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Urban Central Heating Pipeline Project on Economic Technical Development Area, Yingkou City Based on the Loan Provided By World Bank

Environment Management Plan

Compiling Unit: Huayuan Thermal Heating Company ltd. Yingkou Economic Technical Development Area

Oct 2007

CATALOG

1 General Situation of the Project

1.1 Background of the Project

Yingkou Economic Technical Development Area (YETDA for short) is a state-level economic technical development area, set up in 21st Oct. 1992, approved by state government, and belonged to Yingkou City, Liaoning Province, with a govern are of 258.8km^2. YETDA has a building area of 9,760,000m^2, and most of the buildings are not energy saving building. In winter, there is about 5,431,100m^2 needs heating. At the present time, most buildings in YETDA are heated by middle-sized and small boiler rooms. These boilers are low in efficiency, and have much more chimneys. The dust removing plants of these boilers are mostly ceramics multi-tube dust cleaners, which are low in efficiency, and without devulcanized ability. Because of the interval heating of boiler rooms, energy is greatly wasted. All these could cause great pollution to city environment. Due to the increased quantity to be conveyed of coal, ash, and dregs, it increases city traffic pressure and pollution. What's more, the coal, ash and dregs take much building site and green area, which greatly affects the city view and environmental quality of YETDA.
Due to the problems mentioned above, it is inevitable to adopt central heating. After the carrying out of the project, central heating will greatly enhance heating efficiency, save energy and solve the problem that low-quality water would erode pipes. Meanwhile, the discharge amount of soot, SO_2, NO_X, CO_2 will be decreased, as well as the quantity to be conveyed of coal and dregs. Traffic pressure and traffic gas will be also lightened. All these will better the environmental condition of Yingkou City.

1.2 Name, Nature and Construction Site of the Project

Name of the project: Urban Central Heating Pipeline Project on Economic Technical Development Area, Yingkou City Based on the Loan Provided by World Bank
Construction site: Economic Technical Development Area of Yingkou City
Nature of the Construction: Newly-built
Project investment & Construction time: □417,505,000 □206,584,000 provided by World Bank, and the rest 51% from self-financing
Construction duration of the project: Aug. 2007 – Nov. 2008
Aug. 2007 – Feb. 2008: Finishing the design of shop drawing, inviting public bidding, bidding and the preparation for construction.
Mar. 2008 – Oct. 2008: construction completed.
Nov. 2008: put into operation for partial heating.

1.3 Contents of the project

The contents of construction in the project are shown in table 1-1.

Table 1-1 Composition and Scale of the Project

No	Contents of the project	Property	Scale	Remarks
1	The first-level pipeline network from 1m outside the fence wall of Thermal Power Plant to each heat exchange station	Newly built	84.586km	Total heat supply area 10,423,800m2
2	Second-level pipeline network from the heat exchange station to the users	Newly built	70km	
3	Construction of 66 big heat exchange stations and 11 building heat exchange stations	Newly built	37 big heat exchange station and 11 building heat exchange station	Standard configuration is three circulating pumps (2 in operation and 1 in spare) and two sets of water replenishing and constant pressure pump. (1 in operation and 1 in spare) Standard configuration for building heat exchange stations is two circulating pumps (1 in operation and the other in spare) and 1 set of water replenishing and constant pressure pump
		Reconstruction	29 big heat exchange station	

Among the construction of 66 heat exchange stations, 29 of which make use of the buildings of former boiler houses or heat exchange stations, however, the outdated equipments must be changed.

2 Basis of compilation

2.1 Executive Standard

2.1.1 Standard of environmental quality

1) Ambient Air Quality Standard

The test of routine pollutants for ambient air quality executes the secondary standard of the state's Ambient Air Quality Standard. (GB3095-1996) See Table2-1 for details.

