



# SHIPPING REGIONAL

## Blue Economy - Wave 63

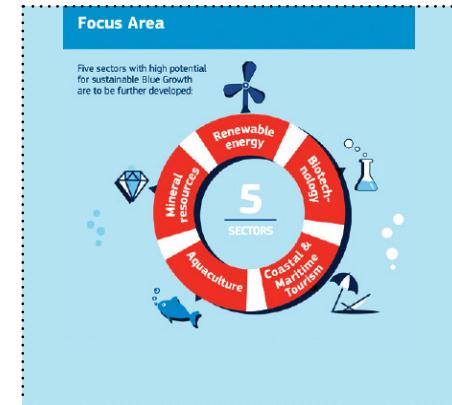
(Series on "Blue Economy" By Capt. Gajanan Karanjikar)



**Capt. Gajanan Karanjikar, Blue Economy Social Activist & Multi Modal Logistics Expert**

### Blue Economy and Ocean Energy:

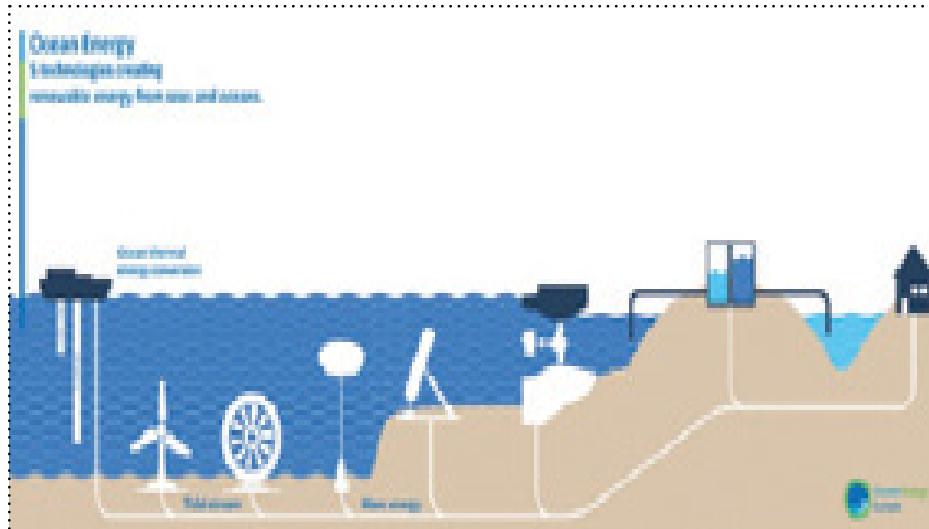
Expanding demand for ocean-derived protein rich food, materials, energy, and knowledge is driving rapid growth in the emerging "blue economy." Blue economy industries, such as aquaculture, are moving further offshore to take advantage of the vast scale of the ocean, but moving further offshore requires access to consistent, reliable power untethered to land-based power grids.



Marine energy resources could be particularly well poised to address these power constraints because they are abundant, geologically diverse, energy dense, predictable, and complimentary to other energy sources.

New forms of ocean energy are gaining interest globally, and because European companies are leaders on tidal and wave technologies, that is good news for the environment and for the European economy, argues Francesco La Camera.

(Francesco La Camera is Director-General of the International Renewable Energy Agency (IRENA), based in Abu Dhabi.)



Marine energy can be harvested from many forms' tides, surface waves, ocean circulation, salinity and thermal gradients. Those found in tidal or marine currents, driven by gravitational effects and wind driven waves, are derived ultimately from solar energy [Bahaj, 2011]. The best wave conditions for generation are found in high latitudes with deep water power densities of 60-70 kW/m. About 2 % of the world's 800 000 km of coastline exceeds a power density of 30 kW/m, with a technical potential of about 500 GWe based on a conversion efficiency of 40 %. The total European wave energy resources are estimated to be 1 000 TWh. In the area of the north-eastern Atlantic (including the North Sea), the available wave power resource is about 290 GW and for the Mediterranean 30 GW. The

potential for marine current turbines in Europe is estimated to exceed 12 000 MW of installed capacity. Locations with especially intense currents are found around the UK and Ireland, between the Channel Islands and France, in the Straits of Messina between Italy and Sicily, and in various channels between the Greek islands in the Aegean [European Commission, 2006]. Globally, wave energy can produce 2 000-4 000 TWh/yr and tidal energy can reach 800 TWh/ yr.

Marine technologies may be able to provide capacity factors of 30-45 %. Energy from waves is predictable, thus making the technology suitable for hybrid systems with balancing power from pumped storage or gas [BNEF, 2011].

## Commodity-based approach required while developing waterways transport: IWAI Chairperson

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A mandatory clause for the movement of certain commodities through waterways as a commodity-based approach will lead to a big boost to inland waterways, stated Amita Prasad, Chairperson, Inland Waterways Authority of India (IWAI) at a virtual conference on 'Eastern Waterway Grid for Regional Connectivity,' organized by The Associated Chambers of Commerce and Industry of India (ASSOCHAM).

Amita Prasad stated that in the last decade, India has embarked on developing an inland waterway 'Eastern Grid', a system of multi-modally interconnected waterways and coastal routes.

### India and Bangladesh taking lead in developing potential inland waterways

"The waterway regional connectivity agenda offers an important opportunity to kick start regional integration in SAR and to facilitate regional trade between South and East Asia. India and Bangladesh in particular are taking lead in advancing policies and investments in developing potential inland waterways," she said.

The government is keen to develop the waterway connectivity with its neighbours – Nepal, Bhutan, Bangladesh and Myanmar.

### Commodity approach required since everything cannot be transported through the waterway.

"For centuries water has been the preferred mode of transport for trade between countries. But over the years this model has fallen to disuse. But a commodity-focused approach is required as everything cannot be transported through the waterway."

Bulk cargo should only move through waterways," she added.

During the webinar the participants that included dignitaries from India, Bhutan, Nepal, and Bangladesh spoke for the need to strengthen waterways as the mode of intra-regional transport.

Vineet Agarwal, President, ASSOCHAM and Managing Director of Transport Corporation of India (TCIL), said that for decades India has been involved with the above countries for trade activities using the waterway transport.

### Waterways cost less, climate-friendly and green transport

"We need to explore how the eastern grid can strengthen trade with them," said Agarwal. He also emphasised that the importance of waterways is not less. "It costs less, is climate-friendly, and is a form of green transport," he said.



India and Bangladesh in particular are taking lead in advancing policies and investments in developing potential inland waterways: Amita Prasad, Chairperson, Inland Waterways Authority of India (IWAI)