LEGAL FOUNDATION FOR ECO-INDUSTRIAL PARKS IN VIETNAM

Preliminary analyses

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PROPOSED STRUCTURE

PART 1. INTRODUCTION
1. Background information
2. Objective and Methodology

PART 2. FINDINGS
1. Reviews on policies and regulations on master plans and development orientations
2. Reviews on regulations on establishments of industrial parks
3. Reviews on regulations on operation and management of industrial parks
4. Reviews on policies and regulations on supporting economic growth
5. Reviews on policies and regulations on environmental protections
6. Reviews on policies and regulations on social developments

PART 3. RECOMMENDATIONS
1. Building EIPs and transformation IPs and IZs into EIPs
2. Implementation Plans

Introduction

- Review and assess the existing legal framework, policies and regulations
- Analyse the present institutional situation and structural organization of the enforcement and monitoring of IZ
- Comparative study, learning from international examples in building and operating EIPs
- Final report on the foreseen future challenges and requirements for (Eco) Industrial parks; Developing implementation plans.

- About 100 legal documents
- 84 legal documents of policies on industrial park
- 65 documents on environmental issues for enterprises, industrial parks; and related national environmental standard
Contents

- Policies and practices on development of industrial zones in Vietnam
- Brief overview of industrial ecology and eco-industrial park
- Basic requirements of eco-industrial parks for Vietnam
- Current regulations on industrial parks
- Recommendations on eco-industrial parks regulations

Policies and practices of development of industrial park in Vietnam

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<tr>
<td>Doi moi (reform) was initiated in the Party Congress VI, 1986</td>
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<td>Law on foreign investment (1987)</td>
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<td>Decree 322- HDBT issued by Council of Ministers on October 18th 1991 with regard to the pilot of processing zones</td>
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<td>Decree 192/CP issued on December 28th 1994 by the Government, concerning industrial zones</td>
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<td>Decree 36/CP issued on April 24th 1997 by the Government, concerning industrial zones</td>
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<td>Decision 132/2000/QD-Ttg by the Prime Minister, concerning industrial cluster</td>
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<td>Pilot project on open-industrial zone and coastal economic zones</td>
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<td>Decree 189/2007/ND-CP issued on December 12th 2007 on responsibility towards industrial cluster management.</td>
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<td>Decision 12/2011/QD-Ttg on supporting industries.</td>
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<tr>
<td>Draft decision on development of industrial cluster</td>
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Pratice

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<td>FDI projects appeared</td>
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<td>Tan Thuan Processing Zone – the first one – established in 1991</td>
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<td>The 2nd processing zone – Linh Triung Processing Zone – established at Ho Chi Minh City</td>
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<td>Processing zone was regulated in Amended Law on foreign investment 1992.</td>
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<td>Two processing zones in Hanoi and Da Nang</td>
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<tr>
<td>Rapid emergence of industrial zones at different provinces/cities</td>
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<td>3 processing zones at Ha Noi, Da Nang and Can Tho transformed into industrial zones</td>
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<tr>
<td>The first hi-tech zone – Hoa Lac hi-tech park established in 1998</td>
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<td>The border zones were piloted (Mong Cai 1996; Lang Son 1997)</td>
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<tr>
<td>The first open economic zone was piloted (Chu Lai Open Economic Zone established in 2003 based on Decision 103/2003/Ttg)</td>
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<td>Special economic zones were proposed by 11 provinces. 3 special economic zones</td>
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Policies and practices of development of industrial park in Vietnam

• Political report at the XII Party Congress provided development guideline for industrial zones and processing zones, as follows: "more appropriate distribution of industries around the country, improving effectiveness of economic zones, industrial zones, and processing zones; bringing hi-tech zones into existence as soon as possible"; "ensure the harmony between natural environment and living environment at industrial zones…".

• The green growth strategy specified: "develop the up-to-date and environment-friendly recycle industry… using technology to categorize and transform industrial zone’s waste… into energy, construction material and micro-organic fertilizer".