Table 2-1 Ambient Air Quality Standard

Standard	Item	Concentration limits of pollutants (mg/m^3)		
		Hourly average	Daily average	Yearly average
GB3095-1996	SO_2	0.50	0.15	0.06
	PM_{10}		0.15	0.10
	NO_2	0.24	0.12	0.08

2) Ambient Noise Standard

According to the different functional region of heat exchange station, execute *Standard for Urban Regional Environment Noise* (GB3096-93) respectively, first standard, 55 dB in the daytime, 45dB at night; third standard, 65 dB in the daytime, 55dB at night.

2.1.2 Emission Standard of Pollutants

1) Waste water

Discharge waste water to urban down comer pipeline. Execute *Standard for Quality of Sewage Discharged to Urban Sewer* (GJ3082-1999).

Table 2-2 Standard for Quality of Sewage Discharged into Urban Sewer Unit: mg/L

CODcr	BOD_5	SS
150□500□	100□300□	400

2) Noise

The noise during construction implements *Noise Limits for Construction Site*□GB12523-90□.

Table 2-3 Noise limits for construction site

Construction phase	Main noise source	Noise limits	
		Day time	Night time
Earthwork	Bulldozer, Excavator, Loader etc,	75	55

According to the different functional region of heat exchange station, execute *Standard for Urban Regional Environment Noise* (GB3096-93) respectively, first standard, and third standard.

3) Solid Waste

Implement *Standard for Pollution Control of Industrial Solid Wastes of Liaoning Province*（DB21-777-94）and *Standard for Pollution Control on the Storage and Disposal Site for General Solid Wastes* （GB18599-2001）.

2.2 Foundation of compilation

This plan is drawn up based on laws and regulations of environmental protection of the People's Republic of China, security guarantee policy, related regulations and planning documents of Liaoning province, Yingkou city, and Yingkou Economic Technical Development Area, the design documents of this project, the environmental impact assessment technical documents of construction project of the State Environmental Protection Bureau of the People's Republic of China as well as the international environmental agreements on which China has signed.

3 Pollutant produced by the project

3.1 Waste Water Pollutant Emission of the Project

Sewage is produced by maintainer of heat pipeline and operator in charge of heat exchange station. Sewage is discharged into municipal pipeline network.

Table 3-1 Sewage Water During Operation Period

Sewage source	Quantity of waste water （t/a）	Name of pollutant	Effluent concentration（mg/L）	Discharge quantity （t/a）	Discharge situation
Working staff	8910	COD_{Cr}	240	2.14	Into municipal pipeline network
		SS	180	1.60	

The water quality of these waste water can meet the need of *Water Quality Standard of the Sewage Discharged into Urban Sewer* （CJ3082-1999）.

3.2Solid waste produced the project

After the completion of the project, total manpower quota is 310. The quantity of home scrap is 50t/a. All the home scrap will be sent to destructor plant by environmental health department.

3.3 Replacement-source Pollutant Emission and the Change in Value of Area Pollutant

After the carrying out of the project, it will realize a central heating area of 10,423,800m2. Coal-burning boilers will be taken place by combined heat and power generation, which can greatly save energy (save standard coal 123,900 Ton

every year), Meanwhile, the discharge amount of soot, SO_2, NO_X, CO_2 will be decreased (among which, soot 2606.4 ton every year, SO_2 2372.0 ton every year, NO_X 1484.0 ton every year, and CO_2 220203.4 ton every year), as well as the quantity to be conveyed of coal and dregs. Traffic pressure and traffic gas will be also lightened. All these will better the environmental condition and people's living standard of Yingkou City. Thus, the project has great economic benefit, as well as environmental and social benefits.

4 Analysis of the Environmental Impact

This Chapter is aiming at collecting the negative environmental impact of the project, which is mainly based on the environmental impact report of the project.

4.1 Status Quo of Environment Quality

1) Ambient Air
According to Environmental Quality Briefing of Yingkou City, the daily average concentration of TSP of this area is 0.13 mg/m^3, SO2 0.04mg/m^3, NO2 0.04 mg/m^3. All quota executes State Ambient Quality Standard, secondary standard.
2) Sound Environment
The noise background value at the surrounding of the heat exchange stations can reach the first, secondary and third standard of *Standard of Environmental Noise of Urban Area*□GB3096-93□.
The noise background value at monitoring spots of pipeline network along the main communication lines can reach the fourth standard of *Standard of Environmental Noise of Urban Area*□GB3096-93□.

