Minutes of Discussions
on the Preparatory Survey
on the Project for Clean Energy Promoting Using Solar Photovoltaic System
in the Republic of Kazakhstan
(Explanation on Draft Final Report)

In December, 2009 and March 2010, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Preparatory Survey Teams on the Project for Clean Energy Promoting Using Solar Photovoltaic System (hereinafter referred to as "the Project") in the Republic of Kazakhstan (hereinafter referred to as "Kazakhstan"), and through discussions, field surveys and technical examination of the results of the surveys in Japan, JICA prepared a Draft Final Report of the Outline Design.

In order to explain and to consult with the concerned officials of the Government of Kazakhstan on the component of the Draft Final Report, JICA sent Kazakhstan the Preparatory Survey Team for Draft Final Report Explanation (hereinafter referred to as "the Team"), which is headed by Mr. Hideaki Maruyama, Chief Representative of Kyrgyz Republic Office, JICA, from August 27th to September 4th, 2010.

And as a result of discussion, both sides confirmed the main items described on the attached sheets.

Astana, September 3, 2010

Kasymbekov Baktybay
Vice Minister
Ministry of Education and Science
The Republic of Kazakhstan

Hideaki Maruyama
Leader
Preparatory Survey Team
Japan International Cooperation Agency
JAPAN

(Witnessed by)

Nurlan Aimaganbetov
Chairman of Board
JSC "Astana Knowledge City"
The Republic of Kazakhstan

Kanat Baigarin
Managing Director on Development
JSC "Nazarbayev University"
The Republic of Kazakhstan

ATTACHMENT

1. Project Components

After the explanation of the contents of Draft Final Report by the Team, the Kazakh side and Japanese side agreed the project components included in it.

2. Program Grant Aid for Environment and Climate Change of the Government of Japan

The Kazakh side confirmed the components defined in the Minutes of Discussion signed by both sides on 23rd December, 2009 (hereinafter referred to as "the previous M/D"), and would take the necessary related measures for smooth implementation of the Project following procedures of the Program Grant Aid for Environment and Climate Change of the Government of Japan as described in **Annex-4, 5, 6, 7 and 8 of the previous M/D**.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Kazakh side by October 2010.

4. Confirmation of progress made for the previous M/D

4.1. Project Site and capacity of PV module

Both sides confirmed that the Project Site is the Nazarbayev University (hereinafter referred to as the "NU"). The detail location of the site is shown in Annex-1. The Team explained that the design capacity of Photovoltaic (PV) module procured and installed in the NU is 800kWp based on the result of the outline design and cost estimation.

4.2. Connection of national grid

Based on the previous M/D, the Team reconfirmed that Kazakh side has agreed to install the PV system, and to have it connected to the national grid and to send the surplus of the power generated by the system back to the grid.

5. Items of Equipment to be procured

The Team explained that the items of equipment to be procured as shown in Annex-2. After discussion, both side confirmed that the major equipment such as PV modules consist of PV cells and Power Conditioners should be products of Japan, and products of third country could be acceptable for other equipment as a part of components.

6. Project Cost

The Kazakh side was informed that the Project cost should not exceed the upper limit of amount agreed on in E/N and G/A. Both sides also confirmed that the Project cost contains procurement of equipment, the transportation up to the Project Site, installation, the payment for Procurement Agent and the consultant that includes implementation and soft component for the technical assistance of operation and maintenance of the equipment and PV system as a whole.

The Kazakh side understood that the Project Cost Estimation attached as Annex-3 is not final and is subject to change by the result of examination through revision of the Outline Design.

7. Project Implementation Schedule

Both sides confirmed the revision of implementation schedule.

8. Implementing Agency

(1) The responsible organization is the Ministry of Education and Science. A representative of the ministry will be the signer of E/N and G/A of the Project.

(2) The implementing entity is JSC "Astana Knowledge City" (hereinafter referred to as the "KC"). A representative of the KC will be the signer of the Agent Agreement.

(3) The responsible entity of operation and maintenance after the completion of the Project is JSC "Nazarbayev University". JSC "New University of Astana" changed the name officially to JSC "Nazarvayev University"

9. Ownership and Responsibilities for Operation and Maintenance

The Kazakh side has confirmed that the KC will transfer the PV equipment to the NU who will be the owner after the completion of the Project. The NU will be responsible for Operation and Maintenance (O&M) activities of daily basis, and should assign necessary personnel required therein. The Kazakh side understood the estimated cost for O&M described in the Draft Final Report and agreed that the NU and Ministry of Education and Science will jointly secure necessary budget.

