

Ocean Power



Ed Lemery,
Brooke Scatchard,
Nate Trachimowicz

What is OTEC

- OTEC, or Ocean Thermal Energy Conversion, is an energy technology that converts solar radiation to electric power.
- OTEC systems use the ocean's natural thermal gradient—the fact that the ocean's layers of water have different temperatures—to drive a power-producing cycle.

How Does it Work

- Carnot Efficiency $(T_1 - T_2) / T_1$: in transferring heat to do work, the greater the spread in temperature between the heat source and the heat sink, the greater the efficiency of the energy conversion.
- As long as the temperature between the warm surface water and the cold deep water differs by about 20°C (36°F), an OTEC system can produce a significant amount of power with a maximum Carnot Efficiency of about 6.7%