.61	0	0	0	0	0	0	0	0		0
			3. Build 34.69km heating supply distribution	0	0	0	37.03	0	0	0	0	0	0	0		0
4	Benxi Steel Heat Supply Company district heating project	Benxi	1. Build new EIC heating pipeline network, which is rebuilding the pipeline network from first-level EIC compression pumping station to the main pipeline network in city zone(near Beidi post office) and some lateral pipeline network; Rebuild carbonization heating pipeline network; Build a trunk line and some branch lines of residues-flushed water heating supply pipeline network and rebuild some outdated pipeline network.	0	0	0	81.55	0	0	0	0	0	0	0	NO RAP	

No.	Subproject	City/Dist	Project contents	Land acquisition impact			Temporary land occupation		House demolition impact		Affected population				Remarks	
				State-owned land□mu□	Collective land□mu□	Property undefined land□mu□	State-owned land□mu□	Collective land□mu□	Residential houses□m2□	Enterprise houses	Land acquisition□households/persons□	House demolition□households/persons□	House demolition□enterprises/persons□	Total□persons□		
			2. Expanding present first-level EIC heating pipeline network compression pumping station and build new heating pipeline network backwater pumping station	0.6	0	0.38	0	0	0	0	0	0	0			
			3. Build a residues-flushed water treatment plant and a first-level compression pumping station; build a compression pumping station in Qianjin community.	21.71	0	0.59	0	0	0	0	0	0	0			
5	Benxi Nanfen central heating project	Nanfan	1. Construct 1 set of heat source plant, the scale of which is 3 hot water boilers (29MW)	0	34.46	0	0	0	0	0	0	37 households / 93 persons	0	0	93	RAP
			2. Build 13 heating converting stations	1.69	0	2	0	0	0	0	0	0	0	0	0	
			3. Build 17.37km pipeline network.	0	0	0	40.41	0	0	0	0	0	0	0	0	
6	Dashiqiao District central heating project of Yingkou City	Dashiqiao	1. Build 2 set of heat source plants, one of which is 4 hot water boilers (64MW), the other is 1 hot water boiler (29MW)	0	90.26	0	0	0	0	0	0	100 households / 327 persons	0	0	327	RAP

No.	Subproject	City/Dist	Project contents	Land acquisition impact			Temporary land occupation		House demolition impact		Affected population				Remarks
				State-owned land□mu□	Collective land□mu□	Property undefined land□mu□	State-owned land□mu□	Collective land□mu□	Residential houses□m2□	Enterprise houses	Land acquisition□households/persons□	House demolition□households/persons□	House demolition□enterprises/persons□	Total□persons□	
City			2.Build 47 heating converting stations, of which 35 sets are large heat converting station, and 12 sets building heat converting station	9.9	0	1.41	0	0	0	0	0	0	0		
			3. Pave 39.17km relevant first-level hot water distribution	0	0	0	44.49	0	0	0	0	0	0		0
			7	Yingkou economic development zone central heating project	Yingkou economical and technical development zone	1.Build 66 large heating converting stations, and 1 set of relaying pumping station, and 11 building heat converting station	9.52	0	14.18	0	0	0	0		0
			2.Build 84.59km first-level distribution and some second-level	0	0	0	205	0	0	0	0	0			
8	Gongchangling District central heating project of Liaoyang City	Gongchangling	1.Construct 3 hot water boilers(58MW)	92.42	0	0	0	0	0	0	0	0	0	NO RAP	
			2. Build 16 heating converting stations, 1 relaying pumping station and 1 interspaced heating converting station	5.64	0	0.99	0	0	0	0	0	0	0		0
			3.Build 37.56km first-level heating supply pipeline network	0	0	0	95.49	0	0	0	0	0	0		0

No.	Subproject	City/Dist	Project contents	Land acquisition impact			Temporary land occupation		House demolition impact		Affected population				Remarks
				State-owned land□mu□	Collective land□mu□	Property undefined land□mu□	State-owned land□mu□	Collective land□mu□	Residential houses□m2□	Enterprise houses	Land acquisition□households/persons□	House demolition□households/persons□	House demolition□enterprises/persons□	Total□persons□	
9	Yingkou Gas establishment expansion project	Yingkou	1.Build 1 set of 50000m <sup>3</sup> dry gasholder; repair the existing 50000m <sup>3</sup> storage tank and 20000m <sup>3</sup> storage tank; construct gas intelligent management system	2.4	0	0	0	0	0	0	0	0	0	NO RAP	
			2.Rebuild 50.78km pipeline network system	0	0	0	149.1	0	0	0	0	0	0		0
10	The 1st phase central heating project of Huaneng Thermal power in Yingkou	Yingkou	1.Build 83 heating converting stations; build a new control centre of thermal net	19.94	0	1.85	0	0	0	0	0	0	0	NO RAP	
			2.Build 49.1km heating supply pipeline network	0	0	0	186.75	0	0	0	0	0	0		0
11	Mining area central heating project in Yangjiazhan development zone	Yangjiazhan Development Zone of Huludao City	1.Build a new 3×29MW hot water supply boilers	39.55	0	0	0	0	5941.44	0	0	149 households / 474 persons	474	RAP	
			2.Build 13 sets of heat converting station	1.06	0	2.59	0	0	0	0	0	0	0		
			3.Build 12.77km 1st level heating pipeline network	0	0	0	17.64	0	0	0	0	0	0		0

No.	Subproject	City/Dist	Project contents	Land acquisition impact			Temporary land occupation		House demolition impact		Affected population				Remarks
				State-owned land□mu□	Collective land□mu□	Property undefined land□mu□	State-owned land□mu□	Collective land□mu□	Residential houses□m2□	Enterprise houses	Land acquisition□households/persons□	House demolition□households/persons□	House demolition□enterprises/persons□	Total□persons□	
Total				343.75	166.62	42.26	981.58	0	6853.55	209	141 households/428 persons	179 households 562 persons	1 enterprise / 0 persons	990	

\* Note: Because at the feasibility study stage, the design institute can not give the specific position of heating converting stations and pump stations, the acquired land property couldn't be defined. The resettlement effects of the undefined heating converting stations and pump stations are defined by the RPF.

## Resettlement Mitigation Measures

During project planning and design, the socio-economic impact on local areas has been considered, and where feasible, alternative project designs have been adopted. Where it is impossible to avoid land acquisition, wasteland, shoal and state-owned land has been occupied to minimize cultivated land acquisition. Where it is not feasible to avoid demolition, the scale has been minimized. Meanwhile, proper space should be left for other public facilities. For example, the original design scheme of Dashiqiao considered about 4 heat sources. By analysis, western source would have larger demolition quantity, so the scheme was adjusted with combining western and eastern sources to avoid 6727m<sup>2</sup>house demolition of 67 households. Most heating converting stations of the project cities are constructed by rebuilding former boiler rooms, with less land acquisition. Through optimization design, the wasteland and state-owned land are acquired firstly, with less plowland acquisition. Consequently, the quantity of land acquisition and house demolition in the project is reduced rapidly, and the population of affected persons is reduced furthest.

## Project Linkage Issues

Linkage projects refer to those projects that have direct relationships with project construction function or benefits during project preparation and implementation.

During project design, project unit paid highly attention to the identification of linkage projects. Local Project Management offices and sub-project agencies have analyzed all sub-projects and found only Fushun power plant had linkage projects. The Fushun power plant resettlement review is in Annex 2.

Table 0-2 Linkage issues review

No.	Subproject	City/Dist.	Linkage issues analysis	Conclusion
1	Fushun Power Plant heat supply unit (2*300MW) enlarging project and heat network construction	Fushun	Heat source is exported from new-built power plant.	Yes The resettlement review is in annex 2
2	Haicheng central heating project	Haicheng	The subproject is an independent system.	No
3	Benxi second Phase central heating project	Benxi	The subproject is an independent system.	No
4	Benxi Steel Heat Supply Company district heating project	Benxi	The subproject is an independent system.	No
5	Benxi Nanfen central heating project	Nanfen	The subproject is an independent system.	No

No.	Subproject	City/Dist.	Linkage issues analysis	Conclusion
6	Dashiqiao District central heating project of Yingkou City	Dashiqiao	The subproject is an independent system.	No
7	Yingkou economic development zone central heating project	Yingkou economical and technical development zone	The heat source is exported from the former Yingkou power plant, constructed in 1995. In this subproject, the former electrical machines have been rebuilt as heating supply set.	Yes. But the Yingkou power plant was constructed in 1995.
8	Gongchangling District central heating project of Liaoyang City	Gongchangling	The subproject is an independent system.	No
9	Yingkou Gas establishment expansion project	Yingkou	The subproject is an independent system.	No
10	The 1st phase central heating project of Huaneng Thermal power in Yingkou	Yingkou	The heat source is exported from the Huaneng Yingkou power plant which to be constructed in Aug. 2007	Yes, but the Huaneng Yingkou power plant construction will not be involved land acquisition and resettlement. See annex 1.
11	Mining area central heating project in Yangjiazhangzi development zone	Yangjiazhangzi Development Zone of Huludao City	The subproject is an independent system	No

## Project Impacts

During August to December, 2006 and August to November, 2007, according to the request of World Bank and Liaoning Provincial Project Management Office, the management offices of every city, together with resettlement offices, land management bureaus, design institutes and other relevant departments, had finished a 100% complete investigation on the population and objects in the range affected by the project, and a 20% sampling investigation on the social economy situation of towns, streets, and communities affected by the land acquisition and house demolition. During the investigation on the objects affected by land acquisition and house demolition, the affected persons all joined in the investigation work and negotiated together. See the details of investigation organizations in Table 0-1.

Table 0-1 Organization of object index investigation in the project

No.	Subproject	City/Dist.	Investigation time	Investigation measure	Investigation organization
1	Yingkou Dashiqiao city zone centralize heating supply project	Dashiqiao	August to December, 2006	100% general indoor investigation, spot survey and social economy sampling investigation (sampling proportion: at least 20%)	Development and reform committee organized land management bureau affected villages and other departments to do object investigation.
2	Benxi Nanfen centralize heating supply project	Nanfen	August to December, 2006		Development and reform committee organized land management bureau affected villages and other departments to do object investigation.
3	Haicheng Tiedong Yong'an road northern centralize heating supply project	Haicheng	August to December, 2006		The urban investment company organized land management bureau and affected villages to do object investigation.
4	Benxi central heating project (the second phase)	Benxi city	October to November, 2007		Benxi Heating Supply Parent Company did the object investigation on the state-owned land.
5	Yangjiazhangzii mining area central heating supply project	Yangjiazhangzi	August to October, 2007		The headquarters of Yangjiazhangzi Mine Alteration of Shanty Area project did the object investigation on the state owned land

Liaoning Energy Project funded by World Bank involves 5 cities/districts (Dashiqiao, Haicheng, Benxi Nanfen, Benxi city and Yangjiazhangzi economic development zone), 5 towns/streets, and 6 villages; the main impacts are: permanent



land acquisition, house demolition of urban citizens and enterprises, infrastructures, ground attachments and so on.

### Affected Persons

The project totally affected 990 persons. The permanent collective land acquisition affected 141 households (428 persons) and 258 labor force need to be resettled. House demolition affected 562 people in 179 households including illegal buildings and 1 enterprise without any person affected. The details of affected population show in Table 0-2.

Table 0-2 Project affected persons

Affection type		Dashiqiao	Haicheng	Nanfen	Benxi	Yangjia-zhangzi	Total
Collective land acquisition	Affected household (household)	100	4	37			141
	Affected population (person)	327	8	93			428
	Thereinto □ Labor	176	8	74			258
House demolition in urban area	Affected household (household)				18	149	167
	Affected population (person)				54	474	528
Enterprise demolition	Affected enterprise				1		1
	Affected population (person)				0		0
Illegal building demolition	Affected household (household)				16	54	70
	Affected population (person)				47	168	215
	Affected enterprise					1	1
	Affected population (person) □					4	4
Tangibal impacts in total	Affected household	100	4	37	30	149	320
	Affected enterprise				1	1	2
	Affected population (person) □	327	8	93	88	474	990

Note: Among the 16 affected households with illegal houses in Benxi, 34 persons of 12 households are independent illegal houses affected person and the other 13 persons of 4 households have property right licensed housed affected at the same time; among the affected 474 persons of 149 households in Yangjiazhangzi project, 55 households have illegal houses which are all accessory houses.

## Permanent and Temporary Land acquisition

LEP funded by World Bank acquired 166.62mu collective land permanently, in which dry land is 132.16mu and vegetable land is 34.46mu. Details show in Table 0-3.

Table 0-3 Permanent collective land acquisition in the project

City/Dist.	Land acquisition (mu)		
	Dry land	Vegetable land	Subtotal
Dashiqiao	90.26		90.26
Haicheng	41.9		41.9
Benxi Nanfen		34.46	34.46
Total	132.16	34.46	166.62

The project acquired 174.4mu state-owned land permanently for free by transfer, involving 5 cities/districts. In which, property of 17.98mu land is un-defined. In addition, the area of temporary state-owned land acquisition is 187.65mu (88.02mu non-driveway, 99.63mu driveway, involving 5 cities/districts. Details could be seen in Table 0-4.

Table 0-4 State-owned land acquisition in the project

City/Dist.	Permanent land acquisition (mu)		Temporary land acquisition (mu)		
	assigned	un-defined	Non-driveway	Driveway	Subtotal
Dashiqiao	9.9	1.41	24.55	19.94	44.49
Haicheng	4.99	3.37	38.08	6.81	44.89
Benxi Nanfen	1.69	2		40.41	40.41
Benxi	117.21	8.61	6.96	30.07	37.03
Yangjiazhangzi economic development zone	40.61	2.59	18.43	2.4	20.83
Total	174.4	17.98	88.02	99.63	187.65

## Residential House Demolition

562 persons in 179 households are affected in this project with a total demolition acreage of 6979.55m<sup>2</sup> (including illegal building 1678.94m<sup>2</sup>). See details in Table 0-5.

Table 0-5 Residential house demolition effect

Project	Acreage□m <sup>2</sup> □		Land category	Including illegal building□m <sup>2</sup> □
	storied building	bungalow		
Benxi central heating supply project(No.2 phase)	/	1038.11	No.4	419.4
Yangjiazhangzi mining area central heating project	/	5941.44		1259.54
Total		6979.55		1678.94

### Nonresidential House Demolition

1 enterprise is affected in this project by Benxi central heating supplying project (No.2 phase) , which covered an acreage of 2109 m<sup>2</sup>□and 209 m<sup>2</sup> houses demolished and no people affected. The enterprise is closed now.

### Illegal Building Demolition

Among all the demolished buildings, the acreage of illegal building is 1678.94 m<sup>2</sup>, among which 1259.54 m<sup>2</sup> of 55 households in Yangjiazhangzi mining area heating supply project are affected and those buildings are connected with property right licensed legal buildings. Those people all have legal houses and the proportion contrast of legal and illegal houses are 2.07:1. 419.4 m<sup>2</sup> independent buildings are demolished in Benxi central heating supply project (No.2 phase), involved 16 households, among which, 12 households are independent illegal houses and other 4 households' property right licensed houses are affected at the same time. See details in Table 0-6.

Table 0-6 Affected illegal buildings

Project name	Affected household	House acreage□m <sup>2</sup> □			with property right certificate /illegal
		With property right certificate	Illegal houses		
			With two certificates	With one or Without any certificate	
Benxi central heating supply project(No.2 phase)	16	100	339.4	80	0.24□1
Yangjiazhangzi mining area central heating project	55	1707.52		1259.54	1.36□1
Total					

Note: 1. "With two certificates" means have both household Hukou register and temporary house certificate. One certificate or without any certificate refers to those houses without temporary house certificate, no matter the house owners have Hukou register or not.

2. Household in Yangjiazhangzi project used their illegal building as business building.

## Vulnerable Groups

Among all the affected groups, there are 52 persons of 18 households are in vulnerable groups. See details in Table 0-7.

Table 0-7 Vulnerable groups

Project name	Poverty		Disabled		Mainly women supported household		Old people live alone household		Total	
	Household	Person	Household	Person	Household	Person	Household	Person	Household	Person
Benxi central heating supply project(No.2 phase)				0	2	3	1	2	3	5
Yangjiazhangzi mining area central heating project	13	42	1	4			1	1	15	47
Total	13	42	1	4	2	3	2	3	18	52

## Affected Infrastructure

One 1 category ground and public infrastructure is affected and which is electricity pole.

