Asia-Pacific Economic Cooperation

Island of Cat Ba: Transport & Electricity Profile

Nikola Medimorec, SLoCaT Partnership

Workshop: Deep Transition and Integration of Power and Transport Systems(APEC project EWG 10 2018A)

NREL Office, Washington DC, 14 January 2020

SD STRATEGIES

NREL Transforming ENERGY

LEDS GLOBAL PARTNERSHIP

REINER LEMOINE INSTITUT

Partnership on Sustainable Low Carbon Transport

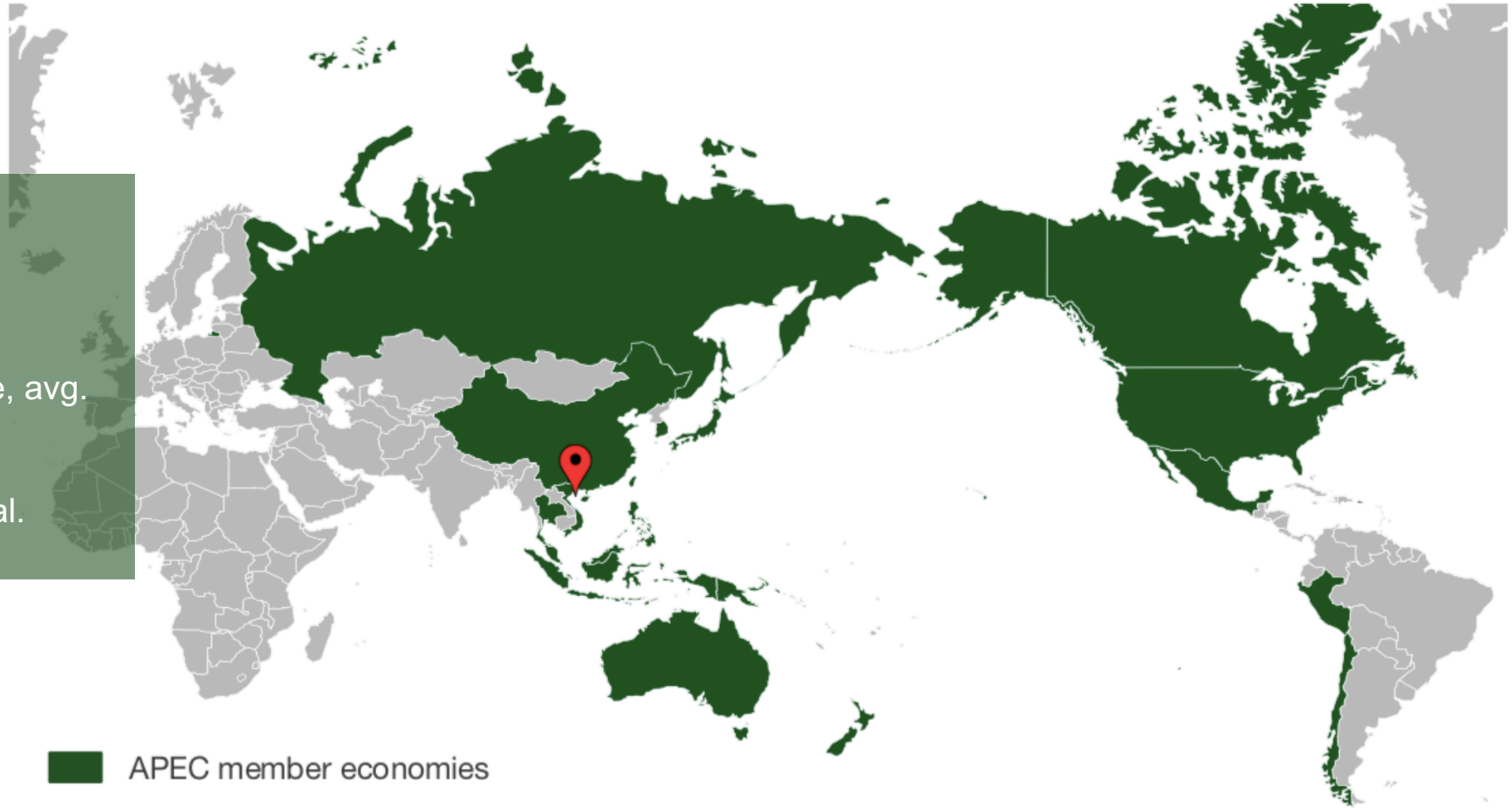
Cat Ba Island, Viet Nam

Cat Ba Island

Land area: 285 km^2

Population: 17,911 people, avg. household size: 3.8

Climate: Humid subtropical.



Partnership on Sustainable Low Carbon Transport

SD STRATEGIES

Cat Ba National park, a UNESCO biosphere reserve.

Cat Ba Island

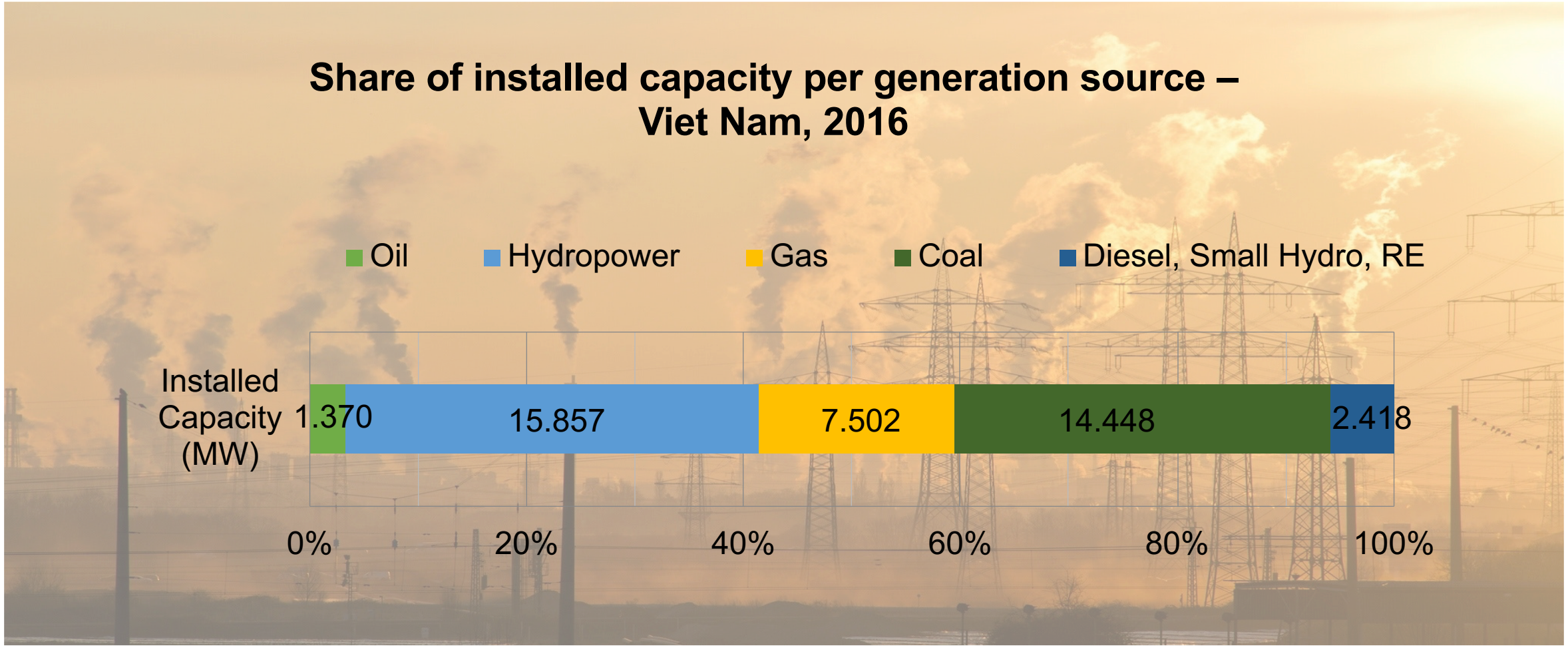
Primary economic activities: Tourism and services, some industry and agriculture.

