

[www.landartgenerator.org](http://www.landartgenerator.org)  
**land art generator initiative**

**Elizabeth Monoian & Robert Ferry**



**BEYOND THE WAVE**

**Jaesik Lim, Ahyoung Lee, Sunpil Choi, Dohyoung Kim, Hoeyoung Jung, Jaeyeol Kim, Hansaem Kim**

**A submission to the 2014 Copenhagen Land Art Generator Initiative competition**

**PUBLIC  
ART** + **RENEWABLE  
ENERGY** + **LIVING  
BUILDINGS  
AND CITIES** + **INTEGRATED  
SYSTEMS**

**= land art generator initiative**



**Hydroelectric Power Plant Taccani (1906)**  
**Gaetano Moretti**  
**Trezzo sull'Adda (Milan)**



**Tejo Power Station**  
**Various Engineers and Architects**  
**Lisbon**



**Bruno Barbey**  
**THERMAL POWER PLANT WITH RICE FIELDS**  
**HADONG, SOUTH KOREA**  
**2007**



**Thomas Hoepker**  
**VIEW OF INDUSTRIAL PLANT IN ESPENHAIN**  
**EAST GERMANY**  
**1998**



**Airman 1st Class Nadine Y. Barclay**  
**VIEW OF US AIRFORCE SOLAR INSTALLATION**  
**2007**



**Henning Leweke**  
**TEHACHAPI WIND FARM, CALIFORNIA, USA**  
**2001**



**Donald Trump Tweeted on Sept. 17, 2012**

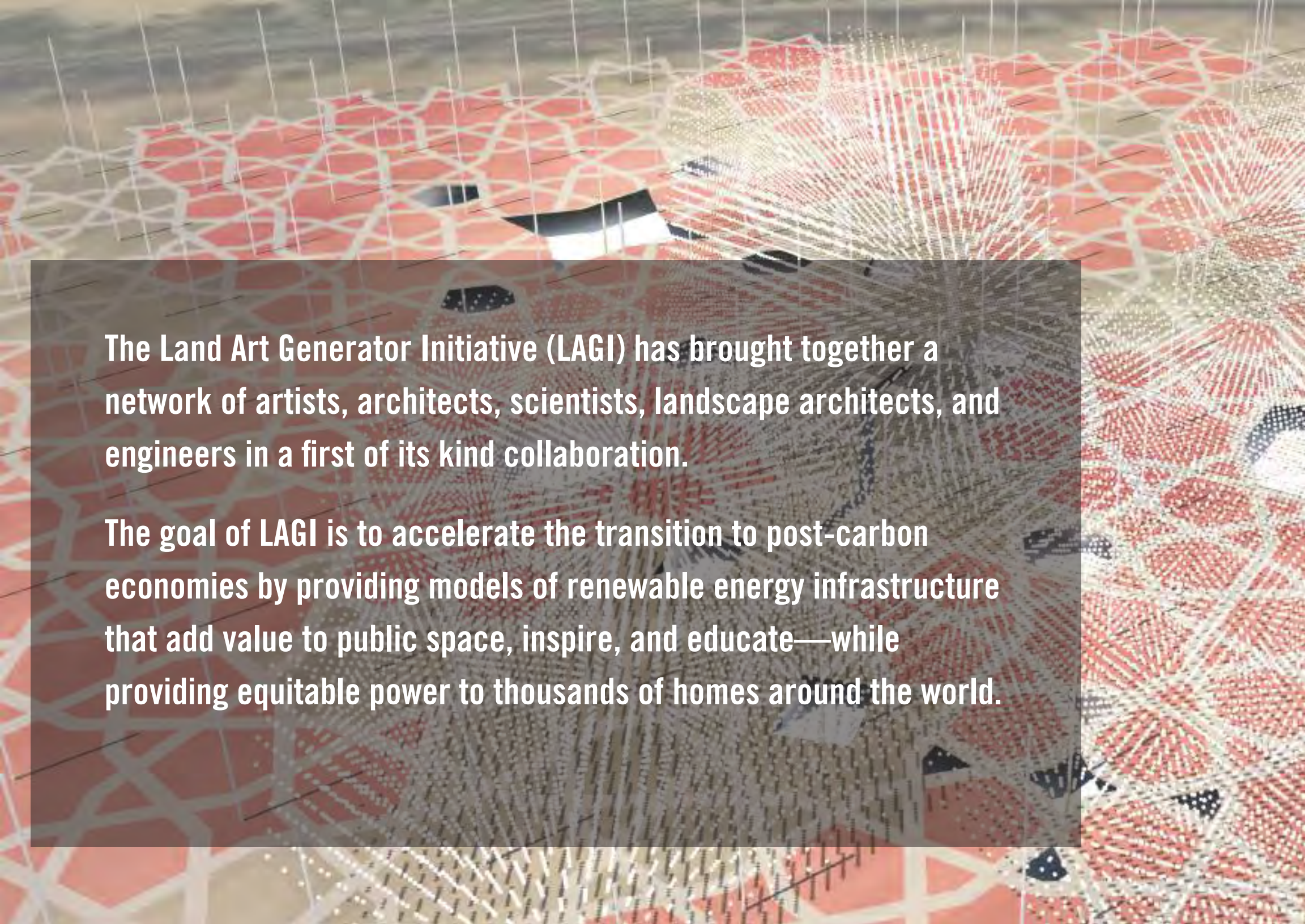
**“Ugly wind turbines have destroyed the entrance to Palm Springs, CA. These monstrosities are ruining landscapes all over the globe – expensive & bad electric.”**

