

Steel distribution poles poised for market gains

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NEW YORK — The potential for steel distribution poles hinges on how North American countries react to the banning of a popular chemical treatment for wooden poles by the Stockholm Convention on Persistent Organic Pollutants.

The Stockholm Convention, a global environmental treaty, banned the use of pentachlorophenol for member countries in May 2015, giving the chemical a five-year phase-out period. One of the most common uses of the chemical was as a preservative for wooden utility poles.

While steel distribution poles have already gained market traction as a replacement for wooden distribution poles, this new development gives them even greater potential, according to American Galvanizers Association marketing director Melissa Lindsley.

“This is one of the best opportunities for steel distribution that we’ve had since this market became a focus. A golden opportunity,” Lindsley told *AMM*, adding that the development also gives the zinc industry great potential since the majority of steel distribution poles are galvanized.

The two largest consumers of wooden poles treated with pentachlorophenol are Canada and the United States, and the chemical is processed in Mexico. Although the United States isn’t a signatory member of the Stockholm Convention, it generally recognizes the rules. Both Canada and Mexico are signatory members.

“If Mexico and Canada are going to stop producing and buying those poles, most likely the plants (in the United States that use the chemical) will stop producing those poles and switch to something else. It will probably force the (United States’) hand if they weren’t going to go that way,” Lindsley said.

While the majority of all electric transmission structures are steel, the battleground for market share is in the distribution, or under 69 kilovolts (kV), and subtransmission, or 69 kV to 138 kV, pole markets, according to Dan Snyder, director of business development at the American Iron and Steel Institute and director of the Steel Market Development Institute (SMDI).

There are around 120 million steel distribution poles in the United States, and about 2 to 4 million are replaced each year, Snyder told *AMM*. That leaves the total market potential for steel, specifically in the wood-to-steel conversion market, at an estimated 1

million to 1.5 million tonnes per year. Approximately 60 percent of that tonnage is for distribution and 40 percent is for subtransmission.

“Well over” 1 million steel distribution poles have been installed in an estimated 600 U.S. electric utilities, or 20 percent of the total, Snyder said.

With distribution and subtransmission poles ranging in size from 500 to 1,500 pounds, the amount of galvanized zinc on each pole is approximately 17.5 to 52.5 pounds. That means that approximately 17.5 million to 52.5 million pounds of zinc have been used so far on steel distribution poles, with the potential of doubling each year.

While steel isn’t the only alternative—concrete poles are also an option, and wooden poles can be treated with a different chemical—it does offer certain advantages.

One major benefit of steel is its reliability compared with wood, according to Snyder. Steel poles reduce the risk of a “catastrophic” system failure, in which a single downed pole affects the entire distribution system.

“This is especially true in remote locations where access is difficult and in areas prone to extreme weather or pests, such as high winds, ice storms, fire or excessive woodpecker populations,” Snyder said.

Another benefit of steel is that it’s non-toxic and completely recyclable, according to Snyder. “While it takes an entire tree to produce a wood pole, one scrapped automobile may produce more than four distribution poles.”

Steel also offers a number of economic benefits, since it requires minimal maintenance and is at least 30 percent lighter than wood, which “can reduce the cost of transportation, handling and construction,” Snyder said.

However, one disadvantage that electric utilities commonly cite is cost, Lindsley said. For poles that are at least 40 feet long, the cost of different materials is competitive. But for poles under 40 feet, steel is generally more expensive.

But while the cost can be prohibitive, it’s important to look at the life cycle cost, Lindsley said. In the long run, “(steel) will be more economical because it will last longer and won’t require as much maintenance.”

Another limitation is that people are used to wooden poles and are resistant to change, according to Lindsley. “That’s what they’ve always had. They’re used to how it works. So when you introduce steel poles, it’s a lot different,” she said.

The SMDI has formed a task force to inform people about the benefits of steel poles, encourage them to take the life cycle cost into account and reassure them that switching to steel poles doesn’t have to be an all or nothing scenario. Not all poles need to be changed at once, and the conversion process can go at one’s comfort level, Snyder said.

Although Lindsley couldn't say how long it will take for wooden poles to be replaced by steel ones, considering the time it would take to educate people and convince them to convert, the market presents "a lot of potential. Where it's going and how much potential is hard to say, but it's a good opportunity for galvanized steel."

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Editor's note: This story was updated Nov. 16, 2016. Due to a reporting error, the original version incorrectly stated that the AGA formed a task force targeting the benefits of steel poles and contained an inaccurate attribution.