Review on the LCT Planning of Phu Quoc

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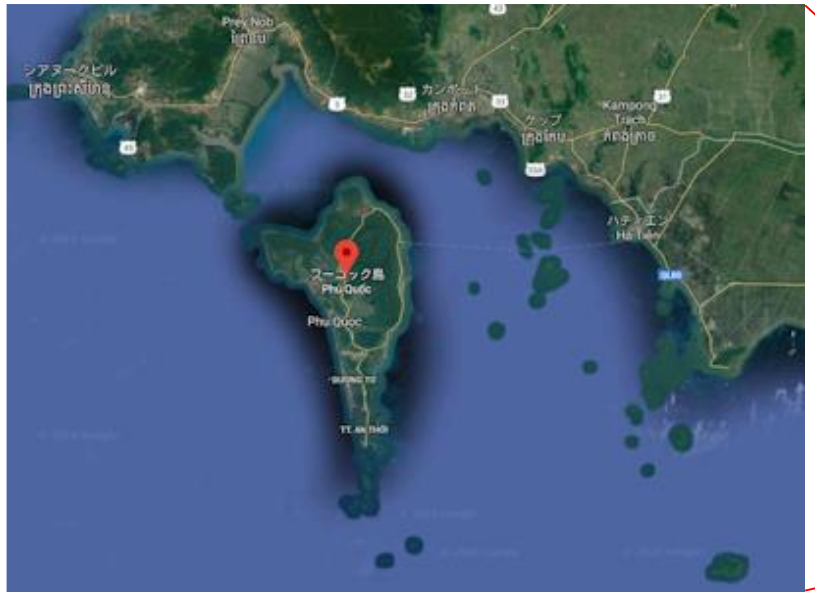
Findings on the LCT Planning of Phu Quoc (1)

Characteristics of the town:

- ✓ Phu Quoc, located close to the southern coast of Cambodia in the Gulf of Thailand, is the largest island of Vietnam and is a **tourist resort**.
- ✓ Size and population: 574 km^2, 103,000



Findings on the LCT Planning of Phu Quoc (2)

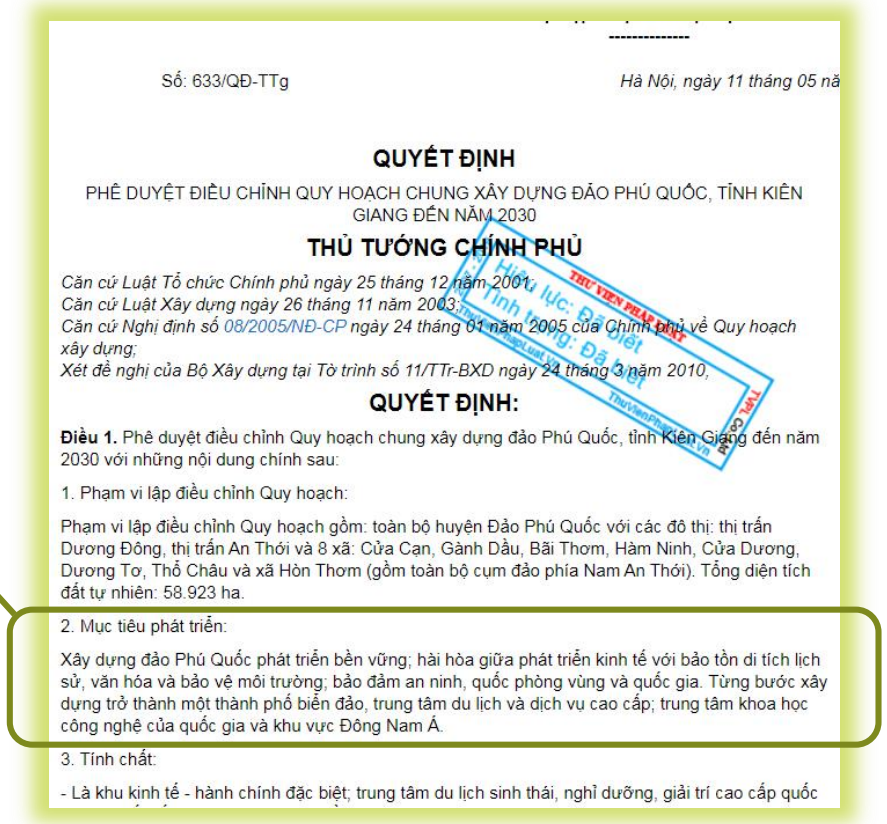
Low-carbon measures taken:

