

Making hay while the sun shines: Tapping new solar growth opportunities in the United States

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At a glance

The U.S. solar market is expected to see substantial growth opportunities and much stronger competition.

Developers could benefit from flexible operations, enhanced pipeline management, and tailored offerings for specific segments of the market.

State-level market insights and the right partnerships are also expected to be crucial.

Introduction

Favorable module pricing and clarified regulations are expected to drive a major growth phase in the U.S. solar market over the coming years. Although this is anticipated to create opportunities, it could also attract global players. To succeed in a more competitive environment, solar companies should consider several key capabilities, including a U.S. operations center with flexibility and reach, strong pipeline and capital management, market knowledge at the state level, and unique offerings for specific segments of the market (e.g. utilities, residential, and commercial).

The U.S. solar market is on the cusp of a significant expansion in downstream installations, owing to a number of factors. Module pricing is down significantly in 2011, financing is more widely available, renewable portfolio standards (RPS) targets are increasing and recently announced loan guarantees will generate direct demand for parts and services.

Current estimates put the U.S. non-residential solar pipeline at roughly 24 GW (up from 17 GW only a few months ago).¹ One research firm projects that the U.S. share of the global solar installations will triple over the next four years.² This growth has already attracted some non-U.S. firms to the market, including a major

Chinese-based module manufacturer which recently established a U.S. headquarters, and another foreign firm that opened a second warehouse facility to service the East Coast. Over the next 12 months, this shift is expected to continue, as the leading global solar companies rapidly redirect their focus from Europe to the U.S.

As a result of these developments, the U.S. solar market is anticipated to soon become far more crowded and competitive. While the predicted expansion phase will create opportunities for companies that can execute well, it could also pose risks for those that lack strong fundamentals or the ability to respond to a highly dynamic market.

¹ "Solarbuzz reports US non-residential solar project pipeline reaches 24GW on module price declines," PV Tech, September 12, 2011.

² "U.S. on the up: GTM/SEIA report reveals market increased installs by 69 percent year-on-year," PV Tech, September 21, 2011.

Four core capabilities

In our view, solar firms should consider four core capabilities in order to effectively compete: a U.S.-based operations center with flexibility and reach; pipeline and capital management; market knowledge and partnerships at the state level; and specialized offerings for specific market segments.

A U.S. operations center with flexibility and reach

In a highly competitive market, ultra-responsive customer service could be a key differentiator. But companies will have to be creative in order to keep costs low while maintaining high service levels. For example, although labor costs may be better in low-cost countries, producing and shipping complete modules to the U.S. adds substantial freight expenses and complexity-- and could nullify certain incentives companies receive for local production or assembly.

To score high marks in both responsiveness and costs, companies that wish to capitalize on the growth opportunities in downstream solar installations should consider an in-market presence. A U.S.-based operations center encompassing some segment of the supply chain can significantly reduce the total landed costs of getting goods to customers. In addition, a local operations center can help solar developers react rapidly to changes in demand and provide existing customers with better service, maintenance, and related functions.

Companies have wide latitude in determining the right degree of vertical integration. One option is to form partnerships with established U.S. conglomerates that can handle final assembly, provide access to an established sales channel, and even offer warranty protection. Another consideration is the degree of in-country production required to earn the “Made in U.S.A.” designation, which can help bolster a company’s brand.

Once companies commit to U.S.-based operations in some capacity, they should also seek to remain nimble enough to drive growth in promising markets quickly while adjusting their footprint up or down as conditions dictate. This can be thought of as “local-lite.” In what we consider to be the ideal model, firms invest intelligently to establish touch points within specific markets, especially in sales and in service functions such as maintenance and engineering. These initiatives require little fixed investment in infrastructure, so that companies can quickly ramp down if demand fizzles, while still focusing production in centralized locations.

Companies should also consider operational hedging—outsourcing manufacturing to strategic partners. While this would likely involve paying a premium over in-house production, it can reduce the downside risk of being stuck with substantial fixed assets in a choppy market.

Companies that chase growth before they have the right skills in place may risk losing business to more fundamentally sound competitors.

Pipeline and capital management

Given the dynamics of the U.S. solar market, companies should strive to excel not only in managing individual projects but in coordinating supply-chain and EPC functions across their entire pipeline. Management at the portfolio level could help facilitate sales and operations planning and overall supply-chain execution. Companies should consider seeking to balance their volume across the pipeline, with a healthy number of projects at all stages of development. This approach could help prevent peak resource requirements—including cash to fund inventory and design/engineering functions to support new orders—from all hitting at the same time. Some leading companies leverage software solutions to help with project-level and project-portfolio planning. Companies may also consider ensuring that their pipeline is visible in order to reduce the perceived risk to investors and other external stakeholders. Portfolio level management should be combined with periodic updates regarding the timeline for specific projects, new order status and even balance-sheet information.

