

添付資料 I-5

本邦招聘参加者より PPC に提出された本邦招聘についてのレポート

No. /BC-KHĐT

Quang Ninh, May, 2016

REPORT

On results of the Study trip for learning experiences about management method to raise environmental awareness and cooperation of citizens in Japan

To: Quang Ninh Provincial People's Committee

Pursuant to the Decision No. 978/QĐ-UBND dated 04/4/2016 of the Provincial People's Committee on appointment of the provincial delegation to join the study trip for learning experiences about management method to raise environmental awareness and cooperation of citizens in Japan. Based on the results of the trip, the Delegation makes summary and report to the Provincial People's Committees as follows:

I. Achieved results

With the aims of studying the experiences on resources management, environmental protection and mechanisms, policies relating to sustainable development of Shiga Prefecture (Japan) to be the basis for implementing the action plan of the Project for Promotion of Green Growth in Halong Bay Area, Quang Ninh province (supported by Japanese government) in the next phase, the Quang Ninh Delegation, led by Mr. Dang Huy Hau, the Standing Vice-chairman of the Quang Ninh Provincial People's Committee had a working visit to Japan from April 22nd to 28th 2016.

- During the trip, the delegation had a courtesy visit to Leaders of the Japan International Cooperation Agency Office (JICA); the Ministry of Land, Infrastructure, Transportation and Tourism; the Governor of Shiga Prefecture and Nippon Koei Company. In the meeting sessions, the parties stressed the similarities in culture between Vietnam and Japan, as well as the close relationship between the two countries, including Quang Ninh province and other provinces and cities in Japan in the recent years. That has been proved through various annual activities, especially the cherry blossom festival in Ha Long, as well as the successful projects of the Japanese enterprises in Quang Ninh province; These success has been thanks to the interest and support of the Japanese Government, particularly the JICA Office. The parties agreed commitment to continue close cooperation to ensure the successful implementation of programs, projects and promote long-term effectiveness of the resources which have been assisted to Quang Ninh Province in particular, Vietnam in general by the Japanese Government, the people, and the businesses.
- In view of sustainable socio-economic development in line with strategic objectives of green growth of Vietnam; the economic structure of Quang Ninh province is now being gradually shifted from "brown" to "green" operations, prioritizing the development of services sector and non-mining industries, while ensuring the mineral mining, especially the coal mining more and more sustainable. To meet the targets by 2020 in building Quang Ninh to become a province of modern industrial services: the parties discussed and agreed on the importance of conservation and sustainable promotion of the Halong Bay heritage – the natural Wonders of the world to the socio-economic development of Quang Ninh province. For the Quang Ninh province side, hopes to continue to receive the attention and support of the Japanese government in the fields of environmental protection, especially the Shiga Prefecture's experiences in natural resources

management and protection of Biwa lake water environment. The Japanese side expressed willingness to support Quang Ninh province in implementing the provincial action plan for green growth, especially the Phase 2 of the Project to promote green growth in Ha Long Bay Area, Quang Ninh province.

- The Delegation visited and learnt experiences:

- (1) The system of environmental management of Kirin Brewery - One of the leading enterprises of Japan in beverage industry (beer production capacity of 200,000 kl/year and other beverages production capacity of 20,000,000 c/s kl/year) with the wastewater treatment capacity of 6,300 m³/day; COD: 15.8 tons/day; proportion of reusable waste, scrap and articles of the company reached nearly 70%;
 - (2) Water Environment Protection Association of Shiga Prefecture - This is an Agency established voluntarily by enterprises, to be a place for enterprises to meet, cooperate and linking and for mutual assistance in reducing costs, raising level of knowledge and techniques on the basis of voluntary compliance with provisions of the environmental protection of Shiga Prefecture. Here, the delegation had been sharing about operating methods of the Association, especially the mechanisms for monitoring the compliance of the business, as well as awareness of businesses in handling their waste before discharging into the environment. Many enterprises perform sewage treatment achieving more stringent criteria than the standard allows.
 - (3) Visited the local community in Harie District. Takashima City is a residential area nearby the Biwa Lake, applying "Satoyama" model in environmental protection and energy saving. Researched the local sewage system: in addition to the centralized public sewer system, there is also waste water treatment tank for each household, the centralized tank for farm wastewater treatment to ensure the wastewater is treated before discharge into the public system. All the water canals and channels reach environmental quality, many places ensure for the pupils to swim, play with clean and safe conditions; beautiful view. In each population group, there are solid waste collection points in sorting mode for being convenient for collection and recycling.
 - (4) Visited the Konan Chubu wastewater treatment plant with current handling about 487,000m³/day. The plant was built and put into operation from 01/4/1982; So far, the scale and treatment technology of the plant still meet the demand and the current environmental provisions of Japan. Even the effluent standards after treatment by the Plant are higher than the current standards of Japan.
 - (5) The delegation also visited a number of tourist attractions such as the Edo-Tokyo Museum, Golden Temple and a number of scenic spots in Kyoto, Yanmar Museum of Yanmar marine engines fabrication company and several points on Chikubu island in Biwa lake. The common feature of these attractions is the harmony between the natural landscapes and the cultural, spiritual and modern structures works; the devotion, thoughtful and seriousness of organizations and individuals doing tourist services; the elegant style, the strict compliance with the provisions of the visitors. The tourism sites, the museums not only display and exhibits with explanations on the historical, cultural items by adopting modern technology, but also have plenty of space to help educational activities on cultural, historical, scientific and technological knowledge to young people and visitors. Shiga Prefecture has its own education program on environmental protection for primary school students on a vessel visiting Biwa Lake.
- The Delegation also met to exchange and promote investment with member enterprises of the Water Environment Protection Association of Shiga Prefecture and visit directly the businesses (Sekisui, Yanmar) specializing in production and business the wastewater treatment equipment, machinery and equipment in the fields of agriculture, waterway transport etc. to find out the actual production process, the new technology products to serve transportation, civil construction and in the field of environmental protection.

- Working with the Environmental Research Institute of Biwa Lake, Shiga Prefecture. In addition to visiting the Institute's operational model, the delegation got sharing by the Shiga Prefecture Leaders on experiences in linking between the people, the government, businesses and research institutes in exploitation and protection of Biw Lake, the Biwa lake protection plan and the development model of Shiga Prefecture in the near future; especially the state management policies for the protection of Biwa Lake environment, namely:
 1. Policy on forest protection and development including: policies for watershed areas, the circulation use of forest resources; educational activities to raise awareness and encouraging participation of the local people in forest protection and sustainable forest harvesting;
 2. Policies to mobilize capitals from people for environmental protection of Ibuki mountain. This is the highest mountain in Shiga Prefecture (1,377m), one of 100 famous mountains in Japan with diverse flora (over 1,300 species). Besides the goals of socialization of resources, mechanisms and policies applied here are towards raising awareness and responsibility of citizens, as well as ensuring harmony between tourism development with protection of ecological flora, fauna systems of the Ibuki mountain.
 3. Policies of environmentally friendly agriculture development of Shiga Prefecture aiming to: provide consumers with more safe and reliable sources of agriculture products, while ensuring the agricultural production in association with environmental protection. Specifically: Shiga Prefecture developed and issued a policy of commitment to develop environmentally friendly agriculture in which identifying specific roles of the province, the farmers, the businesses and consumers; developing technical standards in agricultural production; the agricultural products testing regimes meeting environmental standards. Farmers and state management agencies jointly signed a "Commitment" in implementation of agricultural production environmentally friendly. If the products meet standards will be labeled with "environmentally friendly products" certificate before they enter the consumption market. The province will provide funding support directly to people working with agriculture if ensuring the environmental standards according to the commitments signed.

Overall assessment: This is a very useful study and actual surveying trip, in addition to strengthening, promoting the cooperation and exchanges, as well as learning experiences of Shiga Prefecture on mechanisms and policies of water environment management, protection; learning experiences in mobilizing the businesses community and residents participating in preserving protection of environment, the Mission had direct exchange visits and promotion of investment to the businesses in the Water Environment Protection Association of Shiga Prefecture, from that we have more overall look, as well as identify the works that have to do immediately, in medium term and in long term in Quang Ninh province for implementation of the provincial green growth action plan and the activities in the phase 2 of the Project for promotion of Green Growth in Halong Bay Area. The trip contributed to strengthening the good cooperation relationship between Vietnam - Japan in general and relationship between the localities of the two countries in particular. On the basis of the success of the project, Shiga Prefecture and Quang Ninh Province have consents towards building up the extensive and deep relationships cooperation in various fields between the two provinces in the near future.

II. Recommendations, proposals

To implement the Provincial Green Growth Action Plan as well as the activities in Phase 2 of the Project on Promotion of Green Growth in Halong Bay Area, Quang Ninh Province, the Delegation has proposals as follows:

1. Promote propaganda communications and educational activities through the social – political organizations including the Halong Environmental Education and Protection Association to

raise awareness and responsibilities of the Quang Ninh people, organizations, individuals, enterprises and visitors about protection of Halong Bay; determine the environmental protection for the Halong Bay Area to be the first task to ensure sustainable development and to achieve the green growth targets. Propaganda and education should be attached to specific targets. Immediately, should have early research to develop and put in educational program of schools on Halong Bay environment protection, especially in the primary schools in the localities of Halong Bay area, such as the vocational training schools etc. ; At the same time, conduct surveying for assessment in people living in Halong Bay area on their awareness and desire for the future of Halong Bay, to get a more holistic view, from which to identify the tasks, solutions need to be done in view of state management accordingly.

2. Accelerate the inspection and supervision on environmental protection of Halong Bay Area through construction of specific sanctions directed to: Enterprises, people have to handle their waste before discharge into environment, ensure the treatment must be radical. Widely publish periodically the information relating to waste disposal and treatment of the enterprises as basis for control and supervision of the management bodies as well as the people. This can be done through regular disclosure of environmental monitoring reports (White book) as well as promotion of agriculture waste recycling and resources circulation in agriculture activities of small/household scale.

Study and formulate the encouraging mechanisms to establish the Association for Environmental Protection in Industrial Parks, Economical Zones of Quang Ninh Province – This will be the bridge between enterprises and the state management agencies, at the same time it will be a place for enterprises to meet and share experiences in order to improve qualifications and reduce costs in waste treatment in their business, as well as raise awareness of the business for environment protection, towards green growth targets of the province.

3. Promptly conduct research to assess the current state of natural resources and environment of Halong Bay Area, clearly identify causes to be the basis for building up specific mechanisms and policies for management, exploitation and protection of environment in Halong Bay Area to be more effective. In the long-term, propose to establish a Research Center or Institute for Halong Bay Environment to serve the stage management of Quang Ninh Province for environment protection of Halong Bay area.
4. Investment to construction of waste treatment systems requires a long-term vision, not patchy. Study on application of model of environmental protection and energy saving by communities themselves following the “Satoyama”, immediately can be done to the fishing villages on Halong Bay and the resident areas surrounding Halong Bay.
5. Regarding tourism development in Halong Bay Area, need to ensure harmony with the natural landscapes and associating with environmental protection, sustainable environment development of Halong Bay. Focus on improving level of qualifications of human resources operating in tourism sector; Issue regulations, specific standards for the size, quality and design of tourist boats operating on the Bay to ensure consistency, uniform, modern and environmentally friendly.
6. Speed up solutions to encourage, mobilize resources from the people and enterprises in environmental protection of Halong Bay. Recommend that annually, the province should spare certain resources for targeted supports (possibly called Green Growth Program) for implementing the green growth action plan of the province, firstly apply to the Halong Bay Area. The province should study to develop budgeting mechanism at provincial level separately to Green Growth to confirm the determination in awareness as well as in resources reserved for implementation of green growth targets of the province.

7. Study and formulate sanctions in monitoring, inspection as well as policies and mechanisms to encourage and support farmers to apply the environmentally friendly techniques in agricultural production in order to provide consumers with safe agriculture products, ensuring agriculture production needs to associate with environmental protection.
8. Promote international cooperation in protection of Halong Bay environment, through periodic organizing of conferences and forums at regional level.

The results of the study visit to Japan as presented above will continue to be studied and put in recommendations for actions and specific policies for management and sustainable development of Halong Bay Area, especially in designing the activities in Phase 2 of the Project for Promotion of Green Growth in Halong Bay Area.

The Department of Planning and Investment summarises, reports to the Provincial People's Committee for consideration and decision./.

Addressees:

- As the above;
- Mr. Dang Huy Hau-Standing Vice-chairman of PPC (report);
- Depts.: DONRE, DOIT, DCST; .
- KTĐN, VX, KTN;
- Filing: VP/THQH.

**FOR THE HEAD OF THE DELEGATION
DEPUTY HEAD**

**DIRECTOR OF DPI
Nguyen Van Minh**

添付資料 I-6

本プロジェクト実施フェーズの PDM 案及び PO 案

Annex 2

PROJECT DESIGN MATRIX (PDM)

Project Title: Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province (Implementation Phase); Project Period: 2016-2018 (3 years)

Target Area: Halong Bay : Halong City, Cam Pha City, Van Don District, Hoanh Bo District, Quang Yen Town, Uong Bi City in Quang Ninh Province

Target Group: The population of Halong Area (approx. total 1,780,000 people; Halong City 237,000, Cam Pha City 186,000, Van Don District 43,000, Hoanh Bo District 50,400, Quang Yen Town 134,200, Uong Bi City 113,300)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
OVERALL GOAL			
Green growth is promoted in Quang Ninh Province through transition from brown to green economy.	<ul style="list-style-type: none"> - Quang Ninh Province green growth white book is continuously published. - Ten (10) or more activities concerning provincial fund/financial mechanisms, energy saving, reduction of direct pollution load to the bay are conducted through the environmental management regulations and organizations developed by the Project for the selected key industrial sectors in Quang Ninh Province. - Two (2) or more eco-tour programs and their tourism information are developed and provided through the regulations, mechanisms and organizations developed by the Project for the tourism sector in Quang Ninh Province. 	<ul style="list-style-type: none"> - Quang Ninh Province green growth white book - Official records and interviews with the concerned departments in Quang Ninh Province, private sector enterprises, residents, and tourists 	<p>The policies for promoting the provincial Green Growth Strategy are not changed in Quang Ninh Province.</p> <p>There is no change in social situation inhibiting activities by the concerned private sector, such as economic crisis etc.</p> <p>Natural disaster causing damage to tourism resources does not occur.</p>
PROJECT PURPOSE			
Green Growth is promoted in Halong Bay Area through the implementation of environmentally sustainable policies in the key industrial sectors and implementation of development policies in tourism sector.	<ul style="list-style-type: none"> - The following regulations and organizations to promote green growth are approved by Quang Ninh province. <ul style="list-style-type: none"> • Regulation and organization for publishing the Quang Ninh Province green growth white book continuously • Financial and budgetary mechanisms and organization for promoting environmental management activities and energy saving activities • Regulation and organization for delivering and updating tourist information as well as marketing. • Regulation and organization for promoting eco-tourism in Quang Yen town. • Regulation and organization for labeling to promote energy saving and sustainable tourism activities - The recommendations for the post-project phase are submitted to Quang Ninh province. 	<ul style="list-style-type: none"> - Approved documents on regulations and organizations - Interviews with the concerned departments in Quang Ninh Province 	<p>The policies for promoting the provincial Green Growth Strategy are not changed in Quang Ninh Province.</p> <p>There is no change in global situation and no increase of infectious disease risks inhibiting development of tourism sector.</p> <p>Natural disaster causing damage to tourism resources does not occur.</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
OUTPUTS			
1. Awareness raising activities on the outputs 2 and 3 are implemented and the recommendations for post-project phase is prepared to promote green growth through the lessons learnt from the project activities.	<ul style="list-style-type: none">- The Halong Bay Area green growth white book, describing initial activities of policy implementation and awareness raising activities on green growth, is prepared and published once a year.- Regulation and organization for preparing the Quang Ninh Province green growth white book is developed and documented.- Recommendations for the post-project phase on promotion of green growth are prepared.	<ul style="list-style-type: none">- Halong Bay Area green growth white book;- Administrative documents on the preparation and publication of the green growth white book- The recommendations for post-project phase	There is no change in social situation inhibiting activities by the concerned private sector, such as economic crisis etc.
2. Environmentally and financially sustainable policies for the selected key industrial sectors are developed and implemented as pilot activities.	<ul style="list-style-type: none">- Five (5) or more cases of the environmental management activities (enhancement of provincial fund and financial mechanism, energy saving and management, reduction of direct pollution load to the bay) are implemented in the selected key industrial sectors.- Regulations and organizations for promoting environmental management and energy saving for the selected key industrial sectors are developed and documented.	<ul style="list-style-type: none">- Activity records of the Project- Administrative document on provincial funding/financial mechanism, energy saving and the provincial green label system for promoting energy saving and management in the selected key industrial sectors	
3. Measures to stimulate sustainable growth of tourism sector are implemented as pilot activities.	<ul style="list-style-type: none">- Six (6) or more of tourism information materials or tourism promotion tools are developed and utilized by tourists through the tourism information center and the tourism websites.- Two (2) or more of eco-tour programs are developed and provided in Quang Yen Town, and 5,000 or more tourists visit in the final year of the Project.- Ten (10) or more of tourist boats are certified by The green label for tourist boats (Blue Sail Certificate).- Regulations and organizations on delivering and updating tourist information as well as marketing, eco-tourism promotion in Quang Yen town, and the green label for tourist boats (Blue Sail Certificate) are developed and documented.	<ul style="list-style-type: none">- Tourism information materials and tools developed- Eco-tour programs developed- Report on survey of tourism information center and tourism website utilization (Before / After)- Report on eco-tour activity- Issued green labels for tourist boats- Administrative documents on delivering and updating tourist information as well as marketing, eco-tourism promotion in Quang Yen town, and the green label for tourist boats (Blue Sail Certificate)	
ACTIVITIES			
1-1 Review progress of activities based on the recommendations prepared in the detail planning phase of the Project.	JICA Experts: Chief advisor/ Green growth Environmental measures for industry	<u>Pre-conditions</u> Quang Ninh province issues the notification of agreement to JICA	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
1-2 Prepare the Halong Bay Area green growth white book referring to experience and history of the environmental white book in Shiga Prefecture, based on the activities in Output 2, Output 3 etc., and disclose the white book to the concerned stakeholders through workshops and to the public.	Pollution source control and treatment Energy saving/ Energy management Environmental policy/ Water environmental management Financial mechanism Sustainable tourism promotion Ecotourism Awareness/ Public relation/ Information disclosure Coordinator		Vietnam office for implementation of the Project.
1-3 Based on the output and progress of the activities 1-2, develop and document the regulation and organization to continue and expand publishing the Quang Ninh Province green growth white book and start the approval process by Quang Ninh province.	Equipment: Equipment necessary for implementing the pilot activity on energy efficiency measures in Halong Bay Area Equipment necessary for implementing the pilot activity on enhancement of water environment management capacity by reducing direct pollution load to the bay. Others		
1-4 Prepare recommendations for the post-project phase (such as proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.) on green growth policies in Halong Bay Area referring to the Lake Biwa Model.	Training in Japan, third country or Vietnam (Vietnamese side) Assignment of counterpart personnel in DPI, DONRE, DOIT, DT, DOST, DARD, DOC, DOT, 6 Local Authorities in Halong Bay Area, HBMD, Tourism Association, Halong Association for Environmental Education and Awareness, and other related organizations as required.		
2-1 Implement and monitor the pilot activities on enhancement of the provincial funds and financial mechanisms for environmental management and green growth.	Office Space Budget allocation for salary and other expenditure for counterpart personnel during the project period.		
2-2 Implement and monitor the pilot activities on promotion of incentive for energy saving and management such as ESCO projects, financial support, etc.	Budget allocation for running cost of equipment procured under the Project (in case that the ownership of the equipment comes under QN PPC.).		
2-3 Implement and monitor the pilot activities on enhancement of management capacity for reduction of direct pollution load to the bay.			
2-4 Design a provincial green label system contributing to energy saving and management in the selected key industrial sectors and initiate implementation of the system through the activities 2-1 to 2-3.			
2-5 Summarize outputs and progress of the activities			

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>2-1 to 2-4 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.</p> <p>2-6 Based on outputs and progress of the activities 2-1 to 2-4, develop and document regulations, mechanisms and organizations to continue and expand environmental management activities in the selected key industrial sectors and start the approval process by Quang Ninh province.</p> <p>3-1 Improve or develop tourism information contributing to sustainable tourism development in Halong Bay Area, and provide the information to tourists.</p> <p>3-2 Promote eco-tourism in Quang Yen Town through providing the training and technical transfer for capacity development.</p> <p>3-3 Design and operate green label system for tourist boats in Halong Bay (Blue Sail Certificate).</p> <p>3-4 Summarize outputs and progress of the activities 3-1 to 3-3 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.</p> <p>3-5 Based on the outputs and progress of the activities 3-1 to 3-4, develop and document the regulations and organizations to continue and expand sustainable tourism activities and start the approval process by Quang Ninh province.</p>			

Technical cooperation products

[Output 1]

- Halong Bay Area green growth white book
- Administrative document on publishing the Quang Ninh Province green growth white book
- The recommendations for the post-project phase, including proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.

[Output 2]

- Pilot activity records on enhancement of provincial funds and financial mechanism, including procurement and operation records of equipment, and photos
- Pilot activity record on promotion of incentive for energy saving and management such as ESCO projects, financial support etc., including procurement and operation records of equipment, and photos
- Pilot activity record on enhancement of management capacity for reducing direct pollution load to the bay, including procurement and operation records of equipment, and photos
- Administrative documents covering (1) enhancement of the provincial funds and financial mechanism, (2) promotion of incentives for energy saving and management such as ESCO project, financial support etc., (3) enhancement of management capacity for reducing direct pollution load to the bay, and (4) provincial green label for energy saving/management in the selected key industrial sectors

[Output 3]

- Products such as web-site and brochures
- Eco-tour programs developed
- Administrative documents covering (1) delivered and updated tourist information as well as marketing, (2) eco-tourism promotion in Quang Yen town, and (3) green label for tourist boats (Blue Sail Certificate)

Definitions of terms

Overall goal:

- “Green growth is promoted in Quang Ninh Province” means that reduction of environmental impacts in the selected key industry sectors, and diversification and reduction of environmental impacts in the tourism sector are implemented in Quang Ninh Province, and the contents of such activities are published and utilized for awareness raising.
- “through transition from brown to green economy” means reduction of environmental impacts in the brown economy (primary and secondary sectors of industry) and promotion of green economy (tertiary sector of industry, or service industry).
- “Quang Ninh Province green growth white book” is a compilation of the information on activities of green growth which may cover larger area (outside Halong Bay Area) and/or themes (other than the selected key industrial sectors and tourism sector) compared to Halong Bay Area green growth white book. The area and theme to be covered in the Quang Ninh Province green growth white book is studied through the preparation of Halong Bay Area green growth white book in the project.

Project purpose:

- “Green Growth is promoted” means the necessary institutions and organizations are developed for implementation of environmentally sustainable policies and tourism sector policies.
- “Selected key industrial sector” means the industries selected as important ones in the Project for Quang Ninh province for the future, including industrial zone, energy, tourism, food processing, etc.
- “Implementation of environmentally sustainable policies” means taking actions for reducing environmental impacts in the selected key industrial sectors.
- “implementation of tourism sector policies” means reduction of environmental impacts with promotion of the tourism sector
- “Halong Bay Area green growth white book” is a compilation of the information on activities of reduction of environmental impacts in the selected key industrial sectors and activities of reduction of environmental impacts with promotion of the tourism sector by the Project in Halong Bay Area, as well as the information on current situation in the Halong Bay Area and necessary actions to improve the situation.

Abbreviations:

BDF	Bio Diesel Fuel	DOT	Department of Transport
DARD	Department of Agriculture and Rural Development	DPI	Department of Planning and Investment
DOC	Department of Construction	DT	Department of Tourism
DOIT	Department of Industry and Trade	ESCO	Energy Service Company
DONRE	Department of Natural Resource and Environment	HBMD	Halong Bay Management Department
DOST	Department of Science and Technology	QN PPC	Quang Ninh Provincial People's Committee

End of Document

Plan of Operation

Project Title: Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province

Activities	Year	Before Implementation Stage	1st Year				2nd Year				3rdYear				Responsible Organization	
			I	II	III	IV	I	II	III	IV	I	II	III	IV	Japan	Quang Ninh
			Sub-Activities													
Output 1: Awareness raising activities on the outputs 2 and 3 are implemented and the recommendations for post-project phase is prepared to promote green growth through the lessons learnt from the project activities.																
1.1 Review progress of activities based on the recommendations prepared in the detail planning phase of the Project.	Plan															
	Actual															
1.2 Prepare the Halong Bay Area green growth white book referring to experiences and history of the environmental white book in Shiga Prefecture, based on the activities in Output 2, Output 3 and etc., and disclose the white book to the concerned stakeholders through workshops and to the public.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■													JET	DPI
	Actual															
Prepare a plan for publishing white book and awareness raising activity	Plan														JET	DPI
	Actual															
Provide Japanese experience on preparing white book	Plan														Shiga Pref.	
	Actual															
Collect information from concerned organizations, Outputs 2 and 3	Plan														JET	DPI, DOIT, DONRE
	Actual															
Compile collected information with visualization	Plan														JET	DPI
	Actual															
Publish white book to target enterprises and local residents	Plan														JET	DPI, Env. Edu. Association
	Actual															
Implement awareness raising activity	Plan														JET	Env. Edu. Association
	Actual															
Monitor activity and obtained lessons	Plan														JET	DPI
	Actual															
Prepare a proposal on contents of white book, publication plan and awareness raising activity in post-project phase	Plan														JET	DPI, Env. Edu. Association
	Actual															
Prepare administrative documents on prepared proposal	Plan														JET	DPI
	Actual															
1.3 Based on the output and progress of the activities 1-2, develop and document the regulation and organization to continue and expand publishing the Quang Ninh Province green growth white book and start the approval process by Quang Ninh province.	Plan														JET	DPI, DARD, Tourism Department and DOIT
	Actual															
1.4 Prepare recommendations for the post-project phase (such as proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.) on green growth policies in Halong Bay Area referring to the Lake Biwa Model.	Plan														JET	DPI
	Actual															
Output 2:Environmentally and financially sustainable policies for selected key industries and developed and implemented as pilot activities.																
2.1 Implement and monitor the pilot activities on enhancement of the provincial funds and financial mechanisms for environmental management and green growth.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■													-	DPI
	Actual															
Select facilities participating in the activity for funding mechanism enhancement	Plan														JET	DONRE, DOIT, DOST
	Actual															
Assist target facilities for preparing documents for applying existing fund with DONRE etc.	Plan														JET	DONRE, DOIT, DOST
	Actual															
Introduce advanced technologies for better management of enterprises with Japanese experiences	Plan														Japanese enterprises	
	Actual															
Provide Japanese administrative policy on financial and funding mechanism for better management of selected industries	Plan														Shiga Pref.	
	Actual															
Conduct funding approval process	Plan														JET	DONRE,DOST
	Actual															
Examine required measures for enhancement of existing funding system	Plan														JET	DONRE, DOIT, DOST
	Actual															
Select pilot area for examination of development of financial policy on green growth implementation	Plan														JET	DONRE, DOIT, DOST
	Actual															
Identify required measures on improvement of better management system in pilot area	Plan														JET	DONRE, DOIT, DOST
	Actual															
Examine incentive mechanism on investment for better management system	Plan														JET	DONRE, DOIT, DOST
	Actual															
Prepare a proposal on enhancement of existing funding system	Plan														JET	DONRE, DOIT, DOST
	Actual															
Prepare articles for white book prepared under output 1	Plan														JET	DONRE, DOIT, DOST
	Actual															
Prepare proposal on financial policy on green growth implementation with incentive mechanism	Plan														JET	DONRE, DOIT, DOST
	Actual															
Prepare administrative documents on prepared proposal	Plan														JET	DONRE, DOIT, DOST
	Actual															
2.2 Implement and monitor the pilot activities on promotion of incentives for energy saving and management such as ESCO projects, financial support, etc.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■													-	DPI
	Actual															
Step 1: Pilot Project Implementation stage	Plan														JET	DPI
	Actual															
Confirmation of institutional and financial readiness for pilot projec	Plan														JET	DPI, DOIT, DOG, DONRE, DOST
	Actual															
Finalization of selection of target pilot projects	Plan														JET	DPI, DOIT, DOG, DONRE, DOST
	Actual															
Financial arrangements including preferential loan, subsidy and ESCO	Plan														JET	DPI, DOIT
	Actual															
Set up a pilot-projects working group and monitoring	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Preparation of a detail plan and specifications for pilot component	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Target setting and formulation of a monitoring plan	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Procurement and implementation of pilot projects	Plan														JET	DOIT, DOG, DOST
	Actual															
Step 2: Monitoring stage	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Extraction of lessons learned	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Preparation of EE portion of draft white book	Plan														JET	DPI, DONRE
	Actual															
Step 3: Feedback and preparation for post project	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Evaluation of EE measures of pilot projects	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Preparation of Annual Action Plan including provincial energy label and energy audit system	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Preparation of incentives and financial mechanism and penalty system for post project phase	Plan														JET	DPI, DOIT, DOG, DONRE
	Actual															
Policy recommendations for EE measures	Plan														JET	DPI
	Actual															
2.3 Implement and monitor the pilot activities on enhancement of management capacity for reduction of direct pollution load to the bay.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■													-	DPI
	Actual															
Select cooperative enterprises	Plan														JET	DPI, Halong City, DONRE, DOT, DARD, DOST
	Actual															
Support design work for introducing advanced technologies for reducing direct pollution load to the bay	Plan														JET	Halong City, DARD, DOT, DOST
	Actual															
Procure and install advanced technologies for reducing pollution load to the bay	Plan														JET	Halong City, DARD, DOT, DOST
	Actual															
Operate equipment of advanced technologies for reducing pollution load to the bay	Plan														JET	Halong City, DARD, DOT, DOST
	Actual															
Examine green label system for introducing advanced technologies	Plan														JET	DPI, Halong City, DARD, DOT
	Actual															
Evaluate secondary benefits by contributing to clean food products	Plan														JET	DPI, Halong City, DARD, DOT
	Actual															

Activities	Year	Before Implementation Stage	1st Year				2nd Year				3rd Year				Responsible Organization	
			I	II	III	IV	I	II	III	IV	I	II	III	IV	Japan	Quang Ninh
Sub-Activities																
Monitor activities and obtain lessons	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
Prepare articles for white book prepared under output 1	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
Prepare a proposal on green label system	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
Prepare administrative documents on prepared proposal	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
2.4 Design a provincial green label system contributing to energy saving and management in the selected key industrial sectors and initiate implementation of the system through the activities 2-1 to 2-3.	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
2.5 Summarize outputs and progress of the activities 2-1 to 2-4 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.	Plan														JET, Shiga	DPI, DONRE, DARD, Env Edu Association
Actual																
2.6 Based on outputs and progress of the activities 2-1 to 2-4, develop and document regulations, mechanisms and organizations to continue and expand environmental management activities in the selected key industrial sectors and start the approval process by Quang Ninh province.	Plan														JET, Shiga	DPI, Halong City, DARD, DOT
Actual																
Output 3: Measures to stimulate sustainable growth of tourism sector are implemented as pilot activities.																
3.1 Improve or develop tourism information contributing to sustainable tourism development in Halong Bay Area, and provide the information to tourists.	Plan															
Actual																
Set up a Working Group	Plan	■ ■ ■ ■ ■													-	DPI, DT
Actual																
Prepare an action plan and guidelines	Plan	■ ■ ■ ■ ■													JET	DPI, DT
Actual																
Make a branding of Ha Long Bay Area (including Ha Long smile, OCOP, etc.)	Plan														JET	DT, Tour Ass, HBMD
Actual																
Prepare a list of resource persons/organizations	Plan														JET	DT, Tour Ass, HBMD
Actual																
Provide tourist information materials and tools (website, brochures, maps, event calendar, video, etc.)	Plan														JET	DT, Tour Ass, HBMD, DOT
Actual																
Train the concerned parties on tourist information management and delivery, etc.	Plan														JET	DT, Tour Ass, HBMD
Actual																
Organize promotion activities (events, FAM trip, media tours, etc.)	Plan														JET	DT, Tour Ass, HBMD, DOT
Actual																
Update periodically based on the feedback from tourists	Plan														JET	DPI, DT, Tour Ass, HBMD
Actual																
Monitor outputs and impacts of the pilot activity	Plan														JET	DPI, DT, Tour Ass, HBMD
Actual																
Establish a DMA	Plan														JET	DPI, DT, Tour Ass, HBMD
Actual																
3.2 Promote eco-tourism in Quang Yen Town through providing the training and technical transfer for capacity development	Plan															
Actual																
Set up a local Working Group	Plan	■ ■ ■ ■ ■													-	DPI, DT, QY
Actual																
Develop discovery routes for promotion of ecotourism	Plan														JET	DT, QY
Actual																
Provide tourist information materials and tools (mainly brochures and maps)	Plan														JET	DT, QY
Actual																
Install on-site signage and interpretation	Plan														JET	DT, QY
Actual																
Train local guides, tourist business and services, communities, etc.	Plan														JET	DT, QY
Actual																
Organize promotion activities (events, FAM trip, media tours, etc.)	Plan														JET	DT, QY, Tour Ass
Actual																
Update periodically based on the feedback from tourists	Plan														JET	DT, QY
Actual																
Monitor outputs and impacts of the pilot activity	Plan														JET	DPI, DT, QY
Actual																
3.3 Design and operate green label system for tourist boats in Halong Bay (Blue Sail Certificate)	Plan															
Actual																
Examine criteria and incentives for Blue Sail Certificate	Plan														JET	DPI, DT, DONRE, DOT
Actual																
Get official approval of criteria	Plan														JET	DT, DONRE
Actual																
Launch Blue Sail Certificate inscription	Plan														JET	DPI, DT, DONRE, DOT
Actual																
Examine application and give awards	Plan														JET	DPI, DT, DONRE, DOT
Actual																
Monitor outputs and impacts of the pilot activity	Plan														JET	DT, DONRE
Actual																
3.4 Summarize outputs and progress of the activities 3-1 to 3-3 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.	Plan														JET, Shiga	DPI, DT, QY, Env Edu Association
Actual																
3.5 Based on the outputs and progress of the activities 3-1 to 3-4, develop and document the regulations and organizations to continue and expand sustainable tourism activities and start the approval process by Quang Ninh province.	Plan														JET	DPI, DT, Tour Ass, HBMD, QY
Actual																

Abbreviations

BDF	Bio Diesel Fuel
DARD	Department of Agruculture and Rural Development
DMA	Destination Marketing Agency
DOC	Department of Consutrcution
DOIT	Department of Industry and Trade
DONRE	Department of Natural Resource and Environment
DOST	Department of Science and Tourism
DOT	Department of Transport
DPI	Department of Planning and Investment
DT	Department of Tourism
ESCO	Energy Service Company
FAM trip	Familialization Trip
HBMD	Halong Bay Management Department
JET	JICA Expert Team
OCOP	One Community One Product
QY	Quang Yen Town

添付資料 I-7

署名済みミニッツ（2016 年 7 月 13 日）

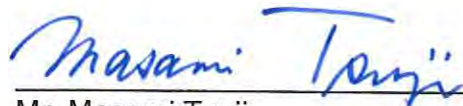
**MINUTES OF MEETING ON
JAPANESE TECHNICAL COOPERATION FOR
THE PROJECT FOR GREEN GROWTH PROMOTION IN HALONG BAY AREA,
QUANG NINH PROVINCE
AGREED UPON BETWEEN
QUANG NINH PROVINCIAL PEOPLE'S COMMITTEE OF THE SOCIALIST
REPUBLIC OF VIETNAM
AND
JAPAN INTERNATIONAL COOPERATION AGENCY**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") has dispatched the Detailed Planning Survey Team (hereinafter referred to as "the Team") headed by Mr. Masami Tsuji to the Socialist Republic of Vietnam (hereinafter referred to as "Vietnam") from 11 to 15 July, 2016 for the purpose of preparation of the technical cooperation regarding the Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province (hereinafter referred to as "the Project").

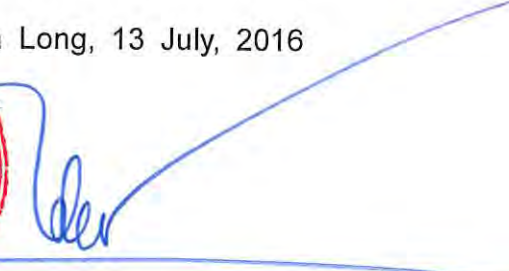
Based on the Record of Discussions (hereinafter referred to as "R/D"), signed by the JICA and Vietnam, dated on June 12, 2015, the Detailed Planning Survey has been conducted since October 2015.

During its stay in Vietnam, the Team had a series of discussions with the Vietnamese authorities concerned with respect to the implementation of the Project. Based on the result of the discussions, both sides understood the issues related to the Project referred to in the document attached hereto.

Ha Long, 13 July, 2016



Mr. Masami Tsuji
Leader
Detailed Planning Survey Team
Japan International Cooperation Agency



Mr. Dang Huy Hau
Standing Vice Chairman
Quang Ninh Provincial People's
Committee
The Socialist Republic of Vietnam

MAIN POINTS DISCUSSED

Both sides discussed the following points and agreed on the necessary modifications in the project design in accordance with the Detailed Planning Survey results. The details and points, other than the following, are effective and valid in accordance with the R/D.

1. The Project Steering Committee (hereinafter referred to as "StC") established in the planning stage of the Project regards as a JCC with succeeding its roles, responsibilities, and members defined in the R/D.

2. Both sides confirmed that the Implementation Plans (hereinafter referred to as "IPs") for each of the five pilot activities prepared in the planning stage of the Project shall be authorized by Quang Ninh Provincial People's Committee of Vietnam (hereinafter referred to as "QN PPC") prior to the commencement of the implementation stage of the Project. The topics of five pilot activities are enumerated below.

(1) Pilot activity on enhancement of provincial funding and financial mechanism for environmental management and green growth.

(2) Pilot activity on energy efficient (EE) measures in Halong Bay Area.

(3) Pilot activity on sustainable tourism promotion in Halong Bay Area.

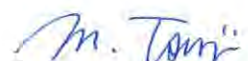
(4) Pilot activity on enhancement of water environment management capacity for reduction of direct pollution load to the bay.

(5) Pilot activity on awareness raising for contribution to green growth implementation with regular publishing of white book.

3. Both sides confirmed that the following particular points shall be effective in QN PPC prior to the commencement of the the implementation stage of the Project.

(1) The implementation structure or working groups (hereinafter referred to as "WGs") shall be organized as proposed in IPs of five pilot activities respectively.

(2) Regarding the pilot activity on enhancement of provincial funding and financial mechanism for environmental management and green growth, QN PPC



acknowledges initiating allocation of the state budget and other legal financial and funding sources for implementation of the Project.

(3) Regarding the pilot activity on EE measures in Halong Bay Area, QN PPC acknowledges initiating the financial incentive mechanism, such as subsidy scheme by QN PPC, preferential loan scheme by the central ministry, ESCO project scheme in collaboration with the private sector, and other available funding scheme, with designing provincial green label system contributing to energy saving and management.

(4) Regarding the pilot activity on sustainable tourism promotion in Halong Bay Area, QN PPC acknowledges developing tourism information contributing to sustainable tourism development, and promoting eco-tourism in Quang Yen Town with designing and operating green label system for tourist boats in Halong Bay (Blue Sail Certificate system).

(5) Regarding the pilot activity on enhancement of water environment management capacity for reduction of direct pollution load to the bay, QN PPC acknowledges initiating the application of advanced technologies to reduce direct pollution load to the bay such as control of tourist boats wastewater and aquaculture with green label on advanced technology for reducing direct pollution load.

(6) Regarding the pilot activity on awareness raising for contribution to green growth implementation with regular publishing of white book, QN PPC acknowledges disclosing the Halong Bay Area green growth white book to the target stakeholders such as enterprises, local authorities and residents, high school students in the area, as well as disseminating on the provincial website, with bearing cost for publishing the Halong Bay Area green growth white book.

4. Both sides confirmed the deployment of the efforts each other to commence the implementation stage of the Project as early as possible in 2016. The duration of the Project will be three (3) years after dispatch of an expert team.

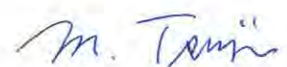
5. Both sides confirmed that QN PPC bears the responsibility to proceed, with being supported and advised by JICA and the expert team, to the approval

process in the third year (or earlier than the third year if possible and practicable) of the implementation stage of the Project for the regulations, mechanism and organizations developed/ improved in the Project, in order to put them into practice for green growth implementation for the post-project phase.

6. Both sides confirmed that i) the JICA and Shiga Prefecture, the expert team conduct the technical transfer and knowledge sharing to QN PPC and counterparts in the course of the joint implementation of the Project, and ii) QN PPC takes an initiative to expand the achievement and outcomes obtained through the Project toward the post-project phase.

7. The Minutes of Meetings for amendment of the R/D on the Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province, which stipulates the revised framework of the Project as shown in Appendix I as draft, will be signed by Quang Ninh Provincial People's Committee and JICA Vietnam Office after notification of agreement of implementation of the Project such as IPs by QN PPC.