**Trump Tweeted on Sept. 19, 2012**

**“Don’t let them build a wind turbine in your backyard (or near your house). It will destroy your property value.”**

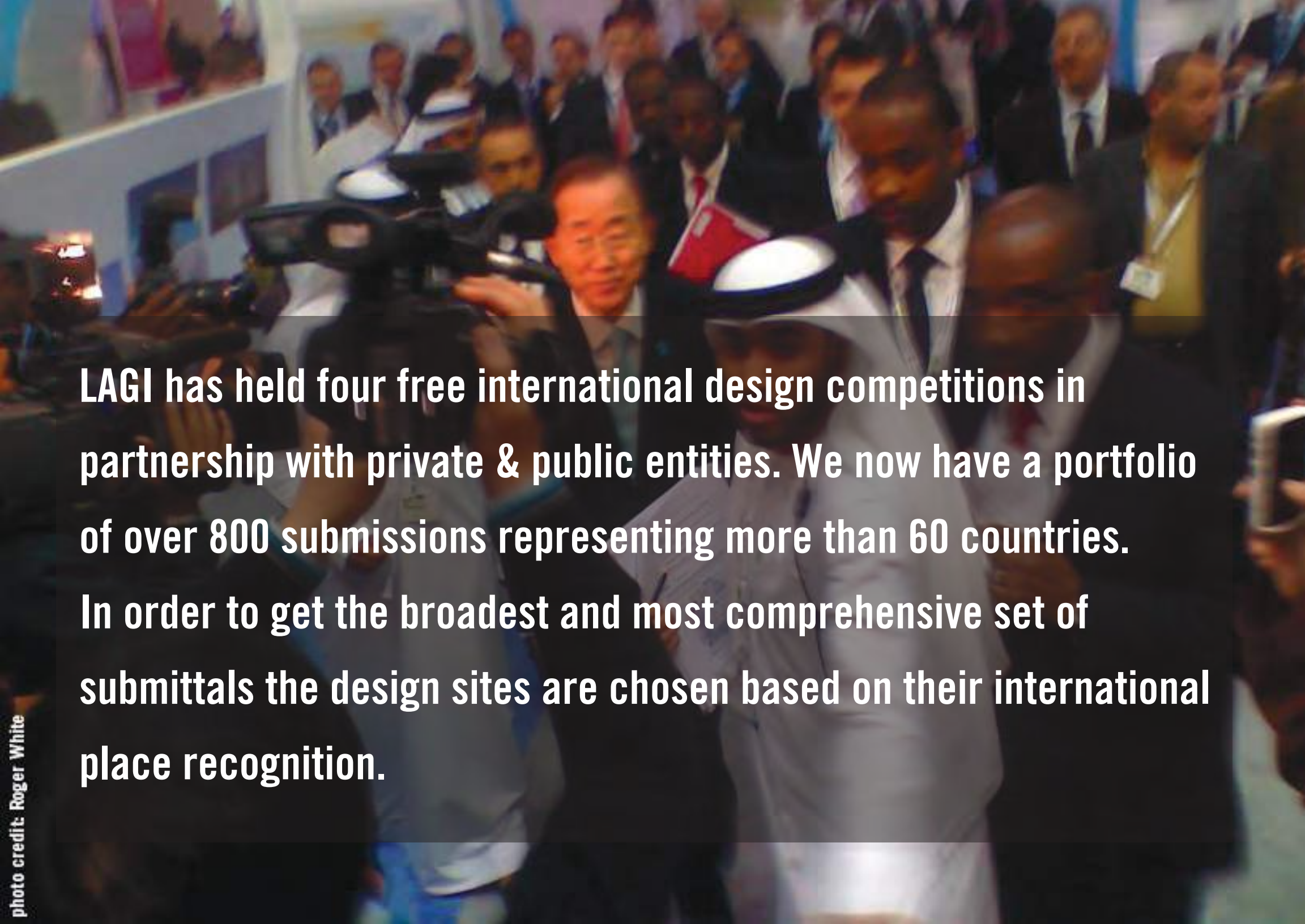


**Wind turbines near Whitewater, Calif., in the San Geronio Pass west of Palm Springs. Banning-Beaumont Patch file photo by Eric Reed. Credit Eric Reed**

An aerial photograph of a vast desert landscape covered in a complex, geometric pattern of red and white lines. The pattern consists of interconnected, irregular shapes that resemble a honeycomb or a network of veins. The red lines are prominent, forming a grid-like structure that covers the entire area. The white lines are interspersed, creating a high-contrast, textured appearance. The overall effect is a striking, abstract design that blends with the natural environment.

