



OFFICE OF THE ADMINISTRATOR  
**ECOLOGY CENTER**

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**SUBIC BAY FREEPORT ZONE  
ENVIRONMENTAL COMPLIANCE CERTIFICATE  
EC-SBFZ-ECC-69-21-500**

The SUBIC BAY METROPOLITAN AUTHORITY (SBMA) through the ECOLOGY CENTER (EC) hereby grants this **SUBIC BAY FREEPORT ZONE ENVIRONMENTAL COMPLIANCE CERTIFICATE (SBFZ ECC)** to

**TAIWAN COGENERATION INTERNATIONAL CORPORATION**

for the proposed **2 X 150 MW COAL- FIRED THERMAL POWERPLANT PROJECT** after complying with the Environmental Impact Assessment (EIA) requirements as provided for in the SBMA Environmental Impact Statement (EIS) System and Department of Environment and Natural Resources Administrative Order 2003-30.

This Certificate is being issued subject to existing and applicable laws, rules and regulations, and to the following conditions:

**A. GENERAL CONDITIONS:**

1. This Certificate is valid only for the construction, installation and operation of **2 x 150 MW Circulating Fluidized Bed Combustion (CFBC) Coal Power Plant** on Sitio Naglatore, Barangay Cawag, Subic, Zambales, Subic Bay Freeport Zone to include the following components and other ancillary facilities;
  - *Boilers with maximum continuous rating (MCR) of 480 ton/hr maximum by coal firing and 225 ton/hr maximum heavy oil firing*
  - *Two (2) sets of tandem compound, single flow, reheating and condensing type Steam Turbines*
  - *Two sets of hydrogen cooling type, 60 Hz, 15.6 kV, .85 power factor power Generators*
  - *Main and Distribution/Auxiliary Transformers*
  - *One 230 kV and 69 kV GIS switchyard*
  - *Plant Auxiliary power*
  - *Microprocessor based distributed digital control system (DCS)*
  - *Ash Handling and Disposal System including bottom and fly ashes*
  - *Limestone Handling System*
  - *Ash Pond Disposal*
  - *Coal Handling System*
  - *Perimeter fence*



**"Green is profitable."**


Sound environmental practices make perfect business sense.

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- *Electrostatic Precipitators*
  - *Turbine/Generators and Auxiliary System*
  - *Feedwater System*
  - *Condensate System*
  - *Circulating Water System*
  - *Closed Circulation Cooling Water (CCCW) System*
  - *Heavy and Light Oil System*
  - *Compressed Air System*
  - *Water Supply (raw water, de-mineralized and deep well) and Pretreatment System*
  - *Wastewater Collection and Treatment System*
2. Any expansion and/or alteration from the developments/operation discussed in the Environmental Impact Statement (EIS) report shall be subject to a separate EIA requirement in accordance with existing guidelines;
3. The Proponent shall be responsible in ensuring compliance at all times by its employees, agents, consultants, guests, and contractors with the SBMA Environmental Rules and Regulations (**Annex A**). Likewise, they shall conform to all conditions of this SBFZ ECC;
4. The Proponent shall establish/set up the following in accordance with the procedures stipulated under DAO 2003-30:
- 4.1 *A readily available and replenishable Environmental Guarantee Fund (EGF) to be used exclusively for purposes as provided for in the law to include but not limited to the following expenses: expenses for further environmental assessment or research work; compensation/indemnification for whatever damages to life and property that may be caused by the project; rehabilitation or restoration of areas affected by the project's implementation and decommissioning. The amount shall be determined by both the SBMA and the Proponent and shall be deposited in a mutually agreed bank as a trust account;*
- 4.2 *A Multipartite Monitoring Team (MMT) composed of representatives from the Proponent, concerned SBMA departments (Ecology Center, Fire Department, Engineering Department, Utilities Department, Public Health and Safety Department and Seaport Department), and other stakeholders shall be organized in accordance with the guidelines stipulated in DAO 2003-30. The proponent shall provide the logistical/administrative support for the monitoring activities. The MMT shall primarily oversee the compliance of the Proponent with the EMP and the SBFZECC conditions. A Memorandum of Agreement on the formation of the MMT shall be executed and submitted to the Ecology Center within sixty (60) days upon receipt of the SBFZECC;*
- 4.3 *A replenishable Environmental Monitoring Fund (EMF) to cover all costs attendant to the creation and operation of the MMT. The amount will be determined by both the Proponent and SBMA and shall be guided by the EMoP;*

