Guidance of Management System of Evaluation of Environmental Effects

(Draft)

Sino-Singapore Tianjin Eco-City

2010 年 1 月 13 日
1. General Background

Tianjin Municipal Government through the Sino-Singapore Tianjin Eco-City Administrative Committee (SSTECAC) is developing Sino-Singapore Tianjin Eco-City (SSTEC) to build a model eco-city which is environmentally and economically sustainable and socially inclusive. The SSTEC project (SSTECP) aims to achieve this objective by taking an integrated approach to sustainable urban development, specifically by planning a new urban area from the outset in an environmentally sustainable manner, thereby realizing gains from, e.g., integrating land use and urban transport considerations. By 2020, it is projected that SSTEC will cover a total development area of 30km² and house up to 350,000 residents. The SSTECP has high-level political support from the Government of China and the Government of Singapore—in November 2007 the Chinese Premier and the Prime Minister of Singapore signed a framework agreement on the SSTEC. Subsequently, the SSTEC Master Plan was developed and joint venture and commercial agreements signed.

2. Objective

This guide is based on combining the existing relevant national and local environmental impact assessment laws, regulations and management processes, and combination of actual situation of eco-city, elaborate on examination and approval authority, implementation institution as well as users, identify the responsibilities and obligations of managers, developers, the staff of EIA agency in order to reduce the negative environmental impacts through the overall implement process of mast plan of eco-city.

3. Management System of Evaluation of Environmental Effects

3.1 System and Requirements for Evaluation of Environmental Effects of National and Sino-Singapore Tianjin Eco-city

3.1.1 Law and Regulations of Evaluation of Environmental Effects

 Regulations on the Administration of Construction Project Environment Protection promulgated by the State Council of the People’s Republic of China on November 29, 1998, combining with the Law of the People’s Republic of China on Evaluation of Environmental Effects promulgated by Ministry of Environmental Protection of the People’s Republic of China on September 1, 2003. And other relevant laws, regulations being formed as the most important component of the System of Evaluation of Environmental Effects of National and Sino-Singapore Tianjin Eco-city (see Figure 3-1).
3.1.2 Classification of Evaluation of Environmental Effects

According to Article 16 of Law of the People’s Republic of China on Evaluation of Environmental Effects: On the basis of the extent of the effects exerted on the environment by construction projects, the State exercises in a classified manner, control over the evaluation of the effects of construction projects on the environment.

A construction unit shall, in accordance with the following provisions, make arrangements for preparing a written report on the environmental effects or a statement on such effects or filling out a registration form of environmental effects (hereinafter referred to as the document for evaluation of environmental effects, in general):

(1) Where considerable effects may be exerted on the environment, preparing a written report on environmental effects, in which a comprehensive evaluation of the effects on the environment shall be made;
Where mild effects may be exerted on the environment, preparing a written report on environmental effects, in which an analyses or special evaluation of the effects shall be made;

Where the effects on the environment are very little and therefore it is not necessary to make an evaluation of them, filling out registration form of environmental effects.

3.1.3 Examination and Approval of Evaluation of Environment Effects of National and Sino-Singapore Tianjin Eco-City

As this order, the Construction Units must be in conformity to the prescript of <<Construction Project Environmental Category Management Directory>> as an organization which is qualified to write the environmental impact report environmental impact report form; environmental impact registration form as an Environmental Impact Assessment Unit, hand in the document to the Environmental Protection Department. As a result they will determine as following, all the construction projects which get approved by Environmental Protection Department can commencement of its works:

(1) The complete application, according with the legal form, will be admissible and set the return receipt

(2) The uncompleted application, fall short of the legal form, will be inform the Construction Units the content which need to modification in 5days

(3) Do not admissible the application which is not belong to the Environmental protection administrative department and informing the Construction Units to apply again to the relevant units.

After the environmental protection administrative departments accept the construction project environmental impact report decide to technology assessment, the environmental impact assessment agencies will put up. And they will hand in the report in 30days, and the report is responsible, edit the build project in the environmental impact report if the
project will effect environment gravely. Environmental authorities will hold the hearing, resort the result, relevant units will decide accept the case or not.

In between 60days, after the environmental protection administrative department receives the environmental impact report, in 30days after hand in the environmental impact report form, in 15days after hand in the environmental impact registration form. As the result had been survey, the supervisor will inform the construction units in written.