Appendix I Draft Minutes of Meetings for Amendment of the Record of Discussions on the Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province



Appendix 1

**DRAFT MINUTES OF MEETINGS
BETWEEN
QUANG NINH PROVINCIAL PEOPLE'S COMMITTEE OF THE SOCIALIST REPUBLIC
OF VIETNAM
AND
JAPAN INTERNATIONAL COOPERATION AGENCY
FOR AMENDMENT OF THE RECORD OF DISCUSSIONS
ON
THE PROJECT FOR GREEN GROWTH PROMOTION IN HALONG BAY AREA, QUANG
NINH PROVINCE**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") and Quang Ninh Provincial People's Committee of Vietnam (hereinafter referred to as "QN PPC") hereby agree that the Record of Discussions on the Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province (hereinafter referred to as "the Project") signed on 12th June 2015 will be amended as follows, considering the progress and achievements of the Planning Stage of the Project. It is noted that the Overall Goal and the Project Purpose shall not be amended.

1. Project Design Matrix (PDM)

Before	Amended Version
(1) Title of the Project Project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation for the Halong Bay	(1) Title of the Project Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province
(2) Output 1 and its activities Policy framework and priority action plan for the realization of green growth in Halong Bay Area is put in place by refining the existent Provincial Green Growth Action Plan. 1-1 Review existing knowledge of Green Growth worldwide, and identify lessons applicable to Quang Ninh Province. 1-2 Review existing policies, plans, legislations, financial status and institutional arrangements in Quang Ninh Province and in Vietnam, and analyze their needs and gaps for materializing Green Growth in Halong Bay area. 1-3 Conduct rapid assessment of	(2) Output 1 and its activities Awareness raising activities on the outputs 2 and 3 are implemented and the recommendations for post-project phase are prepared to promote green growth through the lessons learnt from the project activities. 1-1 Review progress of activities based on the recommendations prepared in the detail planning phase of the Project. 1-2 Prepare the Halong Bay Area green growth white book referring to experience and history of the environmental white book in Shiga Prefecture, based on the activities in Output 2, Output 3, etc., and disclose the white book to the concerned stakeholders

<p>environmental performance (including energy efficiency, carbon emission, resources usage efficiency, etc.) in key economic sub-sectors of Quang Ninh Province (including industries, transport, solid waste, agriculture, water/wastewater, etc.)</p> <p>1-4 Conduct seminars/workshops and trainings to improve understanding and capacity related to Green Growth of Quang Ninh Province's key departments, business and civil actors.</p> <p>1-5 Set up necessary institutional arrangements including cross-stakeholder Working Groups for stakeholder consultation.</p> <p>1-6 Based on the rapid assessment and through stakeholder consultation, propose to Quang Ninh People's Committee a financially sustainable draft policy framework consisting of: definition of Green Growth, targets, indicators, institutional arrangement, potential policy instruments (both regulatory and incentivizing), resource, measures for monitoring and evaluation, and roadmaps for Green Growth implementation in Halong Bay area.</p>	<p>through workshops and to the public.</p> <p>1-3 Based on the output and progress of the activities 1-2, develop and document the regulation and organization to continue and expand publishing the Quang Ninh Province green growth white book and start the approval process by Quang Ninh province.</p> <p>1-4 Prepare recommendations for the post-project phase (such as proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.) on green growth policies in Halong Bay Area referring to the Lake Biwa Model.</p>
<p>(3) Activities of Output 2</p> <p>2-1 Identify priority sub-sectors and propose pilot measures/models, consisting of technology, human resource and financial tools to improve both environmental performance and business effectiveness.</p> <p>2-2 Draft and institutionalize concrete policies including institutional framework, policy instruments, etc. for the priority sub-sectors.</p> <p>2-3 Demonstrate and monitor selected pilot measures/models in priority sub-sectors.</p>	<p>(3) Activities of Output 2</p> <p>2-1 Implement and monitor the pilot activities on enhancement of the provincial funds and financial mechanisms for environmental management and green growth.</p> <p>2-2 Implement and monitor the pilot activities on promotion of incentive for energy saving and management such as ESCO projects, financial support, etc.</p> <p>2-3 Implement and monitor the pilot activities on enhancement of management capacity for reduction of direct pollution load to the bay.</p> <p>2-4 Design a provincial green label system contributing to energy saving and management in the selected key industrial sectors and initiate implementation of the system through the activities 2-1 to 2-3.</p> <p>2-5 Summarize outputs and progress of the activities 2-1 to 2-4 annually and incorporate the information in Halong Bay Area green</p>

	<p>growth white book to be prepared in Output 1. 2-6 Based on outputs and progress of the activities 2-1 to 2-4, develop and document regulations and organizations to continue and expand environmental management activities in the selected key industrial sectors and start the approval process by Quang Ninh province.</p>
<p>(4) Output 3 and its activities Development policies to stimulate sustainable tourism sector growth are implemented as pilot activities. 3-1 Review development opportunities and obstacles in the current tourism activities, and identify priority issues from the Green Growth perspective. 3-2 Assess environmental performance of tourism facilities and activities in Halong city and activities in the Halong Bay area. 3-3 Propose policy/action measures to improve tourism facilities and activities in the Halong Bay area based on the above 3-2. 3-4 Demonstrate and monitor selected pilot measures/models in some selected zones/operators.</p>	<p>(4) Output 3 and its activities Measures to stimulate sustainable growth of tourism sector are implemented as pilot activities. 3-1 Improve or develop tourism information contributing to sustainable tourism development in Halong Bay Area, and provide the information to tourists. 3-2 Promote eco-tourism in Quang Yen Town through providing the training and technical transfer for capacity development. 3-3 Design and operate green label system for tourist boats in Halong Bay (Blue Sail Certificate). 3-4 Summarize outputs and progress of the activities 3-1 to 3-3 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1. 3-5 Based on the outputs and progress of the activities 3-1 to 3-4, develop and document the regulations and organizations to continue and expand sustainable tourism activities and start the approval process by Quang Ninh province.</p>
<p>(5) Objectively Verifiable Indicators, Means of Verification, Important Assumptions, and Pre-conditions N.A.</p>	<p>(5) Objectively Verifiable Indicators, Means of Verification, Important Assumptions, and Pre-conditions As shown in Annex 2.</p>
<p>Reason: Amendment and update on the stated items of the current version of PDM was necessary for the following reasons; (1) Recommendation to modify the Project title was agreed in the Record of Discussion signed on 12 June 2015, and Note of Verbal No. J. D. 95/ 2015 was issued by Embassy of Japan in Vietnam on 1 December 2015 to concur with the modification. (2) Activities of the Output 1 agreed in the Record of Discussion (signed on 12 June 2015) were conducted and completed in the Detail Planning Stage. Accordingly, the Output 1 and its activities are newly set for the Implementation Stage of the Project.</p>	

- (3) Activities of the Output 2 were revised in accordance with the Implementation Plans of the pilot activities for the Implementation Stage of the Project, which were concluded in the Planning Stage.
- (4) Activities of the Output 3 were revised in accordance with the Implementation Plans of the pilot activities for the Implementation Stage of the Project, which were concluded in the Planning Stage.
- (5) Objectively verifiable indicators, means of verifications, important assumptions and pre-conditions were not indicated in the Record of Discussion (signed on 12 June 2015). These are newly prepared in this Minutes of Meeting as shown in Annex 2.

2. Plan of Operations (PO)

Before	Amended Version
(1) N.A.	(1) As shown in Annex 2.
Reason: Amendment and the update on the stated items of PO was necessary for the following reasons;	
(1) PO was not indicated in the Record of Discussion (signed on 12 June 2015). PO is newly prepared in this Minutes of Meeting as shown in Annex 2.	

The contents of the Record of Discussions (signed on 12 June 2015), other than the contents amended and agreed in this Minutes of Meeting, shall be prevailing.

This amendment will become effective as of XX August, 2016.

Annex 1: Record of Discussions (signed on 12 June 2015)

Annex 2: PDM (Revised), PO

Ha Long, XX August, 2016

Mr. Kenichi Yamamoto
Deputy Chief Representative
Vietnam Office
Japan International Cooperation Agency

Mr. Dang Huy Hau
Standing Vice Chairman
Quang Ninh Provincial People's Committee
The Socialist Republic of Vietnam

Annex 2

PROJECT DESIGN MATRIX (PDM)

Project Title: Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province (Implementation Phase); Project Period: 2016-2018 (3 years)

Target Area: Halong Bay : Halong City, Cam Pha City, Van Don District, Hoanh Bo District, Quang Yen Town, Uong Bi City in Quang Ninh Province

Target Group: The population of Halong Area (approx. total 1,780,000 people; Halong City 237,000, Cam Pha City 186,000, Van Don District 43,000, Hoanh Bo District 50,400, Quang Yen Town 134,200, Uong Bi City 113,300)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
OVERALL GOAL			
Green growth is promoted in Quang Ninh Province through transition from brown to green economy.	<ul style="list-style-type: none"> - Quang Ninh Province green growth white book is continuously published. - Ten (10) or more activities concerning provincial fund/financial mechanisms, energy saving, reduction of direct pollution load to the bay are conducted through the environmental management regulations and organizations developed by the Project for the selected key industrial sectors in Quang Ninh Province. - Two (2) or more eco-tour programs and their tourism information are developed and provided through the regulations, mechanisms and organizations developed by the Project for the tourism sector in Quang Ninh Province. 	<ul style="list-style-type: none"> - Quang Ninh Province green growth white book - Official records and interviews with the concerned departments in Quang Ninh Province, private sector enterprises, residents, and tourists 	<p>The policies for promoting the provincial Green Growth Strategy are not changed in Quang Ninh Province.</p> <p>There is no change in social situation inhibiting activities by the concerned private sector, such as economic crisis etc.</p> <p>Natural disaster causing damage to tourism resources does not occur.</p>
PROJECT PURPOSE			
Green Growth is promoted in Halong Bay Area through the implementation of environmentally sustainable policies in the key industrial sectors and implementation of development policies in tourism sector.	<ul style="list-style-type: none"> - The following regulations and organizations to promote green growth are approved by Quang Ninh province. <ul style="list-style-type: none"> • Regulation and organization for publishing the Quang Ninh Province green growth white book continuously • Financial and budgetary mechanisms and organization for promoting environmental management activities and energy saving activities • Regulation and organization for delivering and updating tourist information as well as marketing. • Regulation and organization for promoting eco-tourism in Quang Yen town. • Regulation and organization for labeling to promote energy saving and sustainable tourism activities - The recommendations for the post-project phase are submitted to Quang Ninh province. 	<ul style="list-style-type: none"> - Approved documents on regulations and organizations - Interviews with the concerned departments in Quang Ninh Province 	<p>The policies for promoting the provincial Green Growth Strategy are not changed in Quang Ninh Province.</p> <p>There is no change in global situation and no increase of infectious disease risks inhibiting development of tourism sector.</p> <p>Natural disaster causing damage to tourism resources does not occur.</p>

OUTPUTS			
1. Awareness raising activities on the outputs 2 and 3 are implemented and the recommendations for post-project phase is prepared to promote green growth through the lessons learnt from the project activities.	<ul style="list-style-type: none">- The Halong Bay Area green growth white book, describing initial activities of policy implementation and awareness raising activities on green growth, is prepared and published once a year.- Regulation and organization for preparing the Quang Ninh Province green growth white book is developed and documented.- Recommendations for the post-project phase on promotion of green growth are prepared.	<ul style="list-style-type: none">- Halong Bay Area green growth white book;- Administrative documents on the preparation and publication of the green growth white book- The recommendations for post-project phase	There is no change in social situation inhibiting activities by the concerned private sector, such as economic crisis etc.
2. Environmentally and financially sustainable policies for the selected key industrial sectors are developed and implemented as pilot activities.	<ul style="list-style-type: none">- Five (5) or more cases of the environmental management activities (enhancement of provincial fund and financial mechanism, energy saving and management, reduction of direct pollution load to the bay) are implemented in the selected key industrial sectors.- Regulations and organizations for promoting environmental management and energy saving for the selected key industrial sectors are developed and documented.	<ul style="list-style-type: none">- Activity records of the Project- Administrative document on provincial funding/financial mechanism, energy saving and the provincial green label system for promoting energy saving and management in the selected key industrial sectors	
3. Measures to stimulate sustainable growth of tourism sector are implemented as pilot activities.	<ul style="list-style-type: none">- Six (6) or more of tourism information materials or tourism promotion tools are developed and utilized by tourists through the tourism information center and the tourism websites.- Two (2) or more of eco-tour programs are developed and provided in Quang Yen Town, and 5,000 or more tourists visit in the final year of the Project.- Ten (10) or more of tourist boats are certified by The green label for tourist boats (Blue Sail Certificate).- Regulations and organizations on delivering and updating tourist information as well as marketing, eco-tourism promotion in Quang Yen town, and the green label for tourist boats (Blue Sail Certificate) are developed and documented.	<ul style="list-style-type: none">- Tourism information materials and tools developed- Eco-tour programs developed- Report on survey of tourism information center and tourism website utilization (Before / After)- Report on eco-tour activity- Issued green labels for tourist boats- Administrative documents on delivering and updating tourist information as well as marketing, eco-tourism promotion in Quang Yen town, and the green label for tourist boats (Blue Sail Certificate)	
ACTIVITIES			
1-1 Review progress of activities based on the recommendations prepared in the detail planning phase of the Project.	JICA Experts: Chief advisor/ Green growth Environmental measures for industry Pollution source control and treatment		<u>Pre-conditions</u> Quang Ninh province issues the notification of agreement to JICA Vietnam office for implementation

<p>1-2 Prepare the Halong Bay Area green growth white book referring to experience and history of the environmental white book in Shiga Prefecture, based on the activities in Output 2, Output 3 etc., and disclose the white book to the concerned stakeholders through workshops and to the public.</p>	<p>Energy saving/ Energy management Environmental policy/ Water environmental management Financial mechanism Sustainable tourism promotion Ecotourism Awareness/ Public relation/ Information disclosure Coordinator</p>	<p>of the Project.</p>
<p>1-3 Based on the output and progress of the activities 1-2, develop and document the regulation and organization to continue and expand publishing the Quang Ninh Province green growth white book and start the approval process by Quang Ninh province.</p>	<p>Equipment: Equipment necessary for implementing the pilot activity on energy efficiency measures in Halong Bay Area Equipment necessary for implementing the pilot activity on enhancement of water environment management capacity by reducing direct pollution load to the bay. Others</p>	
<p>1-4 Prepare recommendations for the post-project phase (such as proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.) on green growth policies in Halong Bay Area referring to the Lake Biwa Model.</p>	<p>Training in Japan, third country or Vietnam (Vietnamese side) Assignment of counterpart personnel in DPI, DONRE, DOIT, DT, DOST, DARD, DOC, DOT, 6 Local Authorities in Halong Bay Area, HBMD, Tourism Association, Halong Association for Environmental Education and Awareness, and other related organizations as required.</p>	
<p>2-1 Implement and monitor the pilot activities on enhancement of the provincial funds and financial mechanisms for environmental management and green growth.</p>	<p>Office Space Budget allocation for salary and other expenditure for counterpart personnel during the project period.</p>	
<p>2-2 Implement and monitor the pilot activities on promotion of incentive for energy saving and management such as ESCO projects, financial support, etc.</p>	<p>Budget allocation for running cost of equipment procured under the Project (in case that the ownership of the equipment comes under QN PPC.).</p>	
<p>2-3 Implement and monitor the pilot activities on enhancement of management capacity for reduction of direct pollution load to the bay.</p>		
<p>2-4 Design a provincial green label system contributing to energy saving and management in the selected key industrial sectors and initiate implementation of the system through the activities 2-1 to 2-3.</p>		
<p>2-5 Summarize outputs and progress of the activities 2-1 to 2-4 annually and incorporate the information in Halong Bay Area green growth</p>		

<p>white book to be prepared in Output 1.</p> <p>2-6 Based on outputs and progress of the activities 2-1 to 2-4, develop and document regulations, mechanisms and organizations to continue and expand environmental management activities in the selected key industrial sectors and start the approval process by Quang Ninh province.</p> <p>3-1 Improve or develop tourism information contributing to sustainable tourism development in Halong Bay Area, and provide the information to tourists.</p> <p>3-2 Promote eco-tourism in Quang Yen Town through providing the training and technical transfer for capacity development.</p> <p>3-3 Design and operate green label system for tourist boats in Halong Bay (Blue Sail Certificate).</p> <p>3-4 Summarize outputs and progress of the activities 3-1 to 3-3 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.</p> <p>3-5 Based on the outputs and progress of the activities 3-1 to 3-4, develop and document the regulations and organizations to continue and expand sustainable tourism activities and start the approval process by Quang Ninh province.</p>		
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Technical cooperation products

[Output 1]

- Halong Bay Area green growth white book
- Administrative document on publishing the Quang Ninh Province green growth white book
- The recommendations for the post-project phase, including proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.

[Output 2]

- Pilot activity records on enhancement of provincial funds and financial mechanism, including procurement and operation records of equipment, and photos
- Pilot activity record on promotion of incentive for energy saving and management such as ESCO projects, financial support etc., including procurement and operation records of equipment, and photos

- Pilot activity record on enhancement of management capacity for reducing direct pollution load to the bay, including procurement and operation records of equipment, and photos
- Administrative documents covering (1) enhancement of the provincial funds and financial mechanism, (2) promotion of incentives for energy saving and management such as ESCO project, financial support etc., (3) enhancement of management capacity for reducing direct pollution load to the bay, and (4) provincial green label for energy saving/management in the selected key industrial sectors

[Output 3]

- Products such as web-site and brochures
- Eco-tour programs developed
- Administrative documents covering (1) delivered and updated tourist information as well as marketing, (2) eco-tourism promotion in Quang Yen town, and (3) green label for tourist boats (Blue Sail Certificate)

Definitions of terms

Overall goal:

- “Green growth is promoted in Quang Ninh Province” means that reduction of environmental impacts in the selected key industry sectors, and diversification and reduction of environmental impacts in the tourism sector are implemented in Quang Ninh Province, and the contents of such activities are published and utilized for awareness raising.
- “through transition from brown to green economy” means reduction of environmental impacts in the brown economy (primary and secondary sectors of industry) and promotion of green economy (tertiary sector of industry, or service industry).
- “Quang Ninh Province green growth white book” is a compilation of the information on activities of green growth which may cover larger area (outside Halong Bay Area) and/or themes (other than the selected key industrial sectors and tourism sector) compared to Halong Bay Area green growth white book. The area and theme to be covered in the Quang Ninh Province green growth white book is studied through the preparation of Halong Bay Area green growth white book in the project.

Project purpose:

- “Green Growth is promoted” means the necessary institutions and organizations are developed for implementation of environmentally sustainable policies and tourism sector policies.
- “Selected key industrial sector” means the industries selected as important ones in the Project for Quang Ninh province for the future, including industrial zone, energy, tourism, food processing, etc.
- “Implementation of environmentally sustainable policies” means taking actions for reducing environmental impacts in the selected key industrial sectors.
- “implementation of tourism sector policies” means reduction of environmental impacts with promotion of the tourism sector
- “Halong Bay Area green growth white book” is a compilation of the information on activities of reduction of environmental impacts in the selected key industrial sectors and activities of reduction of environmental impacts with promotion of the tourism sector by the Project in Halong Bay Area, as well as the information on current situation in the Halong Bay Area and necessary actions to improve the situation.

Abbreviations:

BDF	Bio Diesel Fuel	DOT	Department of Transport
DARD	Department of Agriculture and Rural Development	DPI	Department of Planning and Investment
DOC	Department of Construction	DT	Department of Tourism
DOIT	Department of Industry and Trade	ESCO	Energy Service Company
DONRE	Department of Natural Resource and Environment	HBMD	Halong Bay Management Department
DOST	Department of Science and Technology	QN PPC	Quang Ninh Provincial People's Committee

End of Document

Plan of Operation

Project Title: Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province

Activities	Year	Before Implementation Stage	1st Year				2nd Year				3rdYear				Responsible Organization	
Sub-Activities			I	II	III	IV	I	II	III	IV	I	II	III	IV	Japan	Quang Ninh
Output 1: Awareness raising activities on the outputs 2 and 3 are implemented and the recommendations for post-project phase is prepared to promote green growth through the lessons learnt from the project activities.																
1.1 Review progress of activities based on the recommendations prepared in the detail planning phase of the Project.	Plan															
	Actual															
1.2 Prepare the Halong Bay Area green growth white book referring to experiences and history of the environmental white book in Shiga Prefecture, based on the activities in Output 2, Output 3 and etc., and disclose the white book to the concerned stakeholders through workshops and to the public.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■ ■ ■ ■													JET	DPI
	Actual															
Prepare a plan for publishing white book and awareness raising activity	Plan														JET	DPI
	Actual															
Provide Japanese experience on preparing white book	Plan														Shiga Pref.	
	Actual															
Collect information from concerned organizations, Outputs 2 and 3	Plan														JET	DPI, DOI, DONRE
	Actual															
Compile collected information with visualization	Plan														JET	DPI
	Actual															
Publish white book to target enterprises and local residents	Plan														JET	DPI, Env. Eds Association
	Actual															
Implement awareness raising activity	Plan														JET	Env. Eds Association
	Actual															
Monitor activity and obtained lessons	Plan														JET	DPI
	Actual															
Prepare a proposal on contents of white book, publication plan and awareness raising activity in post-project phase	Plan														JET	DPI, Env. Eds Association
	Actual															
Prepare administrative documents on prepared proposal	Plan														JET	DPI
	Actual															
1.3 Based on the output and progress of the activities 1-2, develop and document the regulation and organization to continue and expand publishing the Quang Ninh Province green growth white book and start the approval process by Quang Ninh province.	Plan														JET	DPI, DARD, Tourism Department and DOI
	Actual															
1.4 Prepare recommendations for the post-project phase (such as proposal of Halong Bay Environmental Science and Research Center, community involvement program, formulation of Halong forum, promotion of BDF, etc.) on green growth policies in Halong Bay Area referring to the Lake Biwa Model.	Plan														JET	DPI
	Actual															
Output 2:Environmentally and financially sustainable policies for selected key industries and developed and implemented as pilot activities.																
2.1 Implement and monitor the pilot activities on enhancement of the provincial funds and financial mechanisms for environmental management and green growth.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■ ■ ■ ■													-	DPI
	Actual															
Select facilities participating in the activity for funding mechanism enhancement	Plan														JET	DONRE, DOI, DOST
	Actual															
Assist target facilities for preparing documents for applying existing fund with DONRE etc.	Plan														JET	DONRE, DOI, DOST
	Actual															
Introduce advanced technologies for better management of enterprises with Japanese experiences	Plan														Japanese enterprises	
	Actual															
Provide Japanese administrative policy on financial and funding mechanism for better management of selected industries	Plan														Shiga Pref.	
	Actual															
Conduct funding approval process	Plan														JET	DONRE,DOST
	Actual															
Examine required measures for enhancement of existing funding system	Plan														JET	DONRE, DOI, DOST
	Actual															
Select pilot area for examination of development of financial policy on green growth implementation	Plan														JET	DONRE, DOI, DOST
	Actual															
Identify required measures on improvement of better management system in pilot area	Plan														JET	DONRE, DOI, DOST
	Actual															
Examine incentive mechanism on investment for better management system	Plan														JET	DONRE, DOI, DOST
	Actual															
Prepare a proposal on enhancement of existing funding system	Plan														JET	DONRE, DOI, DOST
	Actual															
Prepare articles for white book prepared under output 1	Plan														JET	DONRE, DOI, DOST
	Actual															
Prepare proposal on financial policy on green growth implementation with incentive mechanism	Plan														JET	DONRE, DOI, DOST
	Actual															
Prepare administrative documents on prepared proposal	Plan														JET	DONRE, DOI, DOST
	Actual															
2.2 Implement and monitor the pilot activities on promotion of incentives for energy saving and management such as ESCO projects, financial support, etc.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■ ■ ■ ■													-	DPI
	Actual															
Step 1: Pilot Project Implementation stage	Plan														JET	DPI
	Actual															
Confirmation of institutional and financial readiness for pilot project	Plan															
	Actual															
Finalization of selection of target pilot projects	Plan														JET	DPI,DOI, DOG, DONRE, DOST
	Actual															
Financial arrangements including preferential loan, subsidy and ESCO	Plan														JET	DPI, DOI
	Actual															
Set up a pilot-projects working group and monitoring	Plan														JET	DPI,DOI, DOG, DONRE
	Actual															
Preparation of a detail plan and specifications for pilot component	Plan														JET	DPI,DOI, DOG, DONRE
	Actual															
Target setting and formulation of a monitoring plan	Plan														JET	DPI,DOI, DOG, DONRE
	Actual															
Procurement and implementation of pilot projects	Plan														JET	DOG, DOG, DOST
	Actual															
Step 2: Monitoring stage	Plan														JET	DPI,DOI, DOG, DONRE
	Actual															
Extraction of lessons learned	Plan														JET	DPI,DOI, DOG, DONRE
	Actual															
Preparation of EE portion of draft white book	Plan														JET	DPI, DONRE
	Actual															
Step 3: Feedback and preparation for post project	Plan														JET	DPI, DOI, DOG, DONRE
	Actual															
Evaluation of EE measures of pilot projects	Plan														JET	DPI, DOI, DOG, DONRE
	Actual															
Preparation of Annual Action Plan including provincial energy label and energy audit system	Plan														JET	DPI, DOI, DOG, DONRE
	Actual															
Preparation of incentives and financial mechanism and penalty system for post project phase	Plan														JET	DPI, DOI, DOG, DONRE
	Actual															
Policy recommendations for EE measures	Plan														JET	DPI
	Actual															
2.3 Implement and monitor the pilot activities on enhancement of management capacity for reduction of direct pollution load to the bay.	Plan															
	Actual															
Institutional and financial readiness for pilot project	Plan	■ ■ ■ ■ ■ ■ ■ ■													-	DPI
	Actual															
Select cooperative enterprises	Plan														JET	DPI, Halong City, DONRE, DOI, DARD, DOST
	Actual															
Support design work for introducing advanced technologies for reducing direct pollution load to the bay	Plan														JET	Halong City, DARD, DOI, DOST
	Actual															
Procure and instal advanced technologies for reducing pollution load to the bay	Plan														JET	Halong City, DARD, DOI, DOST
	Actual															
Operate equipment of advanced technologies for reducing pollution load to the bay	Plan														JET	Halong City, DARD, DOI, DOST
	Actual															
Examine green label system for introducing advanced technologies	Plan														JET	DPI, Halong City, DARD, DOI
	Actual															
Evaluate secondary benefits by contributing to clean food products	Plan														JET	DPI, Halong City, DARD, DOI
	Actual															

Activities	Year	Before Implementation Stage	1st Year				2nd Year				3rdYear				Responsible Organization	
Sub-Activities			I	II	III	IV	I	II	III	IV	I	II	III	IV	Japan	Quang Ninh
Monitor activities and obtain lessons	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
Prepare articles for white book prepared under output 1	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
Prepare a proposal on green label system	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
Prepare administrative documents on prepared proposal	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
2.4 Design a provincial green label system contributing to energy saving and management in the selected key industrial sectors and initiate implementation of the system through the activities 2-1 to 2-3.	Plan														JET	DPI, Halong City, DARD, DOT
Actual																
2.5 Summarize outputs and progress of the activities 2-1 to 2-4 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.	Plan														JET, Shiga	DPI, DONRE, DARD, Env Edu Association
Actual																
2.6 Based on outputs and progress of the activities 2-1 to 2-4, develop and document regulations, mechanisms and organizations to continue and expand environmental management activities in the selected key industrial sectors and start the approval process by Quang Ninh province.	Plan														JET, Shiga	DPI, Halong City, DARD, DOT
Actual																
Output 3: Measures to stimulate sustainable growth of tourism sector are implemented as pilot activities.																
3.1 Improve or develop tourism information contributing to sustainable tourism development in Halong Bay Area, and provide the information to tourists.	Plan															
Actual																
Set up a Working Group	Plan														-	DPI, DT
Actual																
Prepare an action plan and guidelines	Plan														JET	DPI, DT
Actual																
Make a branding of Ha Long Bay Area (including Ha Long smile, OCOP, etc.)	Plan														JET	DT, Tour Ass. HBMD
Actual																
Prepare a list of resource persons/organizations	Plan														JET	DT, Tour Ass. HBMD
Actual																
Provide tourist information materials and tools (website, brochures, maps, event calendar, video, etc.)	Plan														JET	DT, Tour Ass. HBMD, DOT
Actual																
Train the concerned parties on tourist information management and delivery, etc.	Plan														JET	DT, Tour Ass. HBMD
Actual																
Organize promotion activities (events, FAM trip, media tours, etc.)	Plan														JET	DT, Tour Ass. HBMD, DOT
Actual																
Update periodically based on the feedback from tourists	Plan														JET	DT, Tour Ass. HBMD
Actual																
Monitor outputs and impacts of the pilot activity	Plan														JET	DPI, DT, Tour Ass. HBMD
Actual																
Establish a DMA	Plan														JET	DPI, DT, Tour Ass. HBMD
Actual																
3.2 Promote eco-tourism in Quang Yen Town through providing the training and technical transfer for capacity development	Plan															
Actual																
Set up a local Working Group	Plan														-	DPI, DT, QY
Actual																
Develop discovery routes for promotion of ecotourism	Plan														JET	DT, QY
Actual																
Provide tourist information materials and tools (mainly brochures and maps)	Plan														JET	DT, QY
Actual																
Install on-site signage and interpretation	Plan														JET	DT, QY
Actual																
Train local guides, tourist business and services, communities, etc.	Plan														JET	DT, QY
Actual																
Organize promotion activities (events, FAM trip, media tours, etc.)	Plan														JET	DT, QY, Tour Ass.
Actual																
Update periodically based on the feedback from tourists	Plan														JET	DT, QY
Actual																
Monitor outputs and impacts of the pilot activity	Plan														JET	DPI, DT, QY
Actual																
3.3 Design and operate green label system for tourist boats in Halong Bay (Blue Sail Certificate)	Plan															
Actual																
Examine criteria and incentives for Blue Sail Certificate	Plan														JET	DPI, DT, DONRE, DOT
Actual																
Get official approval of criteria	Plan														JET	DT, DONRE
Actual																
Launch Blue Sail Certificate inscription	Plan														JET	DPI, DT, DONRE, DOT
Actual																
Examine application and give awards	Plan														JET	DPI, DT, DONRE, DOT
Actual																
Monitor outputs and impacts of the pilot activity	Plan														JET	DT, DONRE
Actual																
3.4 Summarize outputs and progress of the activities 3-1 to 3-3 annually and incorporate the information in Halong Bay Area green growth white book to be prepared in Output 1.	Plan														JET, Shiga	DPI, DT, QY, Env Edu Association
Actual																
3.5 Based on the outputs and progress of the activities 3-1 to 3-4, develop and document the regulations and organizations to continue and expand sustainable tourism activities and start the approval process by Quang Ninh province.	Plan														JET	DPI, DT, Tour Ass. HBMD, QY
Actual																

Abbreviations

BDF	Bio Diesel Fuel
DARD	Department of Agriculture and Rural Development
DMA	Destination Marketing Agency
DOC	Department of Construction
DOIT	Department of Industry and Trade
DONRE	Department of Natural Resource and Environment
DOST	Department of Science and Tourism
DOT	Department of Transport
DPI	Department of Planning and Investment
DT	Department of Tourism
ESCO	Energy Service Company
FAM trip	Familiarization Trip
HBMD	Halong Bay Management Department
JET	JICA Expert Team
OCOP	One Community One Product
QY	Quang Yen Town

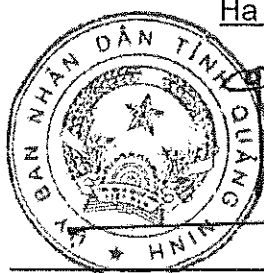


**RECORD OF DISCUSSIONS
ON
PROJECT FOR INSTITUTIONAL DEVELOPMENT FOR GREEN
GROWTH IMPLEMENTATION AND STRENGTHENING OF
ENVIRONMENTAL MANAGEMENT SYSTEM TOWARDS
SUSTAINABLE CONSERVATION FOR THE HALONG BAY
IN
THE SOCIALIST REPUBLIC OF VIETNAM**

**AGREED UPON BETWEEN
QUANG NINH PROVINCIAL PEOPLE'S COMMITTEE
AND
JAPAN INTERNATIONAL COOPERATION AGENCY**



Mr. Yamamoto Kenichi
Deputy Chief Representative
Vietnam Office
Japan International Cooperation
Agency



Ha Long, 12/6/2015
K.M. U.A.N.H. T. H. QUANG NINH
K.T. CH. T. H.
PH. CH. T. H.

Mr. Dang Huy Hau
Vice Chairman
Quang Ninh Provincial People's
Committee
Vietnam

In response to the official request of the Government of the Socialist Republic of Vietnam (hereinafter referred to as "Vietnam") to the Government of Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Quang Ninh Provincial People's Committee of Vietnam (hereinafter referred to as "QN PPC") and relevant organizations to develop a detailed plan of the Project for Green Growth Promotion in Halong Bay, Quang Ninh Province (hereinafter referred to as "the Project").

Both parties agreed the details of the Project and the main points discussed as described in the Appendix 1 and the Appendix 2 respectively.

Both parties also agreed that the Department of Planning and Investment (DPI) of Quang Ninh province, the main counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of Vietnam.

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on October 20 1998 (hereinafter referred to as "the Agreement") between the Government of Japan (hereinafter referred to as "GOJ") and Vietnam.

The effectiveness of the Record of Discussions is subject to the approval of JICA.

Appendix 1: Project Description
Appendix 2: Main Points Discussed

PROJECT DESCRIPTION

I. BACKGROUND

Quang Ninh Province has a strategic location, potentials and advantages on the political, economic, security, defense and foreign affairs. It is a leading province in the northern key economic region and is one of four major tourism centers in Vietnam with the World Natural Heritage of Halong Bay recognized by UNESCO for its aesthetic and geological geomorphological values.

The Resolution at the Seventh Congress of the 11th Central Committee of the Communist Party in June 2013 reaffirmed the critical role of environmental protection in achieving sustainable development of the country. Quang Ninh with the World Natural Heritage Halong Bay is one of the provinces urging an imperative need for changing from the traditional growth model, which has been environmentally threatening the Halong Bay, to the one that ensures sustainable development of the Halong area in particular and the whole Province in general. Currently, Quang Ninh Province is implementing actions to restore and protect the environment to ensure sustainable economic development, particularly implementing the Socio-Economic Development Plan to 2020 and vision toward 2030 (No. 2622/QĐ-TTg), which sets a new direction for Quang Ninh province to shifting the structure of the provincial economic development from dependency on industrial production, especially the mining industry, to marine economic development, services development and sustainable tourism .

Protection of coastal environment and Halong Bay environment has been paid especially high attention by the authorities and already achieved positive changes. However, until now there still exist a number of shortcomings, mostly related to not being able to eliminate the pollution sources to the Bay caused by coastal activities, and collection and treatment of solid waste and wastewater in the Bay and at the coastal areas have not yet been thorough.

Pursuant to the National Green Growth Strategy (Decision No 1393/QĐ-TTg, 2012) and the National Green Growth Action Plan 2014-2020 (Decision No 403/QĐ-TTg, 2014) adopted by the GoV, Quang Ninh Province has developed a series of Master Plans and the Provincial Green Growth Action Plan 2014-2020 (Decision No 3741/KH-UBND) in 2014 in order to promote subnational implementation of the above-mentioned policies. The above-mentioned plans aim to accelerate the province's transition from "brown" to "green" development by reducing energy- and resource-intensive activities and promoting growth through wise-use of the outstanding values of Halong Bay. However, Quang Ninh Province and stakeholders lack relevant knowledge and experiences, and therefore their capacities in planning, coordinating and implementing green growth policies need to be enhanced.

Based on these backgrounds, the GoV has requested the GoJ to support the Project for promotion of green growth in the Halong Bay area.

II. OUTLINE OF THE PROJECT

Tentative outline of the Project are described below. The Project Design Matrix (PDM) and the Plan of Operation (PO) shall be developed in the Detailed Planning phase.

As a prerequisite for conducting the Implementation phase, the Vietnamese counterpart agencies are responsible for undertaking necessary institutionalization within the government based on the outcomes of the Detailed Planning.

1. Title of the Project

Project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation for the Halong Bay

2. Overall Goal, Project Purpose, Outputs and Activities

(1) Overall Goal

Green growth is promoted in Quang Ninh Province through transition from brown to green economy.

(2) Project Purpose

Green growth is promoted in Halong Bay Area through the implementation of environmentally sustainable policies in the key industrial sectors and implementation of development policies in tourism sector.

3. Outputs

Output 1. (Institutional capacity development and planning)

Policy Framework and Priority Action Plan for the realization of GG in Halong Bay Area is put in place by refining the existent Provincial Green Growth Action Plan.

Output 2. (Greening industrial sector)

Environmentally and financially sustainable policies for selected key industries are developed and implemented as pilot activities.

Output 3. (Growing tourism sector)

Development policies to stimulate sustainable tourism sector growth are implemented as pilot activities.

4. Tentative Activities

- 1-1. Review existing knowledge of Green Growth worldwide, and identify lessons applicable to Quang Ninh Province.
- 1-2. Review existing policies, plans, legislations, financial status and institutional arrangements in Quang Ninh Province and in Vietnam, and analyze their needs and gaps for materializing Green Growth in Halong Bay area.

- 1-3. Conduct rapid assessment of environmental performance (including energy efficiency, carbon emission, resources usage efficiency, etc.) in key economic sub-sectors of Quang Ninh Province (including industries, transport, solid waste, agriculture, water/wastewater, etc.).
- 1-4. Conduct seminars/workshops and trainings to improve understanding and capacity related to Green Growth of Quang Ninh Province's key departments, business and civilactors.
- 1-5. Set up necessary institutional arrangements including cross-stakeholder Working Groups for stakeholder consultation.
- 1-6. Based on the rapid assessment and through stakeholder consultation, propose to Quang Ninh Provincial People's Committee a financially sustainable draft policy framework consisting of: definition of Green Growth, targets, indicators, institutional arrangement, potential policy instruments (both regulatory and incentivizing), resource, measures for monitoring and evaluation, and roadmaps for Green Growth implementation in Halong Bay area.
- 2-1. Identify priority sub-sectors and propose pilot measures/models, consisting of technology, human resource and financial tools to improve both environmental performance and business effectiveness.
- 2-2. Draft and institutionalize concrete policies including institutional framework, policy instruments, etc. for the priority sub-sectors.
- 2-3. Demonstrate and monitor selected pilot measures/models in priority sub-sectors.
- 3-1. Review development opportunities and obstacles in the current tourism activities, and identify priority issues from the Green Growth perspective.
- 3-2. Assess environmental performance of tourism facilities and activities in Halong city and activities in the Halong Bay area.
- 3-3. Propose policy/action measures to improve tourism facilities and activities in the HLB area based on the above 3-2.
- 3-4. Demonstrate and monitor selected pilot measures/models in some selected zones/operators.

* Activities 1, 2-1, 2-2 (drafting of policies only), 3-1 and 3-2 will be conducted as the Detailed Planning Stage.

5. Inputs

- (1) Input by JICA

- (a) Short-term experts (e.g. green growth, fiscal policies, environmental management, tourism development, land use management, coordinator, etc.) with sound experience on green growth issues, good practices of environmental management in industries and biodiversity conservation, environmental-friendly tourism development and propaganda and communication of environmental conservation.

The number and the expertise of experts will be determined through the Detailed Planning phase and discussions between both sides within the framework of the Project.

- (b) Necessary short training courses (in-country, in Japan and/or in third countries) for QN PPC's Project-related cadres on relevant issues addressed in this Project;

- (c) Required expenses necessary for carrying out the Project's activities;

and

- (d) Equipment essential to the performance of the Project's technical issues.

Inputs other than indicated above will be determined through mutual consultations between JICA and QN PPC during the implementation of the Project, as necessary.

(2) Input by QN PPC

QN PPC will take necessary measures to provide at its own expense:

- (a) Services of QN PPC's counterpart personnel and administrative personnel as referred to in II-7;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;
- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project;
- (h) Expenses necessary for transportation within Vietnam of the equipment referred to in II-6 (1) as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Vietnam from Japan in connection

with the implementation of the Project

6. Implementation Structure

The implementation structure shall be finalized by the end of the Detailed Planning phase. Tentative description is provided below.

The roles and assignments of relevant organizations are as follows.

- (1) Responsible and Implementing Agency
QN PPC shall be the responsible agency of the Project. DPI shall be the major implementing agency of the Project, responsible for coordinating other related agencies and stakeholders.
- (2) Project Director
- (3) Department of Planning and Investment (DPI)
 - (a) Project Director/Director of Project Management Unit (PMU)
DPI leader will be responsible for overall administration and implementation of the Project.
 - (b) Members of PMU
Sufficient number of staff of DPI, other Departments and target districts if necessary will be assigned as members of PMU.
- (3) JICA Experts
The JICA experts will give necessary technical guidance, advice and recommendations to involved departments, districts and QN PPC on any matters pertaining to the implementation of the Project.
- (4) Joint Coordinating Committee
Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deemed necessary. JCC will approve an annual work plan, review overall progress, conduct evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in the Annex.
- (4) Working Groups
Cross-stakeholder Working Groups will be established for identified sectors/issues in order to facilitate the Project's implementation

7. Project Site(s) and Beneficiaries

Project sites:

Halong Bay area, including Halong City, Cam Pha City, Van Don District, Hoanh Bo District, Quang Yen Town and Uong Bi City

Direct beneficiaries:

Relevant departments, target districts and selected companies in Quang

Ninh province
Indirect beneficiaries:
Residents of target districts, private and semi-private companies,
investors, tourist visitors

8. Duration

Detailed Planning phase: approximately nine (9) months

Implementation phase : approximately two (2) to three (3) years (to be finalized
based on the results of the Detailed Planning)

9. Environmental and Social Considerations

QN PPC agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF QN PPC AND relevant Vietnamese authorities

1. QN PPC and relevant Vietnamese authorities will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Vietnamese nationals as a result of Japanese technical cooperation contributes to the economic and social development of Vietnam, and that the knowledge and experience acquired by the personnel of Vietnam from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the JICA experts referred to in II-6 (1) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Vietnam.