**The Land Art Generator Initiative (LAGI) has brought together a network of artists, architects, scientists, landscape architects, and engineers in a first of its kind collaboration.**

**The goal of LAGI is to accelerate the transition to post-carbon economies by providing models of renewable energy infrastructure that add value to public space, inspire, and educate—while providing equitable power to thousands of homes around the world.**



**LAGI has held four free international design competitions in partnership with private & public entities. We now have a portfolio of over 800 submissions representing more than 60 countries. In order to get the broadest and most comprehensive set of submittals the design sites are chosen based on their international place recognition.**





**The design brief for the LAGI design competition contains the following baseline requirements:**

The artwork is to capture energy from nature and cleanly convert it into electricity

Consideration should be made for the safety of the viewing public and for the educational activities that may occur on site

The design should be constructible (rather than theoretical)

# LAGI 2010 DUBAI & ABU DHABI



LAGI 2010 at the World Future Energy Summit 2011

# LAGI 2012 FRESHKILLS PARK



## PARTNERS

FreshkillsPark Alliance



INSTITUTE FOR URBAN DESIGN



## SUPPORT

Horne Family Foundation  
National Endowment for the Arts



**ART WORKS.**  
arts.gov

## PUBLICATION SUPPORT



Furthermore:  
a program of the J.M. Kaplan Fund

# LAGI 2014 COPENHAGEN

**Connie Hedegaard**

**European Commissioner for Climate Action**

“When it comes to renewables it’s not a question of nice to have. The world of the 21st century needs to have more renewables. We have seen here in Denmark that it is doable. We see it in Europe. But I think in order to scale things up, it would be so good to have some more input from artists, from creative thinking people, who know how to landscape things in a better manner. Who can show attractive visions. Who can show that to take climate change seriously it not about gloom and doom—it can be a positive vision. It can create beauty. It can create something that all of us would like to be a part of.”



