Climate Change Corner

A more sustainable way forward for wind farms?

To achieve the Government's target of obtaining 3-4% of energy from renewable sources by 2020, offshore wind farms located within Hong Kong's territorial waters are currently being considered by the two power companies. Two environmental impact assessments are currently underway.

However, there is a more sustainable alternative for wind farms which should help to reduce both construction and operating costs significantly; that is, developing wind farms on the Dangan Islands south of Hong Kong territorial waters in collaboration with the Guangdong and Macau Governments. The main advantages include the following:

(1) The Dangan Islands in Guangdong are currently largely undeveloped and possess sufficient land area.

(2) Based on surface wind data collected at the Waglan Island Station by the Hong Kong Observatory, the potential electricity generated by wind turbines located on the Dangan Islands is expected to be high. Furthermore, wind turbines located above sea level on hilltops should generate more electricity than offshore wind turbines at sea level.

(3) The east-northeast to west-southwest orientation of some of the islands makes them ideal for tapping the prevailing wind during the northeast and southwest monsoons.

(4) Cost reduction for onshore wind farms through:
   (a) Lower ground investigation cost
   (b) Lower construction cost
   (c) Removal of risk of damage by storm waves
   (d) Removal of ground stability risk
   (e) Lower maintenance cost

(5) No obstruction of shipping channels or loss of fishing ground.

(6) The extension of an electric grid to the Dangan Islands should be useful for the development of other types of marine energy.

There are two disadvantages to this option: the Dangan Islands are classified as a nature reserve with development restrictions; and the existing electric grid from Lamma Island will have to be extended to the Dangan Islands. However, the advantages should outweigh this disadvantage.

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