COMMENTS

Dear member,

Please find below the presentation made during WG 1 on ISO 37101 by the representative from Legislative Bureau of Sino-Singapore Tianjin Eco City.

FOLLOW UP

For information.

SOURCE

Sino-Singapore Tianjin Eco City
01. INTRODUCTION
02. MANAGEMENT PRACTICE
03. STEPS AHEAD
Sino-Singapore Tianjin Eco-City (SSTEC)

Jointly developed by the governments of China and Singapore.

The first National Green Development Demonstrative Area in China.
Prior to the development of the Eco-city, the site is brown field comprised of ‘Saltpans, Barren land and Polluted water-bodies’.

After nine years of development, 8km$^2$ of construction has been accomplished:

- 100% green building
- 50% green coverage ratio
ECONOMY

2008
In Sep. 2008, foundation-stone-laying ceremony was held, initiating the development from scratch.

2017
- 5 leading industries with 4200 registered enterprises: cultural innovation, Internet + high-tech, elite amenities, cold chain logistics and coastal tourism.
- GDP: 18 Billion RMB; Fiscal revenue: 4.8 Billion RMB.
2008
No Residents before development

2017
A well facilitated and fine functioned new eco-city with nice living environment:
• 70,000 residents and employees
• 1 high school, 2 elementary schools, 6 kindergartens
KPIs Guided Integrated Planning

- A KPI system established in Apr. 2008.
- Integrated with Land-use Planning, Transport Planning & Green/Blue Network Planning.
- Integrated with more than 20 Disciplinary Plannings concerning Green Travel, Renewable Resources, Alternative Water Recycling...

### 26 KEY PERFORMANCE INDICATORS

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
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<tbody>
<tr>
<td><strong>CLEAN WATER</strong></td>
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<td></td>
<td>100% potable tap water</td>
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<td>50% non-traditional resource</td>
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<td></td>
<td>Domestic water use &lt;120 L/d per capital</td>
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<td>Local plant index &gt;0.7</td>
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<td></td>
<td>Grade IV Water bodies</td>
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<td>Green space &gt;12m² per capital</td>
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<td>Zero loss of natural wetland</td>
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<td><strong>ECOLAGY</strong></td>
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<td>&gt;60% overall recycling rate</td>
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<td><strong>CLEAN ENVIRONMENT</strong></td>
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<td>&gt;20% renewable energy use</td>
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<td></td>
<td>&lt;150 ton-c/mil US $ GDP</td>
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<td><strong>GREEN BUILDING</strong></td>
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<td>&gt;90% green trips by 2020</td>
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<tr>
<td><strong>CLEAN TRANSPORT</strong></td>
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<tr>
<td></td>
<td>100% non-hazardous treatment</td>
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<tr>
<td></td>
<td>Ambient all quality to meet Grade II &gt;310 d/yr</td>
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<tr>
<td></td>
<td>Domestic Waste generation &lt;0.8kg/d</td>
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<tr>
<td><strong>ECOLOGY</strong></td>
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<tr>
<td></td>
<td>&gt;50nos researches/engineers per 10000 labor force</td>
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<tr>
<td><strong>CLEAN ENERGY</strong></td>
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<tr>
<td></td>
<td>100% barrier free accessibility</td>
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<td>&gt;20% public housing provision</td>
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<tr>
<td><strong>CITY MANAGEMENT</strong></td>
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To measure our success...
Standardized Construction and Development

Urban Infrastructure Standardization

SSTEC Urban Infrastructure Construction Standards (Parks)
SSTEC Urban Infrastructure Construction Standards (Roads)
SSTEC Urban Infrastructure Construction Standards (Stations)

Green Building Standardization
From KPIs Guided Planning and Construction to Green Development Oriented Management Practice

In 2014, SSTEC was awarded as the first National Green Development Demonstrative Area in China. Green Development Demonstrative Area, is the Sustainable Development Demonstration in China.

China will focus more on green development as a devote to sustainable development, will increase the ability of climate change adaption, and will build a beautiful China with bluer sky, greener land and cleaner water.

——Chairman XI, Nov.18th, 2015 in APEC CEO Summit
Management Practice

2014 ~ 2015
Planning and Roadmap

- Green Development Demonstrative Area
  - Investigation Report
  - Implementation Scheme
  - Task Decomposition

2015
International Communication

- 2014: initial discussion with AFNOR in the framework of ISO/TC268
- 2015: site visit by French delegations on standardization
- 2015: ISO37101 Standard as benchmark to evaluate and improve Green Development Demonstrative Area practice

2016 ~ 2017
Attend ISO Meetings

- 2016: participation in the 5th conference of ISO/TC 268 in Hangzhou
- 2017: Introduce ISO37101 implementation program ISO/TC 268 Mexico Conference
ISO/TC268 Sustainable cities and communities

