

Resettlement Planning Document

Resettlement Plan
Document Stage: Revised
Project Number: 36362
March 2007

People's Republic of China: Liaoning Environmental Improvement Project

Prepared by Project Management Office of Liaoning Environment Improvement and Fuxin
CBM/CMM Development and Utilization Company

The revised resettlement plan is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

Confirmation Letter

It's confirmed that all the commitments in the updated RP are prepared, accepted and promised by the Foreign Capital Utilization Project Office (the PMO) under the Liaoning Provincial Development and Reform Commission and the PMO will implement the resettlement following this Document.

Representative's signature of Liaoning Provincial PMO:



2007-1-28

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
APs	Affected Persons
AAOV	Average Annual Output Value (over the last three years' harvest)
CBM	Coalbed Methane
CMM	Coal Mine Methane
CO ₂	Carbon Dioxide
DMS	Detailed Measurement Survey
FCCDUC	Fuxin CBM/CMM Development and Utilization Co.
GHGs	Greenhouse Gas
GoC	Government of China
HH	Household
LA	Land Acquisition
LPG	Liquid Petroleum Gas
PPTA	Project Preparatory Technical Assistance
PRC	People's Republic of China
RP	Resettlement Plan
RRP	Report and Recommendation to the President
TGs	Township Governments
TVEs	Township and Village Enterprises
VCs	Village Committees

UNITS

<i>mu</i>	area; 15 <i>mu</i> = 1 ha
ha	area; 1 ha = 15 <i>mu</i>

CONTENTS

1. INTRODUCTION	1
1.1 Objective and Scope of the Project.....	1
1.2 Descriptions of the Project	6
1.3 Total Project Investment	8
2. IMPACTS OF LAND ACQUISITION AND RESETTLEMENT	10
2.1 Fuxin CBM/CMM Development Project	10
2.2 Benxi Gas Pipeline Improvement Project	10
2.3 Benxi Central Heating Supply Project.....	11
2.4 Benxi Huaxin Heating Supply Project	11
2.5 Liaoyang Central Heating Supply Project.....	11
2.6 Yingkou Central Heating Supply Project.....	12
2.7 Fuxin Heating Supply Project.....	12
Appendix A: Resettlement Plan for Fuxin CBM/CMM Development Project.....	14
A1. INTRODUCTION	14
A1.1 Project Description	14
A1.2 Socio-Economic Benefits of the Project.....	14
A1.3 Land Acquisition Impacts.....	15
A1.4 Preparation of updated RP.....	16
A2. SOCIO-ECONOMIC PROFILE OF AFFECTED AREA AND PERSONS	16
A2.1. Socio-Economic Profile of Affected Area	16
A2.2. Socio-Economic Profile of Affected Villages	19
A2.3. Socio-Economic Profile of Affected Persons	19
A3. OVERVIEW OF PROJECT IMPACTS.....	22
A3.1 Types of Losses.....	22
A3.2 Impact Identification.....	22
A4. LEGAL AND POLICY FRAMEWORK.....	27
A4.1 Chinese Laws and Regulations.....	27
A4.2 ADB's Involuntary Resettlement Policy.....	29
A4.3 Objectives and Principles of Land Acquisition	29
A4.4 Principles of Compensation.....	30
A4.5 Special Considerations.....	32
A4.6 Entitlement Matrix.....	32
A4.7 Gaps Between ADB and Chinese Policies.....	34
A5. RESETTLEMENT AND INCOME RESTORATION PLAN	34
A5.1 Livelihood Rehabilitation Plan	34
A5.2 Gender Considerations	35
A6. PUBLIC INFORMATION, CONSULTATION AND PARTICIPATION	35
A7. INSTITUTIONAL ARRANGEMENT	37
A8. GRIEVANCE PROCEDURES	39

A9. LAND ACQUISITION AND RESETTLEMENT BUDGET	39
A9.1 Costs and Budget	39
A9.2 Flow of Funds	40
A9.3 Administrative Costs	40
A10. SUPERVISION AND EVALUATION	40
A10.1 Monitoring, Evaluation Objectives and Requirements	40
A10.2 M&E Indicators and Mechanisms	41
A11. IMPLEMENTATION SCHEDULE	42
Appendix A-1: Summary of Interview with Leaders of Village and Township and Representatives of Villagers Affected by Land Acquisition	43
Appendix A-2: Summary of Socio-Economic Survey of Affected Village	45
Appendix A-3: Summary of Interview with Leaders of Village Representatives of Villagers Affected by Land Acquisition	46
Appendix B-1: Resettlement Plan Booklet	48

FIGURES

Figure 1-1 Map of Liaoning Province	5
Figure A1 Layout of Fuxin CBM Development Project	18

TABLES

Table 1-1 Scope of the Project	2
Table 1-2 Project Cost Estimates (US\$ million)	9
Table 2-1 Land acquisition impact comparison	10
Table 2-2 Impact of Temporary Land Occupation	11
Table 2-3 Impact of Temporary Land Occupation	11
Table 2-4 Potential Resettlement Impacts of the Project	12
Table 2-5 Summary of Land Acquisition Impacts of All Project Components	13
Table A1.1 Land acquisition impact information	15
Table A1.2 Land acquisition information	16
Table A2.1 Affected villages' information	19
Table A2.2 Education Level of Surveyed Population	20
Table A2.3 Family Size	20
Table A2.4 Length of Residence	20
Table A2.5 Preferred Options of Compensation for Farmland	21
Table A2.6 Willingness to New Technology Training	21
Table A2.7 Knowledge about the Project and Information Source	22
Table A2.8 Views and Perceptions of APs on the Project	22
Table A3.1 General information of affected households by land acquisition	24
Table A3.2 Permanent Land Acquisition by Fuxin CBM Development Project	26
Table A4.1 Summary of Eligibility Criteria	30
Table A4.2 Compensation Rate of Permanent Agricultural Land Acquisition	31
Table A4.3 Compensation Rate comparison	32
Table A4.4 Entitlement Matrix	33
Table A6.1 Public Participation Plan	36

Table A7.1	Institutional Responsibility Matrix	37
Table A9.1	Detailed Cost Estimate of Land Acquisition	39
Table A10.1	Monitoring and Evaluation Indicators	41
Table B1.1	Permanent Land Acquisition by Fuxin CBM Development.....	49
Table B1.2	Summary of Eligibility Criteria.....	50
Table B1.3	Compensation Rate of Permanent Agricultural Land Acquisition.....	51
Table B1.4	Entitlement Matrix.....	52

LIAONING ENVIRONMENTAL IMPROVEMENT PROJECT RESETTLEMENT PLAN

1. INTRODUCTION

1.1 Objective and Scope of the Project

1. The objective of this ADB-financed Liaoning Environmental Improvement Project is to improve the environment in the heavily industrialized, northeastern province of Liaoning. ADB approved a loan of \$70 million to finance the Project on 25 November 2004, which comprised seven subcomponents in four parts— (i) Part A: CBM/CMM development in Fuxin City; (ii) Part B: gas distribution improvement in Fushun and Benxi cities; (iii) Part C: city central heating supply in Anshan, Benxi, Liaoyang, and Yingkou cities; and (iv) Part D: institutional reforms and corporate governance improvement for all project implementing agencies. The Loan was signed in May 2005 and became effective in November 2005. Loan closing date is scheduled for 30 September 2009. The Government of Liaoning Province is the EA, while the subcomponent companies are the Project Implementing Agencies (PIAs). The Foreign Capital Utilization Project Office, the Project Management Office (the PMO) under the Liaoning Provincial Development and Reform Commission coordinates for overall project implementation.

2. During the December 2005 Loan Review/Hand-over Mission, PMO advised that several big project changes were envisaged however the final decision of the Province was yet to be made at that time. The PMO submitted to PRCM the formal request on the proposed changes through the fax of 3 August 2006. The proposed scope changes included three items: (i) changing the scope of Subproject A: Fuxin CBM/CMM to include four mini CBM/CMM-fired power plants with total capacity of 22 MW; (ii) cancellation of Subproject C2: Anshan City Central Heating Supply; (iii) adding two new subprojects --- Fuxin Central Heating Supply and Benxi Huaxing Central Heating Supply. A Loan Review Mission from ADB visited Liaoning Province from 4-14 December 2006 to review the implementation progress. During the mission, Liaoning PMO reported to the mission that Fushun Gas Distribution Improvement Subproject will be dropped mainly because the PIA, Fushun Gas General Company, was reorganized as the Fushun Zhongran Urban Gas Development Co., Ltd as a result of an ownership change in July 2006. The updated Project mainly consist of four (4) components: (a) establishment of commercially viable coal bed methane (CBM) and coalmine methane (CMM) production and utilization demonstration projects in Fuxin coal mining areas; (b) improvement of urban gas pipeline network in one (1) cities in Liaoning Province¹; (c) improvement of urban central heating system in four (4) cities in Liaoning province², and (d) gas/urban heating sector reforms and corporate governance improvement. The construction of the Project can be divided into 3 broad categories: CBM/CMM Development, Gas Distribution and City Central Heating. The Project is divided into seven (7) sub-projects, involving seven (7) different Project Implementation Agencies (IAs) in four (4) cities. A summary of the sub-projects comparison from appraisal to present (see Table 1-1) and the detailed description of the Project is described below. Figure 1-1 provides a map of Liaoning Province and the Project cities.

¹ The one (1) city includes Benxi. It's selected by Government of Liaoning Province (GLP) based on the needs of the city to improve the gas distributions.

² The four (4) cities include Benxi, Fuxin, Liaoyang, and Yingkou. There were selected by GLP based on the needs of these cities to improve their central heating system.

**Table 1-1: Scope of the Project
(as of January 2007)**

	At Appraisal	At Present	Implementation Progress
Part A: CBM/CMM Development Component			
<i>A1:Fuxin CBM/CMM Development Subproject</i>	<ul style="list-style-type: none"> • Installation of 22 vertical wells; • Installation of one 54,000 m³, one 10,000 m³, and one 5,000 m³ above ground methane gas storage tanks; and • Installation of three CBM extraction stations. 	<ul style="list-style-type: none"> • Installation of 22 vertical wells; • Gas extraction system at Liujiaqu of Wulong coal mine; • One 20,000 m³ dry-style gas storage, booster, distribution and transportation system (10 km pipeline); • One 5,000 m³ low-pressure wet-style gas storage facility; • Construction of four gas-fired power stations with 36 power turbines and upgrade one existing gas-fired power stations with an additional 8 power turbines, total capacity is 22MW; • One CNG compression station at Liujia; and • Upgrade the existing compression system of Wulong station, and north/south stations of Wangying. 	<ul style="list-style-type: none"> • The bidding documents for the 22 vertical wells are under preparation; • The proposed change in project scope is being reviewed.
Part B: Gas Distribution Component			
<i>Benxi Gas Distribution Improvement Subproject</i>	<ul style="list-style-type: none"> • Replacement of 43 km of aging gas pipelines; and • Installation of 5 km of new gas pipeline to cut down pipeline losses and accidents and increase capacity to serve about 60,000 new consumer households. 	<ul style="list-style-type: none"> • Construction of one sulphur remove station; • Replacement of 43 km of aging gas pipelines; and • Installation of 5 km of new gas pipeline to cut down pipeline losses and accidents and increase capacity to serve about 60,000 new 	<ul style="list-style-type: none"> • Procurement completed; • PIA has conducted the privatization reform; and • The construction will start in April 2007.

	At Appraisal	At Present	Implementation Progress
		consumer households and enhance the supplied gas quality for about 17,000 households.	
Part C: City Central Heating Supply Component			
<i>C1: Benxi Central Heating Supply Subproject</i>	<ul style="list-style-type: none"> Construction of two 209 GJ/hour circulating fluidized bed (CFB) hot water boilers and auxiliaries; Construction of 7 km of heat supply pipeline; Construction of 18 heating exchange stations; and Closure of 63 existing small, inefficient and polluting boilers. 	<ul style="list-style-type: none"> Construction of two 209 GJ/hour circulating fluidized bed (CFB) hot water boilers and auxiliaries; Construction of 17 km of heat supply pipeline; Construction of 18 new heating exchange stations and renovation of 2 old heating exchange stations; and Closure of 63 existing small, inefficient and polluting boilers. 	<ul style="list-style-type: none"> Trial operation started in 2006 winter; and 43 small boilers demolished.
<i>C2: Liaoyang Central Heating Supply Subproject</i>	<ul style="list-style-type: none"> Construction of 8 208 GJ/hour hot water boilers and auxiliary facilities; Construction of 42 km of heat distribution network and 55 heat exchange stations; and Closure of 174 existing small inefficient and polluting boilers. 	<ul style="list-style-type: none"> Construction of 8 208 GJ/hour hot water boilers and auxiliary facilities; Construction of 42 km of heat distribution network and 55 heat exchange stations; and Closure of 174 existing small inefficient and polluting boilers. 	<ul style="list-style-type: none"> Procurement completed; Construction of two heating plants completed; Four boilers installed and commissioned in 2006 winter; 37 km heat distribution network completed; and 141 small boilers demolished.
<i>C3: Yingkou Central Heating Supply Subproject</i>	<ul style="list-style-type: none"> Construction of one (2 x 12 MW) combined heat and power (CHP) generation plant and auxiliaries; Construction of three 104 GJ/hour hot water boilers; Construction of 40 km of heat supply and distribution 	<ul style="list-style-type: none"> Construction of one (2 x 12 MW) combined heat and power (CHP) generation plant and auxiliaries; Construction of two 104 GJ/hour hot water boilers; Construction of 41.6 km of heat supply and distribution 	<ul style="list-style-type: none"> Procurement completed; Two 58MW circulated fluidized-bed boilers and one 12 MW combined heat and power plant completed; and 77 small boilers demolished.

	At Appraisal	At Present	Implementation Progress
	network and 12 heat exchange stations; and <ul style="list-style-type: none"> • Closure of 175 existing small inefficient and polluting boilers. 	network and 12 new heat exchange stations; and <ul style="list-style-type: none"> • Closure of 175 existing small inefficient and polluting boilers. 	
<i>C4:Fuxin Central Heating Supply Subproject</i>	newly proposed subprojects	<ul style="list-style-type: none"> • Construction of 14 new heat stations and renovation of 12 old heat stations; • Replacement and construction of main pipeline totaling 16.4 km; and • Replacement and construction of branch pipelines totaling 4.5 km. 	<ul style="list-style-type: none"> • Subproject is under appraisal.
<i>C5:Benxi Huaxing Central Heating Supply Subproject</i>		<ul style="list-style-type: none"> • Construction of one 174 MW heating plant; • Construction of three 58 MW boilers; and • Construction of 20.83 km of heat supply and distribution network; and • Construction of 7 new heat exchange stations and renovation of 9 old heat exchange stations. 	<ul style="list-style-type: none"> • Subproject is under appraisal.
<i>C6:Anshan Central Heating Supply Subproject</i>	<ul style="list-style-type: none"> • Recovery of the waste heat from the Anshan Steel No. 1 new blast furnace; • Recovery of the heat from the No. 2 thermal power Plant; and • Construction of household heat supply control system. 	Subproject is cancelled.	

