2016 Top Markets Report Renewable Energy Sector Snapshot

Wind Energy

Most U.S. wind energy exports currently are destined for only a small group of markets – namely Canada, Mexico, Brazil, Uruguay, and China. These five markets alone will account for nearly 70 percent of all wind exports through 2017. Yet, continued global investment in the industry outside these markets will very likely increase going forward, broadening export opportunities for U.S.-based suppliers.

Industry Overview

The wind industry is a large and growing sector with a supply chain that produces thousands of component parts as well as a service sector that is increasingly advanced in its use of technology to design turbines, organize wind farms, and map wind potential. Most of the industry is vertically integrated, but deep supply chains have emerged to provide technology and components to the largest turbine manufacturers.

The global wind market is in the midst of a recovery after a brief decline in 2013. Orders for nearly all manufacturers have increased year-over-year and turbine prices have stabilized around the world. Wind power component factories can be found in a diverse range of locations around the world, although the vast majority of manufacturing capacity is in China, Brazil, India, and the United States.[1]

Global wind capacity in 2015 increased 17 percent over the previous year.[2] This included over 4GW of offshore wind projects, most of which was in Europe.[3] However, although this segment is growing rapidly, offshore wind only accounts for 3 percent of total global wind capacity.

Meanwhile, demand continues shifting towards Asia and other emerging markets and away from the saturated European market. China, in particular, will be the focal point of the industry going forward; after installing roughly 33 GW of new capacity in

Wind Export Markets (2016-2017)

1. **Canada**
   large market; large share
2. **Brazil**
   large market; large share
3. **Mexico**
   large market; large share
4. **Uruguay**
   large market; small share
5. **China**
   large market; small share
6. **South Africa**
   small market; large share
7. **South Korea**
   small market; large share
8. **Chile**
   small market; large share
9. **Egypt**
   small market; large share
10. **Honduras**
    small market; large share

2015, it intends to install another 30GW in 2016,[4] aiming to reach 200GW by 2020. Other key markets will include India, Brazil, Canada, Germany, the United Kingdom, France, Mexico, and Turkey. Most demand will be met with locally-sourced products, as the wind industry's preferred method of global expansion has been foreign direct investment.

Export Opportunities

Despite ongoing logistical challenges and higher labor costs, ITA expects the market share captured by U.S. exporters to be around 7 percent, which is better than other faster-growing sectors such as solar and hydro.

The largest five export destinations –Canada, Brazil, Mexico, Uruguay, and China – should account for the majority of all U.S. exports in the sector through 2020, as export markets are expected to remain highly concentrated. Notably, the U.S. market share in the previously mentioned European markets for this sector is no greater than 2 percent.

Beyond these markets, other opportunities exist depending on the planned development of individually large projects, and the availability of financing.

In markets that are large, but which are far from the United States, only component parts and services will likely be exported. In China, for example, where re-powering existing wind farms with new technology has become a priority, American companies that can provide efficiency solutions may find considerable demand for their expertise.

For manufacturers of large component parts, Latin American markets may provide the greatest opportunity, particularly when pairing their technology with ExIm financing. In this region, U.S. exporters are expected to capture an average 27 percent of the import market. While these will not necessarily be the largest wind markets in the world, they may provide an attractive environment in which to do business due to lower shipping costs.

Although wind power will always be capital intensive, as prices decline, the importance of upfront cost should lessen, creating an opportunity for more efficient, innovative turbines perhaps produced in the United States. It should also create export opportunities for U.S. service providers that specialize in plant design, engineering, and site assessment.

Challenges

Two important competitors have emerged in Latin America that policy-makers should consider when helping firms develop an export strategy. First, Chinese manufacturers now compete directly with American firms in these markets – a new phenomenon, since Chinese manufacturers have traditionally focused exclusively on China's domestic market. To compete in the region, U.S. exporters must differentiate their often higher-cost equipment by focusing on quality.

Second, the largest Latin American market – Brazil – has used local content requirements and high import tariffs to protect and grow its domestic manufacturing base. Today, Brazil has the capability to supply wind technologies to markets elsewhere in South America, competing for the first time with U.S.-based suppliers. This capability has been limited to date, but will very likely increase, as the Brazilian wind market expands.

If Mexico continues to invest heavily in wind development, it too could become a supplier of low-cost equipment to the region, rivaling both the United States and Brazil. Given the interlinked nature of wind supply chains between Mexico and the United States, this development – while not helpful to export competitiveness – would be far more supportive of export growth than an active and export-minded Brazilian manufacturing sector.

The offshore wind market will likely continue to be concentrated in Northern European markets – namely, the United Kingdom and Germany – although some growth can be expected in Japan, China and possibly India. In some ways, low oil prices may actually help offshore development, as there could be less competition for large crane vessels and thus lower development costs. Until the U.S. wind industry can successfully deploy major offshore wind projects domestically, spurring its manufacturing of related technologies, it cannot expect to be a key player globally in the subsector.

[1] Bloomberg New Energy Finance, Manufacturing Plants database.
[2] Bloomberg New Energy Finance, Market Size database.
[3] Bloomberg New Energy Finance, "Q1 2016 Global Wind Market Outlook: Stable Market," February 18, 2016.
[4] Bloomberg New Energy Finance, "China Plans 22% Boost for Wind Power Capacity After Record 2015," March 21, 2016.