

## **Eclipsall, Bilagot and others working to lower costs of Solar Energy systems**

A two-stage research project being undertaken by Eclipsall Energy, Bilagot Energy, and other partners in southern Ontario, aims to reduce the cost of total solar energy system installation costs, while also improving the efficiency of solar modules.

In the first stage, [Eclispall](#), [Bilagot](#), [Structural Tech Corp.](#) and the [Elite Engineering Group](#) are working on both developing a new type of racking system that will make it easier and less expensive to install solar arrays for both rooftop and ground-mount applications. The second sees Eclipsall and Bilagot team with [Lambton College](#), the [University of Western Ontario Research Park](#) and [Mohawk College](#) to try to come up with new ways of assembling solar modules in a lower-cost and more effective manner.

With respect to the first component, Les Lyster, CEO of Eclipsall tells Canadian Green Tech that the goal is to reduce solar energy system installation costs by about one fifth through the development of new innovative racking systems that are much easier to install. With about 60% of a total projects costs related to installation and modules, it's difficult to reduce costs, so the only way to lower them is reduce installation expenses.

In rooftop applications, the racking system will be non-penetrating and will be an improvement on current ballasted and self-ballasted systems.

Commercial racking systems from the research project will be available on the market in the first quarter of 2012, says Lyster. The first systems to use the new racking system will be California.

A second phase to the racking research will begin next year as well. Lyster says this will look at eliminating the frame of the module. "When you have an aluminum frame [around a module], then you're putting it into a mounting or racking structure that's aluminum or galvanized steel, that's a redundancy," he explains. "But if you put a module without putting a frame on it into the racking and you've eliminated 20 cents a watt on the manufacturing, plus a process set. So that's step 2 we'll be working on next year."

On the module side, Eclipsall and Bilagot are working with partners on the materials used in assembling the panel. Moses Bilagot, a technical advisor with Bilagot, says this would involve looking at insulation, the metal, the soldering, the glass and other components that go into a solar module.

"There are components that could be integrated into the system, so it's just more improvements to the existing module technology to enhance its capability," he tells Canadian Green Tech.

The goal of the second stage of the research is to improve the overall efficiency of the panel. Currently, efficiency levels are in the mid-teens, Bilagot notes, adding the goal is “to take that up to about 19% to 20% efficiency. And that would then translate into 20% more production out of the same square footage of the panel.”

Bilagot adds that more efficient modules should hit the markets commercially by the third quarter of 2012.

Another element of the two-phased research was to reduce the installation costs and improve module efficiencies by about 20% to coincide with a decrease in the feed-in-tariff rate for solar energy projects.

“The idea there is we anticipate the FIT program reduction in the payback by 20% so having this product in the market by 2012 would compensate for the reduction of the FIT rate,” says Bilagot.

While Ontario solar energy developers will be able to take advantage of the lower cost installation and more efficient modules, another goal of the research is to be able to take this to international markets.

“If we reduce the installation costs and increase the panel efficiency, then it gives us a competitive edge outside of Ontario where the rates are not as lucrative as Ontario,” explains Bilagot. “So we’ve created a widget to compete with the Chinese, Koreans or Japanese.”

Lyster adds that the goal is to drive the costs down to compete in markets that aren’t subsidized. And to do that solar energy needs to get down to the \$3 per watt installed price range. In Ontario that can’t be done because there is a 20% premium on project costs and the most cost effective projects here are getting done for \$3.50 per watt installed.

“In the US or internationally, you’ve got to be closer to \$3 a watt to get the job and that’s where we’re truly targeting as an international presence,” Lyster says.

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Written by: Perry Hoffman