10. Procurement Process of the Project

Both sides reconfirmed that procurement process would be supervised by the Procurement Agent (hereinafter referred to as "the Agent") in necessary consultation with the Consultative Committee (hereinafter referred to as "the Committee"). And both sides also reconfirmed roles of the Agent as follows;

(1) The Agent renders the services stipulated in the provisions of the G/A as well as the E/N for the Project;

(2) The Agent will undertake the procurement procedure necessary for the Project according to the provisions of the G/A and E/N and any other concerned guidelines;

(3) JICA will provide the Draft Final Report and Final Report to the Agent; and

(4) The Agent will commence the procurement according to the contents of the Final Report of the Outline Design.

The Team explained that if tender price exceeds the amount agreed on G/A and E/N, quantity or/and items of the equipment would be reduced until the cost for the Project comes down to the amount agreed on G/A and E/N.

The Kazakh side agreed that if there is a remaining amount of the cost for the Project after tenders, additional items of equipment would be procured based on an equipment lists which will be set in the Final Report.

The Kazakh side is also informed that decision on addition or reduction of the equipment to be procured would be made through necessary consultation among members of the Committee.

11. Environment and Social Considerations

The both side agreed the contents of EIA check list as shown in Annex-4. And the Kazakh side agreed following issues and to monitor EIA procedures in accordance with the monitoring sheet (Annex-5).

11.1 Environment Impact Assessment (EIA)

The both sides agreed that the KC will issue the letter with the reports submitted by the Team to the Ministry of Environmental Protection to clarify the necessity of EIA procedures for the Project. And the result shall be shared with the Japanese side by the end of September.

11.2 Resettlement

The team recommended and the Kazakh side agreed to announce the schedule of the resettlement to the affected parsons by the middle of October. And the Kazakh side agreed to complete resettlement of all residences in the Project Site before the Agent Agreement.

12. Other Issues

12.1 Construction Permission for the Project

The Kazakh side explained that KC will be responsible for obtaining a construction permission for the Project including coordination between the Contractor for the Project and the design company of the NU.