Income level: 2,914 USD per capita and year, 9.8% of population living below national poverty line.

Cat Ba National park: a UNESCO biosphere reserve (core area of 8,500 ha), home to 3,860 species of which 130 species are threatened by extinction.

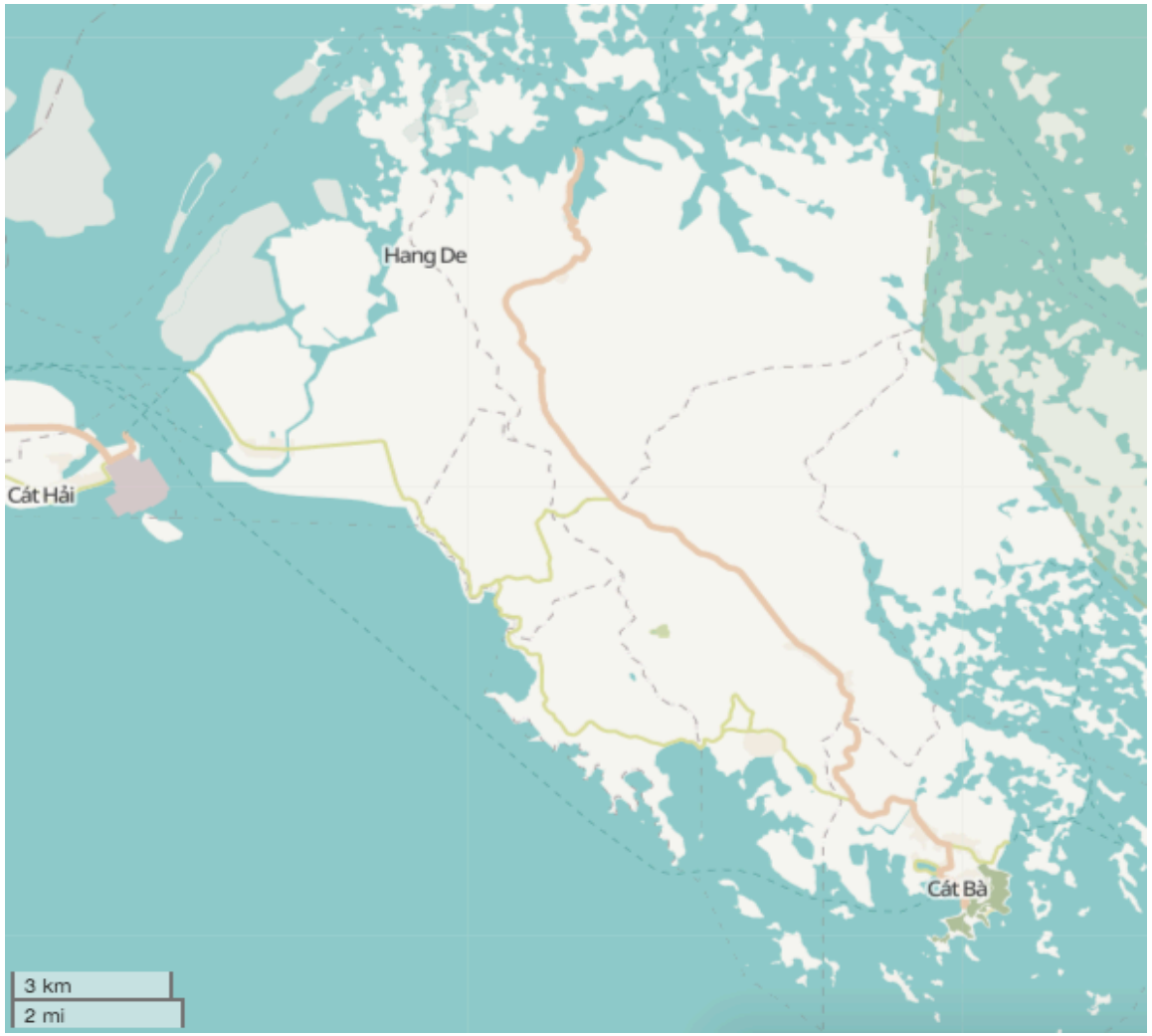
SD STRATEGIES

Cat Ba's electricity sector



SD STRATEGIES

Cat Ba's transport sector



Map of Cat Ba showing main road network
Source: OpenStreetMap, 2019)

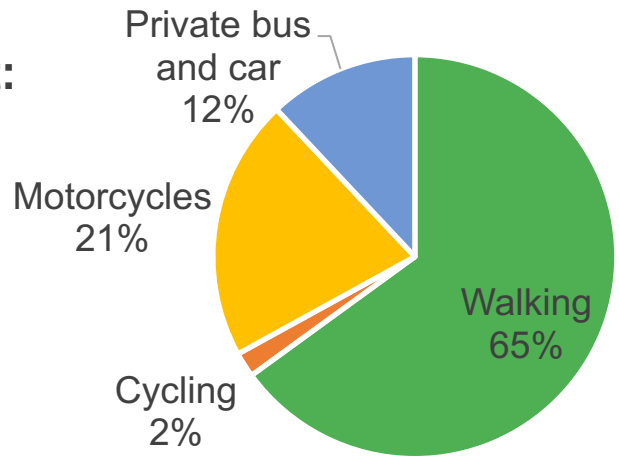
Private vehicle fleet size:
170 cars; 4,290 motorcycles; 80 boats. EVs: 81 (1 bus and 80 cars).

Public vehicle fleet size: /

Growth rate of private motorization from 2005 to 2015:
For Viet Nam: 214%.

Motorization rate:
For Viet Nam: 23.2 vehicles per 1,000 people (2015).

Transport modal split:



Policy + investment environment

- **National targets (unconditional):**

(based on Vietnam's Nationally Determined Contribution)

  - To reduce GHG emissions by **8% compared to 2030 BAU** projections.
  - To reduce emission intensity per unit of GDP by 20% compared to 2010 levels.
  - To increase forest cover to cover 45% of land.

- **Regional targets:**

(based on 'Master Plan on Sustainable Tourism Development of Cat Ba Archipelago until 2025 and Vision to 2050')

  - To implement **energy-saving technologies** for hotels and homes.
  - To expand use of **environmentally friendly transport** methods for tourists.
  - To reduce **CO_2 emissions from transport** on the island and in the long-term, a phase-out of fossil fuel vehicles.

