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AMSC Selected for Award by U.S. Department of Energy to Participate in its Next Generation Electric Machines Program

AMSC Selected for \$4.5 million Award Advancing Wire Technology to Improve Yield and Reduce Cost of HTS Wire for Electric Machine Applications

DEVENS, Mass., Jan. 03, 2017 (GLOBE NEWSWIRE) -- AMSC, a global energy solutions provider serving wind and power grid industry leaders, today announced it has been selected for an award of \$4.5 million for applied research and development of superconductor wire by The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) as part of the agency's Next Generation Electric Machines program. The award is subject to completion of a contract which is expected to be entered into in the coming weeks.

"We are focused on delivering system level value to enable a more resilient electric grid and a resilient fleet. We expect that this funding will enable us to continue advancing wire technology specifically for rotating machines for the fleet," said Daniel P. McGahn, President and Chief Executive Officer of AMSC. "This work with the DOE is complementary to our efforts to enable the U.S. Navy's 'Electric Ship' objective and will allow our team to continue to develop wire technology focusing on specific system level applications like motors and generators for naval ships."

In 2009, AMSC and Northrop Grumman Corporation announced the successful completion of full-power testing of the world's first 36.5 megawatt (MW) high temperature superconductor (HTS) ship propulsion motor at the U.S. Navy's Integrated Power System Land—Based Test Site in Philadelphia. This accomplishment was the first successful full-power test of an electric propulsion motor sized for a large Navy combatant and, at 36.5 MWs, doubled the Navy's power rating test record. This system was designed and built under a contract from the Office of Naval Research (ONR) to demonstrate the efficacy of HTS motors as the primary propulsion technology for future Navy all-electric ships and submarines. Naval Sea Systems Command funded and led the successful testing of the motor. This new DOE program is expected to help further the advance of wire technology in preparation for what could be next with the U.S. Navy.

The projects selected by EERE will address the limitations of traditional materials and designs used in electric motor components by cost-effectively enhancing their efficiency, improving their performance, and reducing weight. The effort will support innovative approaches that are expected to significantly improve the technology in industrial electric motors, which use approximately 70 percent of the electricity consumed by U.S. manufacturers and nearly a quarter of all electricity consumed nationally, according to EERE.

"AMSC has worked with the U.S. Department of Energy, and other U.S. government agencies for many years to extend and enhance the application of HTS," said McGahn. "This recent award is an opportunity to continue to demonstrate our leadership in developing high performance HTS systems for the evolving electric grid and motors of the future."

In 2006, AMSC partnered with American Electric Power (AEP) of Columbus, Ohio and DOE to demonstrate a HTS cable system to efficiently deliver electric power to approximately 8,600 homes and businesses in suburban Columbus. The HTS power cable installed in AEP's distribution grid connecting its Bixby substation in Groveport, Ohio to commercial and industrial customers was developed, installed and energized on time and on budget.

In 2008, AMSC, Long Island Power Authority (LIPA) and DOE celebrated the commissioning of the world's first HTS power transmission cable system in a commercial power grid capable of delivering 500 MWs, or one half gigawatt of power. The 138kV system (operated at 115kV), which consisted of three individual HTS power cable phases running in parallel, was successfully energized and operated to demonstrate the power density advantage of transmission-voltage HTS cables utilizing far less wire, but conducting up to five times more power, in a smaller right of way than traditional copper based cables. HTS cables can deliver transmission level power at distribution level voltages enabling the deployment of transmission assets on the grid in an environmentally appropriate format.

Also in 2008, AMSC supplied critical components to the ONR and the Naval Surface Warfare Center Carderock Division (NSWCCD) Ship Engineering Station Philadelphia for a HTS degaussing coil system for initial electrical testing onboard the USS Higgins (DDG 76), an 8,000 ton Arleigh Burke-class destroyer. Powered by AMSC's HTS wire and magnet cable technology, the coil system successfully completed a multi-year U.S. Navy sea trial, and is the program that enabled the

creation of AMSC's ship protection system solutions for the U.S. Navy, which is expected by the company to be an annual market opportunity of between \$70 million and \$120 million by 2020.

In 2011, AMSC and LS Cable deployed a HTS power cable utilizing AMSC's proprietary 2G HTS wire, to energize a 22.9 kV cable system that was installed in Korea Electric Power Corporation's (KEPCO) commercial power delivery network at the I'cheon substation located near the city of Seoul. At nearly one-half mile in length, the HTS power cable was successfully energized and tested at delivering up to 50 MWs of power, making it the world's longest distribution-voltage HTS cable system.

In 2011, AMSC, Nexans, and Siemens, along with DOE, successfully qualified a transmission voltage resistive fault current limiter (FCL) that utilizes AMSC's 2G HTS wire for power levels suitable for application in the transmission grid (138kV insulation class and nominal current of 900 A). This smart grid system demonstrated its ability to strengthen the grid by reducing the destructive nature of faults, extending the life of existing substation equipment and allowing utilities to defer or eliminate equipment replacements or upgrades. The resistive nature of the HTS-based FCL improves the ability of the high voltage transmission power grid to remain stable, reducing the likelihood of more widespread system collapse. The Company, in conjunction with Nexans, is now offering stand-alone FCL's for the North American market.