## Policy Objectives and Legal Framework

In order to accomplish the task of land acquisition and demolition caused by LEP and guarantee the legal rights of affected persons and enterprises and to support project implementation, project policy is prepared according to the following land acquisition and demolition regulations:

	Policy file	Effective time
Nation	Land Administration Law of the People's Republic of China	August 28, 2004
	Regulations for the Implementation of the Land Administration Law of the People's Republic of China	August 28, 2004
	Real Estate Administration Law of the People's Republic of China	January 1, 1995
	Regulations for Urban House Demolition Administration	November 1, 2001
	State Council's Decision on Deepening, Reforming, and Strengthening Land Administration □ Guo Fa □ 2004 □ No.28 □	October 21, 2004
	Notice on Guiding suggestion on Urban House Demolition Evaluation □ Jian Zhu Fang [2003] No.234 □	January 1, 2004
Liaoning	Measures of Liaoning Province on Implementing the Land Administration Law of the People's Republic of China □ Liaoning Provincial Government Order [2002] No. 149 □	April 1, 2002
	Measures of Liaoning Province on Urban House Demolition Administration	December 1, 2002
	Notice on Liaoning provincial government on land acquisition and compensation task and farmer's legal rights protection □ Liao Zheng Fa [2004] No.27 □	August 14, 2004
Dashiqiao	Notice on Printing and Distributing Guiding Opinions on Strengthening Urban House Demolition of Dashiqiao (Da Zheng Fa [2005] No.15)	April 19, 2005
Haicheng	Notice on Printing and Distributing Measures of House Demolition Administration of Haicheng (Hai Zheng Fa [2007] No.27)	April 6, 2000
Benxi	Measures of House Demolition Administration of Benxi (Ben Zheng Fa [2002] No.86)	May 16, 2002
	Notice about demolition and resettlement compensation in the rebuilding of shanty area (Ben zheng Fa [2005]No.52)	May, 24, 2005
	Notice on Printing and Distributing Land Acquisition and House demolition Compensation Standard of Benxi (Ben Jia Fa [1995] No.81)	November 4, 1995
Yangjiazhangzi economic development zone	Former plan of the demolition and resettlement compensation of the shanty areas and mining sinking area rebuilding in Yangjiazhangzi	Aug.10,2006
	Compensation Standard for the Shops in the Shanty Areas Rebuilding in Yangjiazhangzi Economic Development Zone	Aug.10,2006

	Policy file	Effective time
	The Notice on the Distribution of the Opinions on Strengthen the House Demolition in Urban Area(Hu yang management committee fa [2007] No.52)	July,9,2007
World Bank	World Bank Operational Policies OP4.12 Involuntary Resettlement and its Annex	January 1, 2002
	World Bank Operational Procedures BP4.12 Involuntary Resettlement and its Annex	January 1, 2002

The objective of project resettlement policy is to minimize the adverse affects brought by land acquisition and demolishment. Displaced persons<sup>1</sup> will be provided compensation at full replacement cost<sup>2</sup> for loss of assets and assisted to restore or even surpass former living standards. Main principles are as follows:

- ① When possible, resettlement plans should be conceived as development opportunities, so that those affected may benefit from project activities.
- ① Lack of legal rights should not bar displaced persons in peaceful possession from compensation or alternative forms of assistance.
- ① Compensation rates refer to amounts to be paid in full to the individual or collective owner of the lost asset, without deduction for any purpose. Also Individual owners receive compensation for affected

<sup>1</sup> "Displaced persons" refers to all the people who, on account of the activities listed above, would have their (1) standard of living adversely affected ; or (2)right, title, interest in any house, land (including premises, agricultural and grazing land) or any other fixed or movable asset acquired or possessed temporarily or permanently; (3) access to productive assets adversely affected, temporarily or permanently; or (4)business, occupation, work or place of residence or habitat adversely affected; and "displaced person" means any of the displaced persons.

<sup>2</sup> "Replacement cost" is defined as follows: For agricultural land, it is the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes. For land in urban areas, it is the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes. For houses and other structures, it is the market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labor and contractors' fees, plus the cost of any registration and transfer taxes. In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset. Where domestic law does not meet the standard of compensation at full replacement cost, compensation under domestic law is supplemented by additional measures so as to meet the replacement cost standard. Such additional assistance is distinct from resettlement measures to be provided under other clauses in OP 4.12, para. 6.

structures and other fixed assets, and villages receive compensation for acquired land in rural areas.

- ⌚ When cultivated land is acquired, it often is preferable to arrange for land-for-land replacement through collective land distribution. In some cases, as when only small proportions of income are earned through agriculture, alternative measures such as payment of cash or provision of employment are acceptable if preferred by the persons losing agricultural land.
- ⌚ Replacement curtilage land, sites for relocating businesses, or redistributed agricultural land should be of equivalent use value to the land that was lost.
- ⌚ Transition periods should be minimized. Compensation should be paid prior to the time of impact, so that new houses can be constructed, fixed assets can be removed or replaced, and other necessary measures can be undertaken before displacement begins.
- ⌚ Displaced persons are consulted during the planning process, so their preferences regarding resettlement arrangements are considered; resettlement plans are disclosed in a publicly accessible manner.
- ⌚ The previous level of community infrastructure and services and access to resources will be maintained or improved after resettlement.
- ⌚ The borrower is responsible for meeting costs associated with land acquisition and resettlement, including contingencies.
- ⌚ Resettlement plans include adequate institutional arrangements to ensure effective implementation of resettlement measures.
- ⌚ Resettlement plans include arrangements for internal and external monitoring of resettlement implementation.
- ⌚ Resettlement plans include procedures by which displaced persons can pursue grievances.

## Compensation

The LEP compensation standard is decided according to above legal framework and actual conditions in the affected municipalities. The time of displaced persons eligibility definition is the announcement date of demolition. After this date, displaced persons can not build new houses, expand and rebuild houses, can not change the use purpose of land and house and can not rent land or rent and sale or buy houses. The people influx after this certain date cannot be regarded as eligible displaced persons.

### Compensation Standard of Rural Collective Land Acquisition

Based on Land Administration Law of the People's Republic of China, Guidance Opinions on Improve Compensation and Resettlement System for Land Acquisition, Measures of Liaoning Province on Implementing the Land Administration Law of the People's Republic of China, Implementation Opinions of Liaoning Province on State Council's Decision on Deepening, Reforming, and Strengthening Land Administration (Guo Fa (2004) No.28) and the related policies and regulations of the participating municipalities, land acquisition compensation includes land compensation, resettlement subsidy and young crop compensation, calculated as the legal annual output value multiple, and details could be seen in Table 0-1. Every city's compensation standard for rural collective land acquisition could be seen in Table 0-2. Tax and fee of land acquisition could be seen in Table 0-3.

Table 0-1 Annual output value standard for land acquisition compensation

Subproject	City/Dist.	Policy of Liaoning Province	Policy of City	Remark
Dashiqiao District central heating project of Yingkou City	Dashiqiao	Annual output value is calculated as the local comprehensive output of crop and economy but not single crop production. In accordance with the actual situation of Liaoning, the annual output value per mu of municipalities is not less than RMB 2,000, county level cities or towns are not less than RMB 1500 and in other place not less than RMB 1,000. Economic developed areas also should increase the standard.	Carry out the policy of Liaoning province.	
Haicheng central heating project	Haicheng			
Benxi Nanfen central heating project	Nanfen			



Table 0-2 Land acquisition compensation multiple and standard

City/Dist.	Land type	Annual output value	Multiple			Compensation Standard (yuan/mu)			
		(yuan/mu)	Land compensation	Resettle-ment subsidy	Subtotal	Land compensation	Resettle-ment subsidy	Young crop compensation	Subtotal
Dashiqiao	Dry Land	1500	10	6	16	15000	9000	1500	25500
Haicheng	Dry land	1500	10	6	16	15000	9000	1500	25500
Nanfen, Benxi	Vegetable land	3000	10	20	30	30000	60000	3000	93000

Table 0-3 Tax and fee of land acquisition

City/Dist.	Land type	Land cultivation fee (yuan/mu)	Fees paid for use of New Land Construction (yuan/mu)	Farmland Acquisition Tax (yuan/mu)	Land Administration Fee (yuan/mu)
Dashiqiao	Dry land	6666	18667	4000	2% of the land acquisition compensation
Haicheng	Dry land	6666	22667	3663	
Nanfen	Vegetable land	6666	18667	4333	
Receiver		Land Management Bureau	Financial Bureau	Revenue Bureau	Land Management Bureau
Charge according to		Notice on Collecting Land Cultivation Fee, Land Re-cultivation Fee and Land Unused Fee (Liao Zheng Fa [2000] No.48)	Notice on Adjusting Policy of Fees paid for use of New Land Construction (Cai Zong [2006] No.48)	Measures of Liaoning Province on Implementation of Farmland Occupation Tax (Liao Zheng Fa [1987] No.131)	Notice on Collecting Land Cultivation Fee, Land Re-cultivation Fee and Land Unused Fee (Liao Zheng Fa [2000] No.48)

### Compensation Standard of Permanent State-owned Land acquisition

The land acquired by the project becomes urban infrastructure land. State-owned land can be obtained through land assignment according to national laws.

### Compensation Standard of Residential Houses

According to the residential house compensation policies in each project city or district, the compensation standard is made according to the replacement cost in considering the different structure and section of the houses and consulting the commercial houses and second hand

houses in the similar location. See the relocation house survey result in Table 0-4 and the specific compensation standard in each city and district in Table 0-5.

Table 0-4 House price in the similar section of the affected area

Project name	Land category	Commercial houses	Second hand houses	Relocation houses	Remarks
Benxi central heating supply project(No.2 phase)	No.4	1350yuan/m <sup>2</sup>	1000-1200yuan/m <sup>2</sup>	1080yuan/m <sup>2</sup>	Second hand houses are popular
Yangjiazhangzi mining area central heating area		1200yuan/m <sup>2</sup>	500-700yuan/m <sup>2</sup>	650yuan/m <sup>2</sup>	

Table 0-5 House compensation standards

Project name	House compensation (yuan/m <sup>2</sup> )	House price difference compensation (yuan/m <sup>2</sup> )	land category	Other compensation		
				House removing compensation (yuan/household)	Loss of working time subsidy (yuan/household)	House removing subsidy (yuan/household)
Benxi central heating supply project(No.2 phase)	1080	604.8	No.4	200	200	5
Yangjiazhangzi mining area central heating area	650	/		200		3

Note: 1. land price is consisted in the house compensation standard.  
2. The house renting subsidy is calculated as tangible transition period.

### Compensation Standard of Non-residential Houses

Only one enterprise demolished in this project which was affected by Benxi central heating supply project (No.2 phase). The compensation standard is made according to due regulations after appreciation. The compensation standard for No.4 category land is 260yuan/ m<sup>2</sup> and the building compensation is 1100yuan/ m<sup>2</sup> (land price is included and FAR is calculated as 0.5)

### Compensation Standard of Illegal Buildings

According to the requirement on illegal buildings of WB, compensation will be given and proper assistance will be given to the affected persons. See details in Table 0-6.

Table 0-6 Compensation standards of illegal buildings

Project name	Compensation standard	Remarks
Benxi central heating supply project(No.2 phase)	6000yuan/household(with 2 certificates , 1 or without any certificates);	At the same time, cheap rent house can be provide at the standard of 60 yuan/m <sup>2</sup> ; as for the vulnerable groups cheap rent house can be provided for free.

Project name	Compensation standard	Remarks
Yangjiazhangzi mining area central heating area	150yuan/m <sup>2</sup>	As for those illegal buildings used for business, temporary shutout subsidy will be given a year per capita at the standard of 171 yuan/month, according to the registered number of the shops in illegal buildings or the consecutive membership due collect bills in half a year.

Note: "two certificates" means households register and temporary house certificate

### **Compensation Standard of Affected Infrastructure and Ground Attachment**

The affected infrastructure and ground attachment should be compensated according to the replacement principle.

### **Rehabilitation Measures for Livelihoods of Dps**

The resettlement goal of this project is make sure that Dps can get good resettlement, restoration and all the lost assets can be compensated and enable them to share in the project benefits. Displaced persons should be given allowance for their temporary difficulties and assisted in their efforts to improve their livelihoods and standards of living and enterprise production and/or at least to restore them (in real term) to pre-displacement levels or to levels prevailing at the beginning of project implementation, whichever is higher.

### **Compensation and Resettlement of Permanent Land Acquisition**

Permanent land acquisition of the project is 359mu; including collective land 166.62mu, state-owned land 174.44mu, and the land property of the rest 17.98mu is undecided.

## State-owned Land Allocation

According to the related regulations and policies of Liaoning province and each municipality, permanent state-owned land acquisition of the project will be free transfer, no compensation and labor resettlement needed.

## Permanent Acquisition of Collective Land

### □ 1 □ impact analysis

To implement the project, acquisition of rural collective land 166.62mu is needed, all to be cultivated land and 4 villages affected. 141 households (428 persons) are impacted, including 258 labors. Therefore, contrast and analysis are made on cultivated land and other conditions before and after land acquisition. In the affected villages, the impact of land acquisition is 8% or so. Impact analysis of collective land acquisition, see Table 0-1

According to socio-economic investigation to the project areas, Of the 141 affected households, there are 64 households having lost all their land and 77 households having lost 75%-50% of their land. See details in Table 0-2. However, the investigation result indicates that the average proportion of agricultural income of Dps is about 10%. The main source of their income is non-agricultural except Nanfen village, so impact on Nanfen villagers are relatively greater.

Table 0-1 Impact Analysis of Land Acquisition

Sub-project	City	The number of affected villages	village	Pre-land acquisition			Effect of land acquisition			Effect of land acquisition		
				households	population	Cultivated land (mu)	Cultivated land (mu)	Affected household	Affected population	Household ratio□□□	Population ratio□□□	Rate of land acquisition□□□
Dashiqiao District central heating project of Yingkou City	Dashiqiao	2	Xujia village	615	1930	973	70	61	195	9.9	10.1	7.2
			Shengshui village	658	2023	228	20.26	39	132	5.9	6.5	8.9
Haicheng Tiedong Yongan road northern central heating supply project	Haicheng	1	Xindong village	1478	4731	464.34	41.9	4	8	0.3	0.2	9.0
Benxi Nanfen central heating project	Nanfen	1	Nanfen village	479	1511	447	34.46	37	93	7.7	6.2	7.7
Total		4		3230	10195	2112.34	166.62	141	428			

Table 0-2 Land Acquisition Affected Household Analysis

City	Affected household	Impact degree				
		100%	100-75%	75-50%	50%-25%	Below 25%
Dashiqiao	100	23		77		
Haicheng	4	4				
Nanfen	37	37				
Total	141	64		77		

□2□resettlement plan and guarantee measures

Project affects 258 laborers as given in Table 0-3. The affected villages will get land compensation and resettlement subsidy (16~30 times of unified annual production value), and land contractors will get young crop compensation. The most severely affected persons are some households in Nanfen District, Benxi City. The following are the details of rehabilitation measures:

Table 0-3 Resettlement of affected persons in land acquisition

Project name	City	Resettlement members	Rehabilitation Measures	Remark
Dashiqiao District central heating project of Yingkou City	Dashiqiao	176	Transfer of farmer into non-farmer identification/cash compensation	
Haicheng Tiedong Yongan road northern central heating supply project	Haicheng	8	Cash compensation	
Benxi Nanfen central heating supply project	Nanfen	74	Transfer of farmer into non-farmer identification /cash compensation / endowment insurance	
Total		258		

Dashiqiao: Xujia village and Shengshui village of Nanlou economic zone were affected in this project. Most villagers of these two villages are working in the nearby mines with average wage of about 1000 yuan/ month. The plow land per capita of Xujia village and Shengshui village are respectively 0.5mu and 0.28mu and the annual income from agriculture is about 200 yuan/mu. Among the 100 affected households, the one with the most acquisitioned land is 3 mu which bring a loss of over 600yuan/year, accounting for 1.9% of the family annual income. The proportion of the agricultural income accounting for the annual family income varies from 0.7-

2.2%, so they are not mainly depend on the land and land acquisition have little impacts<sup>3</sup> on them.

According to DPs' opinion, they would be paid money compensation. 80% of land compensation and all the resettlement subsidies will be handed out directly to them. Dps could do individual business with the compensation. 20% of land compensation will remain in village used for the welfare of all the villagers. Meantime, Dps (26 households) could be transferred from farmer to non-farmer identity and managed by the community he belongs at their will. Project unit will provide them with job information and give them free skill training and help, including cooking, handicraft, knitting and so on. At present, these jobs are needed a lot and the salary is higher than 800 yuan.

Haicheng: The plowland acquisitioned in this project is the land of Xindong village which has 464.34mu farm land contracted by 62 households. All the land is contracted annually to relatively fixed household. In the contracts, it is indicated that the contract would be self-cancelled when the land is acquisitioned. The village should return contracting fee to the contractors (80yuan/mu).

4 contractors are mainly affected in this project and whose contracted land varied from 3-5mu, and 1 household has the most agricultural income is 4000 yuan/year accounting for 45% of the family annual income.

As for the villagers who lost land, Haicheng municipal government issued the Notice on the Social Guarantee Measures for the Farmer Who Lost Land on Aug.24, 2007. According to it, the 4 households can get old pension guarantee of 170yuan/month from the next month after land acquisition without any payment. Every household can get 4080 yuan per year. Their income after land acquisition is higher than before land acquisition..

80% of the land compensation and all the resettlement subsidies will give to the villagers (which are even distributed according to agricultural people) and 20% of land compensation will reserve at village collective used for all the villagers' welfare. If the land has been cultivated when land acquisitioned, the project owner should pay young crop compensation.

Haicheng is a relatively developed city. There are many enterprises in the city, so the demand of labors is great. The demand of labors in 2006 is 38692. The village committee group could provide relevant employment information for the affected persons, and also some necessary free training. It can recommend some Dps to some village enterprises.