Figure 1-1: Map of Liaoning Province



1.2 Descriptions of the Project

1.2.1 CBM/CMM Development Component

3. **Fuxin CBM/CMM Development Project.** The Project owner is Fuxin CBM/CMM Development and Utilization Co. (FCCDUC). The Project is located in the Fuxin coal mining area, in the west of Liaoning Province. Fuxin mining area has rich CBM resources, the total resources are estimated at 13.2 billion m³; and the gas content is averaged at 12 m³/t. The Project will recover CBM by underground gas drainage systems and vertical standard wells. Methane production will reach 78.99 million m³, of which 55.85 million m³ by underground drainage systems and 23.14 million m³ by vertical wells. Twenty-two (22) vertical wells will be drained in Wulong coal mines. The CBM recovered will be supplied via pipeline to the existing gas regulation plant from where the gas is distributed to residential and industrial users in Fuxin city by Fuxin Gas Company.

4. The Project consists of:

- Installation of 22 vertical wells;
- Gas extraction system at Liujiaqu of Wulong coal mine;
- One 20,000 m³ dry-style gas storage, booster, distribution and transportation system (10 km pipeline);
- One 5,000 m³ low-pressure wet-style gas storage facility;
- Construction of four gas-fired power stations with 36 power turbines and upgrade one existing gas-fired power stations with an additional 8 power turbines, total capacity is 22MW;
- One CNG compression station at Liujia; and
- Upgrade the existing compression system of Wulong station, and north/south stations of Wangying.

5. The total investment of the Project is estimated to be US\$29.54 million with an expected construction duration of 24 months.

1.2.2. Gas Distribution Component

6. **Benxi Gas Distribution Improvement.** The Project will be implemented by Benxi Gas Company, which was established in 1974 as a State-Owned Enterprise (SOE), with total assets of RMB 140 million. So far, the company has developed a complete gas supply system in Benxi city with 140,000 residential users. However, the pipelines are ageing, as most of them were installed before 1985.

7. In order to improve the gas supply system, some gas pipeline needs to be replaced and new pipeline needs to be installed to cut down pipeline losses and accidents. The Project will not only eliminate the hidden risk of the gas supply system, but also expand the gas supply to new household users to reduce domestic coal consumption and improve air quality.

8. The Project includes two components:

- Construction of one sulphur remove station;
- Replacement of 43 km of aging gas pipelines; and
- Installation of 5 km of new gas pipeline to cut down pipeline losses and accidents and increase capacity to serve about 60,000 new consumer households and enhance the supplied gas quality for about 17,000 households.

9. The total investment for this project is US\$6.10 million. The duration of construction will be 26 months.

1.2.3. City Central Heating Supply Component

10. **Benxi Central Heating Supply Project.** The Project implementation agency is Benxi General Heating Company. The Project aims at improving the local air quality by replacing small boilers with central heating supply. The Project consists of:

- Construction of two 209 GJ/hour circulating fluidized bed (CFB) hot water boilers and auxiliaries;
- Construction of 17 km of heat supply pipeline;
- Construction of 18 new heating exchange stations and renovation of 2 old heating exchange stations; and
- Closure of 63 existing small, inefficient and polluting boilers.

11. The total investment for the Project is US\$ 16.41 million. The construction duration of the Project is 16 months.

12. **Benxi Huaxin Heating Supply Project.** The IA is the Benxi Huaxin Heating Company. The Project consists of the following four components:

- Construction of one 174 MW heating plant;
- Construction of three 58 MW boilers;
- Construction of 20.83 km of heat supply and distribution network; and
- Construction of 7 new heat exchange stations and renovation of 9 old heat exchange stations.

13. The Project will supply heat to 2.5 million m² of residential area. The total investment for the Project is US\$ 12.83 million. The construction duration of the Project is 16 months.

14. **Liaoyang Central Heating Supply Project.** The Project IA is the Liaoyang Real Estate Heating Company. The Project objective is to supply heat to domestic and industrial users and consequently improve the local air quality by replacing numerous existing small boilers, which are currently causing significant air pollution. The heating supply area of the Project will cover 7.82 million m².

15. The Project consists of:

- Construction of 8 208 GJ/hour hot water boilers and auxiliary facilities;
- Construction of 42 km of heat distribution network and 55 heat exchange stations; and
- Closure of 174 existing small inefficient and polluting boilers.

16. The construction of the Project will take three 38 months. The total investment for the Project is estimated at US\$41.76 million.

17. **Yingkou Central Heating Supply Project.** The Project is located in Yingkou city, south of Liaoning Province. The Project IA is the Yingkou Heating Company.

18. The Project consists of:
- Construction of one (2 x 12 MW) combined heat and power (CHP) generation plant and auxiliaries;
 - Construction of two 104 GJ/hour hot water boilers;
 - Construction of 41.6 km of heat supply and distribution network and 12 new heat exchange stations; and
 - Closure of 175 existing small inefficient and polluting boilers.
19. The Project will supply heat to 2.10 million m² of residential area. The duration of construction will be three 38 months. The total project investment is US\$ 38.95 million.
20. **Fuxin Central Heating Supply Project.** The Project is located in Fuxin urban area, the west of Liaoning Province. The Project IA is Fuxin Heating Company.
21. The Project consists of:
- Construction of 14 new heat stations and renovation of 12 old heat stations;
 - Replacement and construction of main pipeline totaling 16.4 km; and
 - Replacement and construction of branch pipelines totaling 4.5 km.
22. The duration of construction will be in 8 months. The total project investment is US\$10.38 million.

1.3 Total Project Investment

23. Incorporating the revised and proposed new subprojects, the updated project cost is estimated to be \$167.23 million, comprising foreign exchange cost of \$71.98 million and local currency cost of \$95.25 million. The final project cost may have minor changes in view that the proposed refinement in technical design may have impact on the project cost.
24. A breakdown of the base cost estimates and cost estimation comparison between appraisal and present are included in Table 1-2.

Table 1-2 Project Cost Estimates

(\$ million)

Component	Original Estimate		Total Cost	Updated Estimate		Total Cost
	Foreign Exchange	Local Currency ^a		Foreign Exchange	Local Currency ^b	
I. Base Cost						
A. CBM/CMM Development Component						
1. Fuxin CBM/CMM Development	15.78	10.89	26.67	16.20	7.87	24.07
Subtotal (A)	15.78	10.89	26.67	16.20	7.87	24.07
B. Gas Distribution Component						
1. Fushun Gas Distribution Improvement	1.70	0.73	2.43	subproject cancelled		
2. Benxi Gas Distribution Improvement	2.75	2.60	5.35	2.64	3.46	6.10
Subtotal (B)	4.45	3.33	7.78	2.64	3.46	6.10
C. City Central Heating Component						
1. Benxi City Heating Supply	5.45	5.35	10.80	6.01	10.40	16.41
2. Liaoyang City Heating Supply	14.02	22.05	36.07	13.76	28.00	41.76
3. Yingkou City Heating Supply	12.71	26.18	38.89	12.82	26.13	38.95
4. Fuxin City Heating Supply	} New subprojects			4.90	6.43	11.33
5. Benxi Huaxing City Heating Supply				4.95	9.19	14.14
6. Anshan City Heating Supply				subproject cancelled		
Subtotal (C)	41.61	58.62	100.23	42.44	80.15	122.59
D. Institutional Strengthening	0.60	0.00	0.60	1.05	0.00	1.05
Subtotal (I)	62.44	72.84	135.28	62.33	91.48	153.81
II. Contingencies						
Physical	3.80	4.83	8.63	3.89	2.19	6.08
Price	2.48	4.06	6.54	2.05	1.28	3.33
Subtotal (II)	6.28	8.90	15.18	5.94	3.47	9.41
III. Financial Charges during Development	7.28	3.26	10.54	5.11	0.80	5.91
Total (I+II+III)	76.00	85.00	161.00	73.38	95.75	169.13

^a Based on an exchange rate of \$1=CNY8.27^b Based on an exchange rate of \$1=CNY7.8499

2. IMPACTS OF LAND ACQUISITION AND RESETTLEMENT

2.1 Fuxin CBM/CMM Development Project

25. The construction of the Fuxin CBM/CMM Development Project will acquire 43.75 mu (2.92 ha) of rural village collective owned dryland and affect 17 households or 75 persons in 2 village in Hanjiadian Town. In the original RP, a total of 10.4 mu (0.69 ha) of dry land would be acquired permanently in Xiwa Village of Hanjiadian Township and 3 households or 12 persons would be affected by land acquisition. The land acquisition impact comparison between original RP and present shows in table 2-1.

Table 2-1 Land acquisition impact comparison

	Original RP	At Present
Land Acquisition Area (mu)	10.4	43.75
Affected People(households/persons)	3/12	17/75
Affected village	1 (Xiwa)	2 (Xiwa, Shangwang)
Affected Town	Hanjiadian	Hanjiadian

26. Out of that 43.75 mu of acquisitioned land, 8 mu will be from Xiwa Village and rest 35.75 mu from Shangwang Village, Hanjiadian Township, Xihe District. Out of the 43.75 mu dry land permanent acquisition, only 17 mu of dry land have been contracted to villagers and 26.75 mu of dry land are held by Shangwang Village. The permanent land acquisition will affect 17 households or 75 persons. In Xiwa village, there are 8 households or 35 persons to be affected by 8 mu (1 mu each household) of dry land acquisition, and in Shangwang Village, there are 9 households or 40 persons to be affected by 9 mu (1 mu each household) dry land acquisition. Additionally, the project will permanent occupy 26.86 mu (1.79ha) construction land and 5 mu (0.33ha) of wasteland owned by the Fuxin CBM/CMM Development and Utilization Company themselves since the establishment of the company.

27. The land acquired area from farmers less than 1/3 of their represents owned dry land. 5 wells will be located on wasteland Fuxin CBM/CMM Development and Utilization Company themselves since the establishment of the company. In addition, about 96 households (381 persons) will be affected temporarily by the construction of gas pipelines³; it is estimated that 239.4 mu (15.96 ha) of dry land will be affected for 3 months while the pipelines are laid.

28. The budget for the LAR is estimated at RMB 7.00 million (including budget for monitoring and evaluation) and it has been included in the Project budget. The construction is expected to last twenty-four (24) months.

29. In line with the ADB's Involuntary Resettlement Policy and the relevant laws, regulations and guidelines of the Government of China (GoC), a short resettlement plan (RP) was prepared by the Fuxin CBM/CMM Development and Utilization Co. with assistance from the ADB Resettlement Specialist. The details of the RP report are provided in Appendix A.

2.2 Benxi Gas Pipeline Improvement Project

30. The construction of the gas pipeline will occupy 1,091 mu of urban road temporarily in

³ In total, 10 km of transmission line will be buried within the road ROW.

the three districts of Benxi city. Table 2-2 provides the impact information. The diameter of the pipeline ranges from 200 mm to 300 mm. The pipeline will be 1.5 m at width and 1.5 to 2 m at depth. The construction of each section of pipeline will only take one night to one week to complete. The impact is very minor. The Benxi Gas Company will restore the road to its original conditions once the construction is completed. No other properties will be affected. No resettlement will be involved. However, a permit must be obtained from Benxi Municipal Construction Commission and compensation for disturbance/easement will be paid to the municipal civil engineering department in the amount of RMB 8.4 million.

Table 2-2: Impact of Temporary Land Occupation

District	Temporary Land Occupation (mu)
Pingshan	654.6
Mingshan	327.3
Xihu	109.1
Total	1,091.0

2.3 Benxi Central Heating Supply Project

31. The Project will occupy a land area of 45,000 m² for the construction of new central heating supply Plant. The land has already been acquired several years ago by the Benxi General Heating Company. The 18 heat exchange stations will be built at the same location to replace the existing 18 small boilers. No land acquisition and resettlement will be involved. In addition, 50 mu of land will be temporarily acquired, of which 10 mu wasteland will be used for the construction material storage; and 40 mu of urban land will be used for pipeline construction (26.67 mu in Mingshan district and 13.33 mu in Pingshan district). Included in Table 2-3 are the expected land impacts. The cost for road recovery will be RMB 6 million, which is included in the engineering cost and will be paid to the municipal civil engineering department. The 20 newly built heat exchange stations will use the existing plant of boilers. No other properties will be affected and no resettlement will be involved in the Project.

Table 2-3: Impact of Temporary Land Occupation

Project Component	Location	Temporary Land Occupation (mu)		
		Urban Road	Waste land	Total
Central Heating Supply Plant	Meitie Street of Xihu District		10	10
Pipeline	Mingshan District	26.67		26.67
	Pingshan District	13.33		13.33
Total		50	10	60

2.4 Benxi Huaxin Heating Supply Project

32. The Project will occupy a land area of 16,700 m² for the construction of new central heating supply Plant. The land has already been planned as public facility using land and without any structures and RMB 0.2 million of land transferring fee will pay to the municipal government. Additionally, the construction of 20.83 km pipe will cause some damage of road and RMB 0.8 million will pay to Benxi Municipal Civil Engineering Department for the rehabilitation of the road.

2.5 Liaoyang Central Heating Supply Project

33. The Project will occupy 13,500 m² of industrial land for the Beicaoku Heating Supply

Center (5,000 m²) and Doushuangshu Heating Supply Center (8,500 m²), which was purchased by the Liaoyang Commerce Bureau in 2002 by the Liaoyang Real Estate Heating Co. in 2002. The compensation payment totaled CNY10 million (about CNY7.5 million per ha). The construction of 6.8 km of heat distribution network will cause minor disturbance along urban roads. Compensation will be paid to the municipal civil engineering department. The construction of 112 heat exchange stations will use the industrial land of demolished boilers. Therefore, no land acquisition and resettlement will be involved.