4.2 Environmental Impact Analysis in Operation Period

1) Noise
Most parts of the project panned to construct situated in residential area, so the noise produced by equipments of heat exchange station might have some impact on the surrounding residents.

2) Waste water
Sewage is produced by maintainer of heat pipeline and operator in charge of heat exchange station. If the sewage is not treated properly, to some degree, it will do harm to local water environment.
3) Solid waste
After the completion of the project, total manpower quota is 310. The quantity of home scrap is 50t/a. All the home scrap will be sent to destructor plant by environmental health department.

4.3 Environmental Impact Analysis in Construction Period

4.3.1Analysis of the Impact on the Air Environment

The construction of this project includes first-level heat pipeline network laying (84.586km), second-level heat pipeline network laying (70km), 66 newly-built heat exchange stations (29 stations made use of the intrinsic buildings) and 11 building heat exchange stations. The dust produced during the construction period is the main reason of ambient environment pollution, and will bring bad impact of the residents near the pipelines and heat exchange stations.

4.3.2Analysis of the Impact on the Water Environment

The sewage produced by workers on site is the main water pollution source during the construction period of the project. In the different construction periods, the number of worker differs, dozens generally. Suppose every construction worker uses water 50/L everyday, the quantity of sewage produced accounts for 80% of the total water consumption, and every worker discharge sewage 40/L everyday, it will produce SS180mg/l, CODcr 240mg/l, ammonia and nitrogen 25mg/l. If the domestic wastewater is drained directly, water environment in all the regions will be impacted

4.3.3 Analysis of solid waste environmental impact

It is about the domestic waste in constructors' resident place and constructional waste in the construction process. Such as packing bags, leftover bits and pieces of constructional material, etc. The domestic waste will be sent to city waste plant. The packing bags and leftover bits and pieces of constructional material be will recycled by constructional companies.

4.3.4 Analysis of sound environmental impact

The main machine in the construction period includes loading vehicles, road rollers, load-carrying vehicles, etc. See Table 4-2 about noise of main construction mechanical equipments.

Table 4-2 Noise of main construction mechanical equipments

Construction machine	Loading vehicles	Road rollers	Trucks
Noise dB(A)	80	75	78

Noise of construction will impact much on resident area or schools around heat exchange stations, and the first row of building on the road next to the site.

4.3.5 Analysis of traffic impact

The following aspects are the main traffic impact on piping construction in the construction period:

The piping construction breaks road and blocks traffic;

Piling earthwork and digging road block traffic;

Vehicles for transporting increasing the vehicle flow rate on the road.

4.3.6 Analysis of the impact on Ecological Environment

When digging the piping of this project, it will impact environment in a certain degree but not make the green land broken. However, vegetation in both sides of the road will be damaged in certain degree in the process of construction.

4.3.7 Analysis of the impact on Pipeline crossing the River

The first-level pipeline network of this project is alone the Hongmeihe River from north to south and Hongmeihe River is a seasonal river which discharge the rainfall of the development zone in rainy season and remains the dry-out situation not in rainy season.
The construction of the project is not in rainy season, so the method of the pipeline laying at the bottom of the river channel do little harm to the sounding environment.

5Environment Impact Mitigation Measures

According to environment impact assessment documents, considering the project features and based on pollution discharge process of project construction phase and operation phase, the environment impact mitigation plans for different phase are given as Table 5-1~Table 5-2.