-> the main policy is to develop sustainable industries, heading towards establishing eco-industrial zones.
Policies and practices of development of industrial park in Vietnam

FDI in industrial zones

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<tr>
<td>No. of projects</td>
<td>6,160</td>
<td>2,198</td>
<td>109.90%</td>
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<tr>
<td>Registered and incremental capital</td>
<td>95</td>
<td>41,4</td>
<td>138%</td>
</tr>
<tr>
<td>Implemented capital</td>
<td>58.5</td>
<td>41,4</td>
<td>289.60%</td>
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Domestic investment in industrial zones

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<tr>
<td>No. of projects</td>
<td>5750</td>
<td>2198</td>
<td>109.90%</td>
</tr>
<tr>
<td>Registered and incremental capital</td>
<td>570</td>
<td>41,4</td>
<td>138%</td>
</tr>
<tr>
<td>Implemented capital</td>
<td>58.5</td>
<td>41,4</td>
<td>289.60%</td>
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Source: Vietnam Journal of industrial zones

Outcomes of enterprises in industrial zones

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<tr>
<td>Total revenue</td>
<td>USD108 bil.</td>
<td>109.30%</td>
<td>USD408 bil.</td>
<td>130.20%</td>
</tr>
<tr>
<td>Export value</td>
<td>USD80 bil.</td>
<td>113.80%</td>
<td>USD286 bil.</td>
<td>136.40%</td>
</tr>
<tr>
<td>Import value</td>
<td>USD71 bil.</td>
<td>115.90%</td>
<td>USD285 bil.</td>
<td>136.40%</td>
</tr>
<tr>
<td>Contribution to state budget</td>
<td>USD2.2 bil.</td>
<td>116.60%</td>
<td>USD9.3 bil.</td>
<td>87.90%</td>
</tr>
<tr>
<td>Job creation</td>
<td>984 thousands</td>
<td>89.90%</td>
<td>984 thousands</td>
<td>89.90%</td>
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Source: Vietnam Journal of industrial zones

Water treatment at industrial zones

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<th>Until 12/2015</th>
<th>Compared with 12/2010</th>
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<tr>
<td>Number of industrial zones</td>
<td>304</td>
<td>304</td>
</tr>
<tr>
<td>Active industrial zones</td>
<td>207</td>
<td>207</td>
</tr>
<tr>
<td>IZs with complete and operated water treatment system (WTS)</td>
<td>178</td>
<td>178</td>
</tr>
<tr>
<td>Ratio between IZs with WTS and active IZs</td>
<td>85.99%</td>
<td>150.00%</td>
</tr>
<tr>
<td>Average capacity</td>
<td>4046 m3/day</td>
<td>3473 m3/day</td>
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</tbody>
</table>

Source: Vietnam Journal of industrial zones

→ The target of having common and operated water treatment system in 100% of IZs in 2015 is not met
→ Collection, transportation, treatment of solid and hazardous waste still facing issues and problems
→ Housing for labor working in IZs → Demand (80%) >>> Supply (20%)
→ Community’s participation in environmental protection in the IZs → limited due to poor information dissemination and mechanism.

Source: Vietnam Journal of industrial zones
Brief overview of industrial ecology and eco-industrial parks

“Industrial Ecology is the means by which humanity can deliberately and rationally approach and maintain a desirable carrying capacity, given continued economic, cultural, and technological evolution. The concept requires that an industrial system be viewed not in isolation from its surrounding systems, but in concert with them. It is a systems view in which one seeks to optimize the total materials cycle from virgin material, to finished material, to component, to product, to obsolete product, and to ultimate disposal. Factors to be optimized include resources, energy, and capital.”