IT UNIVERSITY OF COPENHAGEN  
**REFSHALEØENHOLDING**



**DDC**<sup>®</sup>  
Danish Design Centre



  
AARHUS UNIVERSITY



The Capital Region  
of Denmark



# LAGI 2016 SANTA MONICA



## PARTNERS



## PUBLICATION SUPPORT

Elizabeth Firestone Graham Foundation

IN PARTNERSHIP WITH



# LAGI2018 MELBOURNE



renewable energy can be beautiful

## **TECHNOLOGY TYPE**

polycrystalline solar  
panels

### **Conversion Efficiency**

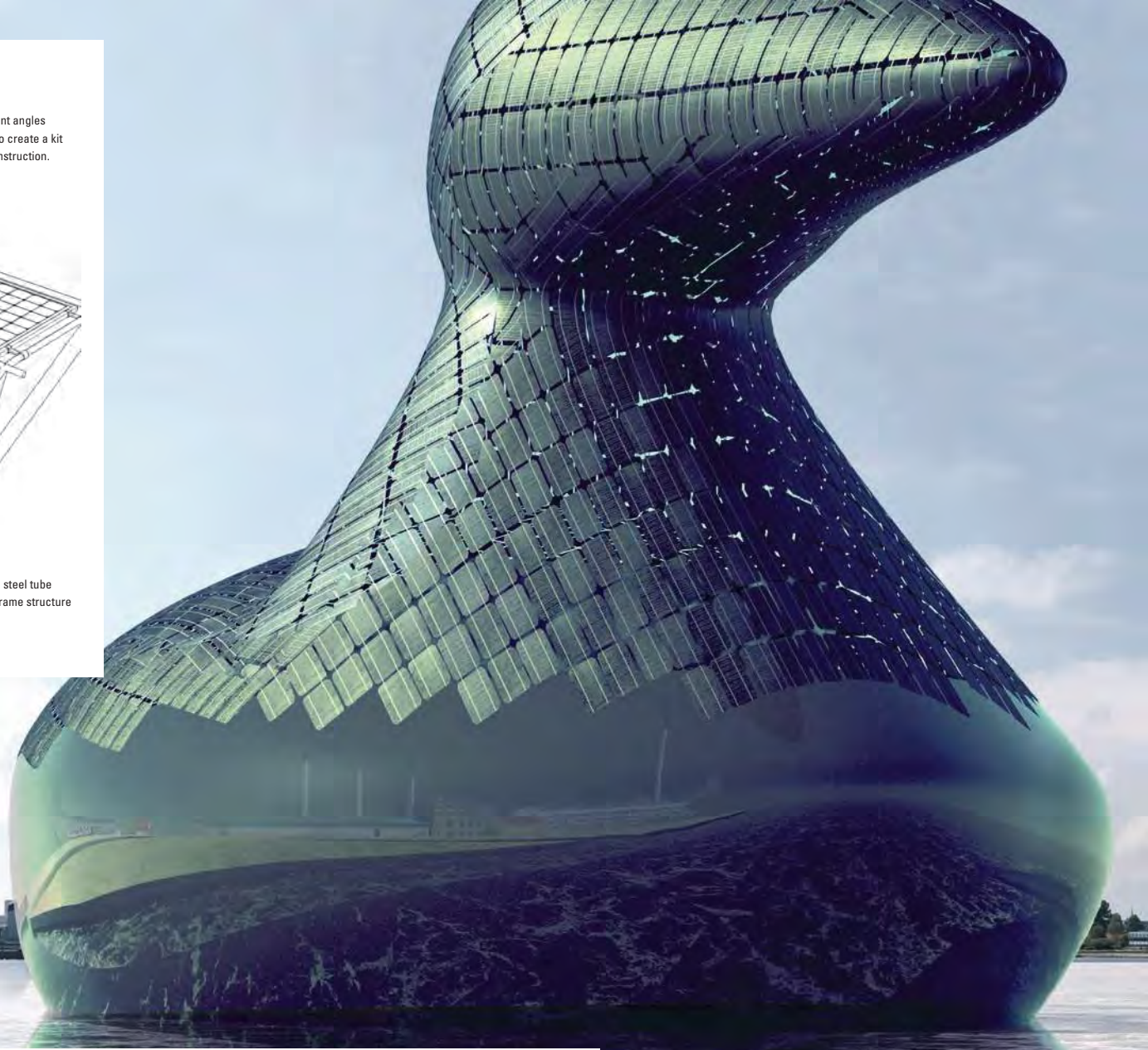
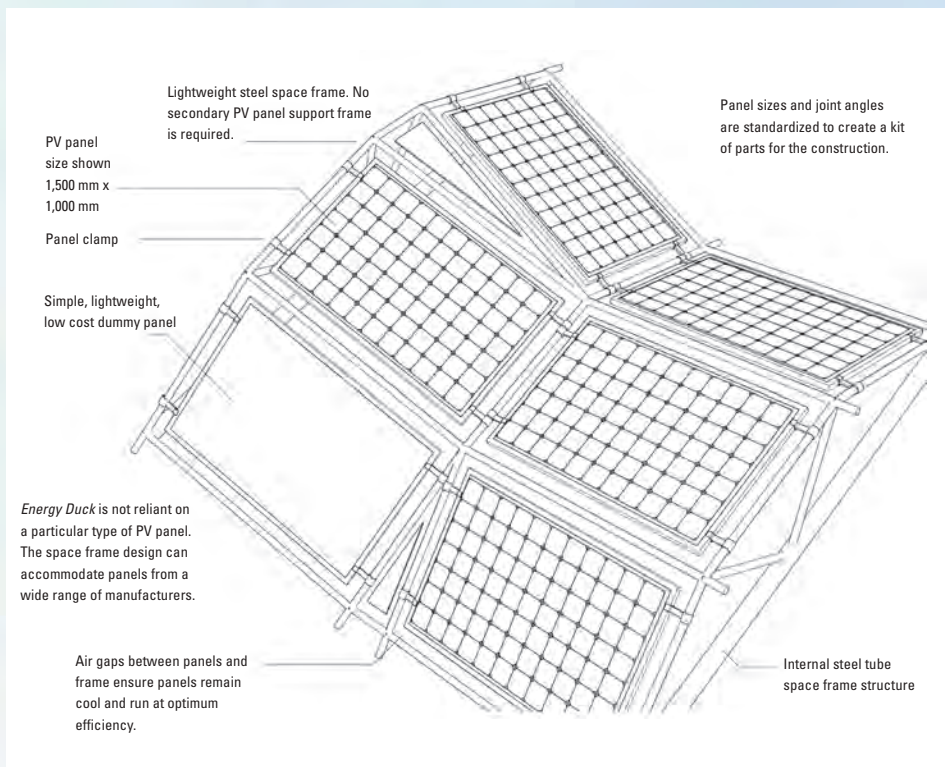
22%

### **Capacity Factor**

15%–20%  
(depending on site conditions)