Table 5-1 Environment Impact Mitigation Measures List for Pipelines Project

Phase	Problem	Mitigation Measures	MitigationCost (High or not)	Undertaker	Starting Date	Completing Date
	Noise	1□Arrange reasonable construction time from 7:00 am-6:00 pm, night construction is forbidden. 2. The noise of working equipment must meet the require of *Noise Limits for Construction Site*□GB12523-90□ which should be included in the bid documents. 3. Track and monitor.	Lower	Contractor		
	Dust	1□Establish watering system for dust suppression. Regular daily watering can prevent floating dust. Increase watering times and amount in case of dry and gale weather. 2□Area for building materials storage shall be around with enclosed fence with height no lower than the stack of building materials. 3□Each inlet and outlet of building site shall be provided with equipment to remove dirt from wheel so that vehicles will not take dirt beyond the building site. 4□Bulk materials shall be transported in tank car or under felt cloth. 5□Temporary storehouse for bulk materials shall be built within building site, or with materials under dustproof gridding. Bulk materials exposed to open air are forbidden. 6□Remove building waste in time. Incineration waste is not allowed within building site. 7□Set up fence around building site to lessen the diffusion extent of floating dust.	Lower	Contractor		
	Traffic Interruption	1.Block out the construction without using traveling crane path in case pipelines are dug at sidewalk. 2. Shorten construction time limit to 4 days in case construction goes through road. 3. Bulletin board shall be erected on the construction site, saying the project contents, construction term and the words “Please understand the inconveniences incurred from the construction”. In addition, there should be contact person and contact manner displayed on the board. 4. Set temporary bridge and baffle to insure safety of goer nearby school and hospital.	Lower	Contractor	2008.3	2008.10
	Passage Construction/Usage	Use the roads in existence without building extra transporting passage.	Lower	Contractor		
	Vegetation Damage	Vegetation quantity and category shall be recovered conforming to original one.	Low	Huayuan Thermal Heating Company ltd.		
	Cultural Heritage	1. Stop construction and inform relevant department in case any cultural properties are found during construction. The site of cultural relics shall be properly preserved without any artificial articles to be removed. 2. Wait for identification and treatment by cultural relics institutions. 3. Go to cultural relics institutions for resuming work when the cultural relics are dealt with. 4. After getting the permission from cultural relics institutions, proceed with construction following the advice of experts on cultural relics. 5.Above-mentioned will be included in contractor bid document.	Lower	Contractor		
	Non-dangerous Waste Removal (Rock and etc.)	Building waste shall be removed to waste landfill ground which stands on Yingkou Economic Technical Development Area.	Lower	Contractor		
	Insulation pipe	Bids shall indicate that the applied pre-insulation pipe does not contain any foaming agent falling short of the commitment by China in *Montreal*	Lower	Huayuan Thermal Heating		

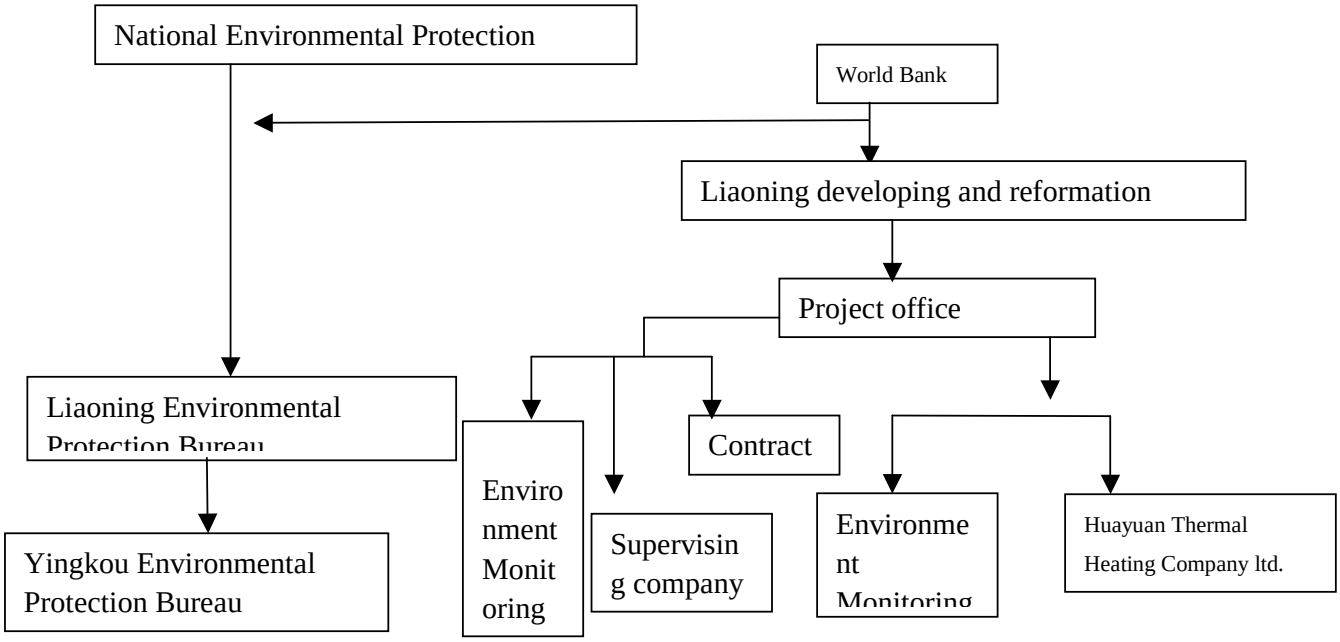
Table 5-2 Environment Impact Mitigation Measures List for Heat Exchange Station (New and Rebuilt)