2.6 Yingkou Central Heating Supply Project

34. The construction of the boilers and heat exchange stations will require the occupation of 163.1 mu of industrial land permanently within the thermal power plant. As the land has been owned by the Yingkou Heating Company since 1992, no permanent land acquisition and resettlement will be involved. However, the Project will temporarily occupy an area of 9,360 m² urban road as a result of the pipeline construction. The pipeline will be buried within the road right of way (ROW). The cost of compensation for disturbance/easement is RMB 8.6 million⁴, which will be paid to the municipal civil engineering department.

2.7 Fuxin Heating Supply Project

35. The Project will only require the replacement of 20.9 km existing pipe. As such, no land acquisition and resettlement will be involved. But RMB 8.44 million will pay to Fuxin Municipal Civil Engineering Department for the rehabilitation of the damage of the road and its greenbelt.

36. In summary, the overall Liaoning Environmental Improvement Project will involve no land acquisition and resettlement, except the Fuxin CBM/CMM Development Project. The resettlement impacts of all Project components and budget are presented in Table 2-4 and Table 2-5.

Table 2-4: Potential Resettlement Impacts of the Project

Components	Subprojects	Activities with Potential Resettlement Impacts
CBM Extraction	Fuxin Coal Mine	- 22 extraction wells require minor land acquisition (17mu) - One 20,000 m ³ dry-style gas storage, booster, and construction of one CNG compressor require minor land acquisition (26.75 mu) transportation system (10km) require temporary farmland disturbance for 3 months duration.
Gas Distribution	Benxi City	- replacement of 40 km of old pipes and construction of 3 km of new pipes will cause some temporary disturbance along urban roads—compensation to be paid to the civil engineering department
Central Heating	Benxi City	- construction of 7 km pipeline will cause some temporary disturbance along urban roads—compensation to be paid to the civil engineering department

⁴ The cost of compensation for disturbance/easement includes the earlier payment for industrial land.

Components	Subprojects	Activities with Potential Resettlement Impacts
	Benxi Huaxin	- Construction of one 174 MW heating plant will require 16,700 m ² of existing urban construction land and land transferring fee will be required. Construction of 20.83 km of heat supply and distribution network will cause some temporary disturbance along urban roads—rehabilitation fee to be paid to the civil engineering department
	Liaoyang City	- construction of 6.8 km of heat distribution network and 112 heat exchange stations will cause minor disturbance along urban roads—compensation to be paid to the municipal civil engineering department
	Yingkou City	- construction of 12 heat exchange stations and 40 km of heat supply pipelines will cause minor disturbance along urban roads—compensation to be paid to the municipal civil engineering department
	Fuxin City	- rehabilitation of existing facilities requires no land acquisition or disturbance. Road rehabilitation fee will be required to the government.

Table 2-5: Summary of Land Acquisition Impacts of All Project Components

Project Components	Permanent Land Acquisition (PLA) (ha)	Temporary Land Use (TLU) (ha)				Affected Persons (AP)			Total Budget (CNY 1,000)
		Dry land	Urban Road	Land Owned by PIAs	Total	PLA	TLU	Total	
Fuxin CBM/CMM Development	2.92	15.96	—	2.12	18.08	75	381	456	7,001
Benxi Gas Distribution Improvement	—	—	72.7	—	72.7	0	0	0	8,400
Benxi Central Heating Supply	—	—	4.0 ¹	4.5	8.5	0	0	0	6,000
Fuxin Heating Supply	—	—	3.61	—	3.61	0	0	0	8,440
Liaoyang Central Heating Supply	1.8453 ⁵	—	4.0	1.3 ²	5.3	0	0	0	6,000
Yingkou Central Heating Supply	—	—	14.0	10.9 ³	24.9	0	0	0	8,600
Benxi Huaxin Heating Supply	1.67 ⁴	—	20.83	0.1	1.85	0	0	0	1,000
Total	4.59	15.96	119.14	18.92	154.02	75	381	456	45,441

Notes:

¹ It includes 10 mu of wasteland.

² The land was purchased from Liaoyang Commerce Bureau by the Liaoyang Real Estate Heating Co. in 2002. The compensation payment totaled CNY10 million (about CNY7.5 million per ha).

³ The 10.9 ha of industrial land for the construction of thermal power plant has been owned by the Yingkou Heating Company since 1992, therefore no land acquisition and compensation are involved.

⁴ The 1.67 ha of urban construction land for the construction of new central heating supply Plant has been owned by the government.

⁵ The 1.8453 ha of industrial land, owned by Taizihe Village, was required by PIA in 2005. A Due Diligence Report has been prepared and submitted to ADB.

Resettlement Plan for Fuxin CBM/CMM Development Project

A1. INTRODUCTION

A1.1 Project Description

1. The Fuxin CBM/CMM Development Project is one of the eight (8) Projects of the ADB financed Liaoning Environmental Project. The objective of the Project is to improve the environment in the heavily industrialized, northeastern province of Liaoning. The Project owner is the Fuxin CBM/CMM Development and Utilization Co. (FCCDUC). The Project is located in the Fuxin coal mining area, in the west of Liaoning Province. Figure A1 provides the layout of the Fuxin CBM/CMM Development Project. Fuxin mining area has rich CBM resources, the total resources are estimated at 13.2 billion m³; and the gas content is averaged at 12 m³/t. The Fuxin coal mine has a 50-year mining history, and is one of the major coal mines in the People's Republic of China (PRC). At present, Fuxin coal field has ten (10) mines with capacity of 10 million tons per year. Five of the 10 mines are rich-gas mines, which are Haizhou Mine, Wulong Mine, Wuying Mine, Aiyu Mine, and Qinghe Mine.

2. The Project will recover CBM/CMM by underground gas drainage systems and vertical standard wells. Methane production will reach 78.99 million m³, of which 55.85 million m³ by underground drainage systems and 23.14 million m³ by vertical wells. Twenty-two (22) vertical wells will be drilled in Wangyin coal mines. The CBM recovered will be supplied via pipeline to the existing gas regulation plant from where the gas is distributed to residential and industrial users in Fuxin city by Fuxin Gas Company.

3. The Project consists of:
- Installation of 22 vertical wells;
 - Gas extraction system at Liujiaqu of Wulong coal mine;
 - One 20,000 m³ dry-style gas storage, booster, distribution and transportation system (10 km pipeline);
 - One 5,000 m³ low-pressure wet-style gas storage facility;
 - Construction of four gas-fired power stations with 36 power turbines and upgrade one existing gas-fired power stations with an additional 8 power turbines, total capacity is 22MW;
 - One CNG compression station at Liujia; and
 - Upgrade the existing compression system of Wulong station, and north/south stations of Wangying.

A1.2 Socio-Economic Benefits of the Project

4. It is expected that the Project will bring about substantial socioeconomic benefits to the local populations residing in the Project beneficiary areas at large, particularly the poor and women. These benefits: i) 580 person-years of employment opportunity generation during the Project construction and 320 full time employment opportunity generation during the Project operation; ii) RMB 10 million value-added benefits through procurement of local materials; iii) stimulation of regional economic development; iv) increase of tax revenue to local governments for poverty reduction at about RMB 10.59 million per year; and v) reduction of greenhouse gas (GHG) emissions, improvement of environment and health; and vi) improvement of mine workers' safety.

5. In particular, the extraction will replace partial coal gas produced by local coal gasification plants and hence will avoid air pollution caused by coal gasification. The Project is also likely to improve the financial status of Fuxin city as the coal gasification plant has been losing money for several years due to its high operation costs.

A1.3 Land Acquisition Impacts

6. The construction of the Fuxin CBM/CMM Development Project will acquire 43.75 mu (2.92 ha) of rural village collective owned dryland. Out of that, 8 mu will be from Xiwa Villager and rest 35.75 mu from Shangwang Village, Hanjiadian Township, Xihe District. Out of the 43.75 mu dry land permanent acquisition, only 17 mu of dry land have been contracted to villagers and 26.75 mu of dry land are held by Shangwang Village. The 26.75 mu of dry land held by Shangwang Village will not affect any local farmers as the village made annually contract of the land to farmers and the village administration will cease contract in 2007. The village has additionally 106 mu of dry land and will help the contractors to find new lands to continue such annual-based contracts in farming. And the village has developed an initial production rehabilitation plan. They will invest the land compensation they will hold to expand the existing Brick Factory and Fowl-run to absorb the labor of their village. They will invest RMB 500,000 to the Brick Factory and will absorb 15-20 laborers, and RMB 200,000 to the Fowl-run and absorb 10-15 laborers. The village will get annual profit of RMB100,000-120,000 from the investment. The salary of employees in the two enterprises will exceed RMB 600 per month.

7. The permanent land acquisition will affect 17 households or 75 persons. In Xiwa village, there are 8 households or 35 persons to be affected by 8 mu (1 mu each household) of dry land acquisition, and in Shangwang Village, there are 9 households or 40 persons to be affected by 9 mu (1 mu each household) dry land acquisition. The land acquisition is detailed in below table. Additionally, the project will permanent occupy 26.86 mu (1.79ha) construction land and 5 mu (0.33ha) of wasteland owned by the Fuxin CBM/CMM Development and Utilization Company themselves since the establishment of the company.

Table A1.1: Land acquisition impact information

Town	Village Name	Land Contractor	Number (Household/person)	Dry Land Area (mu)
Hanjiadian			17/75	43.75
	Shangwang		9/40	35.75
		Village Held		26.75
		Farmer	9/40	9
	Xiwa		8/35	8

8. In addition, about 96 households (381 persons) will be affected temporarily by the construction of gas pipelines⁵; it is estimated that 239.4 mu (15.96 ha) of dry land will be affected for 3 months while the pipelines are laid.

⁵ In total, 10 km of transmission line will be buried within the road ROW.

Table A1.2: Temporary Land Use Information

Village name	Purpose of land using	Dry land area (mu)	Affected individual	
			household	person
Shangwang	Installation of well	31.53	11	45
	pipe	68.53	29	114
Xiwa	Installation of well	42.04	41	162
	pipe	97.3	56	222
Total		239.4	96	381

9. The budget for the LAR is estimated at RMB 7.00 million. The construction is expected to last twenty-four (24) months

A1.4 Preparation of updated RP

10. The resettlement plan has been developed in line with the ADB's Involuntary Resettlement Policy and the relevant laws, regulations and guidelines issued by the Government of China (GoC) during the project preparation. The RP is based on a series of information sources, including:

- relevant project reports: particularly the Project Pre-Feasibility Study Report;
- field visits to the proposed project sites;
- measurement survey in October, 2003;
- socio-economic survey of 20 households in October, 2003;
- discussions with the related officials of the Fuxin Land and Resources Bureau; and
- consultations with various local governments, village leaders and APs.

11. The RP is prepared by the FCCDUC with the assistance of the ADB PPTA Resettlement Specialist. As the project components changed, the original RP must be updated. RP key activities for the preparation of updated RP include:

- scope the land acquisition;
- census and inventory survey in November 2006;
- socio-economic survey of 17 households in December 2006 and January 2007;
- interview affected village leaders and affected people to develop production rehabilitation activities.

12. The updated RP is prepared by the FCCDUC with the assistance of the ADB Staff Consultant during October 2006 to January 2007.

A2. SOCIO-ECONOMIC PROFILE OF AFFECTED AREA AND PERSONS

A2.1. Socio-Economic Profile of Affected Area

13. Nicknamed "the city of electricity", Fuxin is an important base for energy and industrial centre with traditional heavy industry, but light industry and electronics have also become pillars of the economy for the municipality. There are 628,093 households or 1.93 million people, including 0.78 million in the urban area and 1.15 million people in rural area. Of the total

population, the number of males was 968,720 persons and females 958,095 persons. In total, there are 65 townships and 623 villages under the jurisdiction of the city.

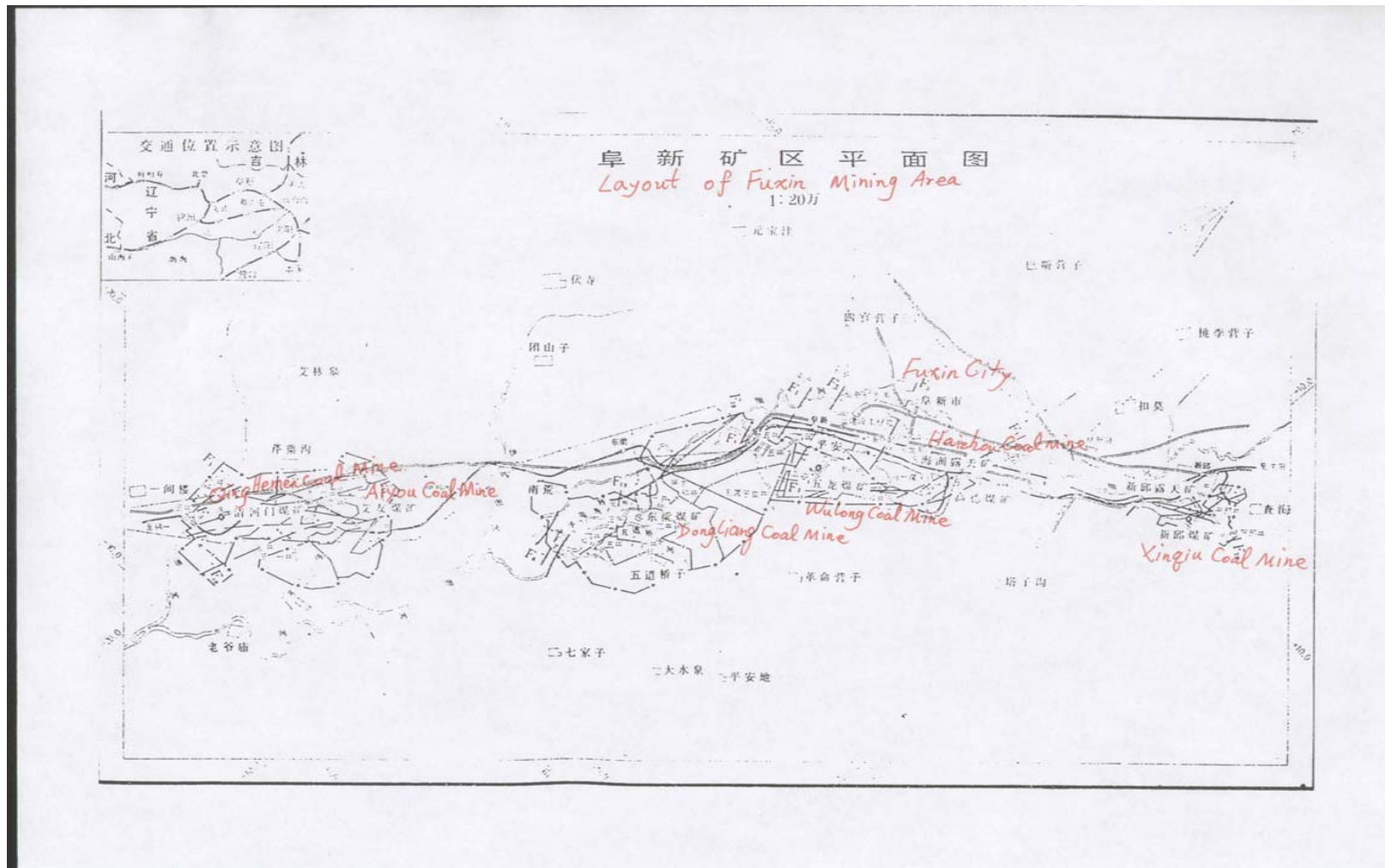
14. Fuxin is abundant in mineral resources, especially natural gas and petroleum. There are over 20 kinds of non-metallic minerals, such as silica sand, marble, lime, turquoise, and over 10 kinds of metallic minerals, such as iron, molybdenum, aluminum, zinc, copper, tungsten, lithium. Fuxin is a developing and emerging city with rapid development not only in terms of the machinery, chemical, building sectors but also the food, textile, industry, medicines, electronics sectors. The GDP for Fuxin was RMB 14.26 billion in 2005. Of this, the primary industrial sector contributed RMB 3.55 billion, the secondary industry RMB 4.89 billion, and the tertiary industry RMB 5.82 billion. In total, the fiscal revenue in 2005 was RMB 2.27 billion, while the fiscal expenditure was RMB 3.38 billion.

