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Sent: 9/13/2012 12:57:24 PM  
To: Allen, Meredith (/O=PG&E/OU=Corporate/cn=Recipients/cn=MEAe)  
Cc:  
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Subject: FW: FYI: GreenVolts closing down

FYI

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California Public Utilities Commission

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**From:** [Redacted]  
**Sent:** Thursday, September 13, 2012 9:45 AM  
**To:** Blackney, Robert; [Redacted]; Simon, Jason; Simon, Sean A.  
**Cc:** Baker, Amy C.; Kamins, Sara M.  
**Subject:** FYI: GreenVolts closing down  
**Importance:** Low

## Updated: GreenVolts, CPV Aspirant, Lays Off Most of Its Staff

Second-tier CPV firm with unknown differentiation and \$105M in VC is winding down.

Eric Wesoff: September 12, 2012

GreenVolts, a concentrating photovoltaic (CPV) systems vendor, talked a good game and raised sizable amounts of VC and strategic funding since its founding.

In spite of a \$20 million funding round from ABB late last year, sources close to the

firm have informed GTM that the company is closing its doors and letting most of its employees go as early as this Friday. Emails and calls to the CEO of the firm, several staff members, as well as the firm's investors have not been returned.

*Update 2 p.m. PT:* Katie Fehrenbacher of GigaOm was able to reach the CEO of GreenVolts, David Gudmundson. She learned that GreenVolts has laid off more than 60 of its 80-person staff after investor ABB withdrew its support of the firm.

GreenVolts came to the solar market with a lot of promise a few years ago -- only to recede soon afterward. The startup had signed a multi-megawatt power purchase agreement (PPA) with PG&E in 2008, one of the more sizable CPV projects at the time. But GreenVolts had some troubles and a bit of a boardroom shift: Founder Bob Cart was replaced as CEO by JDSU executive Dave Gudmundson. Gudmundson had no experience in the solar industry and brought several of his JDSU colleagues along with him. The new management had little solar or utility expertise. The same held true for the board of directors of the company.

Gudmundson took the firm quiet and the company reworked its product and its strategy. The product went through a major redesign because of issues with accuracy, tracking and scalability, according to our sources.

As far as we could tell, Gudmundson's contribution was outlined in a press release calling the product "the industry's first complete and fully integrated solar system, including modules, trackers, inverters, and energy management software." Although not willing to go on record, a competitor in the tightly knit CPV space told GTM that this was hardly a CPV industry first and that most CPV vendors provide complete systems.

What that "systems" claim was was an attempt to find some or any differentiation for the GreenVolts product in a brutal, commodity electron market.

GreenVolts returned, armed with its new lipstick and a new \$35 million VC round, which included \$20 million from ABB Technology Ventures, the VC arm of ABB (NYSE: ABB), the power and automation technology giant. The GreenVolts CPV technology looked like a good match for ABB's recent equity stake in Novatec Solar, a provider of linear fresnel lenses. ABB was to sell the system for GreenVolts, providing a turnkey CPV system to its customers.

While GreenVolts was re-inventing itself, Amonix, Soitec, and SolFocus became the dominant leaders in the CPV sub-sector, with hundreds of megawatts in their PPA pipelines. But Amonix recently closed its Nevada factory and SolFocus is trolling for more funding with the help of Advanced Equities.

In an interview late last year, Eric Romo, a VP and founder at the firm, said he didn't see CPV vendors as the competition. He told Greentech Media, "The competition isn't CPV; it's PV. How we measure and think about ourselves is as a solar company, not a CPV company." He said that GreenVolts had won a dozen projects (about three megawatts total) in competitive bids against flat-panel photovoltaics. GreenVolts had

installed a one-megawatt CPV system in Yuma, Arizona at Arizona Western College.

Maintaining the aspirational language of startups, Romo claimed that CPV had "the potential to be the next leg in the curve," adding, "The next phase is showing CPV is not just as good, but better than PV."

If you're competing head-to-head with PV panels below \$1.00 per watt or solar farms with an all-in cost of ~~\$3.50~~ \$2.50 \$2.00 per watt, GreenVolts should have been able to furnish a dollar-per-watt or LCOE number that shows why it could win business against flat-panel PV. That's where Romo was less than completely communicative with this reporter. He said that because it was a full systems company, the dollar-per-watt value was not comparable to the PV module dollar-per-watt price and that there was a "nomenclature" mismatch because of the apples-to-oranges nature of the comparison of a CPV system to a PV installation.

Despite Romo's spin, Ed Gunther's sleuthing of the GV-1 installation estimated the cost of the system at about \$11.00 per watt -- apples-to-oranges notwithstanding.

In a 3.2-gigawatt U.S. PV market and a 25-gigawatt global solar market, scale is vital -- and GreenVolts had to scale, scrub out cost, and genuinely outperform and out-compete against PV and its CPV brethren, even as solar pricing continues to drop. And it was never able to do that.

The Cleantech Open heralded GreenVolts as one of its successes -- defining "success" as raising a lot of venture capital.

Here's a partial list of VC-funded CPV firms, including system and component vendors:

- ██████████ Ahura Energy
- ██████████ Banyan Energy
- ██████████ Circadian Solar
- ██████████ Concentrator Optics
- ██████████ Cool Earth Solar
- ██████████ Covalent Solar
- ██████████ Cyrium
- ██████████ Energy Innovations
- ██████████ EnFocus

- ☐☐☐☐☐☐☐☐ EverPhoton
- ☐☐☐☐☐☐☐☐ Extreme Energetics
- ☐☐☐☐☐☐☐☐ Greenfield Solar
- ☐☐☐☐☐☐☐☐ GreenVolts
- ☐☐☐☐☐☐☐☐ MegaWatt Solar
- ☐☐☐☐☐☐☐☐ Microlink Devices
- ☐☐☐☐☐☐☐☐ Morgan Solar
- ☐☐☐☐☐☐☐☐ MST
- ☐☐☐☐☐☐☐☐ Netcrystal
- ☐☐☐☐☐☐☐☐ Optony
- ☐☐☐☐☐☐☐☐ Phostor Solar
- ☐☐☐☐☐☐☐☐ Prism Solar
- ☐☐☐☐☐☐☐☐ Pyron Solar
- ☐☐☐☐☐☐☐☐ Pythagoras Solar
- ☐☐☐☐☐☐☐☐ QuantaSol (acquired by JDSU)
- ☐☐☐☐☐☐☐☐ QuNano
- ☐☐☐☐☐☐☐☐ Scaled Solar
- ☐☐☐☐☐☐☐☐ Semprius
- ☐☐☐☐☐☐☐☐ Skyline Solar
- ☐☐☐☐☐☐☐☐ Solaris
- ☐☐☐☐☐☐☐☐ Solaria
- ☐☐☐☐☐☐☐☐ Solbeam
- ☐☐☐☐☐☐☐☐ SolFocus

- ██████████ Solandis
- ██████████ Solar Junction
- ██████████ Solar Systems
- ██████████ Soliant (acquired in fire sale by Emcore)
- ██████████ Stellaris
- ██████████ Sunovia
- ██████████ Sun Phocus
- ██████████ Sunrgi
- ██████████ ~~SV Solar~~
- ██████████ ~~Wakonda~~
- ██████████ Zenith Solar
- ██████████ Zytech
- ██████████ Whitfield Solar