United Solar's enlightened partnership

The solar panel maker is reliant on efficient manufacturing practices, but when it came to inbound shipping and distribution across borders, those operations began to suffer as the company grew. Here's how this progressive shipper partnered with its 3PL to re-engineer its logistics model to save 25 percent on its inbound costs.

BY **PATRICK BURNSON,** EXECUTIVE EDITOR

As one of the world's largest producers of thin, lightweight solar products, United Solar has manufacturing facilities in Mexico, the U.S., and Canada. Given the advantages of the North American Free Trade Agreement (NAFTA), one might assume that its logistics team would have conquered the major regulatory obstacles associated with cross-border trade. However, fast company growth presented other, more daunting supply chain challenges back in 2008.

Despite the organization's history of innovation, the vexing problem of inbound management began to surface as a major concern right around that time. Before then, United Solar used a manual process to ship their inbound freight through multiple transportation providers. Each of their North American plants independently managed shipments to their facility from all of their vendors.

But as their organization expanded, this approach created several challenges. First, orders were not always being routed via the most cost-effective method. Furthermore, less-than-truckload (LTL) and truckload (TL) were usually the only transportation freight services considered. Missed optimization opportunities resulted in inefficiencies and lost savings.

Steve Britt, who joined United Solar in early 2009 as manager of logistics and customs compliance, shakes his head when recalling some of the major problems back then. "Nearly every trade lane had its own carrier and mode of service," says Britt. "You essentially had to use an improvised matrix to determine who moved what. But there really was no long-term model created."

According to Britt, that knowledge was essentially held in the head of the corporate logistics coordinator at that

Steve Britt, manager of logistics and customs compliance, United Solar

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time. "She functioned too much as a dispatch in managing these shipments," says Britt. "While she did a good job handling the moves, the effort was extraordinary."

As a consequence, destinations were "under-served," but the problem was deeper than that. The physical movement of goods was inefficient. Britt remembers occasions when two trucks would be driving side-by-side on the same expressway bringing inbound cargo—both only half filled.

"LTL was used based on number of pallets rather than cost considerations," says Britt. "This was obviously a waste of funds and resources." And because of the effort and urgency of movements at the time, Britt says that it was very easy to get swept into the "just get it moving" mindset.

In addition, working with multiple TLs, LTLs, and 3PLs created a manual, time-consuming process for managing freight. Limited visibility to freight in-transit made it difficult to answer shipper queries or assess carrier on-time performance.

Finally, some vendors invoiced United Solar for freight-delivered costs on their orders. This made it difficult to know whether the most efficient shipment method had been selected or if freight charges were in line with the market. But the complications didn't end there.

Expedited obstacles

With United Solar's plants already running around the clock, demand for expedited services threw more complications into the mix, says Britt. "There were times that faster shipments were needed for various reasons—quality issues, supplier short-ships, broken machine parts, late truck arrivals—and when you're relying on just asset-based motor carriers, the job can't always be done," he says.

Transportation within the domestic market meant moving a lot of shipments from the East Coast to the West Coast he adds, and for that standard transit, the lane is long, indeed.

"We've had times when a truck left en route on a normal run and during that time an issue occurred at the plant that required expediting," says Britt. "Ideally, we would divert it to a station to have the pallets pulled. Then we could have some of the cargo flown to its destination, while the rest of the load moves as scheduled by truckload."

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But that meant marshalling all of United Solar's administrative team to work with an expeditor and multiple transport providers.

"It was at that point that we took a step back to evaluate the whole process," says Britt. "Then we used our imaginations to see what we could come up with. Finally, we put a plan in place to get us there."

More than a beauty contest

Britt and his logistics team soon began exploring numerous asset- and non-asset based carriers. They also looked at well-known 3PL's and many LTL companies in search of a single point of reference, a competitive cost, and a high level of service.

"We evaluated roughly 15 to 20 different options," says Britt. "But because we had an existing relationship with C.H. Robinson, and a good experience with them, we gave them the first chance to see what could be done."

For United Solar, that meant it needed a provider to "take ownership" of its supply chain. According to Britt, this was part of a larger company-wide initiative driven by the purchasing, materials management, and logistics groups to work more collaboratively with its supply base and form better partnerships. So, from

Solar making sense

United Solar is not alone in believing that there's never been a better time than now to be part of the "sustainability" business.

According to a new global study by MIT Sloan Management Review (MIT SMR) and Boston Consulting Group (BCG), energy-saving products like flexible solar panels occupy a central and permanent place in corporate boardrooms.

The study, titled ***Sustainability Nears a Tipping Point,*** found that two-thirds of companies see sustainability as necessary to being competitive in today's marketplace, up from 55 percent a year earlier. In addition, two thirds of the respondents said management attention to—and investment in—sustainability has increased in the last year.