15. In 2005, there were about 200 enterprises in the city. The industrial development experienced rapid expansion, with the total value of gross industrial products amounting to RMB 32.45 billion. The value-added industrial production reached RMB3.97 billion. The sales income of products was RMB 10.51 billion.

16. The farmland area was 375,500 ha in 2005, of which 7,300 ha was paddy land and 368,200 ha dry land. The grain production in Fuxin reached 1.87 million tons. The total value of gross domestic products for the agriculture, forestry, animal husbandry and fishery as a whole amounted to RMB 3.55 billion, of which agriculture contributed RMB 2.07 billion.

17. Fuxin is a poor area in Liaoning province. The quality of farmland is poor and lacks water but the rural people have traditionally relied on employment in coal mines for the majority of their incomes. Recently, with the closure of some mines, poverty has increased. The average net income per capita for the rural farmers in 2005 was at RMB 3,090, which was lower than that of the province at RMB 3,690. The average expenditure per capita for the rural farmers in that year was at RMB 3,228, which was much higher than that of the province at RMB 2,700. Of the total expenditure in Fuxin, food accounts for 45%, clothing 6%, housing 11%, medical and education 37%, and transportation and communication 1%.

Figure A1: Layout of Fuxin CBM/CMM Development Project



A2.2. Socio-Economic Profile of Affected Villages

18. In later November and earlier December 2006, Fuxin CBM/CMM Development and Utilization Co. conducted a socioeconomic survey on two affected villages. The main information shows below table.

Table A2.1: Affected villages' information

	Shangwang Village	Xiwa Village
Household (hh)	670	620
Population (person)	2234	2330
In which, labor (person)	1510	1266
Male labor	712	656
Female labor	798	610
Employment (person)	1510	1266
Agriculture	679	634
Industry	223	198
Construction	120	241
Transportation	260	35
Commerce	32	38
Restaurant	60	
Other	136	120
Farmland (mu)	2776	2136
Per capita net income (yuan)	4260	4153
Total net income (million yuan)	7.80	6.63
Agriculture net income of total (%)	20%	10%

19. As the two affected villages are located in the suburban of Fuxin and close to Fuxin coal mine, the villagers have chance to get non-agriculture employment and income. The village level information show that their averagely per capita net income are much higher than Fuxin municipality (whole municipality averagely per capita net income is 3090 yuan). Their income mainly ($\geq 80\%$) comes from non-agricultural activities.

A2.3. Socio-Economic Profile of Affected Persons

20. In order to gain a better understanding of the general socioeconomic profile of the APs and evaluate the impacts on the affected people by the Project, based on first socio-economic survey on October 20, 2003, Fuxin CBM/CMM Development and Utilization Co. conducted another socioeconomic survey from December 20-30 2006. 17 affected households were surveyed from the Project affected villages, Xiwa village and Shangwang Village.

A2.3.1 Demographical Characters of the Affected People

21. Of the total surveyed 75 persons, 39 persons were male and 36 persons female. The average age is 47 years, with the youngest being 10 years old, and the oldest being 72 years old; 52 persons (69%) are married, and 17 (23%) are unmarried, 6 persons (8%) are widow.

22. In terms of education (see Table A2.2), 18 person (24%) graduated from primary school, 30 persons (40%) from middle school, 17 persons (23%) from high school, 7 persons (9%) from college, and 3 person (4%) from university.

Table A2.2 Education Level of Surveyed Population

Education	No. of Surveyed Population	% of Surveyed Population
Primary School	18	24%
Middle School	30	40%
High School	17	23%
College	7	9%
University and Above	3	4%
TOTAL	75	100%

A2.3.2 Size of Family

23. Of the 17 surveyed households, the total population is 75 and the family size is 4 persons, with the smallest being three (3) and the largest five (5). Detail information is given in Table A2.3.

Table A2.3 Family Size

	Number of Persons	Frequency	Percent (%)
Family Size	3	2	12%
	4	6	35%
	5	9	53%
	Total	17	100%
Average	4		
Min	3		
Max	5		
Total	75		

A2.3.3 Length of Residence

24. From the survey, of the 17 sample households, 4 (24%) have resided in the present place of residence for generations, 4 (24%) have been living here for 30-50 years, 3 (17%) for 20-30 years, 2 (12%) for 10-20 years, 3 (17%) for 5-10 years, and 1 (6%) for less than 5 years (see Table A2.4). The survey shows that most residents have been living here for quite a long time.

Table A2.4 Length of Residence

Length of Residence	No. of Households	Percent of Households
Less than 5 years	1	6
5-10 years	3	17
10-20 years	2	12
20-30 years	3	17
30-50 years	4	24
Generations	4	24
Total	17	100

A2.3.4 Occupations and Family Income

25. Of the 75 respondents, 53 have the capability to work. The ratio of labour force is 1.42. All of the surveyed households are rural families. The average annual income of the families is

RMB 19,148, with the highest income being RMB 24,000 and the lowest RMB 15,000. The average annual per capita income is RMB 4,377, with the highest being RMB 5,200 and the lowest income RMB 3,200.

A2.3.5 Ethnic Minorities and Most Vulnerable Groups

26. All affected households are Han people. No vulnerable groups are affected by the land acquisition in the 17 households.

A2.3.6 Preferred Options of Compensation

27. The surveyed households generally agreed with the compensation in accordance with the land acquisition and compensation policies of Fuxin City. The compensation rate of land would be more than 10 times of the AAOV of last 3 years, the relocation subsidy would be higher than 10 times of the AAOV of last 3 years. 3 resettlement options have been developed for production rehabilitation: cash compensation for land lost; equivalent land re-adjusted to APs by the township government and village committee and employment arrangement. For the loss of farmland, 100% (17 households) of the surveyed population requested cash compensation (see Table A2.5). But if there would be good job opportunities with high income of formal job, they will change their minds.

28. For the temporary land occupation due to the pipeline construction (normally 3 months), the APs would be compensated 3 time of AAOV of last 3 years for land recovery, and the compensation would be in cash paid directly to APs. In addition, the loss of standing crops should be compensated for the output value of one (1) season, based on the most recent market price.

Table A2.5 Preferred Options of Compensation for Farmland

Compensations for Farmland Loss	Preferred Options	Frequency	Percent (%)
	In cash	17	100%
	Land re-allocation		
	Employment for family members		
Total		17	100.0%

A2.3.7 Willingness for Training on New Technology

29. Of the total surveyed population, there are 10 households or 60% who are willing to take the training on new technologies if there is other job opportunity available to them, and 7 households or 40% do not know. But if there are no good job opportunities, they would change their minds. The results are presented in Table A2.6.

Table A2.6 Willingness to New Technology Training

Willingness	No. of Surveyed Population	Percentage (%)
Willing	45	60%
Un-willing		
Do not know	30	40%
No answer		
Total	75	100.0%

A2.3.8 Knowledge about the Project

30. The surveyed population were asked about their knowledge of the Project. The results of the survey showed that all surveyed population had known the Project within 1 year. All of them heard the Project from the meetings (see Table A2.7).

Table A2.7 Knowledge about the Project and Information Source

Length of Knowledge about the Project	Within 1 years			
%	100%			0
Information Sources	Newspaper	Meeting	Neighbor/Friend	Project Investigator
%		100%		

A2.3.9 Views and Perceptions

31. With the consultation activities, 100% of the surveyed people agree with the Project. About 60% of the people trust that they could get fair compensation, and 40% were not sure; 60% believed that the relevant departments would help them, while 40% did not know. When asked if their family could benefit from the Project, 60% believed so, 40% were not sure. Table A2.8 provides the summary of the survey results.

Table A2.8 Views and Perceptions of APs on the Project

Questions	Answers			
Do you think that your family could benefit from the Project?	Yes	No	Do not know	
	60%		40%	
Do you think that you could be fairly compensated for your loss?	Yes	No	Do not know	
	60%		40%	
Do you think that the relevant departments could help you?	Yes	No	Do not know	
	60%		40%	
Do you agree with the Project?	Yes	No	Do not care	Do not know
	100%			

A3. OVERVIEW OF PROJECT IMPACTS

A3.1 Types of Losses

32. From the measurement survey conducted in October 2003 and November, 2006, the following categories of losses have been identified: 1) permanent farmland loss (dryland); 2) temporary farmland (dryland) occupation; and 3) loss of standing crops.

A3.2 Impact Identification

A3.2.1 Baseline Information

33. The construction of the CBM surface extraction wells and compression station and gas tank will necessitate permanent land acquisition and the pipeline will involve temporary land occupation. No demolition of houses, other structures or trees will occur.

34. At the time of preparing this resettlement plan (RP), the locations and areas of the CBM wells, Wangyin gas storage tank 20,000 (m³), CNG compressor and pipelines have already been estimated. The exact location of wells and pipeline may subject to change based on the suggestions of technical specialists. Once the final design is complete, a Detailed Measurement Survey (DMS) will be carried out to update the impact information and revise the costing figures accordingly.

A3.2.2 Scope of Land Acquisition Impacts

35. **Surface Wells.** As a result of the construction of 22 wells, two villages will be affected by permanent land acquisition. The affected community is Xiwa village and Shangwang in Hanjiadian Township of the Haizhou district, Fuxin city. The CBM Extraction component will affect 17 rural households or 75 persons. In total, 17 mu (1.13 ha) of dry land will be acquired permanently, including 9 mu will be acquired from farmers in Shangwang village and 8 mu will be acquired from farmers in Xiwa village.

36. All land acquisition affected households have been interviewed in November, 2006. General information shows as below table.

Table 3.1: General information of affected households by land acquisition

No	Household head	Nationality	Family member (person)	Contract ed land (mu)	To be required land (mu)	Total annual net income (yuan)	Per capita net income (yuan)	Agriculture net income (yuan)	Agricultural net income of total (%)	To lose net income by land acquisition (yuan)	lose income of total(%)	Remai ned land (mu)
Shangwang Village												
1	Lizong	Han	5	5	1	16000	3200	2000	12.5	400.00	2.5	4
2	Daitiecheng	Han	4	4	1	15800	3950	1600	10.1	400.00	2.5	3
3	Xukuan	Han	5	5	1	20000	4000	2000	10.0	400.00	2.0	4
4	Xusheng	Han	3	3	1	15000	5000	1200	8.0	400.00	2.7	2
5	Xuping	Han	4	4	1	18000	4500	1600	8.9	400.00	2.2	3
6	Yangping	Han	4	4	1	19000	4750	1600	8.4	400.00	2.1	3
7	Libaoku	Han	5	5	1	21000	4200	2000	9.5	400.00	1.9	4
8	Zhangjunguang	Han	5	5	1	22000	4400	2000	9.1	400.00	1.8	4
9	Xuziguang	Han	5	5	1	20000	4000	2000	10.0	400.00	2.0	4
Sub-total			40	40	9							
Xiwa Village												
1	Suoxuewen	Han	4	4	1	16700	4175	1600	9.6	400.00	2.4	3
2	Zhangxingchi	Han	5	5	1	23000	4600	2000	8.7	400.00	1.7	4
3	Baijinshan	Han	5	5	1	24000	4800	2000	8.3	400.00	1.7	4
4	Zhangxingyuan	Han	4	4	1	16900	4225	1600	9.5	400.00	2.4	3
5	Chengonglin	Han	3	3	1	15600	5200	1200	7.7	400.00	2.6	2
6	Zhangguangyi	Han	5	5	1	22100	4420	2000	9.0	400.00	1.8	4
7	Changuotie	Han	4	4	1	17500	4375	1600	9.1	400.00	2.3	3
8	Qizhengdong	Han	5	5	1	22300	4460	2000	9.0	400.00	1.8	4
Sub-total			35	35	8							
Total			75	75	17							

The annual net income was roughly estimated by each household head.

The dry land annual net income was estimated at 400 yuan per mu based on their year book.

37. The land acquired from farmers represents 1/3-1/5 of their dry land, but the loss of net income represents less than 6%. The impact is minor. .

The installation of wells and gas pipeline will temporarily occupy 239.4 mu (15.96 ha) of farmers' dry land and 96 rural households (381 persons) will be affected.

38. **Installation of one 20,000 m³ dry storage gas tank and construction of one CNG compressor.** Installation of one 20,000 m³ dry storage gas tank and construction of one CNG compression station will be constructed in the same site. One village, Shangwang village will be affected by permanent land acquisition. These project components will affect 26.75 mu land from Shangwang Village Collective.

39. **Construction of 4 power plants.** The 4 gas-fired power stations will occupy 26.86 mu (1.79ha) of the industrial land owned by the Fuxin CBM/CMM Development and Utilization Company since the establishment of the company.

40. The summary impacts of the land acquisition of the Project are presented in Table A3.2. The impacts of permanent land acquisition and temporary land occupation are small. Therefore the impact will be limited.