(Graedel and Allenby, 1995)

Brief overview of industrial ecology and eco-industrial parks

- Industrial ecology creates foundation to connect waste treatment systems of different enterprises with one another in order to minimize the use of materials which would have been discharged or lost during intermediate steps -> the focus was moved from minimizing the waste of one particular system to minimizing the waste of a large system.
- Industrial symbiosis: in addition to cleaner production and higher economic efficiency -> the waste of a particular production system becomes an input for another system -> imitating the cycle in nature
Brief overview of industrial ecology and eco-industrial parks

- Close the circle of industrial activities
- Balance the input-output of industrial system with natural ecology's capacity
- Minimize the industrial input
- Improve the material flow and industrial activities
- Effectively utilize energy and renewable energy
- Attach policies to long-term industrial development
- Create new coordinating mechanism, new information and communication channels.

Waste from one enterprise becomes another’s input

- Reduction of waste results in lower cost
- Economic value of the waste -> higher profit
- Creating jobs at niche market for enterprises
- Reducing waste -> lower demand for urban/industrial land, and lower rate of conversion of land use.
Brief overview of industrial ecology and eco-industrial parks

• Lowe & Warren (1996):
  – Eco-industrial park is a community of manufacturing and service businesses seeking enhanced environmental and economic performance through collaboration in managing environmental and resource issues including energy, water, and materials. The community of businesses seeks a collective benefit that is greater than the sum of the individual benefits each company would realise if it optimised its individual performance.
  – Interaction between enterprise-enterprise and enterprise-environment -> economically-socially sustainable.

• Schlarb (2001):
  - Eco-industrial parks are still considered a possible format for eco-industrial development; however, such parks are now nestled within a broader regional context in which park tenants not only interact amongst themselves, but also with other firms in the region and with the surrounding community.
  - This approach brings about economic-social benefit such as: provide training and employments to local labors; Create better working environment; Empower the community in selecting better and more appropriate industrial development mode.

Basic requirements of eco-industrial parks for Vietnam

1. Requirements for management:
   • Comply with rules and standards concerning environment, such as standard of water treatment, solid waste management, hazardous waste.
   • Management board must have a monitoring system to supervise enterprises’ compliance.
   • Management board should have information about enterprises’ material and waste.
Basic requirements of eco-industrial parks for Vietnam

2. Standards in cleaner production and resource efficiency
   – Enterprises carry out cleaner production (training, implementation, monitoring the input – energy, water, main materials).
   – Enterprises have internal management system which is easy to use energy, solid waste, sewage, exhaust fumes.

3. Closing production and applying industrial ecology
   – Circulate and reuse the water (as much as possible) before discharge.
   – Circulate and reuse solid waste
   – Exchange residuals and waste (heat, water, materials, etc.) with other enterprises within the same IZ.

4. Standards in energy use that have little impact on environment
   – Use renewable energy: solar, windy, wave...
   – Use energy created from waste, exhaust fumes, etc.

5. Standard in labor and society
   – Improve labor’s living standard
   – Housing for workers
   – Increase the community’s participation in managing and monitoring environmental issues.
Current regulations on industrial zones

1. Establishment and management
   - Regulations on establishment, procedures, orders, supplement for general master-plan of industrial zones development is stipulated in Article 5, 7, 8, 10 and 12 of Decree 29 and Article 1 of Decree 164.
   - The concept of an eco-industrial park has not been mentioned officially and thus the regulation on establishment of eco-industrial parks are not available yet.
   - State management -> regulated in Chapter III, article 22-35 of Decree 29.
   - Functions and missions of management board of industrial parks were stipulated in artical 36, 37 and 39 of Decree 29.
   - Mission of the IZs’ management board in term of environment is: “examine, supervise, monitor the implementation... of environment protection in projects within the IZs, ... penalize the violators within their jurisdiction and submit to higher-level agencies when the violators are not under their jurisdiction” -> the monitoring regulation comply with environmental regulations.
   - The concept of eco-industrial zone hasn’t been mentioned yet, therefore industrial ecology and other factors which could support the management board such as information system concerning the use of material, waste have not been available either.