- ✓ Decision by the Central Government approved in 2010
  - ➢ *2. Mục tiêu phát triển:*

    Xây dựng đảo Phú Quốc phát triển bền vững; hài hòa giữa phát triển kinh tế với bảo tồn di tích lịch sử, văn hóa và bảo vệ môi trường; bảo đảm an ninh, quốc phòng vùng và quốc gia. Từng bước xây dựng trở thành một thành phố biển đảo, trung tâm du lịch và dịch vụ cao cấp; trung tâm khoa học công nghệ của quốc gia và khu vực Đông Nam Á.

  - ➢ 2. Development objectives:

    Promoting Phu Quoc island's **sustainable development**; harmony between economic development and preservation of historical and cultural relics and **environmental protection**; ensuring national and regional security and defense; step by step building an island city, a high-end tourist and service center; a science and technology center of Vietnam and Southeast Asia.



Số: 633/QĐ-TTg

Hà Nội, ngày 11 tháng 05 nă

QUYẾT ĐỊNH

PHÊ DUYỆT ĐIỀU CHỈNH QUY HOẠCH CHUNG XÂY DỰNG ĐẢO PHÚ QUỐC, TỈNH KIÊN GIANG ĐẾN NĂM 2030

THỦ TƯỚNG CHÍNH PHỦ

Căn cứ Luật Tổ chức Chính phủ ngày 25 tháng 12 năm 2001;
Căn cứ Luật Xây dựng ngày 26 tháng 11 năm 2003;
Căn cứ Nghị định số 08/2005/NĐ-CP ngày 24 tháng 01 năm 2005 của Chính phủ về Quy hoạch xây dựng;
Xét đề nghị của Bộ Xây dựng tại Tờ trình số 11/TTr-BXD ngày 24 tháng 3 năm 2010,

QUYẾT ĐỊNH:

Điều 1. Phê duyệt điều chỉnh Quy hoạch chung xây dựng đảo Phú Quốc, tỉnh Kiên Giang đến năm 2030 với những nội dung chính sau:

1. Phạm vi lập điều chỉnh Quy hoạch:

Phạm vi lập điều chỉnh Quy hoạch gồm: toàn bộ huyện Đảo Phú Quốc với các đô thị: thị trấn Dương Đông, thị trấn An Thới và 8 xã: Cửa Cạn, Gành Dầu, Bãi Thơm, Hàm Ninh, Cửa Dương, Dương Tơ, Thổ Châu và xã Hòn Thơm (gồm toàn bộ cụm đảo phía Nam An Thới). Tổng diện tích đất tự nhiên: 58.923 ha.

2. Mục tiêu phát triển:

Xây dựng đảo Phú Quốc phát triển bền vững; hài hòa giữa phát triển kinh tế với bảo tồn di tích lịch sử, văn hóa và bảo vệ môi trường; bảo đảm an ninh, quốc phòng vùng và quốc gia. Từng bước xây dựng trở thành một thành phố biển đảo, trung tâm du lịch và dịch vụ cao cấp; trung tâm khoa học công nghệ của quốc gia và khu vực Đông Nam Á.

3. Tính chất:

- Là khu kinh tế - hành chính đặc biệt; trung tâm du lịch sinh thái, nghỉ dưỡng, giải trí cao cấp quốc

Findings on the LCT Planning of Phu Quoc (3)

Energy issues in the master plan of 2010:

- ✓ *Effectively implementing the regulations on the economical and efficient energy use, development of renewable energy and strengthening control of investment projects using a lot of energy and resources, causing the environmental pollution.*
- ✓ *Raising the organizations and individuals' awareness on economical energy use; promoting the economical and effective energy use, making the energy saving programs become a regular activity in social life in the province, contributing to ensuring energy security, environmental protection and sustainable socio-economic development*
- ✓ *Improving the energy use efficiency, focusing on the following areas: public lighting system, industrial production, agriculture, construction, transportation, buildings of agencies using state budget, service activities, households. Popularizing the high-efficiency and energy-saving vehicles and equipment. Strengthening the control of investment projects using a lot of energy and resources, causing environmental pollution;*
- ✓ *Striving to save energy from 5% by 2020; reducing electricity consumption at state agencies and offices from 10%, public lighting from 10%, production facilities from 5%, other sectors and fields from 3%.*