Table A3.2: Permanent Land Acquisition by Fuxin CBM Development Project

Name of the Project Components	Affected Counties/ Districts	Affected Towns	Affected Villages/ Streets	Type of Land (mu)		Affected Households (no.)		Affected Population (no.)	
				Permanent Acquisition (Dry Land)	Temporary Land Occupation				
						Land acquisition	Temporary land using	Land acquisition	Temporary land using
Surface Drilling and Extraction Field	Haizhou	Hanjiadian	Xiwa	8.0		8		35	
	Haizhou	Hanjiadian	Shangwang	9.0		9		40	
20,000 m ³ gas storage tank, CNG compressor	Haizhou	Hanjiadian	Shangwang	26.75					
Transmission Pipelines	Haizhou	Hanjiadian	Shangwang		100.06		40		159
	Haizhou	Hanjiadian	Xiwa		139.34		56		222
4 Power Plants	Fuxin Coal Mine			26.86					
TOTAL				70.61	239.40	17	96	75	381

A4. LEGAL AND POLICY FRAMEWORK

41. There are two sets of regulatory and policy requirements that are applicable to the land acquisition and resettlement of the Project: relevant Chinese laws and regulations at national and provincial levels, and ADB policies. These regulatory and policy requirements are summarized in the following sections.

A4.1 Chinese Laws and Regulations

A4.1.1 Land Administration Law of PRC, 2004

42. The Land Administration Law of the People's Republic of China was newly amended and brought into force on January 1, 1999, according to the Decision on the Amendment to the Land Administration Law of the PRC that was adopted at the Fifth Session of the Seventh Standing Committee Meeting of the National People's Congress. It is stipulated in **Clause 2, Article 1** of the land administration law that the state can acquire collective-owned land according to the law for the sake of public interests. The law requires that agreement from two thirds of villagers or two thirds of the villagers' representatives be obtained before making adjustments to the land, and be verified by the agricultural administration department of the county or township government.

43. **Article 47** stipulates that in case land acquisition shall take place, compensation shall be made in accordance with the original usage of the acquired land, which shall include a land compensation fee, a relocation subsidy and a compensation fee for the attachment of the land and standing crops. The land compensation fee for the acquired cultivated land is 6-10 times the average annual output value (AAOV) of the land in the previous three years before land acquisition. The relocation subsidy of acquired farmland shall be calculated according to the agricultural population to be resettled. The agricultural population to be resettled is computed with the quantity of acquired farmland divided by farmland quantity per person of the acquired unit. The relocation subsidy for the agricultural population to be resettled shall be 4-6 times the AAOV in the previous three years. But the relocation subsidy for farmland shall not exceed 15 times the AAOV. However, in special cases a higher relocation subsidy may be given to a maximum of 15 times the AAOV over the last three years. The provinces or municipalities directly under the central authority shall determine the standards of compensation for the attachment of the land and standing crops.

A4.1.2 Decision of the State Council to strictly control land management and deepen reform of land management (Document GUOFA[2004]28)

44. **Article 12.** To improve the methodology of land acquisition compensation. The government above county must take practical measures to ensure that the livelihood of people who affected by land acquisition must not reduce due to land acquisition, and fully deliver land compensation, resettlement subsidies and standing crop compensation in time. Given land compensation and resettlement subsidies based on existing law or regulation could not ensure affected people who restore their original livelihood or, be less than Social Security Fee of affected people, the provincial level government should approve increasing resettlement subsidies. If the affected people could be ensure to restore their livelihood while the sum of land compensation and resettlement subsidies has already been the upper limit of the law, the local government can give them additionally allowance by using income from state owned land charging. Provinces, Autonomous Regions and Municipalities must stipulate and publish consolidated annual output value or comprehensive land-value of each county and make that

same land will be same rate. State-level project must include the resettlement fund into the project budget.

45. **Article 14.** To make up the land acquisition procedure. The farmers' rights and interests of land collective ownership and land contact and running must be preserved during land acquisition. Before land acquisition be reported upper in line with law, the information about the usage, location, compensation rates and resettlement methodology of proposed acquisition land must be disseminated to affected people, and the survey result to the proposed acquisition land must be confirmed by the affected Rural Collective Economic Organization (Villager Group) and farmers. If there is necessary, the Land management Department should organize the Hearing of Witnesses following the regarding regulation. The material informed and confirmed by affected farmers must be the necessary material for land acquisition approval. To establish and improve the coordination and verdict mechanism of land acquisition compensation and its resettlement must accelerated to preserve their legal rights and interests of both the affected farmers and land users. Proceedings of approved land acquisition, must be opened to public except special case.

A4.1.3 Liaoning Management Guidelines for Implementation of the PRC Land Administration Law, 2002

46. The relevant stipulations of the *Liaoning Management Guidelines for Implementation of the PRC Land Administration Law* applicable to the Project include Articles of 23, 25 and 44 in Chapter 5, which are summarized as follows:

47. **Article 23** of the guideline stipulates that compensation for land and relocation subsidy should be paid according to the following standards: i) The acquisition of farmland shall be compensated at six (6) to seven (7) times of the AAOV of last three years before the land acquisition; ii) the relocation subsidy of acquired farmland shall be four to six (4-6) times of the AAOV in the previous three years. But the relocation subsidy for farmland shall not exceed 15 times the AAOV of last three years. According to the above regulated land and relocation subsidy, the living standards of farmers still cannot reach original level, additional compensation should be considered with the approval from provincial people's government. But the sum of the land and relocation subsidy shall not exceed 30 times of the AAOV of last three years.

48. **Article 25** stipulates that the attachment of the land and crops shall be compensated according to the standards: 1) attachment on the land will be compensated based on its actual value and loss; and 2) the compensation for standing crops is based on the production value of one season's crops. Since the date of public announcement, no compensation shall be paid to the trees and crops to be planted and other structures to be constructed.

49. **Articles 44** states that the for less than one (1) ha of temporary land occupation of state- and collective-owned land due to a construction project and geological investigation, the approval shall be obtained from the county land administration department; for temporary land occupation of over one (1) ha to less than three (3) ha, the approval shall obtained from the municipal land administration department; and over 3 ha of temporary land occupation from the provincial land administration department.

A4.1.4 Regulation on State-Owned Land Use Rights Transfer through Open Bidding, May 9, 2002, Document No. 11, Ministry of State Land and Resources of PRC

50. According to the 4th provision of the ***Regulation of State-Owned Land Use Rights Transfer through Open Bidding***, issued on May 9, 2002 and effective as of July 1, 2002, the current land acquisition procedure, all commercial land use of business, tourism, entertainment and commercial housing must go through an open bidding and transfer process. The supply plan for other types of land except above land use has been publicized, if the same land has over two intended land users to use the land, it shall also go through open bidding for land transfer.

51. However, taking into consideration of the land required by the Project will only have land user for this specific type of land for CBM/CMM development, the regulation will not be applied to the Project.

A4.2 ADB's Involuntary Resettlement Policy

52. The Asian Development Bank sets out its official requirements in the Involuntary Resettlement Policy adopted in 1995. The Bank's policy on involuntary resettlement is aimed to: (i) avoid involuntary resettlement wherever feasible; and (ii) minimize resettlement where population displacement is unavoidable, and ensure that displaced people receive assistance, preferably under the Project, so that they would be at least as well-off as they would have been in the absence of the Project. Appropriate land, housing, infrastructure, and other compensation, comparable to the without project situation, should be provided to the adversely affected population, including indigenous groups, ethnic minorities, and pastoralists who may have usufruct or customary rights to the land or other resources taken for the Project.

53. According to the Bank policy, the contents and level of detail of a resettlement plan, which may vary with circumstances, especially the magnitude of resettlement, should normally include a statement of objectives, policies and strategy, and should cover the following essential elements: (i) organizational responsibilities; (ii) community participation and integration with host population; (iii) socioeconomic survey; (iv) legal framework, including mechanisms for resolution of conflicts and appeals procedures; (v) identification of alternative sites and selection; (vi) valuation of and compensation for lost assets; (vii) land ownership, tenure, acquisition and transfer; (viii) access to training, employment and credit; (ix) shelter, infrastructure and social services; (x) environmental protection and management; and (xi) implementation schedule, monitoring and evaluation.

54. The Bank policy also requires that cost estimates should be prepared for these activities; they should be budgeted; and implementation of the activities should be scheduled with time-bound actions in coordination with the civil works for the main investment project. The resettlement plan should have an executive summary. A summary resettlement plan should be included in the draft Report and Recommendation of the President (RRP) for Management Review Meeting, and in the final RRP for Board circulation.

A4.3 Objectives and Principles of Land Acquisition

55. The primary objectives of this land acquisition plan are to restore the income and living standards of the affected persons (APs) within a short period of time after land acquisition and with as little disruptions as possible in their own economic environment. Particular attention will be given to the needs of the poorest and vulnerable groups to be affected. The RP for this Project has been prepared with these in mind as the guiding principles. To meet the ADB requirements as outlined in the Involuntary Resettlement Policy and ADB Handbook on Resettlement, the following principles and approaches are employed:

56. **LAR Principles:** i) Land acquisition should be avoided or minimized where feasible from an economic, engineering, social and environmental perspective; ii) The plan should be prepared for those affected; iii) All people residing cultivating or making a living within the areas acquired for project prior to a formally recognized cut off date should be considered as affected people. They should receive compensation for all losses, including assets and livelihoods regardless of land tenure status, and should be entitled to rehabilitation assistance sufficient to assist them to improve or at least maintain their pre-project living standards, income earning capacity and production levels; iv) APs should be informed of and consulted on land acquisition and compensation standards; v) Land acquisition should be an integral part of project design. No land acquisition will take place prior to the satisfactory compensation of APs; and vi) Land acquisition program should be monitored by the Government and ADB.

A4.4 Principles of Compensation

57. In accordance with the legal and policy requirements of the Chinese Government and the Asian Development Bank, the principles of the compensation and entitlements established for the Project include: 1) Compensation and entitlements provided to APs are adequate to at least maintain their pre-project standard of living, with the prospect of improvement; 2) Land temporarily occupied and the period of disruption are kept to a minimum; 3) All APs, legal and illegal, are taken into consideration and accounted for; 4) The per-capita land holding after land acquisition is sufficient to maintain the previous livelihood standards; 5) Where land allocation per capital is not sufficient to maintain previous livelihood standards, other income generating activities are provided for; 6) All APs are adequately informed on eligibility, compensation standards, livelihood and income restoration plans, and project timing; and 7) No land acquisition will take place prior to satisfactory compensation of the APs.

A4.4.1 Definition of APs and Compensation Eligibility

58. Affected persons (APs) refer to all persons whose livelihood or living standard is adversely affected through the loss of land, other assets, income as a consequence of the Fuxin CBM Extraction Project by the FCCDUC Table A4.1 below summarizes the types of people who are eligible for compensation and entitlements.

Table A4.1: Summary of Eligibility Criteria

Project Component	Eligibility
CBM Extraction, 20,000 m3 gas tank, CNG compressor	All of the people losing their land and standing crops within right-of-way (red line) by the CMB component
Pipelines	All affected people due to the land occupation by newly constructed pipelines for sections from wells to compress station

59. All APs losing land, standing crops or sources of income will be compensated or rehabilitated in accordance with the type and amount of their losses and they are included in the final Detailed Measurement Survey (DMS) to be completed within the deadline specified by the government, or are identified as affected temporarily during construction. The deadline specified by the government is set as the final date for compensation eligibility. APs cultivating land and other productive assets after the deadline will not be eligible to compensation or subsidies.

A4.4.2 Basis of Compensation Rates

60. **Compensation rates in original RP.** According to the Liaoning Management Guideline of PRC Land Administration Law and the permanent and temporary land acquisition policy of local State Land and Resources Bureau, the compensation of land losses consists of land compensation as well as land relocation subsidy and standing crops compensation. The compensation rate for land acquisition and land temporary using was estimated as following.

61. **Land acquisition compensation estimated.** Permanent loss of agricultural land will be compensated in cash to the affected villages at a rate equivalent to 10 times the AAOV. Individuals or entities legally and illegally using affected plots will be compensated in terms of "land for land" mechanisms through redistribution of land within the village territory or other means.

62. All APs affected by permanent agricultural land losses will be entitled to receive a land relocation allowance equivalent to 10 times the AAOV. The loss of standing crops and trees will be compensated in cash to the APs at a rate equivalent to one (1) times the AAOV.

63. According to the PRC Land Administration Law, the compensation of land losses consists of land compensation as well as land relocation subsidy and standing crops compensation. Combined together, they are equal to 21 times the AAOV. The detailed standards of compensation are presented in Table A4.2.

Table A4.2: Compensation Rate of Permanent Agricultural Land Acquisition

Type of Land	Output (kg/mu)	Unit Price (yuan/kg)	Compensation Factor (x AAOV)			Total (RMB/mu)
			Land	Relocation Allowance	Standing Crops	
Dryland	800	1.25	10	10	1	21,000

64. **Temporary using land compensation estimated.** Temporary agricultural land losses will be compensated in cash to the APs through a land recovery subsidy equivalent to one (1) time the AAOV relative to the crops cultivated in the affected plot. Land cannot be occupied for more than 2 years. All APs will directly receive full compensation in cash for the crops lost calculated at output value of crop for one season, in addition to the land recovery subsidy. As a result, the compensation for the crop loss and land rehabilitation of temporary land occupation will be RMB 7,667 per mu for dry land (RMB 1,000 per mu for crops loss to be paid to APs directly and RMB 6,667 per mu for land recovery to be paid to the respective Township Land Administration Office).

65. **Compensation rates in updated RP.** The compensation rates in original RP were estimated by local Land Management Bureau. During the preparation of updated RP, Fuxin CBM/CMM Development and Utilization Co. negotiated with the two villages on compensation rates. They have reached agreement about the compensations. For the land acquisition, the compensation rate is RMB **55,000** yuan per mu, and for land temporary using, the compensation rate is RMB **10,500** yuan (including RMB 3,000 yuan for crops loss and RMB 7,500 yuan for land recovery. RMB 3,000 per mu for crops loss to be paid to APs directly and RMB 7,500 per mu for land recovery to be paid to who the Township Land Administration Office)per mu. The agreement compensation rates are higher than estimated based on Land Law and local regulations. Detail shows in table A4.3

Table A4.3: Compensation Rate comparison

	Rate in Original RP	Rate in Updated RP
1. Land acquisition		
Land compensation and resettlement subsidies (dry land)	RMB 21,000 per mu	RMB 55,000 per mu
2. Land temporary using		
Compensation for crops loss	RMB 1,000 per mu	RMB 3,000 per mu
3. Land recovery fee	RMB 6,667 per mu	RMB 7,500 per mu

66. Additionally, Fuxin CBM/CMM Development and Utilization Co. should pay RMB43,000 per mu tax and fee to governments for land acquisition and RMB20,000 for resettlement monitoring and evaluation.