12.2 Customs and tax exemption

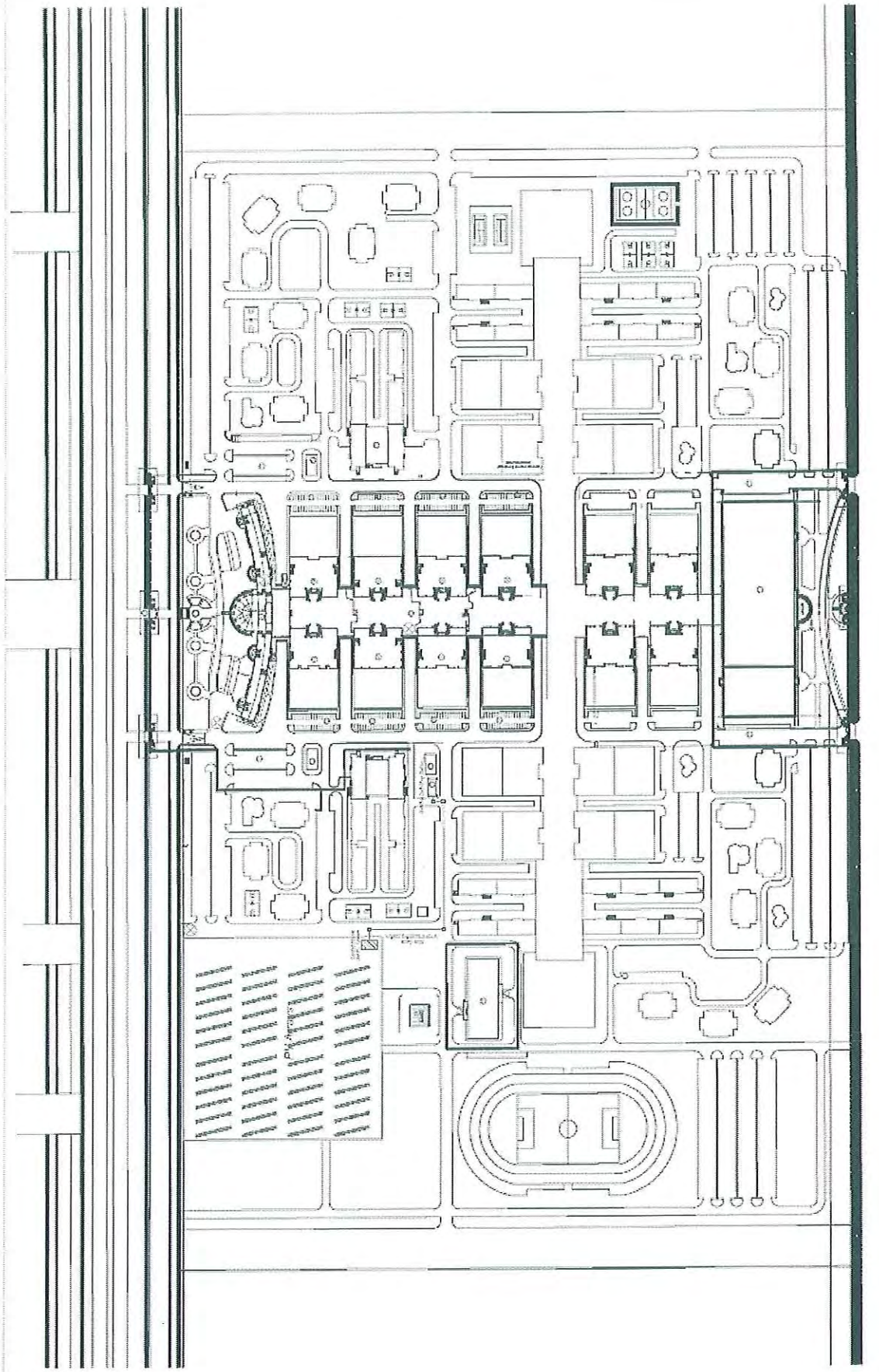
Both sides confirmed the Kazakh side will commence the procedure for customs and tax exemption, as soon as the E/N was ratified, in cooperation with the Ministry of Finance.

12.3 Confidentiality of the Project

Both sides confirmed that all the information related to the Project such as detailed drawings, specifications, and the result of cost estimation shall not be released to any outside parties before conclusion of all the contract(s) for the Project because they are confidential document that contains information related to the tender.

<List of Annex>

Annex-1	Project Site
Annex-2	List of Equipment
Annex-3	Project Cost Estimation (Confidential)
Annex-4	EIA Check List
Annex-5	Monitoring Form



Project Site

Annex-2

List of Major Equipment

Equipment		Quantity
Photovoltaic Generating System		1 system
	1-1. Photovoltaic (PV) Modules	*800 kW*
	1-2. Junction & connection Boxes	*1 lot*
	1-3. Power Conditioners	*1 lot*
	1-4. Step-up transformers	*1 lot*
	1-5. 10 kV switchgear cubicles for network interconnection	*1 lot*
	1-6. 400 V distribution panels	*1 lot*
	1-7. Supporting Structures for PV module	*1 lot*
	1-8.Materials of wiring and earthing	*1 lot*
	1-9. PV system display units	*1 lot*
	1-10. Meteorological Observation Device	*1 lot*
	1-11. Spare Parts, Consumables and Tools	*1 lot*
	1-12. Miscellaneous Materials	*1 lot*

Confidential

Annex-3

Project Cost Estimation

This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant Aid.

1. Cost to be borne by the Japanese side: approximately

Item	
1. Procurement cost of equipment and materials	
2. Procurement Agent & Consulting Services Fee	
3. Total (1+2)	

This page is closed due to the confidentiality.

2. Cost to be borne by the Kazakh side:
Although small in scale and not estimated, there are two undertakings that should be done by the Kazakh side:

Item	Amount (Million Kazakh Tenge)
1. Land preparation for the PV module installation area by KC	2.58
2. Installation of the fence and the gate around the site by KC	5.83
3. Total (1+2)	8.41

3. Cost to be borne by the Kazakh side for Operation and Maintenance (every year)
   (1) Personnel expenses Approximately KZT 1,620,000
   (2) Expendable and replacement parts cost Approximately KZT 1,420,000
   (3) Total Approximately KZT 3,040,000

The equipment to be procured in the Project can be operated and maintained by the existing maintenance staff of the facility of NU. The O&M work will take up a little time of the staff on daily basis, which is evaluated in money term.