Evaluation on the Application of the LCT- I System

Question	Excellent	Good	Average	Below Average	Poor
Information of the LCT-I Volunteer Town		✓			
Understanding of each LCT-I System indicators			✓		
Explanation (evidence) provided for the self-evaluation				✓	
Collection of data necessary for the evaluation				✓	
Calculation of CO2 emissions		✓			

Feedback on the Self-Evaluation (1)

Tier 1	Tier 2	Tier 3	Comments
Demand	Town Structure	1. Adjacent Workplace 2. Land Use 3. TOD	The scores of town structure are relatively high although there are no evidences, and experiences of reviewing previous cases tell that there may be strong indication that the evaluators misunderstand the definitions of the indicators.
	Buildings	1. Energy Saving Construction 2. Green Construction	The relatively high scores of the building section may reflect the regulations for resort facilities such as hotels and restaurants.
	Transpor-tation	1. Promotion of Public Transportation	While no evidence is given in the self-evaluation sheets, the master plan approved by the central government refers to the promotion of public transportation stating “To build modern, environmentally friendly public transformation system”. Road traffic axes are planned to improve the traffic flow as a high-level tourist resort.
		2. Improvement in Traffic Flow	
		3. Promotion of Efficient Use	

Feedback on the Self-Evaluation (2)

Tier 1	Tier 2	Tier 3	Comments
Supply	Area Energy System	Area Energy	The uniformed score, three stars = "There are plans.", for area energy system, untapped energy, and renewable energy may indicate that the plans are ambiguous and have not been prioritized, which must be reviewed. There is a description in the master plan approved by the central government in 2010 that “Research and apply new technologies to develop clean energy sources to meet a part of island energy demand”. The master plan indicates the growth of population as well as the increase of tourists, and the increase of power supply depends on the construction of a new thermal plant and the increase of the capacity of the existing power plant. The use renewable and untapped energy sources should be included in the execution plans.
	Untapped Energy	Untapped Energy	
	Renewable Energy	Renewable Energy	
	Multi-Energy System	Multi-Energy	

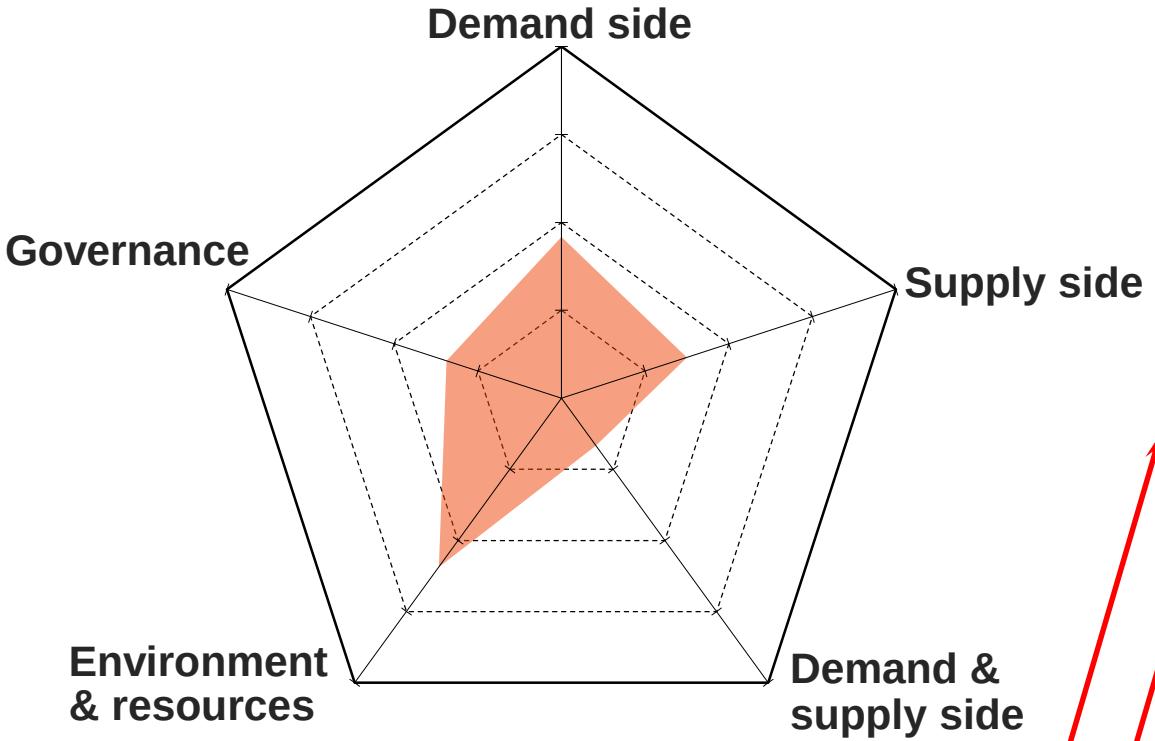
Feedback on the Self-Evaluation (3)

