

April 12, 2008

SEA SOLAR POWER INTERNATIONAL, LLC  
Owned by the Abell Foundation

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“FEED THE PEOPLE – SAVE THE WORLD”

WHAT IS OTEC?  
Ocean Thermal Energy Conversion

- OTEC is an economically and environmentally efficient means to convert the solar energy of the tropical oceans into low-cost electricity.
- A large floating vessel similar to an ocean drilling rig or large tanker houses the power cycles. Small, land based plants are also available.
- Warm 80 degree F surface water is pumped through heat exchangers in order to boil the working fluid, propylene, into a vapor. Propylene boils under pressure at 67 degrees F. The vapor then expands through vapor turbines which drive generators.
- Cold 40 Degree F bottom water is pumped up from 3,000 feet below the surface to condense the vapor back into its liquid state. The liquid propylene returns to the evaporators where the cycle starts all over again.

OTEC  
Renewable Energy

- Oceans are largest solar collectors on earth
- They are already built and paid for
- Manmade solar collectors only work when the sun shines
- OTEC - base load power operates 24 hours per day
- Stored solar energy throughout the equatorial zone could provide 300 times the world's consumption of electricity

## THERMAL ENERGY

- A pound of water raised one degree is lifted to an equivalent height of 778 feet
- OTEC operates on a delta-T of 40 Degrees F
- $40 \text{ degrees} \times 778 \text{ feet} = 31,120 \text{ feet}$
- Best possible Carnot cycle designed by SSP is 3.25%
- $3.25\% \times 31,120 = 1,011 \text{ feet}$
- Warm water, cold water – divide 1,000 by 2 = 500 feet of head – constant heat source

## TWO STANDARD OTEC MODELS

- 10 MW land based OTEC plant – 3 million gallons of fresh water per day
- 100 MW floating OTEC plantship - 32 million gallons of fresh water per day
- Both small and large plants can be dedicated to produce only fresh water
- Small land based plant: 10 million gallons of fresh water per day – large plantship – 130 million gallons of fresh water per day
- Large quantities of ammonia for fertilizer

## STUDIES CONFIRM TECHNICAL FEASIBILITY

- Fluor Daniel
- Lehigh University Energy Research Center
- EA Engineering / Abell Foundation
- Indian Government Appraisal
- Southern States Energy Board's Special Report to Puerto Rico
- Stone & Webster / Kvaerner- John Brown

## SEA SOLAR POWER INT., LLC, TEAM

- Sea Solar Power International, LLC: OTEC cycle designed by J. Hilbert Anderson
- Abell Foundation: equity funding
- AON Risk Insurance: guarantee performance of each SSP-OTEC plant
- Burns & Roe Enterprises, Inc: mechanical engineers – design OTEC cycle
- Whiting-Turner Contracting Company: construction of complete OTEC plant
- Mele Associates, Inc: environmental permits
- Loria Emerging Energy Consulting: OTEC expert
- Dr. Pierce Linaweaver: OTEC expert
- Alion Science & Technology: marine architects – design marine platforms
- Healy Tibbitts Builders, Inc., Division of Weeks Marine, Inc: install cold water pipe

## PROPOSAL

- SSPI is prepared and eager to install OTEC plants throughout the equatorial zone
- SSPI has the most advanced OTEC design, the team in place to deliver and the financing from private investors to begin now
- SSPI is seeking sincere clients to enter into signing contracts for both power and water
- This includes both the land based OTEC for small islands and the large floating OTEC plantships for continental applications

## ACTION

- Identify decision makers – coordinate with their technical advisors
- Select ideal site
- Negotiate power and water contracts
- Secure operating permits
- Install OTEC plant – 3 years
- Additional plants as desired