Source: @free3yourmind4/Youtube

Wave Energy for An Binh Island, Vietnam

Vietnam renewable energy transaction assistance fund nearshore wave power plant in Ly Son: EIA, gap analysis, and learning capture

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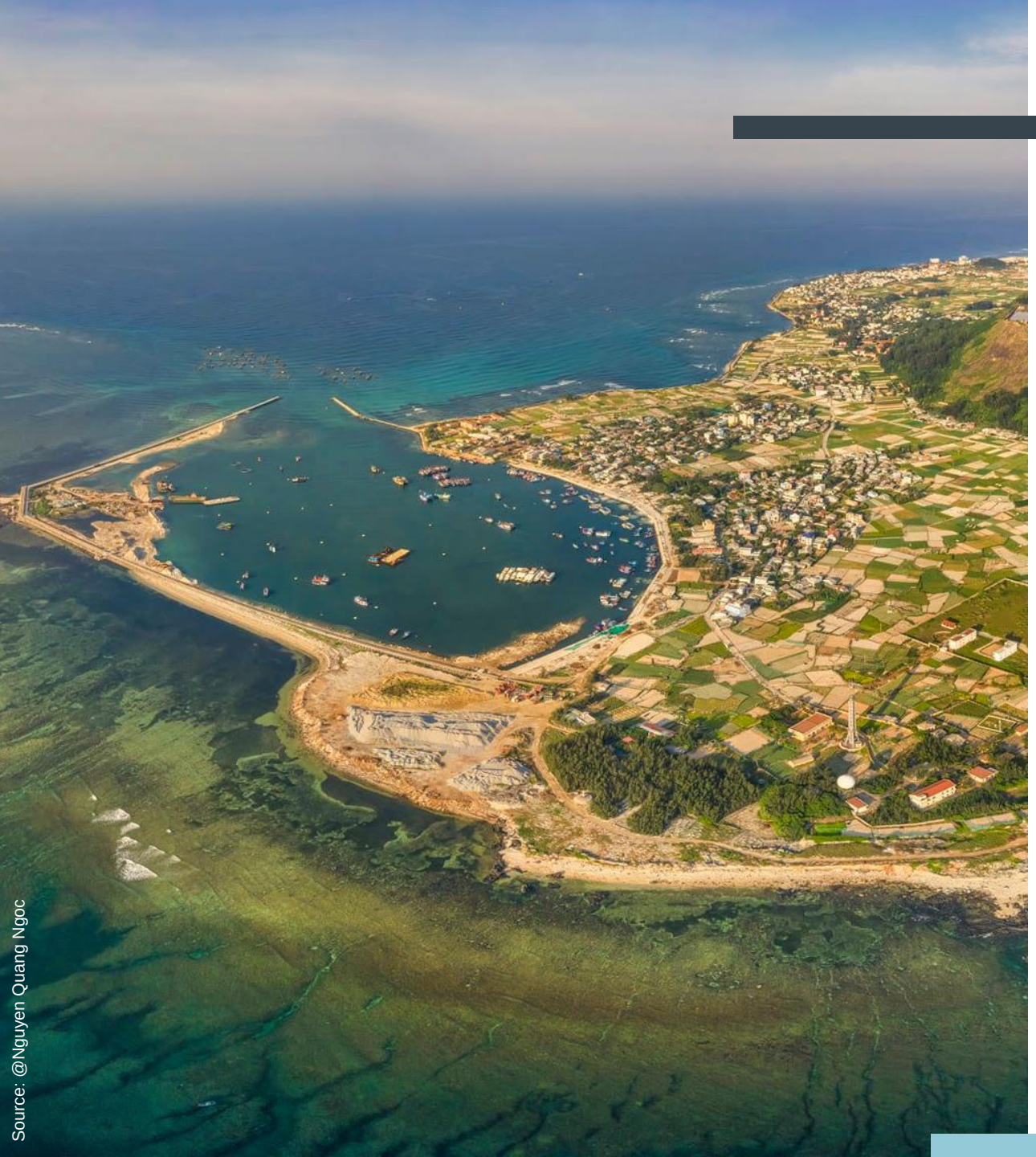
Why waves?

- Baseload - wave power is considered complementary to baseload power, unlike wind and solar
- Wave energy density - ability to capture large amounts of energy in a single device
- Remote areas and national energy grids



Source: @Nguyen Quang Ngoc

Environmental Impact Assessment

- Balance the needs of development, socio-economics and the environment
- Ensure that development aligns with government policy
- Supports investment decisions
- Ensures community involvement
- Enhances development designs

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Development Impacts

- INGINE's wave energy converter would substantially increase the renewable energy supply on the island

  (expected average annual energy production ~ 65.5 MWh/y)
- Significantly decrease dependence on diesel fuels used for generators

  (50,000-60,000 liters fuel currently used per year)
- Decrease greenhouse gas emissions
- The development would contribute to a higher volume of water produced by the existing desalination plant - beneficial for tourism and onion and garlic production on the island