IV. MONITORING AND EVALUATION

JICA and the QN PPC will jointly and regularly monitor the progress of the Project through the Monitoring Sheets based on the Project Design Matrix (PDM) and Plan of Operation (PO). The Monitoring Sheets shall be reviewed every six (6) months.

In addition, for the purpose of learning and accountability, joint reviews and/or evaluations shall be conducted whenever deemed necessary.

Project Completion Report shall be delivered one (1) month before the termination of the Project.

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. QN PPC is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, QN PPC will take appropriate measures to make the Project widely known to the people of Vietnam.

VI. Misconduct

If JICA receives information related to suspected corrupt or fraudulent practices in the implementation of the Project, QN PPC and relevant organizations shall provide JICA with such information as JICA may reasonably request, including information related to any concerned official of the government and/or public organizations of the Vietnam.

QN PPC and relevant organizations shall not unfairly or unfavorably treat the person and/or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project.

VII. MUTUAL CONSULTATION

JICA and QN PPC will consult each other whenever any major issues arise in the course of Project implementation.

VIII. AMENDMENTS

The Record of Discussions may be amended by the Minutes of Meetings between JICA and QN PPC.

The Minutes of Meetings will be signed by authorized persons of each side, who may be different from the signers of the Record of Discussions.

Annex List of Proposed Members of Joint Coordinating Committee/ Steering Committee

Annex List of Proposed Members of Joint Coordinating Committee/ Steering Committee

1. Vietnamese side

(1) Chairman: Vice Chairman of QN PPC

(2) Vice Chairman: Director of DPI

(3) Member agencies

Provincial level:

- Department of Planning and Investment (DPI)
- Department of Natural Resources and Environment (DONRE)
- Department of Finance (DOF)
- Department of Science and Technology (DST)
- Department of Culture, Sport and Tourism (DCST)
- Department of Industry and Trade (DOIT)
- Department of Construction (DOC)
- Department of Transportation (DOT)
- Department of Agriculture and Rural Development (DARD)
- Halong Bay Management Department (HBMD)

District level:

- Halong City
- Cam Pha City
- Van Don District
- Hoanh Bo District
- Quang Yen Town
- Uong Bi City

Business representatives:

- Tourism operators association
- Vietnam National Coal and Mineral Industries Group (Vinacomin)
- Electricity Vietnam (EVN)
- Other business representatives if necessity

Civil society representatives

2. Japanese side

(1) Project Expert Team

(2) JICA

MAIN POINTS DISCUSSED

1. Main contents of the Project

- (1) Both sides agreed that there is a need to refine Quang Ninh's Green Growth Action Plan in the specific circumstances of Halong Bay area, so that the action plan will be better suited for implementation.
- (2) Both sides agreed to recommend that the Project shall include the following two key pillars: (i) strengthening the capacity for planning and monitoring of Green Growth Action Plan, and (ii) concretization of Green Growth in prioritized sectors and issues.
- (3) Following were discussed as potential priority sectors and issues: tourism, heavy industries (coal mining, thermal power generation, construction material production, etc.), business operations in economic zones and clusters.
- (4) Following were discussed as potential priority activities: energy efficiency promotion of industrial/commercial/public facilities; water quality improvement of Halong Bay; effective use of organic waste and its application to agriculture.

2. Main counterpart agency

- (1) In line with the institutional arrangement of National Green Growth Strategy, DPI has been designated as the focal agency in charge of implementation of Green Growth at the provincial level. Therefore DPI will be the main counterpart agency of the Project. DPI will collaborate closely with DONRE and other relevant departments and district. In addition, working groups including non-governmental stakeholders will be established for prioritized sectors and issues.

3. Target area

- (1) Both sides confirmed that while the Green Growth planning for the whole province is desirable, districts adjacent to Halong Bay, namely Halong City, Cam Pha City, Van Don District, Hoanh Bo District and Quang Yen Town, should be included in the target area of the Project as a minimum.
- (2) In addition, given the importance of Uong Bi as one of the four key tourism sites as stipulated in the Tourism Master Plan for Quang Ninh Province, the Vietnamese side proposed to include Uong Bi City as well.

4. Project Title

- (1) In order to facilitate the recognition of the project by stakeholders, both sides agreed to recommend that the project title shall be modified as follows:

(before) Project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation for the Halong Bay

(after) Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province

添付資料 II-1

5つのパイロット活動の実行計画

Enhancement of provincial funding and financial mechanism for Environmental Management and Green Growth
(as of 13th July 2016)

1. Introduction

For green growth implementation, financial mechanism which can be used for activities related to green growth should be enhanced. Currently, Quang Ninh Province has the funds to support environmental management and economical development, such as Environmental Protection Fund or Science and Technology fund. To facilitate usage of these funds, it is recommended to conduct required activities such as dissemination of funds to the target stakeholders, and support for application. In addition, based on the reviewing results of the existing funds, a proposal for improvement of funding mechanism and trial implementation plan in the implementation stage will be prepared, and submit to PPC. After getting approval from PPC, the proposed improved funding process will be trialed.

Enhancement of allocation of provincial budget will be also required. For enhancement of allocation of budget, a program for allocation of the budget is required. Therefore, in the implementation stage, a green growth program will be prepared to achieve the targets for task on greening production in the provincial green growth action plan such as increasing rate of enterprises observing effluent standards.

2. Rationale of Pilot Activity on This Pilot Activity

The province has long-term combat for better management of Halong bay with environmental pollution triggered by the secondary industries. Thus, environmental management of manufacturing industries is inevitable to be nominated as the priority issue in the Project. The pilot activities will be expected to contribute to the allocation of the state budget and other legal financial and funding sources for green growth implementation, especially for environmental management field. In the course of the activities, a new financial/ funding mechanism is expected to be developed, or the existing financial mechanism is expected to be enhanced.

3. Review of Policy and Institutional Mechanism on This Pilot Activity

As examples of existing funds, outline of Environmental Protection Fund and Science and Technology with their operational status were reviewed.

(1) Environmental Protection Fund

The Environmental Protection Fund is established under Decision No. 2061/QĐ-UBND, dated 08/07/2010. The Fund has functions of receiving funds from sources as State budget; grants; donations, trust organizations and individuals in the country and abroad to support the financing of environmental protection activities in the province.

Tasks of the Fund include of:

- Receive fund deposit for environmental improvement and rehabilitation in minerals mining activities from organizations, individuals who are permitted to exploit minerals in the province.

- Financial support to programs, projects and activities for conservation of natural resources and biodiversity; pollution prevention and remedy; environmental degradation and incidents in the province in forms of: giving loan with preferable interest rate; interest rate support, financing and co-financing to organizations and individuals having programs, projects, activities and tasks of environmental protection. Loan size of each project does not exceed 05 billion VND, level of funding to one project does not exceed 01 billion VND (Currently, the Fund has given loan to the Viet Long Investment and Construction JSC with preferential interest rates for a project on Solid waste treatment plant and renewable materials production, capacity of 200tons/day in Khe Giang, Thuong Yen Cong Commune, Uong Bi City with a total amount of 05 billion VND).

(2) Science and Technology Fund

Decision No.1023/QĐ-UBND on establishment of Quang Ninh Science and Technology Development fund has been approved on 7th May 2012. The purpose of the fund is to support for a part or entire expenses for tasks or projects including researches for new and advanced technology development, and improvement of existing technology in prioritized sectors etc. The fund stocks 100 billion VND steadily. From 2015, the fund is regulated to be able to use only for designated science and technology enterprises. Currently, five science and technology enterprises are nominated in Quang Ninh Province. So far, the fund has loaned for the following projects.

4. Preliminary Design and Implementation Plan of Pilot Activity

4.1 Overview of Pilot Activity

This pilot activity is to enhancement of financial options for investment for environmental management and green growth. For concrete examination on this matter, enhancement of usability of existing fund and development of financial policy for green growth will be examined with the selected target facilities and pilot area.

4.2 Implementation Plan of Pilot Activity

(1) Objectives of Pilot Activity

The objectives of pilot activity are as follows:

- Enhance usability of existing funding mechanism for environmental management and green growth, and
- Develop a financial policy for environmental management and green growth in post-project phase

(2) Expected Outcomes and Benefit by Project Activity

The expected outcomes and benefit are as follows:

- Regulation on enhancement of usability of environmental protection fund and science and technology fund
- Financial and budgetary mechanisms and organization for promoting environmental management activity
- Obtaining of experiences and lessons on operating of fund for environmental management and green growth

- Secure budget for supporting investment for environmental management and green growth in post-project phase

-

(3) Contribution of Pilot Activity to Implementation of GGAP of Quang Ninh Province

This pilot activity is expected to contribute to the achievement of the following indication of GGAP.

- Increasing the rate of industrial parks and industrial clusters with satisfactory centralized wastewater treatment systems;
- Increasing the rate of manufacturing enterprises satisfying environmental standards
- Increasing the rate of manufacturing enterprises adopting clean technologies
- Promotion of waste recycling industries

(4) Scope of Pilot Activity

1) Set up a Working Group

During the Phase 1, a Working Group will be launched for this pilot activity.

2) Select facility participating in the activity for funding mechanism enhancement

The WG will select the facility on the target of trial funding. The criteria of selecting the target facilities are as follows;

- Facilities from industrial sectors considered as important ones for Quang Ninh province for the future, including industrial zone, energy, tourism, food processing etc.,
- Facilities affecting environmental status of Halong Bay, Bai Tu Long Bay, and surrounding costal area,
- Facilities having concern or intention to apply for existing funds to improve existing condition or introduce advanced technology for sustainable environmental management,
- Facilities expected to contribute to awareness raising for other local enterprise if its environmental management capacity is improved, and
- Facilities having key roles for regional economic activity including tourism sector in Halong Bay Area

Tentatively, the facilities conducted preliminary surveys in detail planning phase, which are shown in the table below, were considered as candidate facilities. Applicability of the following candidates as the targets of the pilot activity will be studied, and the target facilities will be finalized in the implementation stage.

Table-1 Candidate Target for Pilot Activity (Tentative)

Target	Facility	Location	Outline
Market	Halong 1 Market	Halong City	This market has an important position both serving the people's life as well as tourists, and is located near the sea, more over sewage system here works less effectively, especially in area of seafood selling market, discharging wastewater directly to Halong bay. Therefore, investment to wastewater treatment systems in Halong 1 Market is very important and necessary.
	Cai Dam Market	Halong City	Although newly built but the wastewater treatment system of the market has a lot of deficiencies, many environmental

Target	Facility	Location	Outline
			parameters not met. At the same time, this is the market model built and managed by private, meeting the loan requirements of the Provincial Environmental Protection Fund.
	Hong Ha Market	Halong City	Currently, there is no space for temporary solid-waste disposal and treatment. Moreover this is the safety-food market model of the province, therefore a wastewater treatment system ensuring quality as provisions is quite necessary.
	Troi Market	Hoang Bo District	Manager wants to improve wastewater treatment facility, but Hoang Bo PC does not have budget.
	Rung Market	Quang Yen Town	Waste water treatment system is just sedimentation, and to be improved.
Seafood processing industry	Quang Ninh Aquatic Products Import Export Joint Stock Company No.2	Quang Yen Town	Structure of wastewater treatment facility is inappropriate, and should be improved.
Industrial Zone	Cai Lan Industrial Zone	Halong city	The industrial zone has engineering production and assembly factory, shipbuilding, textile, electric equipment production, electronic assembly, and packaging material production.

Note: The application of funds to the public markets can be considered in case that the regular expenditures would not be sufficient to improve the environment management.

3) Assist target facility for preparing document for applying existing fund

The WG and JET will assist the selected target facility for preparing document for applying existing fund, such as explanation of process to apply the fund, and required documents. Through the assistance, the WG and JET will review measures to enhance usability of the existing fund, discussing with target facilities for trial funding.

4) Introduce advanced technique for better management of enterprises with Japanese experiences

As references on expected technique on environmental management for private enterprises such as wastewater improvement, waste reducing or recycling etc., JET will assist to provide example of Japanese technique to the WG and possible target facilities.

5) Provide Japanese administrative policy on financial and funding mechanism for better management of selected industries

For effective usage of the funding system and securing of budget for environmental management and green growth, Japanese local administrative government, Shiga Prefecture will provide their knowledge, experience, and lesson to the WG.

5) Conduct trial funding approval process

WG and the concerned department on existing fund such as DONRE or DOST will conduct trial funding approval process to the selected target facility.

6) Examine required measures for enhancement of existing funding system

Through trial funding, in case that any recommendation to enhance usability of the existing funds will be found, it will be summarized as proposal in post-project phase as described in 4.2 (4) 13). Main item to be examined is necessity on enhancement of accessibility of existing funds for introducing advanced environmental management technology. Possible items for preparing recommendations for enhancement of usability of existing funds are tentatively considered as shown in Appendix-1, for Environmental Protection Fund and Science and Technology fund as examples. In implementation stage, the examination will be carried out not only for above two funds, but also other funds or similar

policies for implementation of green growth in environmental management field. As necessary, new funding mechanism for green growth implementation will be examined and proposed.

7) Select pilot area for examination of development of financial policy on green growth implementation

WG will select the pilot area for examination on development of financial policy on green growth implementation. Tentatively, DOIT recommended Ha Khanh Industrial Cluster as pilot area for this activity. The selected area is expected to be developed as model area of green growth. Therefore, considering both aspect, amount of pollution load to Halong Bay, and suitability for developing as model area, the model area will be selected.

8) Identify required measures on improvement of better management system in pilot area

WG and JET will identify required measures on improvement of better management system in pilot area, discussing with facilities/enterprises in the selected pilot area from wastewater treatment improvement, waste reducing and recycling, and enhancement of environmental management system. In case that any possibility on energy saving and production process improvement is found, the possibility will be examined, cooperating with another pilot activity on Promotion of incentive for energy saving and management such as ESCO project, financial supports, etc. Existing financial support policies will be also examined for enhancement of its usability. For example, Decision No. 3799/2010/QĐ-UBND on Regulation of Financial Mechanisms to Encourage Organizations and Individuals in Activities of Science and Technology can support 50 million VND for development of the environmental management system such as ISO 14000. To promote green growth policy, such existing financial support policies will be reviewed to enhance their usability.

9) Examine incentive mechanism on investment for better management system

WG will examine incentive mechanism on investment for better management system. The selected area would be developed as model area for green growth. Considering this approach, any incentive mechanism such as financial support for developing, prize system on good practice, or concentrated awareness raising activity for green growth implementation.

10) Monitoring and Evaluation

The WG will record activities implemented with monitoring and evaluation of the effectiveness. For evaluation of the effectiveness, interview survey will be implemented to the governmental department and targeted facilities joining to the pilot activities.

11) Prepare proposal on enhancement of existing funding system

Based on the work from 4.2 (4) 2) to 4.2 (4) 6), a proposal on enhancement of existing funding system will be prepared.

12) Prepare article for white book prepared under output 1

All activities done will be summarized as an article for “Halong Bay Area Green Growth White Book” prepared by the Output 1 of the Project.

13) Preparing proposal on enhancement of usability of existing funds and develop financial mechanism for green growth

In the 2nd year of the Project, the WG will prepare proposal for enhancement of usability of existing funds and develop financial mechanism for green growth.

- 14) Prepare administrative document on proposal on enhancement of usability of existing funds and develop financial mechanism for green growth

After finalizing the proposal on enhancement of usability of existing funds and develop financial mechanism for green growth in post-project phase, the proposal will be documented as an administrative proposal. The proposal will be complied as the Priority Action Plan on Green Growth Implementation under Output 1.

(6) Implementation Structure

The roles and responsibilities for this pilot activity is shown below:

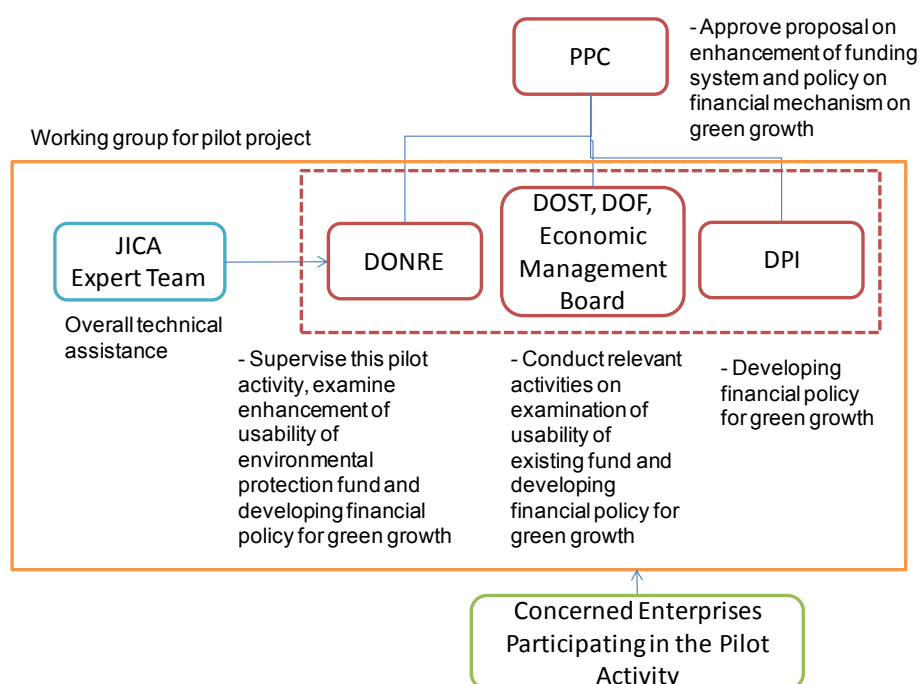


Figure-1 Implementation Structure

- **DONRE**
 - Supervise this pilot activity
 - Examine enhancement of usability of environmental protection fund
 - Conduct monitoring and evaluation
 - Developing financial policy for green growth
- **DOST**
 - Examine enhancement of usability of science and technology fund
 - Conduct monitoring and evaluation
 - Develop financial policy for green growth
- **DOF, DPI**
 - Develop financial policy for green growth
- **Economic Management Board, Private enterprise**

- Join trial funding with implementation of monitoring and evaluation
- Develop financial policy for green growth

(7) Schedule :

The schedule of the pilot activity is shown in the following table.

Table-2 Schedule of Pilot Project

Year/ Month	1st Phase	1st Year												2nd Year												3rd Year													
Component		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12		
Pilot Activity Implementation																																							
Set up a Working Group																																							
Select facility participating in the activity for funding mechanism enhancement																																							
Assist target facility for preparing document for applying existing fund																																							
Introduce advanced technique for better management of enterprises with Japanese																																							
Provide Japanese administrative policy on financial and funding mechanism for better management of																																							
Conduct trial funding approval process																																							
Examine required measures for enhancement of existing funding system																																							
Select pilot area for examination of development of financial policy on green growth implementation																																							
Identify required measures on improvement of better management system in pilot area																																							
Examine incentive mechanism on investment for better management system																																							
Prepare proposal on enhancement of existing funding system																																							
Monitoring and Evaluation																																							
Monitor effectiveness of advanced technique introduced																																							
Summarize lessons learned																																							
Prepare article for white book prepared in Output 1																																							
Preparing proposal in post-project phase																																							
Preparing proposal on proposal on enhancement of usability of existing funds and develop financial mechanism for green growth																																							
Prepare administrative document on proposal on enhancement of usability of existing funds and develop financial mechanism for green growth																																							

(8) Monitoring of Pilot Activity

The monitoring will be conducted by the WG.

1) Monitoring items for enhancement of usability of existing fund

- Number of the enterprises targeted for trial fund
- Proposal on enhancement of usability of existing fund

2) Monitoring items for developing financial policy for green growth

- Proposal on financial policy for green growth

3) Method:

- Monitoring sheet for interview and site investigation will be prepared
- Interview will be implemented to the governmental department and targeted facilities joining to the pilot activities.

4) Monitoring Schedule and frequency

- (a) 1st monitoring: 4th quarter in 1st year of the Project
- (b) 2nd monitoring: 4th quarter in 2nd year of the Project

(9) Training Program to be Conducted

Technical assistance for WG will be conducted as shown in the table below. As one of the training, experiences and lessons of Japanese local administration body, Shiga prefecture, on operation of fund and allocation of budget for environmental management.

Table-3 Training Program

Target	Training Items
DONRE, DOST	- Providing of experiences and lessons to operate funds for improvement of environmental management for local private enterprises by Japanese local administrative government, Shiga prefecture
DPI, DOF	- Providing of experiences to operate financial mechanism to promote investment for environmental management and green growth by Japanese local administrative government, Shiga prefecture

4.3 Readiness for Implementation of Pilot Activity on EE measures

For commencement of the pilot activity, the following readiness will be necessary.

(1) Quang Ninh Province and its Departments

- Set institutional arrangement and instruct roles and responsibilities for the concerned department for pilot project implementation as proposed in Figure-1.
- Allocate counterpart budget for pilot activity.
- Approve to conduct trial funding with examination of usability improvement and examination of financial and budgetary mechanisms and organization for promoting environmental management activity.
- Commit to document and approve financial and budgetary mechanisms and organization for promoting environmental management activity in post-project phase.

(2) Concerned Organizations/Enterprises Participating in the Pilot Activity

- Willingness to participate the pilot activity

(3) JICA

- Financial support for this pilot activity
- Technical training for this pilot activity

5. Expectation and Readiness for Post-project Phase

For continuous activity for promotion of green growth related to this pilot activity, financial and budgetary mechanisms and organization for promoting environmental management activity will be documented and approved by the Project.

End of Document

Appendix-1

Table Possible Items for Preparing Recommendations for Enhancement of Usability of Existing Funds (Tentative)

Target	Document	Article	Possible Items for Preparing Recommendations for Enhancement of Usability
Environmental Protection Fund	Decision No. 2061/QĐ-UBND on Establishment of Quang Ninh Environment Protection Fund.	5. Sources of Capital for Quang Ninh Environment Protection Fund	Total capital for environmental fund, 20 billion VND will be reviewed whether its increasing is necessary or not.
	Decision No. 104/QĐ-HDQL on Issuing of Regulations on Lending with preferential interest rate, supporting to interest rate, financing and co-financing of the Environment Protection Fund of Quang Ninh Province	Article 1. Scope of fund application	Current environmental fund can provide assistance for activities preventing environmental pollution, environmental degradation and incident, waste treatment and biodiversity conservation. It is recommended to review the article for more active utilization of the fund for green growth implementation.
		Article 5. Targets of lending with preferential interest rate	Same as Article 1, it is recommended to review the article for more active utilization of the fund for green growth implementation.
		Article 7. Conditions of the loan providing	Through trial funding, condition of the loan providing will be reviewed to examine possibility on enhancement of usability of environmental fund.
		Article 9. Duration of Loan	Through trial funding, duration of loan will be reviewed to examine possibility on enhancement of usability of environmental fund.
		Article 12. Loan dossiers	Through trial funding, way of confirming loan guarantee will be reviewed, based on the experiences on Japanese similar fund for increasing usability of the fund.
		Article 16. Risks and risks management.	Through trial funding, risk management measure will be reviewed, based on the experiences on Japanese similar fund for increasing usability of the fund.
Science and Technology Fund	Decision No. 1023/QĐ-UBND on Establishment of Quang Ninh Science and Technology Development Fund	4. Fund's operating capital:	Total capital for science and technology fund, 100 billion VND will be reviewed whether its increasing is necessary or not.
		8. Utilization of the Fund	Current science and technology fund can provide partially reimbursed grant or totally nonrefundable grant for specific tasks. It is recommended to review existing criteria defining specific tasks for more active utilization of the fund for green growth implementation. Maximum amount of the grant mentioned above is 2 billion VND per one specific task. It is recommended to examine necessity of increasing maximum amount for granting per one specific task.

Pilot Activity on Promotion of incentive for energy saving and management such as ESCO project, subsidy etc.
(as of 13th July 2016)

1. Introduction

Energy saving is one of the effective measure to save natural resources and to reduce CO₂ emission. However, high cost of initial investment of energy efficient (EE) measures is the hurdle to promote energy saving. EE measures with high-efficiency equipment is costly and market competitiveness for such equipment is poor. Incentive mechanism is necessary to facilitate introduction of EE measures. Available financial mechanism to streamline energy saving is identified including subsidy, preferential interest, and energy service company (ESCO). In order to demonstrate the incentive mechanism of EE measures, pilot projects on energy efficiency are to be implemented with key energy consumers in Quang Ninh such as factories, tourism services, and public facility with proposed financing scheme.

2. Rationale of Pilot Activity on EE measures under Energy Saving and Management Sector

Following national laws, guideline and regulation are stipulated to promote energy saving.

- Law 50/2010/QH12 Law on Energy Efficiency and Conservation
- Decree 21/2011/ND-CP Providing in Detail and Measures for Implementation of the Law on Energy Efficiency and Conservation
- Circular 09/2012/TT-BCT Guidelines on Reporting for Energy Saving and Implementing Energy Audit
- Circular 51/2011/QĐ-TTg Guidelines on labeling for energy used facilities and equipment

Accordingly, Quang Ninh Province issued the Decision 708/2016/QĐ-UBND on Energy Efficiency and Savings Program in Quang Ninh province, period 2016 – 2020. The decision aims at save 8%-10% total energy consumption compared to forecast energy demand as per National Electricity Development Master Plan (Decision 1208/QĐ-TTg dated 21/7/2011).

Quang Ninh Province also sets the target of GHG reduction in No. 6970 /KH-UBND Implementation of National Strategy on Green Growth 2016-2020. It sets the target to reduce GHG emission 7.02 million tCO₂ equivalent by 2020, corresponding to 22.5% compared with level of 2010. Among of this, 1.91 million t CO₂ equivalent or more is targeted to be reduced by avoiding emissions in industrial sector.

3. Review of Policy and Institutional Mechanism on Green Growth Promotion

3.1 Current Situation and Issues related to Policy and Institutional Mechanism for implementation of EE measures under Energy Saving and Management Sector

- Awareness of financial mechanism to promote EE measures need to be enhanced. Investors have little motivation to install EE equipment of which recovery takes more than three years.
- Priority of investment is high in production equipment but that in energy saving is not high. Financial incentive is necessary to be introduced for EE equipment such as preferential loan.
- High-end model of EE equipment is effective in energy saving, however, initial investment is high and market competitiveness is small. To promote effective EE measures, incentive such as subsidy for the demonstration of high-end EE measures is necessary.
- ESCO is one of the mechanism to enable promotion of energy saving, however, following challenges were found in Quang Ninh Province:
 - Availability of ESCO company is limited in north region of Viet Nam;
 - Since ESCO is private business, only equipment with very short recovery period (ex. 1-3 years) is applicable for ESCO; and
 - ESCO company will deal only with selected type of equipment of their interest
- Existing system of energy label and energy auditing need to be fully utilized for promotion of energy saving.
- While roles and responsibilities in energy saving is assigned in relevant departments for each sector, implementation body to promote scheme of EE measure such as preferential loan or ESCO is absent in Quang Ninh.

3.2 Policy and Institutional Improvement Plan for Implementation of EE measures

- Incentive mechanism for the promotion of EE measures is identified and demonstrated such as preferential loan operated, subsidy operated by DOIT, and ESCO project through the pilot projects.
- Subsidy operated by DOIT may be provided for high-performance high-end model of EE measures for the demonstration purpose.
- Energy label system is utilized at the provincial level such as promotion of high-ranked energy label equipment in Halong Bay area, and design a provincial-level green label system contributing to energy saving and management
- Energy auditing system is fully utilized with target setting for designated energy users. Energy auditing system is also demonstrated in small and medium enterprise.
- Policy recommendation is prepared for operation of proposed incentive mechanism for the promotion of EE measures in post-project phase

3.3 Recommendations for GG Promotion for Implementation of EE measures under Energy Saving and Management Sector

- (1) Allocation of relevant provincial administrative personnel as working group members for the pilot project from DPI, DOIT, DOC, and DONRE.
- (2) Coordination for budgeting for financial arrangement including subsidy
- (3) Setting up division for energy saving promotion in Center of Industry Development and Promotion
- (4) Information and lessons learned is utilized by Investment Promotion Association (IPA) in Provincial government to promote investment of energy saving.
- (5) Utilization of existing regulation related to EE such as energy auditing, energy label, and energy management system

4. Preliminary Design and Implementation Plan of Pilot Activity on EE measures

4.1 Overview of Pilot Activity on EE measures

The industrial and service enterprises and governmental building are the main targets on energy saving. The pilot project target in industry sector is selected from the designated key energy consumer in Quang Ninh Province, of which list is included in Decision, No. 1535/2014/QĐ-TTg. The target in service sector is selected from preliminary survey of energy saving in hotels in Environment Management Master Plan in Quang Ninh Province. Target of public facility is selected according to the recommendation of Quang Ninh government. The preliminary selection of the target is done according to the criteria below:

- 1) Appropriateness: type, scale, location as model
- 2) Effectiveness: possible energy saving amount and CO₂ reduction
- 3) Feasibility: cost, recovery years, technology, willingness of project owner (plan, cost sharing, etc.)

For pilot activities, available financial mechanism, such as preferential loan, subsidy and ESCO project, etc., is identified, and pilot activity on EE measures will be implemented with those financial incentives. In addition, a provincial-level green label system and energy audit system contributing to energy saving and management will be developed.

4.2 Implementation Plan of Pilot Activity on EE measures

(1) Objectives of Pilot Activity

The objectives of pilot activity are as follows:

- To formulate institutional and financial mechanism to promote energy saving and management through the implementation of pilot project of EE measures,
- To extract lessons learned from the pilot activity to contribute to formulate institutional and financial mechanism to make institutional and financial mechanism formulated more feasible one, and
- To design a provincial-level green label system contributing to energy saving and management

(2) Expected Outcomes and Benefit by Project Activity

- Know-how on financial structure such as preferential loan, subsidy, and ESCO project is obtained in relevant provincial departments.
- Capacity is enhanced for monitoring, evaluation, and management of EE measures
- Lessons learned for incentive mechanism of EE measures is obtained for formulation of sustainable policy and action plan in green growth
- Provincial green label system and energy auditing system contributing to energy saving and management

(3) Contribution of Pilot Activity to Implementation of GGAP of Quang Ninh Province

The contributions of pilot activity to GGAP of Quang Ninh Province are as follows:

- Contribution to reduction of energy consumption through pilot activity and incentive mechanism of energy saving
- Contribution to CO₂ reduction according to reduction of energy consumption

(4) Scope of Pilot Activity

The proposed financial mechanism for EE measures in pilot project is (i) promotion of preferential loan in industry sector, (ii) subsidy for introduction of high-end EE equipment as demonstration, and (iii) introduction of ESCO.

1) Energy efficiency measures with promotion of preferential loan

Target facility:	Industry including medium and small scale enterprises
Ownership	Private
Outline	Information provision and coordination of preferential loan for energy efficiency such as Vietnam Energy Efficiency for Industrial Enterprises Project (VEEIEs) and environment protection fund is conducted to promote fund procurement with soft loan of EE measures.
Energy efficiency measures:	<ul style="list-style-type: none"> - Installation of inverter to motive load - Installation of high-efficiency furnace - Improvement of lighting system with efficient lamps

2) EE measures with subsidy for high-end equipment

Target facility:	Service, public facility (province building or public lighting)
Ownership	Private and public
Outline	Subsidy to promote high-end EE measures applied to the pilot project in private service sector or public facility for demonstration purpose.
Energy efficiency measures:	High-end EE measures such as air conditioning, heat insulation, and public lighting

High cost of high efficiency equipment makes its market competitiveness poor, which became the barrier of introduction of high-efficiency equipment. The concept of the subsidy is to supplement the cost difference between normal equipment and high-efficiency equipment and to drive the introduction of high-efficiency equipment. To demonstrate the method of subsidy, the pilot project is proposed to be conducted with the budget from province and support from JICA, as shown in the figure below. Based on the experiences and lessons obtained through the demonstration activity, Quang Ninh province is expected to enforce provincial subsidy mechanism to support for introducing high-efficiency equipment in post-project phase.

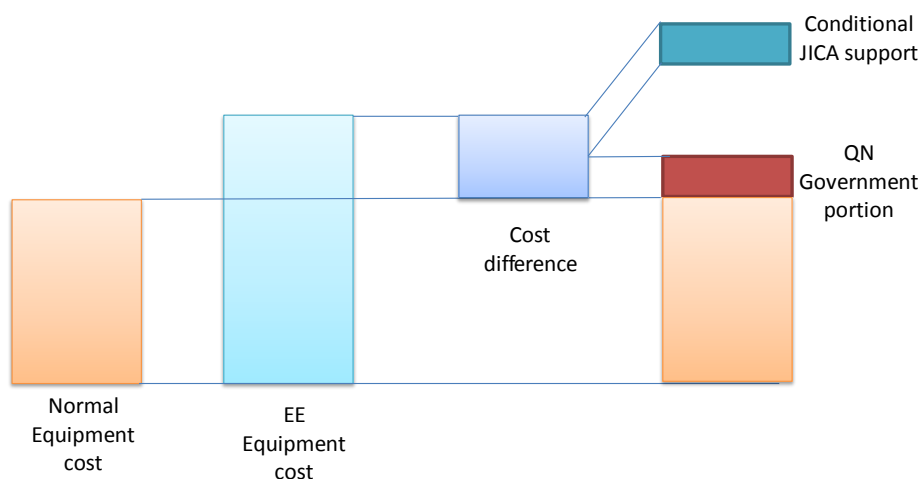


Figure-1 Subsidy Concept

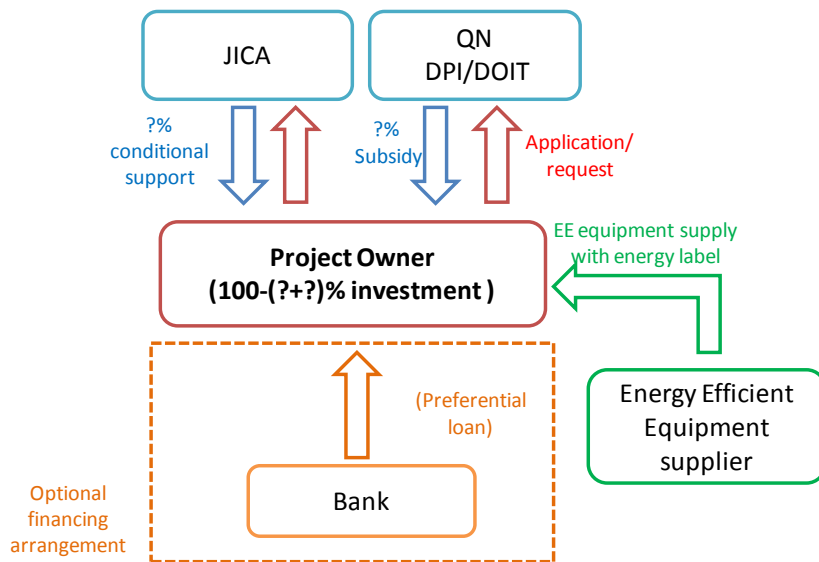
3) EE measures with ESCO project

Target facility:	Industry and service including medium and small scale enterprises
Ownership	Private
Outline	ESCO will be identified and arranged for project owner who has willingness to introduce EE measures. ESCO company will procure EE equipment and the project owner will pay the lease fee to ESCO. Awareness of ESCO system is enhanced through the pilot project. Preferential loan may be applied to ESCO.
Energy efficiency measures:	EE measures that ESCO deals with. - ESCO model is applied for EE measures with short recovery period (1-3 years) - ESCO may utilize preferential interest loan from the bank.

One or two pilot projects utilizing above financing mechanism will be selected and implemented with installation of EE equipment. The candidates for the pilot project site are listed in Appendix-1.

(5) Financial Structure

The financial incentive structure is proposed in three types, i.e., subsidy, preferential loan, and ESCO project scheme.



- Target equipment for subsidy is:
 - Demonstration purpose
 - High-end energy efficiency type
 - Long recovery years (>3 years)

Figure-2 Subsidy Scheme

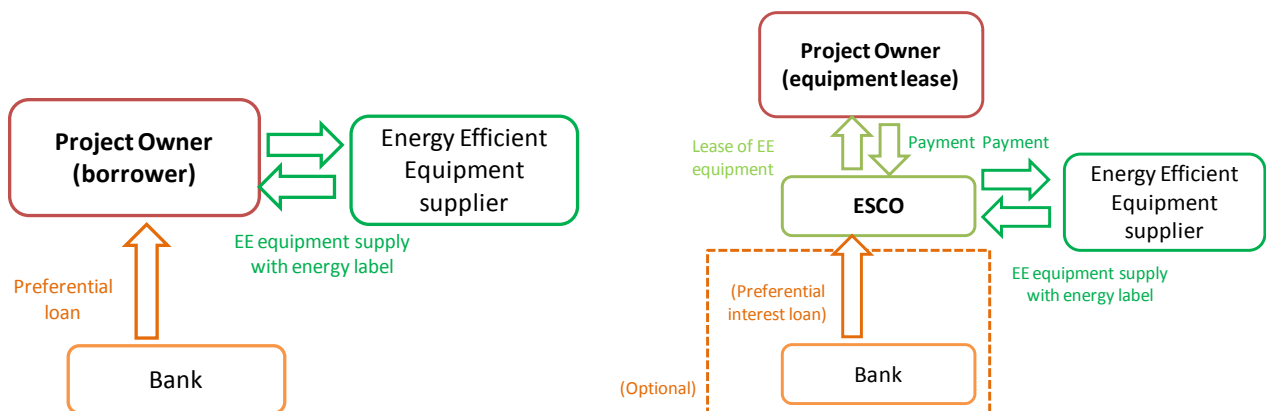


Figure-3 Preferential Loan Scheme and ESCO Project Scheme

(6) Implementation Structure

The roles and responsibilities for pilot activity of EE measures under energy saving and management sector is shown in the figure below:

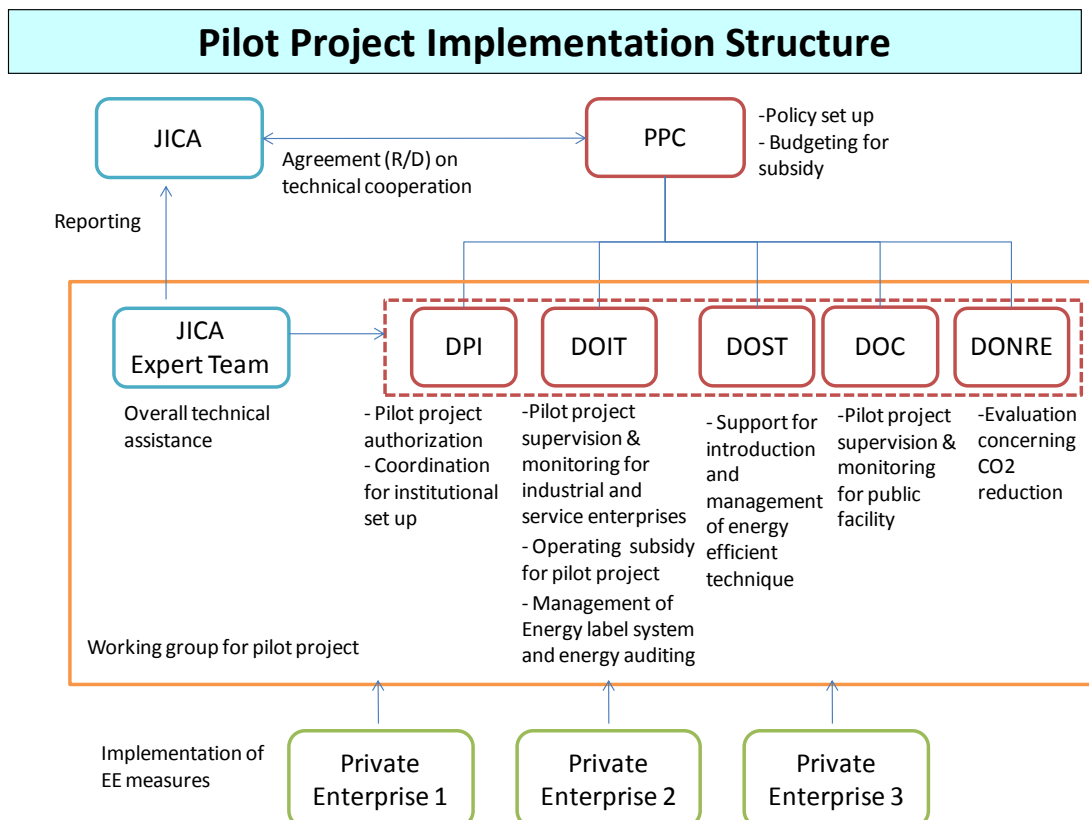


Figure-4 Implementation Structure

- **DPI**
 - Authorization of pilot project target and activity component
 - Coordination for financial arrangement and management
 - Budgeting for subsidy from PPC and coordination with JICA about EE measures
 - Matching of preferential interest for EE measures from financing institution
 - Set up of Institutional and financial support for post-project
- **DOIT**
 - Implementation of selected pilot project and formulation of monitoring plan for industry sector
 - Management and monitoring of EE pilot activity in industry sector
 - Operate subsidy in pilot activity by the Center for Industrial Consultation and Promotion
 - Promotion of energy auditing and provincial-level green label system contributing to energy saving and management
 - Information management for EE measures
- **DOST**
 - Support for introduction and management of energy efficient technique
- **DOC**

- Implementation of selected pilot project and formulation of monitoring plan in public facility
- Management and monitoring of EE pilot activity in public structure
- Preparation of action plan of EE measures for post-project phase in public sector
- Information management for EE measures in public sector
- DONRE
 - Evaluation of CO₂ reduction by EE measure
 - Information and data management about CO₂ reduction

(7) Schedule :

The schedule has following three phases:

Phase-1 (1st year): Implementation of pilot project

Phase-2 (2nd year): Monitoring stage

Phase-3 (3rd year): Policy preparation for post-project phase

Table-1 Schedule of Pilot Project

Year/ Month Items	1st year												2nd year												3rd year												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
Phase-1 Pilot project implementation																																					
Confirmation of institutional and financial readiness for pilot project																																					
Finalization of selection of target pilot project																																					
Financial arrangement including preferential loan, subsidy and ESCO																																					
Setting up of pilot-project working group with monitoring implementation structure																																					
Preparation of detailed plan and specification for pilot component																																					
Target setting and formulation of monitoring plan																																					
Procurement and implementation of pilot project																																					
Enhancement of energy audit system and application to small-medium enterprise																																					
Designing of provincial green label system contributing to energy saving and management																																					
Phase-2 Monitoring stage																																					
Monitoring																																					
Extraction of lessons learned																																					
Preparation of EE portion article for Halong Bay Area green growth white book																																					
Phase-3 Feedback and preparation for post project																																					
Evaluation of EE measures of pilot project																																					
Preparation of Annual Action Plan including provincial energy label and energy audit system																																					
Preparation of incentives and financial mechanism and penalty system for post project phase																																					
Policy recommendation for EE measures																																					

The pilot activity is conducted in the following three phases.

