

WHAT IS THE VALUE OF ELECTRICITY?

We view the production of electricity for the UAE in relation to its consumption; any amount a Land Art installation could produce would simply be a drop in the ocean.

The ambition of this Land Art Generator initiative is laudable. While the technology we employ could be used to create electricity (and does so for lighting) we would like, with the competition jury's permission, to shift the focus.

IS ELECTRICITY THE PROBLEM?

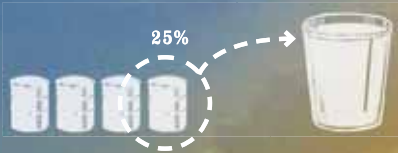
As technology and global thinking shifts towards renewable energy production, the UAE finds itself fortunate in its abundance of solar energy.

Its natural resources ensure that electricity production will never be a problem.

IF NOT..... THEN WHAT IS?

The UAE is burdened by a lack of one resource that is essential to its future growth: fresh water.

The UAE currently uses a huge proportion of its electricity consumption (approx. 25%) on the energy intensive process of seawater de-salination.



Approximate proportion of energy consumption attributed to desalination of seawater. Based on an estimated 14kWh/m3 energy use.

INCREASE PRODUCTION OR REDUCE CONSUMPTION?

With the largest population growth rate in the world and the highest rate of water consumption in the world the UAE's dependence on de-salinated seawater is total.

The solution of increasing the production of water and energy indefinitely to meet demand is unsustainable.

There must be an alternative solution.



Average Energy Use (kg of oil equivalent per capita) - World Bank



Average Water Consumption per Capita per Day

“WATER WATER EVERYWHERE AND NOT A DROP TO DRINK”

- The Rime of the Ancient Mariner, Samuel Taylor Coleridge

THE RESOURCE GENERATOR

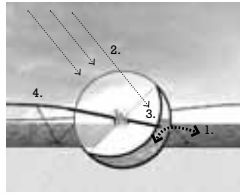
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THE RESOURCE GENERATOR

Solar collectors

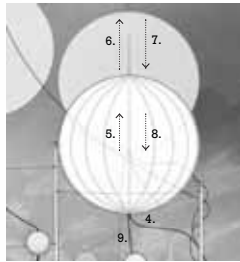
high tide - sunrise - sunset



1. The tide fills the lower compartment with sea water, washing away salt deposits from the previous cycle.
2. Solar rays hit the parabolic mirror throughout the day.
3. The parabolic mirror concentrates solar power onto the black copper coil containing sea water, boiling it, and producing pressurised steam.
4. Steam is pumped through the insulated tube due to its heat and pressure.

Lightweight steam vessels

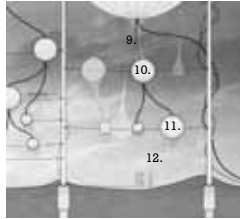
sunrise - sun peak - sunset



4. Steam enters the vessel through its extendable tube throughout the day.
5. As the vessel fills with steam it displaces the air. As steam volume increases, the vessel becomes increasingly buoyant, which enables it to rise.
6. At the sun's peak the vessel reaches its full height allowed by its extendable cord.
7. After the sun's peak the rate of steam production slows, causing the vessel to gently fall.
8. As the sun sets, the vessel gradually returns to its starting position.
9. Throughout the day condensate continually drains out of the vessels.