2. Cleaner production and resource efficiency
   - Decision 1419/QD-TTg in 2009 on approving “Strategy of industrial cleaner production until 2020”
     - b) Targets from 2016 til 2020:
       - 90% of industrial establishment realize the benefit of applying cleaner production in industry;
       - 50% of industrial establishment employ cleaner production; those have employed cleaner production would have saved about 8%-13% of total energy usage, material usage per unit; 90% of SMEs have a department specifically in charge of cleaner production;
       - 90% of Departments of Industry and Commerce (DOITs) have sufficient capacity to give instruction on cleaner production to industrial establishment.
   - Decision 4135/QD-BCT in 2013 approving Project on “Strategy of industrial cleaner production until 2020”.
     - Increase awareness and capacity of applying cleaner production in industry;
     - Build and operate database and website about cleaner production in industry;
     - Provide technical support to applying cleaner production in industrial production;
     - Complete a network of organizations who support cleaner production in industry.
Current regulations on industrial zones

2. Cleaner production and resource efficiency

- Law on water resource 47/2012/QH13
  - The establishment of economic zones, industrial zones, processing zones, hi-tech zones, industrial cluster, etc... and production, business units... that is likely to cause water pollution, degradation and depletion must have a plan to prevent those from happening.

- Decree 80/2014/NĐ-CP on water drainage and treatment
  - Waste water flowing from IZ’s drainage system to urban waste water system must comply with technical requirement for waste water. These requirements are issued by the Ministry of Construction.
  - The waste water flowing from IZ’s drainage system to irrigation system must comply with technical requirement for waste water flowing into irrigation system. These requirements are issued by the Ministry of Agriculture and Rural Development.
  - Ministry of Construction bears responsibility for national management of IZ’s water drainage and waste water treatment.

- Decree 25/2013/NĐ-CP on environment protection fee for waste water
  - Regulations on environment protection fee for waste water: the fee calculation is divided into two types: one that contains heavy metals and one do not.

- Decree 67/2003/NĐ-CP on environment protection fee for waste water
  - The rate of environment protection fee for waste water is calculated based on availability of dangerous chemicals, specifically COD, BOD, TSS, Hg, Pb, Cd and As. The maximum and minimum rate is set for 1 kg of polluted chemicals.
  - A small proportion of collected fee is reimbursed to the collector. The rest is divided into 2 parts: 50% to central budget and 50% to local budget.
  - Decree 04/2007/ND-CP amending Decree 67/2003/ND-CP -> removing BOD from the list of chemicals used in fee calculation.
  - Decree 26/2010/ND-CP amending Artical 2, Clause 8 Decree 67/2003/ND-CP: a small proportion of fee is reimbursed to the collector; the rest is submitted to local government’s budget.
2. Cleaner production and resource efficiency

- Decree 59/2007/NĐ-CP on management of solid waste
  - Regulate the management of solid waste, rights and duties of objects related to the solid waste.
- Decree 38/2015/NĐ-CP on management of waste and wasted materials
  - Regulate the management of dangerous waste, normal industrial solid waste, liquid waste, waste water, industrial exhaust fumes and other specific chemicals.
- Decision 16/2015/QĐ-TTg on withdrawal and treatment of wasted products
  - Wasted products arise from production and business establishment not under jurisdiction of this Decision must follow regulations in Decree 38/2015/NĐ-CP issued on April 24th 2015 by the Government, which stipulate the management of waste and wasted products.

→ Basically form a legal framework for cleaner production

3. Circulation, industrial symbiosis:

- Circular 35/2015/TT-BTNMT on environment protection for economic zones, industrial zones, process zones, hi-tech zones:
  - Waste water: must be treated centrally, exemption is mentioned at point a, clause 4, article 9 -> can be reused for other purposes.
  - Solid waste: stipulated at clause 2, article 11 -> treated or reused based on regulations of waste mud -> possibility of exchange for recycle.
- Decree 54/2015/ND-CP on preferential treatment for activities that save water or use water efficiently.
  - Stipulate the activities that use water circularly, or reuse the waste water.
  - Preferential treatment: capital, taxations.