Tier 1	Tier 2	Tier 3	Comments
Demand and Supply	Energy Manage-ment	Energy Management of Building / Areas	There can be a guess from the scores here that a plan has been developed for energy management of buildings, but this is not the issue of this section, which is more oriented to smart grid and demand response approaches.
Environ-ment and Resources	Greenery	Securing Green Space	As "greenery section" is composed of percentile evaluation, the high scores may have resulted from the nature of resort island.
	Water Manage-ment	Water Resources	The uniformed scores of water management and pollution sections may indicate that the plans based on the resort island master plan have been developed but have not been brought to implementation.

Feedback on the Self-Evaluation (4)

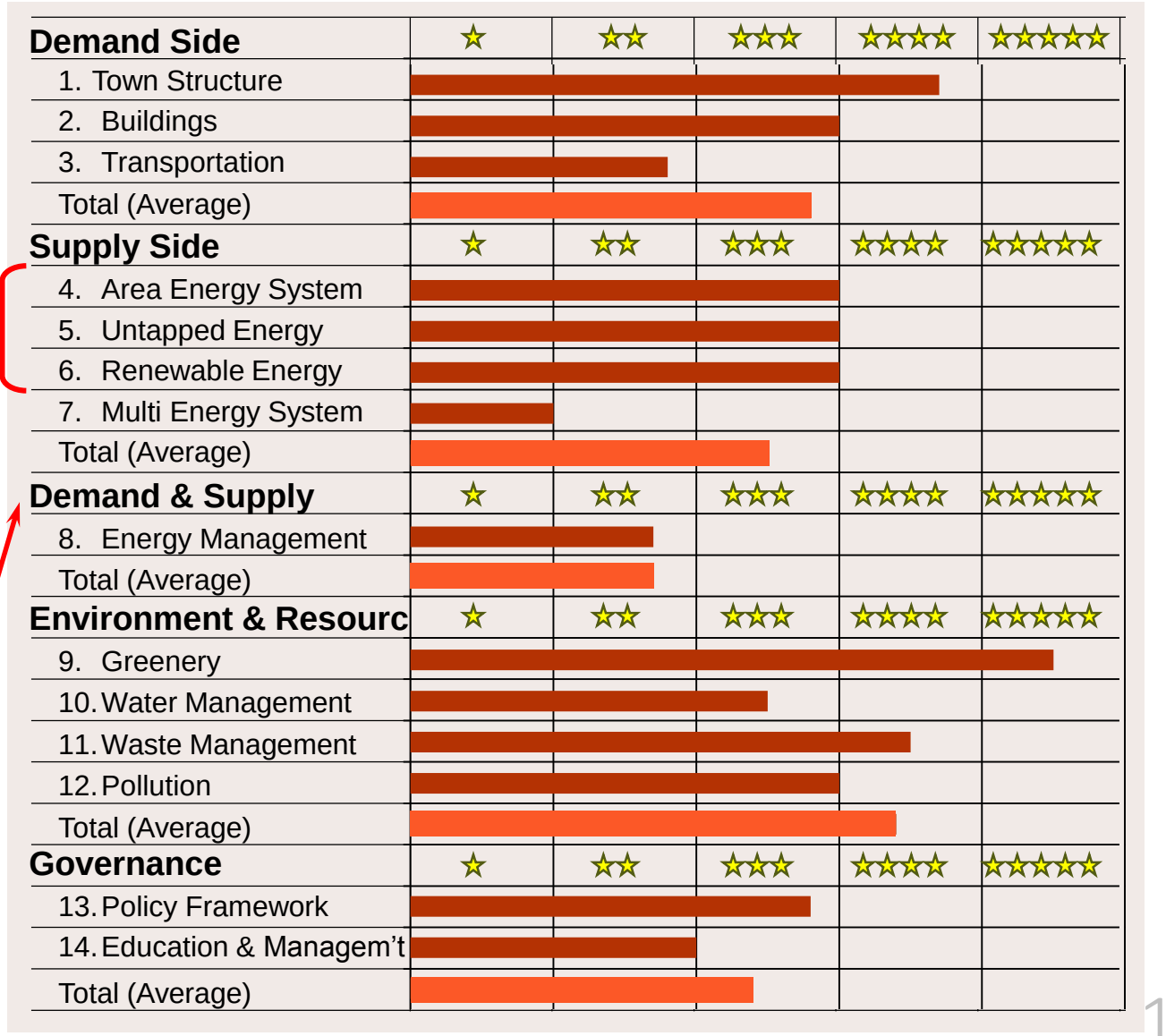
Tier 1	Tier 2	Tier 3	Comments
Environ-ment and Resources	Waste Manage-ment	Waste Products	The reduction of solid waste in one of key items of the resort areas, and the actions may have been commenced.
	Pollution	1. Air 2. Water Quality 3. Soil	Pollution control is important in tourism development, and environmental protection is emphasized in the master plan. Solid system to execute the master plan is required.
Govern-ance	Policy Frame-work	1. Efforts toward a Low-Carbon Town	While the adequacy of the self-evaluation can not be judged as no evidence is given, the indicators of this section, Governance, lead less misunderstanding. Differentiated scores of individual indicators seem to reflect actual stages of progress.
		2. Efforts toward Sustainability	
	Education & Manage-ment	Life Cycle Management	

