UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Utilization in the Organized Markets of Electric Storage Resources as Transmission Assets Compensated through Transmission Rates, for Grid Support Services Compensated in Other Ways, and for Multiple Services	Docket No. AD16-25-000

POST-TECHNICAL CONFERENCE COMMENTS OF THE TRANSMISSION ACCESS POLICY STUDY GROUP

Pursuant to the invitation extended at the November 9, 2016 Technical Conference, and the November 14, 2016 Notice Inviting Post-Technical Conference Comments[1] in the above-captioned docket, the Transmission Access Policy Study Group ("TAPS") files these brief follow-up comments regarding the discussion on the first day of the Technical Conference.

INTEREST OF TAPS

TAPS is an association of transmission-dependent utilities ("TDUs") in more than 35 states, promoting open and non-discriminatory transmission access.[2] As TDUs, TAPS members have long recognized the importance of maintaining a reliable, capable grid at a reasonable cost. TAPS members are also users of the bulk power system and are highly reliant on the reliability of facilities owned and operated by others for the transmission

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[1] *Utilization in the Org. Mkts. of Elec. Storage Res. as Transmission Assets Compensated Through Transmission Rates, for Grid Support Servs. Compensated in Other Ways, & for Multiple Servs.*, Notice Inviting Post-Technical Conference Comments (Nov. 14, 2016), eLibrary No. 20161114-3013.

[2] David Geschwind, Southern Minnesota Municipal Power Agency, chairs the TAPS Board. Jane Cirrincione, Northern California Power Agency, is TAPS Vice Chair. John Twitty is TAPS Executive Director.

service required to meet TAPS members' loads. Thus, TAPS supports the development and implementation of new and advanced technologies which will increase reliability and increase access to more economic power supplies, provided that those technologies increase reliability and increase access to more economic power supplies at a reduced cost to the ultimate ratepayer.

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COMMENTS

The Commission's November 1 Supplemental Notice of Technical Conference[3] asked whether electric storage resources can provide transmission service and whether such resources can be characterized as transmission assets. In TAPS' view, batteries and other assets associated with emerging storage technologies have both similarities to, and differences from, traditional transmission assets like wires strung over long rights-of-way. Yes, storage resources can provide services similar to the services provided by wires, and therefore may in some circumstances be identified by Order No. 1000-type planning processes as the best practicably available solution to a system need. In that

[3] *Utilization in the Org. Mkts. of Elec. Storage Res. as Transmission Assets Compensated Through Transmission Rates, for Grid Support Servs. Compensated in Other Ways, & for Multiple Servs.*, Supplemental Notice of Technical Conference (Nov. 1, 2016), eLibrary No. 20161101-3033.

regard, they resemble generators' reactive power production capability, which is classified as non-transmission (specifically, as generation) in the Uniform System of Accounts. But as a ratemaking functionalization matter, they may justifiably be recoverable from transmission customers through cost-based rates. When functioning as part of the transmission system, an electric storage resource may likewise reasonably qualify to collect a cost-based revenue requirement that has been established on a case-by-case basis in a proceeding before the Commission.

But storage resources are not the same as, and can never provide precisely the same service as, transmission lines that move power over long distance rights-of-way. Unlike such wires, emerging storage technology assets have several characteristics which make them less risky for purposes of developing an appropriate cost-based recovery mechanism. Such characteristics include:

- Availability and diversity of alternative revenue streams, e.g. they can garner revenues by bidding into organized energy and ancillary service markets.
- Reduced siting opposition, because they generally have small footprints, do not impinge on nearby property values and aesthetics, and can be sited on land already dedicated to utility use.
- Ease of re-deployment at new sites as system needs change.
- Shorter recoupment of investment because the assets have short physical and/or economic lives.[4]
- Entail benefits to the transmission system that are more predictable at installation.

[4] The underlying premise of this proceeding is that battery technology and usage base economies of scale are advancing rapidly. Where that is shown to be true, it will likely follow that a battery's depreciable economic life is short, much as the ongoing rapid advance of computing technology renders physically operable old computers economically obsolete. Moreover, the normal charge-discharge operational cycle of batteries diminishes the capability of the battery such that there useful life is much shorter than the 40 to 50 year life of a transmission line.

