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Startup's high-tech lighting has bright future — Focus

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There are about 35 million of them in the United States and their numbers grow every year. You drive past hundreds – maybe thousands – each day without noticing, and probably take them for granted even at night. But every year each one produces an average of 10 tons of carbon dioxide and the group is responsible for about 1 percent of all the electricity used in the country.

Street lights and other outdoor fixtures are such a basic part of the modern landscape that they go unnoticed, yet their basic compressed sodium technology hasn't changed since the middle part of the 20th century. Enter Inovus Solar, a 2-year-old Boise startup that's working to revolutionize the way the world is lit.

"Lighting's been an old technology game for so long and that's kind of changing with all this new emphasis on the Smart Grid," said John Hanousek, adviser to Inovus' board of directors and a major financial backer of the company.

The company's new light fixtures use light emitting diode (LED) modules powered by flexible solar absorbent sheets wrapped around the pole. Called the SmartPole, they are capable of operating independent of the power grid or, when connected and networked with remote sensors, actually feed power back to the grid during periods of peak demand.

Because they can be self-powered, SmartPoles eliminate the need to dig trenches and string wires, making them increasingly attractive to communities that want to reduce both their carbon footprints and operating expenses. But even without the solar wrapping, LED modules use about 60 percent less energy than traditional compressed sodium bulbs and last about twice as long.

"The main benefit would be energy savings and maintenance cost," said Hank Alarcon, street lighting engineer for the city of Boise. "The high pressure sodium bulb change-out is a five-year interval. LED lights can be 10 years or higher. Plus the cost for maintaining the system would be down also. ... We're looking at about a 50 percent savings."

Boise is planning an RFP to LED retrofit all of its more than 600 downtown streetlights – a project that would be funded in part from the \$2.2 million the city received from the federal stimulus package. In the meantime, with help from a \$10,000 grant from the city of Boise, Inovus partnered with Alloway Electric and the North End Neighborhood Association to retrofit 21 historic light posts with LED modules in Hyde Park over the past week.

"The city was really interested in looking at a prototype project, something that would be able to save money," said Mike Christie, Alloway vice president. "The city looked at this as a great opportunity to look at this emerging technology."

The benefits go beyond cost savings though. Christie said switching from compressed sodium to LED lights increases safety. Because the human brain detects motion faster in the whiter light emitted by LEDs, pedestrians, bicyclists and motorists will have increased visibility and reaction times, he said. The light quality also better represents true colors – a boon to emergency crews.

"Is that brake fluid or is that blood on the ground? You can't tell (with compressed sodium light)," Christie said. "With this new product you're able to tell that. This is a real benefit to emergency services."

Another difference between old-style street lighting and Inovus' LED modules is their directionality – while compressed sodium lights simply emit light in all directions, the Inovus LED module can be oriented to focus light in specific areas, cutting down on light pollution and more evenly distributing lighting across sidewalks or streets.

"This is going to be a lot more pleasant, it's going to be safer, you're going to be able to see better because of the distribution," Christie said.

Inovus' unique combination of LED and solar technology was the brainchild of company CTO Seth Meyer, who, while working at Bogus Basin, envisioned an off-grid, solar-powered way to provide light for night skiing.

Meyer partnered with Clay Young, who co-founded software firm ProClarity in 1995, and together

they've grown the company to about 18 employees. Headquartered in the Water Cooler in downtown Boise, Inovus contracts almost exclusively with Idaho businesses to build both SmartPoles and LED retrofitted fixtures for use around the world.

Hanousek said the company raised \$1.3 million in capital this round, with another \$500,000 invested previously. Counting equity, he said total investment is probably around \$3 million. There's enough money in the bank for two years, and with a crack team of engineers and technologists hailing from firms like Micron, HP, CH2M Hill and Microsoft, Inovus' future looks bright.

"We feel we're well capitalized and we're really happy with the people we've got," Hanousek said. "Our goal is to get to break even real quickly and then self-fund."