Nanfen □ To the 37 households, the impact is relatively great, because their land is completely acquired. According to social economy investigation, the agricultural investment can

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<sup>3</sup> See the details of the impacts on the affected 100 households in the subsidiary report.

account for 11%-73% of the whole family income, so the land acquisition effect on them is great..

According to the DPs' opinion, two kinds of resettlement modes would be adopted and they can choose one of them freely:

(1) The project owner could compensate them with money. The resettlement subsidy and 80% of the land compensation should be paid to the affected persons who could use the money to proceed with their present career and do individual business. 20% of land compensation will reserve at village collective used for all the villagers' welfare. The compensation fund which the DPs received is about 14 times of their annual agricultural income:

(2)According to the relevant regulations of *Provisional Method of Social Security for Land-lost Peasants in Benxi*, The land-lost peasants could be brought into social pension security system by paying pension security fee. The fee standard is 37444 yuan/person, of which 30% (11233 yuan) would be paid by government, and 70% (26211 yuan) would be assumed by individual and village group. Male aged from 16-60 after 60 years old would obtain 200-532yuan per month according to the payers' age. Female aged from 16-60 after 55 years old would obtain 200-476 yuan per month according to the payers' age.

Besides the above policies, Dps can also enjoy the following preferential policies: (1) they could enjoy the same opportunity with the urban workers, such as job-hunting registration, occupation instruction and job introduction freely. (2) They can enjoy skill-training and business-establishing training freely. (3) To those who enterprise successfully, they could enjoy the relevant supporting policy. (a. Preferential policies on tax and fee; b. Preferential policies on small guaranteed loan). To those who are accordant with the subsidy conditions ( Those who laid off from the new added post and are newly recruit people with labor contract period more than 3 years), they could enjoy the social insurance subsidy. (4)To those who have employment willingness but still unemployed, they could enjoy the promoting employment policy. (a. Derate employment fees of laid off workers; b. Derate part fees of the enterprises which employed laid off worker.) To those who have been employed, the employer should buy the unemployment insurance for them, and the DPs have the right to enjoy the same unemployment insurance as the urban workers.



In addition, each project owner should give preferential participation chance to the affected persons, such as arranging them on the lower technical demands posts, so the Dps could obtain benefits directly from the project.

### Restoration Plan of Temporary Land Acquisition

Temporary acquired land of the project is all to be state-owned. When digging for the pipeline project, the construction-and-rehabilitation integrative method was used, with a quick fluidness. When the acquisition time is expired, the project owner would be in charge of resuming and cleaning the ground

### Affected Urban Residential Houses

562 persons in 179 households are affected by the urban residential house demolition in Benxi subproject and Yangjiazhangzi subproject. The demolished acreage totally is 6979.55m<sup>2</sup> including illegal building 1678.94m<sup>2</sup>.

At the first period of resettlement, the demolished houses should be evaluated at the principle of replacement cost by qualified appraisal company chosen by the Dps in considering of house position, house structure, usage, floor and orientation. Then two modes of resettlement can be select: currency compensation or property right exchange. Those who chosen the mode of property right exchange can buy commercial houses or second-hand houses at their will. Besides, Dps can select relocation position and the size of relocation houses by themselves. See the detail of Dps' options in Table 0-4. As for the mode of property right exchange, no price difference needs to be settled between the demolished house and relocation house. But for the exceeded acreage, the construction cost should be paid by the Dps.

Each project city did surveys on property right exchange mode, the house source purchased by the currency compensation and commercial house market. According to its result, Dps can buy the houses of the same conditions and same acreage in the same position as the demolished houses with the compensation fund. Besides project cities all rebuilt and newly-built houses in the shanty area to relocate Dps. The relocation community is better than the demolished houses in environment, supporting facilities, transportation, structure and quality. So it's convenient for them to go to work, go to school, go out and see doctors.

Table 0-4 Relocation options of Dps

City/District	House acreage	Affected households	Proportion (%)	Relocation options □household□			Relocation arrangement	
				Equal acreage exchange	Increased acreage	Currency compensation	Households	Acreage
Benxi	0-43	14	77.8%	10	4		10	43
	43-65	3	16.7%	2	1		8	60

City/District	House acreage	Affected households	Proportion (%)	Relocation options □household□			Relocation arrangement	
				Equal acreage exchange	Increased acreage	Currency compensation	Households	Acreage
	>65	1	5.5%		1		1	80
	subtotal	18	100%	12	6		19	990
Yangjiazhangzi	0-36	135	90.6%	4	131		4	36
	36-45	10	6.7%	3	7		13	45
	45-55	1	0.7%	1			81	55
	45-65	3	2%	3			51	65
	subtotal	149	100%	11	138		149	8499
Total		167		23	144		168	9489

Note: Among which, a household with large area demolished house selected 2 relocation houses.

### Rehabilitation Plan of Affected Enterprise

1 enterprise was affected by this project in Benxi central heating supplying project (No.2 phase), which is Dabao gas station of China Petroleum Group Benxi branch office and now is shutout without any affected stuff. According to the house demolition policies in Benxi, currency compensation can be adopted by project unit and then select position and build by themselves. Besides, project unit can provide the field of the same acreage, similar position and be responsible for the restoring and construction.

### Rehabilitation Plan of Affected Vulnerable Groups

Benxi: Special relocation measures and policies will be given to affected vulnerable groups in this project. 3 vulnerable or enjoyed the lowest guarantee households were affected in this project whose houses are all illegal. Project unit has negotiated with Liaoning Dongyi Real Estate Co. LTD to and proposed to build some small door type houses of 36m<sup>2</sup> which will be given to the vulnerable group at the form of cheap rent houses. The property right will be owned by the project unit, and no rent should be paid by the demolished. As for the family have disabled person and old people living alone, the low storey relocation houses will be given to them at their will for the traveling convenience.

Yangjiazhangzi: Special relocation measures and policies will be given to affected vulnerable group in this project as follows:

(1) For those who chosen property right exchange, if they are the lowest guarantee household decided by the government and have a house less than 36m<sup>2</sup>, the same acreage of the demolished house will be given without payment and the property right belongs to Dps. As for

the increased acreage, if Dps can not afford, the property right belongs to the government and no public housing rent need to be paid.

(2) As for the family have disabled person and old people living alone, the low storey relocation houses will be given to them at their will for the traveling convenience.

(3) As for people in line with the requirement, they can work in the community to provide community service and realty management to get stable earnings.

### **Rehabilitation Plan of Illegal Buildings**

Benxi: There are 12 households are independent illegal houses in the illegal buildings of this project and other 4 households' house property right licensed houses are affected are affected at the same time. In order to have no negative on there living the rehabilitation plan is as follows:

(1) According to the urban residential house demolition regulations of Benxi and considering the actual situation of the APs, project unit will give each household a subsidy at the standard of 6000 yuan/ household, no matter those APs have the certificates or not , or relocated them with a No.1 category door type house at the standard of 1080 yuan/m<sup>2</sup> and which must be paid fully.

(2) Provide them with small door type cheap rent houses with house rent less than 60 yuan/ month..

(3) As for the vulnerable groups which can not afford house rent, the house will be provided to them for free.

Yangjiazhangzi: There are no independent illegal buildings and most illegal buildings in this project are accessory houses connecting with the houses having property right, which are mostly used for storage and only one used for business shop.

As for the illegal accessory houses, a subsidy of 150yuan/m<sup>2</sup> will be given. Besides the above subsidy of 150yuan/m<sup>2</sup>, temporary shutout subsidy of 171 yuan/ month per capital will be given a year to the illegal building used for business from the next month after house demolition,

according to the registration stuff number or the consecutive membership fee collective bill within half a year. This household can be relocated at the first floor to continue their business.

### **Affected Infrastructure and Ground Attachment**

Project organization should compensate for the affected infrastructure and ground attachments to property right-owned organizations that are responsible for the rebuilding.

The restoration measures for demolished facilities should be planned and arranged in advance. In actual operation, measures should suit different conditions to ensure safety and effectiveness, avoid delay and errors, and minimize the adverse effect to nearby people.

As for affected civil public infrastructure, demolition is based on the project working drawings. No effect to project construction is the prerequisite to minimize displacement, where feasible. As for the demolition of affected pipelines, demolishers must guarantee not to affect residents (including unnecessary displaced persons) along the pipelines, and the demolition could only take place after rebuilding (or displacement).

## **Organization and Implementation Arrangements**

### **Organization**

Foreign Capital Utilization Project Office of Liaoning development and reform committee is in charge of guiding preparing RAP of LEP and carrying out land acquisition and house demolition, contacting with World Bank and so on. Meanwhile, every subproject has a project management office (PMO) in charge of preparing RAP, managing land acquisition and house demolition, inner supervision and monitoring and so on. The organization institution and its duty of each subproject could be seen in Table 0-1.

Table 0-1 organization institution and its duty of each subproject

Subproject	City/Dist.	Management institution				Implementing institution			
		Management institution	Main duty	Personnel arrangement	Phone	Name	Main duty	Personnel arrangement	Phone
Yingkou Dashiqiao city zone centralize heating supply project	Dashiqiao	Dashiqiao Energy project Management office	Be in charge of preparing RAP, managing land acquisition and house demolition, and resettlement capitals; organize, coordinate and practice inner supervision and monitoring; work out inner monitoring report and send to World Bank.	Tong Lianchen	0417-2126001 13324171655	Land Use Station of Land Management Office	Be in charge of implementing land acquisition and house demolition according to the RAP approved by World Bank, and report the implementation arrangement to the project management office of World Bank.	Jia Yumei	0417-5837608
Haicheng Tiedong Yongan road northern centralize heating supply project	Haicheng	Haicheng Urban Investment Company		Wang Yong	0412-3204113 13898032200	Land Use Station of Land Management Office		Zhang Shitai	0412-3331811 13332115868
Benxi Nanfen centralize heating supply project	Nanfen	Ben steel Heat Power Development Co. Ltd.		Feng Zhaohui	13700147333	Land Use Station of Land Management Office		Gao Tiezhu	0414-3839877
Benxi central heating project (No.2 phase)	Benxi city	Benxi heating supplying parent office		Zhao Gang	13804149872	Liaoning Dongyii Real Estate Development Co. LTD		Min Yongli	0414-2106146
Yangjiazhangzi mining area central heating project	Yangjiazhangzi	Economic and trade development bureau of Yangjiazhangzi economic development zone		Chen Shaobin	0429-4421183 13050992068	Demolition and relocation team of shanty area rebuilding head office		Hao Sujie	0429-4414041

## Implementation Arrangement

In accordance with project implementation schedule, the project will be implemented in phases from April 2008 to December 2011. The schedule of land acquisition, demolition and resettlement interlinks with the implementation plan of each sub-project. Land acquisition, demolition and resettlement task will commence in February 2008 and end in February 2011.

The project construction and land acquisition, demolition and resettlement schedule for each sub-project are as follows: □1□Land acquisition and demolition should be finished one month before using land for construction activities. □2□Enough time should be allowed for land acquisition, demolition and resettlement before construction work starts.

According to the implementation schedule of land acquisition and house demolition, and resettlement preparation and practice, the general resettlement schedule plan of each subproject should be worked out. The practical implementation time may be adjusted for the general project arrangement. The schedule of land acquisition, demolition and construction shows in Table 0-2. And the practical time and contents show in Table 0-3.

Table 0-2 Schedule of land acquisition & demolition and construction

Subproject	City/Dist.	Construction schedule	Resettlement schedule
Yingkou Dashiqiao city zone centralize heating supply project	Dashiqiao	2008.4-2008.11	2008.2-2009.12
Haicheng Tiedong Yongan road northern centralize heating supply project	Haicheng	2008.4-2008.11	2008.2-2009.12
Benxi Nanfen centralize heating supply project	Nanfen	2008.4-2008.11	2008.7-2010.2
Benxi central heating project (No.2 phase)	Benxi city	2008.4-2010.10	2008.2-2011.2
Yangjiazhangzi mining area central heating project	Yangjiazhangzi	2008.4-2008.11	2008.2-2009.12

Table 0-3 Practical time and contents of land acquisition and house demolition in each subproject

No.	Resettlement content	Schedule arrangement					Progression
		Dashiqiao	Haicheng	Nanfen	Benxi	Yangjiazhangzi	
<b>1</b>	<b>Resettlement plan preparation phase</b>						
1.1	Establish PMO.	2006.8	2006.6	2006.8	2007.6	2007.6	
1.2	Implement detailed social economy investigation.	2006.8~2007.1	2006.8~2006.10	2006.8~2006.10	2007.10~2007.11	2007.6~2007.9	
1.4	Compile RAP.	2006.8~2007.8	2006.8~2007.8	2006.8~2007.8	2007.10~2007.11	2007.7~2007.10	Finished
<b>2</b>	<b>Information disclosure and public participation</b>						
2.1	Consult suggestions from relevant departments and Dps.	2006.8~2007.1	2006.8~2006.11	2006.8~2006.11	2007.10~2007.11	2007.6~2007.10	
2.2	Publish the RAP on internet or papers.	2007.8	2007.8	2007.8	2007.12	2007.10	
2.3	Publish the RAP on the web site of World Bank.	2007.10	2007.10	2007.10	2007.12	2007.10	
<b>3</b>	<b>Construction land use procedure</b>						
3.1	Land prejudication	2007.12	2007.12	2007.12	2007.12	2007.8	
3.2	Approval	2008.2	2008.2	2008.7	2008.2	2008.2	
<b>4</b>	<b>Implementation phase</b>						
4.1	Land acquisition announcement	2008. 2	2008.2	2008.7	2008.2	2007.5	

No.	Resettlement content	Schedule arrangement					Progression
		Dashiqiao	Haicheng	Nanfen	Benxi	Yangjiazhangzi	
4.2	Check physical quantity index	2008. 2	2008.2	2008.7	2008.2	2007.6-11	
4.3	Land acquisition arrangement	2008.2-3	2008.2-3	2008.7-8	2008.2-3	2007.6-11	
4.4	Compensation payment	2008.2-3	2008.2-3	2008.7-8	2008.2-3	2007.6-11	
4.5	Dps skill training	2008.3-5	2008.3-5	2008.7-10			
4.6	Income rehabilitation measures	2008.3-6	2008.3-6	2008.7-11			
<b>5</b>	<b>Monitoring and evaluation</b>						
5.1	Base line investigation	2008. 2	2008. 2	2008.7	2008. 2		
5.2	Internal supervision	2008.2~2009.12	2008.2~2009.12	2008.7~2010. 2	2008.2~2011. 2	2007.5~2009.12	
5.3	External monitoring and evaluation	2008.2~2009.12	2008.2~2009.12	2008.7~2010.2	2008.2~2011. 2	2008.8	



## Budget and Funding Arrangements

### Budget

The total budget includes permanent land acquisition compensation, compensation for urban residential houses, compensation for affected enterprises, compensation for illegal buildings, compensation for demolition of infrastructures and ground attachments, and the related taxes.

The total resettlement budget is RMB 19.0232 million, accounting for 1.79% of the project, including compensation for permanent collective land acquisition, RMB 6.5794 million accounting for 34.6%. Compensation for urban residential houses is RMB 4.0942 million, accounting for 21.5%. Compensation for affected enterprise is RMB 0.6696 million, accounting for 3.5%. Compensation for illegal building is RMB 0.278 million accounting for 1.5%. The taxes are RMB 5.2455 million accounting for 27.6%. Project budget is given in detail in Table 0-1.

Table 0-1 Project Resettlement Budget

Unit: 10<sup>4</sup> Yuan

No.	Type	Dashiqiao	Haicheng	Nanfen	Benxi	Yangjiazhangzi	Total	Proportion
1	Permanent land acquisition	230.16	106.85	320.93			657.94	34.6%
2	Demolition of urban residential houses				79.64	329.6	409.24	21.5%
3	Demolition of enterprises				66.96		66.96	3.5%
4	Demolition of illegal buildings				10.2	19.1	29.3	1.5%
5	Ground attachment and infrastructure			1.0			1.0	0.1%
1□2 subtotal		230.16	106.85	321.93	156.8	348.7	1164.44	61.2%
6	Programming and design fee	4.6	2.14	6.44	3.14	6.97	23.29	1.2%
7	Monitoring and supervision fee	6.9	6.0	6.44	5.00	10.46	34.8	1.8%
8	Management fee	1.2	3.21	9.66	4.7	10.46	29.23	1.5%
9	Skill training fee	4.6	1.0	1.61			7.21	0.4%
10	Basic preparation fee	23.02	10.69	32.19	16.96	37.66	120.52	6.3%
11	Tax	275.59	143.28	105.68			524.55	27.6%
6□11 subtotal		315.91	166.32	162.02	29.8	65.55	739.6	38.8%
Total		546.07	273.17	483.95	186.6	414.25	1904.04	100%

### Annual Investment Plan

According to the land acquisition and demolition schedule of each sub-project, annual capital utilization plan would be worked out, see inTable 0-2

Table 0-2 List of annual capital utilization plan

Unit: 10<sup>4</sup> RMB

Subproject	2008	Total
Yingkou Dashiqiao city zone central heating supply project	546.07	546.07
Haicheng Tiedong Yongan road northern central heating supply project	273.17	273.17
Benxi Nanfen central heating supply project	483.95	483.95
Benxi central heating project (No.2 phase)	186.6	186.6
Yangjiazhangzi mining area central heating project	414.25	414.25
Total	1904.04	1904.04
Ratio	100%	100%

### Capital Sources and Allocation

Liaoning province energy project financed by the World Bank belongs to urban infrastructure and, based on the project schedule, resettlement funds come from municipal government finance and domestic bank loan. See in Table 0-3.