For which Construction projects should be examination and approval by Tianjin examination and approval authority are as follow:

As "<<Tianjin construction projects on strengthening environmental impact assessment of the implementation of hierarchical views of the approval notice>>(2008/3/5) of Tianjin EPA. The competence of approval of environmental impact assessment classification as following form:

<table>
<thead>
<tr>
<th>The approving limits and rights of the city environmental protection administration department</th>
<th>The State Council department in charge of environmental protection administration for approval of construction projects commissioned.</th>
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<tr>
<td>Inter-district and county administrative regions of the construction project</td>
<td>Municipal People's Government or municipal department in charge of investment examination and approval, approval or filing of the construction projects. Which may cause slight effect on the environment of the 28 industries construction project environmental impact assessment document from the project site environmental protection administrative department for approval;</td>
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<td>County or district and county people's government department in charge of investment approval, approval or filing of the construction projects, as well as the &quot;three zones&quot; in charge of investment management committee or the department concerned for approval, approval or filing of the construction projects, in addition to the environment may cause mild effects of 28 trades, according to Environmental Protection Agency, &quot;&lt;&lt;Construction Project Environmental Protection Classification Management Directory&gt;&gt; (Environmental Protection Administration Order No. 14) the need to prepare an environmental impact report on construction projects</td>
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<td>The construction site is located in the Binhai New Area within the scope of</td>
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<td>The approving limits and rights of the district and county environmental protection administration department</td>
<td>Municipal environmental protection administrative department for approval of construction projects commissioned by</td>
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<td>Located in the counties within the scope of the municipal people's government or municipal department in charge of investment approval, approval or Record-keeping a construction project on the environment may cause mild to affect the construction industry, the following 28 items: Clothing and footwear manufacturers, sawn timber, wood processing, furniture manufacturing, wood, bamboo, rattan, palm and grass products, printing industry, culture, education, sporting goods manufacturing, magnetic materials, products, oil tanks, plastic products, substation (35 kV and below), urban centralized sewage treatment (5 tons / day and below), urban waste treatment, agriculture, desertification engineering, animal husbandry, fisheries, warehousing, wholesale, retail, catering, real estate development (floor area of 15 million square meters or less), parking lots, long-distance bus terminal, the pilot training bases, car washing industry, vehicle maintenance, laundry, bathing industry, refueling, filling stations, crematoria, cemeteries, schools, waste collection stations, Minilab points and other community services, entertainment services, exhibition halls, museums, theaters, concert halls, film base, Film Lab</td>
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<td>Municipal environmental protection administrative department and its agencies outside the competence examination and approval by the county or district and county people's government department in charge of investment approval, approval or filing of the construction project</td>
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<td>Is located in the &quot;three zones&quot; within the scope of 2, the municipal people's government or municipal department in charge of investment approval, approval or filing of the construction projects on the environment may cause mild to affect the construction industry, the following 28 items:</td>
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<td>administration</td>
<td>Clothing and footwear manufacturers, sawn timber, wood processing, furniture manufacturing, wood, bamboo, rattan, palm and grass products, printing industry, culture, education, sporting goods manufacturing, magnetic materials, products, oil tanks, plastic products, substation (35 kV and below), urban centralized sewage treatment (5 tons / day and below), urban waste treatment, agriculture, desertification engineering, animal husbandry, fisheries, warehousing, wholesale, retail, catering, real estate development (floor area of 15 million square meters or less), parking lots, long-distance bus terminal, the pilot training bases, car washing industry, vehicle maintenance, laundry, bathing industry, refueling, filling stations, crematoria, cemeteries, schools, waste collection stations, Minilab points and other community services, entertainment services, exhibition halls, museums, theaters, concert halls, film base, Film Lab</td>
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</table>

Municipal environmental protection administrative department and its agencies other than the examination and approval authority from the "three zones" in charge of investment management committee or the department concerned for approval, approval or filing of the construction project

PS: 1. Municipal Environmental Protection Administrative Department and its agencies other than the examination and approval authority from the "three zones" in charge of investment management committee or the Ministry of 1: examination and approval system that applies to government investment projects and the use of government funds for business investment projects; approval system means for the enterprise does not use government funds invested in the construction of major projects, restricted items, specifically refer to "directory on government approved investment projects " (2004 version), any other investment projects beside this directory belong to Record-keeping system.

2. "Three zones" in the form means Tianjin Economic and Technological Development Zone, Tianjin Port Free Trade Zone, Tianjin New Technology Industrial Park of the short.