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5. The Proponent shall secure from the appropriate SBMA departments and other national government agencies all the necessary permits and approval prior to commencement of any activity. The Proponent shall obtain and keep current all permits related to the project throughout its duration;
6. Priority employment shall be given to qualified local residents. If so hired, adequate training programs shall be provided to update their skills and improve their capability;
7. No tree may be cut, pruned or otherwise interfered with until a permit has been secured by the Proponent from the EC. Prior to the issuance of such permit, an inventory of the affected trees must be made by the Proponent/Contractor and validated by EC. Replacement requirements for trees cut shall be in accordance with Section 9 of the SBMA Guidelines for Allowable Tree Cutting and Tree Trimming within the SBFZ;
8. All commitments, mitigating measures and monitoring requirements especially those contained in the Environmental Impact Statement (EIS) particularly in the Environmental Management and Monitoring Plans as approved by the SBMA-Ecology Center shall be instituted to minimize any adverse impact of the project to the environment throughout the project implementation including the following:
  - a. Implementation of a continuing Information, Education, and Communication (IEC) Program to explain to all stakeholders the mitigative measures embodied in its EIS, as well as the conditions of this Certificate for greater awareness and acceptance of the project, especially among the local residents. Transparency and timeliness of information should be honored and it should provide opportunities to educate the workers, contractors, subcontractors, and affected community(ies) through sectoral and small group orientations and consultations on environmental and safety measures leading to a more responsible participation and involvement. The IEC activities should be funded by the Proponent and should be implemented in coordination with the Ecology Center (EC) of the Subic Bay Metropolitan Authority (SBMA);
  - b. Installation and operation of a Continuous Emission Monitoring System (CEMS);
  - c. Installation of an appropriate signages and other applicable measures for the safety of the affected stakeholders;
  - d. Establishment and maintenance of a five (5) meter buffer zone around the perimeter of the power plant and appropriate noise barriers should be installed especially near the generators engines to effectively attenuate the noise emanating from the same;
  - e. Construction, installation and operation of adequate and appropriate air and water pollution control devices;
  - f. Conformance with the DENR standards on the noise levels, effluent and air emissions generated during all the project phases;



- g. Preparation and implementation of an Emergency Response Plan and Disaster Preparedness Program in case of fire, oil spill and other emergencies and natural calamities;
  - h. Preparation and implementation, throughout the project phases of a Solid Waste Management Program in consonance with R.A. 9003, the Ecological Solid Waste Management Act and the SBMA Waste Management Guidelines:
  - i. Compliance with the Republic Act (R.A. No. 6969) otherwise known as the "Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990", DENR Administrative Order (DAO) 29, Series of 1992 and the SBMA Rules and Regulations for Hazardous Waste Generators and Transporters. The Proponent shall provide Material Safety Data Sheet (MSDS) for each chemical intended for use. All hazardous chemical and hazardous wastes shall be properly stored and disposed in accordance with the instruction provided in the MSDS, subject, however to the approval by the EC;
  - j. Implementation of adequate slope protection measures to abate soil erosion and sedimentation of the nearest water body;
  - k. Provision in and around the plant of adequate internal and external drainage system and flood protection structures:
9. The Proponent shall establish an Environmental Monitoring Unit (EMU) to handle all environment- related aspects of the project. As such, submit the appointment of a full time Pollution Control Officer (PCO) to the EC, prior to the start of development phase. The PCO shall oversee the implementation of the Environmental Management Plan designed for the project. The PCO shall submit a quarterly environmental monitoring report to the EC:
10. The EMU shall also be responsible for the following:
- a. Establishment of a continuous ambient air and noise quality monitoring (Noise levels,  $SO_x$ ,  $NO_x$ , CO, Total Suspended Particulate and Dust Particulate Matter (PM10) in the immediate vicinity of the power plant as defined (Stations and Frequency) in the EIS. Any exceedance should be a cause for the immediate implementation of mitigation measures;
  - b. Conduct marine monitoring and periodic sampling to determine changes in the physico-chemical conditions of the marine environment attributable to plant operations, and relate these environmental changes with the status of habitats including soft bottom communities and fisheries within the vicinity. Results should be submitted to SBMA-EC semi-annually. Monitoring stations shall be jointly determined by the proponent and the EC based on thermal plume model in such a way that the said monitoring and sampling activities would not interrupt or cause a stoppage of the power plant's normal operation;
  - c. Implement the Relocation Action Plan (RAP) and Social Development Plan (SDP) as contained in the EIS;