At intervals the equipment will require replacement of worn out parts and consumables. In the short run, most of parts and consumables to be needed will be covered by those provided in the Project, only minor, locally available items have to be purchased by Kazakh side. After the provisions of the Project have run out, necessary items that have to be purchased by Kazakh side will increase.

4. Conditions for estimation
   (1) Time of estimation: April 2010
   (2) Foreign exchange rate: US$ 1.00 = JP¥ 91.20
   KZT 1.00 = JP¥ 0.606
   (3) Others:
   The above estimation was carried out in accordance with relevant rules and the guideline of Japan's Grant Aid.

Environmental Checklist (1)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	① Have EIA reports been officially completed? ② Have EIA reports been approved by authorities of the host country's government? ③ Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? ④ In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	①Yes,the EIA for the university has been completed. However, the revision of EIA reports will be clarified. ②Yes, the EIA for the university has been approved by the Ministyr of Environment Protection. ③The EIA reports was approved with some condition. Howver, the conditions was alredy solved. ④No, additional environmental permittion is needed.
	(2) Explanation to the Public	① Are contents of the project and the potential impacts adequately explained to the public based on appropriate procedures, including information disclosure? Is understanding obtained from the public? ② Are proper responses made to comments from the public and regulatory authorities?	①The plan of the construction of the University is well known to the public. And the information of land acquisition have been announced to affected people. ②N/A (It has no negative comment.)
2 Mitigation Measures	(1) Air Quality	① In the case that electric power is generated by combustion, such as biomass energy projects, do air pollutants, such as sulfur oxides (SOx), nitrogen oxides (NOx), and soot and dust emitted by power plant operations comply with the country's emission standards and ambient air quality standards? ② Do air pollutants, such as hydrogen sulfide emitted from geothermal power plants comply with the country's standards? Is there a possibility that emitted hydrogen sulfide will cause impacts on the surrounding areas, including vegetation? ③ Do air pollutants emitted from other facilities comply with the country's emission standards?	N/A (This project is to indroduce Solar Photovoltaic System)
	(2) Water Quality	① Do effluents (including thermal effluent) from various facilities, such as power generation facilities comply with the country's effluent standards? Is there a possibility that the effluents from the project will cause areas that do not comply with the country's ambient water quality standards? ② In the case of geothermal power plants, is there a possibility that geothermal utilization will cause water pollution by pollutants, such as As and Hg contained in geothermal fluids? If water pollution is anticipated, are adequate measures considered? ③ Do leachates from the waste disposal sites comply with the country's effluent standards and ambient water quality standards? Are adequate measures taken to prevent contamination of soil, groundwater, and seawater by leachates?	N/A (This project is to indroduce Solar Photovoltaic System)
	(3) Wastes	① Are wastes generated by the plant operations properly treated and disposed of in accordance with the country's standards (especially biomass energy projects)?	N/A (This project is to indroduce Solar Photovoltaic System)
	(4) Soil Contamination	① Has the soil in the project site been contaminated in the past, and are adequate measures taken to prevent soil contamination?	N/A (This project is to indroduce Solar Photovoltaic System)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
2 Mitigation Measures	(5) Noise and Vibration	① Do noise and vibrations comply with the country's standards?	N/A (This project is to indroduce Solar Photovoltaic System)
	(6) Subsidence	① In the case of extraction of a large volume of groundwater or extraction of steam by geothermal power generation, is there a possibility that the extraction of groundwater or steam will cause subsidence?	N/A (This project is to indroduce Solar Photovoltaic System)
	(7) Odor	① Are there any odor sources? Are adequate odor control measures taken?	N/A (This project is to indroduce Solar Photovoltaic System)
3 Natural Environment	(1) Protected Areas	① Is the project site located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	N/A (The project site is in the university site.)
	(2) Ecosystem	① Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? ② Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? ③ If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? ④ Is there a possibility that localized micro-meteorological changes due to wind power generation will affect valuable vegetation in the surrounding areas? (Is there valuable vegetation in the vicinity of the wind power generation facilities?) If impacts on vegetation are anticipated, are adequate measures considered? ⑤ Are the wind power generation facilities (wind turbines) sited by considering the habitats and migration routes of sensitive or potentially affected bird species?	N/A (The project site is in the university site.)
	(3) Hydrology	① Is there a possibility that hydrologic changes due to installation of structures, such as weirs will adversely affect the surface and groundwater flows (especially in "run of the river generation" projects)?	N/A (The project site is in the university site.)
	(4) Topography and Geology	① Is there a possibility that the project will cause a large-scale alteration of the topographic features and geologic structures in the surrounding areas (especially in run of the river generation projects and geothermal power generation projects)?	N/A (The project site is in the university site.)

