

FILE

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

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In the Matter of the Adoption of Rules for :
Alternative and Renewable Energy Technologies :
and Resources, and Emission Control Reporting :
Requirements, and Amendment of Chapters : Case No. 08-888-EL-ORD
4901:5-1, 4901:5-3, 4901:5-5, and 4901:5-7 of the :
Ohio Administrative Code, pursuant to Chapter :
4928, Revised Code, to Implement Senate Bill No. 221 :

COMMENTS OF NORTON ENERGY STORAGE
TO
THE COMMISSION STAFF'S PROPOSED RULES

Now comes Norton Energy Storage LLC, by its attorney, and submits the following comments on the Staff's proposed rules in accordance with the Commission's August 20, 2008 Entry in the subject docket.

1. Norton Energy Storage, ("NES"), is a developmental compressed air energy storage ("CAES") company, with a facility under development in the City of Norton, Summit County, Ohio, pursuant to a Certificate of Public Need and Environmental Compatibility issued to it by the Ohio Power Siting Board in OPSB Case No. 99-1626-EL-BGN on May 21, 2001.

2. The NES project is unique within the State of Ohio, for it is situated within the capacity deficient load center of northeastern Ohio to meet the requirements of that load center. Moreover, the cold start responsiveness of its ancillary services such as providing "reactive power" and "regulation service" facilitates the receipt of off-peak renewable energy into the grid, while enhancing the reliability of the transmission network at the "seam" of the PJM/MISO interconnection. All of

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these factors clearly render the project an “Advanced Energy Resource” as defined by Section 4928.01 (34), Revised Code.

3. NES has been determined by the Ohio General Assembly to be a “Renewable Energy Resource” as provided in Section 4928.01 (35) of the Revised Code, for a CAES facility “*promotes the better utilization of a renewable energy resource that primarily generates off-peak.*” While a CAES facility promotes the better utilization of all renewable energy resources (e.g., hydroelectric, gas-thermal, solid waste etc.) via its storage features, it is of particular value to those energy resources that *primarily generate off-peak* (e.g., wind). A CAES facility is especially beneficial to renewable energy resources generating off-peak for it acts as a “sink” into which off-peak wind and other renewable electrical energy can be stored for on-peak usage. Moreover, the “ancillary services” unique to a CAES facility, such as its fast response capability (“ramping”) in accepting renewable energy off-peak and in providing “regulation services” such as reactive power, facilitates the “better utilization” of renewable energy primarily generated off-peak for both on-peak and off-peak use.

4. As will be demonstrated herein, the proposed rule 4901:1-40-04 (A) (8) (a) and (b) produces unintended results that should be found unacceptable by both Staff and the Commission. This proposed rule provides that a storage facility is a qualified resource for receiving renewable energy only if it complies with the following expressed dictates:

- (a) The electricity used to pump the resource into a storage reservoir must qualify as a renewable energy resource.
- (b) The amount of the energy that may qualify from a storage facility is the amount of electricity dispatched from the storage facility and shall exclude the amount of energy required to initially pump the resource into the storage reservoir.”

5. As seen above, the proposed rules omission of the emphasis given by the legislature to renewable resources which “*primarily generate off-peak*” clearly abandons and frustrates that legislative directive. That language should be included in the proposed rule.

6. Moreover subsection (a) of the proposed rule improperly construes the clear language defining a “Renewable Energy Resource.” Subsection (A) of the rule speaks in terms of the resource or technology being an asset with a placed-in-service date etc., while its subsection (8) (a) speaks in confusing terms of “electricity” or renewable “energy” as being the renewable “resource.” The statutory language clearly provides that a storage asset or resource which promotes the better utilization of renewable energy is a “Renewable Energy Resource.” The statute does not – as the proposed rule does – require the “utilization” of renewable energy for filling the reservoir in a storage facility which provides storage, ancillary, and regulation services. It is these storage, ancillary and regulation features that, standing alone, promote the better utilization of renewable energy resources.¹ The effect of subsection (a) of the proposed rule economically precludes any storage facility from becoming a qualified resource for purposes of receiving renewable energy credits. The

