April 9, 2013

Investment Tax Credit for
Qualified Advanced Electric Transmission Property

Present Law

Section 48 of the Internal Revenue Code provides a tax credit for investments in qualifying energy property to promote renewable energy projects and technologies that are integral to America's successful transition to a clean energy economy. Section 48 provides a 30% tax credit equal to the basis (*i.e.* cost) of certain types of "energy property" placed in service by the taxpayer, including qualified fuel cell property, solar energy property, and small wind energy property. The credit is designed to incentivize companies to invest in renewable energy projects, which might otherwise be cost prohibitive. Additionally, in 2005 Congress reduced the depreciation period from 20 to 15 years for electric transmission property able to transmit 69 or more kilovolts of electricity.

Reasons for Change

Although the section 48 tax credit is designed to incentivize investments in green energy projects, it does not include the transmission and distribution systems necessary to economically and efficiently transport renewable energy across the country and into our cities. As America moves toward a clean energy economy, it should couple its investments in renewable energy production with investments in clean energy infrastructure, like advanced superconductor cables. Advanced superconductor cables transmit high voltage electricity with minimal energy losses over long distances and enables high power transmission at distribution voltage levels to improve the reliability and resiliency of urban power grids. For example, for power transmission, advanced superconductor cables result in less than 3% power loss per 1,000 mile transmission as opposed to the 6-15% power loss of traditional transmission lines. For power distribution, advanced superconductor cables can interconnect urban substations increasing the amount of power they can supply while simultaneously allowing them to survive major failure events. Furthermore, in either application superconductor cables, unlike conventional transmission technologies, do not emit an electromagnetic field and are located underground, eliminating the problems of inefficient land use and unsightly towers.

While advanced electric transmission technology is currently more expensive than conventional transmission methods, a sufficient level of initial investment and production

will decrease costs through economies of scale. During the interim period, a section 48 credit for advanced electric transmission property would encourage electric utilities and transmission developers to choose the most efficient, if temporarily more expensive, transmission system, resulting in long term energy and cost savings.

