

How Solar System Installers Can Trim Balance-of-System (BOS) Costs: Three Observations From the Field

By: Devon Duncan, Territory Field Manager, Heilind Electronics

Per a [November 2012 Greentech Media report](#), since 2008 the photovoltaic module has gone from representing 67% of a solar project's total cost to just 32%. So now, a full 68% of a solar system's price tag consists of BOS costs, which include such items as structural and electrical components, labor and soft costs. Obviously, these BOS expenses represent the greatest opportunity for solar installers to cut costs. And it's been my experience that there are three key areas most solar installers should look to for potential BOS cost-savings.

1. **Cable assembly** – In my line of work it's all driven by the junction box, from which the installer "daisy chains" the panels. To do this of course you need cable assemblies. But, do you really need – and is it really cost-effective for you – to do your own cable assembly?

For example, I recently called on a yard manager whose company was doing its own cable assembly. As we talked shop, he expressed concern about how long it was taking to do this job. He said the cable assembly work often made his crews late to their job sites and – if this kept up – it could potentially push back project completion dates and cost the company money.

OK. Let's look at this situation. (1) The installer has to inventory the various components it needs for the cable assembly and this ties up capital. (2) The installer has to invest in, maintain and periodically replace the tools needed to do the assembly. Granted, not a huge investment but still, it's another added expense that ties up capital. (3) Most importantly, the work itself typically takes longer than it should because the installer's workers aren't highly adept at cable assembly. Bottom line? Factor in these items and it's highly doubtful that DIY cable-assembly generates any cost-savings at all. In fact, it may be *adding* cost to the job.

Now, back to the yard manager. After listening to his concerns I offered to quote him on pre-assembled solar panel cable assemblies. He agreed and I contacted a cable assembly company that's also a Heilind customer. I provided the yard manager's specs, got pricing and then worked up a quote for the installer. When it was all said and done pre-assembled cable assemblies turned out to be a better deal, saving the company time and money. On top of that, while I don't know for sure, I'm betting that the quality of the cable assembly is better, because these units are built by people who are expert cable assemblers.

2. **Direct-to-yard delivery of BOS components** – Another observation I’ve made is that solar installers can often save time and money by having components shipped directly to the yard. For instance, one typical mode of operation for installers is to have one of the crew stop by the local electrical wholesaler to pick up whatever is needed for the day’s work. First, this takes time; and I seem to recall a certain cliché about time and money. Plus, it will take even more time if the regular components supplier is out of stock on an item or two, requiring a trip to your backup supplier. And because your backup supplier is just that – the backup – you may end up paying more.

The Heilind solution is that we’ll ship components directly to your yard – and, we’ll work closely with you to see that there are no “hiccups” in your supply chain. First thing we’ll do is look at your components usage over a 3 – 6 month period. Once we get a handle on your usage we’ll work up a plan.

Typically this plan involves you keeping enough inventory on-hand to cover your day-to-day needs and any spike in demand, both of which we’ll be able to gauge based on the usage study we did. The other part of the plan is that, for every component you source from us, we’ll keep a set amount of bonded inventory in stock at the Heilind warehouse closest to your yard. (We have eight strategically located warehouses throughout the U.S. and Mexico.) I’ve never seen an instance where this arrangement didn’t save an installer time and money over the more typical mode of operation described earlier.

3. **Source as much of the BOS as you can from a single distributor** – One key question every installer wants to answer when deciding how and from whom to source its BOS components is this: How much of the balance-of-system do you distribute? As you know, there’s the module, the junction box, the combiner box. Then there’s the grounding solution you need for the frame, labels, solar wires, connectors, grounding clips and on and on. All things being equal with the distributors on your short list – good reputation, competitive pricing, knowledgeable people, great service – your most efficient and cost-effective choice is the distributor that can supply you with the most BOS products and components.

Ideally, you’ll be able to get pretty much every balance-of-system product and component you need, and the brand names you want, from a single distributor. Because, and you know this but I’m going to say it anyway: The fewer phone calls you have to make, the fewer emails you have to send, the fewer vendors you have to manage, the fewer checks you have to cut, and the less time and gas money you have to spend driving from one distributor to another...then the fewer people you’ll need to do the job,

the more productive those people will be and the more profitable and competitive your business will be.

According to the Solar Energy Industry Association 2012 photovoltaic installations grew by 76% over 2011, with another 30% growth in installations predicted for 2013. Employment in 2012 grew by 13.2%. Indeed, solar is booming. But competition is fierce and 2012 also saw numerous bankruptcies. As an owner or executive of a solar installation company and as a good businessperson you know it's always smart to be on the lookout for ways to save time and money and to be more competitive. It's been my pleasure today to share a few of my observations about actions you can take that might help you do just that.