Phase-1 Pilot project implementation

- ✧ Confirmation of institutional and financial readiness for pilot project
- ✧ Finalization of selection of target pilot project

- ✧ Financial arrangement including preferential loan, subsidy and ESCO
- ✧ Set up the working group for monitoring of pilot-project
- ✧ Preparation of detailed plan and specification for pilot project component
- ✧ Target setting and formulation of monitoring plan
- ✧ Procurement and implementation of pilot project
- ✧ Enhancement of energy auditing system and demonstration in small-medium enterprise
- ✧ Designing provincial green label system

Phase-2 Monitoring stage

- ✧ Monitoring
- ✧ Extraction of lessons learned
- ✧ Preparation of EE portion of draft white book

Phase-3 Feedback and preparation for post project

- ✧ Evaluation of pilot project of EE measures
- ✧ Preparation of Annual Action Plan including provincial energy label and energy audit system
- ✧ Preparation of incentives and financial mechanism and penalty system for post project phase
- ✧ Policy recommendation for EE measures

(9) Monitoring of Pilot Activity

The monitoring will be conducted by the pilot project working group for EE measures.

1) Monitoring items for energy saving:

- Organization, management, and operation of the target facility and factory,
- Energy consumption per production amount: reference value before project and after pilot project
- Operation and maintenance status and record

2) Monitoring items for financing mechanism

- Application form of financing institution, subsidy, and ESCO
- Status and progress of financing mechanism
- Investment cost and specification of equipment that is installed

3) Indicator for energy saving and CO₂ reduction:

- Energy consumption per production amount (kWh of electricity, kL or ton of fuel usage)
- CO₂ reduction amount (ton- CO₂/year)

4) Indicator for energy auditing:

- Number and percentage of designated energy users that undertake energy auditing in the Province
 - Number of small and medium enterprise that undertake energy auditing in the province
- 5) Indicator for provincial green label system:
- Document of provincial energy label system

The items and indicators for pilot project monitoring of energy saving is summarized in the table below.

Table-2 Monitoring Indicators for Energy Saving

Item	Indicators	Unit	Remarks
Baseline condition	- Efficiency or energy usage per unit of production of Baseline equipment	- % (efficiency) - kWh/production - kg(or L)-fuel/production	For new installation, market average equipment is considered as baseline
Investment cost	- Investment cost - Subsidy amount - Cost-benefit	- US\$ or VND	- Cost-benefit analysis is conducted
Energy saving amount	- Energy used by high efficiency equipment, energy used by baseline equipment - Production amount - Energy saving %	- Saved energy kWh or ton or L of fuel - Energy cost: VND/kWh, VND/kg (or L) fuel, waving: US\$/yr or VND/yr	Energy saving is clarified with baseline condition.
CO ₂ reduction amount	- Reduced amount of CO ₂ - CO ₂ reduction %	tCO ₂ /year	Emission coefficient of grid and fuel need to be confirmed

3) Method:

- Monitoring sheet for interview and site investigation is prepared with reference to the energy audit system
- Interview with energy manager of the target facility and financing institution is conducted.
- Equipment status and measurement tool and record for indicator (energy meter, flow meter, operation record) is confirmed in the site investigation
- Reduced amount of CO₂ is calculated using emission factor in Viet Nam.
- Application for financing scheme, financing procedure, allocation of budget, and cash flow for pilot project is recorded.
- Number of enterprise that undertook energy auditing is tracked and monitored. Recommendation to take energy auditing is sent to un-audited designated energy users with penalty warning.
- Legal document for energy label is prepared.

- Lessons learned for post-project phase is extracted.

4) Monitoring Schedule and frequency

- 1st monitoring : At the time of commissioning of EE equipment at site
- 2nd monitoring: 6 months after operation start
- 3rd monitoring: 12 months after operation start

(10) Training Program to be Conducted in the course of Implementation of Pilot Activity

Technical assistance for working group for pilot project monitoring and evaluation is conducted as shown in the table below.

Table-3 Training Program

Target	Training items
DPI	<ul style="list-style-type: none"> - Planning for Monitoring and target setting - Financial mechanism and ESCO promotion method
DOIT and DOC	<ul style="list-style-type: none"> - Implementation of monitoring and evaluation method - Evaluation of energy saving - Management of energy label and energy auditing - Information management
DONRE	<ul style="list-style-type: none"> - CO₂ reduction assessment - Information management

4.3 Readiness for Implementation of Pilot Activity on EE measures

(1) Quang Ninh Province and its Departments

- Set institutional arrangement and instruct roles and responsibilities of the concerned department for pilot project implementation as proposed in Figure-4.
- Allocate counterpart budget for pilot activity.
- Approve to contact pilot activities for proposing financial incentive mechanism related to preferential loan, subsidy and ESCO project.
- Prepare budget for conducting pilot project on subsidy in the implementation stage, and instruct the concerned organization proposed in Figure-1 to join pilot activity on subsidy in the implementation stage.

(2) Private entities:

- Willingness of project owner for pilot project is confirmed and implementation plan is formulated.
- Financial arrangement for own investment portion is committed.

(3) JICA

- Scope of pilot project is approved.
- Finance arrangement of subsidy for pilot project is set according to Quang Ninh province commitment and support procedure is settled.

5. Expectation and Readiness for Post-project Phase

(1) Quang Ninh Province and its Departments

- Institutional arrangement and roles and responsibilities for energy saving planning and pilot project implementation are settled.
- Financial incentive mechanism is established to promote energy saving.
- Regulation related to EE measures (energy auditing and energy label) are conducted with target and penalty setting.
- Provincial-level green label system and energy auditing system contributing to energy saving and management with introducing high-efficiency equipment.

(2) Private entities:

- Financing mechanism for energy saving promotion is well known and incentive for energy saving is enhanced.
- Obligation about energy auditing and provincial-level green label system is performed.

End of Document

Appendix-1 Candidate Pilot Project

1) Energy efficiency improvement in factory

Target facility:	Thang Long Cement Joint Stock Company
Address :	Le Loi commune, Hoanh Bo district, Quang Ninh province
Type:	Clinker, cement
Ownership	Private
Energy efficiency measures:	- Installing the inverter to motor of air supply fan of kiln - Improvement of lighting system with efficient lamps
Cost:	0.1-0.2 mil US\$ (inverter) 25,000-30,000 US\$ (efficient lighting system)
Financing option:	Support of introduction of preferential loan

Target facility:	Lam Thach 2 Cement Company
Address :	KCN Cái Lân, TP. Hà Long
Type:	Clinker, cement
Ownership	Private
Energy efficiency measures:	- Installing the inverter for fan and compressor
Cost:	0.1-0.2 mil US\$ (inverter)
Financing option:	Support of introduction of preferential loan

Target facility:	Viglacera Halong Joint Stock Company
Address :	Ha Khau ward, Ha Long city,
Type:	Ceramic tile
Ownership	Private
Energy efficiency measures:	- Installation of high efficiency furnaces
Cost:	13 mil US\$
Financing option:	Support of introduction of preferential loan

2) Installation of energy efficient chiller in Hotel

Target facility:	Saigon Halong Hotel Tourism JSC
Address :	No. 168, Ha Long Street, Bai Chay Ward, Ha Long city, Quang Ninh province
Type:	Hotel services
Ownership	Private
Energy efficiency measures:	Application of energy efficient chiller (cooling capacity 460 kW, output 160kW) for air conditioning system
Cost:	0.2 mil USD
Financing option:	- Subsidy and ESCO

3) Installation of insulation material for Provincial Government Building

Target facility:	Quang Ninh Provincial Government Building
Address :	Office complex 2, Nguyen Van Cu Street, Hong Ha Ward, Ha

	Long City, Quang Ninh province
Type:	Office building
Ownership	Public
Energy efficiency measures:	Application of heat insulation on windows of building to improve air conditioning efficiency
Cost:	0.2-0.3 mil USD
Financing option:	- Subsidy support

4) Installation of high-efficiency lighting system in street light in Halong City

Target facility:	Street light in Halong City
Address :	Halong City
Type:	Public structure
Ownership	Public
Energy efficiency measures:	Replacement of street lights with high-efficiency lamps
Cost:	In total, 2.1 mil USD (according to target nos. of lighting)
Financing option:	- Subsidy support

Table: Pilot Activity and Proposed Subsidy (tentative)

SN	Pilot Activity	Support Type	Investment cost*	Subsidy from QN*	Subsidy from JICA*
1	EE in cement company	Loan coordination	0.4 mil US\$	-	-
2	EE in hotel	Subsidy or ESCO	0.2 mil US\$	To be proposed	To be proposed
3	EE in government building	Subsidy	0.3 mil US\$	To be proposed	To be proposed
4	EE of street lighting	Subsidy	Part of 2.1 mil US\$	To be proposed	To be proposed

* Above cost should be reviewed after confirmation of scope and quantity of equipment

Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province

Pilot Activity on Sustainable Tourism Promotion in Ha Long Bay Area
(As of 13th July 2016)

1. Introduction

The blooming of tourism sector is a vital trend on a global scope. Tourism helps promoting commercial activities, helps nations in the world become closer in terms of culture. According to the World Tourism Organization, total revenue in 2015 from international tourism worldwide reached USD 1,232 billion, an increase of 3.6% compared to the previous year. This figure represents the growth of 4.4% in international tourist arrivals, reaching 1,184 million in 2015.

Vietnam tourism industry has been growing very strongly in the last half decade with strong growth in both number of tourists and inbound receipts. Total revenue from international travelers to Vietnam has grown at annual rate of 8% from 43 trillion VND in 2006 to 182 trillion VND in 2015. Number of tourists also doubled from 3.5 million to 7.9 million in the same period.

Quang Ninh Province needs to capture this trend to perform rapid and timely development of economic conversion solutions from “Brown to Green” in which tourism is the main economic force.

2. Rationale of Pilot Activity

Quang Ninh Province has set a Tourism Master Plan to 2020 with a vision towards 2030 (Decision No.: 1418/QĐ-UBND) which is fully consistent with the Socio-Economic Development Plan for the same period and aiming at promoting the concept of Green Growth. The Tourism Master Plan includes the following objectives:

- To attract tourists from around the world as well as from the rest of Vietnam: In addition to growing a large domestic tourist segment, Quang Ninh needs to move up to global standards to attract international travelers with attractive potential spending capacity.
- To develop a green and sustainable tourism industry that preserves rather than depletes the environment: With the growing volume that will stress the environmental capacity of many tourist sites, sustainable development and promotion of ecotourism will help to alleviate negative environmental impact while delivering a satisfactory experience to tourists.
- To build a tourism brand of Quang Ninh on the back of UNESCO world heritage listed Ha Long Bay: High quality tourist services and authentic natural and cultural tourism experiences must be offered to the tourists.
- To increase the contribution of tourism to provincial GDP: Shifting away from resource-consumption industries such as coal mining and expanding the tourism industry will help the province to create a sustainable long-term advantage to continuously grow and improve the provincial economy.
- To create employment opportunities and improving income for the community: It will contribute actively to the province’s poverty eradication efforts.

Achieving these goals requires careful planning and cooperation among all the stakeholders to execute swiftly to capture the global and domestic opportunities.

3. Review of Policy and Institutional Mechanism on Green Growth Promotion

3.1 Current Situation and Issues related to Policy and Institutional Mechanism

The Green Growth policy in Quang Ninh Province intends to transform the economic structure from “Brown to Green”. Tourism is one of the main engines for achieving the Green Growth in this sense. However, the current tourism in Quang Ninh depends largely on the mass tourism in Ha Long Bay including tourist boats, hotels and annexed restaurants. Majority of local community in Quang Ninh Province has little to do with tourist services. It is absolutely necessary to establish an institutional mechanism to promote and encourage diversified types of tourism, especially responsible tourism and ecotourism, in the whole Ha Long Bay Area by strengthening marketing, information to the potential tourists as well as improving the service and awareness among the tourism businesses and local communities. Through realization of diversified types of tourism, wider range of local communities will be able to participate in the tourist services, and social, cultural and economic benefit of tourism can be expanded.

3.2 Policy and Institutional Improvement Plan

- A Decision of Quang Ninh PPC on implementation of the pilot activity for Sustainable Tourism Promotion is to be formulated.
- A Working Group at provincial level and a local Working Group in Quang Yen Town are to be set up.
- An action plan for sustainable tourism promotion is to be formulated and approved by Quang Ninh PPC.

3.3 Recommendations for GG Promotion

A pilot activity for Sustainable Tourism Promotion is recommended to include the following components:

- (1) Improvement of tourist information
 - Branding of Ha Long Bay area
 - Provision of tourist information materials and tools
 - Training of tourist information management and delivery, etc.
 - Organization of promotion activities
 - Establishment of Destination Marketing Agency (DMA) as described in the Tourism Development Master Plan in Quang Ninh (Decision No.: 1418/QD-UBND)
- (2) Ecotourism Promotion in Quang Yen Town
 - Development of discovery routes
 - Provision of tourist information materials and tools
 - Installation of on-site signage and interpretation
 - Training of local guides, tourist information management and delivery, etc.
- (3) Introduction of Blue Sail in Ha Long Bay
 - Examination and authorization of criteria and incentives for Blue Sail Certificate
 - Application of Blue Sail Certificate for tourist boats in Ha Long Bay

4. Preliminary Design and Implementation Plan of Pilot Activity

4.1 Overview of Pilot Activity

Ha Long Bay of world fame attracts around 2.5 million tourists both domestic and international annually (2015). However, tourist information on Ha Long Bay Area is provided by different entities without coordination and cooperation. Private tour operators and tourist boat companies have own websites.¹ Both Tourism Department and HBMD run tourist information centers separately. In addition, only a few tourist information materials and tools are available, which don't include necessary and useful contents for visitors to Ha Long Bay Area. As a result, the tourists miss the opportunity to visit other tourist sites or explore urban attractions. In fact, Quang Ninh Province has rich cultural, historical and natural resources. These include both tangible and intangible culture, historical ruins and monuments, fauna and flora, etc.

Improved tourist information provision and deliver are expected to encourage the tourists to visit more places of interests, experience more activities, and spend more time and money in Quang Ninh Province including Ha Long Bay. Consequently, tourism related industry and tourist services are expected to be expanded. For this end, it is absolutely necessary to establish a responsible mechanism for marketing and promotion of tourism which is a single destination marketing agency as described in the Tourism Development Master Plan for Quang Ninh Province (Decision No: 1418/QĐ-UBND).

At the same time, a pilot ecotourism practice is to be initiated to make maximum use of improved tourist information and established voluntary local guide unit or group. In addition, it would be necessary to introduce a sustainable and autonomous mechanism to improve the quality of tourist boats in Ha Long Bay in terms of environmental awareness and service standards.

This pilot activity composed of four components: 1) Improved Tourist Information, 2) Ecotourism Promotion in Quang Yen, 3) Introduction of Blue Sail Certificate and 4) consequent institutionalization, aims at strengthening the sustainable tourism promotion in Ha Long Bay Area.

4.2 Implementation Plan of Pilot Activity

(1) Objectives of Pilot Activity

The objectives of Pilot Activity include the followings:

- To establish an institutional mechanism with necessary capacity for providing useful and practical tourist information to be delivered to both the potential and visiting tourists in Ha Long Bay Area.
- To strengthen the capacity for promoting ecotourism in Quang Yen Town.
- To establish an institutional mechanism for improving both awareness on environmental conservation and quality of service of tourist boats in Ha Long Bay.

(2) Expected Outcomes and Benefit by the Pilot Activity

- Expanded tourism activities, industries, businesses and services in the whole Ha Long Bay Area, particularly in regard to ecotourism.
- Improved environmental conservation including bio-diversity and quality of tourist service in Ha Long Bay, consequently improved value of Ha Long Bay World Heritage site.

(3) Contribution of Pilot Activity to Implementation of GGAP of Quang Ninh Province

- Transformed economic structure from “Brown to Green”.

¹ www.halongbay-vietnam.com; <http://www.halongbay.info/>; <https://www.halongbaytours.com.vn/>; etc.

- Increased and improved forest area by proper utilization for ecotourism.

(4) Scope of Pilot Activity

- 1) Improvement of Tourist Information
- 2) Ecotourism Promotion in Quang Yen
- 3) Blue Sail Certificate
- 4) Institutionalization

(5) Detail Program and Breakdown of Pilot Activity

1) Improvement of Tourist Information:

- Set up a Working Group
- Prepare an action plan and guidelines
- Make a branding of Ha Long Bay Area (including Ha Long smile, OCOP, etc.)
- Prepare a list of resource persons/organizations
- Provide tourist information materials and tools (website, brochures, maps, event calendar, video, etc.)
- Train the concerned parties on tourist information management and delivery, etc.
- Organize promotion activities (events, FAM, media tours, etc.)
- Update periodically based on the feedback from tourists
- Monitor outputs and impacts of the pilot activity
- Establish a Destination Marketing Agency (DMA)

2) Ecotourism Promotion in Quang Yen

- Set up a local Working Group
- Develop discovery routes for promotion of ecotourism
- Provide tourist information materials and tools (mainly brochures and maps)
- Install on-site signage and interpretation
- Train local guides, tourist business and services, communities, etc.
- Organize promotion activities (events, FAM, media tours, etc.)
- Update periodically based on the feedback from tourists
- Monitor outputs and impacts of the pilot activity

3) Introduction of Blue Sail Certificate

- Examine criteria and incentives for Blue Sail Certificate
- Get official approval of criteria
- Launch Blue Sail Certificate inscription
- Examine application and give awards
- Monitor outputs and impacts of the pilot activity

4) Institutionalization

- ## (6) Implementation Structure

-
- The diagram illustrates the organizational structure and reporting lines for the project. At the top level, JICA and PPC are connected by a double-headed arrow labeled "Agreement (R/D) on technical cooperation". JICA reports to PPC, indicated by an upward arrow labeled "Reporting". PPC reports to JICA, indicated by a downward arrow labeled "Reporting". Below JICA is the JICA Exert Team, which provides "Overall technical assistance" and reports to JICA (upward arrow labeled "Reporting"). The JICA Exert Team also interacts with the Provincial Working Group (indicated by a horizontal arrow). The Provincial Working Group is a dashed box containing three entities: DPI (responsible for "Coordination"), Tourism Department (responsible for "Implementation" and "Monitoring"), and DOT, DONRE, HBMD, Tourism Association (responsible for "Participation" and "Collaboration"). Below the Provincial Working Group is the Local Working Group, which is a dashed box containing the Quang Yen PC (responsible for "Implementation" and "Monitoring").
- ```
graph TD; JICA[JICA] <--> |"Agreement (R/D) on technical cooperation"| PPC[PPC]; JICA -- "Reporting" --> PPC; PPC -- "Reporting" --> JICA; JICA_Exert[JICA Exert Team] -- "Reporting" --> JICA; JICA_Exert -- "Overall technical assistance" --> JICA; JICA_Exert --> PWG; subgraph Provincial_Working_Group [Provincial Working Group]; DPI[DPI] -- "- Coordination" --> PWG; Tourism[Tourism Department] -- "- Implementation" --> PWG; Tourism -- "- Monitoring" --> PWG; DOT[DOT, DONRE, HBMD, Tourism Association] -- "Participation" --> PWG; DOT -- "Collaboration" --> PWG; end; subgraph Local_Working_Group [Local Working Group]; Quang_Yen_PC[Quang Yen PC] -- "- Implementation" --> Local_Working_Group; Quang_Yen_PC -- "- Monitoring" --> Local_Working_Group; end;
```

Note: Tourism Boat Sub-association, which would be one of focal points, is included in Tourism Association.

### Figure-1 Implementation Structure

(7) Schedule

The schedule for each component of the pilot activity is shown in the following table.

**Table-1 Schedule of Pilot Project**

| Year/ Month<br>Component                          | Prep. | 1st Year |   |   |   |   |   |   |   |   |    |    |    | 2nd Year |   |   |   |   |   |   |   |   |    |    |    | 3rd Year |   |   |   |   |   |   |   |   |    |    |    |  |  |
|---------------------------------------------------|-------|----------|---|---|---|---|---|---|---|---|----|----|----|----------|---|---|---|---|---|---|---|---|----|----|----|----------|---|---|---|---|---|---|---|---|----|----|----|--|--|
|                                                   |       | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |  |  |
| (1) Improvement of tourist information            |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Set up a Working Group                            |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Prepare an action plan and guidelines             |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Make a branding of Ha Long Bay Area               |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Prepare a list of resource persons/organizations  |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Provide tourist information materials and tools   |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Train the concerned parties                       |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Organize promotion activities                     |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Update based on feedback from visitors            |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Monitor outputs and impacts of the pilot activity |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Establish a DMA                                   |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| (2) Ecotourism promotion in Quang Yen Town        |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Set up a local Working Group                      |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Develop discovery routes                          |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Provide tourist information materials and tools   |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Install on-site signage and interpretation        |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Train local guides, business, communities         |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Organize promotion activities                     |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Update based on feedback from visitors            |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Monitor outputs and impacts of the pilot activity |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| (3) Introduction of Blue Sail in Ha Long Bay      |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Examine criteria and incentives                   |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Get official approval of criteria                 |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Launch Blue Sail Certificate registration         |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Examine applications and give awards              |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Monitor outputs and impacts of the pilot activity |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| (4) Institutionalization                          |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Summarize activities (1), (2) and (3)             |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Develop a post-project phase plan                 |       |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |

#### (8) Monitoring of Pilot Activity

Outputs and outcomes of the pilot activity will be monitored according to the following indicators:

- The number of materials of produced and improved tourist information
- The number of developed ecotourism programs in Quang Yen Town and the number of participated tourists
- Institutionalization of Blue Sail Certificate
- Result of formulation of post-project plan

#### (9) Financial Arrangement and Cost Sharing

Japanese side:

- Dispatch of Japanese experts

Vietnamese side:

- Operation cost of the Project (counterparts' traveling cost, printing documents, etc.)
- Cost of production of tourist information (website, video clips, brochures, event and seasonal calendar, etc.) by mobilizing both the public and private financial sources

#### (10) Training Program to be conducted in the course of Implementation of Pilot Activity

- Training for Website development and maintenance
- Training for Tourist Information management and delivery
- Training for tourism marketing
- Training for local guides
- Training for community development (Public awareness program)
- Others

### 4.3 Readiness for Implementation of Pilot Activity on Improvement of Tourist Information

#### (1) Quang Ninh Province and its Departments

- Newly established Tourism Department has appointed a focal point (or a coordinator) of the pilot activity.
  - Tourism Department has designated “Tourist Information and Promotion Center” as the main implementing body for Improvement of Tourist Information component.
  - “Tourist Information and Promotion Center” has tourist information staff and has been operating provincial tourism website.
  - DOT is ready for continuation of Blue Sail Certificate implementation based on the trial during the previous JICA technical cooperation project.
- (2) Six Local Authorities
- Quang Yen Town has set up a local Working Group for conducting Ecotourism Promotion component.
- (3) Other Public Authorities or Organizations
- Quang Ninh Tourism Association is ready to take part in the Working Group for all the components of the pilot activity.
- (4) Private Entities
- Private tour operators, hotels and restaurants are also willing to cooperate with the pilot activity.
  - Japanese tour companies based in Vietnam are expected to cooperate with the pilot activity.
- (5) JICA
- Financial arrangement for the pilot activity is approved.

## **5. Expectation and Readiness for Post-Project Phase**

Tourism Department has already started preparation for establishment of a Destination Marketing Agency (DMA) which was recommended in the Tourism Master Plan as one of the 13 priority solutions. It is highly expected that the DMA would be established during the pilot activity of the Project.

End of Document

Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province

Enhancement of Water Environment Management Capacity by Controlling Direct Load to the Bay  
(as of 13th July 2016)

**1. Introduction**

In Halong Bay, the direct impacts on water quality by economic activities such as wastewater discharge by vessels or aquaculture in the bay should be controlled more carefully. Recently, Quang Ninh province enhances control of tourist boat operation including discharging of wastewater and solid waste. It is desirable to introduce advanced technique for such management. Inappropriate waste disposal should also be controlled and improved its management. One of possible ways is recycling. In case that the recycling activity is success and good quality fertilizer/feed are produced, it is expected to contribute to ensuring food safety. To promote these kinds of activity which contributes to green growth promotion, it is recommended to develop an incentive mechanism that makes private sector urge to introduce such advanced technique. By this pilot activity, trial introducing of advanced technique for controlling pollution load to the bay, and try to examine incentive mechanism named “green label on advanced technology”.

**2. Rationale of Pilot Activity on Enhancement of Water Environment Management Capacity by Controlling Direct Load to the Bay**

Tourist boats are important means for Ha Long Bay visitors to appreciate the World Heritage site. According to DCST, 301 day cruise boats and 167 overnight cruise boats are registered as of October 2015. Recently, wastewater and solid waste disposal from tourist boat has been regulated more strictly by enforcing new regulations controlling operation of tourist boat. However, it is necessary to continue efforts to control wastewater from tourist boats because main activity in World Heritage Site derives from operation of tourist boats.

According to the draft Quang Ninh Fishery Development Master Plan to 2020, Vision to 2030 (2016), wastewater from aquaculture is more than 3,000m<sup>3</sup>/year. In addition, due to surplus of feed at aquaculture ponds, around 10 cm to 30 cm of thickness of sludge is deposited at bottom of the pond, and it affects water quality of Halong Bay Area.

**3. Review of Policy and Institutional Mechanism on This Pilot Activity**

For controlling environmental impact caused by economic activities in the bay such as operation of tourist boats and conducting of aquaculture, Quang Ninh province has already issued several decisions as shown in the table below. This pilot project will be carried out, considering harmonization with such existing policies.

**Table-1 Relevant Regulations on Operation of Tourist Boats**

| No. | Decision No. etc.                                                   | Outline                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Decision No. 998/QD-UBND dated 1 <sup>st</sup> April 2016           | Approval of Plan on Quality Improvement and Management of Tourist Boats Operating on Ha Long Bay, Bai Tu Long Bay to 2020                                                                                                                                                                                                                                                                                                                 |
| 2   | Decision No. 4088/2015/QD-UBND dated 21 <sup>st</sup> December 2015 | Promulgation of Temporary Regulations on Management of Tourist Boats Operation on Ha Long Bay, Bai Tu Long Bay.<br>This regulations sets out technical requirements, among other that (i) wooden vessels of 15 years and of 25 years operation will not be allowed to transport tourists on Halong Bay and Bai Tu Long Bay; (ii) termination of wooden boat newbuilding for serving tourism activities on Halong Bay and Bai Tu Long Bay. |
| 3   | Decision No. 4036/ QD-UBND dated                                    | Decide to stop of operation of Bai Chay tourist wharf                                                                                                                                                                                                                                                                                                                                                                                     |

| No. | Decision No. etc.                                              | Outline                                                                                                                                                                                                   |
|-----|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | 18 <sup>th</sup> December 2015                                 | from 1st Jan 2016, and start operation of Tuan Chau tourist wharf                                                                                                                                         |
| 4   | Decision No. 3625/QD-UBND dated 16 <sup>th</sup> November 2015 | Decide to stop building of new wooden boats for replacement of those whose operation permits expire.                                                                                                      |
| 5   | Decision No. 1180/QD-UBND dated 20th April 2016                | Plan to conduct sustainable aquaculture considering type of fish species cultivated, way of feeding, technologies adopted, etc. at Vung Vieng area by Halong city, DARD, and the concerned organizations. |
| 6   | Decision No. 3305/QD-UBND dated 29th October 2015              | Plan to conduct sustainable cage aquaculture in Van Dong District by DARD                                                                                                                                 |

According to the draft Quang Ninh Fishery Development Master Plan to 2020, Vision to 2030 (2016), Quang Ninh Province has plan to develop aquaculture as follows;

- Develop aquaculture focusing on characteristic of sustainability, efficiency; high productivity and quality,
- Promote practical application of good aquaculture with certain certifications, and
- Develop the intensive aquaculture areas with high technology applications, water-saving farming, and bio-safety farming.

#### 4. Preliminary Design and Implementation Plan of Pilot Activity

##### 4.1 Overview of Pilot Activity

This pilot activity is planned to conduct trial introducing of advanced technique for controlling pollution load to the bay, and try to develop incentive mechanism named “green label on advanced technology”.

##### 4.2 Implementation Plan of Pilot Activity

###### (1) Objectives of Pilot Activity

The objectives of pilot activity are as follows:

- Develop system to introduce advanced technique for controlling pollution load to the bay by examination of green label on advanced technology, and
- Evaluate feasibility of recycling activity by waste affecting to the bay from not only water environment improvement viewpoint but also secondary benefit such as contribution to clean food production

###### (2) Expected Outcomes and Benefit by Project Activity

The expected outcomes and benefit are as follows:

- Develop incentive mechanism, such as green label on advanced technology, to introduce advanced technique for controlling pollution load to the bay
- Obtain experiences to contribute to promoting clean food production by organic agriculture

###### (3) Contribution of Pilot Activity to Implementation of GGAP of Quang Ninh Province

This pilot activity is expected to contribute to the achievement of the following indication of GGAP.

- Reduce impact of wastewater discharged directly from tourists boats to the bay
- Decrease amount of disposed solid waste in inappropriate way, and promote waste recycling activities

###### (4) Scope of Pilot Activity

### 1) Set up a Working Group

During the Phase 1, a Working Group will be launched for this pilot activity.

### 2) Select cooperative enterprises

The WG will select the enterprises or facilities that have intention to join this pilot activity. The selected enterprises or facilities will be targets for demonstrating on advanced technology for direct pollution control by introducing advanced technique through the Project. Tentatively, the possible advanced techniques to be introduced are shown in the table below. The advanced technique introduced will be selected and finalized in the implementation stage by the WG and JET. How to select the advanced techniques to be introduced will be clarified as criteria for introducing advanced technologies, and the result of examination will be reflected to the proposal on examination of green label on advanced technology in post-project phase.

**Table-2 Possible Advanced Technique to be introduced (Tentative)**

| Technique                                      | Benefit                                                                                                                                                                         | Outline                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bio-toilet (Japanese technique)                | - Reduce wastewater to the bay                                                                                                                                                  | Bio-toilet has been introduced by Vietnam National Railway. The bio-toilet does not need to use water. In Quang Ninh Province, bio-toilets have already been installed in three tourist boats and those boats will be soon operated.                                                                                                                                                                                                                                  |
| Advanced composting plant (Japanese technique) | - Reduce waste by recycling<br>- Improve water quality by producing feed that can be decomposed easily<br>- Contribute to clean food production by producing organic fertilizer | By the composting system, fertilizer and feed with fermentation by viable bacteria can be produced in short time. The produced fertilizer and feed has bactericidal effect, and can reduce usage of chemical antibiotics. This Japanese enterprise is implementing pilot activity of composting by own composting system in An Giang Province.<br>In Quang Ninh Province, a Japanese company has already accessed clean agriculture and composting in Quang Yen town. |

### 2) Support design work for introducing advanced technique for reducing direct pollution load to bay

WG and JET will support design work for introducing advanced technique for reducing direct pollution load to bay. The experiences and lessons obtained through this support will be used for examination of green label on advanced technology.

### 3) Procure and install advanced technique for reducing pollution load to bay

JET conduct procurement and install of equipment.

### 4) Operate advanced technique for reducing pollution load to bay

The selected enterprises will operate installed equipment. The enterprises will record operation condition during the project period. WG will make interview to the enterprises, and summarize lessons which can be utilized in post-project phase.

### 5) Examine trial green label on advanced technology for introducing advanced technique

Based on the work from 4.2 (4) 2) to 4.2 (4) 4), a proposal on green label on advanced technology to enhance pollution control capacity to the bay in post-project phase will be prepared.

### 6) Evaluate secondary benefit by contributing to producing clean food products

WG will evaluate the secondary benefit by contributing to producing clean food products through this pilot activity.

### 7) Monitoring and Evaluation

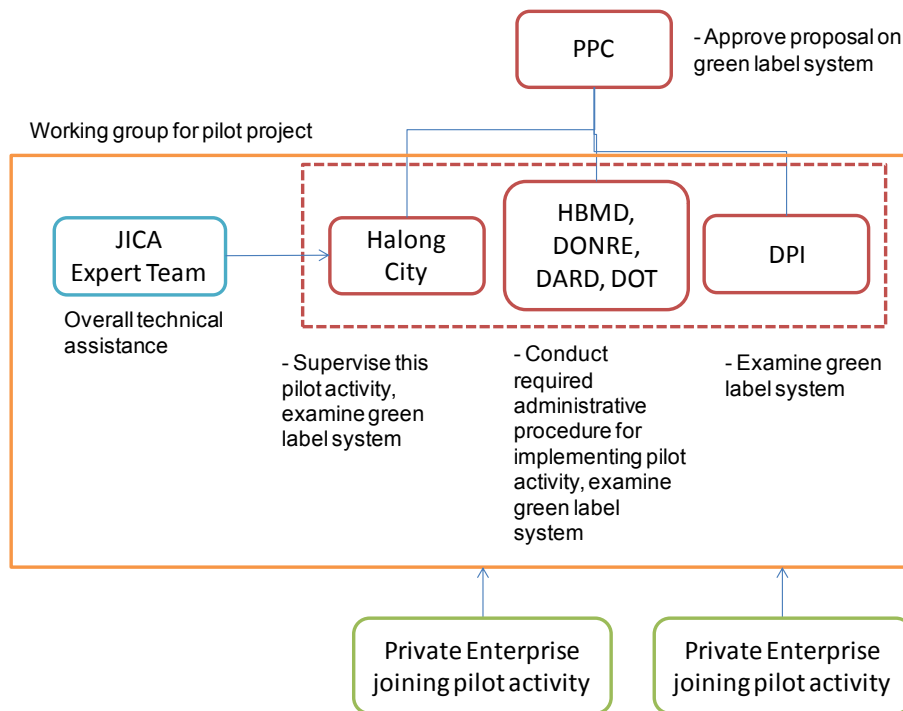
The WG will record activities implemented with monitoring and evaluation of the effectiveness. For evaluation of the effectiveness, interview survey will be implemented to the enterprises joining this pilot activity.

8) Prepare article for white book prepared under output 1

All activities done will be summarized as an article for “Halong Bay Area Green Growth White Book” prepared by the Output 1 of the Project.

(6) Implementation Structure

The roles and responsibilities for this pilot activity is shown below:



**Figure-1 Implementation Structure**

- Halong City
  - Supervise this pilot activity
  - Support the selected enterprises to introduce advanced technique
  - Examine trial green label on advanced technology
  - Conduct monitoring and evaluation
- HBMD, DOT, DONRE, DARD
  - Support the selected enterprises to introduce advanced technique
  - Conduct monitoring and evaluation
- DPI
  - Examine green label on advanced technology in post-project phase

(7) Schedule :

The schedule of the pilot activity is shown in the following table.

**Table-3 Schedule of Pilot Project**

| Year/ Month                                                                                      | 1st Phase | 1st Year |   |   |   |   |   |   |   |   |    |    |    | 2nd Year |   |   |   |   |   |   |   |   |    |    |    | 3rd Year |   |   |   |   |   |   |   |   |    |    |    |  |
|--------------------------------------------------------------------------------------------------|-----------|----------|---|---|---|---|---|---|---|---|----|----|----|----------|---|---|---|---|---|---|---|---|----|----|----|----------|---|---|---|---|---|---|---|---|----|----|----|--|
| Component                                                                                        |           | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |  |
| Pilot Activity Implementation                                                                    |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Set up a Working Group                                                                           |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Select cooperative enterprises                                                                   |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Support design work for introducing advanced technique for reducing direct pollution load to bay |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Procure and install advanced technique for reducing pollution load to bay                        |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Operate advanced technique for reducing pollution load to bay                                    |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Examine trial green label system for introducing advanced technique                              |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Evaluate secondary benefit by contributing to clean food products                                |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Monitoring and Evaluation                                                                        |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Monitor effectiveness of advanced technique introduced                                           |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Summarize lessons learned                                                                        |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Prepare article for white book prepared in Output 1                                              |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Preparing proposal in post-project phase                                                         |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Prepare proposal on green label system                                                           |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |
| Prepare administrative document on proposal for green label system                               |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |

#### (8) Monitoring of Pilot Activity

The monitoring will be conducted by the WG.

##### 1) Monitoring items for operation condition of introduced equipment

- Operation status of equipment
- Amount of waste used for recycling activity
- Amount of produced fertilizer/feed
- Amount of organic agriculture / fishery product (secondary benefit)

Method:

- Monitoring sheet for interview and site investigation will be prepared
- Interview will be implemented to the governmental department and targeted facilities joining to the pilot activities.

##### 4) Monitoring Schedule and frequency

- 1st monitoring: 4th quarter in 1st year of the Project
- 2nd monitoring: 4th quarter in 2nd year of the Project

#### (9) Training Program to be Conducted

Technical assistance for WG will be conducted as shown in the table below.

**Table-4 Training Program**

| Target                            | Training Items                                                                                        |
|-----------------------------------|-------------------------------------------------------------------------------------------------------|
| DOT, DARD, HBMD, Halong City      | - Guidance to operate introduced equipment                                                            |
| DOT, DARD, HBMD, Halong City, DPI | - Providing of experiences to operate green label on advanced technology in Japan and other countries |



### **4.3 Readiness for Implementation of Pilot Activity**

For commencement of the pilot activity, the following readiness will be necessary.

#### **(1) Quang Ninh Province and its Departments**

- Set institutional arrangement and instruct roles and responsibilities for the concerned department for pilot project implementation as proposed in Figure-1.
- Allocate counterpart budget for pilot activity.
- Implement pilot activities on use of composted feeding from fishery waste, which is Japanese technique trialed in Vietnam, for the selected aquaculture farm
- Implement pilot activities on equip bio-toilet for tourism boat in the Project
- Financing support for pilot project is coordinated and committed in Province.
- Monitoring structure and indicators are shared among concerned departments.

#### **(2) Concerned Organizations Participating in the Pilot Activity**

- Willingness to participate the pilot activity

#### **(3) JICA**

- Financial support for preparing white book during phase 2
- Technical training for preparing the white book and way of usage for awareness raising

## **5. Expectation and Readiness for Post-project Phase**

For continuous activity for promotion of green growth related to this pilot activity, incentive mechanism for introducing advanced technology will be proposed.

End of Document

Project for Green Growth Promotion in Halong Bay Area, Quang Ninh Province

Awareness Raising for Contribution to Green Growth Implementation with Regular Publishing of Halong Bay Area green growth White book  
(as of 13th July 2016)

**1. Introduction**

For proceeding of green growth with reducing pollution load and promotion of tourism sector development in Quang Ninh Province, various stakeholders needs to cooperate, based on the accurate comprehension of information on progress and effectiveness of administrative measures on pollution reduction and tourism sector development, and current status of regional environment as tourism resources. As one of measures to urge accurate comprehension of such information among the concerned stakeholders, publishing of a white book concerning green growth by provincial government is recommended.

**2. Rationale of Pilot Activity on Awareness Raising with Publishing Green Growth White Book**

In Quang Ninh province, DONRE submits PPC a provincial environmental monitoring report in every year, and a provincial environmental status report in every 5 years. The reports have various useful information for examination on how to achieve pollution load reduction and wise-use of regional natural resources for tourism sector. If we prepare a report titled “Halong Bay Area Green Growth White Book” with information of planned and implemented activities concerning green growth and environmental pollution source condition reported by 5 year environmental status report, it is expected that the white book will function as a tool of awareness raising, especially enhancement of communication and information sharing on green growth implementation and shifting the concerned stakeholders’ minds toward promotion of green growth. The white book is recommended to be published for not only the concerned local administration bodies but also local private enterprises and residents including high school students. It is expected to contribute to formulating local society network to assist the concerned activities to promote green growth implementation.

