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International Conference on

Coastal Zones

May 16-18, 2016 Osaka, Japan

Ocean energy of Taitung Coast in Taiwan

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Taiwan east coast is full of ocean energy, especially Ocean Thermal Energy Conversion (OTEC). Offshore which is 3 km away from Hualien coast or Taitung coast will reach 1,000 M to 1,500 M. Their temperatures are around zero to 4 degrees, while surface temperature is around 25 to 28 degrees; temperature difference is more than 20 degrees. If ammonia is used as the catalyst, it is easy to generate electric power. Offshore 33 km from Taitung coast and about 5 km from Green Island, there exists 3~4 knots' Kiroshio current. MOEA is currently planning to develop 3 giga watts power. For the convenience to develop the Ocean Energy and Ocean Resources, the planning of an airport and seaport is shown for future transportation of energy and Deep Ocean Water (DOW) products. The SHOTEC power plant is a good solution of OTEC. That scheme not only offers three times thermal efficiency to that of a conventional OTEC plant but also circumvents the difficulties of deployment of deep seawater pipe and evaporator biofouling problem. Therefore, this power plant has advantage of (1) combination of solar and deep seawater energy; (2) without carbon dioxide emissions and waste storage problem; (3) sustainability. This complex ports involve ocean engineering arrangements of ocean engineering installation, DOW intake pipeline, OTEC Fish Coral Reef, etc., and seaport facilities of DOW R&D Center, value added center, logistic center and Tourism Recreation Center. DOW products and mineral DOW water involve cold floral, cold seafood, cold fishery products, etc., will be fast transported by this offshore airport to keep their fresh and coldness. These complex ports (seaport and airport) will develop and enhance the eastern Taiwan's economical development. The ocean energy development of Taitung is welcome an international technical cooperation to participate its ongoing promotion and future developing.

Biography

Ho-Shong Hou worked for three years as a Hydraulic Laboratory Director and Chief Research Engineer with the Taichung Harbor Project, a man-made deep-water port construction on the West Coast of Taiwan. In 1976, he received his PhD in Civil and Coastal Engineering at the University of Florida. He then worked as the Director of the Graduate Institute of Harbor and Ocean Engineering at the National Taiwan Ocean University, and as an Adjunct Professor of the Institute of Naval Architecture at National Taiwan University. He subsequently became the Deputy Director of the Harbor Research Institute in Taichung for the following five years, whilst maintaining his two professorships. Soon after he accepted an offer to become the Division Director (and afterword Deputy Director-General) of the Institute of Transportation of the Ministry of Transportation and Communications (MOTC), positions he held for a total of 12 years. In 1995, he was promoted to Director-General of Department of Railways and Highways within the MOTC. He was in December 1998 invited by then Mayor of Kaohsiung to serve as Deputy Mayor. In this high responsibility role he was in charge of all municipal infrastructure development projects, and was also subsequently appointed to the position of Chief Commissioner of the Kaohsiung City Election Commission. He is a registered Civil and Hydraulic Engineer, and an active member of American Society of Civil Engineers. He was the President of PACON (2002-2008) International and a Life Member (from 2006).

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