Images from Wikipedia



# ENERGY DUCK

**TEAM:** Hareth Pochee, Adam Khan, Louis Leger, Patrick Fryer  
**ENERGY TECHNOLOGIES:** photovoltaic panels (Panasonic HIT or similar), hydraulic turbines (Kaplan, Francis, or similar 100–500 kW capacity)  
**ANNUAL CAPACITY:** 400 MWh  
 A submission to the 2014 Land Art Generator Initiative competition for Copenhagen



## TECHNOLOGY TYPE

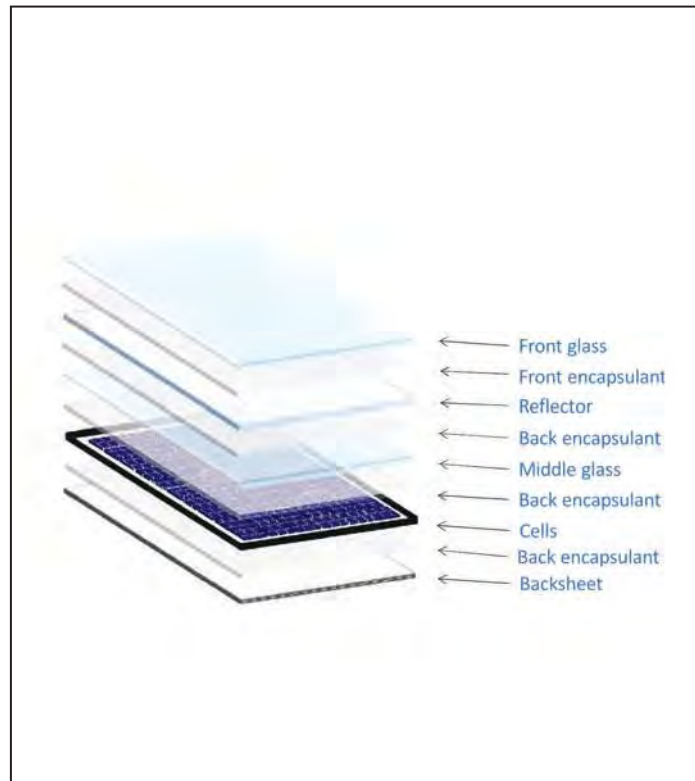
polycrystalline solar panels – color tinted

### Conversion Efficiency

15%–18% (depending on type)

### Capacity Factor

15%–20%  
(depending on site conditions)



Solaxess coating application can create any color of solar panel with minimal impact on efficiency

