UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Grid-Enhancing Technologies	Docket No. AD19-19-000

POST-WORKSHOP COMMENTS OF TRANSMISSION ACCESS POLICY STUDY GROUP

The Transmission Access Policy Study Group ("TAPS") appreciates the opportunity to provide Post-Workshop comments pursuant to the January 17, 2020 Notice.[1] We also appreciate the Commission's interest in new and advanced technologies that will increase the capacity, efficiency, and reliability of existing transmission facilities, as reflected in the discussions at the November 5 and 6 Grid-Enhancing Technologies ("GETs") Workshop (in which TAPS sponsored a panelist, Steve Leovy, WPPI Energy[2]) and the questions posed in the Notice. While TAPS supports implementation of cost-effective technologies to improve use of existing transmission facilities and reduce the delivered cost of energy, we strongly urge the Commission against adopting the incentive proposals presented at the Workshop. The Commission has other tools to mitigate the barriers to increased deployment of advanced technologies, particularly for the "mature" technologies—those that are currently capable of being deployed[3]—on which the Questions attached to the Notice focus. As requested,

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[1] Notice Inviting Post-Workshop Comments (Jan. 17, 2020), eLibrary No. 20200117-3021 ("Notice").

[2] Prepared Statement of Steven Leovy on Behalf of WPPI Energy and the Transmission Access Policy Study Group for the November 5-6 Workshop (Nov. 12, 2019), eLibrary No. 20191112-4023 ("Leovy Statement").

[3] Notice, Post-Workshop Questions for Comment at 1.

TAPS addresses these comments to the six Questions posed in the Notice, cross-referencing, where appropriate, our comments in Docket Nos. PL19-3-000[4] and AD19-15-000.[5]

I. INTEREST OF TAPS

TAPS is an association of transmission-dependent utilities ("TDUs") in 35 states promoting open and non-discriminatory transmission access.[6] It has participated actively in numerous Commission proceedings concerning transmission access, planning, pricing, incentives policies, and the formation and operation of RTOs. Representing entities entirely or predominantly dependent on transmission facilities owned and controlled by others, TAPS has long recognized the need for a robust and efficiently utilized transmission infrastructure to provide non-discriminatory transmission access and foster competition. We therefore appreciate the Commission's efforts to closely examine the potential for advanced technologies to increase the capacity, efficiency and reliability of transmission facilities. If cost-effective, such technologies may enhance TAPS members' ability to meet their load reliably and affordably.

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[4] In the Commission's *Inquiry Regarding the Commission's Electric Transmission Incentive Policy*, Docket No. PL19-3-000, *see* Initial Comments of TAPS (June 6, 2019), eLibrary No. 20190626-5264 ("TAPS Incentives NOI Initial Comments") and Reply Comments of TAPS (Aug. 26, 2019), eLibrary No. 20190826-5116 ("TAPS Incentives NOI Reply Comments").

[5] *See* Post-Technical Conference Comments of TAPS, *Managing Transmission Line Ratings*, Docket No. AD19-15-000 (Nov. 1, 2019), eLibrary No. 20191101-5189 ("TAPS MTLR Comments").

[6] 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.

Communications regarding these proceedings should be directed to:

John Twitty
Executive Director
TRANSMISSION ACCESS POLICY STUDY GROUP
PO Box 14364
Springfield, MO 65814
(417) 838-8576
Email: jtwitty@tapsgroup.org

Cynthia S. Bogorad
William S. Huang
Amanda C. Drennen
SPIEGEL & MCDIARMID LLP
1875 Eye Street, NW, Suite 700
Washington, DC 20006
(202) 879-4000
Email: cynthia.bogorad@spiegelmcd.com
william.huang@spiegelmcd.com
amanda.drennen@spiegelmcd.com

II. COMMENTS

Question 1: Workshop participants identified several types of technologies that are currently capable of being deployed, such as power flow control and transmission switching technologies, dynamic line ratings, and storage as transmission. What other technologies that increase the capacity, efficiency, or reliability of transmission facilities are ready for deployment?

