

Environmental Checklist: 13. Other Electric Generation (1)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
1 Permits and Explanation	(1) EIA and Environmental Permits	<p>Have EIA reports been officially completed?</p> <p>Have EIA reports been approved by authorities of the host country's government?</p> <p>Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied?</p> <p>In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?</p>	
	(2) Explanation to the Public	<p>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?</p> <p>Are proper responses made to comments from the public and regulatory authorities?</p>	
2 Mitigation Measures	(1) Air Quality	<p>In the case that electric power is generated by combustion, such as biomass energy projects, do air pollutants, such as sulfur oxides (SO_x), nitrogen oxides (NO_x), and soot and dust emitted by power plant operations comply with the country's emission standards and ambient air quality standards?</p> <p>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?</p> <p>Do air pollutants emitted from other facilities comply with the country's emission standards?</p>	
	(2) Water Quality	<p>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?</p> <p>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?</p> <p>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?</p>	
	(3) Wastes	<p>Are wastes generated by the plant operations properly treated and disposed of in accordance with the country's standards (especially biomass energy projects)?</p>	
	(4) Soil Contamination	<p>Has the soil in the project site been contaminated in the past, and are adequate measures taken to prevent soil contamination?</p>	

Environmental Checklist: 13. Other Electric Generation (2)

Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
2 Mitigation Measures	(5) Noise and Vibration	Do noise and vibrations comply with the country's standards?	
	(6) Subsidence	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?	
	(7) Odor	Are there any odor sources? Are adequate odor control measures taken?	
3 Natural Environment	(1) Protected Areas	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?	
	(2) Ecosystem	<p>Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)?</p> <p>Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions?</p> <p>If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?</p> <p>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?</p> <p>Are the wind power generation facilities (wind turbines) sited by considering the habitats and migration routes of sensitive or potentially affected bird species?</p>	
	(3) Hydrology	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)?	
	(4) Topography and Geology	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)?	

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
4 Social Environment	(1) Resettlement	<p>Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?</p> <p>Is adequate explanation on relocation and compensation given to affected persons prior to resettlement?</p> <p>Is the resettlement plan, including proper compensation, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?</p> <p>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?</p> <p>Are agreements with the affected persons obtained prior to resettlement?</p> <p>Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?</p> <p>Is a plan developed to monitor the impacts of resettlement?</p>	
	(2) Living and Livelihood	<p>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?</p> <p>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?</p>	
	(3) Heritage	<p>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?</p>	
	(4) Landscape	<p>Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?</p>	
	(5) Ethnic Minorities and Indigenous Peoples	<p>Does the project comply with the country's laws for rights of ethnic minorities and indigenous peoples?</p> <p>Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?</p>	
5 Others	(1) Impacts during Construction	<p>Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p> <p>If necessary, is health and safety education (e.g., traffic safety, public health) provided for project personnel, including workers?</p>	

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Category	Environmental Item	Main Check Items	Confirmation of Environmental Considerations
5 Others	(2) Monitoring	<p>Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?</p> <p>Are the items, methods and frequencies included in the monitoring program judged to be appropriate?</p> <p>Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?</p> <p>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?</p>	
6 Note	Reference to Checklist of Other Sectors	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).	
	Note on Using Environmental Checklist	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).	

- 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.