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EV4 Deploys Innovative Solar-Powered, Battery-Based DC Fast Charging System in Silicon Valley

Portland, Oregon- December 20, 2015 – To show *proof-of-concept* of a solar-powered, battery-based, smart grid charging station without demand charges on the electrical grid, Intel has installed EV4's innovative EV charging station with DC2DC[®] fast charging of electric vehicles (EV). The station is installed on the visitor parking of Intel's corporate headquarters in Santa Clara, California.

EV4 LLC has developed the battery-based DC fast charging system, trademarked as DC2DC[®] with patent pending. Including a solar roof structure the charging station is called an ETM[™] (Energy Transfer Merchant) station, a play on "ATM". Like an ATM, which stores and dispenses money, the ETM[™] captures, stores and dispenses energy.

The ETM[™] is grid-tied with a single phase 120/240 VAC connection and does not require the commonly used 3-phase 208/277/480 VAC connection, which usually results in high demand charges. Thanks to the battery system, DC fast charging is possible in areas and remote locations where 3-phase 208/277/480VAC does not exist, or is very costly to install, and also significantly lowers the operating costs even in urban areas.



DC2DC[®] Fast Charging

The Intel ETM[™] station is equipped with the ABB Terra53 CJ for DC fast charging, which supports CHAdeMO and SAE CCS charging, and an OpConnect Mark II Level 2 charger (J1772[™]) for AC charging. The OpConnect Mark II unit, which is equipped with a high definition touchscreen and credit card reader, functions as the payment kiosk for both chargers in addition to providing the Level 2 charging. The back office for billing and monitoring is also handled by OpConnect.

The DC2DC[®] battery system installed at Intel has a capacity of 43kWh, manufactured by Powin Energy. The ETM[™] station consists of an iconic canopy structure covering two parking spaces (17'x17') with solar modules (SolarWorld SW285) as the roof.



The solar roof has 15 modules with a capacity of 4.1kW, providing an estimated yearly production of 7,300 kWh at this location in Santa Clara. This ETM™ is equipped with the Ideal Power IBC-30kW-480 bi-directional converter with a 30KW capacity to convert AC to DC and DC to AC.

The station provides electricity to charge an average of two (2) EV's (such as the Nissan Leaf) daily, without any input from the electrical grid.

About EV4 (www.ev4oregon.com):

EV4 is a Portland, Oregon based company in the business of design, manufacture, installation and operating services of EV charging stations. The company has developed its ETM™ charging station, a smart grid system with DC2DC® fast charging that allows installation of EV charging stations at remote locations with poor grid power. Also, the ETM™ station enables owners and operators to generate revenue through participation in distributed storage strategies, grid-load balancing and carbon footprint offset (REC) market.

About OpConnect (www.opconnect.com):

OpConnect, based in Portland is a leader in electric vehicle charging stations and charging station management software technology. The OpConnect Electric Vehicle Charging System® includes Level 2 chargers, back office systems for charger management and a web site and mobile application for driver management of their accounts. OpConnect has more than thousand charging ports under management.

About Powin Energy (www.powinenergy.com):

Powin Energy is a leading provider of scalable energy storage technologies in grid-level applications for electric utilities, and their commercial, industrial and institutional customers. Powin Energy is a design and integration company that utilizes advanced energy storage and conversion technologies, as well as strong industry partnerships, to deliver scalable energy storage systems that assist organizations achieve the full potential of the rapidly-changing electricity economy on both sides of the meter.

About Ideal Power (www.idealpower.com):

Ideal Power Inc., based in Austin, Texas (NASDAQ:IPWR) has developed a power conversion system technology that uses transformerless isolation, resulting in smaller, lighter, more reliable and more efficient than conventional technologies, dramatically reducing installed costs.