The study focuses on "Harvesters"—or the 31 percent of companies that say that sustainability is contributing to their profits. Harvesters are not merely implementing individual initiatives such as lowering carbon emissions, reducing energy consumption, or investing in clean technologies, but they are changing their operating frameworks and strategies.

According to the report, Harvesters tend to have a distinctive organizational mindset and design that supports sustainability. Compared to non-Harvesters, Harvesters are three times as likely to have a business case for sustainability. They are also 50 percent more likely to have CEO commitment to sustainability, twice as likely to have a separate sustainability reporting process, and twice as likely to have a separate function for sustainability.

Harvesters are also 50 percent more likely to have a person responsible for sustainability in each business unit and more than 2.5 times as likely to have a chief sustainability officer.

With news like this, don't be surprised to see more 3PLs partnering with shippers like United Solar in this "greener" marketplace.

—Patrick Burnson, Executive Editor

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the beginning of this new era, C.H. Robinson's strategic account manager began collaborating with United Solar's facilities and vendors, coordinating the inbound freight to each facility.

"We've greatly improved our communication with our partners, and that has extended into our 3PL," Britt says. "Suppliers now have explicit instructions on whom they should be contacting for freight movement, and what information should be supplied. Our suppliers have grown a relationship with our outsourced account manager and that has greatly helped the flow of materials."

At the same time, says Britt, United Solar now has "a gate keeper" who ensures suppliers are shipping appropriately.

"There are no more shipments simply showing up at our doors," he says. "Our 3PL checks on shipment authorization, which allows us to better control the supply chain." For example, in the past, the company had suppliers that would get orders ready early and try to ship them at the end of the month. "Obviously, this would be a benefit to them, based on shipping terms, but it would place inventory on our books earlier than needed," adds Britt.

With the current structure of checks and balances, however, this no longer happens, and that has helped United Solar to maintain its inventory levels.

Collaboration with a capital "C"

While the 3PL's systems provided business analytics to contribute to the collaboration and inform continuous improvement, United Solar implemented the 3PL's website to track shipments and customize reports to the needs of each plant. Visibility to orders in the pipeline greatly increased, and reports were customized to help United Solar monitor key metrics and identify new areas for savings.

Together, says Britt, United Solar and its 3PL built a supplier matrix that documented key parameters, including key contacts, shipping and receiving hours, and other important vendor requirements. The matrix offered visibility into these details and made them available to the plants. And as the 3PL began to unbundle the vendors' transportation expense from product costs, United Solar gained new information for supplier comparisons and negotiations.

"Our product remains unique within the solar market," says Britt. "Our lightweight, thin, flexible solar panels are differentiated versus the commodity-based solar products that most people are familiar with. Internally, we've leveraged the lightweight and flexible characteristics of our product to create packaging and shipping methods that allow us to ship the largest number of kilowatts per conveyance in the industry."

Britt also notes that his packaging and shipping teams have improved this over the past several years, and they now "weight out" trucks before they fill them.

When a specific project requires United Solar to arrange distribution for its customer, their 3PL allows them to quickly quote and reliably move products. As with their inbound material flow, they now have greater visibility to the movements, and are able to provide its customers with various service options and competitive costs to meet the requirements of the projects.

"This leads to a better landed cost of product and truly contributes to the bottom line," says Britt.

United Solar has now engineered their logistics model in conjunction with their suppliers and 3PL to utilize multistop trucks that they refer to as "milk-runs." Each supplier now ships on a fixed-day, variable-quantity method based on Kanban cards. Kanban, created by Toyota in the 1950s, is a scheduling system that helps determine what to produce, when to produce it, and how much to produce.

This allows one truck to stop at two to five suppliers and allows United Solar to fully utilize the trailer. This approach takes advantage of the geographical locations of suppliers and has produced significant cost savings for the company. It also makes the act of shipping very straightforward for the suppliers and has lessened their effort in scheduling pickups as well as provides the plants with a consistent date of delivery.

The 3PL is also helping United Solar in the global marketplace as well. While the EU remains its largest overseas market, the company is working with its 3PL to penetrate South America and Asia. Customs compliance and other regulatory challenges are being worked out on a country-by-country basis, Britt says.

"Expanding our addressable markets and having the ability to ship product internationally in a time and cost efficient manner is something we need from a 3PL," says Britt. "For example, our 3PL provided us with a bonded warehouse in Italy to prevent value-added taxes and customs liability while holding product for an extended period of time."

Achieving savings up to 25 percent, the two companies continue to collaborate on creating new efficiencies. Openness and willingness to share accurate information contributes to identifying the best solutions for United's supply chain.

Operating on a large global scale gives our 3PL the kind of leverage our company needs," says Britt. "Global leverage." □

—Patrick Burnson is Executive Editor of Logistics Management