**3. Review of Policy and Institutional Mechanism on This Pilot Activity**

So far, there is no clear regulation to share information on environmental status of Halong Bay and progress and output of activities related to green growth with various stakeholders in Quang Ninh Province. However, in the provincial green growth strategy by Decision No. 6970/ KH-UBND on 16th November 2015, all concerned administration bodies needs to report their activity on green growth promotion every year.

Quang Ninh province and local administrations represented by Halong City put efforts on awareness raising for environmental management, especially in Halong Bay Area. Regarding awareness raising activity in Halong Bay Area, Halong Association of Education and Environmental Protection was launched by Decision No. 1918/QĐ-UBND in July 2015, which consisted of DONRE and other relevant provincial departments, Quang Ninh Youth Union, relevant individuals and organizations engaging environmental education and management. The planned activities by the association are as follows;

- Prepare projects on awareness raising and communication on environmental protection education,

- Design proposals on awareness raising of teenagers and residents for actions for a greening of Halong Bay,
- Conduct campaigns for cleaning beaches focusing on students and young generation,
- Prepare proposals on Eco-boat for children whose age are less than 10 years old to provide knowledge of Halong Bay heritage value and environmental protection,
- Coordinate with other relevant organizations for implementing research program named “Heritage journeys” with Youth Union of 3 provinces in Laos, (Huay Xai, Luang Prahang and Xayaburi),
- Take part in Green Agricultural Production Program and the promotion of “One Community, One Product” (OCOP) implementation,
- Deploy solid waste segregation on tourist boats operating in Halong Bay, and
- Implement planting of mangrove forests in order to protect the environment.

#### **4. Preliminary Design and Implementation Plan of Pilot Activity**

##### **4.1 Overview of Pilot Activity**

This pilot activity is planned to publish “Halong Bay Area Green Growth White Book” to not only the concerned local administration bodies but also local private enterprises and residents including high school students once a year during the Project. Through publication of the white book, awareness raising activity for enhancement of communication and information sharing on green growth activities and shifting the concerned stakeholders’ minds toward promotion of green growth.

##### **4.2 Implementation Plan of Pilot Activity**

###### **(1) Objectives of Pilot Activity**

The objectives of pilot activity are as follows:

- Improve comprehension of environmental status of Halong Bay Area and impacts from the selected key industries by the local stakeholders,
- Improve comprehension on progress and effectiveness of administrative measures on pollution reduction and tourism sector development, and
- Share good practice and lessons learned through the pilot activities of the Project

###### **(2) Expected Outcomes and Benefit by Project Activity**

- Develop regulation and organization for publishing green growth white book that can be used as communication tool on awareness raising for green growth promotion continuously
- Improve comprehension on current status of regional environment including a worth as tourism resources, and progress and effectiveness of administrative measures on pollution reduction and tourism sector development, and for the concerned stakeholders
- Accelerate discussion and implementation of relevant activities concerning green growth

###### **(3) Contribution of Pilot Activity to Implementation of GGAP of Quang Ninh Province**

This activity does not have direct relationship with indicators of the provincial green growth action plan (GGAP). However, it is expected that this activity is contribute to improve comprehension of indicators in the provincial GGAP, and the prepared white book can be used for evaluation of

achievement status of the indicators. In addition, the GGAP requests the concerned organizations to report their activities related to green growth annually. The prepared green growth white book would have function as a tool of reporting.

(4) Scope of Pilot Activity

1) Set up a Working Group

During the Phase 1, a Working Group (WG) will be launched for this pilot activity. The WG will be a core organization to conduct this pilot activity, and a window for collecting relevant information for publishing the white book from stakeholders.

2) Prepare plan for publishing white book and awareness raising activity

Main contents to be included in the white book are as follows;

- (a) Outline of the provincial GGAP with on-going activities and status of achievement of indicators,
- (b) Current environmental status of Halong Bay Area with qualitatively assessment of impacts to the area due to relevant economic activity,
- (c) Possible green growth measures on sustainable environmental measures for contributing to increasing value of Halong Bay Area with experiences and lessons learned through the pilot activities of the Project, and
- (d) Activities promoting sustainable tourism in Halong Bay Area with experiences and lessons learned through the pilot activities of the Project

During the project, the green growth white book will be planned to be prepared every year. An example of table of contents of the white book is attached as Appendix of this document. The white book is expected to consist of visualized contents that can be easy to understand for various stakeholders as much as possible, of which page is 30 to 40 pages. In each year, main topics to be included in the white book will be decided by the WG. Tentatively, the following contents will be expected to be described in the white book.

**Table-1 Main Topics handled by the White Book (Tentative)**

| Year     | Theme                                                                       | Main Contents                                                                                                                                                                                                                                                                                                                                                                                 | Note                                                                                                                                                 |
|----------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1st Year | - Grasp current status of Halong Bay Area and required green growth actions | - Current environmental status of Halong Bay Area with qualitatively assessment of impacts to the area due to relevant economic activity<br>- Outline of Quang Ninh Green Growth Strategy and Tourism Promotion Strategy<br>- Introduction of pilot activities of the Project                                                                                                                 | - Cover page will be designed by public offering, cooperating with existing environmental event, such as activities concerning an Environmental Day. |
| 2nd Year | - For sustainable development of Halong Bay Area                            | - Current environmental status of Halong Bay Area (information will be collected not only from DONRE/CONREM, but also other stakeholders)<br>- Possible green growth measures on sustainable environmental measures for contributing to increasing value of Halong Bay Area<br>- Progress of pilot activities of the Project<br>- Activities promoting sustainable tourism in Halong Bay Area | - Detail contents will be decided taking into account experiences of the 1st year.                                                                   |
| 3rd Year | Outlook for development of green growth                                     | - Current environmental status of Halong Bay Area (information will be collected not only from DONRE/CONREM, but also other stakeholders)                                                                                                                                                                                                                                                     | - Detail contents will be decided taking into account experiences of the 1st and 2nd                                                                 |

| Year | Theme                                                                             | Main Contents                                                                                                                                                                                                                                                                                                                    | Note                                                                                                                                                                                                                                                                                                     |
|------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | society by new regulations, organizations, and mechanisms on green growth actions | <ul style="list-style-type: none"> <li>- Outlook for development of green growth society by new regulations, organizations, and mechanisms on green growth actions</li> <li>- Trial actions by applying for new regulations, organizations, and mechanisms on green growth, such as green label system in the Project</li> </ul> | <p>year.</p> <ul style="list-style-type: none"> <li>- Proposal on publishing green growth white book in post-project phase will be included.</li> <li>- WG will cooperate with IPA for promoting investment with developed regulations, organizations, and mechanisms on green growth actions</li> </ul> |

### 3) Provide Japanese experiences on preparing white book

Experiences and lessons of Japanese local administration body, Shiga prefecture, on publishing the environmental white book with relevant educational activities will be provided through concentrated co-working with the WG.

### 4) Collect information from concerned organizations

Based on the plan for preparation of white book, WG will plan to collect information from concerned organizations, and prepare articles for the white book.

### 5) Compile collected information with visualization

WG will compile the collected information and prepare a draft white book. The book should be visualized one with pictures and figures to make the concerned stakeholders easy to understand the contents.

After preparing a draft white book, the WG will submit the white book to PPC, and obtain comments. Based on the comments, the draft white book will be finalized.

### 6) Publish white book to target enterprises and local residents

WG will report the draft white book prepared to PPC, obtain comments and finalized. Based on the PPC approval, the white book will be published the selected local enterprises, local administrations, local residents and high-school students. The book also disseminate by provincial web-page.

### 7) Implement awareness raising activity

Through publication of white book, WG will conduct awareness raising activity on for enhancement of communication and information sharing on green growth activities and shifting the concerned stakeholders' minds toward promotion of green growth. Each organizations will conduct awareness raising activity to the selected stakeholders as shown in Table-2.

**Table-2 Target of Awareness Raising Activity (Tentative)**

| Target                                                                         | Responsible Organization | Target                                             | Planned Actions |              |          |
|--------------------------------------------------------------------------------|--------------------------|----------------------------------------------------|-----------------|--------------|----------|
|                                                                                |                          |                                                    | 1st year        | 2nd year     | 3rd year |
| Local administration                                                           | DPI                      | City, town, and district in Halong Bay Area        | WS              | distribution | WS       |
| Local enterprise discharging organic pollution load and required energy saving | DONRE, DOIT              | Enterprises of the selected key industrial sectors | WS              | distribution | WS       |

| Target                                             | Responsible Organization                                                                  | Target                                                     | Planned Actions |                           |                           |
|----------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------|-----------------|---------------------------|---------------------------|
|                                                    |                                                                                           |                                                            | 1st year        | 2nd year                  | 3rd year                  |
| Tourism association and tourist sector enterprises | Department of Tourism                                                                     | Tourism association and private sectors related to tourism | WS              | distribution              | WS                        |
| Local residents                                    | Local administration bodies, Halong Association of Education and Environmental Protection | Several communes selected by WG                            | Small meetings  | Distribution and feedback | Distribution and feedback |
| High school student                                | Halong Association of Education and Environmental Protection                              | Several schools selected by WG                             | Small meetings  | Distribution and feedback | Distribution and feedback |

Note: “WS” means to hold a workshop and introduce contents of the white book, and discuss on required actions by the target itself.

“Small meetings” means to hold small discussion meeting with the white book.

“Distribution and feedback” means to distribute the white book with questionnaire, and collect stakeholder’s opinions.

## 8) Monitoring and Evaluation

The WG will record awareness raising activity implemented with monitoring and evaluation of the effectiveness for promotion of communication, increasing of awareness, and shift of the concerned stakeholders’ minds. For evaluation of the effectiveness, interview survey will be implemented to the enterprises, local residents with high-school students, and governmental officers.

## 9) Preparing proposal on awareness raising and way of publishing white book

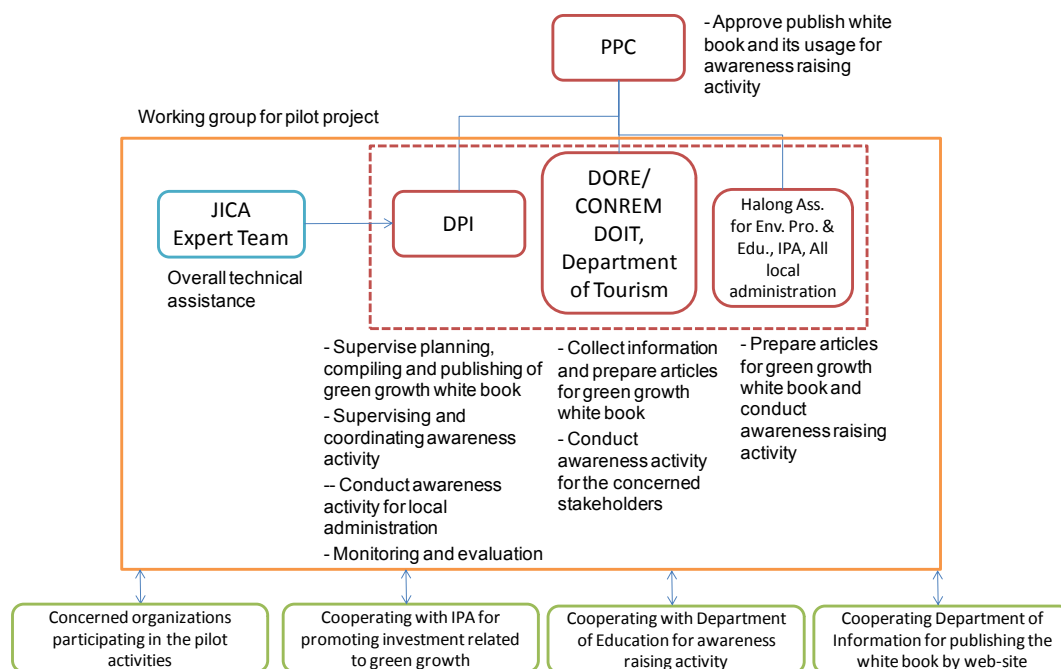
In the 2nd year of the Project, the WG will prepare proposal for awareness raising, especially for promotion of communication and information sharing to shift the stakeholders’ minds for green growth implementation in post-project phase. Regarding the green growth white book, its contents, frequency of publishing and target stakeholders will be reviewed and

## 10) Prepare administrative document on awareness raising and way of publishing white book

After finalizing the proposal on awareness raising activity and publishing of the green growth white book in post-project phase, the proposal will be documented as an administrative proposal. The proposal will be complied as the Priority Action Plan on Green Growth Implementation under Output 1.

## (5) Implementation Structure

The roles and responsibilities for pilot activity of awareness raising and publishing of the white book is shown in the figure below:



**Figure-1 Implementation Structure**

- **DPI**
  - Supervise planning of the green growth white book
  - Compile the draft green growth white book
  - Submit the draft green growth white book to PPC, obtain comments and finalize the green growth white book
  - Publish the green growth white book
  - Supervise and coordinate awareness raising activities
  - Conduct awareness raising activity for local administration
  - Conduct monitoring and evaluation with interview survey
  - Prepare proposal on awareness raising and way of publishing white book
  - Document the prepared proposal in post-project phase as administrative proposal
- **DONRE/CONREM**
  - Collect information on environmental status and enterprises' environmental management capacity confirmed through environmental check and inspection
  - Summarize progress and outcome of relevant pilot activities of the Project
  - Prepare articles of the draft white book
  - Conduct awareness raising activity for enterprises related to the selected key industries
  - Monitor and evaluate the activities conducted by DONRE/CONREM themselves
  - Prepare proposal on awareness raising and way of publishing white book

- DOIT
  - Collect information on enterprises environmental management activity
  - Summarize progress and outcome of relevant pilot activities of the Project
  - Prepare articles of the draft white book
  - Support awareness raising activity for enterprises related to the selected key industries
  - Monitor and evaluate the activities conducted by DOIT herself
  - Prepare proposal on awareness raising and way of publishing white book
- Department of Tourism
  - Summarize progress and outcome of the pilot activities in tourism sector of the Project
  - Prepare articles of the draft white book
  - Conduct awareness raising activity for tourism association and private enterprises in tourism sector
  - Monitor and evaluate the activities conducted by Department of Tourism herself
  - Prepare proposal on awareness raising and way of publishing white book
- Halong Association of Education and Environmental Protection
  - Summarize progress and outcome of the association's activity in Halong Bay Area
  - Prepare articles of the draft white book
  - Conduct awareness raising activity for local residents and high school students
  - Monitor and evaluate the activities conducted by the association herself
  - Prepare proposal on awareness raising and way of publishing white book
- IPA
  - Conduct awareness raising activity for promoting green investment by private sector
- Local administrations
  - Summarize progress and outcome of the activities related to green growth in the project area
  - Prepare articles of the draft white book
  - Join awareness raising activity in the concerned local area
- Department of Education
  - Cooperation with the WG for awareness raising activities
- Department of Information and Communication
  - Disseminate the green growth white book by provincial web-site

(6) Schedule :

The schedule of the pilot activity is shown in the following table. The



**Table-3 Schedule of Pilot Project**

| Year/ Month                                                                                     | 1st Phase | 1st Year |   |   |   |   |   |   |   |   |    |    |    | 2nd Year |   |   |   |   |   |   |   |   |    |    |    | 3rd Year |   |   |   |   |   |   |   |   |    |    |    |  |  |
|-------------------------------------------------------------------------------------------------|-----------|----------|---|---|---|---|---|---|---|---|----|----|----|----------|---|---|---|---|---|---|---|---|----|----|----|----------|---|---|---|---|---|---|---|---|----|----|----|--|--|
| Component                                                                                       |           | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1        | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |  |  |
| Pilot Activity Implementation                                                                   |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Set up a Working Group                                                                          |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Prepare plan for publishing white book and awareness raising activity                           |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Provide Japanese experience on preparing white book                                             |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Collect information from concerned organizations                                                |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Collect information from Output 2 and Output 3                                                  |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Compile collected information with visualization                                                |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Publish white book to target enterprises and local residents                                    |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Implement awareness raising activity                                                            |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Monitoring and Evaluation                                                                       |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Monitor effectiveness of awareness raising activity                                             |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Summarize lessons learned                                                                       |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Reflect experiences and lessons for publishing and awareness raising activity                   |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Preparing proposal in post-project phase                                                        |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Plan contents of white book, publishing plan and awareness raising activity in post-project     |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |
| Prepare administrative document on proposal for publishing of white book with awareness raising |           |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |          |   |   |   |   |   |   |   |   |    |    |    |  |  |

## (7) Monitoring of Pilot Activity

The monitoring will be conducted by the WG.

### 1) Monitoring items for publishing of white book

- Number of the green growth white book distributed
- Number of organizations/enterprises received the green growth white book

### 2) Monitoring items for awareness raising activity

- Number of people participating in awareness raising activity
- Effectiveness for promotion of communication, increasing of awareness, and shift of the concerned stakeholders' minds.

### 3) Method:

- Monitoring sheet for interview and site investigation will be prepared
- Interview with the enterprises, local administration, residents and high school students distributed the green growth white book
- Lessons learned for post-project phase is extracted.

### 4) Monitoring Schedule and frequency

- 1st monitoring: 4th quarter in 1st year of the Project
- 2nd monitoring: 4th quarter in 2nd year of the Project
- 3rd monitoring: 4th quarter in 3rd year of the Project

## (8) Training Program to be Conducted

Technical assistance for WG will be conducted as shown in the table below. As a part of training, experiences and lessons of Japanese local administration body, Shiga prefecture, on publishing the environmental white book with relevant educational activities will be provided.

**Table-4 Training Program**

| Target                                                                                                            | Training Items                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| DPI, DONRE, DOIT, Department of Tourism, Halong Association of Education and Environmental Protection             | - Preparation of articles for green growth white book<br>- Publishing of green growth white book                                                 |
| DONRE, DOIT, Halong, Halong Association of Education and Environmental Protection, IPA, and local administrations | - Measures on awareness raising activity for promotion of communication, increasing of awareness, and shift of the concerned stakeholders' minds |

**滋賀の環境 2014**  
(平成26年版環境白書)



滋賀県

Environmental Report of Shiga Prefecture (2014) contains the following information;

- Promotion of economic activities harmonizing with environmental protection
- Development of local society having environmental conservation viewpoint in daily social and economic activities
- Inheritance of well-managed environment of Lake Biwa to next generation
- Transition to low carbon and energy efficient society

**Figure-2 Environmental White Book prepared by Shiga Prefecture**

### 4.3 Readiness for Implementation of Pilot Activity

For commencement of the pilot activity, the following readiness will be necessary.

(1) Quang Ninh Province and its Departments

- Set institutional arrangement and instruct roles and responsibilities for the concerned department for pilot project implementation as proposed in Figure-3.
- Allocate counterpart budget for pilot activity.
- Approve to publish Halong Bay Area green growth white book to the target stakeholders shown in Table-2.
- Commit to document and approve regulation and organization to publishing green growth white book continuously in post-project phase.

(2) Concerned Organizations Participating in the Pilot Activity

- Willingness to participate the pilot activity

(3) JICA

- Financial support for preparing Halong Bay Area green growth white book during the Project
- Technical training for preparing the white book and way of usage for awareness raising

## **5. Expectation and Readiness for Post-project Phase**

For continuous activity for promotion of green growth related to this pilot activity, regulation and organization to publishing green growth white book continuously will be documented and approved by the Project.

End of Document

**Appendix-1 Table of Contents of the Green Growth White Book (Tentative for 1st year, Around 30 – 40 pages)**

**Halong Bay Green Growth White Book (1st Year of the Project – Toward developing sustainable development society -**

Preface

Chapter 1: Overview of White Book

1. Background and objectives for publishing this white book
2. Contents of this white book
3. Expected readers of this white book

Chapter 2: Principals of Green Growth Promotion and Expected Actions in Halong Bay Area

1. Objectives, solutions, and indicator of provincial green growth action plan
2. Policies to promote tourism in Halong Bay Area
3. Key word for promotion of green growth (ex. “Halong Smile)
4. Expected actions for sustainable development in Halong Bay Area by private enterprises, local residents and local administration bodies

Chapter 3: Existing Environmental Issues and Expected Actions in Halong Bay Area

1. Current status of Halong Bay environment
2. Current status of pollution sources affecting to Halong Bay Area
3. Expected actions for improving environment condition by private enterprises, local residents and local administration bodies

Chapter 4: On-going Actions for Promoting Green Growth in Halong Bay Area

1. Introduction of pilot activities planned in the Project
2. Introduction of relevant activities for promoting green growth in Halong Bay Area

Chapter 5: Planned Actions in 2nd Year of the Project

## 添付資料 II-2

プロジェクトステアリングコミッティを構成する組織の役割（2016 年 2 月現在）

| Organization      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Quang Ninh<br>PPC | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                   | <ul style="list-style-type: none"> <li>- Issuing and consultation for general activities in provincial scale</li> <li>- Management of general activities of regional administrative systems</li> <li>- Providing official information for the public according to legal regulations</li> <li>- Ensure of all conditions and facilities of working for all departments</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                   | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                   | <u>PPC Office</u> <ul style="list-style-type: none"> <li>- Management and implementation of all activities of the PPC office</li> <li>- Supervise and monitoring works related to the sectors and fields</li> <li>- Deputy Directors of the Office</li> <li>- Development, management and monitoring work program of the PPC Chairman</li> <li>- Cooperation with Party committee, National Assembly Office and Provincial People's Council</li> <li>- Support, proposal and monitoring of competitions and awarding by sector, industry, expertise and localities</li> <li>- Support of approval of specialized investment projects</li> <li>- Following up for grasping situations of localities</li> </ul>                                                                                                                                                                                                             |
|                   | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                   | <ul style="list-style-type: none"> <li>- Head of the Provincial Steering Committee</li> <li>- Head of the Project Steering Committee</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| DPI               | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                   | <ul style="list-style-type: none"> <li>- Generally consultation for all provincial issues of planning</li> <li>- Planning and promotion of socio-economic development</li> <li>- Help PPC to put forward the policies and management methods</li> <li>- Association of all provincial departments in planning and investment</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                   | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                   | <u>Foreign Economic Relations Division</u> <ul style="list-style-type: none"> <li>- Mainly survey, report and manage all issues related to FDI, ODA and other funds from NGOs</li> <li>- Pioneer in investment promotion activities: invite projects from FDI &amp; ODA, coordinate in organizing investment promotion events domestically and internationally</li> <li>- Report and monitoring international investors in provincial scale</li> <li>- Implementation of Agenda 21 about sustainable development in provincial scale</li> <li>- Coordination with relevant divisions from other departments in monitoring, reporting and evaluating socio-economic development cooperation between Quang Ninh and other provinces</li> </ul>                                                                                                                                                                              |
|                   | <u>Sectoral Economic Division</u> <ul style="list-style-type: none"> <li>- Monitoring and report of development of agriculture, forestry, aquaculture, salt production and irrigation</li> <li>- Summarization and proposal of solution of apportioning capital allowances</li> <li>- Monitoring, report and making solution of industry and service sector</li> <li>- Joining building development plan and management of mechanism of border economic zone etc.</li> <li>- Monitoring of border economic zone, industrial zones etc.</li> </ul> <u>Socio-culture and Tourism Division</u> <ul style="list-style-type: none"> <li>- Monitoring and report of project and implementation of plans and policies related to socio-culture and tourism</li> <li>- Summarization and proposal of solution of apportioning capital allowances in relevant projects</li> </ul> <u>Generals and Planning management division</u> |

| Organization | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <ul style="list-style-type: none"> <li>- Consultation of socio-economic development plan</li> <li>- Management of documentation of socio-economic development plan and annual investment capital</li> <li>- Coordination with other division to build plan and manage balance of investment capital</li> <li>- Monitoring and evaluation of effectiveness of development program and investment project etc.</li> </ul>                                                                                                                              |
|              | <u>Administration division</u> <ul style="list-style-type: none"> <li>- Consultation for director to implement staff training and personnel</li> <li>- Synthesis report of task of offices and units</li> <li>- Preparation of work program of department</li> <li>- Planning and implementation of the procurement of equipment and facilities for office</li> <li>- Human resource management (Salary, promotion, punishment, insurance etc. ) etc.</li> </ul>                                                                                     |
|              | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|              | <ul style="list-style-type: none"> <li>-Deputy head of the Provincial Steering Committee</li> <li>-Deputy head of the Project Steering Committee</li> <li>-PMU of the Project</li> </ul>                                                                                                                                                                                                                                                                                                                                                             |
| DOF          | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|              | <ul style="list-style-type: none"> <li>- Generally consultation for all provincial issues of finance</li> <li>- Management of provincial budget, tax, financial funds, accounting works, price &amp; valorization, regional financial services</li> </ul>                                                                                                                                                                                                                                                                                            |
|              | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|              | <u>Investment Finance Division</u> <ul style="list-style-type: none"> <li>- Consultation for financial Management of development in provincial scale</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      |
|              | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DONRE        | <ul style="list-style-type: none"> <li>- Add the revenue item as “Environmental Protection Tax” and increase environmental protection fee in order to limit the mining activities and strengthen resources for sending to environmental protection.</li> </ul>                                                                                                                                                                                                                                                                                       |
|              | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|              | <ul style="list-style-type: none"> <li>- Generally consultation for all provincial issues of natural resources and environment</li> <li>- Management of all resources of soil, water and mineral</li> <li>- Management of all works of: geology, environment, hydrometeorology, climate change, map calculation.</li> <li>- Control all relevant aspects of marine areas</li> <li>- Management and implementation of all public services in function of DONRE</li> </ul>                                                                             |
|              | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|              | <u>Sub-Department of Environmental Protection</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|              | - Consultation for promulgating and approving all legislation documents, programs, plans, projects related to environmental protection in provincial scale                                                                                                                                                                                                                                                                                                                                                                                           |
|              | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|              | -In the experimental program of biodiesel B5-B10-B20 on a boat of Bai Tho Company, the engineers of Yanmar and DONRE measured gas emission before and after using BDF to evaluate.                                                                                                                                                                                                                                                                                                                                                                   |
| DOIT         | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|              | <ul style="list-style-type: none"> <li>- Generally consultation for all provincial issues of industry and trade of mechanics, metallurgy, electricity, alternative energy, recyclable energy, chemistry</li> <li>- Control all aspects of industry of Coal mining industry, mineral processing industry, consumer products industry, food industry, other processing industry</li> <li>- Manage all issues of: importation, exportation, market, economic competition, commercial promotion, electric commerce, economic integration etc.</li> </ul> |
|              | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Organization | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <u>Finance-Planning Section</u><br>-Consultation for all management related to:<br>+ Financial planning and investment<br>+ Mechanism and policies in developing industry and trading<br>+ Representative offices of international enterprises in provincial scale<br>+ E-commerce<br>+ Regular report (by month, trimester, one year, 5 years and more) of DOIT                                                                                                                                                                                                                                                        |
|              | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|              | - Coordination with Hanoi center and Hai Phong centre for saving energy for training key person who manage key energy consumption facilities.<br>- Listing and updating annually key energy consumption facilities including coal enterprises, etc.<br>- DOIT coordinates with DONRE in implementation of checks to coal mining units for treatment of solid waste and wastewater from coal mining activities, the technology lines application in production                                                                                                                                                           |
|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| DARD         | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|              | - Generally consultation for all provincial issues of agriculture, forestry, aquaculture, and, irrigation<br>- Management of rural development and natural disasters prevention in provincial scale<br>- Control all regional public services in function of DARD                                                                                                                                                                                                                                                                                                                                                       |
|              | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|              | <u>Finance and Planning Division</u><br>-Planning, making strategy and implementation of short-term, mid-term and long-term plans<br>- Investment function<br>- Financial function<br>- Synthesis and statistics function<br>- International cooperation function                                                                                                                                                                                                                                                                                                                                                       |
|              | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|              | - Application of high technology to produce clean and safe agriculture products which can meet VIETGAP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| DOC          | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|              | - Generally consultation for all provincial issues of construction, architecture, and plan of urban areas and industrial zones<br>- Management of generally all aspects of Urban traffic, water supply and treatment, lighting system, park, cement, solid waste in urban and industrial areas, immovable businesses, and building materials<br>- Control of all regional public services in function of DOC                                                                                                                                                                                                            |
|              | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|              | <u>Infrastructure and Urban Development Division</u><br>-Consultation for all management related to:<br>- Infrastructure of urban areas, industrial zones: Water supply and treatment, solid waste management, cemetery (except for Revolutionary Martyrs' Cemetery)<br>- Urban development: Implementation of urban development projects, evaluation and classification type of urban areas, selection of project investors<br>- Rural innovation and infrastructure<br>- Management of projects of DOC<br>- Climate change<br>- International cooperation with relevant organizations<br>- Management of related data |



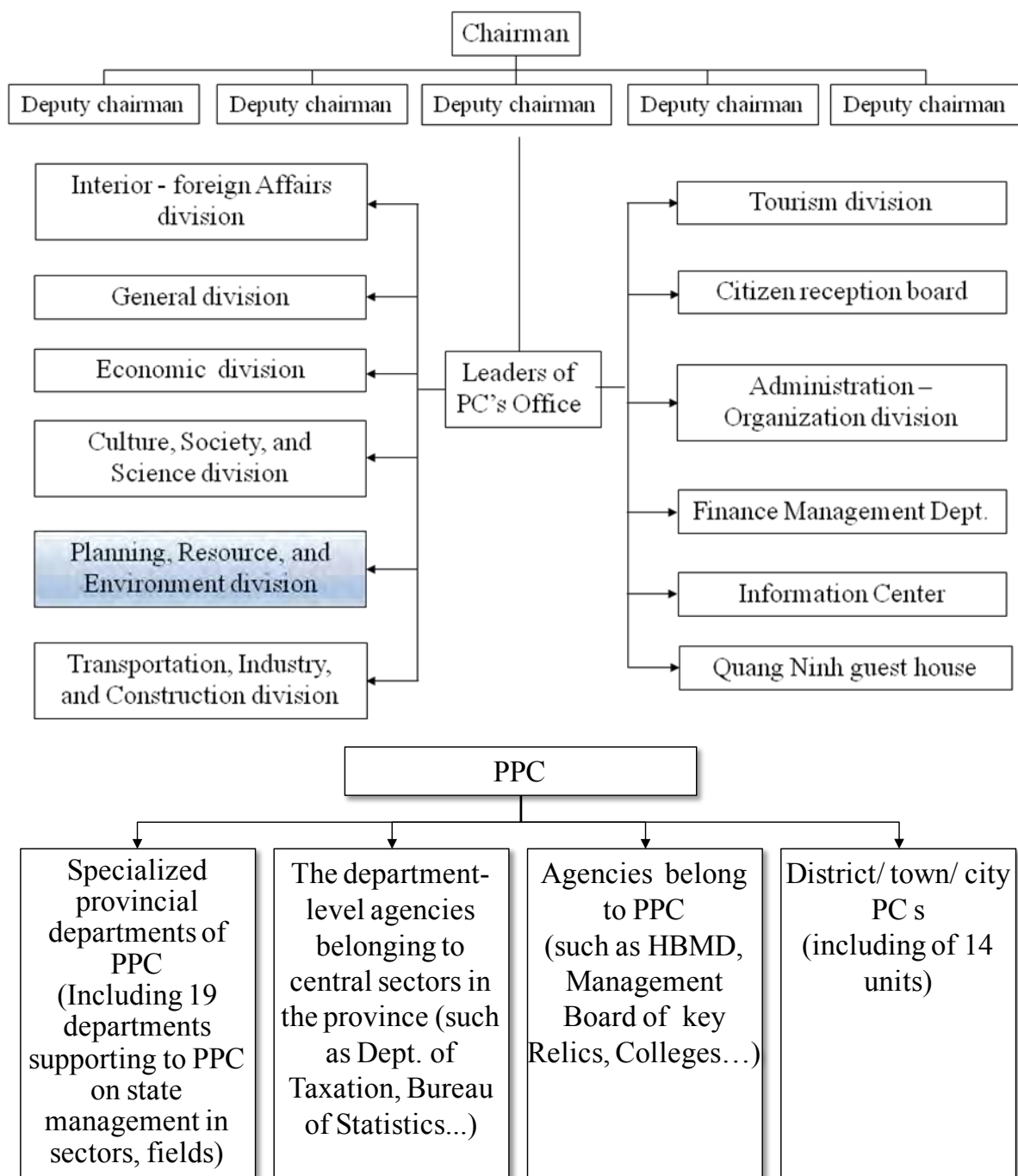
| Organization                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOST                                 | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                      | - State management on boat engine and gas emission<br>- Regarding coal mining sector activity, operation of stone exploration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                      | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                      | -Management of scientific and technical activities<br>-Development of scientific and technical potentials<br>-Management of the issues of calculation of units, radioactivity, nuclear, scientific standard etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                      | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                      | -Management of scientific and technical activities<br>-Development of scientific and technical potentials<br>-Management of the issues of calculation of units, radioactivity, nuclear, scientific standard etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| DCST                                 | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                      | - DOST hosted many annual scientific researches in Quang Ninh province, such as pollution capacity of Ha Long Bay.<br>- DOST has tested biodiesel B5-B10-B20 on a boat of Bai Tho Company, and then expanded to other boats in the company                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                      | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                      | -Planning and management of culture, sports, tourism, advertisement and public services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                      | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                      | <u>ourism Resource Development Division</u><br>- Consulting and planning for tourism mechanism and management policies.<br>- Cooperation with other departments and relevant regional organizations in effective exploitation and protection of tourism resources towards sustainable development<br>- Survey, evaluate, classify and build database of all tourism resources according to Vietnam Tourism Law published from 2005<br>- Coordination with Tourism Information and Promotion Center in propagandizing, presenting tourism resources and inviting tourism investment<br>- Consultation and planning for Tourism Master Plan in specific periods<br>- Pre-assessing and approving all tourism projects before reporting to PPC<br>- Setting up all documents of recognition of tourism sites in provincial scale<br>- Organizing all tourism festivals in provincial scale (in combination with local authorities and relevant regional sub-department in tourism sector) |
|                                      | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                      | - Development of tourism boat cruising route<br>- Control of number of tourism boat<br>- Providing eco label to tourism boat (supported by EU)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Economic Zone<br>Management<br>Board | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                      | -State management of functions for industrial parks, economic zones and border economic zones<br>-management and implementation of delivery service of public administration and other support services related to investment activities and production business for investors in economic zones, industrial parks and zones border economic province in accordance with the law                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                      | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                      | <u>Division of Investment</u><br>-Advisor and Consultant of management of investment in project for Board Director<br>- Management of investment certification for project<br>- Implementation of investment promotion program                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| HBMD                                 | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Organization   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                | <ul style="list-style-type: none"> <li>- Protection of Halong Bay</li> <li>- Supervising waterway vessels operations in the Halong Bay World Heritage area and organization for contracts of anchoring and overnight for tourist boats when needed</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                | <u>Environment management Section</u> <ul style="list-style-type: none"> <li>-Consultation with leaders in building, implementing all projects and plans in environmental protection</li> <li>- Management of environmental monitoring</li> <li>- Organization and cooperation with relevant organizations in report of “Status of natural and socio-economic impacts in Ha Long Bay environment”</li> <li>- Regular report of the status of Ha Long Bay environment based on Environmental protection Law of Vietnam</li> <li>- Cooperation with other relevant organization in propaganda event in environmental protection awareness in Ha Long Bay are</li> <li>- Research and application of technologies in managing and protecting Ha Long Bay environment.</li> </ul> <u>Professions-research section</u> <ul style="list-style-type: none"> <li>-Organization and cooperation with other sections in building plans of managing, exploiting effectively and preserving Heritage zone of Ha Long Bay</li> <li>-Research, survey and building up scientific documents of natural and human resources of Ha Long Bay</li> <li>-Professional reports in managing, effectively exploiting and preserving Heritage zone of Ha Long Bay</li> <li>-Compilation and edit of publication of propaganda, education and promotion of Ha Long Bay heritage</li> <li>-Consultation for leaders in domestic and international cooperation with relevant organizations in managing heritage values and inviting supports from good international organizations.</li> </ul> |
|                | <b>Activities related to Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                | <ul style="list-style-type: none"> <li>-Coordination and supervision of compliance with QCVN.</li> <li>-Monitoring water quality in the bay</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Halong City PC | <b>General Mandate</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                | <ul style="list-style-type: none"> <li>-State management of Halong City</li> <li>- Ensure of administrative system from central to grassroots level</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                | <b>Roles of division in charge of Green Growth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                | <u>Natural resource and Environment Section</u> <ul style="list-style-type: none"> <li>- Report to HLC-PC official instruction documents of implementation all resources and environmental projects.</li> <li>- Making and modifying all plans of land using in scale of Ha Long city, monitor land using projects in scale of ward</li> <li>- Assessment of all documents in selling, buying, renting, transferring reclaiming land and issuing license of land using</li> <li>- Monitoring fluctuation of land using, update and modify documents and maps of land using</li> <li>- Consultation and controlling for all accounting and registering activities</li> <li>- Coordination with DONRE to define prices of land using and renting</li> <li>- Giving compensation and support local people to resettle</li> <li>- Collection and management of all data and environment projects related to protection of land, water and mineral resources in city scale</li> <li>- Making regular reports of status of environment, recommend environmental pollution treatment in craft villages, industrial zones, tourism sites in city scale</li> <li>- Implementation of propaganda of environmental protection and awareness for local people</li> <li>- Organizing regular training courses for relevant staff in resources and environment protection</li> </ul>                                                                                                                                                                                              |

