

SolaRoad cycle path electricity yield exceeds expectations

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Credit: SolaRoad

What a concept for a pilot project. Can't we change our roads into gigantic solar panels? Harvest energy from them? Get solar electricity from them, fed into the electricity grid and used for street lighting,



traffic systems, households and electric cars?

A public-private partnership in the Netherlands has such a <u>pilot project</u> going on, in the form of sunlight on the road surfaces converted into electricity, in the form of a bike path. The project participants for SolaRoad want the world to know that this project so far is looking good. SolaRoad is in a pilot phase for a three-year period; The Associated Press said that this was a 3.5-million Euro project.

The first six months of the pilot phase were successful, according to a SolaRoad press release issued earlier this month. The energy yield was beyond their expectations. Spokesperson Sten de Wit said they were surprised to see the level of success so quickly. Case in point: "The bike road opened half a year ago and already generated over 3,000 kWh," he said. "If we translate this to an annual yield, we expect more than the 70 kWh per square meter per year, which we predicted as an upper limit in the laboratory stage. We can therefore conclude that it was a successful first half year."

The engineers behind the bike path design had to develop a solar road that could not only have requisite strength but also resist skids. SolaRoad has been described as a "living lab" of about 70 meters.





Credit: SolaRoad

The cycle path is made up of concrete modules of 2.5 by 3.5 meters. Solar cells are fitted and protected by a centimeter-thick top layer of safety glass with a transparent, skid-resistant coating. The other lane does not have solar cells; it serves as a test area. *SustainableBusiness.com* said that, "While a flat solar panel is 30 percent less efficient than those at an angle or rooftop, there's <u>plenty</u> of surface to make up for that."

This living lab, however, has hit some issues along the way. Jon Fingas in *Engadget* wrote, "Things haven't been going perfectly. The coating on the solar cells' protective glass tends to peel off when the weather changes, for example, suggesting that the path could be expensive to maintain asis." (The press release said that at the end of December 2014 and in early Spring of 2015 a small section of the coating "delaminated." Large temperature fluctuations can cause local delamination due to shrinkage in the coating, it noted. "Repairs have been made and the development of an improved top layer is now in an advanced stage.") The AP report



said the fluctuations caused part of it to peel off namely in early winter and early <u>spring</u>.

Fingas remarked that, as the project to last for another two and a half years, "SolaRoad believes that it'll have plenty of time to iron out the kinks, and it's confident enough that it plans to test its technology on small municipal roads in the <u>future</u>."

SolaRoad officially opened in November 2014. *Ubergizmo* said about 150,000 cyclists have crossed the SolaRoad in the six months that it has gone <u>live</u>.

The AP report said SolaRoad's public-private partnership includes the province of Noord-Holland, TNO, Ooms Civiel and Imtech.

Looking to the future, TNO project manager Wim ven der Poel said, "Using this <u>energy</u> to charge <u>electric cars</u> while they are driving over the road is a beautiful dream, which might become reality. SolaRoad acts as a step towards a closed ecosystem. From mobility through energy back to mobility – which makes the circle complete."

More information: SolarRoad produces more energy than expected: <u>us7.campaign-archive2.com/?u=f ... 31492e&id=39c5c2acf8</u>

SolaRoad: www.solaroad.nl/en/

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