Source: Tran Thanh Sang, 2020

Development Impacts

- Proposed construction in the Ly Son Marine Protected Area
- Likely negative impacts relate mainly to the coastal zone and biodiversity
- Coastal zone may be affected during the construction phase activities, resulting in higher turbidity and water pollution
- Location of the wave energy converter may impede coastal reef observation trips

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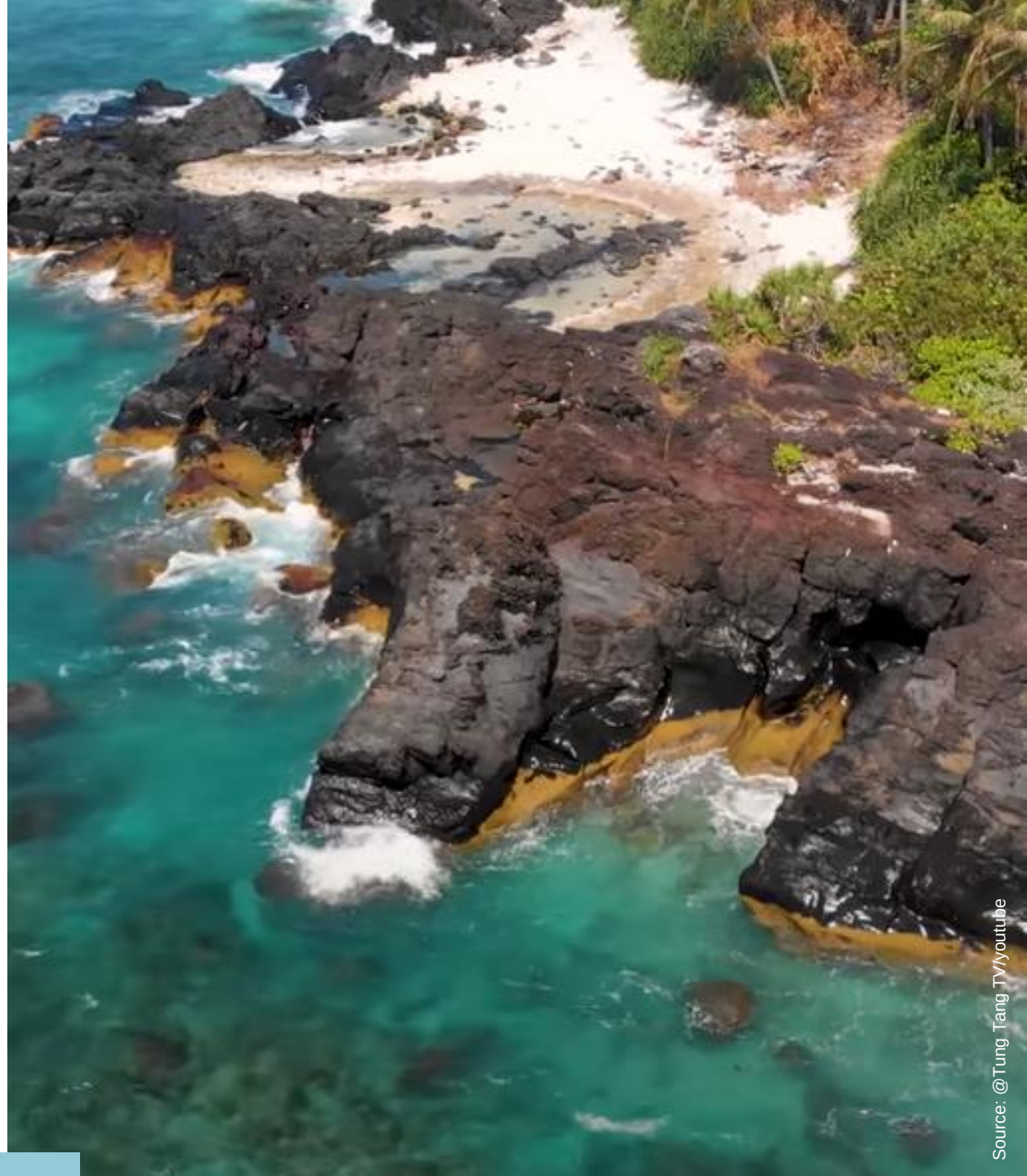
Barriers to wave energy

- Vietnamese Government's policy on renewable energy does not mention wave energy specifically
- Projected climate changes indicate decreasing average wave heights for the development area (*Data from Vietnam Institute of Meteorology, Hydrology and Climate Change*)
- Wave energy converters have a relatively high Levelized Cost of Energy (LCOE).

  Recent studies (Chang et al. 2018) have indicated that *"…the wave energy industry should aim to achieve a LCOE of less than $0.30/kWh for early-market commercial-scale WEC deployment projects.*"



Source: @Tung Tang TV/youtube

Source: @Nguyen Quang Ngoc

Thank you