67. **Compensation utilization.** For land temporary using, the compensation will pay the households who contracted the affected land directly based on the temporary using land area and the rate (3,000 yuan per mu).

68. For land acquisition, two villages have designed two options, that cash compensation and land for land (adjust village holding land to households). The cash compensation means that part (around RMB 30,000 per mu) of the land acquisition compensation will be given to households and they will not adjust land within the village. The remaining land acquisition compensation (RMB 25,000 per mu) will be used for village administration. The land for land means that all land acquisition compensation will keep in villages and the households will get same area land from the village. All households chose cash compensation during the RP preparation.

69. It should be noted that land compensation funds will be paid to the affected villages and delivered to each household and the compensation the village kept will be used to develop the productive capacity of the remaining land in their jurisdiction and/or develop other economic activities and/or village infrastructure in combination with the annual investment of local government. The measures will include: (1) expanding of existing village owned enterprises (Brick Factory-using of coal-waste, Henny); (2) development of productive capacity of the remaining land; and (3) village infrastructure development.

A4.5 Special Considerations

70. Incorporation of the needs and interests of the poor, ethnic minority, women, elderly and children will be ensured during the Project planning and implementation phases through intensive consultations. Special attention will be given to the potential difficulties faced by low-income earners in the affected communities in land acquisition planning and implementation. Focused consultation and participation programs will be carried out. When there are adverse impacts on women, ethnic minority, elderly and children, and poor families; additional social development fund of RMB 5,000 per household will be provided to them.

A4.6 Entitlement Matrix

71. From the census survey by the FCCDUC, the major impacts of land acquisition have been identified based on the nature of losses; an entitlement matrix has been prepared as a guide to compensation payments. The matrix is presented in Table A4.4.

Table A4.4: Entitlement Matrix

Type of Losses	Level of Impact	Entitled Persons	Compensation Policy and Standards	Implementation Issues
Permanent land loss (<i>No illegal APs</i>) (3 households or 12 persons)	Permanent loss of dryland and crops 43.75 mu of land in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of November 2006</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> Land compensation for permanent land loss. The compensation rate shall be RMB 25,000 per mu to be paid to the affected village. The tax (43,000) on permanent land acquisition will be paid to the local land administration bureau Relocation subsidy for loss of land permanently. The compensation rate shall be RMB 30,000 per mu (including standing crops compensation) to be paid the affected household or village collective depending upon land use contract. <p>AND</p> <ul style="list-style-type: none"> As a priority, provision of land with an area closing that of the lost land and satisfaction to the AP, OR If the land lost is marginal, the AP have the option of receiving cash compensation at full replacement cost if they wish 	
Temporary Land Occupation (46 households or 130 persons)	Loss of use of land and crops during construction period. 111.47 mu in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of November 2006</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> The compensation rates for crops loss shall be like this: RMB 3,000 per mu for dryland which will be paid to APs directly. Land recovery at the cost of RMB 7,500 per mu will be paid to the affected holdholds to restore the farmland after construction. 	Measures shall be taken to improve land quality in cases of land quality being adversely affected. Mainly keeping the surface rich soil and levelling and modifying the land by the user of the land when they are returned. This will be monitored to ensure the farmland is restored.

A4.7 Gaps Between ADB and Chinese Policies

72. According to Chinese regulations, no entitlement is considered for illegal land developers, tenants and renters, whereas the ADB policy requires the above APs to be compensated the same way as the regular APs.

73. No illegal land developers, tenants and renters have been found during the preparation of RP. But, if there are any, the FCCDUC will follow the ADB policy in this regard. It is agreed that all APs, legal and illegal, are taken into consideration and accounted for. Therefore APs without legal title will directly receive full compensation as the regular APs. Tenants/laborers will be guaranteed a rental contract equal to the remaining years of their previous contract and contract terms will be equivalent to those of the old contract.

74. Chinese regulations require giving all APs the same treatment without gender consideration. However, the ADB policy requires giving special consideration to women, female-headed households and other venerable groups. The FCCDUC has followed the policy of the Bank and has incorporated the issues of vulnerable groups and gender equity into the land acquisition and resettlement planning and implementation through the provisions of social development fund, special considerations of their needs, and preferential employment policy to them.

A5. RESETTLEMENT AND INCOME RESTORATION PLAN

75. The ultimate objective of the RP is to improve the living conditions of the affected households and host communities. Given the fact that the permanent loss of land to the Project will reduce the availability of the resources to the rural communities who depend largely on land for their livelihood, the achievement of the better-off objective will necessitate the establishment of income restoration programs that will offer the APs.

76. All of households to be affected by the land acquisition are farmers. The purpose of this section is to identify and assess possible options available for the income restoration program.

A5.1 Livelihood Rehabilitation Plan

A5.1.1 Employment of APs by the Project

77. It is stipulated in the Land Administration Law of the PRC of 2004 that all levels of local governments shall support the affected rural collective economic enterprises and individual farmers to establish and operate new enterprises. To this effect, the local governments will expand training programs in the affected communities, along with a host of other measures such as increased agricultural production, employment of APs in project activities, and social assistance to the most vulnerable groups.

78. On the basis of the Law and the wishes of the APs, Fuxin CBM/CMM Development and Utilization Co. will provide employment and training opportunities to the affected people as first priority during construction and operational phases if they choose so. According to estimates, the Project will provide 580 person-years of construction employment opportunities during the Project construction and 320 full time employment opportunities will be created for the operational phase of the Project. The affected people will be given first priority to be employed in the Project as workers, safety guards, cleaners and so on, if they wish. On average, they can

make about RMB 500 to RMB 800 salary per month. Their income will be increased substantially.

A5.1.2 Land Re-Adjustment and Agricultural Extension

79. For those who would like to choose land re-adjustment, the villages will adjust the allocation of land to the APs from the villages holding land. As only seventeen (17) households in two villages will be affected by the loss of permanent land acquisition, the impact of land acquisition is very small. Based on recent consultations with the affected households, it was determined that they all prefer cash compensation, so no land readjustment is planned.

80. According to consultations with local government agencies, the introduction of economic crops and new technologies will be promoted to farmers in the affected communities. Specific measures being considered include introduction of high-quality and high value economic products, green houses, animal breeding, more efficient application of fertilizers, and so on. Agricultural technicians and cadres will be dispatched to the affected villages and farmer households to provide workshops and hands-on training. The workshops and training will be provided semi-annually. FCCDUC will cover all of the training costs. In addition, the local governments will design and undertake programs to intensify and diversify farm operations for the APs in order to raise the value of production and income per unit of land.

A5.2 Gender Considerations

81. In the affected areas, women play a very active role in the economic development activities as well as household work. Apart from family responsibilities, women are playing an active role in the agricultural production process, both on farm and non-agricultural activities. Women also account about half of the population in the affected area. In addition, women in affected areas earned large proportion of family income. If without consideration of unpaid household work, women contribute more labor than male counterpart. Women will need special attention and support to maintain their sources of livelihood and traditional production pattern.

82. FCM and the local government will pay special attention and support to women, concerning their household needs, particularly women-headed households, and maintain their sources of livelihood and traditional production pattern. Proper employment arrangement will be made to women through the employment generation of the Project to maximize the benefits to women.

A6. PUBLIC INFORMATION, CONSULTATION AND PARTICIPATION

83. The public consultation is carried out during the Project design and planning phase by the FCCDUC, particularly through the following activities:

- Interviews with affected households;
- ADB PPTA Resettlement Specialist and technical staff of the Project had an site visit and informal discussion with the village leaders and selected APs in August and September, 2003 and November, 2006
- Measurement surveys conducted in October 2003 and October, November 2006;
- Socio-economic survey of the APs in October 20, 2003 and November, 2006;
- Meetings with various stakeholders held between August and October, 2003 and November, 2006;
- Meetings with village representatives in October 2003 (see Appendix A-1 and

- Appendix A-2 for the summary meeting notes); and
Negotiating with the two villages' leaders on land compensation from last year to October 2006.

84. The *Land Administration Law* requires the disclosure and consultation with the APs (**Articles 48 and 49**). The APs will be notified about the key elements of the land acquisition plan on village meetings to be held in November and participated in the planning and design of the land acquisition program. It is planned that a number of village meetings and interviews to discuss key elements of the land acquisition program will be convened in affected villages. Results of these consultations were integrated into the final RP.

85. The RP booklet (Appendix B-2) was prepared and distributed to the APs in November, 2003 and the updated RP booklet was prepared and distributed to the APs in January 2007. In addition, the RP will be available to anyone at the villages wishing to consult. Copies of the updated RP in Chinese will also be made available in the village committees while copies in English will be submitted to ADB in January 2007.

86. Further consultation with the APs will continue so that all issues may be addressed prior to the start of the Project construction and implementation of the RP. The meetings will be arranged by the FCCDUC in association with village committees. Each affected household will have the opportunity to negotiate on a valuation contract. The final updated RP will be submitted to ADB before February 2007. In order to address the problems and needs of the APs properly and timely regarding land acquisition, further consultation with APs will continue through the land acquisition process so that all issues may be addressed prior to the start of construction and implementation of the updated RP. The public participation and consultation plan is shown in Table A6.1.

Table A6.1: Public Participation Plan

Purpose of Event	Form of Event	Timing	Implementing Agencies	Target Participants	Remarks
1. Provide briefings to APs on Project & LA. Solicit comments from APs.	Public meetings	Completion of PPTA Draft Final Report (November 2006)	FCCDUC, township government, and village committees	All APs	Meetings to be held in each village
2. Conduct final detailed census survey	Site investigations and household interviews	Loan-Fact Finding (Nov'2006)	FCCDUC, township land administration office, and village committees	All APs affected by land acquisition of the Project	Inventory of all assets and land holdings Extraction of socio-economic data
3. Present draft final RP to APs	Public & community meetings and focus group discussion	Draft final report and Implementation (Jan'07)	FCCDUC, township government, and village committees	All APs	Distribution of the draft final RP to APs to discuss concerns & gaps relating to RP Undertake discussions

Purpose of Event	Form of Event	Timing	Implementing Agencies	Target Participants	Remarks
					with various focus groups to solicit comments & suggestions
4. Inform beneficiaries of project progress, final design, and timing	Community meetings and focus group discussion	Loan approval	FCCDUC, township government, and village committees	Stakeholders, beneficiaries, and APs	Meetings to be held with beneficiary population, and with APs
5. Advise APs of entitlements and dates of disbursement	Public meetings	Implementation (Jan 2007)	FCCDUC, township government, and village committees	All APs	Household meetings to outline entitlements
6. Monitoring of APs, beneficiaries and health impacts.	Household interviews	Post land acquisition (Dem'08)	FCCDUC, township government, and village committees, independent external monitor	Random samples	Identify need for additional support, particularly for vulnerable and disadvantaged group Provide recommendations and update RP monitoring plan Identify health improvements

87. A major issue in land acquisition implementation and management is the appropriate institutional framework for both the executing agency and field levels. It is important to ensure timely establishment and effective functioning of appropriate organizations mandated to plan and implement land acquisition, compensation, income restoration and livelihood programs.

A7. INSTITUTIONAL ARRANGEMENT

88. A major issue in land acquisition implementation and management is the appropriate institutional framework. It is important to ensure timely establishment and effective functioning of appropriate organizations mandated to plan and implement land acquisition, compensation, income restoration and livelihood programs. For a successful implementation of the RP, an institutional framework has been developed. The respective responsibilities of the FCCDUC and other relevant organizations are developed and summarized in Table A7.1.

Table A7.1: Institutional Responsibility Matrix

Institution	Responsibility
FCCDUC	1) Coordinating construction and implementation of RP, including: contracting the relevant design Institutes to determine the boundary of construction according to Project design, applying to Municipal Planning Bureau for

Institution	Responsibility
	land-use permit, and applying to provincial State Land and Resources Bureau for construction land use permit 2) Conducting measurement survey of land acquisition within the construction boundary 3) Negotiating and signing LA contracts 4) Disbursing compensation funds 5) Insurance of the employment of APs for the positions generated by the Project 6) Conducting internal monitoring on the progress of RP 7) Supervising the implementation of the RP 8) Review monitoring reports and adopt corrective measures if necessary 9) Disburse funds for LA to APs and village committees/township 10) Inspect land use conditions after LA
Fuxin Planning Bureau	1) Review the application from FCCDUC for land use permit and preliminary approval document 2) Verify the boundary of land and property acquisition 3) Issue “planned land use permit”
Fuxin State Land and Resources Bureau	1) Issue “construction land use permit”, in accordance with the land use application of the FCCDUC and the “planned land use permit” issued by Fuxin Planning Bureau 2) Supervise the implementation of the RP for compliance with approved plan and approval documents 3) Handle complaints and grievances from APs
Township Government/Village Committees	1) Conduct detailed survey 2) Negotiate compensation amounts and sign LA compensation agreements with FCCDUC for land loss 3) Reassign collective agricultural land to APs 4) Provide income restoration and livelihood rehabilitation programs to APs 5) Provide necessary assistance to APs during land acquisition process 6) Ensure that APs receive adequate training 7) Carry out the internal monitoring of RP implementation
Project Leading Group	1) Supervise and monitor the implementation of LA 2) Review internal monitoring reports 3) Review summary reports and independent reports prepared by relevant institutions 4) Propose corrective actions if problems are discovered in reviewing the progress reports and supervising implementation 5) Review external monitoring reports prepared by the independent monitoring agency 6) Propose mitigation measures for any gaps in the RP to ensure that the objectives of the RP will be achieved

89. In order to ensure that the staff of FCCDUC and township/village committees can properly and smoothly handle the land acquisition. A training program will be organized. During implementation, the officers in FCCDUC will interact with the various local governments and other agencies, identify problems early and bring them to the attention of the Project Leading Group.

90. One of the major responsibilities of the land acquisition office staff is to conduct internal monitoring of the LA program. The staff of the land office of FCCDUC and township/village committees will be provided with special training in project monitoring before the initiation of field activities related to land acquisition.