Explanation of Proposal

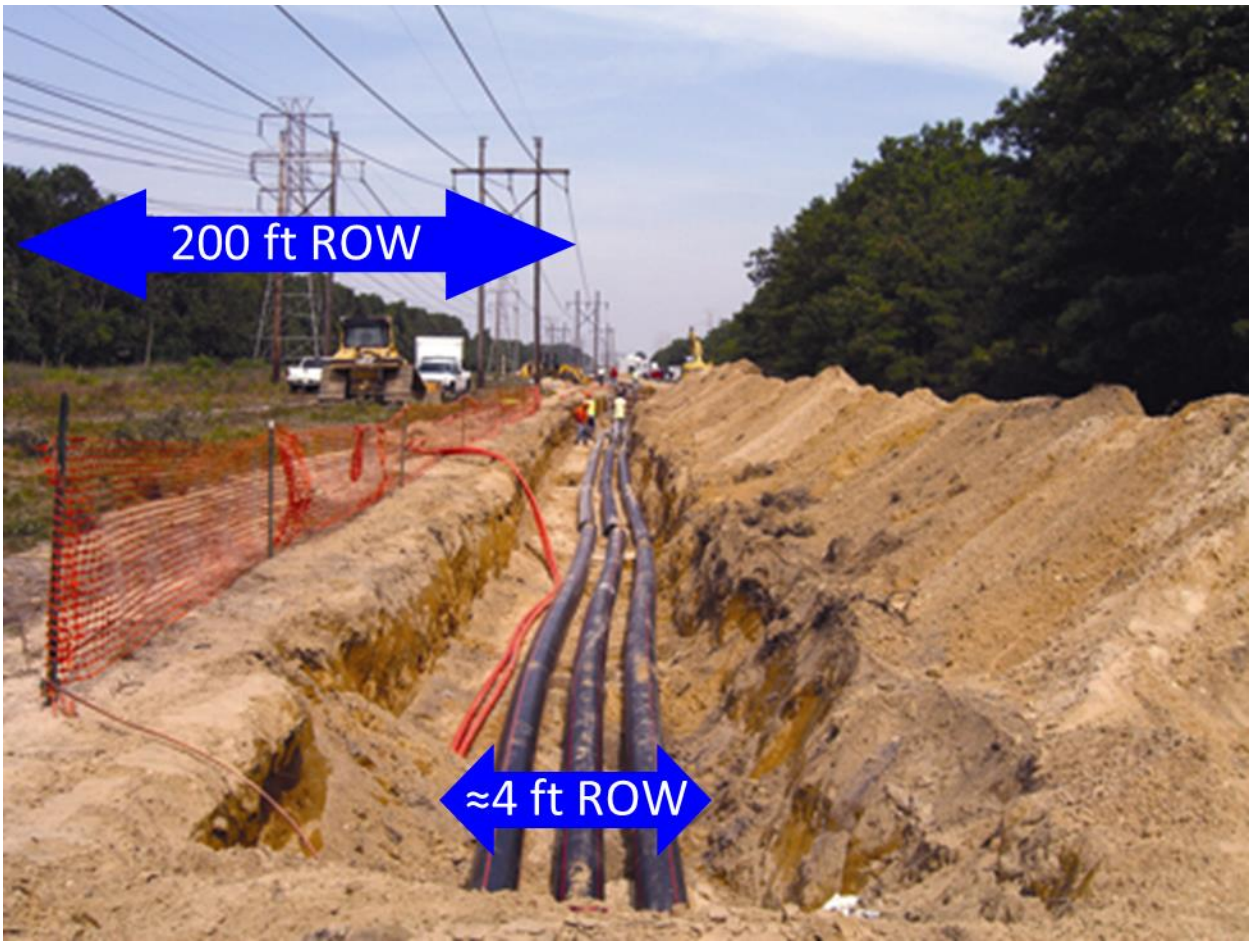
The proposal would modify the section 48 tax credit to include "qualified advanced electric transmission property" within the definition of "energy property" eligible to receive the 30% investment tax credit. Advanced electric transmission property would include electric cables and facilities regardless of voltage, or those designated by the FERC as electric transmission cable and facilities, manufactured with domestically produced advanced ultra-low resistance superconductor wire. The credit would only need to be available for the first 150 miles of cable placed in service.

There are a few reasons why high temperature superconductor (HTS) cables provide a benefit over overhead lines. HTS cables are much more power dense, which means that they can carry up to ten times the power of a traditional copper cable. This means that more power can be put through the same or smaller right-of-way and therefore utilities can save precious time and money during the siting of new cables. This also enables the installation of high power, but much lower voltage, cables. The benefits of lower voltage high power cables include installation of lines in space constrained areas, cost effective placement of high power lines underground, and the ability to share power among urban substations to increase reliability and resiliency. Rather than dealing with the NIMBYism of overhead power lines that require hundreds of feet of right of way, a superconductor cable is underground, out of sight, out of harm's way and only requires a few feet of right of way. The below picture demonstrates this nicely. You can see the superconductor cables at an installation at the Long Island Power Authority in New York going underground – the overhead lines in the background carry the same amount of power.

Superconductor cables generate virtually no electrical losses, meaning that more of the power generated at power plants gets to the customer. By comparison, conventional power grids typically lose seven to 10 percent of power due to the inherent electrical resistance experienced with copper wires. The higher electrical efficiency of HTS cables provides a means to reduce carbon emissions while meeting the growing demand for electrical power.

Additionally, alternating current (AC) HTS power cables have inherently low impedance, which means they can draw power flow away from overtaxed conventional cables or overhead lines, thereby relieving network congestion. They can also be specially designed to have fault current limiting characteristics. When deployed in strategic locations, fault current limiting superconductor cables can rapidly absorb potentially destructive current surges when conventional power grid components are damaged during electrical storms or other events.

There are a variety of applications for superconductor cables in the grid, each come with their own unique benefits.



Thank you,

Best Regards,

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