Phase	Problem	Mitigation Measures	Mitigation Cost	Undertaker	Starting Date	Completing Date
Construction Phase of New Heat Exchange Station	Noise	1□Arrange reasonable construction time from 7:00 am-6:00 pm, night construction is forbidden. 2□Choose equipment with low noise. The construction of the substructure only use hydraulic pressure peg , dig hole peg and basic load peg. All of working equipment ought to be the center of field. 3. The noise of working equipment must meet the require of *Noise Limits for Construction Site*□GB12523-90□ which ought be include in the bid documents. 4. Track and monitor.	Lower	Contractor	2008.3	2008.10
	Dust	1□Establish watering system for dust suppression. Regular daily watering can prevent floating dust. Increase watering times and amount in case of dry and gale weather. 2□Area for building materials storage shall be around with enclosed fence with height no lower than the stack of building materials. 3□Each inlet and outlet of building site shall be provided with equipment to remove dirt from wheel so that vehicles will not take dirt beyond the building site. 4□Bulk materials shall be transported in tank car or under felt cloth. 5□Temporary storehouse for bulk materials shall be built within building site, or with materials under dustproof gridding. Bulk materials exposed to open air are forbidden. 6□Remove building waste in time. Incineration waste is not allowed within building site. 7□Set up fence around building site to lessen the diffusion extent of floating dust.	Lower	Contractor		
	Land Leveling/ Change Runoff Pattern	Dig ditches around project location to contain runoff as well as channel off.	Lower	Contractor		

	Passage Construction/ Usage	Use the roads in existence without building extra transporting passage.	Lower	Contractor		
	Cultural Heritage	1. Stop construction and inform relevant departments in case any cultural properties are found during construction. The site of cultural relics shall be properly preserved without any artificial articles to be removed. 2. Wait for identification and treatment by cultural relics institutions. 3. Go to cultural relics institutions for resuming work when the cultural relics are dealt with. 4. After getting the permission from cultural relics institutions, proceed with construction following the advice of experts on cultural relics. 5.Above-mentioned will be included in contractor bid document.	Lower	Contractor		
	Solid Waste	Domestic garbage shall be sent to rubbish landfill Site which stand on Yingkou Economic Technical Development Area in time.	Lower	Contractor		
	Waste water	Waste water, consisting mainly of builder's sanitary sewage shall be discharged to sewage treatment plant at last.	Lower	Contractor		
Construction Phase of Rebuilt Heat Exchange Station	Non-dangerous Waste Removal (Brick, Concrete, Metallic Scrap)	Building waste shall be removed to waste landfill ground which stands on Yingkou Economic Technical Development Area.	Lower	Huayuan Thermal Heating Company ltd.	2007.8	2008.4
	Dangerous Waste Removal (asbestos)	Dangerous Waste shall be removed to dangerous waste landfill site which have qualification.	Lower	Huayuan Thermal Heating Company ltd.	2007.8	2008.4
Operation Phase of Heat Exchange Station	Noise	1□Use imported water pump with high quality and low noise and the sound of one pump can not exceed 80 dB(A). 2□Provide good base to vibration absorption and install absorber to lighten vibration sound; inlet/outlet of water pump shall be connected with rubber tube. Add a concrete base to the bottom of water pump and add vibration isolator between base and floor, wall to eliminate the impact caused by structural low frequency sound to outside. 3□Build soundproof cover in case noise still cannot meet standard after taking above measures.	Lower	Huayuan Thermal Heating Company ltd.		
	Solid Waste	Domestic garbage shall be sent to rubbish landfill Site which stand on Yingkou Economic Technical Development Area.				
	Waste water	worker's sanitary sewage shall be discharged to sewage treatment plant at last.				