According to the compensation policy and resettlement plan standard, each municipal project office allocates the compensation fund to demolishers or each municipal land administration bureau. And the latter pay it to the affected units or individuals based on the agreement.

Table 0-3 Resettlement Capital Sources

Project	Total investment □ RMB million □	including □ World Bank □ RMB million □	Resettlement fund □ RMB million □	Percentage of total investment	Capital sources
Yingkou Dashiqiao city zone central heating supply project	243.28	132.64	5.46	2.24%	Domestic counterpart funding and bank loan
Haicheng Tiedong Yongan road northern central heating supply project	170.86	84.4	2.73	1.60%	
Benxi Nanfen central heating supply project	82.03	39.29	4.84	5.90%	
Benxi central heating project (No.2 phase)	453.07	233.87	1.87	0.41%	
Yangjiazhangzi mining area central heating project	114.23	54.08	4.14	3.62%	
Total	1063.47	544.28	19.02	1.79%	

# Public Participation, Consultation and Grievance

## **Public Participation**

According to national, provincial and subproject municipal policies and regulations for land acquisition and demolition, the project should protect the legal rights of displaced persons and enterprises, and minimize the discontent and dispute. For the reconstruction property of the project, the displacement and resettlement policy and implementation rules, and the resettlement plan should be prepared well to successfully achieve the goal of resettlement. This project pays much attention to consultation with displaced persons (especially vulnerable group), and has listened carefully to their opinions on the resettlement policy and plan and its implementation. Public participation procedure sees in Table 0-1.

During the resettlement plan preparation, subproject land acquisition bureaus, implementation agencies and design organizations announced the project resettlement plan to affected persons in different ways and through many channels as given in Table 0-2. At the same time, they have heard the opinions of the displaced persons and consulted with them.

Table 0-1 Public Participation Procedure

City / District	Place	Participator	Method	Content and schedule				Main conclusion
				Physical quantity data acquisition	Socio-economic investigation and compensation and resettlement intent of DPs	Compensation and resettlement policies	Resettlement plan	
Dashiqiao	Dashiqiao development and reform committee/ village committee	Project office workers, affected villager representatives, land bureau	Interview, workshop	2006.8-2006.10	2006.8-2006.10	2007.01	2007.01	Dps are supportive to the projects, but should be paid good compensation to land acquisition and house demolition
Haicheng	Haicheng urban investment company/ village committee	Project office workers, affected villager representatives, land bureau	Interview, workshop	2006.8-2006.9	2006.8-2006.9	2006.11	2006.11	
Nanfen	Nanfen development and reform committee/ village	District leaders, project office workers, affected villager representatives, land bureau	Interview, workshop	2006.9-2006.10	2006.9-2006.10	2006.11	2006.11	
Benxi	Benxi Heating supplying parent company / Dabao community	The staff of Benxi Heating supplying parent company and Dabao community, some demolished household	Interview, workshop	2007.10-2007.11	2007.10-2007.11	2007.10-2007.11	2007.10-2007.11	
Yangjiazhangzi	Yangjiazhangzi planning and construction bureau / Lianhuashan community	Staff of demolition office and Lianhuashan community and some demolished households	Interview, workshop	2007.5-2007.7	2007.5-2007.7	2007.5-2007.7	2007.5-2007.7	

Table 0-2 Policy disclosure procedure

Files	Disclosure way and language	Disclosure Schedule					Disclosure place
		Dashiqiao	Haicheng	Nanfen	Benxi	Yangjiazhangzi	
Project introduction	Chinese, Broadcasting station of each municipality, newspaper	2006.09	2006.09	2006.10	2007.10	2007.5	
General introduction of project land acquisition	Chinese, broadcasting and TV station of each municipality, internet	2006.12	2006.12	2006.12	2007.10	2007.5	
Municipal policies of land acquisition and house demolition	Chinese, newspaper, municipal TV station, website of municipal government	2007.4	2007.4	2007.4	2007.10	2007.5	
Resettlement plan report disclosure	Chinese, municipal library, newspaper	2007.8	2007.8	2007.8	2007.12	2007.10	Project office
RAP booklet	Chinese, hand out to DPs	After approval by World Bank	After approval by World Bank	After approval by World Bank	After approval by World Bank	After approval by World Bank	Village committee/ community

## Grievances

The grievance mechanism was established during the project RAP compiling and implementation and implementation. Four phases of grievance are as follows□

- ⌚ Phrase 1: Displaced persons can appeal by verbal or paper way to village committee or project demolition implementation agency; if by verbal way; disposal and written record are needed. Village committee or project demolition implementation agency should solve it in 2 weeks;
- ⌚ Phrase 2□If displaced persons are still unsatisfied with the decision of phrase 1, they can appeal to municipal project management office (PMO) of the World Bank / municipal management institution; PMO / management institution should make decision in 2 weeks;
- ⌚ Phrase 3□If displaced persons are still unsatisfied with the decision of phrase 2, they can appeal to sub-project leading group or PMO, decisions and disposal should be made in 2 weeks;
- ⌚ Phrase 4□If displaced persons are still not satisfied with the decision of PMO or sub-project leading group, they can sue at law under civil procedures on any aspect of the resettlement after receiving a decision notice.

Displaced persons can prosecute any aspect about resettlement including the compensation standard. Displaced persons should be informed about their rights pertaining to grievances through meetings or other ways. Media will be used for propaganda and the advice and suggestions about resettlement will be arranged to inform terms for resettlement organizations at different levels to deal with. Appeal and grievance to every agency or organization is free and the reasonable cost from it will be expended from the contingency cost of project land acquisition & demolition offices.

## Monitoring and Evaluation Arrangement

To achieve successful implementation of the demolition and resettlement plan, land acquisition, demolition and resettlement monitoring and evaluation will be done according to World Bank OP4.12 Involuntary Resettlement and Guiding to Resettlement Monitoring and Evaluation of China Projects Financed by World Bank. Monitoring is divided into two parts: internal monitoring of resettlement organizations and external one. Monitoring and evaluation will begin in February 2007 and end in February 2011 and internal and external monitoring report will be submitted to the World Bank every half year.

The LDRC Foreign Capital Utilization Project Office will take charge of internal monitoring and the implementation of which will be responsible by each subproject leading team, project office, land administration bureau and house demolition bureaus to ensure that land acquisition and demolition will be undertaken according to the plan principles and schedules by the implementation agencies. The purpose of internal monitoring is to maintain the good responsibility of the resettlement agencies during implementation.

External independent monitoring and evaluation is the activity that the independent monitoring institute conducts in respect to land acquisition, demolition and resettlement. The scope of external monitoring includes: responsibility for resettlement network; land acquisition and demolition, implementation and compensation of resettlement; demolition and restoration of displaced persons, enterprises and shops, investigation and analysis of living standard of DPs. Independent monitoring occurs where the institution, which is independent of resettlement implementation agencies, checks and evaluates all the implementation activities of land acquisition, demolition and resettlement over a long-term and overall view. Independent monitoring institution, by following the project resettlement activity, will evaluate if resettlement undertakes national relevant laws or regulations about land acquisition, demolition and resettlement, if accords with World Bank OP4.12 Involuntary Resettlement; if living standard of displaced persons improves or at least keep the same level of pre-project. Monitoring institution will give suggestions to relevant bureaus about problems found in monitoring and help to solve these problems.

Monitoring and evaluation report schedule sees Table 0-1.

Table 0-1 Monitoring and Evaluation Reporting Schedule

Project name	City/District	Internal monitoring		External monitoring		
		M&E	reporting	M&E	reporting	Post-evaluation report
Yingkou Dashiqiao city zone central heating supply project	Dashiqiao	2008.2-2009.12	Once every three months	2008.2-2009.12	Once semiannually	One time
Haicheng Tiedong Yongan road northern central heating supply project	Haicheng	2008.2-2009.12	Once every three months	2008.2-2009.12	Once semiannually	One time
Benxi Nanfen central heating supply project	Nanfen	2008.7-2010.2	Once every three months	2008.7-2010.2	Once semiannually	One time
Benxi central heating supply project (No.2 phase)	Benxi	2008.2-2011. 2	Once every three months	2008.2-2011. 2	Once semiannually	One time
Yangjiazhangzi mining area central heating supply project	Yangjiazhangzi	2008.2-2009.12	Once every three months	2008.8	Once semiannually	One time

## Entitlement Matrix

Impact	City/Dist.	Affected area	Beneficiary	Compensation policy	Compensation standard
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Impact	City/Dist.	Affected area	Beneficiary	Compensation policy	Compensation standard
Permanent land acquisition	Dashiqiao	90.26mu rural collective land	2 villages, 100 households, 327 persons	20% land compensation fund would be paid to the rural collective committee to be used for the improvement of production and villagers' living standard;	Dry land: Land compensation: 15000yuan/mu Resettlement subsidy: 9000yuan/mu Young crop compensation: 1500yuan/mu
	Haicheng	41.9mu rural collective land	1 village, 4 households, 8 persons	80% land compensation fund and resettlement subsidy would be paid to the displaced agriculture persons;  The leaseholder could obtain the ground attachment compensation;  Dps could enjoy the investment income of land compensation;	Dry land: Land compensation: 15000yuan/mu Resettlement subsidy: 9000yuan/mu Young crop compensation: 1500yuan/mu
	Nanfen District, Benxi City	34.46mu collective land acquisition	1 village, 37 households, 93 persons	Dps could obtain training and employment chances to maintain their income;  Dps have the precedence to be employed by enterprises.	Plowland: Land compensation: 30000yuan/mu Resettlement subsidy: 60000yuan/mu Young crop compensation: 3000yuan/mu

Impact	City/Dist.	Affected area	Beneficiary	Compensation policy	Compensation standard
Urban residential house demolition	Benxi	573.71 m <sup>2</sup> , residential houses were demolished	1 community, 17 households, 51 people	<p>The compensation mode of this project is a combination of currency compensation and property right exchange.</p> <p>Currency compensation is complemented according to “Measures of House Demolition Administration of Benxi (Ben Zheng Fa [2002] No.86)” and property exchange is implemented according to ” Notice about demolition and resettlement compensation in the Alteration of Shanty Area(Ben zheng Fa [2005]No.52)” and at the principle of returning the same acreage as demolished. At the same time, as for the houses smaller than 40m2, subsidy will be given according to “Measures of House Demolition Administration of Benxi (Ben Zheng Fa [2002] No.86)” at the standard of 604.8yuan/m2, which is 56% of the relocation price 1080 yuan/m2 approved by price department.</p> <p>The relocation house will be given at the principal of giving the standard door type which is the same or a little bigger of the demolished houses. The standard door type is: the first class, 43m2, the second door type 60m2, the third door type 80m2, and permissible error is 2m2. No price difference settled between the same acreage of relocation house and demolished house. As for the increased acreage of the relocation house, the demolished will be give fund at the standard of 1080yuan/m2 and no preference of 50yuan/m2 for the low guarantee will be enjoyed. 1300 yuan/m2 will be given for the increased acreage which is not in line with regulations.</p>	<p>No.4 category bungalow: 1080 yauan/m2;  Price difference: 604.8 yuan/m2;  House removing subsidy: 200 yuan/household;  Loss of working time: 200 yuan/ household;  Temporary relocation subsidy: 5.00 yan/m2/month, and calculated according to reality</p>

Impact	City/Dist.	Affected area	Beneficiary	Compensation policy	Compensation standard
	Yangjia-zhangzi	4681.9 m <sup>2</sup> , residential houses were demolished	1 community, 149 households, 474 people	<p>The compensation mode of this project is a combination of currency compensation and property right exchange.</p> <p>And the demolished persons can choose one of the following:</p> <p>(1): Demolished the houses with property right: the former acreage below 36m<sup>2</sup>, can get the door type of 36m<sup>2</sup>; former 37-45m<sup>2</sup> can get the door type of 45m<sup>2</sup>; former 46-55m<sup>2</sup> can get 55m<sup>2</sup>, former over 56m<sup>2</sup> can get 65m<sup>2</sup>. No price difference will be settled as for the same acreage between the former house and relocation house, and the increased acreage will be given by the demolished at the standard of 620 yuan/m<sup>2</sup> and they will enjoy full property right. As for the crowded household ( two or three generations live in one house), the upper door type house can be get and the increased acreage will be given by the demolished at the standard of 620 yuan/m<sup>2</sup> and they will enjoy full property right. If the former acreage is bigger than 65m<sup>2</sup>, the bigger acreage will be currency compensation.</p> <p>(2) As for the demolished people need no relocation house, their demolished house will be compensated at the standard of 650 yuan/m<sup>2</sup> without discount (including land price). The demolished will find houses for themselves.</p>	<p>Compensation for houses: 650 yuan/m<sup>2</sup>;            Attachments;            Telephone: 200 yuan /set;            CATV: 380 yuan/ household;            Bounding wall: 50 yuan/ prolonged meter;            Storing shed: 50 yuan/m<sup>2</sup>;            Well: 200 yuan</p> <p>Other compensation:            House removing subsidy: 200 yuan/ household;            House renting household: 3.00 yuan/m<sup>2</sup>/month, calculated according to reality.</p>
Enterprise demolition	Benxi	Demolished 209 m <sup>2</sup> of one enterprise which covered land of 2109 m <sup>2</sup>		<p>Currency compensation or property right exchange will be implemented according to the regulations on house demolition of Benxi. Currency compensation for the non-residential houses must be implemented after the evaluation of legal real estate evaluation institute. The compensation fund is compensated is according to the evaluation which will be conducted according to the section, usage and structure. Property exchange must be implemented after the price difference settlement between the demolished house and relocation house. The specific location of the relocation houses will be decided by the municipal government's regulations on land use property and city building plan</p>	<p>The 4<sup>th</sup> category zone:            Land: 260 yuan/m<sup>2</sup>            House: 1100 yuan/m<sup>2</sup>            (including land price, FAR is calculated at 0.5)</p>

Impact	City/Dist.	Affected area	Beneficiary	Compensation policy	Compensation standard
Illegal building demolition	Benxi	339.4 m <sup>2</sup> , houses were demolished	1 community, 12 households, 34 people	<p>(1) According to the urban residential house demolition regulations of Benxi and considering the actual situation about the APs, project unit will give each household a subsidy at the standard of 6000 yuan/ household for illegal building, no matter the APs have the certificates or not , or relocated them with a No.1 category door type house at the standard of 1080 yuan/m<sup>2</sup> and which must be paid fully.</p> <p>(2) Provide them with small door type cheap rent houses with house rent less than 60 yuan/ month..</p> <p>(3) As for the vulnerable groups which can not afford house rent, the house will be provide to them for free.</p>	Compensation from project unit 6000 yuan/ household.
	Yangjia-zhangzi	1259.54 m <sup>2</sup> , residential houses were demolished	1 community, 12 households, 34 people	House framework compensation at 150 yuan/m <sup>2</sup> will be given. If the illegal houses is used for business uses, 171yuan per capita per month will be given a year according to the registration stuff number or the consecutive membership fee collective bill within half a year.	House compensation: 150yuan/m <sup>2</sup> ; Shutout compensation: 2052 yuan/ capita
Ground attachment		Property owner		Should be compensated by the project owner according to the replacement price.	

## **ANNEXES**

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# Annex 1 Land Acquisition and Resettlement Identification of Liaoning Medium Cities Infrastructure Project Urban Energy Component

## 1. Brief Introduction on Land Acquisition and House Demolition of Heat Network Construction of Fushun Power Plant Heat Unit (2\*300MW) Improvement Project

### 1. Project Construction

The project is a supporting one of Fushun power plant heat supply unit (2\*300MW) enlarging project. The contents of the project construction are: to build 30km heating supply pipe network, 63 heating exchanging stations, and 2 heating computation stations. The project chooses two present boiler rooms, one of Xindong Heat-supply Company and the other of Dongcheng Heat-supply Company. Large-scale regional heat stations will be built in the area. Two large-sized boiler rooms will be retained as peaking heat source to indirectly supply heat through power plant in winter. After completing new pipe network, directly-heat-supplied area will be increased by 5,574,600m<sup>2</sup>, and indirectly-heat-supplied area will be increased by 4,530,000m<sup>2</sup>. The project is planned to be finished in Sep, 2009, and formally put into use in November. The total investment is 208,752,200Yuan.

#### 1.1 Heat Supply Pipe Network Construction

According to the location of heat source and the service region of heating pipeline, pipeline network is composed of two main pipelines for high-temperature water and one pipeline for high-pressure steam from newly-rebuilt plant, respectively to heating station and steam users.

One high-temperature-water main pipeline (DN800mm) is paved along Gaoshan road, covering an area of 1.6571 million m<sup>2</sup> on both sides of the road to supply heat. 9.5 km heat supply pipeline (ditching length) is laid.