The Question 1's list of technologies capable of deployment omits ambient-adjusted line ratings ("AARs"), which were discussed at this Workshop, as well as at the Managing Transmission Line Ratings Technical Conference.[7] Testimony at the MTLR Technical Conference made clear that strategic deployment of AAR technology that relies on commercial forecasts can provide a low-cost means of producing significant benefits to consumers.[8] Workshop and technical conference testimony confirmed that AARs have been widely deployed in PJM[9] and ERCOT[10] and have a track record of success elsewhere.[11]

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[7] *See also* Staff Paper, *Managing Transmission Line Ratings*, Docket No. AD19-15-000 (Aug. 23, 2019), eLibrary 20190823-4002 ("Staff MTLR Paper").

[8] Transcript of Day 2, at 292:20-23 (Bourg, Entergy), *Managing Transmission Line Ratings*, Docket No. AD19-15 (Oct. 8, 2019), eLibrary No. 20191008-4002 ("MTLR Tr. Day 2"); MTLR Tr. Day 2, 286:14-18 (Hartman, ELCON) (the Independent Market Monitor for the Midcontinent Independent System Operator, Inc. "found AARs would have reduced congestion costs by over 100 million annually in recent years.").

[9] AEP's Robert Bradish noting AEP's use of AARs for many years. Transcript of Day 1, at 76:17-24 (Bradish, AEP) (Nov. 6, 2020), eLibrary No. 20200106-4004 ("GETs Tr. Day 1"); Transcript of Day 1, at 97:9-17 (Murphy, PJM), *Managing Transmission Line Ratings*, Docket No. AD19-15-000 (Oct. 8, 2019),

We therefore hope and assume the omission of AARs from Question 1 stems from the fact that this question feeds into Question 2, pertaining to incentives, and a recognition that no incentive should be granted for application of AARs.[12] TAPS has urged that, particularly in regions where RTOs can assist in determining the facilities on which AARs would deliver significant value and can prevent discriminatory application of the technology, selective deployment of AARs should be mandated as part of good utility practice, subject to avoiding undue risk to transmission facilities.[13] At the Workshop and MTLR Technical Conference, representatives of the RTO independent market monitors called for AARs to be required on all transmission lines.[14]

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eLibrary No. 20191008-4001 ("MTLR Tr. Day 1").

[10] MTLR Tr. Day 1, 79:6-10, 81:16-20 (Thompson, ERCOT).

[11] *See*, MTLR Tr. Day 2, 293:5-15 (Bourg, Entergy).

[12] Workshop comments of Jack McCall (Lindsey Manufacturing) questioning whether AAR should be considered a grid-enhancing technology (GETs Tr. Day 1, 34:4-18) need to be evaluated in the context of his position as a DLR provider and Chair of the WATT Coalition (GETs Tr. Day 1, 28:18-24) and the significant industry experience with AARs. *See* Transcript of Day 2, at 322:1-5 (Patton, Potomac Economics) (Nov. 6, 2020), eLibrary No. 20200106-4005 ("GETs Tr. Day 2") ("[I]f I'm a DLR and I'm looking at the WATT proposal, I wouldn't want you to assume AARs, because there goes 90 percent of my benefit . . . I don't buy the argument that AARs are somehow unreliable, so we should start with . . . the ratings we have today.") and GETs Tr. Day 1, 76:18-24 ("[O]ur operators do use something called ambient adjusted ratings that I believe Lindsey wasn't pleased with, but we do use them. We've been using them for many years, apparently at our own peril, but we can apply them though to 40,000 miles of lines at fairly relative low cost, and so they do add additional capability.") *See also* Staff MTLR Paper at 12-14, 17-26 (describing AAR deployment in PJM and ERCOT and comparing AAR and DLR technologies).

[13] Leovy Statement at 7-8; GETs Tr. Day 2, 242:13-19 (Leovy, TAPS); TAPS MTLR Comments at 9-10.