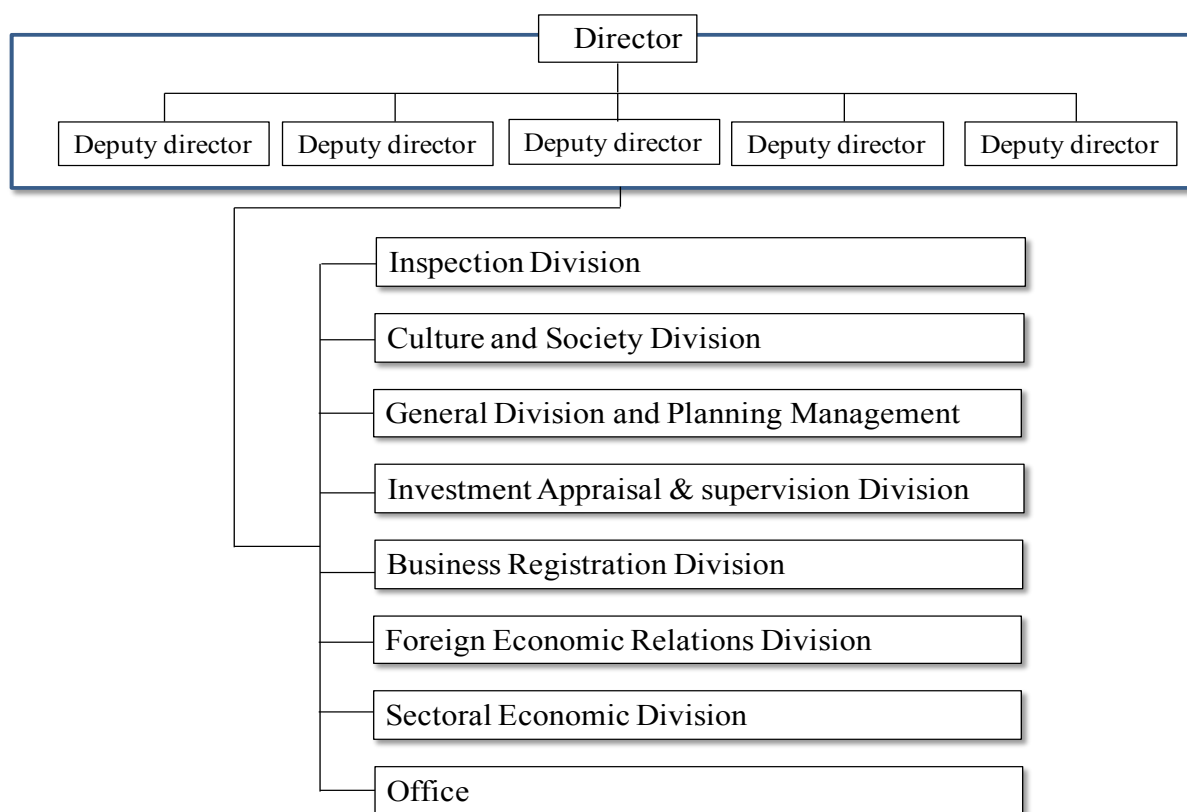
Source: Prepared by JET

添付資料Ⅱ-3  
組織図（2016 年 2 月現在）

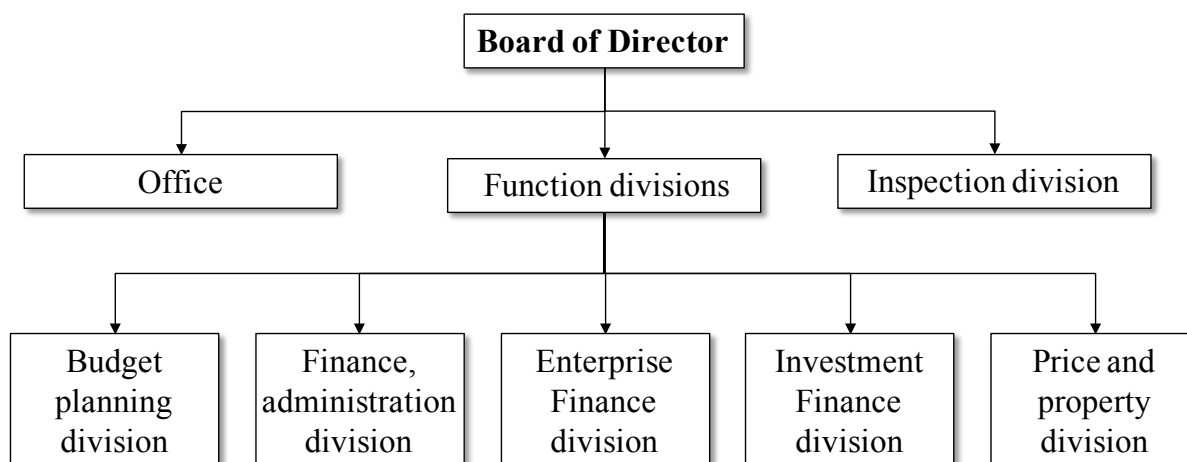
## QN PPC



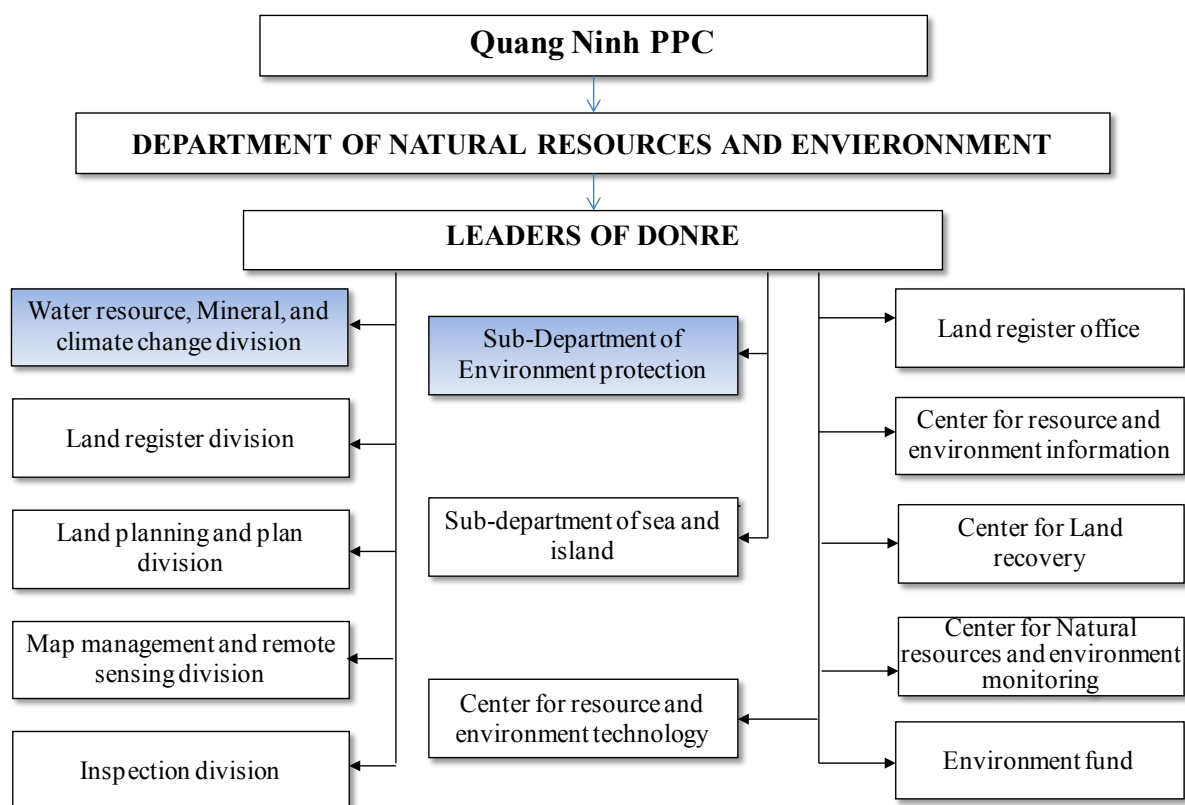
DPI



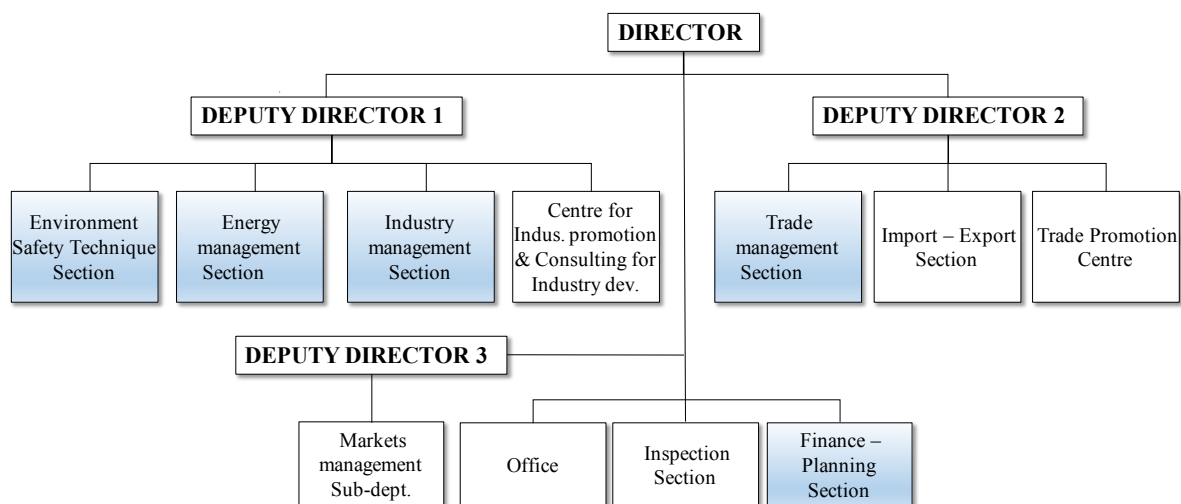
DOF



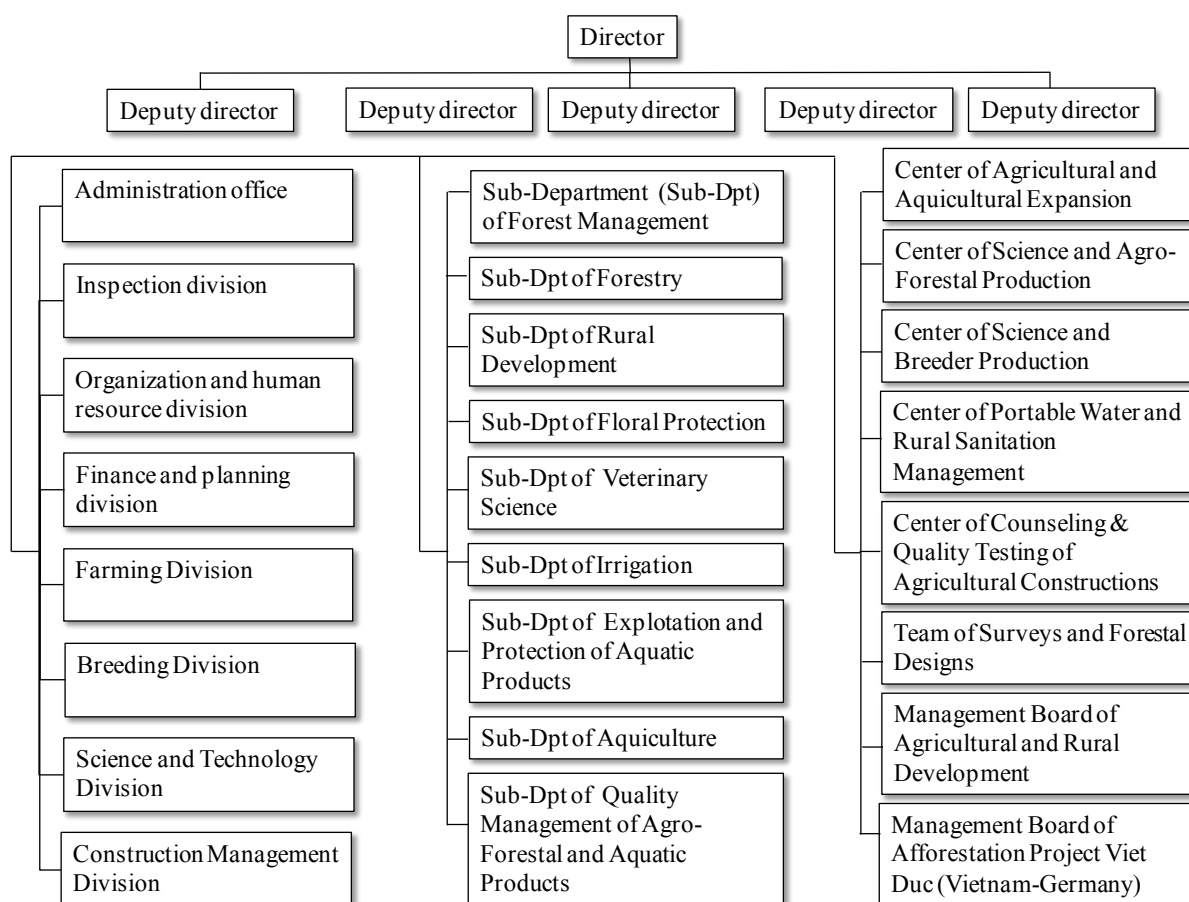
DONRE



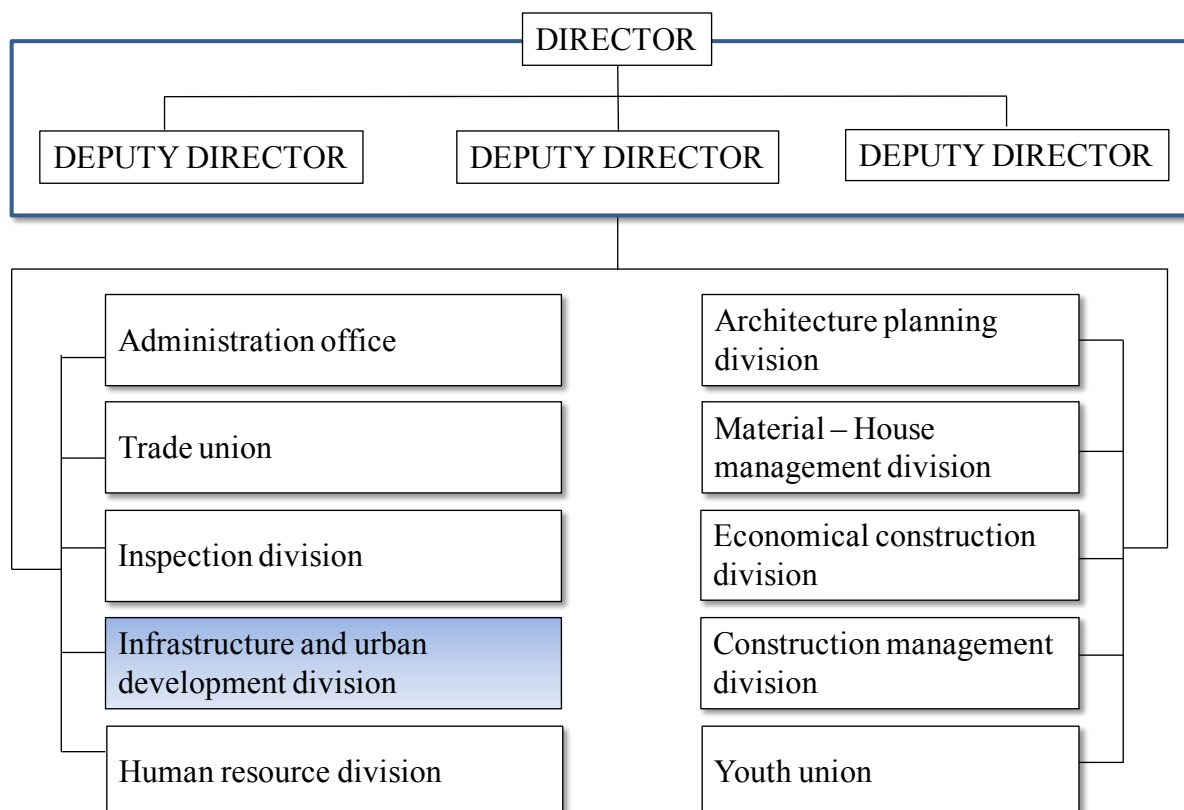
DOIT



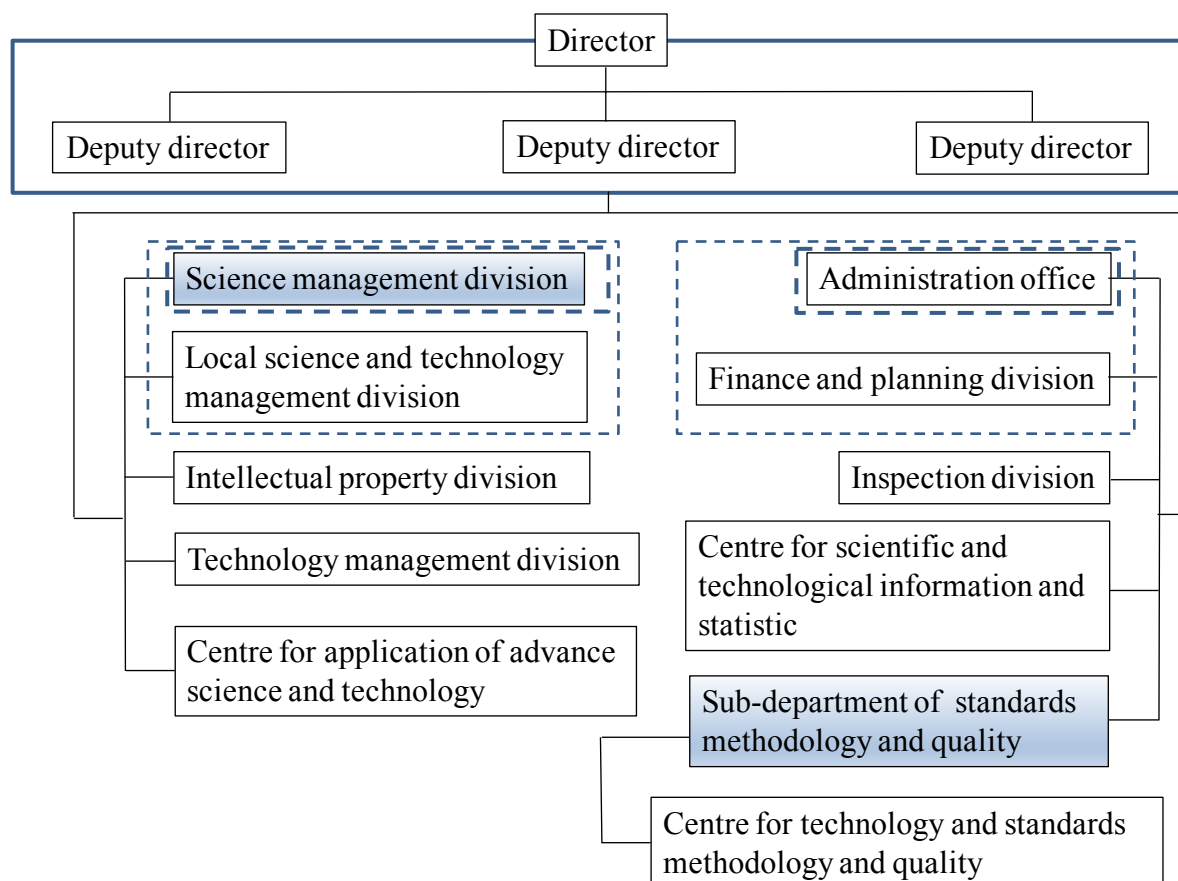
## DARD



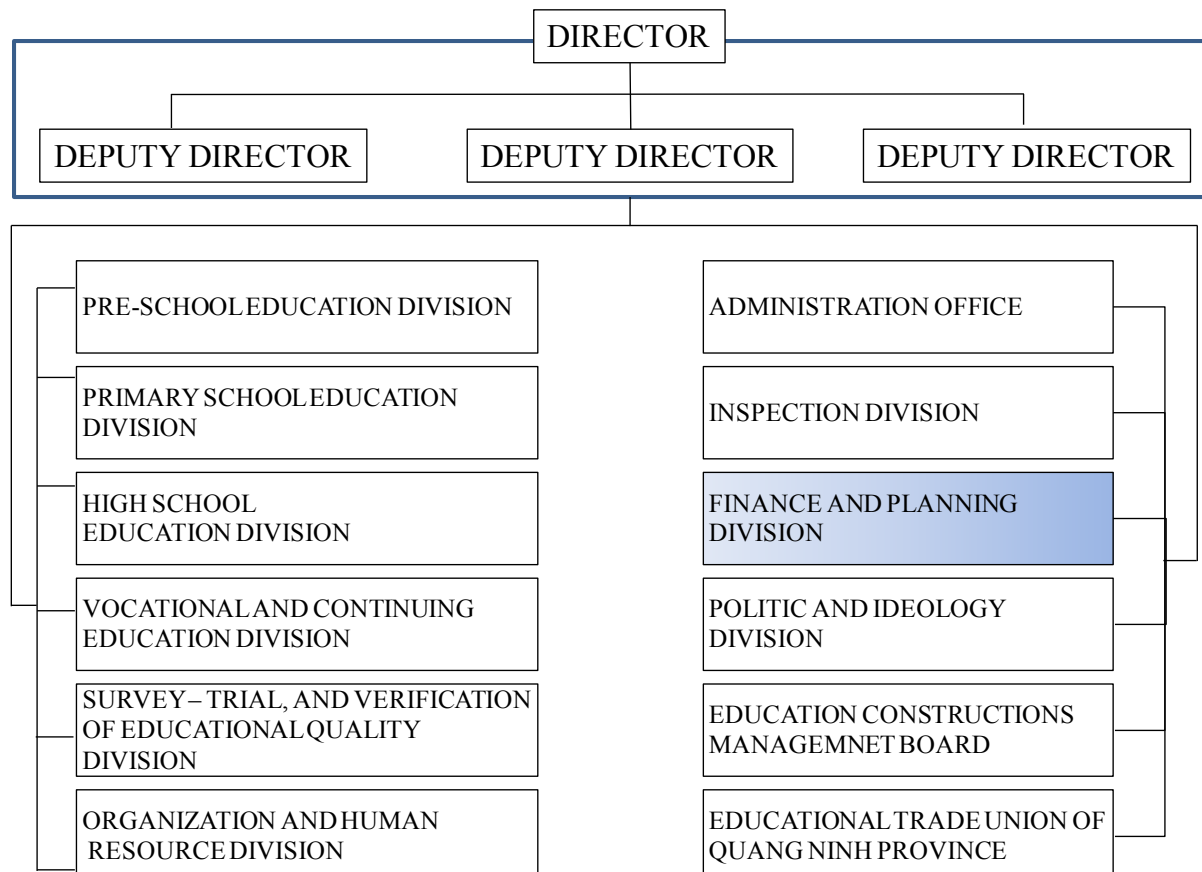
## DOC



## DOST

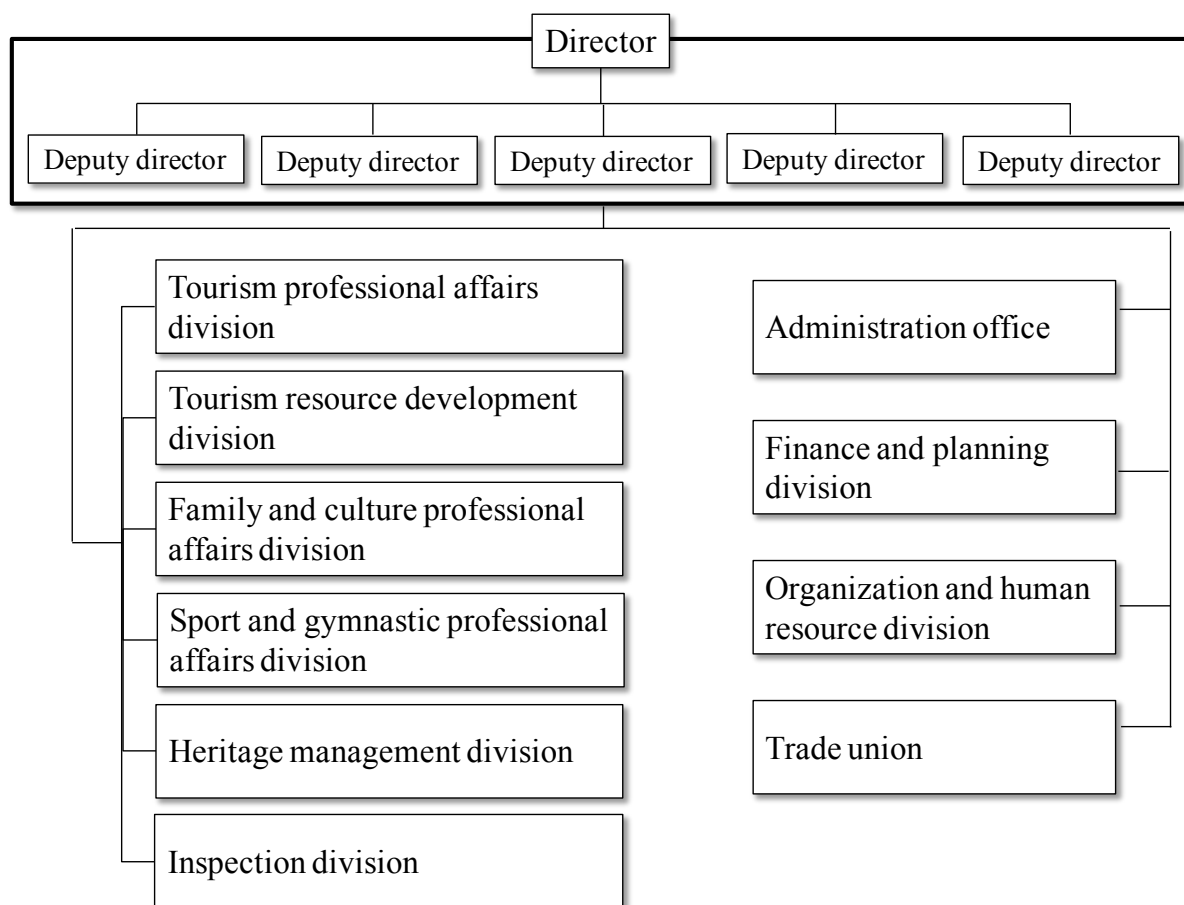


## DOET

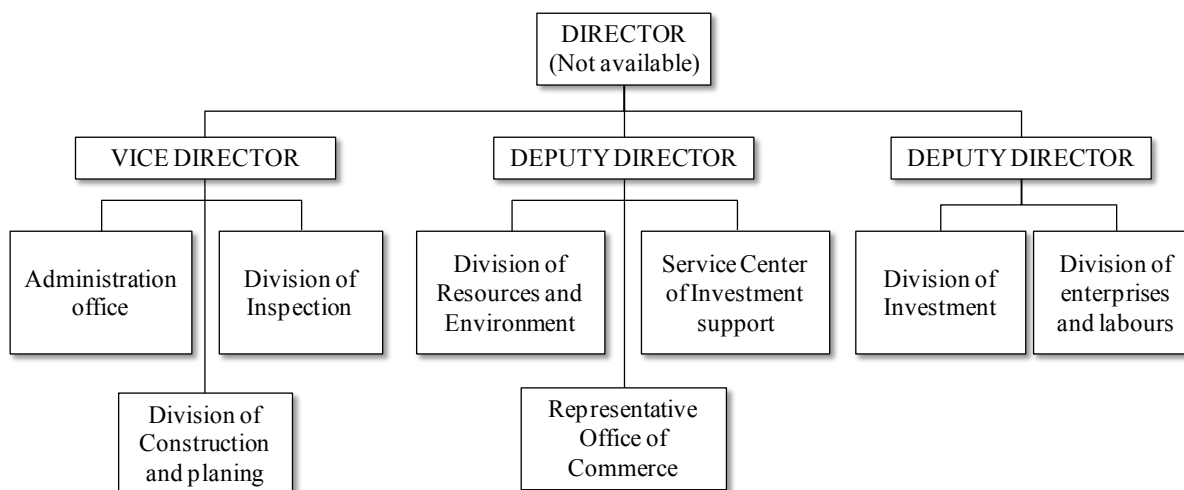




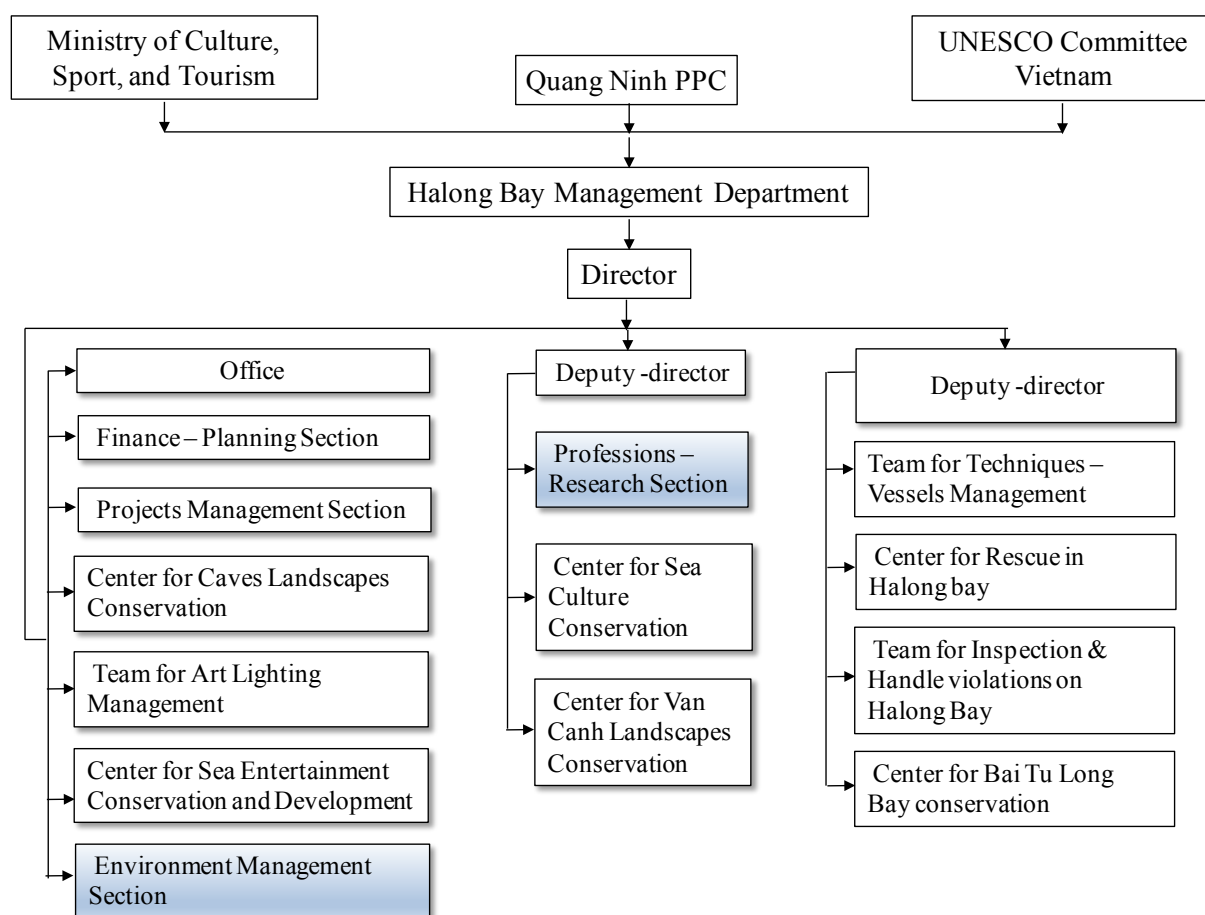
## DCST



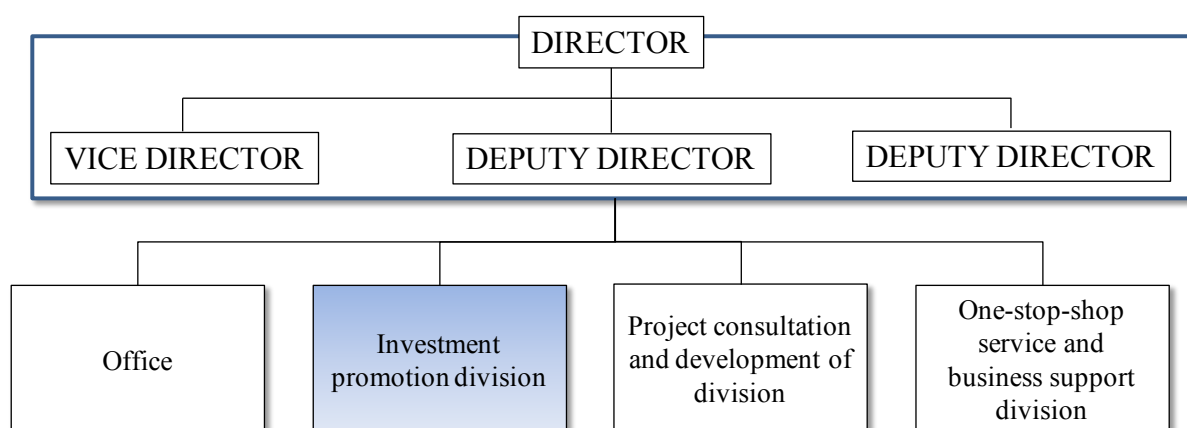
## Economic Zone Management Board



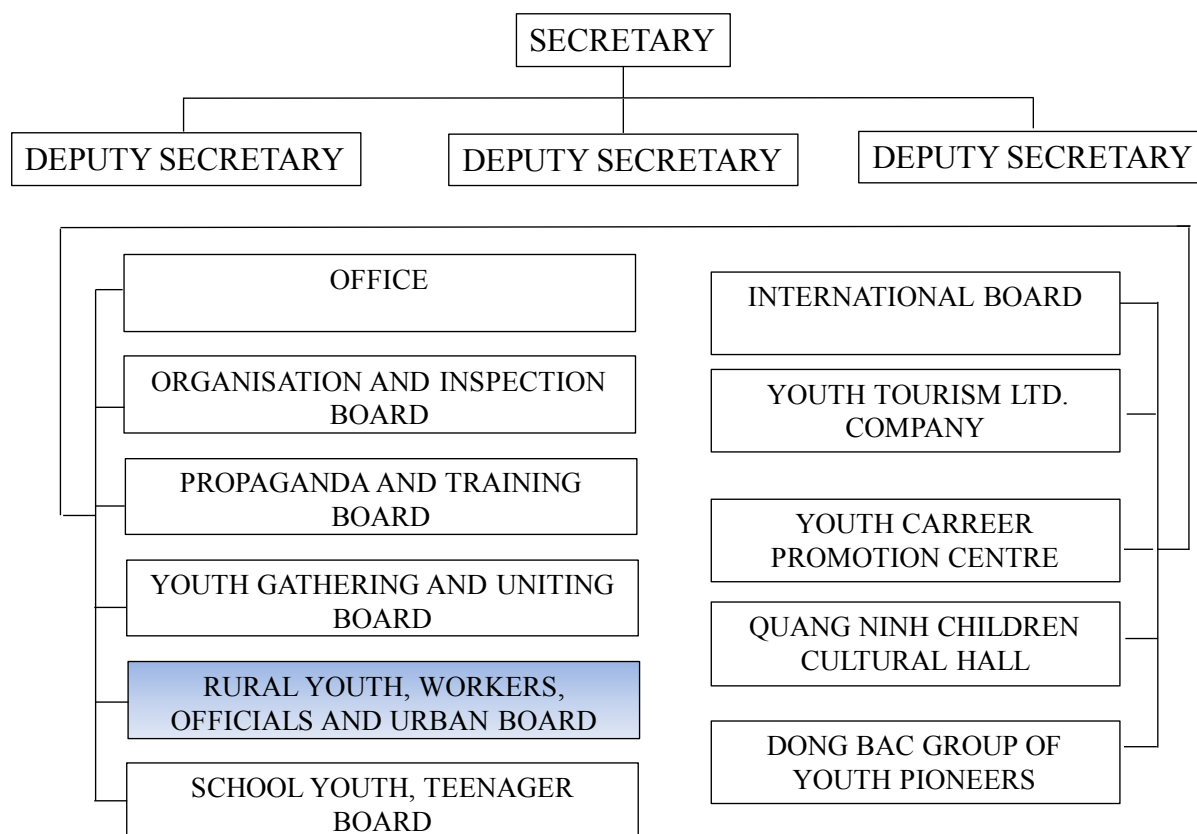
## HBMD



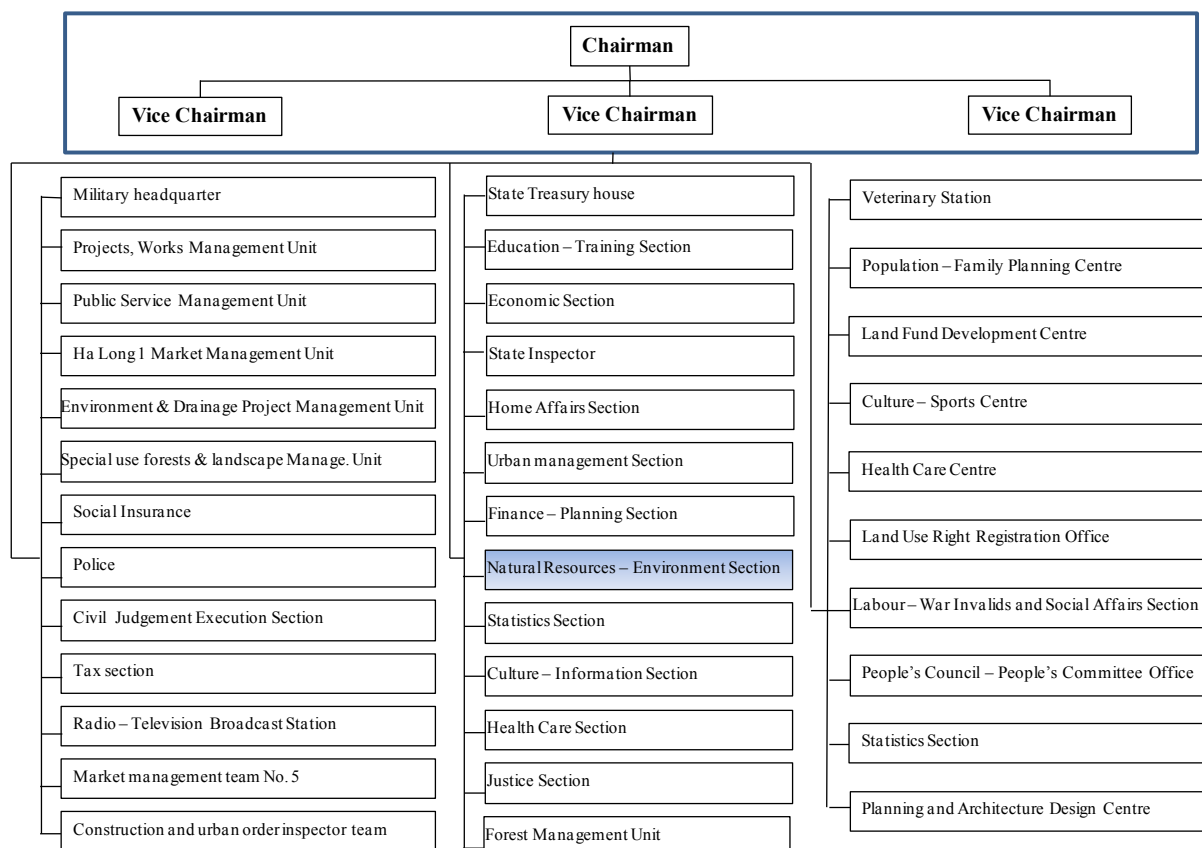
## IPA



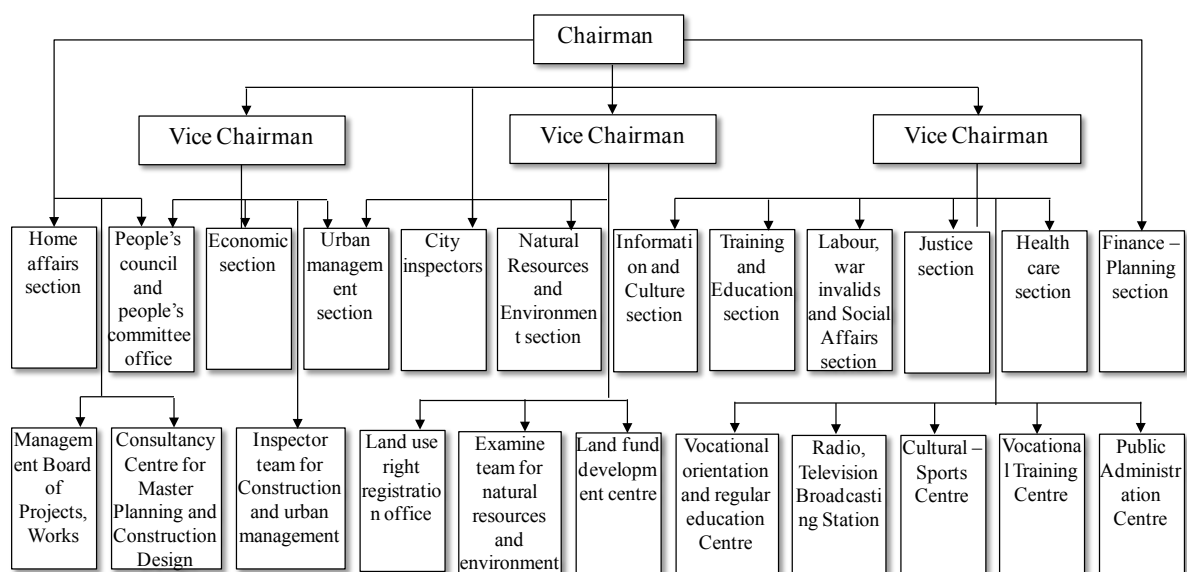
## Youth Union



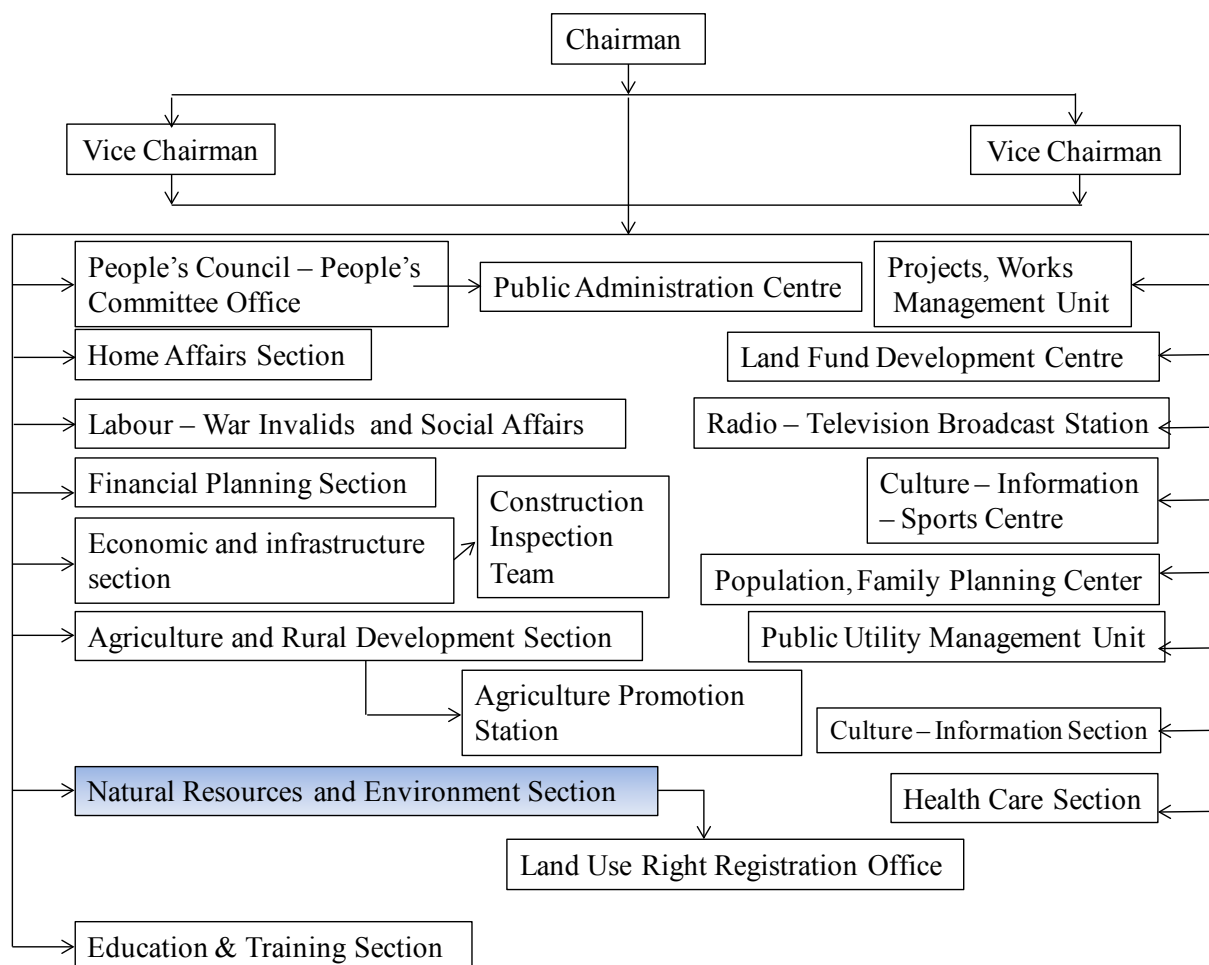
## Halong City



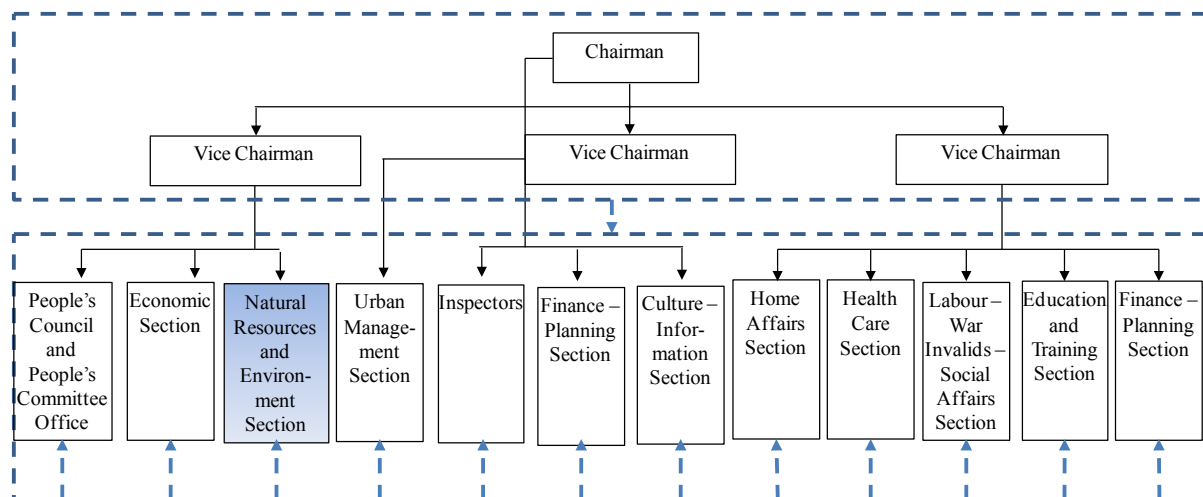
## Cam Pha City



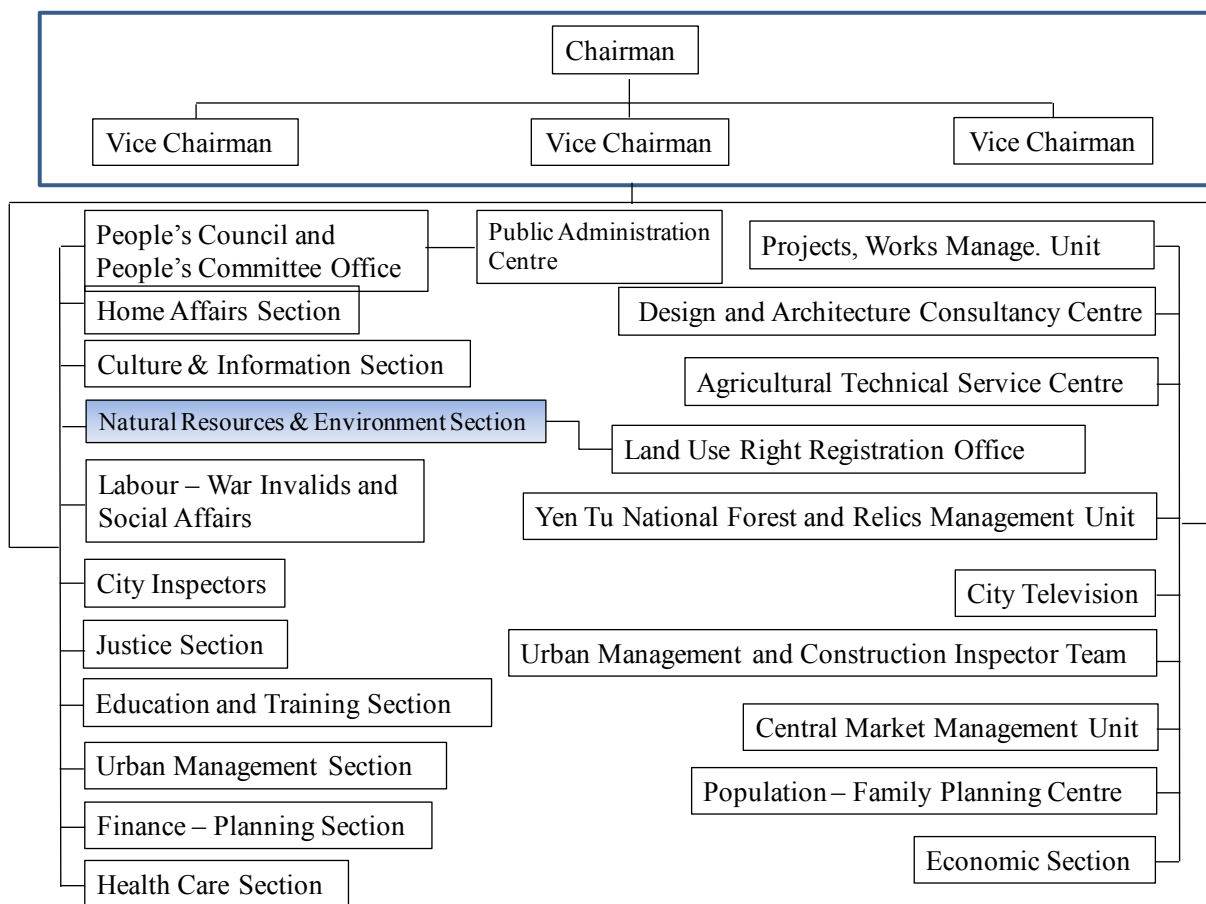
## Hoanh Bo District



## Quang Yen Town



## Uong Bi City



添付資料 II-4  
観光調査質問票

Project for Institutional Development for Green Growth Implementation and Strengthening of  
Environmental Management System towards Sustainable Conservation for the Ha Long Bay in  
Vietnam