The other high-temperature-water main pipeline (DN1200mm) is constructed in three directions after crossing south from the power plant to the railway. One branch (DN900mm) indirectly supplies heat to Dongcheng Heat-supply Company (2 million m<sup>2</sup>), and directly to 2nd term new planning area in the east of the city (1.5 million m<sup>2</sup>), with 5km pipeline paved. The other branch (DN700mm) directly supplies heat to park area on the south of the river (2.0275 million m<sup>2</sup>) with 6 km pipeline paved. Another branch (DN800mm) stretches to the west of Fuxi River and supplies heat directly to the area on the east to Fuxi River (390 thousand m<sup>2</sup>) and indirectly to Xindong (2.53 million m<sup>2</sup>), with 2.5km pipeline paved.

High-pressure steam pipeline (DN500mm) is laid east along the Fushun city road to Fushun electro-ceramics factory after crossing the railway, supplying industrial steam 80ton per hour, with 2.5km heat supply pipeline paved.

## 1.2 Heating Exchanging Station Construction

Totally, 65 heating exchanging stations are built in the heat-supplying region. Details are shown in

Table .

## 2. Land Using

Investigation on land-using of the project began in Jan, 2006. Fushun Construction Commission, City Construction Bureau, City Planning Bureau, Land Administration Bureau and design institution did on-the-spot investigation on land using of the related heating exchanging station, pump station and pipeline. Land using are as follows:

### 2.1 Heat Source

In the project, a heat source plant is built to the east of Gaoshan road of Shuncheng district of Fushun with a total area of 236,500m<sup>2</sup>, the scale of which is a 2\*300MW hot-water boiler. House demolition and resettlement of the project has been finished in Oct, 2005.

Table 2-1 Heat source land use balance

Project name	Scale	Area of acquired land (m <sup>2</sup> )	Land property	Reason for no land acquisition and house demolition involved
Fushun Power Plant heat supply unit enlarging project (3 <sup>rd</sup> term)	2×300MW	23.65ha	State-owned and collective	House demolition and resettlement has been finished in Oct, 2005

### 2.2 Heating Exchanging Station and Heating Computation Station

Totally, 63 heating exchanging stations and 2 heating computation stations are built. 45<sup>4</sup> with an area of 8,710m<sup>2</sup>, heating exchanging stations are constructed by rebuilding former boiler rooms, the

<sup>4</sup> According to No.13 document (Fu Zheng Fa [2007]), the former boiler room will be demolished and relocated unified by the government. The project construction will be on the former boiler room location.

other 18, with an area of 4,190m<sup>2</sup>, ( in feasibility research stage the specific position of heating exchanging station can not be given, so the land property can not be defined)are built with city development construction, and the 2 heating computation stations are constructed by rebuilding the former boiler rooms of Xindong Heat-supplying Company and Dongcheng Heat-supplying Company, with an total area of 2,700m<sup>2</sup>.

Table 2-2 Land use balance of heating exchanging station

Heating exchanging station name(No.)	Scale (100 <sup>2</sup> m <sup>2</sup> )	Area □m <sup>2</sup> □	Land property	Resettlement effect
No.1 station	15	240	State-owned land	Rebuilt from the former boiler room
No.2 station	10	240	State-owned land	Rebuilt from the former boiler room
No.3 station	10	240	State-owned land	Rebuilt from the former boiler room
No.4 station	20	240	State-owned land	Rebuilt from the former boiler room
No.5 station	5	200	State-owned land	Rebuilt from the former boiler room
No.6 station	2	150	State-owned land	Rebuilt from the former boiler room
No.7 station	15	240	State-owned land	Rebuilt from the former boiler room
No.8 station	20	240	State-owned land	Rebuilt from the former boiler room
No.9 station	8	200	State-owned land	Rebuilt from the former boiler room
No.10 station	10	240	State-owned land	Rebuilt from the former boiler room
No.11 station	10	240	State-owned land	Rebuilt from the former boiler room
No.12 station	7	200	State-owned land	Rebuilt from the former boiler room
No.13 station	6	200	State-owned land	Rebuilt from the former boiler room
No.14 station	10	240	State-owned land	Rebuilt from the former boiler room
No.15 station	2	150	State-owned land	Rebuilt from the former boiler room
No.16 station	200	1200	State-owned land	The former Dongcheng Heat-supplying Company, indirect supplying
No.17 station	5	150	State-owned land	Rebuilt from the former boiler room
No.18 station	21.8	240	State-owned land	Rebuilt from the former boiler room
No.19 station	22.34	240	State-owned land	Rebuilt from the former boiler room
No.20 station	3.61	150	State-owned land	Rebuilt from the former boiler room
No.21 station	5.61	200	State-owned land	Rebuilt from the former boiler room
No.22 station	4.06	150	State-owned land	Rebuilt from the former boiler room
No.23 station	253.02	1500	State-owned land	The former Xindong Heat-supplying Company, indirect supplying
No.24 station	7	200	State-owned land	Rebuilt from the former boiler room



Heating exchanging station name(No.)	Scale (100 <sup>2</sup> m <sup>2</sup> )	Area □m <sup>2</sup> □	Land property	Resettlement effect
No.25 station	5	200	State-owned land	Rebuilt from the former boiler room
No.26 station	2.4	150	State-owned land	Rebuilt from the former boiler room
No.27 station	8	200	State-owned land	Rebuilt from the former boiler room
No.28 station	3.6	150	State-owned land	Rebuilt from the former boiler room
No.29 station	4	150	State-owned land	Rebuilt from the former boiler room
No.30 station	4.49	150	State-owned land	Rebuilt from the former boiler room
No.31 station	3.5	150	State-owned land	Rebuilt from the former boiler room
No.32 station	4.98	150	State-owned land	Rebuilt from the former boiler room
No.33 station	4.44	150	State-owned land	Rebuilt from the former boiler room
No.34 station	13.98	240	State-owned land	Rebuilt from the former boiler room
No.35 station	1.87	150	State-owned land	Rebuilt from the former boiler room
No.36 station	5.24	200	State-owned land	Rebuilt from the former boiler room
No.37 station	4.22	150	State-owned land	Rebuilt from the former boiler room
No.38 station	1.96	150	State-owned land	Rebuilt from the former boiler room
No.39 station	10	240	land property undefined	
No.40 station	4.12	150	land property undefined	
No.41 station	11.88	240	land property undefined	
No.42 station	10	240	state-owned land	Built on state-owned unused land
No.43 station	10	240	land property undefined	
No.44 station	7	200	land property undefined	
No.45 station	11.45	240	State-owned land	Built on state-owned unused land
No.46 station	2.13	150	State-owned land	Rebuilt from the former boiler room
No.47 station	3.79	150	State-owned land	Rebuilt from the former boiler room
No.48 station	4.33	150	State-owned land	Rebuilt from the former boiler room
No.49 station	6.28	200	State-owned land	Rebuilt from the former boiler room
No.50 station	5.56	200	State-owned land	Rebuilt from the former boiler room
No.51 station	33.74	300	State-owned land	Rebuilt from the former boiler room
No.52 station	4.18	150	State-owned land	Rebuilt from the former boiler room
No.53 station	10	240	land property undefined	
No.54 station	10	240	land property undefined	
No.55 station	10	240	land property undefined	
No.56-No.65 station	15	240	land property	

Heating exchanging station name(No.)	Scale (100 <sup>2</sup> m <sup>2</sup> )	Area □m <sup>2</sup> □	Land property	Resettlement effect
			undefined	

**Note: Resettlement effect of heating exchanging stations (land property undefined): acquired by the various methods of land property and use, See details in resettlement policy framework.**

### **2.3 Heat Supply Pipeline Construction**

Total length of the newly-built heating supply pipeline is 30km, whose diameter is from DN100 to DN1200mm. 8 roads need to be dug: respectively to be Gaoshan Road, Tonghua Road, Huichun Street, Changchun Street, Lueyang Street, Ankang Street, Liquan Road and Fengxiang Road. Project temporarily occupied land 79.23mu, which are all the pavements and non-driveway excavated for the pipeline laying. In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the project. Land acquisition and house demolition happened because of the plan adjustment will implemented according to the resettlement policy framework.

Table 2-3 Land use balance of heat supply pipeline

Pipeline section	Length(m)	diameter (mm)	Construction property	Construction location		Construction way	
				Street name	Width (m)	Construction site	Work width (m)
From Experimental Middle School to Ankang Street junction	600×2	DN300	Newly-built	Fengxiang Road	20	Non-driveway	2.25
Ankang Street to electro-ceramics factory	330×2	DN450	Newly-built	Fengxiang Road	20	Non-driveway	3
electro-ceramics factory to Lueyang Street	340×2	DN500	Newly-built	Fengxiang Road	20	Non-driveway	3
Park 3 <sup>rd</sup> Street junction to Ankang Street	247×2	DN250	Newly-built	Liquan Road	16	Non-driveway	2.18
Park Road to Liquan Road junction	410×2	DN200	Newly-built	Ankang Street	16	Non-driveway	2
Liquan Road junction to Fengxiang Road junction	145×2	DN350	Newly-built	Ankang Street	16	Non-driveway	2.5
Eastern road of Fengxiang Road to Lueyang Street	200×2	DN125	Newly-built	Lueyang Street	26	Non-driveway	1.65
Fengxiang Road eastern junction to the south of Changchun Bridge	220×2	DN600	Newly-built	Lueyang Street	26	Non-driveway	3.3
East from Fengxiang Road	490×2	DN200	Newly-built	East from Fengxiang Road	20	Non-driveway	2
Changchun Bridge south towards North	390×4	DN450	Newly-built	Changchun Street	30	Non-driveway	3
North of Changchun Bridge to Shuncheng Primary School	440×2	DN600	Newly-built	Changchun Street	30	Non-driveway	3.3
Shuncheng Primary School to Tonghua Road	1065×2	DN700	Newly-built	Changchun Street	30	Non-driveway	3.45
Changchun Road to Fushun University	240×2	DN150	Newly-built	Huichun Street	26	Non-driveway	1.65
Fushun University to Tonghua Road	225×2	DN200	Newly-built	Huichun Street	26	Non-driveway	2
Exit of power plant to Tonghua Road	230×2	DN1200	Newly-built	Huichun Street	26	Non-driveway	4.95
Automobile electrical machinery plant , west to the west side of Fuxi River	340×2	DN150	Newly-built	Tonghua Road	30	Non-driveway	1.65

Pipeline section	Length(m)	diameter (mm)	Construction property	Construction location		Construction way	
				Street name	Width (m)	Construction site	Work width (m)
The west side of Fuxi River, west to Wangqing Street junction	180×2	DN400	Newly-built	Tonghua Road	30	Non-driveway	2.7
Wangqing Street junction to Huichun Street junction	455×2	DN800	Newly-built	Tonghua Road	30	Non-driveway	3.6
Huichun Street junction to Changchun Street junction	450×2	DN1000	Newly-built	Tonghua Road	30	Non-driveway	4.35
Changchun Street junction to Hongguang industrial and trade Group	475×2	DN900	Newly-built	Tonghua Road	30	Non-driveway	4.05
Eastern section of Longcheng Street	1630×2	DN600	Newly-built	Tonghua Road	30	Non-driveway	3.3
Exit of power plant to Fushun electro-ceramics factory	2039.7×2	DN500	Newly-built	Tonghua Road	30	Non-driveway	3
Wabei shanty town to exit of power plant	640×2	DN200	Newly-built	Gaoshan Road	36	Pavement	2
Exit of power plant to the west of Ningyuan Street	2870×2	DN800	Newly-built	Gaoshan Road	36	Pavement	3.6
The west of Ningyuan Street to Food factory	1773×2 1152×2	DN300	Newly-built	Gaoshan Road	36	Pavement	2.25
Food factory to the west of General Bridge	533×2	DN250	Newly-built	Gaoshan Road	36	Pavement	2.18

### **3. Conclusions**

In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the projects of heating exchanging station rebuilt by former boiler house and pipeline network. As for the newly built heating exchanging stations, we can not guarantee there is no land acquisition or house demolition because of the undefined position and possible plan adjustment. If land acquisition or house demolition happened in reality which will be implement according to the WB resettlement policy of LMCIP urban energy component.

## **2. Brief Introduction on Land Acquisition and House Demolition of Ben Steel Heat-supplying Company Central Heating Project**

### **1. Project Brief Introduction**

The project mainly contains:

- 1、 Build new EIC heating pipe network, that is, rebuilding the pipeline network from first-level EIC compression pumping station to the main pipeline network in city zone (near Beidi Post office) and some lateral pipeline network.
- 2、 Rebuild carbonization heating pipeline network.
- 3、 Build a trunk line and some branch lines of flushing-residue-water heating supply pipeline network and rebuild some outdated pipeline network.
- 4、 Expand present first-level EIC heating pipeline network compression pumping station and build new heating pipeline network backwater pumping station.
- 5、 Build a flushing-residue-water treatment plant and a first-level compression pumping station; build a compression pumping station in Qianjin community.

The total investment of the project is 255.065 million Yuan, including a loan of 124.1193 million Yuan from Word Bank. The whole project will be finished in Nov, 2008. Both the owner and implementation institution are Ben Steel Heat-supplying Company.

### **2. Land Using**

Investigation work of the project began in Sep, 2006. According to the blueprint provided by design institution, Ben Steel Heat-supplying Company and Resettlement Plan designing team did on-the-spot investigation on land-using of flushing-residue-water treatment plant, pumping station and pipeline. Land-using of the project is as follows:

## 2.1 Pumping Station

In the project, 2 compression pumping stations, a high-temperature flushing-residue water treatment plant, and a first-level pumping station are newly built, and a first-level pumping station is rebuilt. Totally, 23.28mu land is occupied, including 0.6mu for rebuilding first-level EIC heating pipeline network compression pumping station, 21.71mu reserved land of Ben Steel plant area for building flushing-residue water treatment plant and first-level pumping station, and 0.97mu for building 2 compression pumping stations (in feasibility research stage the specific position of pumping station can not be given, so the land property can not be defined)

. Table 2-1 Land use balance of pumping stations

Pumping station name	Occupied area□m <sup>2</sup> □	Construction time	Land property	Resettlement effect
EIC heating pipeline network backwater compression pumping station	252	2007	Land property undefined	
First-level EIC pumping station	400	2007	State-owned land	Rebuilt on the former plant location
Flushing-residue water treatment plant and first-level compression pumping station	14471	2007	Land property undefined	Newly built, on the reserved land of the plant area
Compression pumping station in Qianjin community	396	2007	State-owned unused land	

**Note: Resettlement effect of pumping stations (land property undefined): acquired by the various methods of land property and use, See details in resettlement policy framework.**

## 2.2 Heat Supplying Pipeline

The length of the newly-built pipeline network is 47.9km, temporarily acquiring land 81.55mu, which are all the pavements and non-driveway excavated for the pipeline laying. In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and

deems that no house demolition and land acquisition is involved in the project. Land acquisition and house demolition happened because of the plan adjustment will implemented according to the resettlement policy framework.

Table 2-2 Land use balance of heat-supplying pipeline

Length (m)	diameter (mm)	Construction property  □ build/rebuilt □	Construction location		Construction way		Remark
			Street name	Width (m)	Construction site □ pavement/driveway /non-driveway □	Work width (m)	
2040	1000	Build	Plant area Road	18	Pavement	4.83	
1020	1000	Build	South Binhe Road	32	Pavement	4.83	
560	1000	Build	Zhengong Road	32	Pavement	4.83	
220	1000	Build	Caiqiao Street	18	Drive way	4.83	
300	1000	Build	Zhanqian Road	24	Pavement	4.83	
170	1000	Build	Planned road	24	Pavement	4.83	Presently, 9m asphalt road
500	450	Build	North Jiefang Road	32	Pavement	4.04	
160	900	Build	North Jiefang Road	32	Pavement	4.63	
430	900	Build	People's Road	24	Pavement	4.63	
260	800	Build	People's Road	24	Pavement	4.43	
330	500	Build	Xincheng Road	18	Drive way	4.07	
260	800	Build	Dongming Road	24	Pavement	4.43	
1000	900	Rebuild	Plant area Road	18	Pavement	4.63	



			Construction location		Construction way		
250	900	Rebuild	South Jiefang Road	32	Pavement	4.63	
150	700	Rebuild	South Jiefang Road	32	Pavement	4.23	
820	400	Rebuild	South Jiefang Road	32	Pavement	3.96	
270	450	Rebuild	Detai Street	18	Drive way	4.04	
180	600	Rebuild	Detai Street	18	Drive way	4.13	
240	450	Rebuild	Fuqiang Street	18	Drive way	4.04	
110	350	Rebuild	Guangyu Road	24	Pavement	3.73	
270	350	Rebuild	Xinhe Street	18	Drive way	3.73	
510	1000	Build	Plant area Road	18	Pavement	5.23	
200	1000	Build	Yongde Street	24	Pavement	5.23	
230	300	Build	Yongde Street	24	Pavement	3.62	
150	300	Build	Guangyu Road	24	Pavement	3.62	
180	300	Build	Changyu Street	18	Drive way	3.62	
870	1000	Build	Qianjin Road	24	Pavement	4.83	
110	900	Build	Qianjin Road	24	Pavement	4.63	
200	450	Build	Planned road	24	Pavement	4.04	Presently, 7m sand-stone road

### 3. Conclusion

In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot

investigation and survey and deems that no house demolition and land acquisition is involved in the projects high-temperature flushing-residue water treatment plants and first-level pumping station, first-level EIC pumping station and the pipeline network. As for the newly built pumping stations, we can not guarantee there is no land acquisition or house demolition because of the undefined position and possible plan adjustment. If land acquisition or house demolition happened in reality which will be implement according to the WB resettlement policy of LMCIP urban energy component.