[14] GETs Tr. Day 2, 305:15-16 (Bowring, Monitoring Analytics); MTLR Tr. Day 2, 308:19-21 (Chiasson, Potomac Economics). David Patton, the market monitor for MISO, opposes shared-savings incentives for other technologies, but urges the calculated savings use assumed application of AARs as a benchmark. GETs Tr. Day 2, 321:19-25–322:1-5 (Patton, Potomac Economics).

Question 2: Some workshop participants argued that further deployment of technologies that increase the capacity, efficiency, or reliability of transmission facilities can be encouraged with various types of incentives. What types of incentives would encourage the deployment of technologies referred to in Question 1?

A. Lack of incentives is NOT the key obstacle to deployment of Grid-Enhancing Technologies

As Question 2 notes, only "some workshop participants" argued that incentives are needed to encourage deployment of grid-enhancing technologies. In fact, what was most striking about the Workshop was how few panelists pointed to the lack of incentives as the obstacle to deployment, or thought that benefits-based incentives made sense. Incentives were barely mentioned during the first day of the Workshop, in which panelists were asked to address "current deployments of grid-enhancing technologies, and what actions the Commission could take to help alleviate any operational challenges or concerns" and "what challenges exist in current transmission planning processes."[15]

Instead, despite the Notice's characterization of the various technologies discussed as "mature,"[16] numerous panelists stressed the need for GETs to be "proven" before deployment could be seriously considered.[17] It would be imprudent for the Commission to assume that shiny new technologies are plug-and-play or a clear win-win for all. Workshop panelists indicated that some GETs are not yet ready for prime time; and they described AEP's experience with new technologies, which has involved a lengthy process of working with vendors through multiple iterations of the technology,

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[15] Final Agenda for the November 5-6 Workshop 1-2 (Nov. 12, 2019), eLibrary No. 20191112-4000.

[16] Notice, Post-Workshop Questions for Comment at 1.

[17] GETs Tr. Day 2, 266:11-24, 267:3-7 (Bradish, AEP); 152:18-153:11 (Webb, MISO), 76:1-5 (Bradish, AEP, "[W]e've deployed just about every grid-enhancing technology that's come our way that's been proven."), 77:25-78:2 (Bradish, AEP, "Piloting new technology with unproven performance is a challenge."), 125:9-15 (Webb, MISO).

just to get to the point of really assessing its potential positive and negative impacts.[18] Based on the Workshop, the need to better understand the upsides and downsides of new GETs, so there is comfort that they will achieve their advertised results without adverse impacts, is a prerequisite—and the most significant obstacle—to their deployment.

Others panelists pointed to obstacles created by vendors who seek to protect what they view as proprietary information. Some found that the "black box" provided by vendors insufficient to permit the modeling required to fully understand and assess the impacts of deploying these new technologies.[19]

Other panelists stressed that evaluation of a new technology requires looking ahead toward broader deployment across the grid, due to potential interactions both between devices of the same type and with other new technologies that may be implemented. Piecemeal assessment of individual projects is insufficient and could be problematic. For example, Dr. Anjan Bose (Washington State University) described how more widespread adoption of a single technology or the implementation of multiple technologies could cause the GETs to "fight each other."[20] AEP witness Bradish said this type of conflict is happening today even without widespread adoption, and "it gets harder to operate the grid with more [GETs] on it."[21]

Such conflicts seem likely to be a particular problem in the United States, since devices from multiple vendors may be deployed simultaneously—either by a single

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[18] GETs Tr. Day 1, 90:4-17 (Bradish, AEP); 100:10-15 (Dagle, PNNL).

[19] GETs Tr. Day 1, 92:21–93:17 (Bradish, AEP); 170:13–171:2, 191:15-25 (Enayati, National Grid); 125:9-15 (Webb, MISO); 94:20-24 (Bose, WSU).

[20] GETs Tr. Day 1, 80:6-12, 114:17–115:3 (Bose, WSU).