Questionnaire for Environmental Performance of Tourism Industry  
(Accommodation)

This survey is intended to estimate environmental performance of tourism industry. The collected data will be used only for analytical purpose.

|                   |                                                     |
|-------------------|-----------------------------------------------------|
| Establishment:    |                                                     |
| Location/Address: |                                                     |
| Contact Number:   |                                                     |
| Grading:          | 5-star   4-star   3-star   2-star   1-star   Others |
| Number of Rooms:  |                                                     |
| Number of Beds:   |                                                     |

|                                                                       |  |
|-----------------------------------------------------------------------|--|
| Number of Permanent Staff:<br>Excluding owner, but including managers |  |
| Number of Seasonal Staff:                                             |  |

|                                        |  |
|----------------------------------------|--|
| Total Number of Guests (2014):         |  |
| Total Number of Tourist-Nights (2014): |  |

|                         |  |
|-------------------------|--|
| Annual Consumption:     |  |
| Electricity (KW):       |  |
| Heavy Oil (FO) (Liter): |  |
| Diesel Oil (Liter):     |  |
| Coal (Ton):             |  |
| Gas (m <sup>3</sup> )   |  |

|                         |  |
|-------------------------|--|
| Water (m <sup>3</sup> ) |  |
|-------------------------|--|

|                              |  |
|------------------------------|--|
| Annual Solid Waste:          |  |
| Kitchen Garbage (Ton):       |  |
| Recyclable Garbage (Ton):    |  |
| Miscellaneous Garbage (Ton): |  |

Note: The amount of each garbage is estimated by measuring for 8 days from Monday to Monday.

|              |  |
|--------------|--|
| 3R Practice: |  |
| Reduce:      |  |
| Reuse:       |  |
| Recycle:     |  |

|                                                                                                         |             |
|---------------------------------------------------------------------------------------------------------|-------------|
| Waste Water Treatment Plant:                                                                            | Yes      No |
| Oil Trap for Kitchen:                                                                                   | Yes      No |
| Quality of Treated Waste Water: (having regularly monitoring or not? The nearest result of monitoring?) |             |

|                                                                           |
|---------------------------------------------------------------------------|
| Any other comments or observation: in regard to Environmental Protection: |
|---------------------------------------------------------------------------|



Project for Institutional Development for Green Growth Implementation and Strengthening of  
Environmental Management System towards Sustainable Conservation for the Ha Long Bay in  
Vietnam

Questionnaire for Environmental Performance of Tourism Industry  
(Restaurant)

This survey is intended to estimate environmental performance of tourism industry. The collected data will be used only for analytical purpose.

|                   |                        |                            |                   |
|-------------------|------------------------|----------------------------|-------------------|
| Establishment:    |                        |                            |                   |
| Location/Address: |                        |                            |                   |
| Contact Number:   |                        |                            |                   |
| Type of Foods:    | Vietnamese<br>European | Other Asian<br>Coffee Shop | Chinese<br>Others |
| Number of Tables: |                        |                            |                   |

|                                                                       |  |
|-----------------------------------------------------------------------|--|
| Number of Permanent Staff:<br>Excluding owner, but including managers |  |
| Number of Seasonal Staff:                                             |  |

|                                |  |
|--------------------------------|--|
| Total Number of Guests (2014): |  |
|--------------------------------|--|

|                         |  |
|-------------------------|--|
| Annual Consumption:     |  |
| Electricity (KW):       |  |
| Heavy Oil (Liter):      |  |
| Diesel Oil (Liter):     |  |
| Coal (Ton):             |  |
| Gas (m <sup>3</sup> )   |  |
| Water (m <sup>3</sup> ) |  |

|                              |  |
|------------------------------|--|
| Annual Solid Waste:          |  |
| Kitchen Garbage (Ton):       |  |
| Recyclable Garbage (Ton):    |  |
| Miscellaneous Garbage (Ton): |  |

Note: The amount of each garbage is estimated by measuring for 8 days from Monday to Monday.

|              |  |
|--------------|--|
| 3R Practice: |  |
| Reduce:      |  |
| Reuse:       |  |
| Recycle:     |  |

|                                                                                                       |             |
|-------------------------------------------------------------------------------------------------------|-------------|
| Waste Water Treatment Plant:                                                                          | Yes      No |
| Oil Trap for Kitchen:                                                                                 | Yes      No |
| Quality of Treated Waste Water (having regular monitoring or not? The nearest result of monitoring?): |             |

|                                                                           |
|---------------------------------------------------------------------------|
| Any other comments or observation: in regard to Environmental Protection: |
|---------------------------------------------------------------------------|

Project for Institutional Development for Green Growth Implementation and Strengthening of  
Environmental Management System towards Sustainable Conservation for the Ha Long Bay in  
Vietnam

Questionnaire for Environmental Performance of Tourism Industry  
(Tourist Boats)

This survey is intended to estimate environmental performance of tourism industry. The collected data will be used only for analytical purpose.

|                               |                                             |
|-------------------------------|---------------------------------------------|
| Boat Company                  |                                             |
| Address:                      |                                             |
| Location of Port:             |                                             |
| Contact Number:               |                                             |
| Number of boats               |                                             |
| Number of staying boats       |                                             |
| Name of surveyed boat         |                                             |
| Number of Maximum Passengers: |                                             |
| Number of Rooms (if any):     |                                             |
| Number of Beds (if any):      |                                             |
| Type of Engine or Fuel        | Diesel   Gasoline   Electric Motor   Others |

|                                                                       |  |
|-----------------------------------------------------------------------|--|
| Number of Permanent Staff:<br>Excluding owner, but including managers |  |
| Number of Seasonal Staff:                                             |  |

|                                          |  |
|------------------------------------------|--|
| Total Number of Passengers (2014):       |  |
| Total Number of Passenger-Nights (2014): |  |

|                     |  |
|---------------------|--|
| Annual Consumption: |  |
|---------------------|--|

|                         |  |
|-------------------------|--|
| Heavy Oil (FO) (Liter): |  |
| Diesel Oil (Liter):     |  |
| Coal (Ton):             |  |
| Gas (m <sup>3</sup> )   |  |
| Water (m <sup>3</sup> ) |  |

|                              |  |
|------------------------------|--|
| Annual Solid Waste:          |  |
| Kitchen Garbage (Ton):       |  |
| Recyclable Garbage (Ton):    |  |
| Miscellaneous Garbage (Ton): |  |

Note: The amount of each garbage is estimated by measuring for 8 days from Monday to Monday.

|              |  |
|--------------|--|
| 3R Practice: |  |
| Reduce:      |  |
| Reuse:       |  |
| Recycle:     |  |

|                                 |             |
|---------------------------------|-------------|
| Waste Water Treatment Plant:    | Yes      No |
| Oil Trap for Kitchen:           | Yes      No |
| Quality of Treated Waste Water: |             |

|                                                                          |
|--------------------------------------------------------------------------|
| Any other comments or observation: in regard to Environmental Protection |
|--------------------------------------------------------------------------|

#### 添付資料 II-5

ハロン湾地域グリーン成長推進プロジェクトに係るエネルギー効率化方策の調査結果

**PREPARATORY STUDY FOR THE PROJECT FOR INSTITUTIONAL DEVELOPMENT FOR  
GREEN GROWTH IMPLEMENTATION AND STRENGTHENING OF ENVIRONMENTAL  
MANAGEMENT SYSTEM TOWARDS SUSTAINABLE CONSERVATION  
FOR THE HALONG BAY IN THE SOCIALIST REPUBLIC OF VIETNAM**

## **Report**

**Energy Efficiency Measures Survey for Project for Green  
Growth Implementation and Strengthening of  
Environmental Management System towards Sustainable  
Conservation for the Halong Bay**

Submitted by:



**June, 2016**

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## BACKGROUND

This report is a part of the project: Preparatory Study for the Project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation for the Halong Bay in the Socialist Republic of Vietnam. The report presents the assessment results from the energy efficiency (EE) measures survey, carried out by the local consultant, RCEE-NIRAS JSC and associated with the International Consultant, Ms. Yuka Nakagawa. The assessment results will provide inputs for the selection of pilot demonstration project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation.

Based on the review of available energy audit reports and energy consumption of selected industrial enterprises provided by the Department of Planning and Investment in Quang Ninh and from other sources, the following 09 industrial enterprises located in Quang Ninh Province have been shortlisted for further assessment:

| No. | Name of the company                                  | Product type               |
|-----|------------------------------------------------------|----------------------------|
| 1   | Vinh Thang Joint Stock Company                       | Glazed- floor tile         |
| 2   | Hoang Ha Colored Ceramics Joint Stock Company        | Ceramic tile               |
| 3   | Vinh Tien Joint Stock Company                        | Brick                      |
| 4   | Lam Thach 2 Cement Company                           | Clinker, cement            |
| 5   | Thang Long Cement Joint Stock Company                | Clinker, cement            |
| 6   | Viglacera Halong Joint Stock Company                 | Ceramic tile               |
| 7   | Intgral Materials Investment Vietnam                 | Metal, rare earth elements |
| 8   | Quang Ninh Seafood Import-Export Joint stock Company | Frozen sefood              |
| 9   | Saigon Halong Hotel                                  | Hotel services             |

Meetings and interviews with the management team of those companies have been conducted from 25-26 May 2016 to discuss the demand and opportunities for energy efficiency as well as the barriers for the implementation of potential energy efficiency measures among industrial enterprises located in Quang Ninh Province, particularly in Halong City.



## 1. ASSESSMENT RESULTS OF ENERGY EFFICIENCY MEASURES SURVEY

This section summarizes the key findings from the interviews with selected industrial enterprises in Quang Ninh Province. The detailed program of the survey is presented in Annex A of the report. It is noted that 08 among 09 selected industrial enterprises are designated energy consumers<sup>1</sup>.

Key findings from the survey with selected enterprises:

- Management of local enterprises show their interest in energy efficiency opportunities and are willingness to cooperate for development EE investment projects if feasible
- Most selected enterprises are well aware of EE measures that can be applied for their production facilities. Most responses show no technical barriers for development of EE investment project. And most of them have their investment plans for EE projects.
- All surveyed enterprises show their demand for financial support for their EE investment projects to overcome the challenges of high investment cost but low savings of this type of investment.
- Only 1 surveyed enterprise is aware of ESCO model. However, with more information and explanation, all of surveyed enterprises confirm their interest in ESCO model if feasible.

### 1.1 Vinh Thang Joint Stock Company

#### 1.1.1 Brief introduction

|                                |   |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name                   | : | Vinh Thang Joint Stock Company                                                                                                                                                                                                                                                                                                                                                                |
| Address                        | : | Kim Son Industrial Cluster, Kim Son ward, Dong Trieu town, Quang Ninh Province                                                                                                                                                                                                                                                                                                                |
| Type of product                | : | Glazed- floor tile                                                                                                                                                                                                                                                                                                                                                                            |
| Ownership                      | : | Private                                                                                                                                                                                                                                                                                                                                                                                       |
| Production capacity            | : | 9 million m <sup>2</sup> of product per year                                                                                                                                                                                                                                                                                                                                                  |
| Type of fuel consumption       | : | Electricity, coal and DO                                                                                                                                                                                                                                                                                                                                                                      |
| Total energy consumption       | : | Total energy consumption in 2013: 14.138 million kWh of electricity, 31.02 thousand tons of coal and 199 tons of DO.<br>Total energy consumption in 2014: 16.04 million kWh of electricity, 26.882 thousand tons of dust coal and 184 tons of DO.<br>Total energy consumption in first 10 months in 2015: 16,522 million kWh of electricity, 22.987 thousand tons of coal and 130 tons of DO. |
| Major energy load by equipment | : | + Electricity is used for most equipment, such as: material crushers, enamel mills, exhaust fans, smoke fans, compressors, tile pressing machines, conveying motors, mixing motors, etc.<br>+ Compressed air is used in the technological processes<br>+ DO is used for lift tracks system and electricity generation system.<br>+ Coal is used for coal gasification furnace.                |

<sup>1</sup> Accordance to Decision No. 1535/QĐ-TTg dated 28/08/2014, enterprises with energy consumption of over 1,000 TOE are categorized as Designated Energy Consumers (DEC)

+ Coal gasification is used for spraying drying furnace, materials drying furnace, kilns system.

### 1.1.2 Energy Efficiency Situation

Energy audit were carried out in Vinh Thang JSC in the year 2015 and a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                                                                           | Energy savings         |                  | Cost savings (USD) | Investment cost (USD) |
|-----|----------------------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                                                | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Check, monitor and timely handle the compressed air leaks                                                      | 107,828.00             |                  | 6,400.91           | 3,409.09              |
| 2   | Installation of speed control equipment for exhaust fans at the end of furnaces No. 1 and No. 2                | 80,201.00              |                  | 4,760.91           | 6,325.00              |
| 3   | Re-arrangement of production activities at the raw crusher workshop to avoid peak hours for saving energy cost |                        |                  | 20,006.36          | -                     |
| 4   | Installation of inverter for compressor in mechanical workshop                                                 | 139,320.00             |                  | 8,270.45           | 16,220.45             |
| 5   | Installation biomass burners (rice husk, woodchip) used for drying materials in spraying drying tower          |                        | 2,603.00         | 119,041.36         | 79,545.45             |
| 6   | Installation of speed control equipment for the furnace heat exchange fan                                      | 162,509.00             |                  | 9,647.27           | 13,311.36             |

Since the last energy audit, Vinh Thang has implemented some EE measures, including:

- Internal management:  
Limitation of unload mode of machines by close coordination between departments, workshops in manufacturing management; Strengthening monitor activities for big motors, machines; Recording operating history and do maintenance in necessary.  
Using heat exhaust from kilns for drying furnace, instead of using fuel for drying process.  
Company has policies about energy, SEC to assess the production status.  
Using natural lights.
- Measures for improvement of EE for equipment:

- Take advantage of natural lights in workshops and warehouses.
- Installation of reactive power compensation system to ensure power factor  $\cos \phi > 0,9$ .
- Installation of inverter for motor of air supply fan of coal gasification furnace.
- Using heat of exhaust gas of kiln to preheat tiles before kiln.

### 1.1.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Vinh Thang JSC:

| No. | Energy Efficiency projects                                                                                    | Priority | Project Schedule | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Arrangement reasonable production activities of raw crusher workshop to take advantages of Electricity tariff | 1        | 2016             | N/I                   |
| 2   | Installation of raw material agitator                                                                         | 1        | 2016             | 20,000                |
| 3   | Installation of Variable Speed Drive (VSD) for raw mill                                                       | 1        | 2016             | 15,000                |
| 4   | Fluidized bed burner installation to utilize coal scrap                                                       | 2        | 2017             | 200,000               |
| 5   | Revamping the dust filter                                                                                     | 2        | 2017             | N/I                   |

### 1.1.4 Conclusion and Recommendations

Vinh Thang JSC is interested in energy saving because energy cost accounts for 40% of their production cost per product, with intensive energy used equipment.

The EE measures of Vinh Thang high priority are of feasible and of high potential for replication in other factories. Also, Vinh Thang JSC is very interested to invest in potential EE investment projects which is of their high priority, however they are looking for financial solutions to arrange the investment. Vinh Thang management level is well aware of ESCO model and they are interested in cooperation for this model for relevant EE projects.

The Consultant recommend that further assessment on potential EE measures at Vinh Thang JSC for cooperation to develop pilot project.

## 1.2 Hoang Ha Colored Ceramics Joint Stock Company

### 1.2.1 Brief introduction

Company name : Hoang Ha Colored Ceramics Joint Stock Company  
 Address : Kim Son Industrial Cluster, Dong Trieu District, Quang Ninh province

|                                |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of product                | : | Ceramic tile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ownership                      | : | Private                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Production capacity            | : | 7,402,939 m <sup>2</sup> ceramic tile in total (in 2013)                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Type of fuel consumption       | : | Electricity, dust coal, solid coal 4A, coal-gas (from coal gasification), Diesel oil (DO), gas (LPG).                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Total energy consumption       | : | Total energy consumption in 2012: 10,393,074 kWh of electricity; 12,282.37 tons of dust coal; 18,109.1 tons of solid coal; 23,099 kg of DO;<br>Total energy consumption in 2013: 14,398,631 kWh of electricity; 13,852 tons of dust coal; 20.982 tons of solid coal; 288,600 kg of DO.                                                                                                                                                                                                                                                 |
| Major energy load by equipment | : | Electricity is used for almost activities in company: electric motors, lightings system...<br>Dust coal is used for material drying process with 03 coal chain kilns, and supplies hot air for 03 material drying boxes.<br>Solid coal 4A is used for coal gasification process to supply coal-gas for tile drying process and kiln.<br>DO is used for preventive electricity generation system and lifting-lowering trucks system in factory.<br>Gas is used for cooking, machining and repairing in mechanical workshops in factory. |

### 1.2.2 Energy Efficiency Situation

Energy audit were carried out in Hoang Ha JSC in the year 2014 and a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                                                                                                                      | Energy savings         |                  | Cost savings (USD) | Investment cost (USD) |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                                                                                           | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Installation the timers and turn-off automatically controllers for the crushers, limit excess time of the crushers and ensure to optimize technology time | 5,145.8                |                  | 322.73             | 681.82                |
| 2   | Installation of inverters to change motor's speed to change the stirring vanes' speed according to necessary standards of technology                      | 7,800.0                |                  | 492.27             | 795.45                |
| 3   | Installation more power control equipment by Power Boss in case of changes in load of motors                                                              | 17,481.0               |                  | 1,103.64           | 4,318.18              |
| 4   | Installation of the timers (rounds) and automatically stop the engine on demand of technology                                                             | 2,437.5                |                  | 153.64             | 681.82                |
| 5   | Use the central controller to control the working mode of compressors on-demand of output pressure appropriately                                          | 27,222.0               |                  | 1,718.18           | 3,181.82              |

|   |                                                                                      |          |  |          |          |
|---|--------------------------------------------------------------------------------------|----------|--|----------|----------|
| 6 | Installation of inverters for compressors to maintain a minimum pressure in the tank | 64,584.0 |  | 4,077.27 | 8,181.82 |
|---|--------------------------------------------------------------------------------------|----------|--|----------|----------|

Since the last energy audit, Hoang Ha has implemented some EE measures, including:

- Installation of automatic coal intake system, saving 10% of coal consumption.
- Installation of 10 VSD for raw grinding system, a capacity of 200 kW / engine.
- Installation of 10 VSD for glazed grinding system, a capacity of 37kW / engine.

### 1.2.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Hoang Ha JSC:

| No. | Energy Efficiency projects                               | Priority | Project Schedule | Investment cost (USD) |
|-----|----------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Improve capacity management                              | 1        | 2016             | N/I                   |
| 2   | Install equipment after the substation for saving energy | 2        | N/I              | 1,000,000             |

### 1.2.4 Conclusion and Recommendations

Hoang Ha JSC is interested in EE measures for improving their energy cost.

Hoang Ha JSC has no technical barrier to invest in their EE measure: Install equipment after the substation for saving energy, however they are lacking of financial capital for investment.

Because the potential EE investment project developed by Hoang Ha JSC is of large scale investment, Hoang Ha JSC should be not appropriate for further assessment to develop pilot project.

## 1.3 Vinh Tien Joint Stock Company

### 1.3.1 Brief introduction

|                          |   |                                                                                                                                                                                                                                                   |
|--------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name             | : | Vinh Tien Joint Stock Company                                                                                                                                                                                                                     |
| Address                  | : | Mao Khe ward, Dong Trieu town, Quang Ninh province                                                                                                                                                                                                |
| Type of product          | : | Brick                                                                                                                                                                                                                                             |
| Ownership                | : | Private                                                                                                                                                                                                                                           |
| Production capacity      | : | 13.499 thousand bricks (2014)                                                                                                                                                                                                                     |
| Type of fuel consumption | : | Electricity, coal, Diesel oil (DO)                                                                                                                                                                                                                |
| Total energy consumption | : | Total energy consumption in 2012: 1.46 million kWh of electricity; 1513 tons of dust coal type 5; 58310 liters of DO.<br>Total energy consumption in 2013: 1.57 million kWh of electricity; 1144 tons of dust coal type 5 and 52120 liters of DO. |

Total energy consumption in first 6 months in 2012: 1.48 million kWh of electricity, 1280 tons of dust coal type 5 and 46040 liters of DO.

Major energy load by equipment : Electricity is used mainly for almost equipment and machines in factory, such as: crushers, brick pressing machines, compressors, conveying motors, mixing motors, kiln fans system, ...

Coal is used for product shape forming process and process in kiln.

Compressed air is used for technological processes in manufacturing lines.

### 1.3.2 Energy Efficiency Situation

Energy audit were carried out in Vinh Tien JSC in the year 2015 and a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                                                              | Energy savings         |                  | Cost savings (USD) | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                                   | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Installation of inverters for the exhaust fan which blows from kiln to drying furnace             | 12,481.0               | -                | 828.64             | 2,181.82              |
| 2   | Installation of power control equipment for mixing motor of product forming machine               | 28,235.0               | -                | 1,875.00           | 4,595.45              |
| 3   | Installation of power control equipment for kneading machines 30kW (02 machines)                  | 15,423.0               | -                | 1,024.09           | 3,231.82              |
| 4   | Use MazNitro DX2 additives mixed with diesel fuel for forklift trucks and material trucks systems | -                      | 2,670.3          | 2,426.36           | 1,465.00              |

Since the last energy audit, Vinh Tien JSC has implemented some EE measures, including:

- Installation of reactive power compensation system to ensure power factor  $\cos \phi > 0,9$ .
- Installation of inverter for exhaust fans system of kiln
- Using heat of exhaust gas of kiln to preheat bricks before kiln
- Change the engine with a capacity matching
- Installation control device of large capacity engine.

### 1.3.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Vinh Tien JSC:

| No. | Energy Efficiency projects                    | Priority | Project Schedule | Investment cost (USD) |
|-----|-----------------------------------------------|----------|------------------|-----------------------|
| 1   | Upgrade the machine shaping and drying system | 1        | 2018 - 2019      | 1,000,000             |
| 2   | Installation control equipment                | 2        | 2017 - 2018      | 5,000- 7,500          |

#### 1.3.4 Conclusion and Recommendations

The factory has small scale production and no experience in EE investment. Vinh Tien JSC is interested in technology improvement, however they are facing financial difficulties.

The high priority of the factory is to replace their existing production line with an advance technology, which is a large investment and the project is of low potential for replication in other factories in the sector. Therefore, Vinh Tien JSC should be not appropriate for further assessment to develop pilot project.

### 1.4 Lam Thach 2 Cement Company

#### 1.4.1 Brief introduction

|                                |   |                                                                                                                                                                                                                                                                                                   |
|--------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name                   | : | Quang Ninh Cement and Construction Joint Stock Company – Lam Thach 2 Cement Company                                                                                                                                                                                                               |
| Address                        | : | Phuong Nam ward, Uong Bi City, Quang Ninh Province                                                                                                                                                                                                                                                |
| Type of product                | : | Clinker, cement (C <sub>pc</sub> 50, PCB30, PCB40)                                                                                                                                                                                                                                                |
| Ownership                      | : | Private                                                                                                                                                                                                                                                                                           |
| Production capacity            | : | 02 clinker lines, 360,000 tons of clinker/year (450,000 tons of cement/year) in each line.<br>806,183 tons of clinker (in 2013), 100,392 tons of PCB 30 Cement and 142,601 tons of PCB 40 Cement.                                                                                                 |
| Type of fuel consumption       | : | Electricity, coal                                                                                                                                                                                                                                                                                 |
| Total energy consumption       | : | Total energy consumption in 2012: 73,216,692 kWh of electricity and 129,325 tons of coal.<br>Total energy consumption in 2013: 73,799,861 kWh electricity and 126,663 tons of coal.<br>Total energy consumption in first 6 months in 2014: 39,022,170 kWh of electricity and 58,392 tons of coal. |
| Major energy load by equipment | : | + Electricity is used for almost equipment in factory, such as: Rotary kiln, crushers, pumps, fans, compressors, conveying machine, lifting bucket ...<br>+ Dust coal is used for combustion in kiln and in calciner.<br>+ DO is used for additional combustion in necessary.                     |

#### 1.4.2 Energy Efficiency Situation

Energy audit were carried out in Lam Thach 2 Company in the year 2014 and a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                                                                                         | Energy savings (USD)   |                  | Cost savings (USD) | Investment cost (USD) |
|-----|------------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                                                              | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Installation of inverters for clinker cooling fans                                                                           | 558,502                |                  | 33,681.82          | 70,630.91             |
| 2   | Installation Powerbosses for materials lift up buckets to heat exchange towers No. 07c.01 and 15c.01                         | 42,778                 |                  | 2,580.00           | 7,765.91              |
| 3   | Installation of inverters for water pumping motor of conditioning tower                                                      | 77,030                 |                  | 4,645.45           | 9,575.91              |
| 4   | Installation of inverters for circulatory fans of coal mill machines No. 08:11 and 19:11                                     | 173,629                |                  | 10,471.36          | 22,264.09             |
| 5   | Improvement of the cooling towers system and the installation of speed control equipment for fans of hot water cooling tower | 28,512                 |                  | 1,719.55           | 2,292.73              |
| 6   | Installation of control device for cooling pumps system                                                                      | 43,264                 |                  | 2,609.09           | 5,082.73              |
| 7   | Make use of exhaust heat from clinker kilns and discharged air from the clinker cooling process to generate electricity      | 15,667,200             |                  | 769,762.27         | 5,836,363.64          |
| 8   | Using E-plus biological waste mixed with fuel to increase combustion efficiency                                              |                        | 6,080            | 157,384.55         | 369,625.45            |

Since the last energy audit, Lam Thach 2 Company has implemented some EE measures, including:

- Improve capacity management.
- Installation VSD for clinker cooler with power 37 kW and 45 kW.

#### 1.4.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Lam Thach 2 Company:



| Stt | Energy Efficiency projects                           | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Construction of waste heat recycling power generator | 1        | 2017             | 9,000,000             |
| 2   | Installation inverter for fan and compressor         | 2        | N/I              | 500,000               |
| 3   | Increase operating time furnaces                     | 1        | N/i              | N/I                   |

#### 1.4.4 Conclusion and Recommendations

The EE measure of highest priority for Lam Thach 2 Cement Plant is waste heat recovery project, which is of very large scale investment. Despite their willingness to further development of this investment project, they are facing the financial difficulties.

Due to their high investment cost, potential EE measure developed by Lam Thach 2 is not appropriate for further assessment as a pilot project.

### 1.5 Thang Long Cement Joint Stock Company

#### 1.5.1 Brief introduction

|                                |   |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name                   | : | Thang Long Cement Joint Stock Company                                                                                                                                                                                                                                                                                                                                                                                        |
| Address                        | : | Le Loi commune, Hoanh Bo district, Quang Ninh province                                                                                                                                                                                                                                                                                                                                                                       |
| Type of product                | : | Clinker, cement                                                                                                                                                                                                                                                                                                                                                                                                              |
| Ownership                      | : | Private                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Production capacity            | : | 6,000 tons of clinker/day (2.3 million tons of cement/year).<br>1,817,121 tons of Clinker and 905,429 tons of Cement (in 2013)                                                                                                                                                                                                                                                                                               |
| Type of fuel consumption       | : | Electricity, coal, Diesel Oil                                                                                                                                                                                                                                                                                                                                                                                                |
| Total energy consumption       | : | Main energy consumption in 2012: 148.96 million kWh of electricity; 236,641 tons of coal and 1,177,317 liters of Diesel Oil (DO).<br>Main energy consumption in 2013: 149.64 million kWh of electricity; 287,856 tons of coal and 890,449 liters of DO.<br>Main energy consumption in first 7 months in 2014: 86.2 million kWh of electricity; 165,786 tons of coal and 764,970 liters of DO.                                |
| Major energy load by equipment | : | Electricity is used for almost equipment in factory, such as: hammer crusher, crushers, rotary kiln's motors, fans system, dust filter, disjunction, packing, conditioner, lightings, compressors...<br>Compressed air is used for controlling, dust filtering, packing and in kiln processes ...<br>DO is used for starting kiln process and additional combustion in necessary<br>Water is used for cooling big equipment. |

### 1.5.2 Energy Efficiency Situation

Energy audit were carried out in Thang Long Cement JSC in the year 2014 and a number of energy efficiency opportunities have been identified as follow:

| Stt | Potential Energy Efficiency Measures                                                                                    | Energy savings (USD)   |                  | Cost savings (USD) | Investment cost (USD) |
|-----|-------------------------------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                                                         | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Improvement of Lighting System                                                                                          | 161,568.0              |                  | 10,459.09          | 10,504.55             |
| 2   | Installation of the coordinating controller for compressors station                                                     | 219,186.0              |                  | 14,186.36          | 32,272.73             |
| 3   | Installation of Powerboss for bucket refluxed motor, code 1E1M121                                                       | 45,147.0               |                  | 2,922.73           | 8,436.36              |
| 4   | Installation of inverter for conditioning tower water pump motor                                                        | 168,854.0              |                  | 10,927.27          | 13,636.36             |
| 5   | Installation of inverters for water pump motor, code 1D1M174 & 1D1M175                                                  | 202,528.0              |                  | 13,109.09          | 10,681.82             |
| 6   | Installation of inverters for air supply fan motor of clinker kiln                                                      | 508,622.0              |                  | 32,922.73          | 90,204.55             |
| 7   | Make use of exhaust heat from clinker kilns and discharged air from the clinker cooling process to generate electricity | 54,627,744.0           |                  | 3,016,890.91       | 17,300,409.09         |
| 8   | Use nano-enzyme G5CC93 additives to increase combustion efficiency of coal fuel                                         |                        | 13,817           | 118,600.00         | -                     |

Since the last energy audit, Thang Long Cement JSC has implemented some EE measures, including:

- Strengthening internal management and maintenance equipment.
- Developments ISO 50001 (not completed).

### 1.5.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Thang Long Cement JSC:

| No. | Energy Efficiency projects                                 | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Construction of waste heat recycling power generator       | 1        | 2017-2019        | 17,272,272            |
| 2   | Improving lighting system (indoor and outdoor)             | 2        | 2016             | 11,360                |
| 3   | Installing the inverter to motor of air supply fan of kiln | 3        | 2017-2019        | 100,000               |

#### 1.5.4 Conclusion and Recommendations

Thang Long Cement Plant shows their interest in EE activities and is willingness to cooperate for the development of EE investment project.

Among the EE measures of high priority by Thang Long Cement Plant, the EE lighting project is most feasible with low investment cost and short term payback period. This type of EE project is also of high potential for replication among industrial enterprises. Therefore, Thang Long Cement Plant can be considered appropriate for further assessment to develop as a candidate for pilot project.

### 1.6 Viglacera Halong Joint Stock Company

#### 1.6.1 Brief introduction

|                                                              |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name                                                 | : | Viglacera Halong Joint Stock Company (having 04 factories producing tiles: Tieu Dao Factory, Hoanh Bo Factory, Cotto Gieng Day, and Clinker Company)                                                                                                                                                                                                                                                                                                                                                     |
| Address                                                      | : | Ha Long city, Quang Ninh province                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Type of product                                              | : | Ceramic tile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ownership                                                    | : | Private                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Production capacity (For Cotto Gieng Day factory)            | : | 2,205,335 m <sup>2</sup> ceramic tile type 300 and 3,440,376 m <sup>2</sup> ceramic type 400 (in 2014)                                                                                                                                                                                                                                                                                                                                                                                                   |
| Type of fuel consumption (For Cotto Gieng Day factory)       | : | Electricity, Gas (LPG), Diesel oil (DO), dust coal 3c, solid coal 4b.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Total energy consumption (For Cotto Gieng Day factory)       | : | Total energy consumption in 2012: 21.48 million kWh of electricity, 32 tons of gas, 260,465 liters of DO, 12,417 tons of dust coal and 13,853 tons of solid coal.<br>Total energy consumption in 2013: 21.42 million kWh of electricity, 64.8 tons of gas, 416,213 tons of DO, 13,147 tons of dust coal and 17,405 tons of solid coal.<br>Total energy consumption in 2014: 21 million kWh of electricity, 25 tons of gas, 414,246 liters of Do, 14,840 tons of dust coal and 16,775 tons of solid coal. |
| Major energy load by equipment (For Cotto Gieng Day factory) | : | Electricity is used for almost equipment and machines in factory, such as: crushers, exhaust fans, tile pressing machine, compressors, conveying motors, mixing motors, etc.<br>Coal is used for gasification process which supply fuel for kilns.                                                                                                                                                                                                                                                       |

Compressed air is used for technological processes in manufacturing lines.

#### 1.6.2 Energy Efficiency Situation

Energy audit were carried out in Viglacera Halong JSC in the year 2015 and a number of energy efficiency opportunities have been identified at different factories owned by Viglacera Halong as follow:

| No. | Potential Energy Efficiency Measures                                                                    | Energy savings (USD)   |                  | Cost savings (USD) | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                                         | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Strengthen kilns insulation system                                                                      |                        | 118              | 15,714.55          | 14,727.27             |
| 2   | Make use of exhaust heat to heat the feed water and strengthen condensate recovery of canteen boiler    |                        | 8                | 1,334.09           | 4,090.91              |
| 3   | Adjust to strengthen the inverter efficiency of exhaust fans at the top of furnaces                     | 68,880                 |                  | 4,646.36           | 5,681.82              |
| 4   | Adjust to strengthen the inverter efficiency of exhaust fans at the end furnaces and fire support fans. | 295,456                |                  | 19,930.00          | 13,863.64             |
| 5   | Installation of inverters for circulating water pump No. M1, M8 and M13                                 | 63,392                 |                  | 4,275.91           | 5,035.45              |

Since the last energy audit, Viglacera Halong JSC has implemented some EE measures, including:

- Implementing fuel switch, increased productivity fires.
- Increased internal audit.
- Installation VSD for large motors and insulate the furnace

#### 1.6.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Viglacera Halong JSC:

| No. | Energy Efficiency projects                                                                        | Priority | Project Schedule | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Installation of high efficient furnace                                                            | 1        | 2017             | 900,000               |
| 2   | Technology replacement to reduce energy consumption from 850kCal/kg product to 500kCal/kg product | 2        | N/I              | 13,000,000            |

#### 1.6.4 Conclusion and Recommendations

This company installed most of energy saving solutions which have been identified. The management team is planning to further improve their efficiency. The two viable EE solutions of medium investment scale which have been considered at the moment by the company are viable but require high investment. Therefore, with their strong financial capacity, Viglacera HaLong should be considered as a candidate for preferential loans.

### 1.7 Integral Materials Investment Vietnam

#### 1.7.1 Brief introduction

|                                |   |                                                                                                                                                                                                                        |
|--------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name                   | : | Integral Materials Investment Vietnam                                                                                                                                                                                  |
| Address                        | : | G2 ward, Viet Hung Industrial zone, Ha Long city, Quang Ninh province                                                                                                                                                  |
| Type of product                | : | Metal, rare earth elements                                                                                                                                                                                             |
| Ownership                      | : | Foreign investment                                                                                                                                                                                                     |
| Production capacity            | : | 5200 tons of products per year.                                                                                                                                                                                        |
| Type of fuel consumption       | : | Electricity                                                                                                                                                                                                            |
| Total energy consumption       | : | Energy consumption in 2013: 10.9 million kWh of electricity.<br>Energy consumption in 2014: 17.1 million kWh of electricity.                                                                                           |
| Major energy load by equipment | : | Electricity is used for variable purposes such as: exhaust fans, conditioner system, lightings system, crushers, pumps, electrolyte furnace, etc.<br>Water is used for living purpose and electrolyte furnace cooling. |

#### 1.7.2 Energy Efficiency Situation

Energy audit were carried out in Integral Materials Investment Company in the year 2015 and a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                                                  | Energy savings (USD)   |                  | Cost savings (USD) | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                                       | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Installation of inverters for circulating water pump system of electrolyte furnace    | 15,437                 |                  | 1,049.09           | 2,759.09              |
| 2   | Installation of a cooling tower for cooling circulation system of electrolyte furnace | 70,200                 |                  | 4,770.45           | 12,500.00             |
| 3   | Installation of inverters for fans vacuuming system of electrolyte furnace            | 38,880                 |                  | 2,642.27           | 8,187.27              |

Based on the internal energy audit, it was concluded that the existing equipment is of efficiency and no EE potential opportunities have been identified.