Of course, storage resources also have certain disadvantages as compared to transmission facilities and thus should not receive the same beneficial rate treatment that a transmission facility might receive for purposes of developing an appropriate cost-based rate. For example, disadvantages of storage resources include the facts that storage facilities:

- Can function continuously for only limited periods, rather than 24/7/365 as can installed transmission lines. For example, in a load pocket in which the minimum load has outstripped transmission import capability, storage alone, no matter how large, can never overcome the transmission deficit. Rather, when there is excess transmission capacity or locally generated energy, storage has some capability to peak-shave transmission demands. However, storage is "energy limited," such that it cannot meet needs that outlast its charge.
- Must be charged in advance of being used.

Thus, while electric storage resources can provide some support of transmission, such resources are not perfectly analogous to long-distance wires. As explained in more detail below, the Commission should recognize these distinctions in cost-based rates.

As a threshold eligibility matter, it is essential that ratepayers funding storage resources through non-bypassable charges receive the benefits for which they pay. Storage operators seeking such revenues should therefore be required to subject themselves to transmission operator functional control of their charging and discharging operational decisions, much as transmission owners are subject to regional operator coordination of their maintenance timing, and as reactive power revenue claimants they must allow transmission operators to manage their real/reactive settings within design criteria.

It is also critical that the Commission carefully consider how the costs of electric storage resources are recovered. To the extent the electric storage resource is used like a

transmission facility with costs recovered through a transmission rate, that rate should be cost-based. That is, as part of the Commission's traditional case-by-case analysis, the resource owner should propose a cost-based rate, fully supported with documentation of costs, that includes a cost-based return on capital. In this respect, the rate for the storage resource could be developed much like the Commission's process for developing rates for ancillary services, such as Schedule 2 reactive power resources. Similar to such Schedule 2 proceedings, a storage resource owner could impute the regionwide return on equity of the host RTO, if applicable, or the cost-of-capital of the host transmission owner.

As part of developing a cost-based rate, the Commission must also recognize the varied functions that an electric storage resource can provide and the potential for each function to generate revenue streams.[5] For example, in its recent Notice of Proposed Rulemaking in Docket No. RM16-23, the Commission proposed the adoption of rules that would require RTOs to examine their tariffs and file tariff amendments that would eliminate barriers to the participation of storage resources in the markets operated by the RTOs, or demonstrate that their tariffs do not contain such barriers.[6] In addition, the Commission has also proposed that storage resources be permitted to be compensated through market mechanisms for services that the resources are technically capable of

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[5] For purposes of these comments, TAPS assumes that an electric storage resource can provide multiple services without sacrificing one service while providing another service. TAPS reserves the right to comment in other proceedings as to whether market rules appropriately ensure that, if a storage resource is simultaneously receiving revenues for providing services, that resource can actually simultaneously provide the services for which it is being compensated.

[6] *Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, 81 Fed. Reg. 86,522, 86,547 (proposed Nov. 30, 2016), FERC Stats. & Regs. ¶ 32,718, PP 159, 161 (2016).

providing but that are currently not compensated.[7] These additional sources of revenue may be substantial. They should be applied to reduce the recipient's revenue requirement for any cost-based transmission support services, so that transmission system customers who fund storage resources as ratepayers do not have to pay again through market mechanisms, and so that revenues paid to a storage resource for transmission support services do not create a competition-distorting subsidy.