SD STRATEGIES

Sectoral Plans by local government

Energy

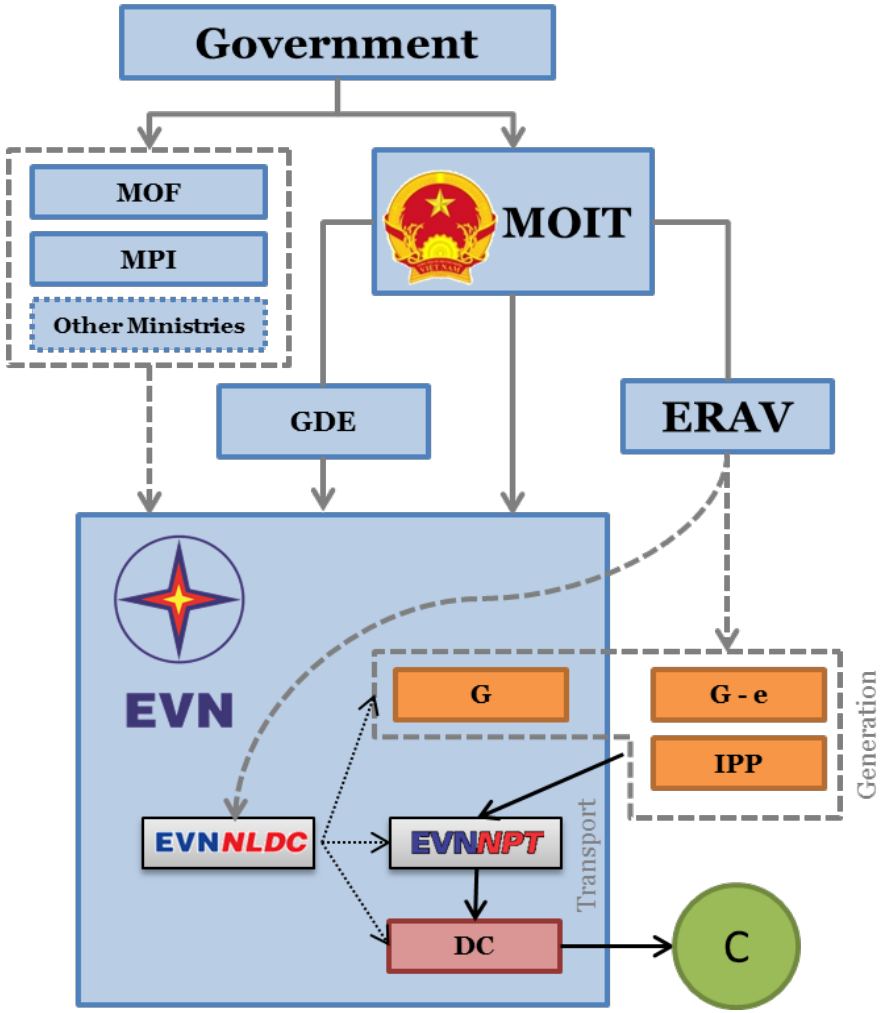
- Construction of **wind power** and **solar power** ensuring that electricity supply meets the minimum need of tourism;
- Expansion of clean energy capacity in tourism-related constructions and
- awareness raising on the need for clean energy in tourism.

Transport

- Upgrade and/or construction of a **Cat Ba tourist port, ferry ports and a yacht harbour**.
- Construction of a **car parking garage** in the centre of town and on a road linking major destinations.
- Construct an **airstrip** allowing tourists from Cat Bi airport or from Hanoi, Ha Long, Van Don to reach Cat Ba and vice versa.
- Replace **transport vehicles using gasoline with vehicles using electricity/gas by 2025**.
- Build a **monorail** linking Cat Ba town with the national park and the east coast of the island.
- Construct a **cable car system** linking Cat Ba and Hon Ong town.

SD STRATEGIES

Main Stakeholders



MOIT	Ministry of Industry and Trade
MOF	Ministry of Finance
MPI	Ministry of Planning and Investment
GDE	General Directorate of Energy
ERAV	Energy Regulatory Authority of Vietnam
EVN	Electricity of Vietnam
G	EVN owned Generation Companies
G – e	Equitized Generation Companies (i.e. privatized or partly privatized)
IPP	Independent Power Producer
NLDC	National Load Dispatch Center
NPT	National Power Transmission Corporation
DC	Distribution Companies
C	Consumer
	State Management
	Electric Flows
	Power System Operation Interface

Electricity

- The Viet Nam wholesale electricity market (VWEM) officially came into operation in 2019 and currently, five power corporations and a few large power plants are participating in the market

Transport

- The main government body for transport is the Ministry of Transport.

Institutional framework of the Viet Nam electricity sector prior to 2019 liberalisation.
Source: GIZ Viet Nam Energy Support Programme, 2015).