→ Current regulations on industrial circulation and symbiosis is a new issue in Vietnam and thus is limited
Current regulations on industrial zones

4. Use of renewable energy

- Decision No. 2068/QĐ-TTg dated on 25/11/2015 about approving the Strategy of developing renewable energy in Vietnam until 2030, towards 2050.
  - Targets: increase total sources of renewable energy; increase electricity from renewable energy.
  - Orientation of development for every period.
- Specific regulations on renewable energy for industrial park is a new issue and has not been mentioned in Vietnam.

5. Housing for workers in industrial zones

- The Investment Law 2014 (Article 21) regulated the development of housing and service accommodations for workers in industrial zones.
  - Making master-plan for the IZs → arranging land for worker’s housing.
  - Facing difficulties in having land for worker’s housing → adjusting the master plan of the IZ
- Decree 188/2013/NĐ-CP issued on 20/11/2013 about development and management of social house
  - Provincial People’s Committee bears responsibility to ensure a sufficient land for IZ worker’s housing.
  - Preferential treatment for investment in social house, such as: lower renting rate, VAT, corporate income tax and preferential credit.
- The policy of having space and infrastructure for housing for IZ workers are not available yet.
Recommendations on regulations for eco-industrial parks

1. The concept of eco-industrial park and establishment, preferential treatment
   • The eco-industrial park is a community of production and service enterprises located in the same industrial park, in which every enterprise improves economic, social and environmental performance through coordinating with one another in terms of production, resource usage, environmental and social management
   • Issue regulations for making master-plan for, and investment in eco-industrial parks.
   • Provide preferential treatments to investors who develop infrastructure for eco-industrial parks.

2. Criteria of eco-industrial park
   • Comply with environmental rules and regulations; have a monitoring system to track down if an enterprise follows closely the environmental requirements; have information about enterprises’ raw material and waste.
   • Provide sufficiently all basic service in an industrial park, including: basic infrastructure (electricity, water, information, fire prevention, etc.) and relevant services (accounting, machinery maintenance, etc.)
   • Enterprises within the IZ perform all requirements of cleaner production to reduce emission, waste; re-use the residuals and waste.
   • The greenery, roads, common infrastructure accounts for more than 70% of total IZ’s land.
   • Enterprises within the IZ coordinate with one another to form an industrial symbiosis and use renewable energy
   • Satisfy at least 50% of total demand for housing of labors working in the IZ
Recommendations on regulations for eco-industrial parks

3. Retrofitting into eco-industrial park

• Change the role, function and mission of the management board to conform to eco-industrial park’s concept and criteria
• Give preferential treatment to enterprises which is recognized as eco-enterprises operating in retrofitting park so that they can improve their management process and technology towards cleaner production and resource efficiency.
• Give incentives and encourage enterprises to cooperate with one another or with the third party to jointly use infrastructure, services, raw materials; re-use waste and residuals; make use of renewable energy to reduce expense, improve operational performance and competitiveness of the enterprises.

Recommendations on regulations for eco-industrial parks

3. Retrofitting into eco-industrial park

• Issue policy to encourage an establishment of new eco-industrial parks by planning and arranging functional areas in an appropriate way; putting enterprises in the same industry or those which can implement industrial symbiosis – close to one another.
• Issue policy to provide favorable space and infrastructure for enterprises to build accommodation for labors.
Recommendations on regulations for eco-industrial parks

4. Implementation plan

• International experience: study carefully an experience of establishing eco-industrial park of foreign countries (Korea, China, etc.)

• Consider establishing an agency responsible for establishment and management of eco-industrial parks in Vietnam. In the short term, that can be done by Department of Economic Zones Management (MPI). In the long term, there should be a specialized agency.

• Build up a database about industrial parks and enterprises operating in industrial parks. This database will be used to facilitate the policy concerning the development of eco-industrial parks

LEGAL FOUNDATION FOR ECO-INDUSTRIAL PARKS IN VIETNAM

Thank you!