The revenues from other services offered by a storage resource should be fully revenue credited against the revenue requirement for cost-based services. Such full revenue crediting is justified for multiple reasons. Electric storage resources seeking supplemental revenues through ancillary services need not identify customers with needs they can fill; the tariff mechanism through which the services will be offered already does that. Moreover, through the markets operated by the RTOs, such storage resources will have an established mechanism to provide such services. The owner of an electric storage resource need only offer into those markets. The costs of those markets' infrastructure (such as the costs of RTO personnel and computing equipment) are funded by all market participants, not directly assigned to storage resource owners that benefit from the ability to participate therein. For other services not procured through the market, the owner need only submit a revenue requirement. For all these reasons, Commission precedent addressing alternative revenue streams earned by transmission assets from sideline revenue streams (such as pole attachments) is not directly applicable to ancillary service revenues of electric storage resources. The revenue-sharing approach

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[7] *Id.* at 86,531, FERC Stats. & Regs. 32,718, P 48 (specifying blackstart, primary frequency response, and reactive power as services for which electric storage resources should receive compensation if they are technically able to provide the service).

adopted in certain of those cases therefore should not be extended to this different context. For example, in *PG&E*,[8] the Commission approved a 50-50 sharing of the utility's revenues from certain secondary services provided using transmission assets (for example, leasing of space on transmission poles and space in the transmission right-of-way). Notably, the Commission required the utility to insulate transmission ratepayers from any losses from its secondary businesses. In other words, the Commission recognized that the utility was taking on some risk as a result of offering secondary services. Moreover, the utility had to expend its own resources to identify services it could offer and in finding customers for those services. Accordingly, unlike *PG&E*, there is no basis for giving ratepayers only half of the revenues generated from other tariffed uses of storage resources. Presumptively, if not conclusively, all revenue from other services should be credited against the costs to be paid by transmission customers.

The Commission should also not establish a rule that electric storage resources are entitled to claim above-cost incentives, such as equity return adders, that the Commission has made available to stimulate certain investments in wires-type transmission infrastructure. As discussed above, storage resources can support electric transmission but they are not, on a standalone basis, a substitute for transmission. Moreover, transmission owners' key arguments for incenting wires-type transmission facilities will generally not apply to battery storage facilities. Transmission developers have argued that wires-type transmission facilities commonly entail new and extensive rights-of-way that must overcome public siting opposition, have long lives, are immobile once installed, and therefore entail both risks and public goods that may not be fully recognized by

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[8] *Pac. Gas & Elec. Co*., 90 FERC ¶ 61,314 (2000) ("*PG&E"*).

traditional cost recovery.[9] As noted above, these arguments generally do *not* apply to storage assets. Consequently, much like a reactive resource is not entitled to a 50 basis point incentive for RTO participation (even though its service is used by an RTO to support transmission), a storage resource generally should not be entitled to any equity return adder incentives for the service it provides. When a generator and electric storage resource are both providing reactive service in an RTO, neither should receive an incentive, regardless of the fact that the storage resource may provide other transmission-like functions. Thus, the Commission should be disinclined to grant such incentives and should not encourage applications for such incentives.

Finally, consistent with cost-of-service ratemaking, the Commission should not permit electric storage resources that are supporting transmission service to charge an alternative rate based on "value of service" pricing.[10] Electric storage resources can be very beneficial as support facilities to the transmission grid, but much of that benefit derives from the lower installation cost relative to a new transmission line or generator. But, as discussed above, the utility of a storage resource as a standalone generation resource is limited in time, and it merely mitigates—not solves—system bottlenecks. Moreover, the storage resource can be subject to the same bottlenecks it is intended to mitigate. Thus, if consumers are to be charged for the storage resource as if it were a transmission line or a new generator, consumers would be better off with the transmission or generation asset. Storage resources lose a significant portion of their value—a lower

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[9] *See, e.g.*, *Conn. Dep't of Pub. Util. Control v. FERC*, 593 F.3d 30 (D.C. Cir. 2010).

[10] For a discussion of "value of service" or "value-based" pricing, see the Wikipedia entry for "value-based pricing." Wikipedia, *Value-based Pricing* (last visited Dec. 14, 2016), https://en.wikipedia.org/wiki/Value-based_pricing. In general, the service is priced based on an estimate of what a customer will pay rather than the cost to provide the service.

cost of service—if they are priced at the cost of an alternative investment, which is not actually made, and would therefore amount to value-of-service ratemaking masquerading as cost-of-service ratemaking. Consistent with cost-of-service ratemaking, electric storage resources must prove their revenue requirements based on actual original costs, and their rates must be limited to the proven revenue requirements.

Respectfully submitted,

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