6 Organization Arrangement

According to environment monitoring plan, Monitoring Station consigned by Huayuan Thermal Heating Company ltd. will prepare monitoring report regularly for relevant functional department to audit their monitoring results.
To effectively control or mitigate different bad environment influence, the whole process of this project shall be tracked strictly and scientifically. Environment management and monitoring shall also be carried out conforming to certain criteria, monitoring and respective managing organization as follows:



1. Monitoring, data analysis and writing of monitoring report will be finished by monitoring station which have correlative qualification consigned by Huayuan Thermal Heating Company ltd.
2. Environmental official of WB, Liaoning developing and reformation committee project office and Huayuan Thermal Heating Company ltd. will answer for receiving of the report.
3. Environmental Protection Bureau of all levels will answer for supervising.
4. Huayuan Thermal Heating Company ltd. has authority to take environment impact mitigation measures of period. Contractor of construction will answer for mitigation measures of construction period which will be supervisory by qualificatory environmental surveillance company who is engaged by Huayuan Thermal Heating Company ltd.

7 Monitoring Plan and Organization Arrangement

Table 7-1 Environment Monitoring Plan for Heat Exchange Station

Phase	Monitoring Object	Monitoring Site	Monitoring Method	Monitoring Frequency	Annual Cost (10000RMB)	Undertaker	Starting Date	Completing Date
Construction	Noise	Building Site Closest to dense population area	Noise measuring instrument	One day monitoring each week or monitor after complaint	0.3	Contractor	2008.3	2008.10
	Dust	Building Site	Visual survey	Once a week in case of dry, gale weather	0.05	Contractor		
	Earth dug and backfilled, runoff patterns	Building Site	Visual survey	Once a week, continuous monitoring in case of rainstorm	0.05	Contractor		
	Passage construction and usage	On the way of transporting passage	Visual survey	Once a week during passage construction and usage; Once after completing construction	0.05	Contractor		
	Cultural Heritage	Building Site or on the way of passage construction-any place where dig is done	Visual survey	Continuous	0.02	Contractor		
	Living waste	Building Site	Visual survey	Once a week	0.02	Contractor		
Construction Phase of Rebuilt Heat Exchange Station	Non-dangerous Waste Removal□Brick, Concrete, Metallic Scrap□	At dumping site	Visual survey	Two or three times during backout period	0.02	Contractor		
	dangerous Waste Removal (asbestos)	At dumping site	Visual survey	Two or three times during backout period	0.02	Contractor		
Operation Phase	Noise	External wall of heat exchange station or ambient residential area □complaint□	Noise measuring instrument	Once in heating season or after complaint	0.05	Monitoring Station		
	solid waste	heat exchange station	Visual survey	Once a month	0.05	Monitoring Station		

