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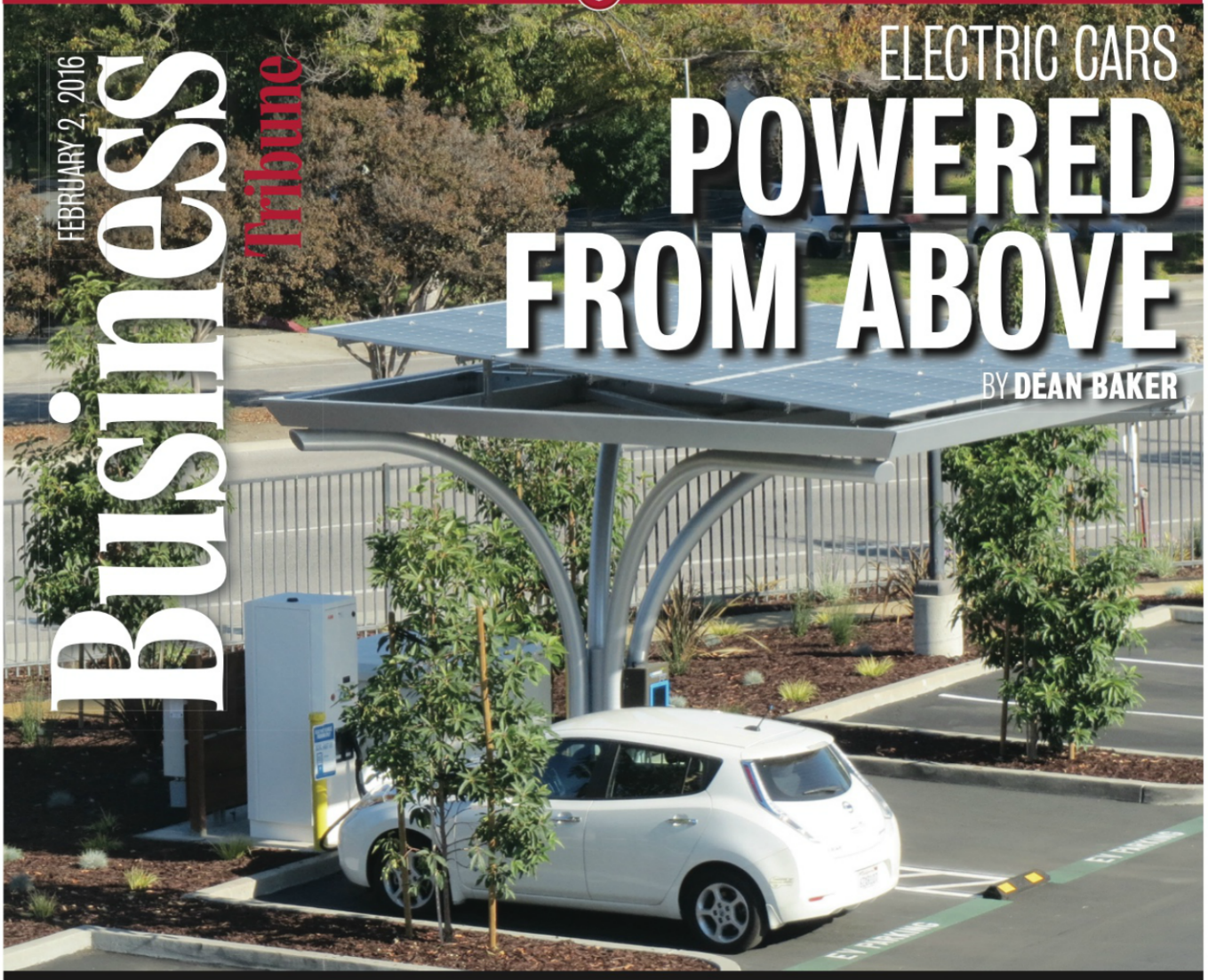
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ELECTRIC CARS POWERED FROM ABOVE

BY DEAN BAKER



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HERE COMES THE SUN

Portland company pioneers faster, solar-powered electric car charging stations

Hans van der Meer has thrown his 38 years as a globetrotting civil engineer and businessman into a five-year effort to develop and sell solar-powered electric car charging stations.

"I am a strong believer that the electric car is going to be the savior of our climate and our world," said van der Meer, 67. He has placed his first 10 charging stations in Oregon, Washington, California, Norway and the Netherlands.

He's out to sell dozens more. He's got Intel and several investors in his corner.

Van der Meer is the owner, president and the CEO of EV4 LLC, a Portland company he founded in 2010 to design, build and operate the solar battery charging systems he calls Energy Transfer Merchant stations (ETMs).

The stations have a capacity for Level 2 charging as well as slower level one charging and are "grid-interactive" — largely, but not exclusively solar.

They take energy from the sun and supplement it from the electrical grid, van der Meer said. Employing a 17-foot-square collector made by SolarWorld in Hillsboro, EV4 stations can power two vehicles a day without any input from the electric grid.

Any solar power beyond the 50 kilowatts needed to charge the station battery trickles back into the power grid, he said. It takes about 25 kilowatts to charge a Nissan Leaf, for example. In California sunshine, an EV4 unit produces about 20 Kilowatts an hour, he said.

