Solar Project for CAP Canals and Waste Management

SINGULAR

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Solar Energy at Arizona

- Arizona has one of the bigger solar potential in US.

Arizona Wind and Solar Status Report 2013

http://www.nrel.gov/gis/solar.html
The Inspiration

• Narmada Project in India with 1MW and 750m built over the irrigation canals.
Why Over The Canal

• Building solar over the canal effectively utilizes plenty of available space.

• The shadow provided by the solar panels helps avoid the following:
  • CAP loses 75,000 acre feet of water per year by evaporation
  • Excess of algae can affect the quality of water and complicate the treatment

• Generates energy reducing the operation costs to maintain the pumps along the canal.
A closer look at the proposed site

• 12197 E Shea Blvd Scottsdale, AZ 85259

Place where the structure can be installed
Access points

- 12197 E Shea Blvd Scottsdale, AZ 85259
Why Here?

• The canal has a North-South direction, ideal for the design of the structure, thereby reducing the costs of the project.

• No obstructions to the canal.

• Easy access from different points.

• Accessibility to the grid.
Solar Panel Design – Front View
Solar Panel Design – Top view of Steel Structure
Solar Panel Design – Top view with Panels
• Power installed: 373kw and an area of 2501.27 m² will be covered;
• 67.3 meter length of extension of the canal will be used;

• The height of the structure will be 10 feet to facilitate the maintenance and to make a pathway for people who want to enjoy the shade provided;

• The type of steel is corrosion resistant because the solar panels cover the canal, which is exposed to vapor from the water;

• The material used will be galvanized steel or common steel which will be painted as part of the maintenance.
Overhead view
Monthly Production

- Annual Production: 661.5 MWh
How can this project improve the local landscape?

• Creates a friendly space that provides shade where people can enjoy being in close proximity to the water.
• The pathway can be illuminated, enabling people to use the space during the night.
• Makes the area an active and beautiful place to gather. It builds community.
• Improves the landscape connecting nature with the neighborhood while it produces energy.
Proposed Design
An electric charging station can be built near the project for electric vehicles travelling along the She Blvd. route to Ft. McDowell or Payson. We are proposing to start an electric bus line that can run to Fountain Hills and the Ft. McDowell Casino. This can be a prelude to what the future of public transportation can look like in Phoenix.

Possible locations for a charging station
Waste Management
The composition of residential garbage of Phoenix

- Nearly two-thirds (65.3%) of the residential garbage consists of material that can be diverted through standard recycling and composting programs.

- About 57,500 tons of material that could be recycled through the existing curbside collection program is being disposed annually. This is approximately 15% of disposed residential garbage.
The composition of residential garbage of Phoenix

- Compostable yard waste (30.1%, 117,746 tons)
- Food waste (14.5%, 56,466 tons)

More than 174,000 tons of material disposed annually

About 2.7% is recycled (est 2,792 tons)
Proposal: Ecopoint

• An installation which allows the integration of the management of waste.
  • How does it work?

Companies, Population,  ⇒  Schools, Public Institutions

⇒ Collector  ⇒  Processing Industry

("Recytus" is intellectual property of the Living Earth Ecological Institute, TM pending)
Proposal: Ecopoint

Objectives

Avoid the waste

Easy access to the population

Incentive for the population

Diminish the cost of transportation

Improve the recycle process
Hi I AM RECYCTUS

Ecopoint

What goes in which bin?

Help save the environment and you could win a gift
1. Take a picture with Recycitus
2. Register in the CHLUE
3. Post the photo in the Facebook or Instagram with the hashtag #LoveRecycitus

Living Earth

CHLUE

Helpful Tips

- Milk Bottles
- Cans
- Glass Jars
- Plastic Bottles

Helpful Tips

- No Cotton
- No Metal
- No Clothing
- No Food

Helpful Tips

- No Electronics
- No Batteries
- No Glass
- No Plastic

Helpful Tips

- No Books
- No Paper
- No Envelopes
- No Plastic

Helpful Tips

- No Toxins
- No Meat
- No Bones
- No Leather

Helpful Tips

- No Hazards
- No Chemicals
- No Medicines
- No Odours

Helpful Tips

- No Flammable
- No Explosives
- No Oxygen
- No Petrol
Environmental education and Incentive

Help save the environment and you could win a gift
1. Take a picture with Recyctus
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3. Post the photo in the Facebook or Instagram with the hashtag #ILoveRecyctus

What goes in which bin?

- Milk bottle tops
- Any plastic bottle
- Flattened cardboard
- Cans

NO THANKS
- Plastic bags
- Plastic wrapping
- Plant pots
- Furniture or toys
- Food Packaging

- Newspapers
- Magazines
- Ripped or Squashed paper
- Junk mail
- Catalogues
- Brochures and office paper

NO THANKS
- Books
- Wallpaper
- Printed envelopes
- Food Packaging

- Cooking oil
- Fuel Oil

NO THANKS
- Food
- Dead Animals
- Gras, Garden Wreaths and Hedges
- House plants, Leaves, Plants and Shrubs
- Twigs and Branches
- Couting

NO THANKS
- Soil
- Large branches
- Liquid oils and fats
- Liquid such as milk, yoghurt or cream

- Styrofoam containers
- Nappies, Tissues, Sanitary
- Used gloves

NO THANKS
- Batteries

BATTERIES
- Batteries
Let’s Innovate!

Phoenix, the City of the Future