Table 7-2 Environment Monitoring Plan for Heating Pipeline

Phase	Monitoring Object	Monitoring Site	Monitoring Method	Monitoring Frequency	Annual Cost (10000 RMB)	Undertaker	Starting Date	Completing Date
Construction Phase	Noise	Closest dense population area where pipeline goes through	Noise measuring instrument	One day monitoring each week or monitor after complaint	0.3	Contractor	2008.3	2008.10
	Dust	Area where pipeline goes through	Visual survey	Once a week in case of dry, gale weather	0.05	Contractor		
	Traffic Interruption（sidewalk toward commercial site）	Area where pipeline goes though or on the way of commercial site	Visual survey	Each week	0.05	Contractor		
	Passage Construction and Usage	On the way of passage	Visual survey	Once a week during passage construction and usage; Once after completing construction	0.05	Contractor		
	Land Bareness/erosion	Area where pipeline goes through and on the way of pipeline construction	Visual survey	During or after rainstorm	0.02	Contractor		
	Cultural Heritage	Area where pipeline goes through and any place where dig is done	Visual survey	Continuous monitoring	0.02	Contractor		
	Unearthed Stuff Management	Area where pipeline goes through, any place where dig is done and backfill storage site	Visual survey	Each week	0.02	Contractor		
	Non-dangerous Waste Removal (rock and etc.)	At dumping site	Visual survey	Two or three times during backout period	0.02	Contractor		
	Chemical characteristics of insulation pipe foaming agent conforms to China's commitment in *Montreal Agreement*	Where insulation pipe is delivered	Audit technical specification in delivery documents	Once when delivering insulation pipe	0.02	Contractor		

	solid waste	Building Site	Visual survey	Once a week	0.05	Contractor		

8 Reporting system

8.1 Monitoring Report

8.1.1Category and Content of Monitoring Report

Monitoring report consists of construction and operation monitoring report.
Perform analysis, assessment to construction and operation monitoring results in accordance with relevant standards, with the explanation of monitoring site, sampling time and monitoring factor.
Assess the result of environment mitigation measures conforming to monitoring results.
Discuss or negotiate with environment supervising organization, environment impact assessment group to improve or replace mitigation measures of bad results.

8.1.2 Submitting Time and Monitoring Report Accepter

□1□Submission of Monitoring Report
In construction phase, monitoring report shall be submitted each quarter.
Comprehensive report shall be submitted after construction accomplishment.
That is quarter report for each quarter in functional phase and annual report for each year.
□2□Monitoring Report Acceptor:
Monitoring report shall be submitted to Yingkou Environmental Protection Bureau, Liaoning Environmental Protection Bureau, Huayuan Thermal Heating Company ltd. and World Bank.

8.1.3 Feedback Requirement of Monitoring Report

Each acceptor shall give their feedback in a month after receiving the report.
Acceptor shall analyze and assess report content within feedback time limit; confirm whether the environment mitigation measures are effective or not; arrange following work and bring forward relevant requirements.
Acceptor also shall bring forward improving advice and regulatory scheme (if applicable) on environment mitigation measures within feedback time limit.

8.2 Records and EMP Execution Annals

8.2.1 Record system

To ensure efficient operation of environment management system, Huayuan Thermal Heating Company ltd., the owner, must establish a perfect record system and retain records in the following respects: requirements by laws and regulations; license; environmental elements and the relevant environmental impacts; training; inspection, check and the maintenance; monitoring data; substandard, the effectiveness of precautionary and remedial measures; information of parties concerned; verification; examination. In addition, proper control over the records aforementioned must be

exerted, including: records ID, records collection, catalogue, filing, retention, management, maintenance, inquiry, retention period and process etc.

8.2.2EMP Execution Reports

Huayuan Thermal Heating Company ltd. should keep a detailed record concerned with the EMP execution, which should be reported to Project Office in time; the project schedule report made by Project Office must include EMP schedule, such as the schedule and effect of EMP execution. The annual EMP execution reports should be completed within the specified time and submitted to the World Bank.
EMP execution report should cover the contents below:
·Project progress;
·Implementation of training programs;
·If there is public complaint, if any, keep records of what they mainly complained, solutions provided and the public satisfaction;
·Next year's executive plan for EMP.

9Training Plan

All employees shall be trained with environmental protection knowledge and skills, builders in particular in order to carry out this project smoothly and effectively. Training includes not only the importance and meaning of the planned project, but also different training emphasis for employees in different position. Training method depends on managing level and the importance of environmental protection position, details in Table 9-1.