Van der Meer worked with Tualatin-based Powin Energy, Portland-based OpConnect and lately with Intel to develop the charging and battery technology. Various contractors build the stations.

Intel has installed an EV4 system at its Santa Clara headquarters in California as a pilot project and to expand its support of electric vehicle charging, said Jennifer Baumgartner, spokeswoman for Intel Global Communications.

"The ETM combines power from multiple sources into battery storage that will charge electric vehicles even when the sun isn't out," she said. "This combination optimizes the use of green solar power and ensures that vehicles can be charged at any time. This project will help us better understand the use of storage and the integration of multiple energy-sourcing into one system."

Since 2009, Intel has supported its employees by adding more than 100 electric vehicle-charging stations at seven of its U.S. campuses. In addition to the EV4 station at

BY DEAN BAKER



COVER: Electric vehicle charging stations that use solar power are a new gambit for entrepreneurs who want to own and operate them. **LEFT:** Hans van der Meer is on a mission to bring solar charging to the world's burgeoning electric vehicle ecosystem. His EV4 charging stations can charge two vehicles per day with just the power of the sun.

TRIBUNE PHOTO: DEAN BAKER
COVER: COURTESY OF EV4

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Santa Clara, Intel's stations are at Jones Farm and Ronler Acres in Hillsboro, at Chandler and Ocotillo in Chandler, Ariz., at Folsom, Calif., and at Austin, Tex.

"We have completed several phases of expansion and continue to monitor and add new units as prudent," Baumgartner said.

Pioneering his solar-power system for electric vehicles, van der Meer also has placed nine other EV4 stations at 3640 Martin Luther King Blvd. and Airport Way in Portland, and in Salem, Tualatin, Tillamook, Madras, Arlington and Seattle as well as in Oslo.

He's also secured 20-year ground land lease agreements on 35 additional sites. The landowner gets \$1 a year plus 5 percent of the charging revenue.

Van der Meer is looking for companies and venture capitalists to buy stations and place them along highways, at shopping malls, on corporate campuses and parking-and-ride lots.

In particular, said EV4 owner and investor William P. Emberlin, owner of ServiceMaster of Portland, van der Meer is looking for connections with restaurants and hotels where electric car drivers can charge up while dining or spending the night.

Emberlin said he's trying for an agreement with Trimet to place charging stations at its park-and-ride lots.

"We are going to change within the next 20 or 25 years into fully electric — maybe quicker, it's going to go tremendously fast in the next five to ten years," said van der Meer. He works out of a Southeast Portland office in the industrial area near Reed College.

Emberlin, who owns the MLK and Tillamook machines, said his stations haven't produced as much as income he had hoped, but he remains optimistic. He leases the MLK lot from the Portland Development Commission.

He paid about \$200,000 for the MLK station, he said, but a tax write-off and depreciation cut his



EV4 charging station at Intel's Santa Clara, Calif., headquarters. Intel encourages its workers to go green.

COURTESY: EV4

costs.

"My out-of-pocket expense is about \$55,000," he said. "You have to put the bigger money up front but my CPA feels it's a good investment."

A major solar advocate, Emberlin also powers his football field-size warehouse on Southeast Raymond Street with solar collectors. "I haven't paid an electric bill

there for seven or eight years," he said.

He sees the potential for electric car charging stations as similar. They are a lot like Automated Teller Machines (ATMs) that were initially scorned, but now are ubiquitous, he said.

After taking a tax write-off on a \$200,000 station, many buyers find they pay as little as \$40,000 out-of-

pocket, van der Meer said, adding they could make that up over about five years, while cars stop in and spend \$10 for a recharge. The owner will pay for electricity from the grid, insurance and maintenance and a fee to the landowner.

The short distance many electrical cars can travel without a charge is a drawback in their use, he said. The low price of gasoline

is also a drag on electric car development.

But that's changing. Charging a car costs in the range of \$10. Tesla cars can go 240 miles on a charge, while other cars can travel only about 80 miles on a charge. The next generation of cars, such as the 2017 Chevrolet Bolt will go 200 miles or more, he said.

Driving a fully electric car on

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the highway requires patience. Charging can take as little as an hour or as much as four or five hours at an EV4 station. It can take nine hours or more on a home 120-volt system.

"Thirty years from now, the kids of my kids will drive only electric cars," he said. "There won't be any production of gas cars anymore. They'll only make spare parts."

He admits he's an optimist and visionary after a career he spent building hotels, resorts, offices, bridges and port facilities from Denmark to Qatar to Saudi Arabia, from Venezuela to Miami and the Caribbean, from Idaho to Seattle to Hillsboro and Portland.

He's hoping for a contract soon with the California Energy Commission to place EV4 charging stations along I-5 from the Oregon border to Sacramento.

"I'm into this world-wide: some countries are way ahead. The charging station density in the Netherlands is tremendous."

Those who opt for his systems need two things, van der Meer said: an environmental consciousness and a significant tax liability. Many companies could benefit from installation, he said.

As batteries improve and solar energy collection is refined, the success of the electric car will become inevitable, he said. He's banking on it.



Powin Energy
EV4 station in
Tualatin.
COURTESY: EV4

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