9 Focal Points In Accord with ISO 37101

1. Scope
2. Objectives
3. Leadership
4. Policy
5. Issues
6. Plan
7. Support
8. Implementation
9. Evaluation

ISO 37101

A more sustainable, resilient and smart community

Strategic steps
- Context
  - Organisation including relevant purposes and issues
  - Interested parties
  - Scopes
  - Management system
- Leadership
  - Commitment
  - Vision and mission
  - Policy
  - Allocation of roles and responsibilities
- Improvement
  - Corrective actions
  - Continual improvement

Operational steps
- Support
  - Resources
  - Competences
  - Awareness
  - Communication
  - Documentation
- Planning
  - Risks and opportunities
  - Significant issues
  - Objective and plans including use of metrics and indicators
- Operation
  - Planning
  - Control
  - Corrective actions
- Evaluation
  - Monitoring using metrics and indicators
  - Internal audit
  - Management review
Management Scope

Pilot Zone:
- 30km² Sino-Singapore Cooperation Zone

Extended Zone:
- 150 km² + Zhongguancun Technology Park

Stakeholders

- Governments
- Sino-Singapore coordination committee
- Functional departments
- Investment, development and construction agencies
- Entering enterprises and property management companies
- Public
Specific Green Development Objectives Responding to Six Purposes of ISO 37101

**Attractiveness**: Research and implementation of green concept and local culture; Set up green development ideas among governments, enterprises and citizens;

**Well-being**: Beautiful and amiable living environment with high green coverage rate;

**Social Cohesion**: Innovative green development mechanism, and green development policy system covering industrial, investment and financial policy;

**Preservation and Improvement of Environment**: Green, recycle & low carbon industry; green building, green transportation and green municipal infrastructure system; development mode of resource saving and environment protection;

**Resilience**: An application of low impact development mode with high storm water runoff control rate;

**Responsible Resource Use**: Reasonable urban space organization; Effective and economic use of land, energy and water resource; Green consumption and living style;
LEADERSHIP

Department Functions Responding to 12 Issues of ISO 37101

Regular administrative meeting of management committee is the ‘top management’
Communication mechanism of Sino-Singapore coordination committee in subjects of construction, education etc.
4 POLICY

Policies Covering 5 Aspects of Industrial, Finance & Tax, Banking, Resource and Environment, Public Development

1 Industrial
- Soften admission terms on investment
- Support the establishment of public publishing service platform
- Promote Electronic business demonstration base

2 Finance & Tax
- Promote the implementation of subsidies from State financing department
- Apply for and implement the discount interest for infrastructure construction

3 Banking
- Promote Innovate on cross board monetary business
- Support eligible enterprises of SSTEC to go public in Singapore market
- Support financing & renting company in SSTEC

4 Resource and Environment
- Support the recycling and hazard-free treatment of kitchen waste
- Support the construction of recycling utilization system of waste goods
- Support the application of national new energy demonstration.

5 Public Development
- Support the construction of national innovation and demonstration zone on community management and service
- Support the development of health service industry
5 ISSUES

Indicators Covering Most of 6 Purposes and 12 Issues
更多于 40 个计划、标准和措施，涵盖行政、经济、生活、建筑和环境领域。

**PLAN**

行政、经济、生活、建筑和环境领域。

**行政**

- 管理
- 行业推广
- 住房
- 装饰
- 资金支付
- 委员会
- 民营化
- 城市基础设施
- 课题管理
- 建筑项目招标
- 旅行费管理
- 可再生能源

**经济**

- 节水
- 制作
- 预算管理
- 社区服务中心
- 招标
- 旅行费
- 可再生能源
- 可再生能源

**生活**

- 环保
- 水供应
- 海绵城市
- 再生能源
- 分布能源
- 绿色廊道
- 低碳交通
- 数字城市

**建筑**

- 绿色系统
- 水供应
- 海绵城市
- 再生能源
- 分布能源
- 绿色廊道
- 低碳交通

**环境**

- 绿色建筑
- 绿色建筑
- 绿色建设
- 绿色建设
- 绿色建设
- 绿色建设
- 绿色建设

**技术规格**

- 绿色建筑
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**标准**

- 指标体系
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**措施**

- 管理
- 行业推广
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- 资金支付
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- 旅行费管理
- 可再生能源
7 SUPPORT

Five Mechanisms to Support Management System

Establish Green Development Evaluation Mechanism

Resources and Environment Management Mechanism
- Market mechanism to promote green development
- Strict resource and environment protection institutions
- Regional ecological compensation mechanism

City Management Mechanism
- Government function reform
- Development and construction model
- Community service model
- Public engagement encouragement

Industrial Development Mechanism
- Private and oversea investment encouragement
- Fiscal & taxation policy in favor of green development
- Financial service system adapted to green development
- Various disciplinary funds

