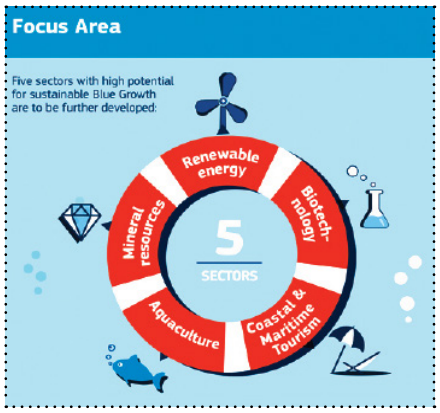
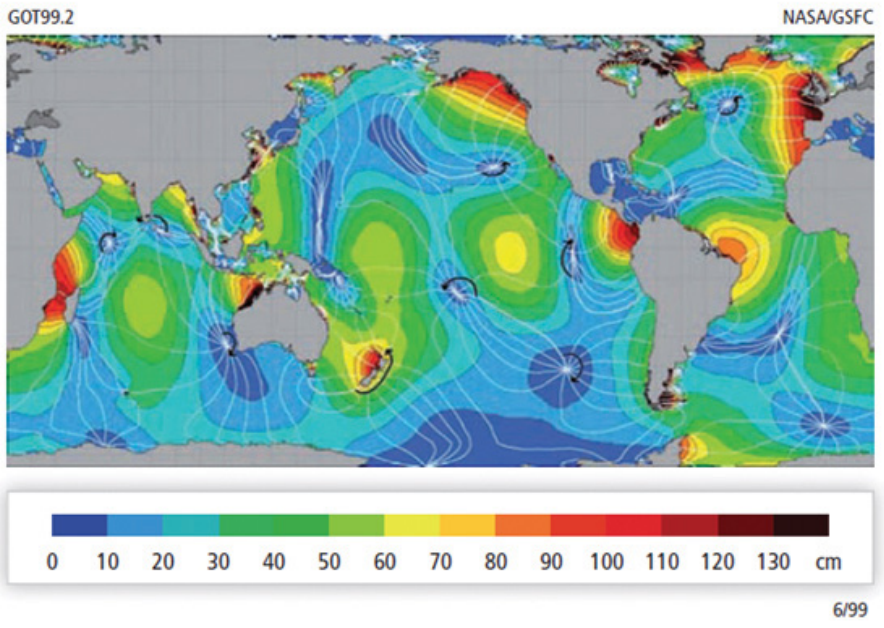
"A sailing ship is no democracy; you don't caucus a crew as to where you''ll go anymore than you Inquire when they'd like to shorten sail. - Sterling Hayden

# Blue Economy – Wave 69

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

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




(source :World map of M2 tidal amplitude (NASA, 2006).

## Blue Economy and Ocean Energy .... (cont..)

Tides are the regular and predictable change in the height of the ocean,driven by gravitational and rotational forces between the Earth, Moonand Sun, combined with centrifugal and inertial forces. Many coastalareas experience roughly two high tides and two low tides per day(called 'semi-diurnal'); in some locations there is only one tide per day(called diurnal). The lunar day of 24 hrs and 50 min means that thetiming of subsequent high and low tides advances each day as thisconstituent is the predominant one. Diurnal and semi-diurnal tides alsooccur at different times in different locations around the Earth.

Concerning tidal, there are different deployment challenges, such as limited site availability and high capital investment, and sometimes also some unclear environmental impacts. The theoretical potential of tidal energy is significantly smaller than that for wave, with around 1,200 terawatt-hours (TWh) per year due to the geographical limitation.

The potential for wave energy is more important; in our estimates it is about 29,500 TWh per year, which means that wave energy alone could theoretically meet all global energy demand. Wave energy is best placed between 30 and 60 degrees of latitude and in Deepwater, meaning more than 40 meters. That is the ideal location for wave energy.

There are some interesting developments in ocean energy, combining tidal and wave. Projects have already added around 24 MW of additional capacity. It means that in one year almost twice the total current cumulative capacity would be installed. The new capacity mainly come from tidal stream and wave technologies.

The current development status of ocean energy technologies rangesfrom the conceptual and pure R&D stages to the prototype and demonstrationstage, and only tidal range technology can be consideredmature. Presentlythereare many technology options for each oceanenergy source and, with the exception of tidal range barrages, technologyconvergence has not yet occurred. Over the past four decades,other marine industries (primarily offshore oil and gas) have madesignificant advances in the fi elds of materials, construction, corrosion,submarine cables and communications. Ocean energy is expected todirectly benefit from these advances.

Competitive ocean energy technologies could emerge in the presentdecade, but only if significant technical progress is achieved. Oceanenergy technologies are suitable for the production of both electricityand potable water, whilst OTEC can also be used to provide thermalenergy services (e.g., seawater cooling for air conditioners).

### Tidal Energy :

- The tidal cycle occurs every 12 hours due to the gravitational force of the moon.
- The difference in water height from low tide and high tide is potential energy.
- Similar to traditional hydropower generated from dams, tidal water can be captured in a barrage across an estuary during high tide and forced through a hydro-turbine during low tide.
- The capital cost for tidal energy power plants is very high due to high civil construction and high-power purchase tariff.
- To capture sufficient power from the tidal energy potential, the height of high tide must be at least five meters (16 feet) greater than low tide.
- The Gulf of Cambay and the Gulf of Kutch in Gujarat on the west coast have the locations in the country where potential exists.

Notes: M2 is the largest (semidiurnal) tidal constituent, whose amplitude is about 60% of the total tidal range. The white lines are cotidal lines—where tides are at the same point of rising or falling, spaced at phase intervals of 30° (a bit over 1 hr). The amphidromic points are the dark blue areas where the cotidal lines meet. Tides rotate about these points where little or no tidal rise and fall occurs but where there can be strong tidal currents.

# Centre Scraps EoI For Box Transhipment Hub At Kanyakumari As Locals Oppose The Plan

NEW DELHI
Sagar Sandesh News Service

The Centre has scrapped plans to build a container transshipment hub near Kanyakumari through the public, private, partnership (PPP) route following opposition from local fishermen groups.

On February 22, Centre-owned VO Chidambaranar Port Trust (VOCPT) floated an expression of interest (EoI) from port developers and shipping lines to build the 6.5 million twenty-foot equivalent units (TEU's) capacity transhipment hub, based on a direction from the ministry of ports, shipping and waterways.

Potential bidders were given time until March 20 to file their expression of interest.

### VOCPT informed by Kanyakumari Collector that local fishermen will go for agitation if EoI not scrapped

However, on March 15, the District Collector of Kanyakumari wrote a letter to VOCPT, conveying that he had received representation from local fishermen groups raising their concerns over the EoI for the container transshipment hub.

"The fishermen groups told the District Collector that they will go for agitation if the EoI for the container transshipment hub is not scrapped. They didn't want the hub to come up in that location," a government official briefed on the development said.

### On Mar 18 ministry advised VOCPT to cancel EoI

On March 18, the ministry "advised VOCPT to cancel the EoI floated for the development of a transshipment hub near Kanyakumari".

"The project file has since been closed", the government official said.

The Vallarpadam Terminal located strategically on the Indian coastline.