Feedback on the Self-Evaluation

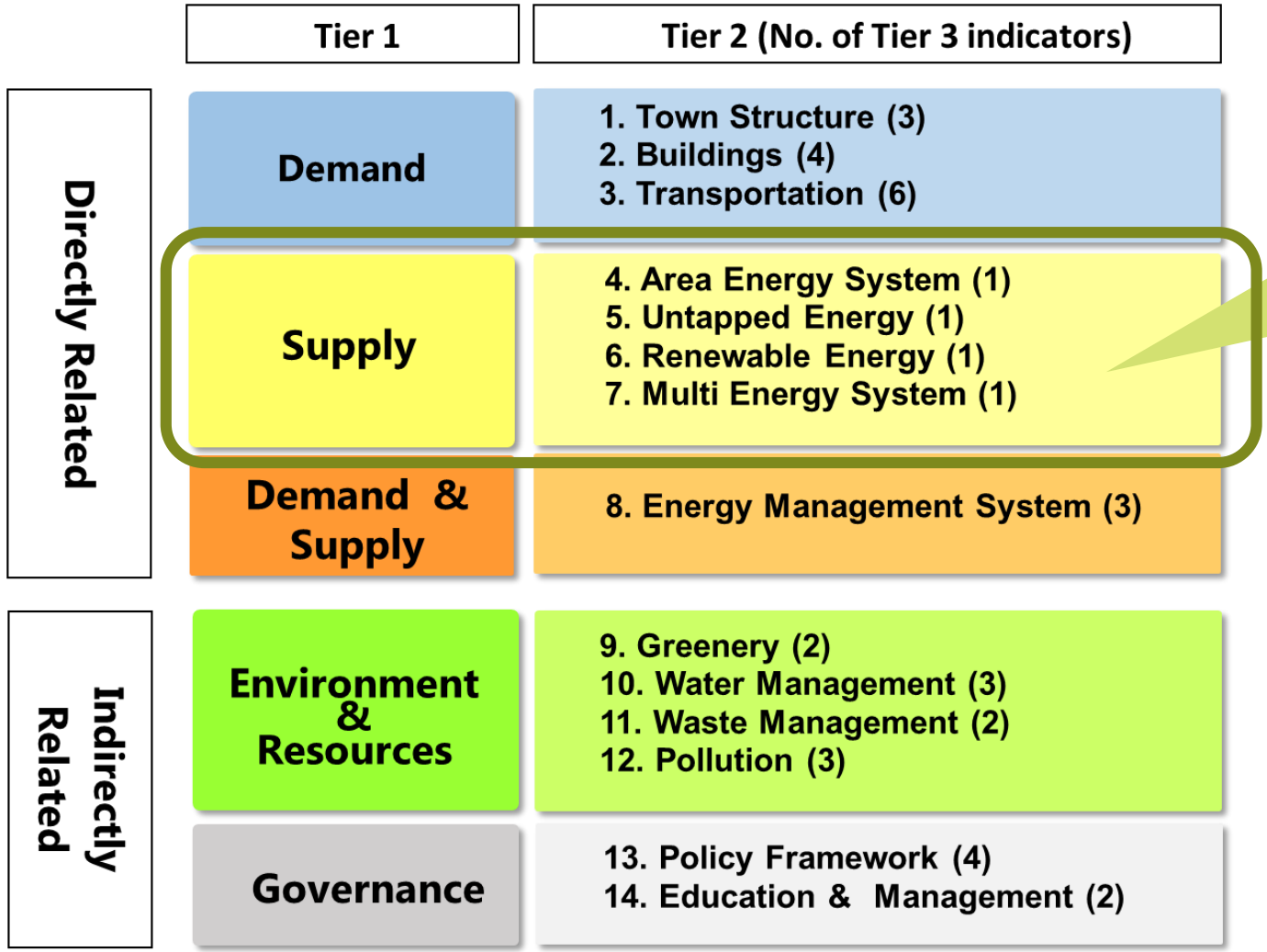


Uniform evaluation in the items of “Supply Side” may indicate insufficient understanding on the definitions of the indicators.

The result of “Demand & Supply” (smart grid and demand response) shows this item is not suited to developing economies just as the cases in previous years showed the same.



For the Improvement



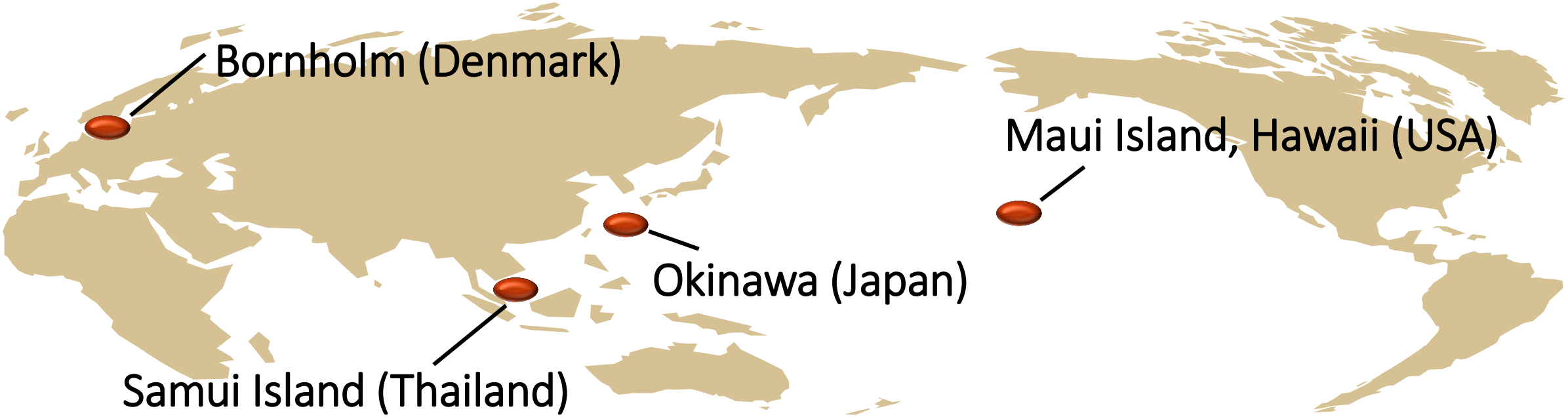
1. Assuming the future increase of population and tourists, the enhancement of energy supply is essential, and the use of "clean" energy sources should be more focused in the actual plans of the development.
2. The use of renewable and untapped energy sources can be more justifiable in terms of capital investment and return on islands than on main lands, as known as the "remote island model".

Ideas for the LCT Development (1)