A8. GRIEVANCE PROCEDURES

91. FCCDUC will make every effort to reach an agreement with each affected household on the land compensation on the basis of the policy and compensation principles mentioned in Section 4 above. To ensure that the affected people have avenues for redressing their grievances in the event that some issues occurred related to any aspect of land acquisition, detailed procedures have been established for the Project. The grievance procedures can be as follows:

- Affected people can appeal to the village committees;
- If the village committee cannot solve the issue, it is taken to any of the following:
 - (i) Fuxin CBM/CMM Development and Utilization Co. (FCCDUC)
 - (ii) Township Government
 - (iii) Fuxin State Land and Resources Bureau
- Reply should be made by the above agencies on the appeal within 15 days;
- If AP is not satisfied with response or if the complaint is of a serious nature, then the appeal is taken to the Fuxin State Land and Resources Bureau;
- Reply should be made by the Fuxin State Land and Resources Bureau on the appeal within 30 days;
- If the AP is still not satisfied with the response then they have the legal right to submit the appeal to the court.

A9. LAND ACQUISITION AND RESETTLEMENT BUDGET

A9.1 Costs and Budget

92. The costs to of land acquisition are included in the overall budget of the Project. The total costs of land acquisition are estimated to be **RMB 7.00 million** at the prices of December 2006, including RMB 2,406,250 for permanent land acquisition of the CBM Extraction Component and 2,513,700 for the temporary land occupation of the pipelines, and RMB 1,881,250 for taxes and other costs and RMB 200,000 for monitoring and evaluation. More than 90% of the budget will be used for the first year of the civil work construction. The detailed cost estimates are presented in Table A9.1.

Table A9.1: Detailed Cost Estimate of Land Acquisition

Compensation	Type of Land	Quantity	Unit	Unit Price	Total (RMB)
1. CBM Extraction					
Permanent Land Acquisition ¹	Dryland	43.75	mu	55,000	2,406,250
	Subtotal	43.75	mu		2,406,250
2. Pipelines					
Temporary Land Occupation (dryland)	Land user	239.4	mu	10,500	2,513,700
	Subtotal	111.47	mu		2,513,700
3. Taxes and Other Costs					
Permanent Land Acquisition		43.75	mu	43,000	1,881,250
	Subtotal				6,801,200
4. Monitoring and evaluation					200,000
TOTAL					7,001,200

93. The compensation for land loss shall be paid to the affected village. The tax on permanent land acquisition shall be paid to the local land administration bureau. The temporary land occupation compensation shall be paid to the households.

A9.2 Flow of Funds

94. FCCDUC will be responsible for the financing of land acquisition cost under the Project. In accordance with the compensation policies and rates given in this RP, FCCDUC will sign compensation agreements with the following recipients and disburse the payments:

- respective township government/village committees for: a) the losses of farmland land by permanent land acquisition; b) the losses of farmland by temporary land occupation;
- APs for compensation of standing crops; and
- - Hanjiadian Township Land Administration Office for land tax and land administration fee.

95. An external and independent auditor will audit the disbursement of land acquisition fund.

A9.3 Administrative Costs

96. The administrative cost for the implementation of land acquisition of local government and its agencies and villages is included in the ***Taxes and Other Costs***.

97. The administrative cost for the implementation of land acquisition of the Project Construction Unit of FCCDUC is included in the civil engineering cost.

A10. SUPERVISION AND EVALUATION

A10.1 Monitoring, Evaluation Objectives and Requirements

98. The objectives of monitoring and evaluation are to assess if the RP is implemented on schedule and within budget and if the goals and principles of the RP are achieved. Monitoring and evaluation will include, but not be limited to: (1) monitor the progress and effectiveness of RP implementation; (2) ensure that the standard of living of APs are restored or improved; (3) assess if rehabilitation measures and compensation are sufficient; (4) identify problems or potential problems; and (5) identify methods of responding immediately to mitigate problems.

99. A monitoring and evaluation program will, accordingly, be implemented to (i) record and assess project inputs and the number of persons affected and compensated; and (ii) confirm that former subsistence levels and living standards are being re-restored and re-habilitated.

100. Specifically, monitoring and evaluation will focus on the following aspects of the APs' situation and land acquisition process: i) land acquisition and transfer procedures; ii) compensation payments; iii) economic situation prior to and after land acquisition /use; iv) restoration or rehabilitation of income levels. Monitoring and evaluation should include: establishment of socio-economic background data of the APs prior to actual land acquisition and regular monitoring of their situation for a period of 2 years after land acquisition. In addition, qualitative and quantitative evaluation will be made on the sustainability of at least the pre-project standard of living of the APs.

A10.2 M&E Indicators and Mechanisms

101. In order to ensure that the implementation of the land acquisition plan in accordance with the requirements, monitoring of implementation, both “internal” and “external”, will be carried out during and after the implementation of the Project. For internal monitoring, the Construction Unit of the FCCDUC, will take full responsibility for conducting regular internal monitoring of the RP. For external monitoring and evaluation, a qualified and independent monitoring agency will be engaged by the FCCDUC to undertake supervision, monitoring and evaluation of land acquisition and livelihood and income rehabilitation from the Project beginning to completion.

102. Table A10.1 summarizes a range of monitoring and evaluation indicators established to ensure attainment of objectives of land acquisition.

Table A10.1: Monitoring and Evaluation Indicators

Type	Indicator	Examples of Variables
Process Indicator	Staffing	<ul style="list-style-type: none"> ● Number of FCCDUC staff on Project, by component and job function ● Number of other line agency officials available for tasks
	Consultation, Participation, and Grievance Resolution Procedures in Operation	<ul style="list-style-type: none"> ● Number of consultation and participation programs held with various stakeholders ● Grievances by type and resolution ● Speed of redress of grievances ● Number of field visits by FCCDUC staff ● Effectiveness of compensation payment ● Coordination between FCCDUC and other line agencies
Output Indicator	Acquisition of Land	<ul style="list-style-type: none"> ● Area of permanent land acquired ● Area of land occupied temporarily
	Standing Crops and Trees	<ul style="list-style-type: none"> ● Standing crops destroyed by area, type and number of owners
	Compensation and Rehabilitation	<ul style="list-style-type: none"> ● Number of households affected (land, crops) ● Number and amount of compensation paid ● Amount of cultivated land re-allocation of cultivated land ● Type of agricultural technology and products introduced to the APs ● Number of job opportunities available to APs ● Number of APs trained. ● Number of employed or unemployed
Impact Indicator	Household Earning Capacity	<ul style="list-style-type: none"> ● Employment status of economically active members ● Landholding size, area cultivated and production volume, by crop ● Changes to income-earning activities (off-farm): pre- and post land acquisition/land lease

103. During implementation of the land acquisition, internal monitoring will be undertaken every six (6) weeks. Post-land acquisition monitoring will be undertaken internally every three (3) months. The independent monitoring agency will undertake external monitoring every six (6) months. The information of monitoring will be checked from three sources: 1) the affected persons; 2) the affected village committees; 3) the respective Township Government; and 3) the Hanjiadian Land Administration Office. The external monitoring agency will also carry out a

comprehensive socio-economic survey after the completion of implementation to document the standards of living and the conditions of the APs after land acquisition. A monitoring report will be prepared by the independent monitoring agency, including among other things: i) conclusion of evaluation; ii) major existing and potential problems; iii) recommendations of mitigation or prevention measures; and iv) resettlement completion report.

104. The report of land acquisition monitoring in English will be forwarded to the Bank. FCCDUC shall ensure that the monitoring agency includes information on the progress and status on all aspects of land acquisition activities. FCCDUC will also submit a final report to the Bank, to be followed by a post-land acquisition impact evaluation by the monitoring agency, which should provide further evidence whether adverse effects of the Project have been mitigated adequately, and at least pre-land acquisition income have been restored.

A11. IMPLEMENTATION SCHEDULE

105. Based on the time schedule of the Projects, a preliminary land acquisition compensation schedule reflecting the linkage land acquisition tasks and civil works construction tasks shall be consistent with the time schedule of the Projects.

106. The permanent land acquisition will be completed one month before the start of the civil work construction. All of the land acquisition activity will be completed within the first six months (January to June 2007) before the start of the Project construction. The temporary land occupation will be from March to October 2007.

107. The proposed schedule is expected to ensure that all APs, prior to the land acquisition: i) will have been adequately consulted about the Project, its impacts and compensation entitlements; ii) will have received compensation entitlements in a timely manner; and iii) have been provided with means to establishing livelihood.

Summary of Interview with Leaders of Village and Township and Representatives of Villagers Affected by Land Acquisition

Place: Minzhu Village, Hanjiadian Township, Haizhou District, Fuxin City
Date: Oct 10, 2003
Participants: Wang Hongzhi (Project Office of FCCDUC); Zhang Fengguo (General Engineer of CBM Development Co.); Zhao Xin and Liu Chunxiang (Office of CBM Development Co.); Yin Jingdong (Safety Office of CBM Development Co.); Wang Zhi (Vice Head of Hanjiadian Township); Zhang Chunguang (Secretary General of Communist Party of Minzhu Village); Li Yi (Vice Director of Minzhu Village Committee); and Wu Shuguo, Wang Jian, Li Yukui, Li Guiqin and Zhang Tianjiao (Representatives of the Villagers)

1. The Project Office organized the interviews to survey the land acquisition issues with the leaders and the villagers in Minzhu Village to be affected by the Project, and the surveys of the villagers in the villages that pipelines will pass through. The surveys have been conducted on the socioeconomic situations and income, and on opinions of APs about the Project construction and the compensation issues of land acquisition. The general situation of the village affected by the Project and the summary of the meetings and surveys are as follows.

I) General Socio-Economic Situation

2. Minzhu Village is located in the west suburb of Haizhou District, Fuxin City, which is affected by the land acquisition by CBM/CMM surface drilling. The village is relatively close to the city, and has a better economic situation. In total, there are 325 households in the village, with a total population of 1,248; most of them are engaged in agriculture. Minzhu Village has 1,872 mu of farmland. The average land holding per capita is 1.5 mu. The major agricultural crops are corn, millet and wheat. Some farmers also grow vegetables in green house. All of the farmland is dry land.

II) Summary of the Surveys

3. With the assistance of the village leaders, interviews have been made to the selected villagers, with focus on the villagers mostly affected by the permanent land acquisition. Those living along the pipelines have also been interviewed. The results are summarized as follows:

a) Introduction by the Project officer to the villagers on the briefings of the Project, the importance of the Project, the construction period, and the location of permanent land acquisition and the temporary land occupation by the construction of pipelines.

b) Introduction of the land acquisition compensation policies and obtaining the villagers' opinions on the land acquisition.

c) The villagers affected by the Project requested that they should be compensated in accordance with the concerned national policies on land acquisition, and temporary land occupation should be compensated for land recovery and standing crops. The specific compensation measures are suggested as follows:

- Permanent land acquisition: Compensation should be paid at the 10 times of the AAOV of last three years, and the APs should be re-allocated with equivalent size of

land by the village and township.

- Temporary land occupation: Compensation should be made at one time of the AAOV of last three years for land recovery, and the young crops should be compensated for about RMB1,000.

d) Assurance should be made to pay compensation timely. The agreement should be reached before land acquisition to ensure the normal livelihood of affected villagers not to be affected. The temporary land occupation should not be more than 2 years. The land should be restored after the construction.

III) Opinions of Villagers

a) Most of the affected villagers expressed that they support the Project, and they trust that the Project would enhance the utilization of the local resources, protect the local environment, increase the profitability of enterprises, reduce the discharge of CBM into air, and stimulate the local economic development in line with social and environmental benefits.

b) Most affected villagers generally understand the relevant national land acquisition laws and policies. They agreed with the compensation rates in accordance with the related national laws and policies. They requested to be compensated in cash timely for the loss of land and properties. Otherwise, the Project should not be constructed.

Summary of Socio-Economic Survey of Affected Village

Place: Minzhu Village, Hanjiadian Township, Haizhou District, Fuxin City, and Other Villages along the Pipeline

Date: Oct 10, 2003

Participants: Wang Hongzhi (Project Office of FCCDUC); Zhang Fengguo (General Engineer of CBM Development Co.); Zhao Xin and Liu Chunxiang (Office of CBM Development Co.); Yin Jingdong (Safety Office of CBM Development Co.)

1. Minzhu Village is located in the west suburb of Haizhou District, Fuxin City, which is affected by the land acquisition by CBM/CMM surface drilling. The village is relatively close to the city, and has a better economic situation. In total, there are 325 households in the village, with a total population of 1,248; most of them are engaged in agriculture. Minzhu Village has 1,872 mu of farmland. The average land holding per capita is 1.5 mu. The major agricultural crops are corn, millet and wheat. Some farmers also grow vegetables in green house. All of the farmland is dry land.
2. Minzhu Village is close to the urban proper of the city, roads and railways, with a relatively good transportation, and also close to the coalmines. Its economic base is average. It has a primary school with an average education condition. There is a small clinic in the village.
3. The villages along pipelines are located far away from the city, where economic conditions are worse than Minzhu Village. However, the land holding per capita is almost similar to Minzhu Village. Agriculture is the dominant sector. Foods and vegetables are for subsistence.
4. The survey result shows that the villagers considered that the Project is in line with the national industry policies and is good to increase the economic benefits of the industry, reduce the CBM discharge into air, improve the local environment, increase the utilization of resources, stimulate the economic development, and produce relatively greater socio-economic and environmental benefits. The APs expressed their support for the Project.

Summary of Interview with Leaders of Village Representatives of Villagers Affected by Land Acquisition

Place: Shangwang Village, Hanjiadian Township, Haizhou District, Fuxin City
Date: Nov 17, 2006
Participants: Zhang Xianguo, Qi Zhaowei, Wangfang (Project Office of FCCDUC); Xiu Yujie (Foreign Affair Division Of Fuxin Reform and Development Committee); Mr. Zhang (Secretary General of Communist Party of Shangwang Village); Mr Huo (Leader of Shangwang Village Committee); and Ms. Zhang (Accountant of Shangwang Village Committee), three representatives of the Villagers.

1. The Project Office organized the interviews to survey the land acquisition issues with the leaders and the villagers in Shangwang Village to be affected by the Project, and the surveys of the villagers in the villages that 8 wells, one 20,000 m³ dry-style gas storage, booster, distribution and transportation system, one CNG compression station, and Gas extraction system will constructed in their land. The surveys have been conducted on the socioeconomic situations and income, and on opinions of APs about the Project construction and the compensation issues of land acquisition. The general situation of the village affected by the Project and the summary of the meetings and surveys are as follows.

I) General Socio-Economic Situation

2. Shangwang Village is located in the west north suburb of Haizhou District, Fuxin City, which is affected by the land acquisition by 8 wells, one 20,000 m³ dry-style gas storage, booster, distribution and transportation system, one CNG compression station, and Gas extraction system. The village is relatively close to the city, and has a better economic situation. In total, there are 780 households in the village, with a total population of 2,330 (1,620 rural registration residents); most of them are engaged in non-agriculture. Shangwang Village has 2,135 mu of farmland. The average land holding per capita is 1.3 mu. The major agricultural crops are corn, millet and wheat. Some farmers also grow vegetables in green house. All of the farmland is dry land.