Table 9-1 Training Plan for Environmental Protection Technician

Personnel	Training Content	Mode	Number of Trainee	Time□Day□	Expense□Unit in 10000RMB□
					RMB
Construction Environmental Protection Personnel	Environment Basic Theory, Monitoring Method, Writing Monitoring Report and Position Training	National training	15	2	5
Environment Protection Supervising Engineer and Environment Managing Staff of Contractor	Environmental Protection Code, Construction Programming, Environment Monitoring Rule and Criterion.	National training	4	3	10
	Noise monitoring and control Training	National training	4	2	
Total					15

According to environment monitoring plan, Yingkou Environment Monitoring Station will prepare monitoring report regularly for relevant functional department to audit their monitoring results.

10 Public Participation Plan

Participation in of the public is an important part of the report of Environmental Impact and is of vital important to improving decision-making. It can directly reflect opinions of the public to enable policy-making department to find out latent problems timely, revise them in time and make the design program perfect, and

enable the problems reflected by the public to be fundamentally dealt with and then proceed to make the planning, design and environmental monitoring and management tend to be perfect and reasonable, making every effort to make the construction of the project to obtain optimized unity as regards the environmental returns, social benefit and economic benefit.

10.1 Public participation plan

·Set notice board in construction site; Confirm the related details of the project; Explain environment-protecting provisions and matters that need attention during construction period; Give name and phone number of the person in charge of the project.

·During the construction period, please take stochastic investigation revisit to sensitive targets every month.

·According to the results of quarterly and annual investigation, assess public satisfaction, analyze related public opinions, and take measures to slow down the environmental impact if necessary.

10.2 Ways of complaints

In order to protect the rights of people (to be influenced), it will build a complaint system which can afford the public with a convenient, transparent, fair and effectual complaint channel. That’s why the Team in Charge of Environmental Impact Complaint is established. The team is composed of the staff from Yingkou Environmental Protection Administration, and team member come from the project office, Yingkou Environment Monitoring Station, and environment evaluation institute. Complaint Acceptance Office (under the leadership of the Team in Charge of Environmental Impact Complaint) is established in Yingkou Environment Monitoring Station. Daily complaints are collected and arranged by Complaint Acceptance Office, and the office will finally give possessing advice after discussed with related accountability unit.

·Complaint process

Team in Charge of Environmental Impact Complaint and Complaint Acceptance Office will accept complaints with one week after the project starts. Meanwhile special complaint link and mailbox will be open up. See following details:

If the person who believes his rights are violated in any environmental aspect, the complainant may lodge a complaint to Complaint Acceptance Office in written form of spoken form. If in spoken form, the staff of Complaint Acceptance Office will keep detailed record, and submit the processing advice within two weeks.

If the complainant is discontented the advice from Complaint Acceptance Office, the complainant may lodge a complaint to Liaoning Environmental Protection Bureau within one month after he received the processing advice. Liaoning Environmental Protection Bureau will give their processing advice within three weeks.

If the complainant is still discontented the advice from Liaoning Environmental Protection Bureau, the complainant may lodge a complaint to local people’s court (according to The Civil Procedure Law of the People's Republic of China), and the court will hear and announce their verdict.

11 EMP

EMP of the project's environmental managing plan includes the cost of employee training and environmental superintendence and environmental monitoring during conductive period. See chart 11-1 and 11-2 for details.

Chart 11-1

unit: ten thousand RMB

Item	Constructive period budget for one year	Operating period budget for one year	Capital resource
Salary	15	36	Domestic funds
Office cost	8	5	
Traffic cost	8	5	
Monitoring cost	10	8	
Budget for superintendence engineers	6	-	
Total budget of environment managing plan	47	54	

Chart 11-2

unit: ten thousand RMB

Item	Number of trainee	Cost	Capital resource
construction environment protection employees	15	5	Domestic funds
environment superintendence engineers during construction period and environment management staff during operating period	8	10	
Total	-	15	