SD STRATEGIES

Island snapshot: Electric shuttles

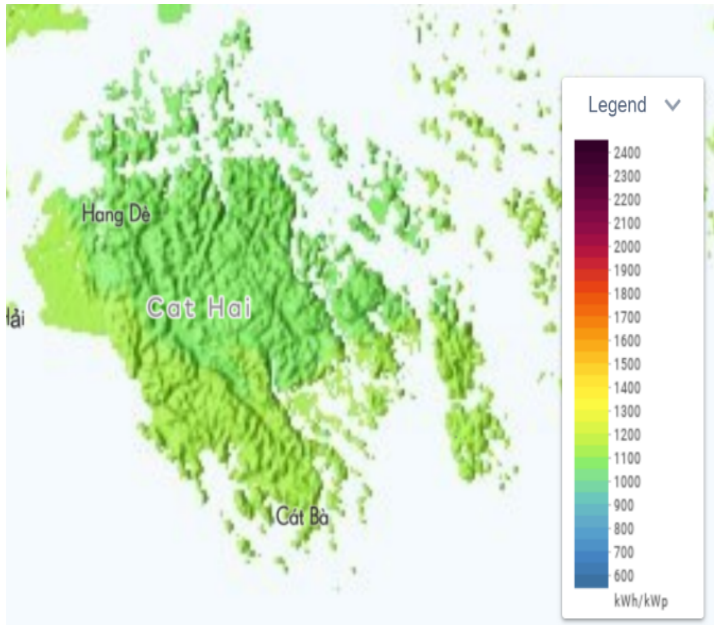
Electric shuttles

Main purpose: to transport tourist groups from hotel to different location along short distances.

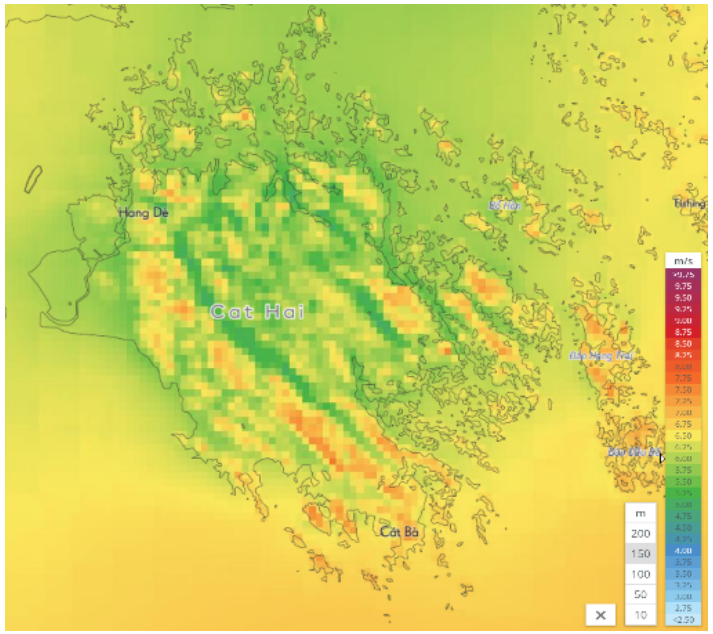
The way forward…

… to advance sustainable energy and transport in Viet Nam:

- develop a **framework that enables uptake of renewable energy,** e.g. giving incentives for private PV panels.
- Scale up **electric two-wheelers** and develop the necessary infrastructure.
- Research **sustainable alternatives for fishing and water transport**.
- Set up **an electric bike sharing system** to familiarise citizens with the technology and lower the purchase barrier.



Potential for solar energy on Cat Ba.
Source: Globalsolaratlas.



Potential for wind energy on Cat Ba
Source: Globalwindatlas.

SD STRATEGIES

Thank you for your attention!

Contacts:

Nikola Medimorec,
Senior Researcher, SLoCaT Partnership
nikola.medimorec@slocatpartnership.org

Alexander Ochs
Managing Director, SD Strategies
ochs@sd-strategies.com

Dean Gioutsos
Project Manager, SD Strategies
gioutsos@sd-strategies.com