

Are you ready to take this challenge?

APPLY NOW !

This project runs from
February 2012 to June 2012

www.designchallenge.tudelft.nl
Open for Master students from all faculties

Design Challenge

Serious Business

Delft Centre for Entrepreneurship

A Sustainable Thermal Desalination Plant

Introduction

Bluerise is currently working in the development of deep sea water (DSW) Ecoparks that can efficiently harness the thermal energy stored in the ocean. DSW Ecoparks bring together different technologies such as Sea Water Air Conditioning (SWAC), Ocean Thermal Energy Conversion (OTEC), Thermal Desalination, Agriculture and Aquaculture in a sustainable manner. All these technologies benefit from the accessibility to both warm surface water (28C) and cold water (4-6C). A first Ecopark is being developed in the Caribbean by the Curaçao International Airport.



Challenge

Due to its arid environment the island of Curaçao depends heavily on expensive desalinated water for its consumption. Current mainstream desalination technologies (Reverse Osmosis and Multi-Stage Flash Evaporation) can be considered to be quite energy intensive and thus costly. The challenge is to design a desalination system based on the availability of cool deep sea water in the Caribbean's first Ocean Ecopark currently under development in Curaçao. Different thermal systems based on a low thermal sink can be implemented in an economic and ecological manner.

Main Tasks

- Identify the main technological and business challenges
- Explore innovative possibilities for implementation, including possible synergies with other technologies in the Ecopark (i.e. Air Conditioning).
- Design the most suitable configuration (centralized or decentralized) and calculate the possible savings when compared to standard systems.

Practical relevance

This project is directly related to ongoing work by Bluerise towards realizing an Ecopark at Curaçao International Airport. This will allow the participating students to contribute to a unique project and possibly expose results internationally.

Your work contributes to one of the World's first OTE Ecoparks!

Expertise Preferably Needed

- 3mE / CiTG / TNW / Understanding of Thermodynamics and design of large capacity systems, modularity, smart interface and materials.
- Industrial Ecology - Engineering synergy solutions
- TPM / Industrial Design / Architecture - Innovation management, business case development, Design and integration of systems into buildings

Client

The client is Bluerise BV. Bluerise is a start-up company located in YES!Delft and working on the development and worldwide implementation of Ocean Thermal Energy technology.

Support

Bluerise and OTE expert Kas Hemmes from the TU Delft will support the team towards a superb result.



For more information contact: *Susan Tate- 015-2787189 - S.C.Tate@tudelft.nl*