3.1.4 Pertaining to the regulation of public participation in environmental impact assessment

3.1.4.1 Public participation and approaches
Public participation in environmental impact assessment is the process of the potential environmental impacts on construction projects with its associated mitigation measures and public communication. Generalized public participation can be divided into three different depth, information disclosure, public opinion surveys or public consultation, participation in decision-making. Public participation in environmental impact assessment focused primarily on information disclosure and public opinion surveys and public consultation.

China's public participation in environmental impact assessment started in the World Bank and Asian Development Bank loan project in the 1990s, and it was developed from the construction project environmental impact assessment. <<Environmental Impact Assessment Law>> clause 5 stipulates that: “the state should encourage the relevant units, experts and the public in an appropriate manner to participate in environmental impact assessment.”

3.1.4.2 Public participation in environmental assessment is needed

The construction projects which have to fill the environmental impact assessment registration form may carry out without public participation.

The construction projects which have to prepare an environmental impact report form, depending on the particular circumstances to determine whether to develop public participation and the level of public participation.

The construction projects which have to prepare the environmental impact report are necessary to develop public participation. According to the difference of environmental impacts and the scope of impact level, also level of social concern.

3.1.4.3 Regarding to public participation laws and regulations

<<The inventory of environmental categorization management on construction project >> provided the project of construct in the environmentally sensitive area needs of the preparation of environmental impact report, the construction unit should within the 7 days after determining the environmental impact evaluation agency which take on the environmental impact assessment and notice to the public the following information.

(1) Name and summary of the construction projects

(2) Name and contact methods of the construction projects
（3）Name and contact methods of the environmental impact assessment agency

（4）Work procedure and content of environmental impact assessment

（5）The primary items of getting public comments

（6）The main form of public comments”

Pertaining to environmental assessment planning, clause 33 stipulates that: “Draft Planning Proposal addresses potential detrimental environmental impacts as well as plans which will affect public health rights of the masses to be submitted after held demonstration feasible studies, hearings or take a other form, consult the comments of relevant units, experts and public towards environmental impact draft planning proposal.

Clause 34 stipulates that: “The preparation agencies for special planning should seriously consider the comments of the relevant units, experts and the public on the environmental impact draft planning proposal, as well as attach the description that whether adopt or not adopt the comments on the submitted environmental impacts report.

3.1.5 The technical guideline of environmental assessment

To implement the "Environmental Protection Law of The People's Republic of China" and the "Construction Project Environmental Protection Management Regulations" to regulate the management system of environmental impact assessment document, and safeguard the prepared quality of environment impact assessment documents, and effectively strengthen scientific, effectiveness, practicality of the technical method of assessment, the Ministry of Environmental Protection compile and publish the following technical guidelines.

（1）The master technical guidelines of environmental impact assessment（HJ/T 2.1-93）

（2）The technical guidelines of planning environmental impact assessment, Overall plan for mining of coal industry（HJ 463-2009）

（3）The technical guidelines of planning environmental impact assessment Urban track traffic （HJ 453—2008）

（4）The technical guidelines of planning environmental impact assessment, Atmospheric（HJ 2.2-2008 stead of HJ/T 2.2-93）
（5）The technical guidelines of planning environmental impact assessment, Land-based oil and gas development projects（HJ/T 349-2007）

（6）Technical Guidelines of Environmental Risk Assessment for Construction Project（HJ/T 169—2004）

（7）Technical Guideline of development Regional Environmental Impact Assessment（HJ/T 131-2003）

（8）Technical Guideline of planning environmental impact assessment（Pilot）（HJ/T 130-2003）

（9）The technical guidelines of planning environmental impact assessment, Water Conservancy and Hydropower Engineering（HJ/T 88-2003）

（10）The technical guidelines of planning environmental impact assessment, Petrochemical Project（HJ/T 89-2003）

（11）The technical guidelines of planning environmental impact assessment, Civil airport construction projects（HJ/T 87-2002）

（12）The technical guidelines of planning environmental impact assessment, surface water environment（HJ/T 2.3-93）

（13）The technical guidelines of planning environmental impact assessment, non-polluted ecological impact（HJ/T 19-1997）

（14）The technical guidelines of planning environmental impact assessment, Acoustic Environment（HJ/T 2.4-1995）

3.2 The strategy environmental assessment system and requirements of China and Sino-Singapore Tianjin Eco-city

3.2.1 Law and requirements on strategy environmental assessment (SEA)

The <<environmental impact assessment law>> the first term of clause 7 and clause 8 stipulate, three categories of plans require environmental assessment, first is “one land” the plans of land use; second is “three domain” the construction development plan of region, drainage area and sea area; third is “10 special planning”, the special/sectoral
development plan of industry, agriculture, livestock, forestry, resources, water conservation, Traffic, urban construction, travel, nature resources development, these plans can be divided into guidance plan and non-guidance plan. Therefore, not all department plans have to carry out the environmental impact assessment.