¹ This later view that the facility or asset should promote the utilization of renewable energy, even if all inputs are not derived from these resources is supported by the literature on this subject. See study which shows benefit to network of storage with wind, not directly tied to wind resource: Jukka V. Paatero, Peter D. Lund, (2004 “Effect of energy storage on variations in wind power” retrieved September 5, 2008 from: http://users.tkk.fi/~patte/pub/conf_2006_NWPC_Espoo.pdf; University of Texas at Austin (2007, October 24). Dealing With Wind Variability On The Wind Farm. ScienceDaily. Retrieved September 5, 2008, from <http://www.sciencedaily.com/releases/2007/10/071019184844.htm>; Canadian study showing benefits of adding storage to Alberta grid (not collocated) at high wind penetrations: Benitez, Liliana E. & Benitez, Pablo C. & van Kooten, G. Cornelis, (2008, December 16). “The economics of wind power with energy storage.” Energy Economics, Elsevier, vol. 30 (4), pages 1973-; Article on storage needed for solar: Zweiber, K.; Mason J. And Fthenakis, V., “A Solar Grand Plan.” Scientific American Magazine Retrieved September 5, 2008 from <http://www.sciam.com/article.cfm?id=a-solar-grand-plan&print=true>

law of conservation of energy requires that any generation machine produce less energy than originally consumed due to losses of friction, heat, and other transactional energy costs. Due to the law of physics any storage facility that desired to qualify as a renewable energy resource would – under the proposed rule – have to buy more renewable credits than it sells (in cases such as pumped hydro storage as much as thirty percent more).² If the intention behind the proposed subsection (a) was to assure the storage facility is operated in a manner promoting the better utilization of renewable energy, an alternative rule effecting this objective would be to require any energy storage asset to utilize “Automatic Generation Control (“AGC”)” allowing the independent system operator (MISO or PJM) to dispatch the asset in ancillary service markets “that promote the utilization of renewable energy.” As currently framed the proposed rule arbitrarily denies renewable energy credits to the energy produced by a renewable energy resource (i.e., a storage facility promoting the better utilization of renewable energy primarily generated off-peak) contrary to the expressed language and intent of Senate Bill 221. The function and purpose of these rules is to fulfill the legislature’s directives, not to ignore or frustrate them.

7. Subsection (8) (b) is also troubling in its potential denial of any energy credits to all storage facilities promoting the better utilization of renewable energy but having an energy pumping to generation ratio greater than one, as discussed in paragraph 7 above. If, in fact, the underlying intention of this subsection was to make sure that Demand Response Resource (“DRR”) megawatts (i.e., turning down the compressors at night and “creating” generation,) are not considered “one

² NES has been developing this CAES since 1998 and is now witnessing legislative and regulatory action supportive for the benefits it brings to the State of Ohio – which unfortunately would be negated if the rule (as proposed) is adopted.

megawatt hour of electricity generated” within the definition of a renewable energy credit provided in section 4901;1-0-01 (DD), this can be addressed by replacing subsection (b) with the following language:

“(b) The amount of energy that may qualify from a storage facility is the amount of electricity dispatched as generation and shall exclude any generation hours from the operation of pumping the electricity into the storage reservoirs.”

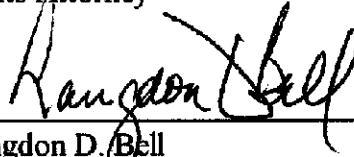
8. As demonstrated above, the proposed rule has the unintended effect of denying the receipt of any renewable energy credits to a legislatively designated “renewable energy resource” – the intended recipient of such credits – for providing unique services which *promote the better utilization of renewable energy resources*. The proposed rule further frustrates the legislative intention favoring renewable resources that *primarily generate off-peak*, as in the case of wind. However, perhaps equally egregious is the fact that, as applied to an Ohio CAES sited facility (such as N.E.S.) the rule discourages not only the economic development and job growth such a facility brings to the people of Ohio, it further discourages the required capacity addition, needed reliability, and regulation services such a CAES as Norton Energy Storage could provide for the citizens of this state – all part of the stated objectives of S.B. 221. Finally, it should be observed that the results produced by the proposed rule (i.e., the discouragement of an Ohio sited renewable resource storage facility) certainly conflicts with the legislative dictate found in Section 4928.64 (B) (3) of the Revised Code that “*At least one-half of the renewable energy resources implemented by the utility or company shall be met through facilities located within this state.*”

For all the foregoing reasons NES respectfully requests the Commission not to adopt the

proposed rule and to incorporate the proposals advanced herein.

Respectfully submitted,

Norton Energy Storage
By its Attorney

A handwritten signature in black ink, appearing to read "Langdon Bell", written over a horizontal line.

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