Environmental Checklist (3)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(1) Resettlement	① Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? ② Is adequate explanation on relocation and compensation given to affected persons prior to resettlement? ③ Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? ④ Does the resettlement plan pay particular attention to vulnerable groups or persons, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? ⑤ Are agreements with the affected persons obtained prior to resettlement? ⑥ Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? ⑦ Is a plan developed to monitor the impacts of resettlement?	① 28 houses should be resetteled. However, the university site has been desided already. If the project was not implemented, these houses will be moved to construct facilities of the university. ② Explanation on relocation has already done to the all residences in the university site. And the schedule of the relocation will be informed to the affected parsons at the project site by the middle of October. The amount of compensation will be decided through the negotiation with each resident in accordance with the Land Law of the Republic of Kazakhstan. ③The site is locatied on the land for vacation houses. Therefore, the public infrastructureof the site is not adequate for the settlement. And proper compensation will be given. ④The resettlement procedure doesn't have any special consideration to vulnerable groups, however, no negative point is existing on the procedure. ⑤Agreements with the affected persons will be obtained in accordance with the Land Law of the Republic of Kazakhstan. ⑥Yes. Some part of the university site was already secured properly in accordance with the Land Law of the Republic of Kazakhstan without any confliction. ⑦Monitoring will be conducted using monitoring form agreed by JICA study team
	(2) Living and Livelihood	① Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? ② Is there a possibility that the amount of water (e.g., surface water, groundwater) used and discharge of effluents by the project will adversely affect the existing water uses and water area uses?	N/A (The project site is in the university site.)
	(3) Heritage	① Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the country's laws?	N/A (The project site is in the university site.)
	(4) Landscape	① Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	N/A (The project site is in the university site.)
	(5) Ethnic Minorities and Indigenous Peoples	① Does the project comply with the country's laws for rights of ethnic minorities and indigenous peoples? ② Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?	N/A (The project site is in the university site.)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
5 Others	(1) Impacts during Construction	① Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? ② If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? ③ If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts? ④ If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?	① The consultant will instruct the Contractor to take adequate measures to reduce impacts during construction. ② - ditto - ③ - ditto - ④ The consultant will instruct the Contractor to provide health and safety education for project personnel.
5 Others	(2) Monitoring	① Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? ② Are the items, methods and frequencies included in the monitoring program judged to be appropriate? ③ Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? ④ Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	① Monitoring will be conducted using monitoring form agreed by JICA study team. ② Yes. ③ Yes. JSC "Astana Knowledge City" is implementing the monitoring. ④ Unnecessary.
6 Note	Reference to Checklist of Other Sectors	① Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (e.g., projects including installation of electric transmission lines and/or electric distribution facilities).	N/A
	Note on Using Environmental Checklist	① If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	N/A

1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are made, if necessary.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan' experience).
2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which it is located.

MONITORING FORM

1. **Resettlement Status of Country Houses as of DD/MM/YYYY** (Frequency: once a month)

No.	Monitoring Items	Monitoring Result
(1)	Total number of houses on the Project Area	28 houses
(2)	Total number of houses completed the relocation agreement	xx houses
(2)	Number of houses resettled during this period	xx houses
(3)	Total number of resettled Country Houses	xx houses
(4)	Total number of houses to be resettled ((1) – (4))	xx houses
(5)	Target day for completion of Resettlement	DD/YY/YYYY

2. **Issue(s) to be solved for Resettlement (if any)**

3. **Land Preparation as of DD/MM/YYYY** (Frequency: once a month)

No.	Monitoring Items	Monitoring Result
(1)	Total Project Area	40,000 m^2
(2)	Prepared area during this period	xxx m^2
(3)	Total prepared area	xxx m^2
(4)	Total area to be prepared ((1) – (3))	xxx m^2
(5)	Target day for completion of land preparation	DD/YY/YYYY