Remote Island Model

Common issues and characteristics

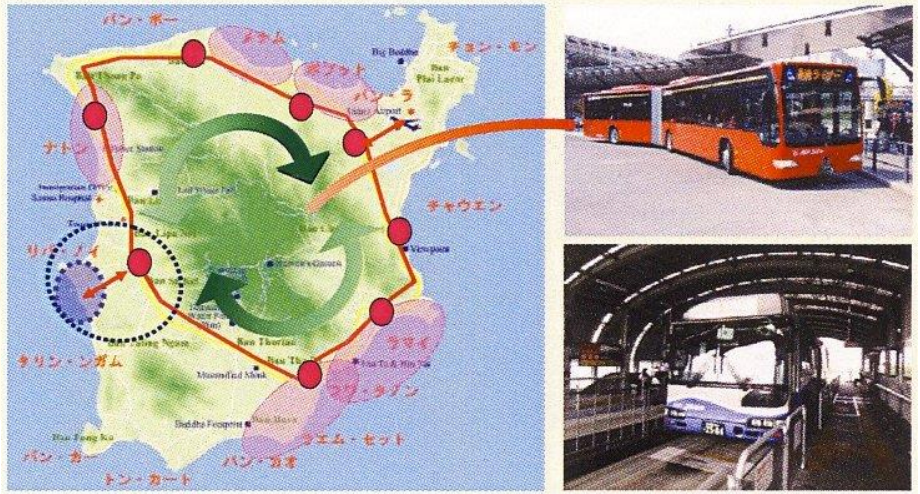
- ✓ High energy cost due to diesel-driven generation
- ✓ Limited total length of roads and travel distances
- ✓ Stable availability of wind and sun shine
- ✓ Separation from main grid on the main land



Ideas for the LCT Development (2)