[21] GETs Tr. Day 1, 90:18-23 (Bradish, AEP).

transmission owner ("TO") or developer, or by different TOs or developers— in varied configurations and conditions on a dynamic AC grid made up of parts owned and maintained by a variety of entities. In this context, the potential for unintended consequences from widespread applications of new GETs is real. And the failure to adequately understand and anticipate such consequences can have direct effects on electric service. For example, although in a different subsector of the industry, experience with widespread deployment revealed a lack of clear understanding of what inverter-based resource technology is capable of and how the controls respond to various system conditions, causing unreliable operations.[22]

If the Commission wants to advance GETs, it would be wise to focus on the technological maturity obstacles identified at the conference and take appropriate steps to overcome them, rather than looking toward rate incentives that will not address the real challenges, and will make technologies claimed to be low-cost and low-risk expensive for consumers. Rate incentives are the wrong tool for the job; and granting them in this

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[22] *See 1,200 MW Fault Induced Solar Photovoltaic Resource Interruption Disturbance Report*, NERC (June 2017), https://www.nerc.com/pa/rrm/ea/1200_MW_Fault_Induced_Solar_Photovoltaic_Resource_/1200_MW_Fault_Induced_Solar_Photovoltaic_Resource_Interruption_Final.pdf; *900 MW Fault Induced Solar Photovoltaic Resource Interruption Disturbance Report*, NERC (Feb. 2018) https://www.nerc.com/pa/rrm/ea/October%209%202017%20Canyon%202%20Fire%20Disturbance%20Report/900%20MW%20Solar%20Photovoltaic%20Resource%20Interruption%20Disturbance%20Report.pdf. These major events resulted in NERC Alerts, one in 2017, *Industry Recommendation*, NERC (June 20, 2017), https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC%20Alert%20Loss%20of%20Solar%20Resources%20during%20Transmission%20Disturbance.pdf, and one in 2018, *Industry Recommendation*, NERC (May 1, 2018), https://www.nerc.com/pa/rrm/bpsa/Alerts%20DL/NERC_Alert_Loss_of_Solar_Resources_during_Transmission_Disturbance-II_2018.pdf. Evaluation of the impact of increasing deployment of inverter-based resources, and guidelines for actions that should be taken to mitigate adverse impacts on the bulk power system has continued. Reliability Guideline: Improvements to Interconnection Requirements for BPS-Connected Inverter-Based Resources, NERC (Sept. 2019), https://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Reliability_Guideline_IBR_Interconnection_Requirements_Improvements.pdf.

context is inconsistent with the Federal Power Act's ("FPA") requirement, expressly made applicable to incentives by Section 219(d), 16 U.S.C. § 824s(d), that to be just and reasonable, incentives must be "in fact needed, and no more than is needed, for the purpose."[23]

B. The Commission can and should take steps other than incentives to meaningfully promote worthy grid-enhancing technologies

TAPS urges the Commission to take steps other than incentives to mitigate the identified challenges to deployment of worthy technologies, many of which were described by TAPS panelist Steve Leovy in his written statement and comments at the Workshop. We highlight several here:

- The Commission should make clear that it expects TOs to adopt low-cost, low-risk grid-enhancing technologies as part of good utility practice required by Commission tariff and other obligations.[24] A Commission statement as to what it expects from TOs to meet their tariff obligations can go a long way.[25] As described by TAPS panelist Leovy:[26]

> Standard best practice evolves over time. Utilities didn't need special incentives. . . to get rid of copper conductors

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[23] *City of Detroit v. FPC*, 230 F.2d 810, 817 (D.C. Cir. 1955) (quoted in TAPS Incentives NOI Reply Comments at 23). *Accord Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1503 (D.C. Cir. 1984). *See also Promoting Transmission Investment Through Pricing Reform*, Order No. 679-A, 117 FERC ¶ 61,345, PP 25, 27 (incentives are awarded only where they "materially affect" decisions and are "tailored to address the demonstrable risks or challenges") (2006), *clarified*, 119 FERC ¶ 61,062007).

