

Title (en)

HEAT TRANSFER METHODS FOR OCEAN THERMAL ENERGY CONVERSION AND DESALINATION

Title (de)

WÄRMEÜBERTRAGUNGSVERFAHREN ZUR UMWANDLUNG DER THERMISCHEN ENERGIE DES MEERES UND ENTSALZUNG

Title (fr)

PROCÉDÉS DE TRANSFERT THERMIQUE POUR UNE CONVERSION D'ÉNERGIE THERMIQUE DES MERS ET LA DÉSALINISATION

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Application

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Abstract (en)

[origin: WO2008042893A2] A means is provided to produce fresh water from seawater on both the boiler side and the condenser side of an OTEC power plant. Part of the warm ocean surface water is evaporated, and its vapor transfers heat to the working-fluid boiler as the vapor condenses. The condensation of the vapor provides fresh water. On the condenser side, the condensation of the working-fluid vapor from the turbine in the condenser releases heat that evaporates seawater that runs down the outside of the condenser surfaces. The vapor from the seawater is condensed by a heat exchanger that uses input from colder seawater. As the cold seawater accepts heat from the condensing vapor, it becomes slightly warmer and provides the source of seawater that accepts heat from the condenser. The condensing vapor on the heat exchanger becomes fresh water that is drawn out as potable water. To provide additional fresh water, a multi-stage desalination unit uses the warm water discharge and the cold-water discharge from the OTEC plant to provide a temperature gradient that causes evaporation and condensation in each stage of the unit.

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