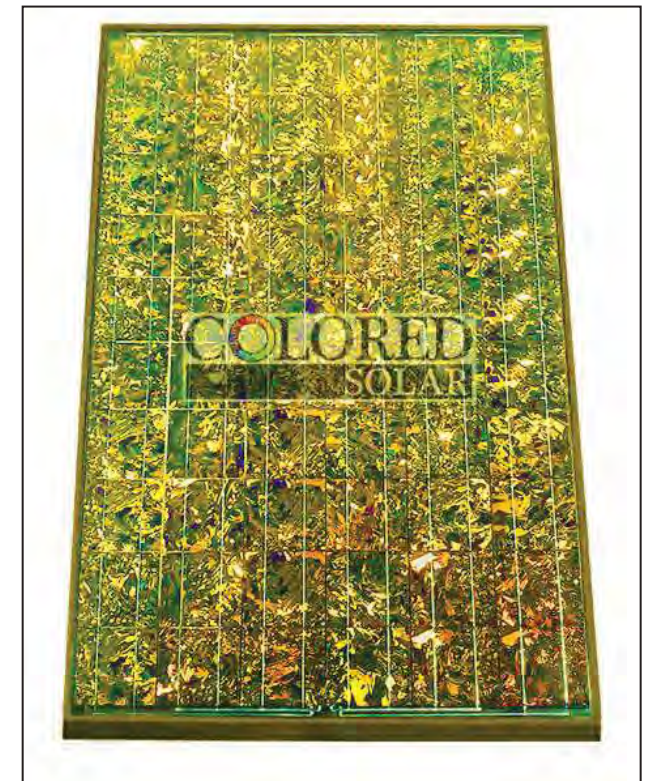


Image from Colored Solar's Product Literature

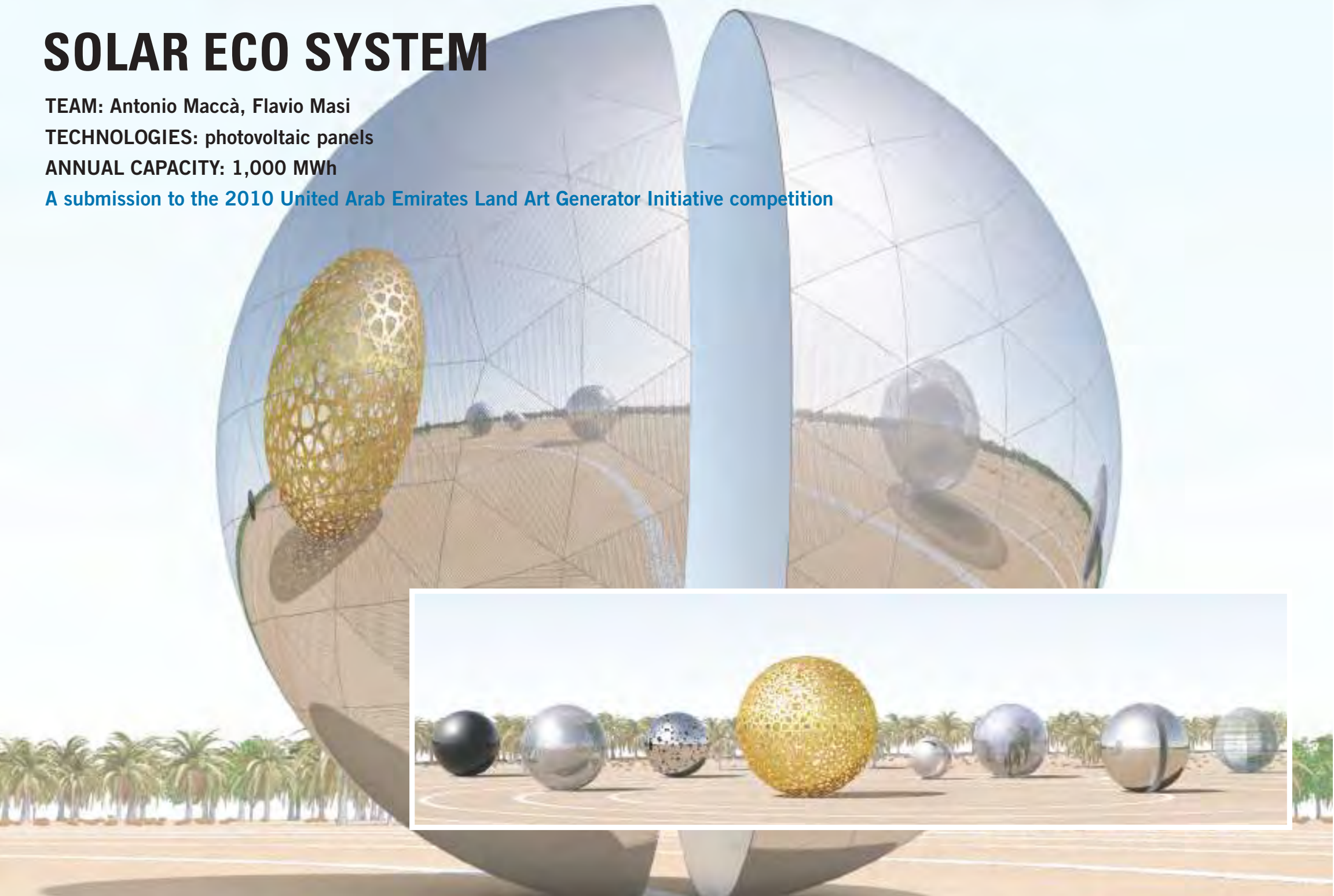
# SOLAR ECO SYSTEM

TEAM: Antonio Maccà, Flavio Masi

TECHNOLOGIES: photovoltaic panels

ANNUAL CAPACITY: 1,000 MWh

A submission to the 2010 United Arab Emirates Land Art Generator Initiative competition