[24] As discussed in response to Question 1, the PJM and MISO market monitors also urge that AAR application be required.

[25] Leovy Statement at 2; GETs Tr. Day 2, 242:9–243:8. Indeed, prior to enactment of FPA Section 215, which authorized this Commission to approve NERC reliability standards as mandatory and enforceable, the Commission issued a policy statement making adherence to then-existing NERC guidelines part of good utility practice required by tariffs. *Policy Statement on Matters Related to Bulk Power System Reliability*, 107 FERC ¶ 61,052, P 23-25 ("[T]he Commission interprets the term 'Good Utility Practice' [as included in Commission open access tariffs] to include compliance with NERC reliability standards . . . . [T]he Commission expects ISOs and RTOs to perform their functions consistent with NERC reliability standards . . . . A failure to comply with such industry standards could in some circumstances affect Commission determinations as to whether rates are just and reasonable. For example, it may be appropriate to deny full cost recovery in circumstances where a transmission provider fails to provide full reliability of service."), *clarified*, 108 FERC ¶ 61,288 (2004).

[26] GETs Tr. Day 2, 242:20–243:4 (Leovy, TAPS).

> and start installing aluminum conductors . . . . [T]he proposal to put incentives into this mix . . . risks rewarding late adopters.

Mr. Leovy explained that, contrary to WATT panelist Gramlich's suggestion that given the introduction of competition in the 1990's, good utility practice is unlikely to change behavior,[27] "We haven't stopped innovation since the [1990s]. Changes in what's regarded as good utility practice haven't stopped since the [1990s], they continue to move."[28] Indeed, TO Workshop panelists described their interest in pursuing advanced technologies, as confirmed in their efforts to do so.[29]

- The Commission can require RTOs to accommodate grid-enhancing technologies, where appropriate, with protections against discriminatory application.[30] This action would provide the platform necessary for GETs to be evaluated and deployed. Based on testimony at the MTLR Technical Conference and GET Workshop, this would be appropriate for Dynamic Line Rating ("DLR") technologies, which should *not* be required as a part of good utility practice at this point, given the additional complexity, security risks, and costs, relative to the potential incremental gains from DLRs versus AARs.[31]

- The Commission could require consideration of grid-enhancing technologies through Order 890 and Order 1000 planning processes.[32] The Commission should not allow the introduction of such technology to be treated as "asset management" with only potentially limited or no Order 890 planning review.[33] Given the potential for these devices to "fight each other,"[34] and the need for direct involvement of RTO operators and integration into RTO systems,[35] there needs to be a robust, open, and transparent

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[27] GETs Tr. Day 2, 250:6-12 (Gramlich, WATT).

[28] GETs Tr. Day 2, 257:24–258:2 (Leovy, TAPS).

[29] GETs Tr. Day 2, 234:6-17 (McKee, ATC/MISO TOs); GETs Tr. Day 1, 130:17–131:2 (Kormos, Exelon); 76:1-16 (Bradish, AEP); 73:3-10, 74:3-15 (Hackman, Ameren).

[30] *See* Leovy Statement at 3; TAPS MTLR Comments at 6-7.

[31] *See* TAPS MTLR Comments at 10-11.

[32] *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119 ("Order 890"), *order on reh'g and clarification*, Order No. 890-A, 121 FERC ¶ 61,297 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g and clarification*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009). *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, 136 FERC ¶ 61,051 (2011) ("Order 1000"), *reh'g denied*, Order No. 1000-A, 139 FERC ¶ 61,132, *on reh'g*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012), *review denied sub nom. S.C. Pub. Serv. Auth. v. FERC*, 762 F.3d 41 (D.C. Cir. 2014) (per curiam).

[33] *See Cal. Pub. Util. Comm'n v. Pac. Gas & Elec. Co.*, 164 FERC ¶ 61,161, PP 66-67, 71 (2018), *reh'g denied*, 108 FERC ¶ 61,171 (2019).

