Solar Roadways Installs Energy Harvesting Parking Lot

Source: indigogo.com

Published: April 25, 2014

Co-inventors Scott and Julie Brusaw take a break and enjoy their creation

About 8 years ago, an electrical engineer and his counselor wife started throwing around an idea to replace asphalt on highways and byways throughout the US with electricity-producing solar panels that were tough enough to be driven upon. The idea blossomed into a project, where the panels featured built-in LEDs that could "paint the road" with markings and warnings, and could be heated to prevent snow and ice build up. The US Federal Highway Administration paid for the couple to produce a working prototype, which they did, and then again to expand the concept into an operational parking lot setup. As the latter contract comes to an end, the Solar Roadways project has released photos of the (almost) completed installation at its Idaho electronics lab. Now the team is dipping into crowd-funding waters with a campaign to raise funds for the move into commercial production.

Solar Roadways Story

Imagine the possibilities of a post Solar Roadways world: Your home could be all or nearly off grid thanks to your solar driveway (which you no longer have to shovel or plow if you live in the north), patio, or walkways etc. When you leave home, you'll be driving on Solar Roadways which are snow and ice free, pothole free, and the LEDs help you see the lines clearly and easily, especially at night when many people suffer night blindness. A study in the UK showed that LED markers on road lines reduced nighttime accidents by 70-percent. If there is danger ahead from a deer in the road or a sudden accident, the intelligent road can sense this and warn you to "Slow Down". This will save the lives of countless animals and keep people safer too. If you go somewhere new, the intelligent road can direct you with an LED-lit arrow that you follow to your destination. If you have an EV, you can stop and charge at a solar parking lot while you work, shop or eat, using clean energy from the sun. Eventually, you'll be able to charge while

you drive via mutual induction panels. Solar Roadways will provide the infrastructure to make this possible.

The parking lot of your favorite store would be snow/ice free and lit with LEDs. Handicapped spaces will be created as needed so they no longer have to be dedicated. EVs can charge in the parking lot while you shop and business owners could also choose to offer some preferred parking spaces to EV owners. They could offer smaller spaces for motorcycles, larger spaces for RVs and trucks, all changeable at the touch of the manager's computer button. The parking configuration itself can be changed as needed with presets too. Imagine your favorite sports arena all lit up with LED filled parking lots and walkways in team colors, perhaps displaying images of your favorite players on the walkway as you approach. Imagine going to an amusement park with solar walkways that change colors by area, event, time, or any other variable. Think of all of the tarmac at airports just baking in the sun. Our panels could not only generate large amounts of power, but pilots tell us they could be used to provide signage visible to them from the air.

We are concerned about all of the mountains of trash in our landfills and even worse – in our oceans. We want to utilize recycled materials wherever possible. We were able to use recycled glass as ten percent of the aggregate in our base layer for our prototype parking lot and we want to work with materials engineers to use as many recycled materials as we can at every phase of production.

All of the ugly overhead cables that mar our landscape and are susceptible to damage from ice, can have a home now in our Cable Corridors, where utility workers can access them easily. There will be no more cell phone dead spots and no more need for cell towers due to the "leaky" cables that can be installed in the Cable Corridor. It would be a home for fiber optic internet too, bringing high speed internet to everyone.

The other side of our Cable Corridors will also store, treat and redistribute stormwater. Our lakes and rivers and oceans become polluted by stormwater which is rain water that picks up things like pesticides from lawns and oil from roads and makes its way into the nearest body of water. When it's collected in Cable Corridors, it can be treated on site or moved to treatment centers or to wherever it's needed such as agricultural centers, aquifers, or helping drought stricken areas for example. In parking lots, water can be treated and then delivered to landscaping or wherever the business owner wants it to go. We can have cleaner water to enjoy while protecting fish and whales and all of the amazing sea creatures that depend on our wisdom.

In America, our infrastructure is badly in need of updating. State DOTs are struggling for money and are not able to keep up with maintenance the way they would like to. We were thrilled when the Federal Highway Administration expressed an interest in what we were doing and provided us the funding to move our concept forward. We have found a way to offer a road that can pay for itself over time by the energy it creates etc. Solar Roadways can also become the Smart Grid. The roads that already traverse each country are perfect for becoming the grid that carries our power. It will allow us to create an organized system, a decentralized system which is secure and protected, unlike the current centralized power stations. Solar Roadways can become the hub which welcomes other types of renewable energy and other inventions into the Smart Grid for distribution.

Our grand vision includes the ability to help in various ways where there is a need. In times of disasters, such as earthquakes or tsunamis, lack of power hinders rescue workers. After the Haiti Earthquake, we were asked if we could send some panels. Unfortunately, we were not product ready, but it made us realize how much our panels could help in such situations. They could be dropped in by helicopter and set up to provide a triage center for medical care and food distribution. There would be solar energy and light to help with current needs.

We often hear from third world countries such as African countries that desperately want our panels to help provide needed power. That power can be used to create clean drinking water and energy to run lights and computers for education.

We worry about Climate Change. We keep hearing reports that it's happening faster than expected. We can help by easing and then eliminating our dependence on fossil fuels. We began our project with the goal of helping with environmental issues and then realized our concept would help the world in so many other ways too.