

**AmerenUE**  
**Response to MPSC Data Requests**  
**Docket Nos. WKT**  
**Solar Generation Certificate for O'Fallon MO Facility**  
**Data Request Response Date: 3/11/2014**

MPSC 0012 J Hernandez

Please explain in detail the decision process of Ameren Missouri for the construction of the proposed solar generation facility. The explanation should include, but not be limited to: 1) all other options considered for RES compliance and reasoning on why they were not selected; 2) selection of the solar array design (5.7 MW-DC photovoltaic ground mount fixed axis solar facility) verses all other designs; other location options considered and reasoning on why they were not selected.

**RESPONSE**

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- 1) Since the inception of the Missouri Renewable Energy Standard (MoRES), Ameren Missouri has believed that in order to effectively handle the rapidly changing advances in technology, the cost of that technology and market forces that are beyond Ameren Missouri's ability to influence or control regarding renewable resources, it should pursue a portfolio that includes RECs (unassociated with energy), power purchase agreements(which include both energy and RECs) and renewable generation facilities owned and operated by Ameren Missouri.

During the first years of the MoRES, those solar requirements were met by Ameren Missouri's purchase of S-RECs from third party brokers which represented generation facilities predominately located in California and Florida, with no associated energy.

In 2010, Ameren Missouri installed a solar array at its General Office Building (GOB) in downtown St. Louis in order to provide customers with a real time view of solar generation in the region. This facility also enabled Ameren Missouri to evaluate the overall effectiveness and operational issues associated with this intermittent resource.

Starting in 2011, Ameren Missouri began purchasing S-RECs from its customers who installed solar facilities on their homes and/or businesses and who accepted the Standard Offer Contract to sell those S-RECs to Ameren Missouri.

In keeping with its strategy, and based on knowledge gained from the small scale facility installed at the GOB, it was determined that the next step is to construct a utility scale solar generation facility. Besides the factors already discussed, this decision was driven by the anticipated increase in solar panel prices due to the current and ongoing international trade dispute between the U.S. and China and the European Union and China that has resulted in strict tariff rates being placed on panels manufactured in China, which represents the bulk of the global supply. Ameren Missouri further concluded that with the current Federal Investment Tax Credit of 30% associated with solar development, the cost of constructing a utility scale facility is currently favorable.

Since the inception of the MoRES, the renewable development community has publicly stated that the utilities in Missouri should do more to advance renewable energy development in the state with more physical generation located within the borders of Missouri. In each legislative session since the law has gone into effect, legislation has been proposed that would require in-state generation and/or renewable energy delivered to the state in order for the utilities to meet the compliance requirements of the MoRES. Constructing a renewable generation plant in Missouri acts as a partial protection, should that statutory change occur.

With the construction and operation of a utility scale solar facility, Ameren Missouri would then be employing all three avenues (discussed above) in meeting the MoRES requirements.

- 2) The selection of the solar array design first began with site evaluations and land selection. Property evaluations and rankings were completed for land presently owned by Ameren Missouri. In addition, land presently on the market and agricultural land that could be pursued was evaluated to provide a general price point; however these properties were not formally screened and ranked per the selection process, as it is believed that the utilization of land presently in Ameren Missouri's possession would be most effective.

A screening method ranked each of the properties' potential. This method included the consideration of 13 criteria, with the first five being definitive requirements, which immediately eliminated a majority of the potential sites. The 13 criteria were as follows:

- 15+ acres of usable space
- Suitable terrain (flat land, minimal trees, accessible, no creeks)
- Near sub-transmission, distribution lines, or substations (34.5 kV – 69 kV)
- Land not needed for other future Ameren needs
- Not in a flood plain
- Nearby lines and subs have 3 – 4 MW load or open capacity (minimum desired)
- Minimal time and expense to obtain the land
- Close proximity to St. Louis

- Relatively small amount of site work required to develop the land
- Visibility to the public
- Secure site from vandalism
- Zoning for solar field (industrial or commercial, agriculture)
- Future solar expansion options for Phase II

All sites evaluated carried certain levels of risk or additional cost to permit and develop. However, the result of the screening method highlighted two Ameren Missouri owned properties that would be suitable for Phase I solar. These properties include approximately 15 acres next to the O'Fallon and Belleau substations and approximately 30 acres located at the former Oran power plant south of Cape Girardeau. Due to the close proximity of a strong distribution system, site topography, close proximity to St. Louis and the public access of the site, the Belleau substation property was selected for the Phase 1 Solar project.

Upon the final selection of the site, a Request for Proposal was issued with the request for bidders to provide a maximum and most cost effective design based on the plot of land being supplied utilizing PV system modeling software and specific weather data tables. This method allowed the bidders to provide the best design layout, panel selection, tilt angle and other options they felt was best suited for the site. In the end all of the bidder's designs were nearly identical with similar panel size, cost and angles selected. All bidders proposed similar inverters, 300 w panels, similar racking systems and a 20 degree panel tilt design appropriate for a utility scale facility in Missouri. Ameren Missouri selected the bidder that provided the best value, performance guarantees and lowest cost design for this project.