[34] *See* GETs Tr. Day 1, 114:18-22 (Bose, WSU).

[35] GETs Tr. Day 2, 243:14-20 (Leovy, TAPS); 283:16–284:24 (Glazer, PJM).

review by RTO and stakeholders. The entity proposing deployment of GET must provide sufficient information so that it can be fully evaluated, providing vendors a strong impetus to eliminate artificial proprietary information barriers they may be erecting.

- The Commission should require better integration of new technologies into the Order 1000 competitive process.[36] Continued Commission attention to these competitive processes, especially with respect to low-cost alternatives, could be helpful in promoting deployment of GETs. For that competition to be real, technologies must be able to compete with each other, as well as with transmission solutions without GETs. For example, an RTO should be able to identify an area of the system that might benefit from GETs and solicit competitive proposals. By providing a real opportunity for competition among technologies, as well as with transmission solutions, the Commission would put these technologies to the competitive test while enhancing consumer benefits. Integrating consideration of new technologies into existing RTO planning processes would also be consistent with the strong preference, expressed by RTO panelists at the GET Workshop, not to create a separate new process for evaluating GETs and their benefits.[37]

  TAPS does not support benefits-based above-cost incentives for GETs. *See* response to Question 3. We note that the GridPolicy Inc. proposal offered at the Workshop by former Chairman Wellinghoff modifies WATT's shared-saving proposal by adding a "competitive market-based selection criteria component" which will "have the impact of reducing costs . . . for consumers."[38] Competition, however, can only be effective in disciplining the price of GETs (including requested incentives) if competitors are able to install and operate GETs independently from the TO whose facilities are being "enhanced."

  If, notwithstanding their serious problems, the Commission were to allow above-cost incentives for grid-enhancing technologies, the requested incentive should be included in the proposal submitted as part of the planning process to enable it to be considered when determining which project is selected through the competitive process.

- The Commission can directly address the concerns raised at the Workshop by supporting pilot projects, as described in response to Question 6. By doing so in a manner that requires transparency as to the results, the Commission can help move more grid-enhancing technologies into the proven, "standard practice" category that TOs should be expected to adopt.

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[36] Leovy Statement at 9.

[37] *See* TAPS' response to Question 3, below.

[38] Wellinghoff Statement 1 (Nov. 22, 2019), eLibrary No. 20191112-4024 ("Wellinghoff Statement").

- The Commission can use its bully pulpit to highlight successful grid-enhancing technologies that are willing to be transparent about how they operate, along with spotlighting the TO and RTO that supported them. This can be achieved through Commission selection of panelists to be featured at an annual Commission technology conference, or some conference to be held in conjunction with meetings of the National Association of Regulatory Utility Commissioners, for example. Doing so will help spur confidence in deployments and may ease retail cost recovery.

The Workshop also made clear what the Commission should *not* do to promote grid-enhancing technologies—i.e., grant incentives to technology that are not based on risks and challenges. As explained by PJM's market monitor, given the inflated returns for construction of projects, it would be impossible to create an incentive system that will sufficiently "incent" TOs to forego transmission solutions in favor of grid enhancing technologies.[39] As described in response to Question 3, the shared-savings approaches discussed at the Workshop should not be adopted. Nor should the Commission allow greater flexibility to capitalize grid-enhancing technologies.[40]

And the alternative suggestion in WATT's reply comments in the Incentives NOI proceeding,[41] that to incent grid-enhancing technologies, ROE adders should be applied to the TO's *entire transmission rate base* (rather than applying the adder to the cost of the investment in grid-enhancing technology being incented) should be rejected as grossly unjust and unreasonable, contrary to the directive of FPA Section 219(d).

> ***Question 3: In discussion at the workshop of the "shared savings" approach for the deployment of GETs to existing transmission assets, workshop participants expressed general ratemaking concerns, and identified implementation issues, such as the measurement of benefits and distribution of***

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[39] GETs Tr. Day 2, 306:12–307:3 (Bowring, Monitoring Analytics).