#### 1.7.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Integral Materials Investment Company:

| No. | Energy Efficiency projects    | Priority | Project Schedule                       | Investment cost (USD) |
|-----|-------------------------------|----------|----------------------------------------|-----------------------|
| 1   | Installation of cooling tower | 1        | Invested already but not yet installed | N/I                   |

#### 1.7.4 Conclusion and Recommendations

Due to their production situation of low demand, the management team do not consider any investment in technology improvement or EE measures. Therefore, no viable EE measures can be identified for further assessment as a candidate for pilot project

### 1.8 Quang Ninh Seafood Import-Export Joint stock Company

#### 1.8.1 Brief introduction

|                                |   |                                                                                                                                                                                                                 |
|--------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Company name                   | : | Quang Ninh Seaproducts Import-Export Joint stock Company                                                                                                                                                        |
| Address                        | : | 35 Ben Tau, Bach Dang, Ha Long city, Quang Ninh province                                                                                                                                                        |
| Type of product                | : | Shrimp, fish, squid sashimi frozen                                                                                                                                                                              |
| Ownership                      | : | Private                                                                                                                                                                                                         |
| Production capacity            | : | 650 tons of products per year.                                                                                                                                                                                  |
| Type of fuel consumption       | : | Electricity                                                                                                                                                                                                     |
| Total energy consumption       | : | Energy consumption in 2014: 2.67 million kWh of electricity<br>Energy consumption in 2015: 2.73 million kWh of electricity.                                                                                     |
| Major energy load by equipment | : | Electricity is used for variable purposes such as: exhaust fans, conditioner system, lightings system, pumps, air blast freezer, refrigerant compressors, etc.<br>Water is used for living purpose and washing. |

#### 1.8.2 Energy Efficiency Situation

Energy audit were carried out in Halong Seafood Company in the year 2016 and a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                    | Energy savings (USD)   |                  | Cost savings (USD) | Investment cost (USD) |
|-----|---------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                         | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | Investing a IQF 500 kg/h using NH <sub>3</sub>          | 708,052                |                  | 44,992             | 300,000               |
| 2   | Upgrading refrigeration system                          | 396,509                |                  | 25,182             | 100,000               |
| 3   | Removing water from the Ammonia                         | 118,349                |                  | 7,523              | 14,500                |
| 4   | Using the Automatic Air purger equipment                | 42,969                 |                  | 2,732              | 10,500                |
| 5   | Installing VSD for refrigerant compressors – Workshop 2 | 86,151                 |                  | 5,477              | 11,800                |

No potential EE measures have been implemented.

### 1.8.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Halong Seafood Company:

| No. | Energy Efficiency projects                     | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------------------|----------|------------------|-----------------------|
| 1   | Investing a IQF 500 kg/h using NH <sub>3</sub> | 1        | 2016 - 2017      | 300,000               |
| 2   | Upgrading refrigeration system                 | 3        | N/I              | 100,000               |

### 1.8.4 Conclusion and Recommendations

The management team is very interested in EE measures, however they are in financial difficulties and are not able to allocate their own fund for this type of investment. The EE investment project will become feasible only with financial support.

## 1.9 Saigon Halong Hotel

### 1.9.1 Brief introduction

|                          |   |                                                                           |
|--------------------------|---|---------------------------------------------------------------------------|
| Company name             | : | Saigon Halong Hotel Tourism JSC                                           |
| Address                  | : | No. 168, Ha Long Street, Bai Chay Ward, Ha Long city, Quang Ninh province |
| Type of product          | : | Hotel services                                                            |
| Ownership                | : | Private                                                                   |
| Accommodation capacity   | : | 223 rooms.                                                                |
| Type of fuel consumption | : | Electricity, Diesel oil, Coal                                             |
| Total energy consumption | : | Electricity consumption in 2012: 1.64 million kWh of electricity.         |

Major energy load by equipment : Diesel oil consumption in 2012: 23,000 liters.  
Coal consumption in 2012 : 10 tons/month  
Electricity is used for variable purposes such as: Air conditioning system to make cool air and warm air, lightings system, pumps, system to make hot water, etc.  
Coal consumption for hot water and steam.  
Water is used for living purpose and laundry

#### 1.9.2 Energy Efficiency Situation

Based on the report provided by Saigon Halong Hotel, a number of energy efficiency opportunities have been identified as follow:

| No. | Potential Energy Efficiency Measures                                  | Energy savings (USD)   |                  | Cost savings (USD) | Investment cost (USD) |
|-----|-----------------------------------------------------------------------|------------------------|------------------|--------------------|-----------------------|
|     |                                                                       | Electricity (kWh/year) | Fuels (ton/year) |                    |                       |
| 1   | High efficient lighting                                               | N/I                    | N/I              | N/I                | N/I                   |
| 2   | Installation of solar water heater                                    | N/I                    | N/I              | N/I                | N/I                   |
| 3   | Replacing of water bottles in the toilet water tanks for water saving | N/I                    | N/I              | N/I                | N/I                   |

All mentioned EE measures have been implemented.

#### 1.9.3 Energy Efficiency Investment Plans

In order to further reduce production cost and increase the products' quality, the following EE investment projects are being considered and developed by Halong Seafood Company:

| No. | Energy Efficiency projects                                                                           | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------------------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Improving lighting system (LED), auto switching                                                      | 2        | N/I              | N/I                   |
| 2   | Wastewater treatment system to re-use for tree planting and providing water for toilet               | 2        | N/I              | N/I                   |
| 3   | Apply boiler system to increase heat for central air conditioning system (Chiller of 160kW capacity) | 2        | 2018             | 2.2 million USD       |
| 4   | Use the Heat Pump                                                                                    | 2        | N/I              | N/I                   |

#### 1.9.4 Conclusion and Recommendations

Although no detailed information have been studied for the potential EE measures at Saigon Halong Hotel, the Consultant find some EE measures: Improving lighting system (LED), auto switching and Installation of Heat Pump should be feasible with medium investment cost and feasible technical solution. Therefore, further assessment should be conducted at Saigon Halong Hotel as a candidate for pilot project.



## 2. SELECTION OF EE MEASURES

### 2.1 Criteria for selection of EE measures

The assessment of potential EE measures for further study is based on the following criteria:

| Criteria        | Description                                        |
|-----------------|----------------------------------------------------|
| Appropriateness | Type and scale of the EE project model             |
| Effectiveness   | Energy saving amount and CO2 reduction             |
| Feasibility     | Cost, Recovery years, Willingness of project owner |

### 2.2 Data Matrix for selection of EE measures

| No. | Company's name                 | The energy saving measures                                                                                                | Appropriateness  |        | Effectiveness          |                  |                    |                         |                                | Feasibility           |                       |             |
|-----|--------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------|--------|------------------------|------------------|--------------------|-------------------------|--------------------------------|-----------------------|-----------------------|-------------|
|     |                                |                                                                                                                           | Type of EE model | Scale  | Energy saving amount   |                  |                    | Cost savings (USD/year) | Potential CO2 reduction (Tons) | Investment Cost (USD) | Payback period (Year) | Willingness |
|     |                                |                                                                                                                           |                  |        | Electricity (kWh/year) | Fuel (tons/year) | Fuel (liters/year) |                         |                                |                       |                       |             |
| 1   | Vinh Thang Joint Stock Company | Check, monitor and timely handle the compressed air leaks                                                                 | Improvement      | 10.45% | 107,828.00             |                  |                    | 6,400.91                | 61.00                          | 3,409.09              | 0.53                  | Yes         |
|     |                                | Installation of speed control equipments for exhaust fans at the end of furnaces No. 1 and No. 2                          | New installation | 23.50% | 80,201.00              |                  |                    | 4,760.91                | 45.37                          | 6,325.00              | 1.33                  | Yes         |
|     |                                | Arrangement reasonable production activities of raw crusher workshop to take advantages of 3 Electricity prices mechanism | Improvement      | 45.03% |                        |                  |                    | 20,006.36               | -                              | -                     | -                     | Yes         |
|     |                                | Installation of inverter for compressor in mechanical workshop                                                            | New installation | 13.50% | 139,320.00             |                  |                    | 8,270.45                | 78.81                          | 16,220.45             | 1.96                  | No          |
|     |                                | Installation biomass burners used for drying materials in spraying drying tower                                           | New installation | 42.10% |                        | 2,603.00         |                    | 119,041.36              | -                              | 79,545.45             | 0.67                  | No          |
|     |                                | Installation of speed control equipment for the furnace heat exchange fan                                                 | New installation | 33.50% | 162,509.00             |                  |                    | 9,647.27                | 91.93                          | 13,311.36             | 1.38                  | Yes         |

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|         |   |                                                                                                                                                           |                  |        |          |  |  |          |      |           |      |     |
|---------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------|----------|--|--|----------|------|-----------|------|-----|
| A-II-91 |   | Installation of the system breaking material before raw mill                                                                                              | New installation |        |          |  |  |          |      | 20,000.0  | 1.00 | Yes |
|         |   | Installation of VSD for raw mill                                                                                                                          | New installation |        |          |  |  |          |      | 15,000.0  | 1.20 | Yes |
|         |   | Fluidized bed burner installation to utilize coal scrap                                                                                                   | New installation |        |          |  |  |          |      | 200,000.0 | 2.50 | Yes |
|         |   | Revamping the dust filter                                                                                                                                 | Improvement      |        |          |  |  |          |      |           |      | Yes |
|         | 2 | Installation the timers and turn-off automatically controllers for the crushers, limit excess time of the crushers and ensure to optimize technology time | New installation | 1.85%  | 5,145.8  |  |  | 322.73   | 2.91 | 681.82    | 2.11 | No  |
|         |   | Installation of inverters to change motor's speed to change the stirring vanes' speed according to necessary standards of technology                      | New installation | 44.44% | 7,800.0  |  |  | 492.27   | 4.41 | 795.45    | 1.62 | No  |
|         |   | Installation more power control equipment by PowerBoss in case of changes in load of motors                                                               | New installation | 5.96%  | 17,481.0 |  |  | 1,103.64 | 9.89 | 4,318.18  | 3.91 | No  |

|         |                               |                                                                                                                  |                  |        |          |  |   |          |       |           |      |     |
|---------|-------------------------------|------------------------------------------------------------------------------------------------------------------|------------------|--------|----------|--|---|----------|-------|-----------|------|-----|
| A-II-92 |                               | Installation of the timers (rounds) and automatically stop the engine on demand of technology                    | New installation | 2.38%  | 2,437.5  |  |   | 153.64   | 1.38  | 681.82    | 4.44 | No  |
|         |                               | Use the central controller to control the working mode of compressors on-demand of output pressure appropriately | New installation | 2.00%  | 27,222.0 |  |   | 1,718.18 | 15.40 | 3,181.82  | 1.85 | No  |
|         |                               | Installation of inverters for compressors to maintain a minimum pressure in the tank                             | New installation | 4.74%  | 64,584.0 |  |   | 4,077.27 | 36.54 | 8,181.82  | 2.01 | No  |
|         |                               | Improve capacity management                                                                                      | Improvement      |        |          |  |   |          |       |           |      | Yes |
|         |                               | Install equipment after the substation for saving energy                                                         | New installation |        |          |  |   |          |       | 1,000,000 | 4.00 | Yes |
| 3       | Vinh Tien Joint Stock Company | Installation of inverters for the exhaust fan which blows from kiln to drying furnace                            | New installation | 32.30% | 12,481.0 |  | - | 828.64   | 7.06  | 2,181.82  | 2.63 | No  |
|         |                               | Installation of power control equipment for mixing motor of product forming machine                              | New installation | 15.00% | 28,235.0 |  | - | 1,875.00 | 15.97 | 4,595.45  | 2.45 | Yes |
|         |                               | Installation of power control equipments for kneading machines 30kW (02 machines)                                | New installation | 22.00% | 15,423.0 |  | - | 1,024.09 | 8.72  | 3,231.82  | 3.16 | Yes |

|         |   |                                                                                                                               |                  |        |         |  |         |           |          |              |      |     |
|---------|---|-------------------------------------------------------------------------------------------------------------------------------|------------------|--------|---------|--|---------|-----------|----------|--------------|------|-----|
| A-II-93 |   | Use MazNitro DX2 additives mixed with diesel fuel for forklift trucks and material trucks systems                             | New technology   | 5.80%  | -       |  | 2,670.3 | 2,426.36  | 7,209.86 | 1,465.00     | 0.60 | No  |
|         |   | Upgrade the machine shaping and drying system                                                                                 | Improvement      |        |         |  |         |           |          | 1,000,000    | 6.00 | Yes |
|         |   | Installation control equipment                                                                                                | New installation |        |         |  |         |           |          | 5,000- 7,500 | 1.50 | Yes |
|         | 4 | Installation of inverters for clinker cooling fans                                                                            | New installation | 16.00% | 558,502 |  |         | 33,681.82 | 315.94   | 70,630.91    | 2.10 | Yes |
|         |   | Installation Powerbosses for materials lift up buckets to heat exchange towers No. 07c.01 and 15c.01                          | New installation | 10.00% | 42,778  |  |         | 2,580.00  | 24.20    | 7,765.91     | 3.01 | No  |
|         |   | Installation of inverters for water pumping motor of conditioning tower                                                       | New installation | 17.00% | 77,030  |  |         | 4,645.45  | 43.58    | 9,575.91     | 2.06 | No  |
|         |   | Installation of inverters for circulatory fans of coal mill machines No. 08:11 and 19:11                                      | New installation | 12.00% | 173,629 |  |         | 10,471.36 | 98.22    | 22,264.09    | 2.13 | No  |
|         |   | Improvement of the cooling towers system and the installation of speed control equipments for fans of hot water cooling tower | Improvement      | 30.00% | 28,512  |  |         | 1,719.55  | 16.13    | 2,292.73     | 1.33 | No  |
|         |   |                                                                                                                               |                  |        |         |  |         |           |          |              |      |     |
|         |   | <b>Cement Joint Stock Company and Constructi on Quang Ninh - Lam Thach 2 Cement Factory</b>                                   |                  |        |         |  |         |           |          |              |      |     |

|         |   |                                                                                                                         |                  |        |            |       |  |            |           |              |      |     |
|---------|---|-------------------------------------------------------------------------------------------------------------------------|------------------|--------|------------|-------|--|------------|-----------|--------------|------|-----|
| A-II-94 |   | Installation of control device for cooling pumps system                                                                 | New installation | 10.00% | 43,264     |       |  | 2,609.09   | 24.47     | 5,082.73     | 1.95 | Yes |
|         |   | Make use of exhaust heat from clinker kilns and discharged air from the clinker cooling process to generate electricity | Improvement      | 0.00%  | 15,667,200 |       |  | 769,762.27 | 8,862.94  | 5,836,363.64 | 7.58 | Yes |
|         |   | Using E-plus biological waste mixed with fuel to increase combustion efficiency                                         | New technology   | 4.80%  |            | 6,080 |  | 157,384.55 | 12,767.62 | 369,625.45   | 2.35 | No  |
|         | 5 | Improvement of Lighting System                                                                                          | Improvement      | 22.22% | 161,568.0  |       |  | 10,459.09  | 91.40     | 10,504.55    | 1.00 | Yes |
|         |   | Installation of the coordinating controller for compressors station                                                     | New installation | 4.50%  | 219,186.0  |       |  | 14,186.36  | 123.99    | 32,272.73    | 2.27 | Yes |
|         |   | Installation of Powerboss for bucket refluxed motor, code 1E1M121                                                       | New installation | 16.89% | 45,147.0   |       |  | 2,922.73   | 25.54     | 8,436.36     | 2.89 | No  |
|         |   | Installation of inverter for conditioning tower water pump motor                                                        | New installation | 20.00% | 168,854.0  |       |  | 10,927.27  | 95.52     | 13,636.36    | 1.25 | No  |
|         |   | Installation of inverters for water pump motor, code 1D1M174 & 1D1M175                                                  | New installation | 28.70% | 202,528.0  |       |  | 13,109.09  | 114.57    | 10,681.82    | 0.81 | No  |
|         |   | Installation of inverters for air supply fan motor of clinker kiln                                                      | New installation | 24.70% | 508,622.0  |       |  | 32,922.73  | 287.73    | 90,204.55    | 2.74 | Yes |
|         |   |                                                                                                                         |                  |        |            |       |  |            |           |              |      |     |

|         |   |                                                                                                                         |                  |        |              |        |  |              |           |               |      |     |
|---------|---|-------------------------------------------------------------------------------------------------------------------------|------------------|--------|--------------|--------|--|--------------|-----------|---------------|------|-----|
| A-II-95 |   | Make use of exhaust heat from clinker kilns and discharged air from the clinker cooling process to generate electricity | Improvement      | 0.00%  | 54,627,744.0 |        |  | 3,016,890.91 | 30,902.91 | 17,300,409.09 | 5.73 | Yes |
|         |   | Use nano-enzyme G5CC93 additives to increase combustion efficiency of coal fuel                                         | New technology   | 4.80%  |              | 13,817 |  | 118,600.00   | 29,015.70 | -             | -    | No  |
|         | 6 | Strengthen kilns insulation system                                                                                      | Improvement      | 0.00%  |              | 118    |  | 15,714.55    | 248.41    | 14,727.27     | 0.94 | Yes |
|         |   | Make use of exhaust heat to heat the feed water and strengthen condensate recovery of canteen boiler                    | Improvement      | 0.00%  |              | 8      |  | 1,334.09     | 16.97     | 4,090.91      | 3.07 | No  |
|         |   | Adjust to strengthen the inverter efficiency of exhaust fans at the top of furnaces                                     | Improvement      | 26.76% | 68,880       |        |  | 4,646.36     | 38.97     | 5,681.82      | 1.22 | No  |
|         |   | Adjust to strengthen the inverter efficiency of exhaust fans at the end furnaces and fire support fans.                 | Improvement      | 26.18% | 295,456      |        |  | 19,930.00    | 167.14    | 13,863.64     | 0.70 | Yes |
|         |   | Installation of inverters for circulating water pump No. M1, M8 and M13                                                 | New installation | 23.61% | 63,392       |        |  | 4,275.91     | 35.86     | 5,035.45      | 1.18 | No  |

|         |   |                                                                                       |                  |        |        |  |  |          |       |            |      |     |
|---------|---|---------------------------------------------------------------------------------------|------------------|--------|--------|--|--|----------|-------|------------|------|-----|
| A-II-96 |   | Conversion production at the plant Hoanh Bo, conform Ceric technology                 | Improvement      |        |        |  |  |          |       | 900,000    |      | Yes |
|         |   | Upgrade technology                                                                    | New technology   |        |        |  |  |          |       | 13,000,000 |      | Yes |
|         | 7 | Installation of inverters for circulating water pump system of electrolyte furnace    | New installation | 12.80% | 15,437 |  |  | 1,049.09 | 8.73  | 2,759.09   | 2.63 | No  |
|         |   | Installation of a cooling tower for cooling circulation system of electrolyte furnace | New installation | 0.50%  | 70,200 |  |  | 4,770.45 | 39.71 | 12,500.00  | 2.62 | No  |
|         |   | Installation of inverters for fans vacuuming system of electrolyte furnace            | New installation | 10.00% | 38,880 |  |  | 2,642.27 | 21.99 | 8,187.27   | 3.10 | No  |
|         | 8 | Investing a IQF 500 kg/h using NH3                                                    | New technology   |        |        |  |  |          |       | 300,000    | 2.5  | Yes |
|         |   | Upgrading refrigeration system                                                        | New technology   |        |        |  |  |          |       | 100,000    | 3.6  | Yes |
|         |   | Removing water from the Ammonia                                                       | New technology   |        |        |  |  |          |       | 14,500     | 1.9  | Yes |
|         |   | Using the Automatic Air purger equipment                                              | New technology   |        |        |  |  |          |       | 10,500     | 3.8  | Yes |
|         |   | Installing VSD for refrigerant compressors – Workshop 2                               | New installation |        |        |  |  |          |       | 11,800     | 2.2  | Yes |



|   |                           |                                                                                        |                |  |  |  |  |  |  |  |  |     |
|---|---------------------------|----------------------------------------------------------------------------------------|----------------|--|--|--|--|--|--|--|--|-----|
| 9 | Saigon<br>Halong<br>Hotel | Improving lighting system (LED), auto switching                                        | Improvement    |  |  |  |  |  |  |  |  | Yes |
|   |                           | Wastewater treatment system to re-use for tree planting and providing water for toilet | New technology |  |  |  |  |  |  |  |  | Yes |
|   |                           | Apply boiler system to increase heat for central air conditioning system (Chiller)     | New technology |  |  |  |  |  |  |  |  | Yes |
|   |                           | Use the Heat Pump                                                                      | New technology |  |  |  |  |  |  |  |  | Yes |

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## 2.3 Recommendations

### 2.3.1 Recommendations on potential EE measures for pilot projects development

Based on the selection criteria, the following EE measures are recommended for further assessment to develop pilot projects:

| No. | EE Measures                           | Project Owner                        | Appropriateness | Effectiveness | Feasibility | Reasons for Selection                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----|---------------------------------------|--------------------------------------|-----------------|---------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Installation of raw material agitator | Vinh Thang<br>Joint Stock<br>Company | Yes             | Yes           | Yes         | <ul style="list-style-type: none"> <li>- Technically feasible EE Improvement investment project</li> <li>- Energy savings potential of 20%</li> <li>- Appropriate scale of investment cost (of 20,000 USD)</li> <li>- Short term payback period: &lt;3 years</li> <li>- The project owner is willing to invest</li> <li>- The project owner is interested in cooperation with JICA project for pilot project</li> </ul> |
| 2   | Improvement of Lighting System        | Thang Long<br>Cement                 | Yes             | Yes           | Yes         | <ul style="list-style-type: none"> <li>- Technically feasible EE Improvement investment project</li> <li>- Energy savings potential of 22%</li> <li>- Appropriate scale of investment cost (of 25,000 USD)</li> <li>- Short term payback period: 1 year</li> <li>- The project owner is willing to invest</li> <li>- The project owner is interested in cooperation with JICA project for pilot project</li> </ul>      |

|   |                                                         |                                |     |     |     |                                                                                                                                                                                                                                                                                                                                                                            |
|---|---------------------------------------------------------|--------------------------------|-----|-----|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3 | Fluidized bed burner installation to utilize coal scrap | Vinh Thang Joint Stock Company | Yes | Yes | Yes | <ul style="list-style-type: none"> <li>- Technically feasible EE Improvement investment project</li> <li>- Appropriate scale of investment cost (of 200,000 USD)</li> <li>- Medium term payback period: 3 years</li> <li>- The project owner is willing to invest</li> <li>- The project owner is interested in cooperation with JICA project for pilot project</li> </ul> |
| 4 | Investing a IQF 500 kg/h using NH3                      | Halong Seafood JSC             | Yes | Yes | Yes | <ul style="list-style-type: none"> <li>- Technically feasible EE Improvement investment project</li> <li>- Energy savings potential of 20%</li> <li>- Appropriate scale of investment cost (of 300,000 USD)</li> <li>- The project owner is willing to invest</li> <li>- The project owner is interested in cooperation with JICA project for pilot project</li> </ul>     |
| 5 | Installation of Heat Pump                               | Saigon Halong Hotel            | Yes | Yes | Yes | <ul style="list-style-type: none"> <li>- Technically feasible EE Improvement investment project</li> <li>- Short term payback period: &lt; 3 years</li> <li>- The project owner is willing to invest</li> <li>- The project owner is interested in cooperation with JICA project for pilot project</li> </ul>                                                              |

## 2.3.2 Financing scheme- wise proposals for pilot projects

| No.                      | Financing Scheme | Project Owner                  | EE Measures                                                                                                                                                   | Reasons for selection                                                                                     | Remarks                                   |
|--------------------------|------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Subsidy</b>           |                  |                                |                                                                                                                                                               |                                                                                                           |                                           |
| 1                        |                  | Vinh Thang Joint Stock Company | Installation of raw material agitator                                                                                                                         | Viable EE technology<br>Small company with limited financial capacity<br>Small investment :20,000 USD     | The project is out of project target area |
| <b>ESCO</b>              |                  |                                |                                                                                                                                                               |                                                                                                           |                                           |
| 1                        |                  | Halong Seafood JSC             | Investing a IQF 500 kg/h using NH3                                                                                                                            | Viable EE technology<br>Limited financial capacity<br>Medium investment :300,000 USD                      |                                           |
| 2                        |                  | Saigon Halong Hotel            | Installation of Heat Pump                                                                                                                                     | Viable EE technology<br>Limited financial capacity<br>Medium investment                                   |                                           |
| 3                        |                  | Vinh Thang Joint Stock Company | Fluidized bed burner installation to utilize coal scrap                                                                                                       | Viable EE technology<br>Limited financial capacity<br>Medium investment :200,000 USD                      | The project is out of project target area |
| <b>Preferential Loan</b> |                  |                                |                                                                                                                                                               |                                                                                                           |                                           |
| 1                        |                  | Viglacera Halong               | Installation of high efficient furnace                                                                                                                        | Viable EE technology<br>Large enterprise with strong financial capacity<br>Big investment :900,000 USD    |                                           |
| 2                        |                  | Viglacera Halong               | Technology replacement                                                                                                                                        | Viable EE technology<br>Large enterprise with strong financial capacity<br>Big investment :13,000,000 USD |                                           |
| 3                        |                  | Thang Long Cement              | Improvement of Lighting System<br>Installation of inverters for conditioning tower water pump motor/<br>water pump motor/air supply fan motor of clinker kiln | Viable EE technology<br>Large enterprise with strong financial capacity<br>Big investment :81,959.09 USD  |                                           |

Quang Ninh, July - 2016

## REPORT

### **Energy Efficiency Measures Survey for Project for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation for the Halong Bay**

Prepared by: RCEE - NIRAS JSC.



## Content

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## Background

- Part of the project: Preparatory Study for the Project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation for the Halong Bay in the Socialist Republic of Vietnam
- Objectives of the assignment:
  - Assessment results from the energy efficiency (EE) measures survey
  - Selection of pilot demonstration project for Institutional Development for Green Growth Implementation and Strengthening of Environmental Management System towards Sustainable Conservation.

## Scope of the survey

**09 industrial enterprises located in Quang Ninh Province have been selected**

**Meetings and interviews from 25-26 May 2016**

| No. | Name of the company                                  | Product type               |
|-----|------------------------------------------------------|----------------------------|
| 1   | Vinh Thang Joint Stock Company                       | Glazed- floor tile         |
| 2   | Hoang Ha Colored Ceramics JSC                        | Ceramic tile               |
| 3   | Vinh Tien Joint Stock Company                        | Brick                      |
| 4   | Lam Thach 2 Cement Company                           | Clinker, cement            |
| 5   | Thang Long Cement Joint Stock Company                | Clinker, cement            |
| 6   | Viglacera Halong Joint Stock Company                 | Ceramic tile               |
| 7   | Intgral Materials Investment Vietnam                 | Metal, rare earth elements |
| 8   | Quang Ninh Seafood Import-Export Joint stock Company | Frozen seafood             |
| 9   | Saigon Halong Hotel                                  | Hotel services             |

## Introduction of the surveyed enterprises

### Vinh Thang Joint Stock Company

- Address: Kim Son Industrial Cluster, Kim Son ward, Dong Trieu town, Quang Ninh Province
- Type of product: Glazed- floor tile
- Type of fuel consumption: Electricity, coal and DO
- Energy audit were carried out in Vinh Thang JSC in the year 2015
- Since the last energy audit, Vinh Thang has implemented some EE measures, including:
  - Internal management:
    - Limitation of unload mode of machines by close coordination between departments, workshops in manufacturing management; Strengthening monitor activities for big motors, machines; Recording operating history and do maintenance in necessary.
    - Using heat exhaust from kilns for drying furnace, instead of using fuel for drying process.
    - Company has policies about energy, SEC to assess the production status.
    - Using natural lights.
  - Measures for improvement of EE for equipment:
    - Take advantage of natural lights in workshops and warehouses.
    - Installation of reactive power compensation system to ensure power factor  $\cos \phi > 0,9$ .
    - Installation of inverter for motor of air supply fan of coal gasification furnace.
    - Using heat of exhaust gas of kiln to preheat tiles before kiln.

## Introduction of the surveyed enterprises

### Hoang Ha Colored Ceramics Joint Stock Company

- Address: Kim Son Industrial Cluster, Kim Son ward, Dong Trieu town, Quang Ninh Province
- Type of product: Ceramic tile
- Type of fuel consumption: Electricity, dust coal, solid coal 4A, coal-gas (from coal gasification), Diesel oil (DO), gas (LPG).
- Energy audit were carried out in Hoang Ha JSC in the year 2014
- Since the last energy audit, Hoang Ha has implemented some EE measures, including:
  - Installation of automatic coal intake system, saving 10% of coal consumption
  - Installation of 10 VSD for raw grinding system, a capacity of 200 kW / engine.
  - Installation of 10 VSD for glazed grinding system, a capacity of 37kW / engine.



## Introduction of the surveyed enterprises

### Vinh Tien Joint Stock Company

- Address: Mao Khe ward, Dong Trieu town, Quang Ninh province
- Type of product: Brick
- Type of fuel consumption: Electricity, coal, Diesel oil (DO)
- Energy audit were carried out in Vinh Tien JSC in the year 2015
- Since the last energy audit, Vinh Tien has implemented some EE measures, including:
  - Installation of reactive power compensation system to ensure power factor  $\cos \varphi > 0,9$
  - Installation of inverter for exhaust fans system of kiln
  - Using heat of exhaust gas of kiln to preheat bricks before kiln
  - Change the engine with a capacity matching
  - Installation control device of large capacity engine.

## Introduction of the surveyed enterprises

### Lam Thach 2 Cement Company

- Address: Phuong Nam ward, Uong Bi City, Quang Ninh Province
- Type of product: Clinker, cement ( $C_{pc}50$ , PCB30, PCB40)
- Type of fuel consumption: Electricity, coal
- Energy audit were carried out in Lam Thanh 2 Company in the year 2014
- Since the last energy audit, Lam Thach 2 Company has implemented some EE measures, including:
  - Improve capacity management.
  - Installation VSD for clinker cooler with power 37 kW and 45 kW.



## Introduction of the surveyed enterprises

### Lam Thach 2 Cement Company

- Address: Phuong Nam ward, Uong Bi City, Quang Ninh Province
- Type of product: Clinker, cement ( $C_{pc}50$ , PCB30, PCB40)
- Type of fuel consumption: Electricity, coal
- Energy audit were carried out in Lam Thanh 2 Company in the year 2014
- Since the last energy audit, Lam Thach 2 Company has implemented some EE measures, including:
  - Improve capacity management.
  - Installation VSD for clinker cooler with power 37 kW and 45 kW.

## Introduction of the surveyed enterprises

### Thang Long Cement Joint Stock Company

- Address: Le Loi commune, Hoanh Bo district, Quang Ninh Province
- Type of product: Clinker, cement
- Type of fuel consumption: Electricity, Coal, Diesel Oil
- Energy audit were carried out in Thang Long Cement JSC in the year 2014
- Since the last energy audit, Thang Long Cement JSC has implemented some EE measures, including:
  - Strengthening internal management and maintenance equipment.
  - Developments ISO 50001 (not completed).

## Introduction of the surveyed enterprises

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### **Viglacera Halong Joint Stock Company**

- Address: Ha Long city, Quang Ninh Province
- Type of product: Ceramic tile
- Type of fuel consumption: Electricity, Gas (LPG), Diesel oil (DO), dust coal 3c, solid coal 4b.
- Energy audit were carried out in Viglacera Halong JSC in the year 2015.
- Since the last energy audit, Viglacera Halong JSC has implemented some EE measures, including:
  - Implementing fuel switch, increased productivity fires.
  - Increased internal audit.
  - Installation VSD for large motors and insulate the furnace

## Introduction of the surveyed enterprises

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### **Intgral Materials Investment Vietnam**

- Address: G2 ward, Viet Hung Industrial zone, Ha Long city, Quang Ninh Province
- Type of product: Metal, rare earth elements
- Type of fuel consumption: Electricity
- Energy audit were carried out in Intgral Materials Investment Company in the year 2015
- Based on the internal energy audit, it was concluded that the existing equipment is of efficiency and no EE potential opportunities have been identified.

## Introduction of the surveyed enterprises

### Quang Ninh Seafood Import-Export Joint stock Company

- Address: 35 Ben Tau, Bach Dang, Ha Long city, Quang Ninh Province
- Type of product: Shrimp, fish, squid sashimi frozen
- Type of fuel consumption: Electricity
- Energy audit were carried out in Halong Seafood Company in the year 2016
- No potential EE measures have been implemented.

## Introduction of the surveyed enterprises

### Saigon Halong Hotel

- Address: No. 168, Ha Long Street, Bai Chay Ward, Ha Long city, Quang Ninh Province
- Type of product: Hotel services
- Type of fuel consumption: Electricity, Diesel oil, Coal
- ▶ Major energy load by equipment:
  - Electricity is used for variable purposes such as: Air conditioning system to make cool air and warm air, lightings system, pumps, system to make hot water, etc.
  - Coal consumption for hot water and steam.
  - Water is used for living purpose and laundry

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Vinh Thang JSC:

| No. | Energy Efficiency projects                                                                                    | Priority | Project Schedule | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Arrangement reasonable production activities of raw crusher workshop to take advantages of Electricity tariff | 1        | 2016             | N/I                   |
| 2   | Installation of raw material agitator                                                                         | 1        | 2016             | 20,000                |
| 3   | Installation of Variable Speed Drive (VSD) for raw mill                                                       | 1        | 2016             | 15,000                |
| 4   | Fluidized bed burner installation to utilize coal scrap                                                       | 2        | 2017             | 200,000               |
| 5   | Revamping the dust filter                                                                                     | 2        | 2017             | N/I                   |

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Hoang Ha JSC:

| No. | Energy Efficiency projects                               | Priority | Project Schedule | Investment cost (USD) |
|-----|----------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Improve capacity management                              | 1        | 2016             | N/I                   |
| 2   | Install equipment after the substation for saving energy | 2        | N/I              | 1,000,000             |

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Vinh Tien JSC:

| No. | Energy Efficiency projects                    | Priority | Project Schedule | Investment cost (USD) |
|-----|-----------------------------------------------|----------|------------------|-----------------------|
| 1   | Upgrade the machine shaping and drying system | 1        | 2018 - 2019      | 1,000,000             |
| 2   | Installation control equipment                | 2        | 2017 - 2018      | 5,000-7,500           |

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Lam Thach 2 Company:

| Stt | Energy Efficiency projects                           | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Construction of waste heat recycling power generator | 1        | 2017             | 9,000,000             |
| 2   | Installation inverter for fan and compressor         | 2        | N/I              | 500,000               |
| 3   | Increase operating time furnaces                     | 1        | N/i              | N/I                   |



## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Thang Long Cement JSC:

| No. | Energy Efficiency projects                                 | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Construction of waste heat recycling power generator       | 1        | 2017-2019        | 17,272,272            |
| 2   | Improving lighting system (indoor and outdoor)             | 2        | 2016             | 11,360                |
| 3   | Installing the inverter to motor of air supply fan of kiln | 3        | 2017-2019        | 100,000               |

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Viglacera Halong JSC:

| No. | Energy Efficiency projects                                                                        | Priority | Project Schedule | Investment cost (USD) |
|-----|---------------------------------------------------------------------------------------------------|----------|------------------|-----------------------|
| 1   | Installation of high efficient furnace                                                            | 1        | 2017             | 900,000               |
| 2   | Technology replacement to reduce energy consumption from 850kCal/kg product to 500kCal/kg product | 2        | N/I              | 13,000,000            |

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Intgral Materials Invesment:

| No. | Energy Efficiency projects    | Priority | Project Schedule                       | Investment cost (USD) |
|-----|-------------------------------|----------|----------------------------------------|-----------------------|
| 1   | Installation of cooling tower | 1        | Invested already but not yet installed | N/I                   |

## Assessment of Energy Efficiency Measures

EE investment projects considered and developed by Halong Seafood Company:

| No. | Energy Efficiency projects         | Priority | Project Schedule | Investment cost (USD) |
|-----|------------------------------------|----------|------------------|-----------------------|
| 1   | Investing a IQF 500 kg/h using NH3 | 1        | 2016 - 2017      | 300,000               |
| 2   | Upgrading refrigeration system     | 3        | N/I              | 100,000               |

## **Conclusions and Recommendations**

### **Vinh Thang Joint Stock Company**

#### **Conclusion:**

- Vinh Thang JSC is interested in energy saving because energy cost accounts for 40% of their production cost per product, with intensive energy used equipment.
- The EE measures of Vinh Thang high priority are of feasible and of high potential for replication in other factories.
- Vinh Thang management level is well aware of ESCO model and they are interested in cooperation for this model for relevant EE projects.

#### **Recommendations:**

- Further assessment on potential EE measures at Vinh Thang JSC for cooperation to develop pilot project.

## **Conclusions and Recommendations**

### **Hoang Ha Colored Ceramics Joint Stock Company**

#### **Conclusion:**

- Hoang Ha JSC is interested in EE measures for improving their energy cost.
- Hoang Ha JSC has no technical barrier to invest in their EE measure: Install equipment after the substation for saving energy, however they are lacking of financial capital for investment.

#### **Recommendations:**

- The potential EE investment project developed by Hoang Ha JSC is of large scale investment, Hoang Ha JSC should be not appropriate for further assessment to develop pilot project.



## Conclusions and Recommendations

### Vinh Tien Joint Stock Company

#### Conclusion:

- Vinh Tien JSC is interested in technology improvement, however they are facing financial difficulties.
- The high priority of the factory is to replace their existing production line with an advance technology, which is a large investment and the project is of low potential for replication in other factories in the sector.

#### Recommendations:

- Vinh Tien JSC should be not appropriate for further assessment to develop pilot project.

## Conclusions and Recommendations

### Lam Thach 2 Cement Company

#### Conclusion:

- The EE measure of highest priority for Lam Thach 2 Cement Plant is waste heat recovery project, which is of very large scale investment
- Despite their willingness to further development of this investment project, they are facing the financial difficulties.

#### Recommendations:

- Due to their high investment cost, potential EE measure developed by Lam Thach 2 is not appropriate for further assessment as a pilot project.

## **Conclusions and Recommendations**

### **Thang Long Cement Joint Stock Company**

#### **Conclusion:**

- Thang Long Cement Plant shows their interest in EE activities and is willingness to cooperate for the development of EE investment project.
- Among the EE measures of high priority by Thang Long Cement Plant, the EE lighting project and installation of inverters are most feasible with low investment cost and short term payback period.
- This type of EE project is also of high potential for replication among industrial enterprises.

#### **Recommendations:**

- Thang Long Cement Plant can be considered appropriate for further assessment to develop as a candidate for pilot project.

## **Conclusions and Recommendations**

### **Viglacera Halong Joint Stock Company**

#### **Conclusion:**

- This company installed most or energy saving solutions which have been identified.
- Two viable EE solutions of medium investment scale which have been considered at the moment by the company are viable but require high investment.

#### **Recommendations:**

- Therefore, with their strong financial capacity, Viglacera HaLong should be considered as a candidate for preferential loans

## **Conclusions and Recommendations**

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### **Integral Materials Investment Vietnam**

#### **Conclusion:**

➤ Due to their production situation of low demand, the management team do not consider any investment in technology improvement or EE measures

#### **Recommendations:**

➤ No viable EE measures can be identified for further assessment as a candidate for pilot project.

## **Conclusions and Recommendations**

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### **Quang Ninh Seafood Import-Export Joint stock Company**

#### **Conclusion:**

➤ The management team is very interested in EE measures, however they are in financial difficulties and are not able to allocate their own fund for this type of investment.

#### **Recommendations:**

➤ The EE investment project will become feasible only with financial support.

## **Conclusions and Recommendations**

### **Saigon Halong Hotel**

#### **Conclusion:**

- No detailed information have been studied for the potential EE measures at Saigon Halong Hotel.
- The Consultant find some EE measures: Improving lighting system (LED), auto switching and Installation of Heat Pump should be feasible with medium investment cost and feasible technical solution.

#### **Recommendations:**

- Need further assessment should be conducted at Saigon Halong Hotel as a candidate for pilot project.

## **Conclusions and Recommendations**

### **Other key findings from the survey**

- Management of local enterprises show their interest in energy efficiency opportunities and are willingness to cooperate for development EE investment projects if feasible
- Most selected enterprises are well aware of EE measures that can be applied for their production facilities. Most responses show no technical barriers for development of EE investment project. And most of them have their investment plans for EE projects.
- All surveyed enterprises show their demand for financial support for their EE investment projects to overcome the challenges of high investment cost but low savings of this type of investment.
- Only 1 surveyed enterprise is aware of ESCO model. However, with more information and explanation, all of surveyed enterprises confirm their interest in ESCO model if feasible.

# Thank you !



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