3.2.3 Strategically environmental assessment review, approval and public consultation
Same as 3.1.3 and 3.1.4

3.2.4 Relevant technical guidelines
(1) The technical guidelines of planning environmental impact assessment (Pilot)（HJ/T 130-2003）

The guidelines mentioned the general principles of develop environmental impact assessment, technical procedures, methods, content and requirements. This guide is applicable to the State Council, departments, and the municipal people's governments and its relevant units organized environmental impact assessment

(2) the technical guidelines of development area environmental impact assessment（HJ/T 131-2003）

The guideline stipulates work procedures, content and methods of development area regional environmental impact assessment. This guide is applicable general principle, content, methods and requirements of environmental impact assessment of economic and technological development areas, hi-tech industrial development area, bonded area, border economic cooperation area, tourist area and other regional development and industrial parks, and similar regional development.

(3) The technical guidelines of planning environmental impact assessment, master plan for mining of coal industry （HJ 463-2009）

The guideline stipulates the State Council's relevant departments; municipal people's government and its relevant departments organized the general principles, contents, methods and requirements of the master plan for mining of the coal industry environmental impact assessment. Integration of .coal, electricity, Integration of coal, electricity, chemical special plans for environmental impact assessment in development planning environmental impact assessment of coal may refer to this standard.
3.3 The Environmental Impact Assessment and Suggestions for the Master Plan of SSTEC

Commissioned by TECAC, Tianjin Academy of Environmental Sciences and Nankai University had finished SEA of SSTEC Master plan, which was approved by Binhai Agency of Tianjin Municipal Environmental Protection Bureau in April 2008. Following major Suggestions from the SEA should by followed in implementation of the master plan of SSTEC:

3.3.1 Wetlands Protection

(1) Nature Protection Measures: Various ecological islands would be connected through eco-corridor when the plan implemented. The circulations of this area become a sound system and the relation among ecological network in this area is closed too. As an important ecological node, it may also play a more important role in the whole ecological network of Tianjin. The “eco-valley” is the significant transport corridor which links the southwest and northeast area and it is rational. The width of “eco-valley” should be not less than 50 meter or 60 meter which can reduce land use intensity of this area.

According to the requirement about exclusion area and controlled-construction area in this planning, the 60-meter-width place on the both sides of old channel of Ji River should be provided and use strictly for ecological function. No less than 100-meters-width ecological corridor should be built between the D3 residential land area and ecological estuary wetland landscape area. It is suggested that the restoration and construction of the wetland in the eco-city and around this area can make these area enter the Qilihai big wetland. There is a typical kind of salt-water reed group between the old channel of Ji River and Sewage Library. When other regions developing, as a original ecological plant community in this area, the reed group should be protected.

(2) Green Vegetation System: There is not a index of service radius in this planning, so it is suggested that any place in the eco-city have less than 300-meter distance from the green area, 500-meter distance from a park, 1000-meter distance or 2000-meter distance from large-scale public green area. When the eco-city is built, the per capita area of green-area will be not less than 41.84 m2 which can reach the design standard. It is suggested that the ratio of green area should be increased, the value is not less than 40% and the suitable ratio of tree, shrub and grass is 1:6:20.

3.3.2 Suggestions for the water supply and pollution control
（1）Rationality of water treatment: the decentralized small-scale sewage treatment facilities are built in this planning. The target of local collection, treatment and reuse of wastewater are achieved. Most of the sewage discharged into Yingcheng sewage treatment plant at Hangu District through the sewage pipeline, and the treated sewage can be used as recycled water resource, such as replenishing water for landscape water, water consumption of roads, municipal, miscellaneous construction and other low-quality water are used. The collection system for rainwater will be established in the planning area. The initial rainwater should be collected and reused after disposing in the sewage treatment plants.

（2）Separate system of rainwater and sewage is designed in this planning. It is a reasonable treatment manner, but the adjustments of Yingcheng sewage treatment plant should be conducted with the change of the receiving wastewater, and the discharge outlet should be reset too. As a result, the zero discharge of sewage be achieved in summer and sewage only discharge during the winter season. The total sewage discharge is 3.429 million tons/a, the total emission of CODcr is 171.5 t/a and NH3-N is 17.1 t/a.