[40] Leovy Statement at 13-14. *See also* TAPS Incentives NOI Reply Comments at 9-16; TAPS MTLR Comments at 3-6.

[41] Reply Comments of the WATT Coalition 2, *Inquiry Regarding the Commission's Transmission Electric Incentives Policy*, Docket No. PL19-3 (Aug. 26, 2019), eLibrary No. 20190826-5082.

payments. Please provide comment on the proposed ratemaking structure and any implementation challenges.

As discussed in TAPS' prior comments, the Commission should reject the "shared savings" approach for the deployment of GETs.[42] During the GET Workshop, Mr. Joseph Bowring (Monitoring Analytics, LLC) explained that "[b]enefit sharing . . . is a terrible idea," that results in an implied rate of return that is "uncapped" and "massively high."[43] While the proposals from WATT and former Chairman Wellinghoff discussed at the Workshop differ in details (e.g., the percentage of total projected production cost savings handed over to those installing GETs, rather than ratepayers; the length of the period over which "shared savings" payments are to be made to those installing GETs), neither remedies the fundamental defects that render "shared savings" incentives unjust and unreasonable. And although former Chairman Wellinghoff's attempt to leverage a competitive process is a potentially significant improvement over the WATT proposal (which simply grants monopoly rents to TOs),[44] it is unclear how to harness competition in this context. Competition can only discipline prices if potential competitors can install and operate GETs independently from the TO whose grid facilities are being "enhanced"; and the discussion at the MTLR Technical Conference and GET Workshop did not explain how that could be achieved.

GET Workshop panelists, moreover, confirmed basic problems with the shared-savings approach. Panelists representing the RTOs and independent market monitors ("IMMs"), for example, agreed that it would be impossible to quantify the future benefits

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[42] TAPS Incentives NOI Reply Comments at 23-30; TAPS MTLR Comments at 3-6; Leovy Statement at 10-12.

[43] GETs Tr. Day 2, 307:17, 320:19 (Bowring, Monitoring Analytics).

[44] Wellinghoff Statement at 1. GETs Tr. Day 2, 222-25, 246-47, 270-72 (Wellinghoff, Grid Policy).

from GETs accurately.[45] Panelists stated that existing RTO benefits calculations are sufficient to enable transmission planners to evaluate the *relative* benefits of competing alternatives; but they explained that using those methodologies to calculate an *absolute* level of benefits to include an above-cost incentive in rates would be inappropriate.[46] As Neil Millar of the CAISO succinctly summarized, "I think we would have trouble defending that ourselves as a credible value."[47]

RTO panelists also strongly opposed the creation of a separate process, outside existing RTO planning processes, for calculating shared-savings benefits from GETs. NYISO panelist Lin, for example, warned that creating such a separate process could

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[45] *See*, *e.g.*, GETs Tr. Day 2, 312:7-9 (Patton, Potomac Economics) ("The idea that you could calculate benefits that are even close to accurate, especially when you go out in time, it's just not realistic."), 321; 316:24–317:2 (Glazer, PJM) ("Can we calculate [the benefit]? Yes. What you then do with the calculation in terms of setting rates is I think those two are very different questions. I wouldn't answer the second one the same way as the first one."); 317:21–318:18 (Millar, CAISO) ("our economic evaluations are an important part of our transmission planning process . . . . We do put a lot of effort into that . . . . But to take one of those and say well we at the ISO are going to put a pin in this one and say that is valid for ratemaking purposes, we would have a lot of trouble with that . . . We could . . . follow a very prescribed set of assumptions and say okay, we will do the math for you, but that's where it would end because the long-term responsibility for that being a valid number for a very specific forecast, very specific set of outcomes, and landing on a long-term rate based on that, I think we would have trouble defending that ourselves as a credible value."); 320:7-10 (Bowring, Monitoring Analytics) ("So, yes, of course, [the RTO] can do [benefits] calculations, but they're wrong, and they're not going to be right over time and they're not a good basis for compensating people."); *See also* Leovy Statement at 12.

