



Alternative Energy From The Sea: A New Paradigm, A Call To Action

The need to replace oil as an energy source is becoming more and more intense. Voices ranging from the most radical environmentalists to the President have called for more use of alternative energy. This is a call to action for marine professionals.

The oceans cover much of the Earth's surface, and hence receive much of the Earth's solar energy. There are also mechanisms that convert the raw energy of the sun to other forms, notably wind and wave. A myriad of schemes to harness a wide range of energy sources from the ocean have been developed over the years, and the combination of high oil prices, probably at high prices for some time to come, and low interest rates may make expenditure of substantial capital to recover "free" energy economical.

In addition, many environmentalists point out that conservation is an energy source, since energy is fungible, and that not used here can be spent there. Ocean transport was originally used because it is conservative of energy, and the easiest way to move goods and people before the advent of compact power sources. This suggests that increased transport by sea can save energy and ultimately money. Short sea transport is therefore poised to expand, especially since it also addresses issues of highway congestion. High speed transoceanic transport is also a potential savings, if it displaces aircraft, and of course passenger ferries potentially address congestion in urban areas as well as fuel costs. In these roles, advanced marine vehicles may have a role as well, if they can compete with aircraft.

Finally, there are numerous ways that we can conserve energy on shipboard, most of which are well known, but have not been economical until recently. Even hull form design will be affected by the shift in the energy paradigm, since you buy the hull once but fuel it for thirty years.

There will be a short workshop beginning with a presentation of possibilities for recovering energy from the oceans including wave current and wind power, ocean thermal energy conversion, differential salinity, and ocean based farming of high hydrocarbon algae (the primordial origin of today's oil). The possibilities and potential for various ways of displacing high energy cost transport to the sea will be discussed, as will various opportunities for reduced energy use in ships.

Those present are invited to make their own suggestions, and develop a possible way ahead. How do we make our voices heard, how do we get funded for the necessary research, where do we go?

Marine professionals and especially SNAME members have a duty, and an opportunity, to come forward and be heard about what our expertise and our concepts offer for addressing the new energy paradigm. This short workshop, scheduled for Friday, October 13, 2006 during the SNAME Marine Technology Conference at Fort Lauderdale, Florida, is offered as a first step.

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