Sector Case Study: Solar Energy

The U.S. solar industry is expected to face a changing and increasingly challenging global environment in which to sell its products and services through 2015. In the short-term, exporters are likely to encounter several trade barriers that limit the competitiveness of U.S.-made products, as well as the continued over-supply of technology – though prices should continue to stabilize in many markets. As new emerging markets develop, exporters should be well-positioned to take advantage of opportunities in non-European countries, particularly in Latin America.

Since 2008, the solar industry has grown rapidly as a source of energy and economic activity, both in the United States and around the world. The industry involves a wide range of companies, each with different needs, opportunities, and challenges.

Today, the solar industry is decidedly global. Manufacturers are often headquartered in one country but operate worldwide, shipping products easily across borders. Large companies often have supply chains in several countries at once, importing components from many different suppliers.

Overview of Global Export Market Opportunities

For many American manufacturers of solar technologies, the dramatic price declines of the past few years have caused significant hardship. Yet, for installers and developers of solar projects the drop in prices has led to higher profits and an exponential increase in the deployment of solar products. In fact, nearly three-quarters of all solar capacity in the United States has been deployed in the last two years – largely mirroring the drop in solar prices.

Globally, the trend of accelerated deployment is expected to continue relatively unabated. Over the next two years, ITA conservatively estimates that 47 GW of new solar capacity will be installed outside the United States – more than 50 percent of total worldwide capacity currently online. This estimate is substantially more conservative than some industry sources, which suggest as much as 73 GW of installed during the same period.

The market is undergoing a significant transition away from Europe – the historical driver of the industry's demand – towards a truly global industry. In 2011, 70 percent of the world's PV modules were installed in Europe;[88] and Europe accounted for seven of the world's ten largest solar markets. Today, most of the industry's growth is occurring outside of Europe, led predominantly by China and Japan.

Importantly, the world's largest solar markets have traditionally not been the largest export markets for U.S. companies. Since 2007, out of the ten largest markets for U.S. solar exports, only two were in the top

Top Solar Export Markets through 2015

1. **Canada**
   (large share; large market)
2. **Chile**
   (large share; large market)
3. **Israel**
   (large share; small market)
4. **China**
   (small share; large market)
5. **France**
   (small share; large market)
6. **India**
   (large share; large market)
7. **Denmark**
   (large share; small market)
8. **Japan**
   (small share; large market)
9. **Belgium**
   (small share; small market)
10. **Italy**
    (small share; small market)

ten markets globally in terms of solar installations: Germany and Spain. ITA expects this trend to continue through 2015 and predicts that China and Japan will account for roughly 10 percent of U.S. solar exports, but over half the installed capacity brought online outside the United States.

U.S. exporters have generally been hampered by the existence of strong local competitors in European markets and the cost advantage enjoyed by many exporters from Asia. China, for example, accounts for over half the global manufacturing capacity in the solar industry and, until recently, exported almost all of the products it produces.

The cost disadvantage has been intensified by the presence of local content requirements in several key markets, including India, Canada, South Africa, and Saudi Arabia. These requirements, as well high import duties in other markets, have been used to protect local industries in many markets that view solar development as key to the establishment of high-tech domestic manufacturing bases. Despite several trade cases within the World Trade Organization, it is likely that in the near-term similar burdensome policy regimes will continue to plague the industry's export potential. U.S. firms are highly encouraged to report trade restrictive practices to U.S. embassy or consulate officials or to contact their local U.S. Export Assistance Center.

Additionally, in some Asian markets, burdensome technology certification regimes have also been used to keep U.S. products out of the market. Korea and Japan are routinely identified by U.S. exporters as markets where technology certification is used deliberately to provide advantages for domestic companies.

The Solar Energy Export Opportunity in the Near-Term

The current overcapacity situation is not expected to abate before 2015 and will continue to define the export opportunity for U.S. firms in the short-term. Although the situation has eased slightly over the past year, with capacity ratios for top tier manufacturers exceeding 80 percent in 2013 and expected to increase further through 2014 and beyond.[89] Thus while downward trending prices should continue, prices are expected to stabilize, allowing U.S. solar exporters to enter more confidently into international markets.

ITA expects that the largest export markets for U.S. companies through 2015 will be markets that lack sufficient manufacturing capacity to meet expected demand. For example, Canada and Chile – the top two projected export destinations – are expected to install several new solar projects, but will need to import equipment to complete these projects. As in other markets with a need to import technology, competition will be fierce (particularly with an oversupply of technology globally), but given the large market share enjoyed by U.S. exporters in these markets, U.S. companies should find considerable opportunities.

In fact, ITA expects Canada and Chile to account for over half of all exports in the sector through 2015 – a proportion that would increase if more development takes place in these markets than what is projected. Beyond Canada and Chile, the export market should remain relatively confined. The top 10 export markets are expected to account for 90 percent of all exports in the sector. To win in these markets, it will be important for exporters to differentiate the quality and reliability of their products from those offered by lower cost suppliers, as this is often the reason buyers decide to purchase U.S. technology.

Planning for the Long-Term

Although short-term competitiveness challenges and the occasional negative headline can invoke pessimism, it is important for solar exporters to understand the industry's vast long-term potential. The International Energy Agency predicts that the deployment of solar technologies will expand rapidly over the next two decades, helping renewables approach coal as the world's leading source of energy by 2035.

Many of the world's largest solar markets beyond 2015 will be in places that have little or no solar market development to date. India and Saudi Arabia, for example, have put targets in place that – if met – would position them as leading solar markets for decades to come. The race to deploy solar technologies is therefore shifting markedly towards Asia. Unfortunately, these markets are not places where U.S. exporters currently enjoy a significant market share, presenting export challenges for U.S. companies.

To compete in these new markets, U.S. exporters will likely need to further their technological lead through continued innovation. Buyers around the world often look to the United States for the latest technology and maintaining this comparative advantage over lower-cost suppliers will likely be critical to long-term competitiveness.