Remote Island Model – Samui Island

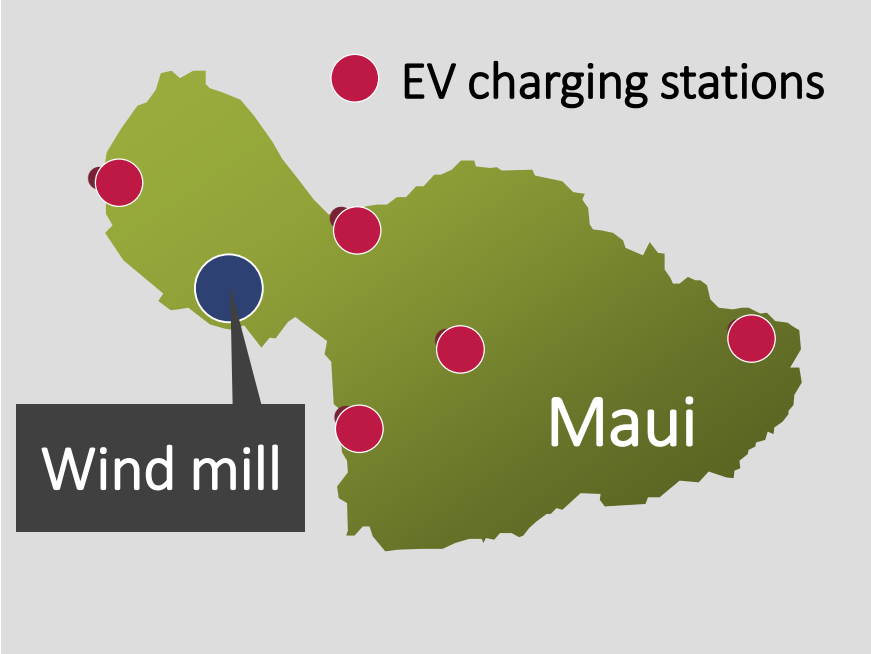
APEC Low-Carbon Model Town Phase 2

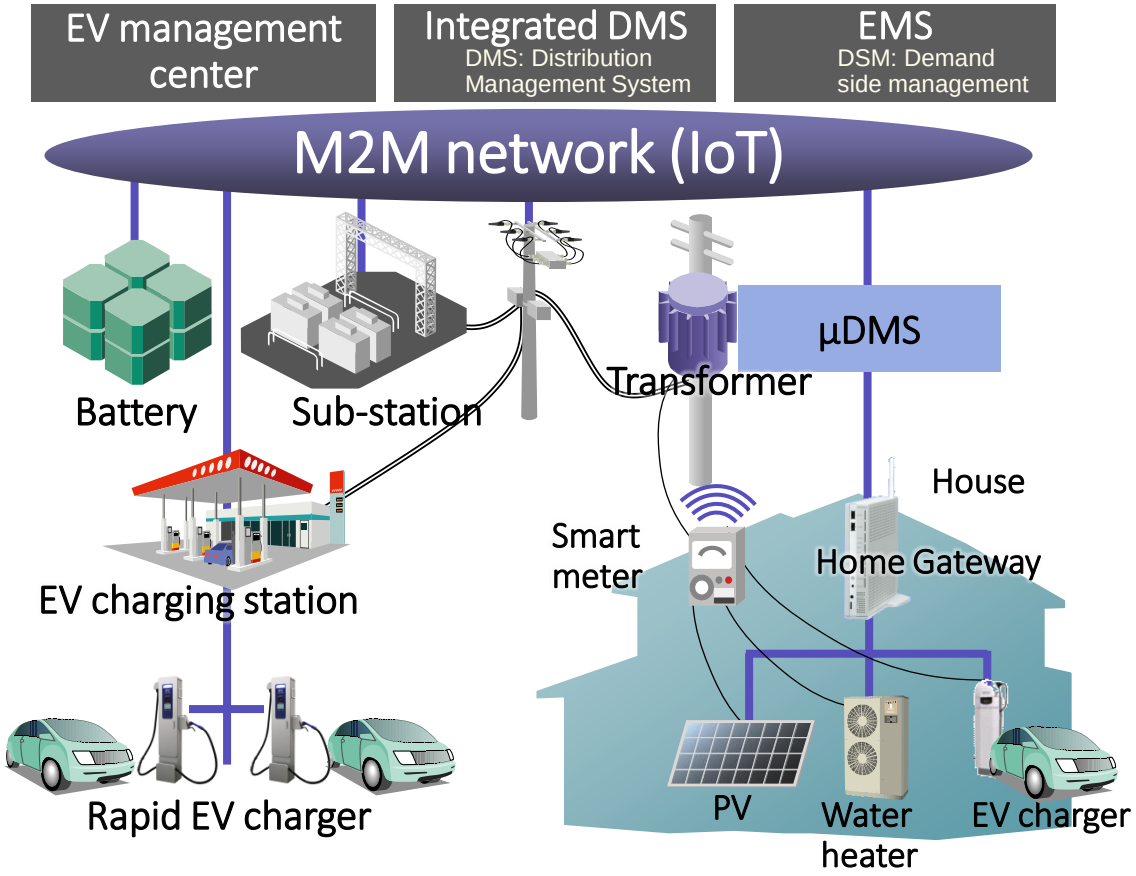


Ideas for the LCT Development (3)

Remote Island Model – Maui Island

Background: 40% of energy supply will be by renewable energy sources by 2030





Ideas for the LCT Development (4)

Focus on “Supply Side”
– Use of Renewable and Untapped Energy Sources –

Islands are suitable for the use of renewable and untapped energy sources.

- ✓ Real economic benefit from decrease of consumption of oil for diesel generation, which is more expensive than on the main land;
- ✓ Improved resilience against natural disaster through the local generation of power;
- ✓ More suited for environmental protection than conventional fossil-fuel based power stations.
- ✓ W2E (waste to energy) combined with the waste management

Ideas for the LCT Development (5)

<<Reference>>

– From the Master Plan approved by the central government in 2010 –

Electricity supply:

- Demand for electricity: demand of 850 million kWh / year, grid receiving 895 million kWh / year, maximum load of 285 MW, average consumption of 750 - 1,500 kWh / person / year .
- Power source: main power source: 110kV or 220 kV underground cable line from Ha Tien.
- Electricity on site: Duong Dong - Phu Quoc 30 MW **diesel station**.
- **To build a power plant** in Ganh Dau, with a capacity of 100 to 200 MW, **using fuels** without polluting the environment and without affecting the tourist landscape and preserving the island's ecology.

First phase planning - period to 2020

- From the on-site electricity source, the existing Phu Quoc power plant is 10 MW, **increasing the capacity to 30 MW.**
- **Research** and apply new technologies to develop **clean energy sources** to meet a part of Island energy demand.

Programs and projects prioritized for investment:

- To invest in **the construction of Ganh Dau 100 MW thermal power plant** and carry out a project of pulling **underground cables from the mainland to the island**.

Other comments

- Points that users might confuse/misunderstand in the LCT-I System indicators

From the experiences of reviewing the self-evaluations by the volunteer towns over the past three years:

- ✓ Deficiencies shown below should be fixed before LCMT program comes to the end and the “Concept” and the “LCT-I” are immobilized and diffused over the region.
- ✓ Structural deficiencies of uneven weights of Tier 3 indicators as Tier 1 scores are derived from simple arithmetic average of Tier 3 scores;
- ✓ Indicators quoted from LEED and others, developed for advanced economies, are unsuited to be applied to developing economies.
  - Use of floor space rather than ground area
  - “Floor Area Ratio” and its “standard” value