### **3. Brief Introduction on Land Acquisition and House Demolition of Yingkou Economic Development Zone Central Heating Project**

#### **1. Project Brief Introduction**

The project contains 84.59km first-level hot-water pipeline network, part of the second-level pipeline network, 1 set of relay pumping station and 77 heating exchanging stations in the planned roads north to Wanghai Road and in the overall-programmed area of the city, west to Shenda motorway and south to Huanghe Road. Investment of the project is total to be 370.438 million Yuan, including a loan of 181.063 million Yuan from Word Bank. The whole project will be completed in the end of 2008. Construction unit is Yingkou economic development zone government.

#### **2. Land Using**

Investigation on land-using of the project began in Sep, 2006. According to the blueprint provided by design institution, Real Estate Bureau, Land Administration Bureau, demolition office, City Planning Department, and Resettlement Plan designing team, organized by development and reform bureau of Yingkou economic development zone government, did on-the-spot investigation on land using of the related heat source, heating exchanging station, pump station and pipeline. Land using are as follows:

##### **2.1 Heat Source**

Heat source of the project is at the former location of Huaneng Yingkou power plant. The former workshop will be made full use of and the old electrical machines will be rebuilt for supplying heat to the urban area. No land acquisition and house demolition will be involved.

##### **2.2 Heating Exchanging Station and Pumping Station**

66 large-scale heating exchanging stations, 1 set of relay pumping station and 11 building heat exchanging stations are planned to be built, with a total area of 23.7mu. Among them, 29<sup>5</sup> heating exchanging stations are rebuilt at the former location of boiler rooms, with an area of 9.52mu; 37 heating exchanging stations and 1 set of relay pumping station are newly built, with an area of 14.01mu; 11 building heat exchanging stations are newly built, with a total area of 0.17mu. (In feasibility research period the specific position of heating exchanging station and pumping station can not be given, so the land property can not be defined)

Table 2-1 Land use balance of heating exchanging station

No.	Scale □100 <sup>2</sup> m <sup>2</sup> □	Area □m <sup>2</sup> □	Constructio n time	Land property	Resettlement effect
1	30.13	216	2008	State-owned land	Rebuilt from the former boiler rooms
2	34.63	300	2008	State-owned land	Rebuilt from the former boiler rooms
3	21.08	216	2008	Land property undefined	
4	20.03	216	2008	State-owned land	Rebuilt from the former boiler rooms
5	14.3	216	2008	State-owned land	Rebuilt from the former boiler rooms
6	21.26	216	2008	State-owned land	Rebuilt from the former boiler rooms
7	32.1	300	2008	State-owned land	Rebuilt from the former boiler rooms
8	19.5	216	2008	State-owned land	Rebuilt from the former boiler rooms
9	21.59	216	2008	State-owned land	Rebuilt from the former boiler rooms
10	9.8	216	2008	State-owned land	Rebuilt from the former boiler rooms
11	19.2	216	2008	State-owned land	Rebuilt from the former boiler rooms
12	18.6	216	2008	State-owned land	Rebuilt from the former boiler rooms
13	11.38	216	2008	State-owned land	Rebuilt from the former boiler rooms
14	4.08	160	2008	State-owned land	Rebuilt from the former boiler rooms
15	5.04	160	2008	Land property undefined	
16	17.98	216	2008	State-owned land	Rebuilt from the former boiler rooms
17	10.98	216	2008	State-owned land	Rebuilt from the former boiler rooms

<sup>5</sup> According to Ying Kai Guan No.20 order, the former boiler rooms will be demolished and relocated by government. The project construction will be on the location of the former boiler rooms (unused land).

18	13.8	216	2008	State-owned land	Rebuilt from the former boiler rooms
19	15.24	216	2008	State-owned land	Rebuilt from the former boiler rooms
20	22.52	216	2008	State-owned land	Rebuilt from the former boiler rooms
21	22.21	216	2008	Land property undefined	
22	24.29	216	2008	State-owned land	Rebuilt from the former boiler rooms
23	8.66	160	2008	State-owned land	Rebuilt from the former boiler rooms
24	9.56	160	2008	State-owned land	Rebuilt from the former boiler rooms
25	7.98	300	2008	State-owned land	Rebuilt from the former boiler rooms
26	13.3	216	2008	State-owned land	Rebuilt from the former boiler rooms
27	13.9	216	2008	State-owned land	Rebuilt from the former boiler rooms
28	14.4	216	2008	State-owned land	Rebuilt from the former boiler rooms
29	14.4	216	2008	State-owned land	Rebuilt from the former boiler rooms
30	15.81	216	2008	State-owned land	Rebuilt from the former boiler rooms
31	16.32	216	2008	State-owned land	Rebuilt from the former boiler rooms
32	13.6	216	2008	State-owned land	Rebuilt from the former boiler rooms
33	5.44	160	2009	Land property undefined	
34	17.24	216	2009	Land property undefined	
35	17.54	216	2009	Land property undefined	
36	10.39	216	2009	Land property undefined	
37	29.69	300	2009	Land property undefined	
38	8.88	300	2009	Land property undefined	
39	11.09	300	2009	Land property undefined	
40	3.17	300	2009	Land property undefined	
41	3.9	216	2009	Land property undefined	
42	12.05	160	2009	Land property undefined	
43	8.68	160	2009	Land property undefined	
44	26	300	2009	Land property undefined	
45	13.79	300	2009	Land property undefined	
46	7.9	300	2009	Land property undefined	
47	8.98	300	2010	Land property undefined	
48	13.09	300	2010	Land property undefined	
49	11.28	300	2010	Land property undefined	

50	15.99	300	2010	Land property undefined	
51	19.13	300	2010	Land property undefined	
52	8.04	300	2010	Land property undefined	
53	12.2	300	2010	Land property undefined	
54	7.74	300	2010	Land property undefined	
55	16.91	216	2010	Land property undefined	
56	7.83	300	2010	Land property undefined	
57	19.9	216	2010	Land property undefined	
58	13.4	216	2010	Land property undefined	
59	10.16	216	2010	Land property undefined	
60	12.76	216	2010	Land property undefined	
61	14.83	300	2010	Land property undefined	
62	19.05	216	2010	Land property undefined	
63	23.17	300	2010	Land property undefined	
64	26.66	216	2010	Land property undefined	
65	27.51	216	2010	Land property undefined	
66	29.62	216	2010	Land property undefined	
Relay pumping station		60	2008	Land property undefined	
11 building heating exchanging station	10.72	110			
Total	1042.4	23.7mu			

**Note: Resettlement effect of heating exchanging stations (land property undefined): acquired by the various methods of land property and use, See details in resettlement policy framework.**

### 2.3 Heat Supplying Pipeline

84.59km first-level pipeline network and part of second-level pipeline network will be newly built, temporarily acquiring land 205mu for digging for the pipeline project. In the period of feasibility research, according to the blueprint provided by design institution, Resettlement Plan designing team did on-the-spot investigation and survey. Investigation result shows that no land acquisition and house demolition is involved. Land acquisition and

house demolition happened because of the plan adjustment will implemented according to the resettlement policy framework.

Table 2-2 Land use balance of heat supplying pipeline

Length (m)	diameter(mm)	Construction in property <input type="checkbox"/> build/rebuild <input type="checkbox"/>	Construction location		Construction way		Remark
			Street name	Width (m)	Construction site <input type="checkbox"/> pavement/driveway/non-driveway <input type="checkbox"/>	Work width (m)	
3340	1200	Build	Tianshan Street	50	Pavement	6.02	
1720	1200	Build	Shugang Road	32	Pavement	6.02	
1090	1200	Build	Huashan Street	70	Pavement	6.02	
2260	1000	Build	Huashan Street	70	Pavement	5.51	
1300	900	Build	Huashan Street	70	Pavement	5.26	
1630	800	Build	Huashan Street	70	Pavement	5.01	
1060	700	Build	Huashan Street	70	Pavement	4.76	
800	600	Build	Huashan Street	70	Pavement	4.51	
420	500	Build	Huashan Street	70	Pavement	4.26	
2400	350	Build	Huashan Street	70	Pavement	3.73	
430	300	Build	Huashan Street	70	Pavement	3.62	
410	350	Build	Huanghe Road	40	Pavement	3.73	
410	300	Build	Huanghe Road	40	Pavement	3.62	
400	250	Build	Huanghe Road	40	Pavement	3.41	
790	450	Build	Changjiang Road	50	Pavement	4.04	
950	350	Build	Changjiang Road	50	Pavement	3.73	
730	300	Build	Changjiang Road	50	Pavement	3.62	
630	250	Build	Changjiang	50	Pavement	3.41	

			Construction location		Construction way		
			Road				
180	350	Build	Minjiang Road	22	Pavement	3.73	
1080	300	Build	Minjiang Road	22	Pavement	3.62	
230	450	Build	Taohuatan Road	32	Pavement	4.04	
880	400	Build	Taohuatan Road	32	Pavement	3.96	
1380	300	Build	Taohuatan Road	32	Pavement	3.62	
870	300	Build	Hudiequan Road	50	Pavement	3.62	
480	250	Build	Hudiequan Road	50	Pavement	3.41	
160	400	Build	Honghai Road	50	Pavement	3.96	
180	300	Build	Honghai Road	50	Pavement	3.62	
460	250	Build	Honghai Road	50	Pavement	3.41	
140	350	Build	Moon Street	78	Pavement	3.73	
860	300	Build	Moon Street	78	Pavement	3.62	
160	450	Build	Wanghai Road	60	Pavement	4.04	
540	400	Build	Wanghai Road	60	Pavement	3.96	
950	250	Build	Wanghai Road	60	Pavement	3.41	
200	350	Build	Planned road	50	Pavement	3.73	Presently, 9m sand-stone road
910	300	Build	Planned road	50	Pavement	3.62	

### 3. Conclusion

In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the projects of heat source, heating exchanging station rebuilt by former boiler house and pipeline network. As for the newly built heating exchanging stations, we can not guarantee there is no land acquisition or house demolition because of the undefined position and possible plan adjustment. If land acquisition or house demolition happened in reality which will be implement according to the WB resettlement policy of LMCIP urban energy component.



## **4. Brief introduction on Land Acquisition and House Demolition of Liaoyang Gongchangling Urban Area Central Heat Supply Project**

### **1. Project Introduction**

In this heat supply project, the total length of the heat supply pipe network is 37.56km and there are 16 newly-built heating exchanging stations, 1 intermediate heat exchanging station, 1 relay pump station and 1 newly-built 3×58MW water heater house with heating area of 3136500 m<sup>2</sup>. The total investment of this project is 178.1302 million yuan, among which

85.481 million yuan is from WB loan. This project is to be finished by Nov, 2008. Project construction unit is Gongchangling District government.

## 2. Project Land Using

Surveys on the land using in this project began in Aug, 2006. According to the blueprints provided by design institute, filed surveys on land using of heat sources, heat exchanging station, pump station and pipe network were conducted by the staff from Land Resource Bureau, Demolition Office, planning department and resettlement action plan compiling team organized by Gongchangling District House Property and Realty Management Bureau. The result is as follows:

### 2.1 Heat Source

There is 1 newly-built heat source plant in this project, which is a 3×58MW water heater with total occupied land acreage of 61613.25 m<sup>2</sup>. The location of heat source plant is on the site of deserted former funeral parlor of Gongchangling district, so the using land was transferred by the government for free.

Table 2-1 Heat source land use balance

Project name	Scale	Land occupation(m <sup>2</sup> )	Land using nature	Reason why land acquisition and house demolition not involved
Gongchangling Heat Power Plant	3×58MW	61613.25	State-own land	Former funeral parlor was deserted, the using land was transferred by the government for free

### 2.2 Heat Exchanging Station and Pump Station

16 heat exchanging stations, intermediate heat exchanging station and 1 relay pump station are planned to be built with land using of 6.63 mu, among which, 5.64 mu of the former water heater house plant site will be used for the construction of 13 heat exchanging

stations<sup>6</sup> and 1 intermediate heat exchanging station, 0.99 mu land will be used for the 3 newly-built heat exchanging stations and 1 relay pump station. (In feasibility research period the specific position of heating exchanging station and pumping station can not be given, so the land property can not be defined)

Table 2-2 Heat exchanging and pump station land use balance

No.	Scale □10 <sup>4</sup> m <sup>2</sup> □	Land occupation □m <sup>2</sup> □	Construction time	Land use nature	Resettlement effect
01	9.70	172.8	2008	Land property undefined	
02	16.42	216	2008	State-own land	Rebuilding the former water heater house
03	12.00	172.8	2008	State-own land	Rebuilding the former water heater house
04	17.00	216	2008	State-own land	Rebuilding the former water heater house
05	20.00	216	2008	State-own land	Rebuilding the former water heater house
06	36.70	345.6	2008	State-own land	Rebuilding the former water heater house
07	17.00	216	2008	Land property undefined	
08	28.92	345.6	2008	State-own land	Rebuilding the former water heater house
09	14.33	216	2008	State-own land	Rebuilding the former water heater house
10	22.95	345.6	2008	State-own land	Rebuilding the former water heater house
11	22.58	345.6	2008	State-own land	Rebuilding the former water heater house
12	20.24	216	2008	State-own land	Rebuilding the former water heater house
13	19.60	216	2008	State-own land	Rebuilding the former water heater house
14	20.00	216	2008	Land property undefined	
15	23.50	345.6	2008	State-own land	Rebuilding the former water heater house
16	12.71	216	2008	State-own land	Rebuilding the former water heater house
Intermediate heat exchanging station		345.6	2008	State-own land	Rebuilding the former water heater house
Relay pump station		60	2008	land property undefined	
Total	313.65	6.63Mu			

**Note: Resettlement effect of heating exchanging stations and pumping stations (land property undefined): aquired by the various methods of land property and use. See details in resettlement policy framework.**

<sup>6</sup> According to the document Liao Gong Zheng Fa[2007] N0.20, all the former water heater houses should be demolished and resettled by the government. The construction of this project will conduct on the site of former water heater house plant (vacant land)

## 2.3 Heat Supply Pipe Network

The newly-built first level heat pipe network in this project is 37.56km with a temporary land occupation of 95.49 mu which are all the pavements and non-driveway excavated for the pipeline laying. In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the project. Land acquisition and house demolition happened because of the plan adjustment will implemented according to the resettlement policy framework.

Table 2-3 Heat supply pipe network land use balance

Length (m)	Caliber size (mm)	Construction nature (newly-built/reconstruction and improvement)	construction site		Construction mode	
			Land section	Breadth (m)	construction site (pedestrian path/locomotive path/non-locomotive path)	Working breadth (m)
1000	400	Newly-built	Nanhuan Road	32	Pedestrian path	3.96
980	450	Newly-built	Nanhuan Road	32	Pedestrian path	4.04
1780	250	Newly-built	Suan Street	32	Pedestrian path	3.41
730	400	Newly-built	Suan Street	32	Pedestrian path	3.96
610	350	Newly-built	Suan Street	32	Pedestrian path	3.73
1720	300	Newly-built	Suan Street	32	Pedestrian path	3.62
760	250	Newly-built	Quanyan Street	18	Pedestrian path	3.41
1480	200	Newly-built	Anping Road	32	Pedestrian path	3.23
570	300	Newly-built	Anping Road	32	Pedestrian path	3.62
240	350	Newly-built	Anping Road	32	Pedestrian path	3.73
660	400	Newly-built	Laodong Street	18	Locomotive path	3.96
450	500	Newly-built	Laodong Street	18	Locomotive path	4.26
210	600	Newly-built	Nanyuan Road	18	Locomotive path	4.61
670	250	Newly-built	Leifeng Road	24	Pedestrian path	3.41
1410	200	Newly-built	Antu Road	32	Pedestrian path	3.23
120	250	Newly-built	Antu Road	32	Pedestrian path	3.41
4200	300	Newly-built	Antu Road	32	Pedestrian path	3.62

## 3. Conclusion

In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the projects of heating exchanging station rebuilt by former boiler house and pipeline network. As for the

newly built heating exchanging stations and pumping stations, we can not guarantee there is no land acquisition or house demolition because of the undefined position and possible plan adjustment. If land acquisition or house demolition happened in reality which will be implement according to the WB resettlement policy of LMCIP urban energy component.

## **5. Brief introduction on Land Acquisition and House Demolition of North Yingkou Central Heat Supply Project of Huaneng Thermoelectricity Project First Period**

### **1. Project introduction**

In this heat supplying project, the total length of the heating supply pipe network is 49.1km and there are 83 newly-built heating exchanging stations, 1 heat net control center and 1 relay pump station. Heat source is provided by Huaneng Yingkou thermoelectricity Plant and the ultimate heat supplying acreage is 9596200 m<sup>2</sup>. The total investment of this project is 417.4881 million yuan, among which 190 million yuan (about 25 million dollars) is from WB loan. This project is to be finished by Nov, 2011. Project construction unit is Yingkou Heating Company.