（3）Rationality of urban water cycle system: although the recycled water can meet the water standard form "the use of landscape and environmental regeneration of urban sewage water quality" (GB/T18921), the water quality is far from Class Ⅳ of "Surface Water Environmental Quality Standards" when it used as replenishing water for landscape water. So it is proposed that artificial wetland on the north of Butterfly Island around recycled water plant should be used fully. It is means that the percolation-type wetland treatment system should be constructed, and be used to treat the recycled water. Before it enter landscape river, the water quality must meet Class Ⅳ. The bioactive of sewage treatment plant will be low in cold weather, and the discharged water quality is deteriorated. the requirement of discharge from recycled water plant should be raised in winter, otherwise, it is difficult to meet the Class Ⅳ. Rational design of recycled water system in this planning can achieve a good result on wastewater discharge, but the disadvantage is that the water circulation between the planning area and other area is isolated. In addition, the planning on the Ganlu River and Huifeng River should be integrated with seaside tourist zone.

（4）The comprehensive management of wastewater and sludge from Hangu sewage library should be started as fast as possible. The relevant ecological restoration should be started at the same time. It is proposed that the deep study and scientific argument on the
comprehensive management programs should be finished rapidly. The secondary pollution should avoid in the management process.

（5）Recommendation on regional water quality protection is that the thematic study on feasibility of the sea water, recycled water and high-quality clean water should be demonstrated deeply, and the optimal program will be implied in future.

3.3.3 Suggestions for the air quality control

（1）Parts of eco-show education area, residential zone and comprehensive land are distributed within 300-600 meters of the sewage treatment plant. These areas may be affected by the odor from the plant. It is suggested that the deodorization process should be designed in some section which produce odor in the sewage treatment plant.

（2）Gas concentration, such as NOx, CO from vehicle exhaust in eco-city, can reach the secondary standard of the environment gas quality. The concentration of SO2 around both sides of main roads is higher than other areas, so a certain width of the green isolation belt should be designed between the sensitive targets and the main roads. If Jingfu Road is built in the way of a channel crossing the eco-city, the import and export of this road should not designed in the eco-city.

（3）The unorganized bad odor emission always exists in the modern industrial area, some enterprises even as far as 1 km from eco-city. If more industrial and medical enterprises would enter the modern industrial area and close to the side of eco-city, the odor must bring bad influence to the eco-city.

（4）During the period of land smoothing and construction, the improper control of industrial dust may bring bad effect to the quality of atmosphere environment.

3.3.4 Suggestions for energy and buildings

Through the popularity of building energy efficiency and the promotion of energy-saving lamps in public facilities, energy saving can be achieved. Renewable energy, such as solar central air-conditioning, solar energy devices, heat pump technology, is new energy use model in future. The geothermal resources, waste heat in northern power plant and other energy cascade utilization will promote efficient of energy.

3.3.5 Suggestions for the transportation
In the slow transportation network, it is suggested to separate the man and vehicles, set special roads and reserve enough parking space for non-motored vehicles. Besides, facilitating rental service of bicycles by public finance is also recommended.

Besides the construction of the Tang-han metro line and Hanbei Road, it is mentioned to consummate the sub-branches of public transportation, enhance the responsibility and connection between public and other transportation. The interface among the various traffic travel modes should be strengthened, in particular, co-ordination between rail transit system and public bus network, taxis, private cars. Parking spaces need to set around the transition of public transportation. Green transportation model will be facilitated with the bicycle and public transportation systems.

### 3.3.6 Suggestions for the solid waste management

The solid waste management plan includes source reduction, recovery system, waste transform, landfill and incineration. The rate of recoverable solid waste will be no less than 60%.

The baseline of waste recovery is separation. The separation and recovery system along with the regulation and policy should be set. The integrated collection system will ensure the successful implementation of recovery process.

Adjusting treatment program in sewage treatment plant, the sewage sludge should be analyzed by identification of hazardous waste before entering the sanitary landfill (Hangu sanitary municipal waste landfill operated since 2002), or safe disposal.

### 3.3.7 the Protection of ancient culture

According to "The People's Republic of China Cultural Relics Protection Law", the design of traffic routes should avoid pass through the scope of protection and construction control zone of Beitang Emplacement. Ancient Coast Chenier, the core area of Ancient Coast and Wetland Nature Reserve, lies to the south-east part of eco-city. As the ‘The People's Republic of China Nature Reserve Regulation’, which stipulated that business, travel and construction activities were constrained in the core or buffer area of nature reserve, the routes designing should avoid pass through the protection scope of Ancient Coast Chenier and avoid pass through three natural villages.