3. Shangwang village committee has two village-owned enterprises, a Poultry Farm and a Brick Factory. The Poultry Farm hired 150 labors but only 40 come from Shangwang village and other people come from outside. The Brick Factory hired 180 labor but 90 from Shangwang village.

II) Summary of the Surveys

4. With the assistance of staffs from Project Office of FCCDUC, interviews have been made to the village leaders and selected villagers, with focus on the villagers mostly affected by the permanent land acquisition. The results are summarized as follows:

a) Introduction by the Project officer to the villagers on the briefings of the Project, the importance of the Project, the construction period, and the location of permanent land acquisition and the predicted temporary land occupation by the construction of pipelines.

b) Introduction of the land acquisition compensation policies and obtaining the village and villagers' opinions on the land acquisition.

c) The villagers affected by the Project requested that they should be compensated in accordance with the concerned national policies on land acquisition, and temporary land occupation should be compensated for land recovery and standing crops.

The village leaders and villager representatives opposed against that take the AAOV of last three years in the statistics year books as the base of the compensation calculation. (According to the year books, the average grain output of their land is less than 300 kg per mu and based on the year books, the AAOV of last three years must less than 600 yuan per mu.).

d) Assurance should be made to pay compensation timely. The agreement should be reached before land acquisition to ensure the normal livelihood of affected villagers not to be affected. The temporary land occupation should not be more than 2 years. The land should be restored after the construction.

e) Before the land compensation delivery down to affected village and affected villagers, it's impossible to use the land.

III) Opinions of Villagers

a) The affected villagers expressed that they support the Project, and they trust that the Project would enhance the utilization of the local resources, protect the local environment, increase the profitability of enterprises, reduce the discharge of CBM into air, and stimulate the local economic development in line with social and environmental benefits.

b) The affected villagers generally understand the relevant national land acquisition laws and policies. They agreed with the compensation rates in accordance with the related national laws and policies. They requested to be compensated in cash timely for the loss of land and properties. Otherwise, the Project should not be constructed.

c) As the acquired farm land is minor for affected households and the agriculture on land is not valuable, the cash compensation to affected households is the best production rehabilitation option and one exception is that the government or the Project could provide formal job.

Resettlement Plan Booklet

1. INTRODUCTION

1. The Fuxin CBM/CMM Development Project is located in the Fuxin coal mining area, in the west of Liaoning Province. The Project will recover CBM/CMM by underground gas drainage systems and vertical standard wells. Twenty-two (22) vertical wells will be drained in one (1) coal mines. The Project consists of: a) installation of 22 vertical wells; b) installation of one 5000 m³ wet storage gas tank; c) installation of one 20,000 m³ dry storage gas tank and its compressor system and transmission pipeline; d) construction of one CNG compressor; e) construction of 4 power plants (installation of 22 MW); f) improvement of compressing system in Wulong and Wangyin.

2. The CBM recovered will be supplied to residential and industrial users in Fuxin city. It is expected that the Project will bring about substantial socioeconomic benefits to the local populations residing in the Project beneficiary areas at large, particularly the poor and women, including increase of employment opportunities and income for local residents during the Project construction and operation; stimulation of regional economic development; reduction of greenhouse gas (GHG) emissions, improvement of environment and health; and improvement of mine workers' safety.

2. LAND ACQUISITION IMPACTS

3. The construction of the Fuxin CBM/CMM Development Project will affect two villages in one township and one district by permanent land acquisition, which is located in Shangwang village and Xiwa village, Hanjiadian township of the Haizhou district, Fuxin city. The project will affect 17 rural households or 75 persons and acquire 43.75 mu (2.92 ha) of dry land permanently. The gas pipeline will temporarily occupy 239.4 mu (15.96 ha) of dry land and 96 rural households (381 persons) will be affected. The summary impacts of the land acquisition of the Project are presented in Table B1.1. The impacts of permanent land acquisition and temporary land occupation are small. Therefore the impact will be limited.

Table B1.1: Permanent Land Acquisition by Fuxin CBM Development

Name of the Project Components	Affected Counties/ Districts	Affected Towns	Affected Villages/ Streets	Type of Land (mu)		Affected Households (no.)	Affected Population (no.)
				Permanent Acquisition (Dry Land)	Temporary Land Occupation		
Surface Drilling and Extraction Field	Haizhou	Hanjiadian	Xiwa	8.0		8	35
	Haizhou	Hanjiadian	Shangwang	9.0		9	40
20,000 m3 gas storage tank, CNG compressor	Haizhou	Hanjiadian	Shangwang	26.75			
Transmission Pipelines	Haizhou	Hanjiadian	Shangwang		100.06	40	159
	Haizhou	Hanjiadian	Xiwa		139.34	56	222
4 Power Plants	Fuxin Coal Mine			26.86			
TOTAL				70.61	239.40	113	456

3. LEGAL AND POLICY FRAMEWORK

4. There are two sets of regulatory and policy requirements that are applicable to the land acquisition and resettlement of the Project: relevant Chinese laws and regulations at national and provincial levels, and ADB policies. The legal and policy framework and compensation standards are summarized as follows:

A. Legal and Policy Framework

5. The RP is based on the following major legal documents:

- 1) The Land Administration Law of the People's Republic of China was newly amended and brought into force on January 1, 1999.
- 2) Liaoning Management Guidelines for Implementation of the PRC Land Administration Law, 2002
- 3) ADB's Involuntary Resettlement Policy

6. The primary objectives of this RP are to restore the income and living standards of the affected persons (APs) within a short period of time after land acquisition and with as little disruptions as possible in their own economic environment.

B. Compensation Eligibility and Standards

7. Affected persons (APs) refer to all persons whose livelihood or living standard is adversely affected through the loss of land, other assets, income as a consequence of the Fuxin CBM/CMM Development Project by the FCCDUC. Table B1.2 below summarizes the types of people who are eligible for compensation and entitlements.

TableB1. 2: Summary of Eligibility Criteria

Project Component	Eligibility
CBM Extraction wells, 20,000 tank, and CNG compressor	All of the people losing their land and standing crops within right-of-way (red line) by the CMB component
Pipelines	All affected people due to the land occupation by newly constructed pipelines for sections from wells to compress station

8. All APs losing land, standing crops or sources of income will be compensated or rehabilitated in accordance with the type and amount of their losses and they are included in the final Detailed Measurement Survey (DMS) to be completed within the deadline specified by the government, or are identified as affected temporarily during construction. The deadline specified by the government is set as the final date for compensation eligibility. APs cultivating land and other productive assets after the deadline will not be eligible to compensation or subsidies.

9. According to the Liaoning Management Guideline of PRC Land Administration Law and the permanent and temporary land acquisition policy of local State Land and Resources Bureau, the following compensation standards in the original RP are:

10. For permanent loss of agricultural land, compensation for land will be paid in cash to the affected villages at a rate equivalent to 10 times the AAOV. Compensation for relocation subsidy will be paid in cash equivalent to 10 times the AAOV to the APs. The loss of standing crops and trees will be compensated in cash to the APs at a rate equivalent to one (1) times the AAOV. Combined together, they are equal to 21 times the AAOV. The detailed standards of compensation are presented in Table B1.3.

TableB1. 3: Compensation Rate of Permanent Agricultural Land Acquisition in Original Resettlement Plan

Type of Land	Output (kg/mu)	Unit Price (RMB/kg)	Compensation Factor (x AAOV)			Total (RMB/mu)
			Land	Relocation Allowance	Standing Crops	
Dryland	800	1.25	10	10	1	21,000

11. Temporary agricultural land losses will be compensated in cash to the APs through a land recovery subsidy equivalent to one (1) time the AAOV relative to the crops cultivated in the affected plot. Land cannot be occupied for more than 2 years. All APs will directly receive full compensation in cash for the crops lost calculated at output value of crops for one season. As a result, the compensation for the crop loss and land rehabilitation of temporary land occupation will be RMB 7,667 per mu for dryland (RMB 1,000 per mu for crops loss to be paid to APs directly and RMB 6,667 per mu for land recovery to be paid to the respective Township Land Administration Office).

12. During the RP updating, recently, Fuxin CBM/CMM Development and Utilization Co. negotiated with the two villages on compensation rates. They have reached agreement about the compensations. For the land acquisition, the compensation rate has been increased to RMB 55,000 per mu, and for land temporary using, the compensation rate has been increased to RMB 10,500 (RMB3,000 for crop loss and RMB7,500 for land recovery) per mu. The agreement compensation rates are higher than estimated based on Land Law and local regulations and the original RP.

13. For land temporary using, the compensation will pay the households who contracted the affected land directly based on the temporary using land area and the rate (10,500 yuan per mu). This will be monitored to ensure the land is restored by the farmers.

14. For land acquisition, two villages have designed two options, that cash compensation and land for land (adjust village holding land to households). The cash compensation means that the part land acquisition compensation the regulation stipulated will deliver to households and they will not adjust land within the village and the remained land acquisition will keep in villages. The land for land means that all land acquisition compensation will keep in villages and the households will get same area land from the village. All households chose cash compensation during the RP preparation.

15. It should be noted that land compensation funds will be paid to the affected villages and deliver to each household and the compensation the village kept will use to develop the productive capacity of the remaining land in their jurisdiction and/or develop other economic activities and/or village infrastructure in combination with the annual investment of local government. The measures will include: (1) expanding of existing village owned enterprises (Brick Factory-using of coal-waste, Hennerly); (2) development of productive capacity of the remaining land; and (3) village infrastructure development.

16. When there are adverse impacts on women, elderly and children, and poor families, additional social assistance will be provided to them.

17. The compensation entitlement matrix for the Project is presented in Table B1.4.

TableB1.4: Entitlement Matrix

Type of Losses	Level of Impact	Entitled Persons	Compensation Policy and Standards	Implementation Issues
Permanent land loss (<i>No illegal APs</i>) (3 households or 12 persons)	Permanent loss of dryland and crops 43.75 mu of land in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of November 2006</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> Land compensation for permanent land loss. The compensation rate shall be RMB 25,000 per mu to be paid to the affected village. The tax (43,000) on permanent land acquisition will be paid to the local land administration bureau Relocation subsidy for loss of land permanently. The compensation rate shall be RMB 30,000 per mu (including standing crops compensation) to be paid the affected household or village collective depending upon land use contract. As a priority, provision of land with an area closing that of the lost land and satisfaction to the AP, OR If the land lost is marginal, the AP have the option of receiving cash compensation at full replacement cost if they wish 	
Temporary Land Occupation (46 households or 130 persons)	Loss of use of land and crops during construction period. 111.47 mu in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of November 2006</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> The compensation rates for crops and land recovery shall be like this: RMB 10,500 per mu for dryland which will be paid to APs directly. 	Measures shall be taken to improve land quality in cases of land quality being adversely affected. Mainly keeping the surface rich soil and levelling and modifying the land by the user of the land when they are returned.

4. RESETTLEMENT AND INCOME RESTORATION PLAN

18. The ultimate objective of the LAR program is to improve the living conditions of the affected households and host communities. As a result, the income restoration plan has been prepared which is as follows:

4.1 Employment of APs by the Project

19. According to estimates, the Project will provide 518 person-years of construction employment opportunities during the Project construction and 320 full time employment opportunities will be created for the operational phase of the Project. The affected people will be given first priority to be employed in the Project as workers, safety guards, cleaners and so on, if they wish. On average, they can make about RMB 500 to RMB 800 salary per month. Their income will be increased substantially.

4.2 Land Re-Adjustment and Agricultural Extension

20. For those who would like to choose land re-adjustment, the affected villages will adjust the allocation of land to the APs from the villages holding land. As only 17 households in two (2) villages will be affected by the loss of permanent land acquisition, the impact of land acquisition is very small. Based on recent consultations with the affected households, it was determined that they all prefer cash compensation, so no land readjustment is planned.

21. The introduction of economic crops and new technologies will be promoted to farmers in the affected communities. Specific measures being considered include introduction of high-quality and high value economic products, green houses, animal breeding, more efficient application of fertilizers, and so on. Agricultural technicians and cadres will be dispatched to the affected villages and farmer households to provide workshops and hands-on training. The workshops and training will be provided semi-annually. The FCCDUC will cover all of the training costs. In addition, the local governments will design and undertake programs to intensify and diversify farm operations for the APs in order to raise the value of production and income per unit of land.

22. FCCDUC and the local government will pay special attention and support to women, concerning their household needs, particularly women-headed households, and maintain their sources of livelihood and traditional production pattern. Proper employment arrangement will be made to women through the employment generation of the Project to maximize the benefits to women.

5. GRIEVANCE PROCEDURES

23. FCCDUC will make every effort to reach an agreement with each affected household on the land compensation on the basis of the policy and compensation principles mentioned in Section 4 above. To ensure that the affected people have avenues for redressing their grievances in the event that some issues occurred related to any aspect of land acquisition, detailed procedures have been established for the Project. The grievance procedures can be as follows:

- i) Affected people can appeal to the village committees;
- ii) If the village committee cannot solve the issue, it is taken to any of the following:
 - FCCDUC
 - Township Government
 - Fuxin State Land and Resources Bureau

- iii) Reply should be made by the above agencies on the appeal within 15 days;
- iv) If AP is not satisfied with response or if the complaint is of a serious nature, then the appeal is taken to the Fuxin State Land and Resources Bureau;
- v) Reply should be made by the Fuxin State Land and Resources Bureau on the appeal within 30 days;
- vi) If the AP is still not satisfied with the response then they have the legal right to submit the appeal to the court.

6. LA BUDGET AND IMPLEMENTATION SCHEDULE

24. The total costs of land acquisition are estimated to be RMB 7.00 million at the prices of December 2006, of which RMB 2,406,250 for permanent land acquisition of the CBM surface extraction well component, 20,000 m³ tank and CNG compressor and RMB 2,513,700 for the temporary land occupation of the pipelines, RMB 1,881,250 for taxes and other costs. More than 90% of the budget will be used for the first year of the civil work construction. The costs to of land acquisition are included in the overall budget of the Project.

25. The permanent land acquisition will be completed one month before the start of the civil work construction. All of the land acquisition activity will be completed within the first six month (January to June, 2007) before the start of the Project construction. The temporary land occupation will be from March to October 2007.