### **2. Project Land Using**

Survey on the land using in this project began in June, 2007. According to the blueprints provided by design institute, filed surveys on land using of heat exchanging stations, heat net control center, relay pump station and heat supplying pipe network was conducted by the staff from Yingkou Heating Company as well as resettlement plan compiling team. The result is as follows:

#### **2.1 Heat Source**

Heat source of this project is provided by Huaneng Yingkou Thermoelectricity Plant. The feasibility report of the first period Huaneng Yingkou Thermal Power Plant project was finished by the Northeast Institute of China Electric Power Engineering Consultant Group and passed the checkup of Liaoning Province Reform and Development Committee. The site of Huaneng Yingkou Thermoelectricity Plant is located in the south end of south offshore industrial base (former offshore tidal flat). The newly-built 2×350MW heating unit occupied totally 101.5 ha land. Construction preparation planned to begin in Aug, 2007 and put into production in Nov, 2009. The site selection opinions on the Huaneng Yingkou Thermoelectricity Plant building thermal power project in Liaoning province offshore

industrial base was proved by Yingkou City Planning and Building Committee. See details in the document “Ying Gui Jian Fa [2007] No.64”.

Table 2-1 Heat source land use balance

Project name	Scale	Land occupation(ha)	Land using nature	Reason why not compiling RAP
First period of Huaneng Yingkou Thermolectricity Plant	2×350MW	101.5	State-own land	the using land was transferred by the government for free

## 2.2 Heat Exchanging Station and Pump Station

83 heat exchanging stations, heat net control center and 1 relay pump station are planned to be built with land using of 21.79 mu, among which, 19.94 mu of the former water heater plant site will be used for the construction of 80 heat exchanging stations<sup>7</sup>, 1.85 mu will be used for the 3 newly-built heat exchanging stations, heat net control center and 1 relay pump station. (In feasibility research period the specific position of heating exchanging station and pumping station can not be given, so the land property can not be defined)

Table 2-2 Heat exchanging and pump station land use balance

No .	Heat exchanging station name	Scale (10 <sup>4</sup> m <sup>2</sup> )	Land occupation (m <sup>2</sup> )	Constr uction time	Land use nature	Resettlement effect
01	Yajule	10.0	96	2009	State-own land	Utilizing the old one
02	Former No.5 station	12.48	291	2009	State-own land	Utilizing the old one
03	Former No.10 station	10.97	68	2009	State-own land	Utilizing the old one
04	Fushan garden	8.10	124	2009	State-own land	Utilizing the old one
05	Former No.6 station	10.02	226	2009	State-own land	Utilizing the old one
06	Bohaimingzhu	21.0	240	2009	State-own land	Utilizing the old one
07	Former No.8 station	9.0	96	2009	State-own land	Utilizing the old one
08	Highway company	9.0	205	2009	State-own land	Rebuilding the former water heater house
09	Lotus station	26.36	136.5	2009	State-own land	Utilizing the old one
10	Chengtai station	11.0	118	2009	State-own land	Utilizing the old one
11	Xingjian	5.0	260	2009	State-own land	Rebuilding the former water heater house
12	Former No.13 station	6.55	104	2009	State-own land	Utilizing the old one

<sup>7</sup> According to the document Ying Zheng Fa[2007] N0.65, all the former water heater houses should be demolished and resettled by the government. The construction of this project will conduct on the site of former water heater house plant (vacant land)

13	Qinjian station	14.31	204	2009	State-own land	Utilizing the old one
14	Yijian lamp factory	8.76	81	2009	State-own land	Utilizing the old one
15	Dongxin subdistrict	9.3	320	2009	State-own land	Utilizing the old one
16	Former No.12 station	4.82	58	2009	State-own land	Utilizing the old one
17	Former No.16 station	9.76	147	2009	State-own land	Utilizing the old one
18	Shuangyang subdistrict	9.4	78	2009	State-own land	Utilizing the old one
19	Taihe villa	8.2	49	2009	State-own land	Utilizing the old one
20	Taihe subdistrict	8.0	66	2009	State-own land	Utilizing the old one
21	Chengfuli	3.0	85	2009	State-own land	Utilizing the old one
22	Xianghe station	6.0	315	2009	State-own land	Rebuilding the former water heater house
23	Hongjingjiayuan	8.5	113	2009	State-own land	Utilizing the old one
24	Youai station	7.23	109	2009	State-own land	Utilizing the old one
25	Donghauyuan	10.3	128	2009	State-own land	Utilizing the old one
26	Former No.14 station	4.60	104	2009	State-own land	Utilizing the old one
27	Gelinxinju	23.75	225	2009	State-own land	Utilizing the old one
28	Meijinghuafu	18.3	108	2009	State-own land	Utilizing the old one
29	Tractor fittings station	8.4	98	2009	State-own land	Utilizing the old one
30	Vegetables company	8.0	126	2009	State-own land	Utilizing the old one
31	No.1 planning station	10.2	216	2009	Land property undefined	
32	Zhaoyang subdistrict	8.0	96	2009	State-own land	Utilizing the old one
33	Former No.26 station	8.23	103	2009	State-own land	Utilizing the old one
34	Aotaigelin	13.0	140	2009	State-own land	Utilizing the old one
35	Former No.18 station	13.1	177	2009	State-own land	Utilizing the old one
36	Zhuxinyuan	10.0	82.71	2009	State-own land	Utilizing the old one
37	Former No.21 station	1.48	120	2009	State-own land	Utilizing the old one
38	Former No.19station	6.52	238	2009	State-own land	Utilizing the old one
39	Guifeng subdistrict	15.0	356	2009	State-own land	Rebuilding the former water heater house
40	Shuiyulanting	20	180	2009	State-own land	Utilizing the old one
41	NO.2 planning station	11.0	216	2009	Land property undefined	
42	No.3 planning station	15.0	300	2009	Land property undefined	
43	Badaju station	2.3	168	2009	State-own land	Utilizing the old one



44	Xiaoyujiayuan	15.0	128	2009	State-own land	Utilizing the old one
45	Xiaoyuyuan	7.0	112	2009	State-own land	Utilizing the old one
46	Changsheng	20.0	328	2009	State-own land	Rebuilding the former water heater house
47	Medical school station	14.47	96	2009	State-own land	Utilizing the old one
48	Former No.17 station	19.33	329	2009	State-own land	Utilizing the old one
49	Former No.20 station	19.31	158	2009	State-own land	Utilizing the old one
50	Hongyu station	15.0	128	2009	State-own land	Utilizing the old one
51	No.17 middle school station	11.0	216	2009	State-own land	Utilizing the old one
52	Fuanmingju station	9.0	60	2009	State-own land	Utilizing the old one
53	Jiankang station	9.86	282	2009	State-own land	Rebuilding the former water heater house
54	prosecutorial office station	15.0	76	2009	State-own land	Utilizing the old one
55	Shuixiehuan	9.0	108	2009	State-own land	Utilizing the old one
56	Riverside station	11.0	186	2009	State-own land	Utilizing the old one
57	Yucai station	13.76	120	2009	State-own land	Utilizing the old one
58	Shengping	18.3	368	2009	State-own land	Rebuilding the former water heater house
59	Lengyansi	19.3	320	2009	State-own land	Rebuilding the former water heater house
60	Shashi station	4.5	72	2009	State-own land	Utilizing the old one
61	Huian subdistrict	5.0	260	2009	State-own land	Rebuilding the former water heater house
62	yijingguojin	13.88	120	2009	State-own land	Utilizing the old one
63	Dasushe	9.0	158	2009	State-own land	Utilizing the old one
64	Zhongtianyipin	14.0	146	2009	State-own land	Utilizing the old one
65	Xinhualou	5.0	226	2009	State-own land	Utilizing the old one
66	Ankang	7.0	265	2009	State-own land	Rebuilding the former water heater house
67	Ruifengyuan	8.0	49	2009	State-own land	Utilizing the old one
68	Xuyuan station	5.0	86	2009	State-own land	Utilizing the old one
69	Judicial administration bureau station	5.0	63	2009	State-own land	Utilizing the old one
70	Ganxiusuo	4.0	120	2009	State-own land	Utilizing the old one
71	Kangning	9.0	158	2009	State-own land	Utilizing the old one
72	Guidu gardern	12.0	160	2009	State-own land	Rebuilding the former water heater house
73	Former No.24 station	13.65	173	2009	State-own land	Utilizing the old one
74	Dongfangtingyuan	7.1	107	2009	State-own land	Utilizing the old one
75	Nanguan	15.22	210	2009	State-own land	Rebuilding the former water heater house
76-	Nanhu No.1	20	180	2009	State-own	Rebuilding the former

1					land	water heater house
76-2	Nanhu No.2	25	200	2009	State-own land	Rebuilding the former water heater house
76-3	Nanhu No.3	25	200	2009	State-own land	Rebuilding the former water heater house
77-1	Xinhua No.1	20	180	2009	State-own land	Rebuilding the former water heater house
77-1	Xinhua No.2	26	200	2009	State-own land	Rebuilding the former water heater house
78	Huayuan	13.0	362	2009	State-own land	Rebuilding the former water heater house
79	Huaannanhu	11.0	320	2009	State-own land	Rebuilding the former water heater house
80	Zhongtianyipin	14.0	218	2009	State-own land	Rebuilding the former water heater house
81	Heat network control center and relay pump station		500		Land property undefined	
Total		959.62	21.79 Mu			

**Note: Resettlement effect of heating exchanging stations and pumping stations (land property undefined): acquired by the various methods of land property and use. See details in resettlement policy framework.**

## 2.3 Heat Supply Pipe Network

The newly-built first level heat pipe network in this project is 49.1km with a temporary land occupation of 186.75 mu which are all the pavements excavated for the pipeline laying. In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the project. Land acquisition and house demolition happened because of the plan adjustment will implemented according to the resettlement policy framework.

Table 2-3 Heat supply pipe network land use balance

Length (m)	Caliber size (mm)	Construction nature (newly-built/reconstruction and improvement)	construction site		Construction mode	
			construction site (pedestrian path/locomotive path/non-locomotive path)	Working breadth (m)	construction site (pedestrian path/locomotive path/non-locomotive path)	Working breadth (m)
4770	1000	Newly-built	Xinmin Street	40	Pedestrian path	4.7
1160	1000	Newly-built	East section of Xingang street	40	Pedestrian path	4.7
1500	1000	Newly-built	Yuxiu Road	20	Pedestrian path	4.7
3250	1000	Newly-built	Bowen Road	70	Pedestrian path	4.7
270	1000	Newly-built	Shifu Road	50	Pedestrian path	4.7
1560	800	Newly-built	Shifu Road	50	Pedestrian path	4.2
1070	700	Newly-built	Shifu Road	50	Pedestrian path	3.8

			construction site		Construction mode	
470	600	Newly-built	Shifu Road	50	Pedestrian path	3.4
1620	800	Newly-built	Donghai Street	40	Pedestrian path	4.2
1550	800	Newly-built	Guanghua Road	32	Pedestrian path	4.2
440	700	Newly-built	Guanghua Road	32	Pedestrian path	3.8
400	600	Newly-built	Guanghua Road	32	Pedestrian path	3.4
230	450	Newly-built	Guanghua Road	24	Pedestrian path	3.2
1060	400	Newly-built	Guanghua Road	32	Pedestrian path	3.1
280	300	Newly-built	Guanghua Road	24	Pedestrian path	2.9
830	200	Newly-built	North Nanhu Street	46	Pedestrian path	2.5
520	600	Newly-built	Jinniushan street	50	Pedestrian path	3.4
320	400	Newly-built	Jinniushan street	50	Pedestrian path	3.1
310	350	Newly-built	Jinniushan street	50	Pedestrian path	3
520	250	Newly-built	Jinniushan street	50	Pedestrian path	2.7
330	200	Newly-built	Jinniushan street	50	Pedestrian path	2.5
450	350	Newly-built	Central street	20	Pedestrian path	3
320	300	Newly-built	Central street	20	Pedestrian path	2.9
750	250	Newly-built	Central street	20	Pedestrian path	2.7
160	200	Newly-built	Central street	20	Pedestrian path	2.5
150	150	Newly-built	Central street	20	Pedestrian path	2.4
310	600	Newly-built	Bohai Street	80	Pedestrian path	3.4
330	500	Newly-built	Bohai Street	80	Pedestrian path	3.2
320	300	Newly-built	Bohai Street	80	Pedestrian path	2.9
640	200	Newly-built	Bohai Street	80	Pedestrian path	2.5
430	500	Newly-built	North Taihe Street	40	Pedestrian path	3.2
540	450	Newly-built	North Taihe Street	40	Pedestrian path	3.2
420	400	Newly-built	North Taihe Street	40	Pedestrian path	3.1
280	500	Newly-built	New street	32	Pedestrian path	3.2
280	450	Newly-built	New street	32	Pedestrian path	3.2
600	400	Newly-built	New street	32	Pedestrian path	3.1
220	300	Newly-built	New street	32	Pedestrian path	2.9
200	250	Newly-built	New street	32	Pedestrian path	2.7
250	400	Newly-built	Xinhua Road	24	Pedestrian path	3.1
230	300	Newly-built	Xinhua Road	24	Pedestrian path	2.9
220	250	Newly-built	Xinhua Road	24	Pedestrian path	2.7
390	200	Newly-built	Xinhua Road	24	Pedestrian path	2.5
400	250	Newly-built	Xuefu Road	32	Pedestrian path	2.7
770	200	Newly-built	Xuefu Road	32	Pedestrian path	2.5
280	400	Newly-built	Panpan Road	40	Pedestrian path	3.1
160	350	Newly-built	Panpan Road	40	Pedestrian path	3
640	200	Newly-built	Panpan Road	40	Pedestrian path	2.5
370	200	Newly-built	Taihe Road	24	Pedestrian path	2.5
190	400	Newly-built	Gongyuanliu road	32	Pedestrian path	3.1
270	350	Newly-built	Gongyuanliu road	32	Pedestrian path	3
230	300	Newly-built	Gongyuanliu road	32	Pedestrian path	2.9
300	200	Newly-built	Gongyuanliu road	32	Pedestrian path	2.5

### **3. Conclusion**

In the period of feasibility research, according to the designing blueprint provided by design institution, Resettlement Plan designing team does on-the-spot investigation and survey and deems that no house demolition and land acquisition is involved in the projects of heat source, heating exchanging station rebuilt by former boiler house and pipeline network. As for the newly built heating exchanging stations and pumping stations, we can not guarantee there is no land acquisition or house demolition because of the undefined position and possible plan adjustment. If land acquisition or house demolition happened in reality which will be implement according to the WB resettlement policy of LMCIP urban energy component.

## **6. Brief Introduction on Land Acquisition and House Demolition of Yingkou Gas Facility Reconstruction and Improvement Project**

### **1. Project Introduction**

The contents of Yingkou gas facility reconstruction and improvement project include: complete repair of gas resource plant and newly-built dry model storage tank, rebuilding of pipe network system, building fuel gas intellectual management system.

- a) The former 2 wet model storage tanks of Yingkou gas company, one is 50000 m<sup>3</sup> and the other is 20000 m<sup>3</sup>, will need complete repayment. A new 50000 m<sup>3</sup> dry model storage tank will be built on the vacant land in the gas resource plant of Gas Company.
- b) Building a set of intellectual gas management system
- c) Rebuilding of pipe network, including renovating or newly build intermediate pressure A pipes 14.3km, about 34.5km pipe network renovating of intermediate and

low pressure, renovating 30 intermediate pressure valve well and adding 40 low pressure valve well as well as setting up cathodic protection facilities.

Construction period: From 2007 to 2009.

Total investment: 77.297 million yuan, among which 40.397 million yuan is from the enterprise itself and 36.9 million yuan form loan with constructing period interest 1.6277 million yuan.

Property owner is Yingkou Gas Company.

The project construction unit is Yingkou Gas facility Reconstruction and improvement Project Management Office, which will be responsible for the construction of this project.

## 2. Project Land Using

① Storage tank land using: Both the tanks need complete repair and newly-built tank are all inside gas resource plant area of the company, so land using belongs to enterprise planning land use. No land acquisition is needed and no house demolition involved.

Table 2-1 Newly-built storage tank land use balance

Project name	Scale	Land occupation(m <sup>2</sup> )	Land using nature	Reason why land acquisition and house demolition not involved
Newly-built storage tank	50000 m <sup>3</sup>	1600	State-own land	In the enterprise area

②Fuel gas intellectual management system: Transmitting by network or wireless transmission. The basic facilities are all in the former buildings and facility rooms. No house demolition is involved.

③Renovation of pipe network: Yingkou Gas Company has long transmission pipes 45km, municipal network and courtyard pipes 240 km in total. This project will renovate 57.8km of which.

The project has two parts: The first part includes 9km long transmission pipes of Tianzhuangtai which located in Panjin city on the north of Liao River south bank, including 1km of one using and one standby pipe across the bottom of the river and 8km of former slitless steel tube along the river bank and in the north part. The pipes were located alongside the roads and channels with no agricultural field and buildings occupied. The pipes across

agricultural filed located on the south of the river was renovated in 2002, so they are not involved in this project. The second part is the about 48.8km pipes in municipal pipe network. Those pipes were all laid along the road shoulders according due regulations on city planning with safe distance apart buildings and fixtures. As a result, no demolition is involved in the renovating of those 57.8km pipes. See road sections of pipe renovating in the follow table.