**TECHNOLOGY TYPE**  
flexible thin film  
(OPV)

**Conversion Efficiency**  
8%–12%

**Capacity Factor**  
15%–20%  
(depending on site conditions)

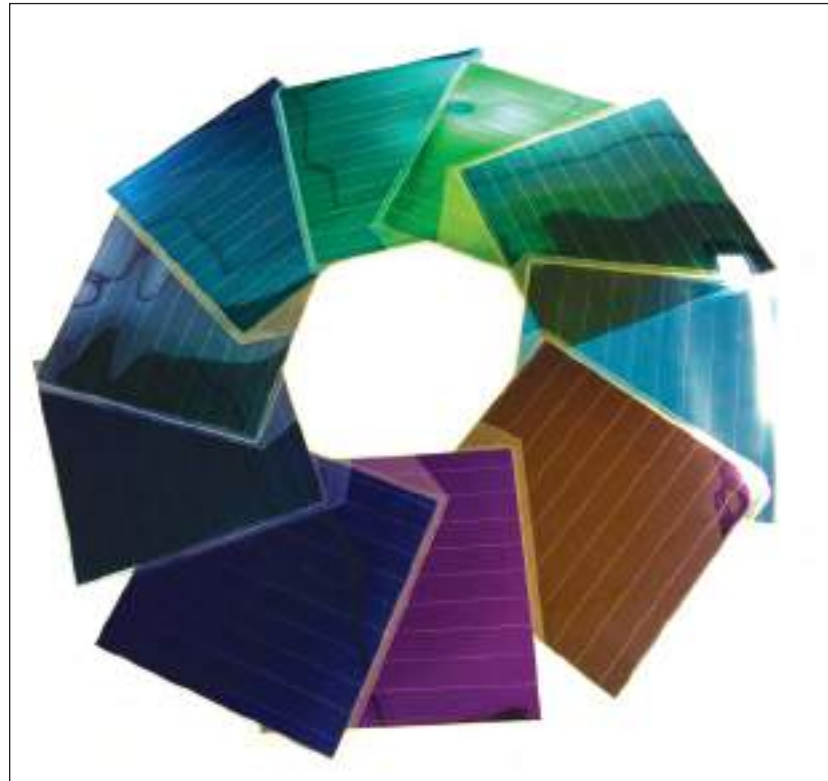
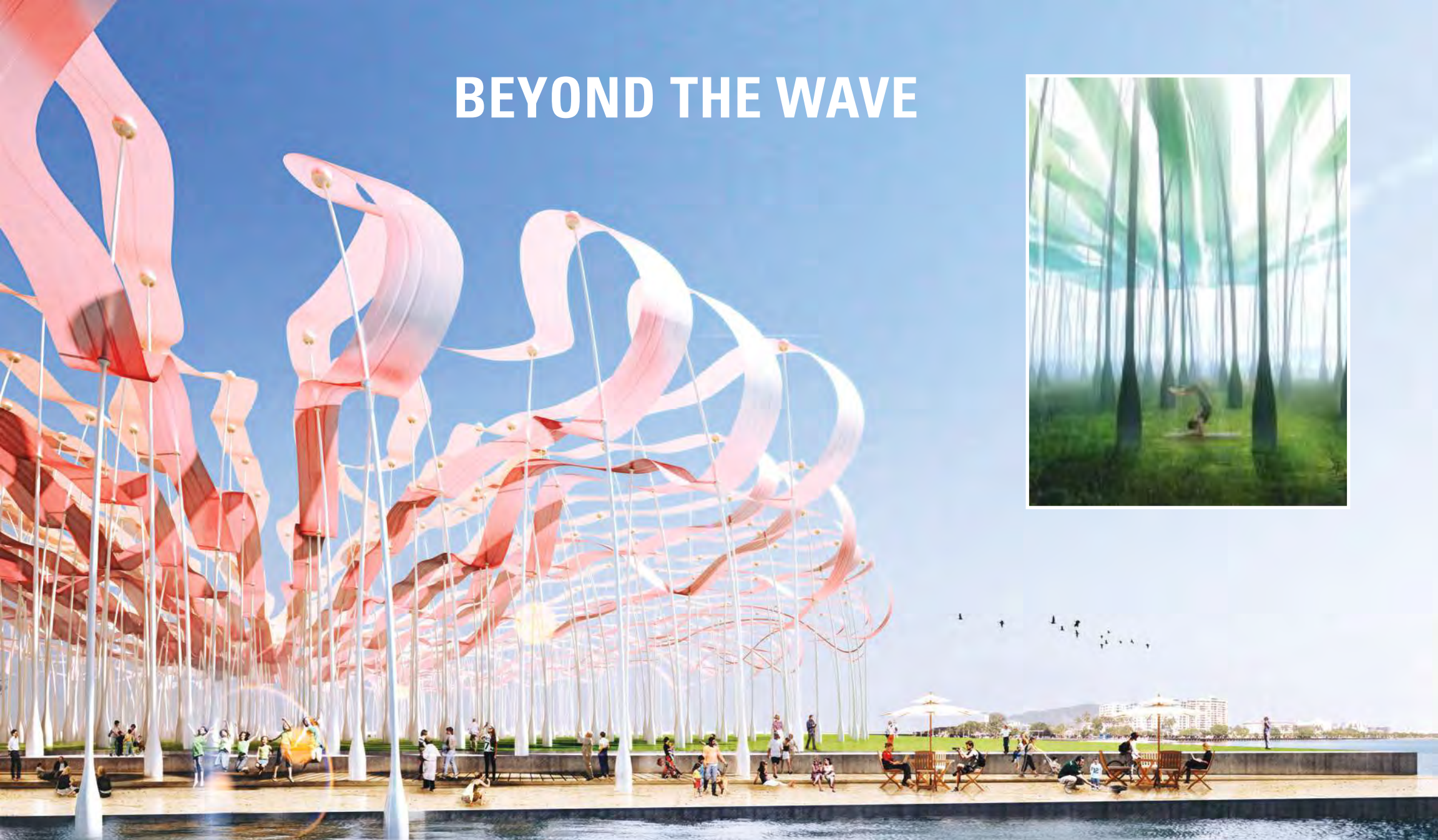


