

ID: CCA\_2011050409385248

Number: **201122018**

Release Date: 6/3/2011

Office:

UILC: 48.01-03

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**From:**

**Sent:** Wednesday, May 04, 2011 9:38:53 AM

**To:**

**Cc:**

**Subject:** Qualified Wind Property 1603 (2).doc

Below is the memo that I sent to

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Qualified Wind Property in an Electric Substation Located at a Wind Farm

You have asked for our interpretation of how to determine which property associated with a wind energy property qualifies for the grant under §1603 of ARRTA. Sometimes this question is described as finding a separation point between the low side and the high side of wind energy generation.

You provided me with a diagram showing equipment in an electric substation located at a particular wind farm. Below is a list of items from that diagram. The wind farm produces electricity for sale into a high voltage transmission line. The listing starts at the point that electricity enters the substation from the wind farm and ends at the point at point of connection to the high voltage transmission line.

1. Dead end structure
2. Grounding XFMR
3. Switch gear building
4. Switch 34.5 KV
5. Transformer 34.5 KV to 345 KV
6. (Lightning or surge) Arrester
7. 345 KV switch
8. Metering CT
9. 345 KV Circuit breaker
10. 345 KV switch
11. Dead end surge arrester

The information submitted does not indicate whether the listing represents one of two or more parallel circuits within the electric substation. Parallel circuits were used in the one other instance in which the operations of such a substation was described to me. The existence of parallel circuits would emphasize the need for the various switches used to isolate items of equipment within a circuit for repair and maintenance. The wind farm can continue to operate (possibly, at a reduced capacity) when equipment in one circuit is isolated for repair and maintenance.

The Program Guidance for § 1603 ARRTA that was issued by Treasury describes qualified property generally in part IV. I. (page 11) as follows:

Qualified property includes only tangible property that is both used as an integral part of the activity performed by qualified facility and located at the site of the qualified facility. ... Property is an integral part of a qualified facility if the property is used directly in the qualified facility, is essential to the completeness of the activity performed in that facility, and is located at the site of the qualified facility.

The Guidance provides more specifically for property generating electricity (page 12) as follows:

For qualified property that generates electricity, qualified property includes storage devices, power conditioning equipment, transfer equipment, and parts related to the functioning of those items but does not include any electrical transmission equipment, such as transmission lines and towers, or any equipment beyond the electrical transmission stage, such as transformers and distribution lines.

The terms used in § 1603 are based, in large part, on § 48 of the Internal Revenue Code. The above language from the guidance is based on §1.48-1(d)(4) of the income tax regulations, which defines “integral part,” and on §1.48-9(d)(3) and §1.48-9(e)(1), which define solar and wind energy property. TD 8147 and TD 7765 issued the portions of § 1.48-9 of the regulations that are relevant here. Section 1.48-9(e) provides:

**(e) Wind energy property--(1)** In general. Energy property includes wind energy property. Wind energy property is equipment (and parts related to the functioning of that equipment) that performs a function described in paragraph (e)(2) of this section. In general, wind energy property consists of a windmill, wind-driven generator, storage devices, power conditioning equipment, transfer equipment, and parts related to the functioning of those items. Wind energy property does not include equipment that transmits or uses electricity derived from wind energy. ...

**(2) Eligible functions.** Wind energy property is limited to equipment (and parts related to the functioning of that equipment) that--

...

(ii) Uses wind energy to generate electricity ... (emphasis added)

The issue<sup>[1]</sup> whether a particular item of property is qualified property turns on the following two questions:

1. Is the equipment used an integral part of the activity of generating electricity from wind?
2. Does the equipment constitute power conditioning equipment, transfer equipment, or parts relating to the functioning of those items?

My research found over one-hundred revenue rulings published by the Service that discuss whether property is an integral part of an activity. None seem directly on point. Rev. Rul. 84-40, 1984-1 C.B. 11 (copy attached), is a good summary and concludes that in each situation, the test is whether the property is used directly in the activity and is essential to the manufacturing (here, the electricity generation) process. I found nothing that discusses what constitutes power conditioning equipment, transfer equipment, or parts relating to the functioning of those items.

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<sup>1</sup>Phrasing the issue in terms of determining the separation point between the low-side and the high-side probably confuses the analysis because the break point is so clearly at the transformer.

Most of the equipment listed above is essential to the manufacturing process because the equipment is necessary to deliver the generated electricity. The guidance and the regulations under § 1.48-9, however, make clear that transmission equipment is not qualified property. We read “power conditioning” equipment to include the step-up transformer that increases the voltage of the electricity generated in the wind farm to the voltage of the high voltage transmission line. Equipment beyond the step-up transformer is qualified property if that property is related to the functioning of the transformer or of transfer equipment. Items 1-5 in the list above clearly are qualified equipment under the above analysis. For purpose of simplicity, I have not discussed the wires or support structures within the substation—generally, these items are clearly related to specific equipment and are qualified property, or not, depending on whether the equipment to which they relate is qualified property.

Item 6. The lightning or surge arrester protects the transformer and clearly relates to the functioning of the transformer. Circuit breakers cannot operate fast enough to protect circuits from the effects of lightning and some transient electrical surges—the equipment used to protect circuits from lightning and these surges is called an arrester.

Item 7. The 345 KV switch is necessary to isolate the transformer that produces the the high voltage necessary to sell the electricity produced. (Generally, a switch is used to manually isolate equipment and a circuit breaker automatically isolates a circuit or equipment.) The transformer will have to be removed from service from time to time for inspection, repair, and maintenance. Therefore, the switch directly relates to the functioning of the transformer.

Item 8. The metering CT measures the amount of electricity that the wind farm produces for sale. Possibly, it is also used to control operations of the wind farm. In either case, it is a necessary part of the transfer equipment.

Item 9. The 345 KV circuit breaker is an automatically operated electrical switch designed to protect the substation from damage caused by overload. Again, this type of protection is a necessary part of the power conditioning and transfer circuit.

Item 10. Even if the surge arrester, as discussed below, is considered part of the transmission function rather than part of the qualified facility, a strong argument can be made that the 345 KV switch is the last item of transfer equipment because the 345 KV switch serves to isolate the transmission line from the power conditioning and transfer equipment in the substation. If the dead end surge arrester is qualified property then, because the switch allows that two items of qualified property to be isolated for maintenance and repair, this switch is qualified property.

Items 11. The term “dead-end” usually refers to the last tower in a transmission line. Thus, it appears that the dead-end surge arrester should be considered part of the transmission activity, because it appears that the purpose of the dead-end surge arrester is to protect the transmission line. In such a case the surge arrester is not qualified property. However, if your investigations develop a good reason for treating this surge arrester as part of the substation (for example, you are convinced that the primary purpose of this surge arrester is to protect the substation, rather than the transmission lines), then this surge arrester is equipment related to the functioning of power conditioning and transfer equipment and the equipment should be qualified property.