

Wave power plant

Zharkov S.V.

Energy Systems Institute (SEI), Russian Academy of Science, Siberian Branch, Russia

1. Power plant utilizing sea waves energy.
2. The energy flow density is known to be the main index that determines material intensity and economic efficiency of using renewable energy sources. Ocean wave energy is a concentrated form of solar/wind energy. The mean yearly energy flow of sea waves reaches 40-90 kW/m of the wave front. As far as this index is concerned, waves exceed wind by a factor of 5-8 and solar insolation by a factor of 12-20. Therefore, they represent a promising source of environmentally friendly energy. WPP can have efficiency 0.6.
3. The WPP can be used to produce drinking water, hydrogen, oxygen, ammonia etc., also for water aeration and for rise deep mineral-rich water to the surface. The plant is the most suitable for the far islands and the countries with lengthy sea coast, developed ship-building and with insufficient mineral energy and fresh water resources, as for example England, France, Japan, Korea and also Australia, India, New Zealand, etc.
4. Analysis of the plant characteristics shows that it meets practically all the requirements imposed to wave power stations and it is possible to expect its superiority on the existing designs of wave-power devices considering efficiency, material intensity, cost, operating costs, viability in the storm conditions and impact on environment.
5. S V Zharkov, 'Wave power plant', patent SU ? 1456634, F 03 B 13/12, 1989.
6. A physical 2-step model has been built and successfully tested.
7. Billions dollars worldwide.
8. Energy Systems Institute (SEI), Russian Academy of Science, Siberian Branch