In 2013, AMSC was selected by Nexans, for HTS wire to be used in a superconductor FCL (SFCL) to be integrated into the electric grid in Essen, Germany, as part of the "AmpaCity" project being undertaken by Nexans, RWE Group, and the German research institute KIT. The AMSC/Nexan SFCL provides overload protection to the HTS cable, lowering the fault current levels, and allowing for a safe and reliable interconnection to the grid. Nexans and AMSC agreed in 2016 to jointly develop and deliver projects using both companies' capabilities.

In 2014, AMSC and Commonwealth Edison (ComEd), a unit of Chicago-based Exelon Corporation, initiated the development of a deployment plan for AMSC's HTS technology to build a HTS cable system designed to strengthen Chicago's electric grid.

The Resilient Electric Grid (REG) effort is part of the U.S. Department of Homeland Security (DHS) Science and Technology Directorate's work to secure the nation's electric power grids and improve resiliency against extreme weather, acts of terrorism, or other catastrophic events. The company estimates that the U.S. market opportunity for its REG system is between \$5 billion and \$6 billion annually.

In 2016, AMSC and BASF Corporation agreed to jointly develop an advanced low cost manufacturing process for second-generation high temperature superconductor wire. In the joint development, AMSC's manufacturing know-how for its Amperium® superconductor wire and BASF's chemical solution deposition production technology are being combined. As part of the agreements, AMSC and BASF also entered into a royalty-bearing, non-exclusive license under which AMSC is providing BASF a specified portion of AMSC's second-generation (2G) HTS wire manufacturing technology. We are working with BASF to possibly refine and advance wire process technology.

The parties expect these agreements to result in the development of a potentially low cost manufacturing process at BASF and to enable AMSC to focus resources on driving down the total system cost. If the development is complete and successful, AMSC may utilize wire produced by this advanced manufacturing process for its systems business. AMSC's strategy is to continually research, develop, and deliver its HTS technology for integration into system level solutions for its customers with the help of its public and private funding partners.

"We are focused on growth while we expand our product portfolio, diversify our revenues and enhance our technology, continued McGahn. "We now have two programs advancing wire technology that are collaborations with and funded by other parties, our manufacturing cooperation with BASF as well as this new advanced wire program with the DOE. These programs are expected to enable us to continue advancing one of our key technologies, HTS wire, so that we may deliver added value to our customers in the future, or what we call 'Value Beyond the Wire', because people don't buy technology, they buy what it does."

About AMSC (NASDAQ:AMSC)

AMSC generates the ideas, technologies and solutions that meet the world's demand for smarter, cleaner ... better energy™. Through its Windtec™ Solutions, AMSC provides wind turbine electronic controls and systems, designs and engineering services that reduce the cost of wind energy. Through its Gridtec™ Solutions, AMSC provides the engineering planning services and advanced grid systems that optimize network reliability, efficiency and performance. The Company's solutions are now powering gigawatts of renewable energy globally and are enhancing the performance and reliability of power networks in more than a dozen countries. Founded in 1987, AMSC is headquartered near Boston, Massachusetts with operations in Asia, Australia, Europe and North America. For more information, please visit www.amsc.com.

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respective holders.

Forward-Looking Statements

Statements in this press release that are not strictly historical in nature constitute "forward-looking statements" within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended. Such statements include, but are not limited to, statements regarding our expectations regarding the entry by AMSC and DOE into a contract for AMSC to provide applied research and development of superconductor wire to DOE, that this funding will enable us to continue advancing wire technology specifically for rotating machines for the fleet, that this new DOE program will help further the advance of wire technology in preparation for what could be next with the U.S. Navy, and that AMSC's ship protection system solutions for the U.S. Navy are expected to be an annual market opportunity of between \$70 million and \$120 million by 2020; AMSC's market opportunity for its REG system in the U.S. is expected to be between \$5 billion and \$6 billion annually; AMSC's and BASF's expectation that the agreements will result in the development of a potentially low cost manufacturing process at BASF and enable AMSC to focus on driving down the total system costs; our expectation that our programs with BASF and the DOE will enable us to continue advancing one of our key technologies, HTS wire, so that we may deliver added value to our customers in the future; and the performance of HTS cables. Such forward-looking statements represent our current expectations and are inherently uncertain. Actual results may differ materially from what we expect because of various risks and uncertainties, including the risks that AMSC and DOE may not enter into a contract for AMSC to provide applied research and development of superconductor wire to DOE; that this funding may not enable us to continue advancing wire technology specifically for rotating machines for the fleet; that this new DOE program may not help further the advance of wire technology in preparation for what could be next with the U.S. Navy; AMSC's ship protection system solutions for the U.S. Navy may not provide an annual market opportunity of between \$70 million and \$120 million by 2020; that AMSC's REG system may not provide an annual market opportunity in the U.S. of \$5 billion to \$6 billion annually; that the agreements between AMSC and BASF may not result in the development of a potentially low cost manufacturing process at BASF and may not enable AMSC to focus on driving down the total system costs; that our programs with BASF and the DOE may not enable us to continue advancing one of our key technologies, HTS wire; and that HTS cables may not perform as expected. These and the important factors discussed under the caption "Risk Factors" in Part 1. Item 1A of our Form 10-K for the fiscal year ended March 31, 2016, and our other reports filed with the SEC, among others, could cause actual results to differ materially from those indicated by forward-looking statements made herein and presented elsewhere by management from time to time. Any such forward-looking statements represent management's estimates as of the date of this press release. While we may elect to update such forward-looking statements at some point in the future, we disclaim any obligation to do so, even if subsequent events cause our views to change. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date of this press release.

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