



## CTC Global's worldwide presence to increase 14% by year-end

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By Rosy Lum



**CTC Global's** presence has expanded to 22 countries with Torrent Power's transmission line in India, and the company expects to be in 25 countries by the end of the year, a nearly 14% increase.

The Irvine, Calif.-based conductor technology company on Aug. 21 announced that Torrent Power **energized** the first aluminum conductor composite core (ACCC) technology in India, doubling the 132-kV line's capacity. CTC expects to have thousands of kilometers of installations in India in the next two years, according to one of the company's directors.

"The Indian market is quite large, and as their recent troubles indicate, their transmission network is in process of being upgraded," Carl Ulrich, CTC's director of strategy, said. Because each country tends to perform its own individual assessment of the technology, it can take years, in some cases, for a market to become available.

"With the number of products in each country and the qualification time to get your first project – that's what's so exciting about this first energized line in India," Ulrich said. "It really opens up the market to us and we expect to have hundreds of kilo[meter]s of installations in the next year and in the following year thousands of kilometers."

The United States and Indonesia are two of the company's largest markets. The United States is also one of the company's largest potential markets, along with China.

Worldwide, CTC has installed 14,000 km (8,700 miles) of ACCC technology at 215 project sites. CTC has also completed 90 installations in China, six installations in Chile, "three or four in Brazil,

and a couple in Belgium and Germany,” Dave Bryant, director of technology, said. South Africa is on its seventh installation, he added.

The company also has installations that will be energized in Russia, Nigeria, Vietnam and Costa Rica, Bryant said.

In the United States alone, CTC has installed 800 miles of ACCC at 43 project sites, which doesn't include **American Electric Power's** (NYSE:AEP) recent order of 1,665 miles of ACCC, which the utility will install on its South Texas Valley transmission project. AEP has installed ACCC on eight projects.

“Instead of these smaller projects, we're now getting into much larger projects,” Bryant said. “It's not just the technical understanding, it's the economic advantages that this product gives utilities [that] is remarkable. That's the primary reason it's starting to be deployed on such larger projects.”

Seeking to relieve line congestion, CTC developed a conductor technology for overhead lines that uses a composite core composed of carbon fiber, a strong, light material that has a low coefficient of thermal expansion, and aluminum, which increases the capacity of the line.

The added aluminum content also reduces the electrical resistance, which reduces line loss by 30% to 40% of other conductors of the same weight, Bryant said.

“When a utility can increase the capacity of an existing corridor by replacing a wire without any other cost, they can then deliver twice the current, which means their revenue goes up substantially and they don't have to worry in most cases about putting in a whole new transmission line,” Bryant said.

ACCC technology also affords utilities the ability to use existing towers, therefore allowing them to avoid having to seek permits and invest in reinforcing tower structures, which can shorten the amount of time it can take for the line to be reconducted, and save costs.

“In most cases when you're installing a new [ACCC] wire, you can do it as maintenance rather than [have to seek] a permit for a new project,” Ulrich said. “And then the actual installation is shorter itself with our ACCC conductor because when you dead-end or splice the wire, you only have to use one crimp to put our system in place, versus what is typically two crimps with most other systems for conductors.”

According to Ulrich, **NV Energy** (NYSE:NVE) used ACCC on a project they had estimated would cost \$8m using conventional conductors, as well as possible undergrounding; with ACCC, the cost was \$4m.

Reducing line loss can improve the economics of conventional generation projects connected to that line by allowing generators to use less generation capacity to deliver the same amount of power, Bryant said. The reduction in fuel consumption saves money and reduces emissions, he said.

Reducing line loss can improve the economics of renewable energy projects as well. Bryant used the example of a 100 MW wind farm:

“If the line losses account for 6% of energy that's generated, they'd only be delivering 94 MW to the customer,” Bryant said. “If we can reduce that by 30% to 40%, they can deliver 95 MW, 96 MW, which saves them on the up-front capital costs of building the wind farm, which makes the wind farm more economically viable because they're getting more electricity out of the same resource.”

The life cycle of ACCC technology is longer than that of conventional lines, as composite materials corrode less than others, Bryant said.

Cyclic load fatigue also diminishes with the technology.

“When you look at a transmission line and install these things at a higher tension, there's a vibration that happens because of wind blowing constantly over the wire, and the vibration can cause the aluminum strands, or steel strands, to fatigue and break over time,” Bryant said. “The resistance of vibration and cyclic load fatigue is remarkable with this wire, which is yet another reason why utilities are so interested in using it.

Utilities may also apply for transmission rate incentives under the Energy Policy Act of 2005 to use ACCC technology, Bryant said. Incentives include accelerated depreciation and an increased return on equity.

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#### ABOUT THE AUTHOR



**Rosy Lum**

Rosy Lum, Analyst for *TransmissionHub*, has been covering the U.S. energy industry since 2007. She began her career in energy journalism at SNL Financial, for which she established a New York news desk. She covered topics ranging from energy finance and renewable policies and incentives, to master limited partnerships and ETFs.

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