Table 2-2 Land use balance of pipe network system construction

Pipe segment	Length (m)	Caliber size (mm)	Tubes and pipes	Construction nature (newly-built/reconstruction and improvement)	construction site		Construction mode	
					Land section	Breadth (m)	construction site (pedestrian path/locomotive path/non-locomotive path)	Working breadth (m)
1-2	1000	250	Steel tube	Reconstruction and improvement	Liao River	/	Across Liao River	
2-3	8000	250	Steel tube	Reconstruction and improvement		/	Filed	2.00
3-4	2803	200	Steel tube	Newly-built	Zhuanglin Road	/	Hanhe Bridge	2.00
4-5	8000	200	Steel tube	Reconstruction and improvement	Zhuanglin road	32	Pedestrian path	2.00
5-6	3503	200	Steel tube		Qinghua Street	50	Pedestrian path	2.00
6-7	12650	400	Cast iron tube	Reconstruction and improvement			Urban highway road shoulder	2.00
7-8	6040	300	Cast iron tube	Reconstruction and improvement	Xinxing Street	32	Pedestrian path	2.00
8-9	800	300	Cast iron tube	Reconstruction and improvement	Dongxin Road	32	Locomotive path	2.00
9-10	300	300	Cast iron tube	Reconstruction and improvement	Tiyu Road	32	Pedestrian path	2.00
10-11	760	200	Cast iron tube	Reconstruction and improvement	Jinniushan Street	50	Pedestrian path	2.00
11-12	4000	200	Cast iron tube	Reconstruction and improvement	Liaoh Street	32	Pedestrian path	2.00
12-13	3000	200	Cast iron tube	Reconstruction and improvement	Xuefu Road	32	Pedestrian path	2.00
13-14	600	200	Cast iron tube	Reconstruction and improvement	Gongyuan Road	32	Pedestrian path	2.00

Note: 1. Pipe segment 1-2 and 2-3 in the above table belong to the long transmission pipes

2. Besides above mentioned, about 6400m low pressure gas pipe network  $\square$ DN150 $\square$  need reconstruction and improvement in some communities.

### **3. Conclusion**

At feasibility study phase, field survey was conducted by the staff of resettlement action plan according to the blueprint provided by design institute and they arrived at a conclusion that there is no land acquisition and house demolition in this project.

# Annex 2 Fushun Power Plant 2×300MW Heating Unit Improvement Project Heating Net Construction Project Resettlement Review

## 1 General Introduction

### 1.1 The Origin of Fushun Power Plant Improvement

Fushun Power Plant is an old plant with heating mainly and linked with electricity, established in 1908, which located in the west of Xinfu district, Fushun, close to Shenfu railway line and mining area electrification railway in the north, business central area in the east, and close to Fushun No.1 Petroleum Plant in the west, and away from Fushun West Open Mine 300m in the south. By the end of 1991, Fushun Power Plant has 8 sets with 262MW capacity. Because of the increasing of heating area, ratified by Nation Development and Reform Committee in 1991, from 1991 to 2002, heating technique was improved twice, with improvement capacity 2×200MW. After improvement, Power Plant has two heating units with 200MW and one unit with 25MW, 425MW together. The system can provide 321t/h steam for industry, heating load 1450GJ/h for municipal heating and meet the heating need for 5.44 million m<sup>2</sup> in Fushun.

With the accelerating of municipal construction, industry, agriculture and municipal construction are developing fast in Fushun. Heat and electricity load increased year by year. Especially with the improvement of old area and expansion of new area, municipal heating area is increasing, heating load rise quickly. Contradiction of heat and electricity supply and demand is outstanding day by day. Dispersed heating boilers increase year by year. Heating capacity of Fushun Power Plant can not meet the increasing need for heat in Fushun. There are only 2 re-heating units with 200MW in Fushun Power Plant, no reserve heating resource, heating reliability is weak. So according to Fushun municipal heating plan and Liaoning power demand actual situation, and the policy” government encourage to develop union production of heat and electricity, and improve utilization of heating unit”, Fushun Power Plant bring up the tentative plan to improve 2X300M heating unit and plan Fushun Power Plant heating unit improvement project. Because Fushun Power Plant locates in downtown area, the space is



narrow, no expanding area. Improvement project choose new location in Gaoshan Road area, new plant and old plant are managed together.

## **1.2 Relevant Project Identification.**

This World Bank financed project includes heating pipe net and heating exchanging station projects of heating unit improvement project. The heat produced by heating improvement project is sent to users through heating pipe net and heating exchanging stations. So the heating pipe net and heating exchanging station project is a sub project of Fushun Power Plant heating unit improvement project. The project of Power Plant heating unit improvement project obtained license of construction land plan on 6 April, 2005, Shuncheng district government is responsible for dismantling and resettling buildings on it. Shuncheng government carried on investigation, statistic and registering from the beginning of 2005, and begin to resettlement from the beginning of October, 2005. Dismantling and compensation were finished in December, 2005. World Bank distinguished Liaoning resource project from 19 to 27 October, 2005. So resettlement was carried on before distinguishing by World Bank. So resettlement of Power Plant heating unit improvement project is excluded by heating pipe net and heating exchanging station project, regard as relative project.

## **.1.3 General Introduction of Power Plant Improvement Project**

Power Plant locates in west of Excavator Plant, west section of Gaoshan road, Shuncheng district, Fushun, east latitude 123°56'51" and north longitude 41°53'33", total area 0.2365 million m<sup>2</sup>.the project was started at the beginning of 2006 and two units will be operated in December, 2008..

This Power Plant will be built with 2×300MW capacity and installing with two homeland-made burning coal heating units. Further improvement is considered in general plan. In plant area, from north to south, outside distribution area, main building area, coal transporting and unloading area, cooling tower area, chemical water disposal facilities area, middle water depth disposal facilities area, circular coal yard area, sewage disposal facilities area, lighting fire oil tank area, boiler house area, comprehensive offices area, dormitories, dining hall, bathroom and other assistant facilities..

Total investment of Power Plant heating unit improvement project is 2.677 billion Yuan. 10.1046 million m<sup>2</sup> heating area will be added for five areas, those are Gaoshan road area, park

area and Changchun street area, Hedong and Fuxi river area, Fushun Excavator Plant area, the second part of Chengdong area and so on, and provide industrial heating load 80 ton/hour for Fushun Electric Porcelain Plant.

78 dispersal small boiler houses are dismantled in heating area and 65 heating exchanging stations are built, which reduce dust 3000 tons/year and sulfur dioxide 3500 tons/year. Noise in heating exchanging station will meet the standard “municipal area noise standard” □GB3096—82□after improvement.

## 2 Resettlement Influence

Fushun Power Plant heating unit improvement project demolished 267 households, with 17,153 m<sup>2</sup> influenced 760 persons; demolished 6 enterprises with area of 2836.23 m<sup>2</sup>, influenced 62 persons; demolished 3 shops with area of 415.87 m<sup>2</sup>, influenced 10 persons.

Project occupied 354.57 acreages totally (236,500m<sup>2</sup>), among which occupied national land 116.72mu, commandeered collective land 237.85 mu (residential land 75.26 mu, construction land 31.33 mu and vegetable plot 131.26 mu).

Table 2-1 Power Plant heating unit improvement project resettlement influence

Demolishing type		Demolishing amount	
Residential house	Demolishing household	House area<45m <sup>2</sup>	123
		House area>45m <sup>2</sup>	144
		subtotal	267
	Demolishing area □m <sup>2</sup> □	House area <45m <sup>2</sup>	4453.83
		House area >45m <sup>2</sup>	12699.17
		subtotal	17153
	Affected population	House area <45m <sup>2</sup>	348
House area >45m <sup>2</sup>		412	
subtotal		760	
Enterprises	Demolishing household	6	
	Demolishing area □m <sup>2</sup> □	2836.23	
	Affected population	62	
Shops	Demolishing household	3	
	Demolishing area □m <sup>2</sup> □	415.87	
	Affected population	10	
Collective land	Residential land □acreage □	75.26	
	Construction land □acreage □	31.33	
	Vegetable land □acreage □	131.26	

## 3 Resettlement Policies and Compensation Rates

Demolition of Fushun Power Plant heating unit improvement project was implemented by Fushun Shuncheng district government, comply with Fushun shanty town improvement policies. The compensation rates for shanty town improvement project comply with national, provincial and city policies, which is consistent with WB policy, that is, at a replacement cost. Compensation for residential houses is according to house structure. And enterprises and shops are compensated by united price despite house structure.

Table 3-1 Compensation rate for residential house

Type		Compensation rate
House	Reinforced concrete	/
	Brick and concrete	1150 Yuan /m <sup>2</sup>
	Brick and wood	1100 Yuan /m <sup>2</sup>
	Simple structure	1100 Yuan /m <sup>2</sup>
Subsidy for displacement	Cash compensation	200 Yuan /household
	Property rights transfer	300 Yuan /household
Temporary subsidy	Below 40 m <sup>2</sup>	120 Yuan /month
	40-60 m <sup>2</sup>	150Yuan /month
	Above 60 m <sup>2</sup>	180Yuan /month
	Illegal house	60Yuan /month

Table 3-2 Compensation rate for enterprises

Type		Compensation rate
House	Reinforced concrete	1250 Yuan/m <sup>2</sup>
	Brick and concrete	1250 Yuan /m <sup>2</sup>
	Brick and wood	1250 Yuan /m <sup>2</sup>
	Simple structure	1250 Yuan /m <sup>2</sup>
Subsidy for displacement		Goods transportation and handing cost appraisal
compensation for production stop lost	State land	Construction area of demolished house×RMB 10 Yuan × transition period
	Collective land	Monthly wages×transition period

Table 3-3 Compensation rate for shops

Type		compensation rate
House	Reinforced concrete	1350 Yuan /m <sup>2</sup>
	Brick and concrete	1350 Yuan /m <sup>2</sup>
	Brick and wood	1350 Yuan /m <sup>2</sup>
	Simple structure	1350 Yuan /m <sup>2</sup>
Subsidy for displacement		300 Yuan /household
compensation for production stop lost	State land	Construction area of demolished house×RMB 20 Yuan × transition period
	Collective land	Monthly wages×transition period

Table 3-4 Compensation rates for collective land

Type		Compensation rate	Remarks
Collective land □acreage□	Residential land	22,000 Yuan /acreage	Output per acreage 2000 Yuan *11times Among which □compensation for land 7times□compensation for resettlement 4 times
	Construction land	22,000 Yuan /acreage	Output per acreage 2000 Yuan *11times Among which □compensation for land 7times□compensation for resettlement 4 times
	Vegetable plot	72,000 Yuan /acreage	Output per acreage 4000 Yuan *18times Among which □compensation for land 10 times□compensation for resettlement 8 times

## 4 Resettlement Plan

Resettlement of Fushun Power Plant heating unit improvement project started in October, 2005 and finished in December, 2005. The transition period is 12 months. In transition period, some residents can find temporary houses by themselves; others find temporary houses by the help of Shanty Town Improvement Headquarter, street administration department and communities. Residents moved in new houses in October, 2006. Demolishment of this project is a part of Shuncheng district shanty town improvement project. Resettlement area is new residential area for Gaoshan road shanty town improvement project.

### 4.1 Resettlement of Residents

Residents can choose relocation houses or cash compensation freely. Fushun municipal government defines Gaoshan Road as a landscape road with high construction standard. 267 households choose relocation houses. According to residents' wish, 155 households were resettled in Gaoshan road Hygiene School community, 112 households were resettled in Gaoshan road Wajian community. Affected residents all moved in new houses in October, 2006.

Affected 123 households have small house occupying 46.07% of the total affected households. Shuncheng district government followed affected residents' wishes, if they can't pay extra funds for more area they can apply for relocation houses of 35 m<sup>2</sup> or with shanty town improvement headquarter help to find storied houses/single-storey houses of below 45 m<sup>2</sup> located outside of relocation areas with the same condition as demolished houses.

#### **4.2 Resettlement of Enterprises**

Enterprises can choose cash compensation or property right transfer. Affected 6 enterprises were whole demolished and choose cash compensation, compensation rates is 4,541,083 Yuan totally. After obtaining compensation, they restore construction nearby or in other places or change products by use of compensation rates and arranged workers by their own. Three enterprises rebuilt nearby, one enterprise rebuilt in other place and two enterprises transferred shop. From shanty town improvement headquarter we know, workers in affected enterprises were arranged well, up to now no one complain.

#### **4.3 Resettlement of Shops**

Shops choose cash compensation. After obtaining cash, they can choose other business locations by their own or get priority to choose relocation houses for business. Shanty town improvements headquarter and communities provide help for business restore. Affected 3 shops all buy new business house in central area of city and continued their business.

#### **4.4 Resettlement of Collective Land**

Collective lands were compensated by cash. Compensation rates for collective cultivated land and residential land were distributed to residents by Shuncheng district Hebei township Oujia village representative assembly. Compensation rates for construction land were distributed by village government according to land utilizing contract. After discussion, village

committee reached a conclusion that all the compensation fund of collective farm land, curtilage and construction land should be paid fully to the affected persons by the end of March, 2006.

#### **4.5 Typical Household Interview**

**Wanfa Qu:** more than ten years ago, Wanfa Qu moved in Gaoshan road from Ganjingzi farm of Qingyuan County. Living condition was very poor. Five persons lived in a 30m<sup>2</sup> house. In low and humid small house, hot in summer and cold in winter. Under so bad condition, young persons can't endure; let alone children and sick persons. His wife Rongying Qiu has been ill for several years, which is sensitive to cold and hot, his granddaughter has no place to study. Wangfa Qu is working in a public bathroom; his son is working in a repair shop and daughter in law work as waitress in a restaurant. It is difficult to buy new storey, they are waiting for movement. Granddaughter admires persons living in storey and always asks her grandma "when we can live in storey?" Wanfa Qu always says now:" it is so well now live in new storey. Clean, warm and happy." three generations moved in 55m<sup>2</sup>storey, granddaughter has her own place to study. Relatives from Qingyuan County always visit them sine they moved in new house. As his wife said, good living condition is good medicine for her.

**Tingcai Huo:** retired worker from Security Instrument Plant. His wife is a farmer. They has 0.8 acreage vegetable plot. He has lived in shanty town for 20 years with only 35 m<sup>2</sup> house. In rainy day, a heavy rain outside and light rain inside. Land is higher than indoor; there is always water in courtyard. People here look forward to living in storey. Now their wishes are realized. Tingcai Huo is satisfied with resettlement and obtained compensation for land. He chose his birthday to move in new house and invited yangko team. He said he was a member of Yangko team originally and didn't dance for a long time. He likes literature and art, and intends to help community to be engaged in popular entertainment, organizing yangko team and calisthenics team, to make people here happy and construct harmonious community. .

**Private enterprise Oujia Wax Plant:** the factory director, Yuhai Bi. Six years age, three persons in his family established Wax Plant in 93.5m<sup>2</sup> single-storey house. Because the plant locations was near railway, and far away from road and houses were so poor, the plant operated badly and only maintained daily life. Now, Yuhai Bi has the chance to resettle his house. He utilized 15 ten thousand compensation rate to exchange a business shop in Wajian community and restore his wax business. Because of the change of location and environment,

his business operates well. Yuhai Bi firmly believes: people's living quality will be better and better, won't be worse. He intends to renovate equipment and enlarge business when conditions better.

**Shop, Yushan Zhao:** original shop was 92.8 m<sup>2</sup>. He started his wheat food in 1997 and changed as small restaurant in 2001, operated badly. In 2003, he rent a 125 m<sup>2</sup> shop in Hedong to burn foods operated well. In the end of 2005, he used compensation rate more than 10 ten thousand to buy the shop he rent; now he is operating his own shop. He is very satisfied with current condition. When talking about his burning business, he always talks a lot.

## 5 Resettlement Effect

In resettlement of Fushun Power Plant heating unit improvement project, paid more attention to consult with affected residents. All resettlement agreements were signed after approval. So resettlement proceeded very smoothly and achieved good effect.

Through interview with affected residents, we know that affected residents are very satisfied with relocation area environment and houses. Shanty town improvement project improved residents, shops and enterprises living condition. Especially for resettlement residents, they are going to move in new and big area houses with heating, power supply, water supply, drainage etc. from old and damage houses. .

In resettlement project, Shuncheng district government complied with relative resettlement policies reflecting the guideline of people is the important and settled many practical problems.

From 1999 to 2006, Fushun government has implemented some traffic reconstruction project in urban area by World Bank financed project. Fushun residents know World Bank demolition policies well and governments have experiences for resettlement. Shuncheng government invited persons who participated in World Bank financed project resettlement to explain resettlement policies. Shuncheng district government paid more attention to public participation and followed affected residents' wish during resettlement and gained great public support.

Resettlement implementation process has been completed with the help of Fushun, Shuncheng district government, resettlement organization has high efficiency, and all the problems were solved on time. No people complain.