Fresh water vessels & distributors

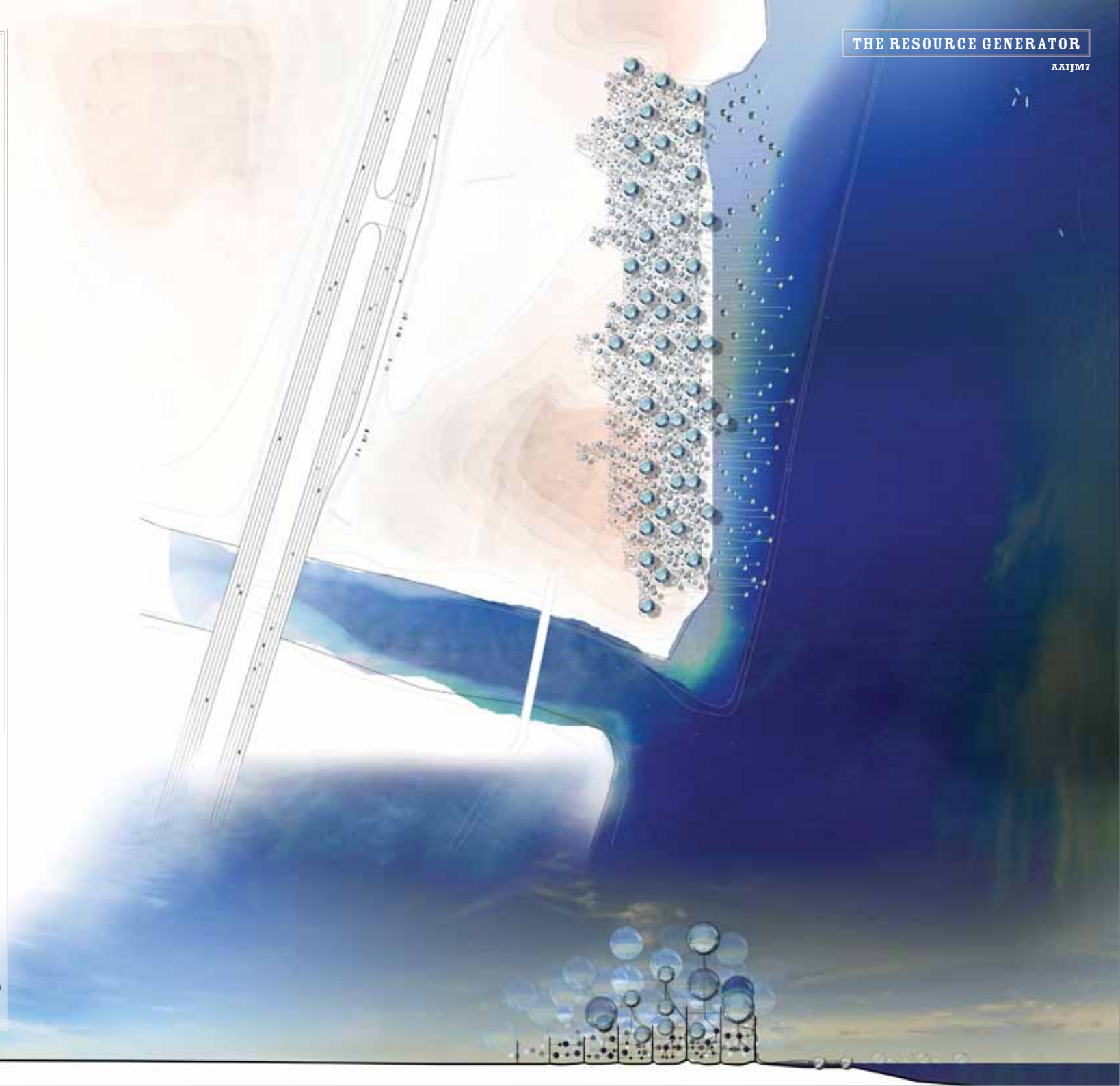
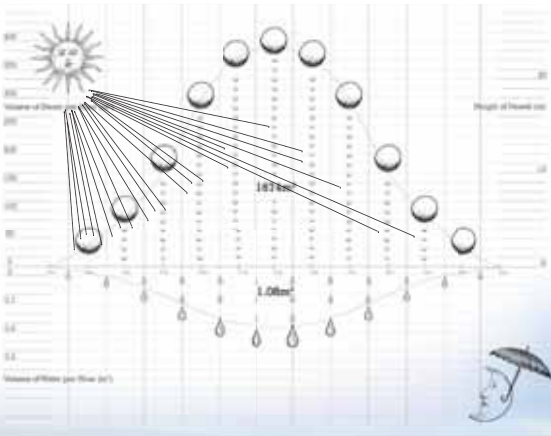
sunrise - sunset - dusk



9. Drained condensate is fed through tubes into the fixed water vessels.
10. The water makes its way down, eventually collecting in the lowest vessels.
11. Nightfall triggers light sensors which open up perforations in the under side of the lower vessels, orchestrating a fresh water shower
12. The fresh water shower is experienced once daily at dusk. Depending on the day temperature, tide and season the resource generator will produce various quantities of fresh water.

Output

Average Temperature = 28.3°C Solar mirror = 13m Ⓞ
 Average Insolation = 19.8 MJ / m² / day Spherical Vessel = 18m Ⓞ



THE LAND ART [RESOURCE] GENERATOR

We aim to inspire a society to question the processes that support their lifestyle.

Our proposal is a physical representation of a natural cycle, that harnesses solar energy to generate fresh water.

By providing low energy alternatives to industrial de-salination we can still generate an excess of electricity for the grid.

THE **سراب** IN THE DESERT

We aim to create an experience at three scales.

From the distant surroundings our installation is a sparkling mirage on the horizon, a vaporous form that shimmers by day and de-materialises by night.

Closer up, at a captured moment between two urbanised landscapes, where desert and city dweller meet, this becomes an encounter with a cloud.

Its language is of a process that connects the sea, sky and ground and produces buoyant water droplets that contrast with the continuous skyline.

Within, it is not the vision but the atmosphere, the sensation of when water meets skin, experienced as a rain-shower that is triggered by the setting of the sun each evening.

WATER: A RESOURCE TO BE TREASURED

We ask people to step out of their cars and reconnect with nature.

To celebrate water.

We want to remind people of the preciousness of water and generate, once again, a respect for water where there is little.

RENEWING A VALUE FOR WATER

The traditional Bedouin way of life, based on a harmonious relationship with nature and rainfall, has been eroded.

Accelerated development has seen modern Abu Dhabi rise from the desert.

We ask whether the UAE is truly interested in an environmentally sustainable future or it is just another imported philosophy?

We argue that sustainability is not in the production of renewable energy, but in the understanding of where one stands in relation to natural processes.

We believe the only way for the UAE to achieve a sustainable future is to renew its people's value for water.