Technical Innovation Mechanism
- Technological creative platform
- Transformation of technological fruit
- Financial support on technological innovation
- Technical talents for green development
### IMPLEMENTATION

- Implementation through 107 Detailed Tasks and 370 Specific Tasks
- In 2015 and 2016, 161 Specific Tasks Have Been Accomplished

<table>
<thead>
<tr>
<th>Supporting Project</th>
<th>Name of Project</th>
<th>Finish Time</th>
<th>Person in Charge</th>
<th>Responsible Department</th>
<th>Supporting Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>55. Compile new energy development plan of Eco-City</td>
<td>55.1 Taking into consideration of 6 year experience of Eco-City construction, as well as analysis on utilization situation of solar, geothermal, wind and biomass energy, compile renewable energy planning, and further promote the usage of renewable energy in various construction projects</td>
<td>2015</td>
<td>Li dong</td>
<td>Construction bureau</td>
<td>City Management Bureau</td>
</tr>
<tr>
<td>56. carry out comprehensive implementation of Solar energy hot water system, construct solar energy heating and air-conditioning system, and install solar energy photovoltaic system according to local conditions</td>
<td>56.1 ensure the construction of solar energy hot water system of all newly built residential building. Make further research on how to improve the utilization efficiency of solar energy hot water system, and to reduce heat loss, raise strict requirement on the review of solar energy hot water system, to ensure the implementation of the system</td>
<td>2015</td>
<td>Li dong</td>
<td>Construction bureau</td>
<td>Urban Management Bureau</td>
</tr>
<tr>
<td>56.2 Launch photovoltaic system of Huaqiang parking lot, actively exploit the practical experience of large-scale application of photovoltaic system, make research on the key techniques of design, installation and operation of photovoltaic system, invite and guide enterprises to take part in the project.</td>
<td>2015</td>
<td>Li dong</td>
<td>Construction bureau</td>
<td>Urban Management Bureau</td>
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<tr>
<td>57. construct the comprehensive utilization system of renewable energy mainly consisting of Ground Source Heat Pump and construction application</td>
<td>57.1 Compile guidance on the design and construction technique of Ground Source Heat Pump</td>
<td>2016</td>
<td>Li dong</td>
<td>Construction bureau</td>
<td>Urban Management Bureau</td>
</tr>
<tr>
<td>57.2 Launch the construction of Gansu Ground Source Heat Pump project, to provide heat source for information park, and in the meantime, construct comprehensive utilization system of renewable energy through supplementation and comprehensive utilization in other ways.</td>
<td>2016</td>
<td>Li dong</td>
<td>Construction bureau</td>
<td>Urban Management Bureau</td>
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<tr>
<td>58. construct methane producing project with kitchen waste</td>
<td>58.1 Establish demonstration project for recycling utilization of kitchen waste</td>
<td>2015</td>
<td>Zhang Yanfa</td>
<td>Urban Management Bureau</td>
<td></td>
</tr>
<tr>
<td>58.2 Formulate construction program of &quot;renewable energy center&quot;</td>
<td>2016</td>
<td>Zhang Yanfa</td>
<td>Urban Management Bureau</td>
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</tbody>
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9 EVALUATION

Periodical Construction Evaluation and Indicator Monitoring

**Periodically Evaluation**
- Annual appraisal of green development demonstrative area
- Statistics yearbook
- Economy and social development statistical report

**Indicator Monitoring**
- Operation and maintenance center
- Eco system and Environment monitoring center
- Building Energy monitoring platform
- Atmosphere monitoring platform
- Energy management platform
On May 14, 2013, Chinese President Xi Jinping visited SSTEC and expressed his hopes:

- An coordination of both advanced, high-end performance and replicable and scalable mode

- A convincing solution to harmonious development among people-to-people, people-to-economic, people to environment activities

- A demonstration for resource saving and environment friendly society.
Active Participation

1. To join the **pilots** of ISO37101/ISO37104

2. To be included in the publication version of ISO37104 (as **case study**)

3. To invite international expert jury to visit SSTEC and give improvement **suggestions** on site.
Enhancement Through P-D-C-A Process

- To form a sustainable development **leading group** and responsible person
- To confirm Legislative Affairs Bureau as **management representative**
- To **upgrade indicators system**, covering all 6 purposes and 12 issues of ISO37101
- To implement the **specific tasks** of green development continuously
- To held work group meetings periodically to discuss the implementation of green development indicators and issues

- To include green performance in annual appraisal of departments
- To establish **Internal Review** and **Management Review** Mechanism
- To form a **documentation system** of ISO 37101, and create index to the existing filing system

- Periodically update of **indicators system**
- Periodically update of **supporting projects** of green development tasks
Welcome to SSTEC!