Capital management can also be critical. Companies with a sophisticated finance function may be able to support increased production requirements during a strong yet variable growth phase in solar installations. Management could benefit from ensuring it has access to a large, low-cost funding mechanism with a strategic partner to support the right scale. Within individual projects,

management should be able to track and improve the effectiveness of working capital over time. One option is to develop a capital effectiveness metric that assesses each project based on the degree of leverage, the efficient use of inventory, and other such factors. This information could help management determine how well it is using working capital over time.

Market knowledge and partnerships at the state level

The U.S. energy industry is a large and diverse market, with regulatory issues that vary widely from one state to another, and procurement approaches that differ even among utilities in the same state. For this reason, market intelligence at the state level can be crucial. Companies could benefit from cultivating relationships with local partners in key markets with the objective of getting a better understanding of current regulatory requirements and permitting procedures, accurately predicting timelines, and managing production pipelines. This market insight can also help companies accurately value the pipeline portfolios of competitors that present potential acquisition targets (as well their own portfolio to determine fair value in a potential buyout). In addition, local partners can facilitate access to incentives—such as renewable energy credits (RECs), grants, tax rebates, among others—and provide clarity on potential future regulatory issues.

The same holds true for solar industry firms that wish to sell to the U.S. military. Even with possible reductions in federal support for clean tech, the Defense Department is scaling up its investment. Current projections call for some \$3 billion in spending on renewable energy by 2015, and more than \$10 billion by 2030. The military is now planning the biggest rooftop solar initiative in the world, at more than 100 bases, and an innovative 500 MW concentrated solar power (CSP) project at an army base in California.³ Defense is expected to continue to be a promising market, but only if companies have the resources, partners, and military procurement expertise to capitalize on the opportunity.

³ "Will the Military Be the Bridge to the US Renewable Energy Future?" Greentech Media, September 29, 2011.

Targeting the residential and commercial markets

While the four capabilities described in this paper apply most directly with utility-scale businesses, with minor alterations they can also prove valuable for companies focusing on the residential and commercial market.

Take capital management as an example. Access to a large, low-cost financing mechanism can be as important for the residential/commercial market as it is for utility-scale businesses. However, in the case of residential/commercial developers, this capital pool is often used to enable a rapid build-out for a base of individual lease customers seeking smaller projects.

When it comes to acquiring market knowledge, insight is needed on the municipal level, rather than the state level, as with utility customers. In general, consumer insights must be far more granular, as firms are now targeting individuals instead of corporations. To determine the best entry points, solar companies should consider doing careful network analysis of population density, demographic factors, solar insolation, and incentives at the municipal level.

The residential and commercial market may also require more comprehensive partnerships with local installers and distributors, supported by robust training, certification, and incentive programs. Finally, and perhaps most importantly, developers should consider a well-developed marketing and branding plan. Branding can be important to homeowners, but strong word of mouth recommendations from friends and neighbors can also create significant demand. The residential and commercial market is still relatively untapped, making it attractive for a company that can get its message out and differentiate its offerings from those of competitors in terms of quality, reliability, and service.

Offerings tailored for specific market segments

Several companies have started to develop specialized offerings for the utility, commercial, and residential market segments (See sidebar) For example, because of current cost constraints affecting many utilities, solar firms may need to innovate their business and operating models in order to offer affordable, bankable projects on a larger scale. One option is to offer product enhancements that reduce balance of systems (BOS) costs. It is also worth considering service models that are attractive to utilities, such as power-generation forecasting models that utilities can use to better manage their grid.

The scope of utility projects can also vary widely. Some energy companies have shown a preference recently for modular “bite-size” projects of a standard, preset capacity, while others are seeking more tailored projects that can be built to match site-specific constraints. Again, innovation can be critical. One company in the sector designed a modular “power plant in a box” for rapid installations of utility-

scale ventures. By leveraging large-format panels and other solutions, the system has an install rate of 1 MW/day, and a 25 percent reduction in balance of system (BOS) infrastructure, making it attractive to utilities looking to ramp up quickly.

Companies that chase growth before they have the right skills in place may risk losing business to more fundamentally sound competitors. The U.S. solar market is poised for a significant uptick over the next several years. Companies that achieve operational excellence through establishing certain core capabilities are expected to be in the best position to capitalize on the opportunity while mitigating risks from overexpansion in a fiercely competitive sector. Some companies may choose to develop these capabilities organically, while others may seek complementary capabilities through mergers and acquisitions. Either way, companies should have a solid operational foundation in place before they seek the growth that we believe is around the corner.

***To have a deeper conversation
about how this subject
may affect your business,
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