  
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- d. Monitor actual project impacts vis-à-vis the predicted impacts in EIS and accordingly formulate suggestions on the revisions of the EMP if necessary;
  - e. Conduct a validation study in coordination with EC on the results of the air quality modeling and the study shall be conducted on the third month of project operations and a report on the same shall be submitted to EC;
  - f. Undertake an annual environmental audit to be conducted by a third party auditor and submit report to SBMA-EC;
11. The Proponent shall hire a full-time Safety Officer. The Safety Officer shall possess accreditation as Safety Practitioner/Consultant from the Bureau of Working Conditions;
12. The Proponent shall comply with the relevant provisions of Presidential Decree (P.D.) 856 or the Code of Sanitation of the Philippines and the Occupational Safety and Health Standards, which include, but not limited to:
- a. Formulation and implementation of a safety and health program for the construction activities and operation phases of the project..
  - b. Provision of appropriate personal protective equipment to all workers.
  - c. Provision of emergency medical facilities and personnel.
  - d. Provision to every worker of training and instruction regarding general safety and health measures in construction sites.
  - e. Provision of adequate welfare facilities such as toilets, showers, washing facilities, drinking water, dining facilities, rest areas and changing facilities.
  - f. Formulation and implementation of a workplace and industrial monitoring programs
  - g. Provision for food sanitation practices from food service providers;
  - h. Formulation and implementation of a Malaria Control Program
13. A thermal plume model for the discharged cooling water should be submitted to the EC prior to the commencement of development activity. Likewise, possible impacts and corresponding mitigation measures on the effect on the marine ecosystem of the discharged cooling water be identified;
14. Additional monitoring stations for corals/fishes should be established and baseline information be submitted to the EC prior to commencement of development activity;
15. Quarterly monitoring of wastewater effluents, ground water, stream and coastal waters during the development and operation of the facility shall be implemented in accordance with established parameters. Results shall be submitted to the EC;
16. All facilities including the combustible and flammable liquid storage area shall be built in accordance with the National Building Code and SBMA Fire Code. The combustible and flammable liquid storage facility shall be well ventilated and located at a safe distance from solid combustibles;
17. The Proponent shall prepare a Fire Protection Plan for implementation, including provision of proper/adequate fire protection facilities (i.e. potable fire extinguishers, automatic sprinkler, standpipe/hose cabinet, special fire protection for range hood, hazardous chemicals and other automatic detection/alarm systems);

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## B. ABANDONMENT PHASE

18. The Proponent shall submit an Abandonment Plan ninety (90) days prior to project abandonment. The Plan shall include clean-up for contaminated areas/rehabilitation measures and proposed alternative projects in the area;

## C. OTHERS

19. The EC shall have the authority to conduct on the spot inspection at any reasonable time in coordination with other concerned SBMA departments;
20. Should there be complaint related to environmental and social problems brought about by the project, the Proponent shall be held responsible to address such problems in a manner acceptable to the EC;
21. The Proponent shall be held liable for any damage to life, property and the environment as a result of the project implementation and/or structural defects and shall pay just and reasonable compensation to the aggrieved party;
22. Any misleading/false information submitted to this Office shall be sufficient cause for the revocation/cancellation of this SBFZ ECC;
23. This Certificate is considered automatically revoked if the project has not commenced within a period of three (3) years from issuance hereof, such that significant changes in land and resource uses have occurred in the project area or its vicinities;
24. That the transfer of ownership of this project carries the same conditions in this SBFZ ECC for which a written notification shall be made by herein grantee to the EC within 15 days of said transfer;

Non-compliance with any of the above conditions shall be sufficient cause for the suspension or cancellation of this Certificate and/or a penalty in the amount not to exceed Fifty Thousand Pesos (P50,000.00) for every violation thereof at the discretion of the EC, pursuant to the SBMA EIS System and all other applicable Philippine environmental laws, rules and regulations.

The SBMA reserves the right to amend this SBFZ ECC should additional information become available or if circumstances should so warrant.

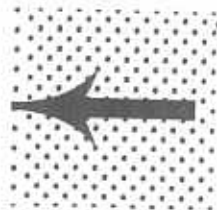
Signed this 1 APR 04 2007 *af*

By Authority of the Administrator /CEO

*Amethya P. Dela Llana*  
AMETHYA P. DELA LLANA  
Department Manager

*Langfor Han*  
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Given this 'APR 04 2007 *af.*



CONFORME:

*Sung-fan Hsu*  
TAIWAN COGENERATION  
INTERNATIONAL CORP.

*af. Sung-fan Hsu*