Image courtesy of Heliatek



Image courtesy of Belectric OPV (Solarte™)

# BEYOND THE WAVE



**TEAM:** Jaesik Lim, Ahyoung Lee, Sunpil Choi, Dohyoung Kim, Hoeyoung Jung, Jaeyeol Kim, Hansaem Kim

**TECHNOLOGIES:** organic thin film

**ANNUAL CAPACITY:** 4,229 MWh

**A submission to the 2014 Copenhagen Land Art Generator Initiative competition**

## **TECHNOLOGY TYPE**

concentrated solar  
power thermal  
(CSP)

### **Conversion Efficiency**

20%–30%

### **Capacity Factor**

20%–35%

(depending on type and site conditions)



**Beam-down point-focus CSP heliostat array at Masdar**

Image courtesy of Lens Online from an interview with Marwan Basem Mokhtar

# THE SOLAR HOURGLASS

TEAM: Santiago Muros Cortés

ENERGY TECHNOLOGIES: concentrated solar power (thermal beam-down tower with heliostats)

ANNUAL CAPACITY: 7,500 MWh

A submission to the 2014 Land Art Generator Initiative competition for Copenhagen



## TECHNOLOGY TYPE

ducted wind  
turbines

**Conversion Efficiency**  
45%

**Capacity Factor**  
20%–30%  
(depending on local conditions)





# FRESH HILLS

**TEAM:** Designer: Matthew Rosenberg; Structural Engineering Consultant: Matt Melnyk; Production Assistants: Emmy Maruta, Robbie Eleazer

**ENERGY TECHNOLOGY:** WindTamer™, Carbon Dioxide Scrubber, SmartWrap™

**ANNUAL CAPACITY:** 238 MWh

[A submission to the 2012 LAGI competition for New York City](#)





# WindNest: Pittsburgh Powered by Art

See <http://windnest.org> for more information and complete list of project partners

## WINDNEST PROJECT SUPPORT FROM

Heinz Endowments  
Hillman Foundation  
Horne Family Foundation  
National Endowment for the Arts

## DESIGN ASSISTANCE FROM

GTK Flow Analysis  
Buro Happold Engineering  
Air Turbine Propeller Company  
C&C Tooling  
Mascaro Construction



**TEAM:** Trevor Lee, Suprafutures

**ENERGY TECHNOLOGY:** compact acceleration wind turbine, thin film solar

**ANNUAL CAPACITY:** 30 MWh

**A submission to the 2010 Land Art Generator Initiative competition for Dubai & Abu Dhabi**

Original design for LAGI 2010





Photo of testing courtesy of GTK Flow Analysis

# WindNest

## 1/4 Scale Wind Testing Prototype

*WindNest* is designed to passively rotate to face the wind just like a weather vane. To test the functionality and to experiment with the ball bearing mechanism design, a prototyping team under the direction of GTK Flow Analysis fabricated this 1/4 scale model and subjected it to a series of tests under different wind conditions and speed sequences.

The full-scale installation will incorporate a slip ring to allow for continuous rotation while conducting the electricity produced by the turbines and solar fabric.

The prototype also provides the opportunity to experiment with the structure of the cloud pods and will assist with the design of the fabric skin.

### FABRICATION AND TESTING TEAM



GTK Flow Analysis specializes in using Computation Fluid Dynamic Analysis, Physical Testing, and Field Testing to determine the flow characteristics of systems.



Testing Equipment

C & C Tooling

Prototype Fabrication

**SUPRAFUTURES**

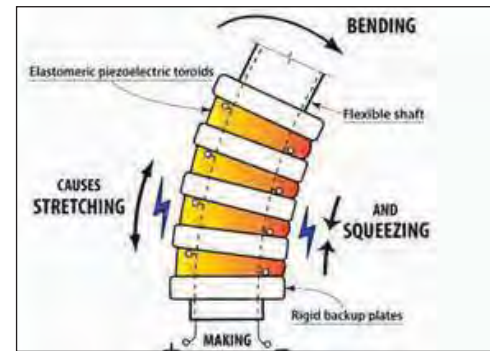
Artist/Designer

land art generator initiative

RENEWABLE ENERGY CAN BE BEAUTIFUL

Project Management

**TECHNOLOGY TYPE**  
piezoelectric  
disks and stacked  
actuators



Gen Shock Linear Alternator  
by Levant Power