[46] *See supra* note 43. *See also* GETs Tr. Day 2, 317-18 (Millar, CAISO); 319:1-4 (Lin, NY ISO) ("In FERC Order [1000], the projects are compared against each other, not necessarily just on a benchmarking case, so we were able to come up with meaningful results from there."); 288:18–289:3 (Glazer, PJM) ("If we now link the incentive to the individual cost benefit analysis we're doing, I guarantee you every one of those will be litigated . . . . If we're going to litigate the cost benefit on each one of those because now there's all these ratemaking incentives, we're going to be sitting here two-three years from now regretting what we did."); 308:15-21 (Bowring, Monitoring Analytics) ("[T]he idea that benefit sharing . . . is an appropriate way to do incentives technology is incorrect."); 239:18–240:1 (Leovy) ("[T]his is a significant problem . . . with these incentives proposals is that we're basing incentives on something that's difficult to estimate.")

[47] GETs Tr. Day 2, 318:16-17.

disrupt NYISO's existing Order 1000 planning process that is finally working.[48]

Similarly, CAISO panelist Millar testified that:[49]

> we are concerned about having a second process overlaid on top of the one we already have in creating duplication and perhaps conflict, with people promoting one set of solutions on one side, a different competing set of solutions through the other process, and having to sort out through some litigation which process is supposed to prevail.

Even assuming that it were possible to develop a methodology to accurately calculate an absolute level of benefits, identifying the appropriate baseline against which to measure those benefits will also pose significant challenges. David Patton (Potomac Economics, Ltd) suggested that any shared-savings incentive for Dynamic Line Ratings should be based on only the incremental benefit realized from DLR, above and beyond the benefits that could be achieved from AARs.[50] And as TAPS previously explained, the Commission should not provide above-cost incentives for investments that TOs already have an obligation to make.[51] Granting incentives for deploying technology that should have been implemented earlier based on good utility practice inappropriately rewards late-adopters, and will create an incentive for TOs to hold the system hostage by delaying implementation of appropriate solutions or, even worse, exacerbating problems, in hopes of later receiving an increased award,[52] as a "'bonus' for good behavior."[53]

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[48] GETs Tr. Day 2, 334. *See also* TAPS Incentives NOI Initial Comments (at 29-30; see also 43-51), which likewise warned that creation of a benefits-based incentives system, separate from existing Order 890/1000 planning processes, would undermine the transmission planning processes which the Commission, RTOs, and stakeholders have worked hard to foster.

[49] GETs Tr. Day 2, 333:20-25 (Millar, CAISO). *See also* GETs Tr. Day 2, 286 (Glazer, PJM), 296 (Millar, CAISO).

[50] GETs Tr. Day 2, 321 (Patton, Potomac Economics).

[51] TAPS Incentives NOI Initial Comments at 34-37.

[52] Leovy Statement at 12.

Contrary to statements made by Robert Gramlich (WATT) during the Workshop,[54] adopting a shared-savings incentives approach will *not* make life easier for the Commission. Craig Glazer of PJM warned that shared-savings incentives could make RTO planning processes more contentious and litigious; and he posited that the risk of litigation created by a such an approach would lead to parties "sitting here two or three years from now regretting what we did."[55] The procedural and administrative burdens of this approach will be enormous. Since the RTOs have made clear that they cannot attest that their benefits methodologies accurately quantify absolute benefits,[56] the task of doing so will fall to the Commission. Given the many assumptions and questions of fact that necessarily factor into any estimate of future benefits, at minimum an evidentiary hearing, with discovery, will be needed before granting shared-savings incentives in any case.

> ***Question 4: Referring to the technologies mentioned in Question 1, some workshop participants indicated that RTOs/ISOs consider qualitative benefits, including certain reliability and flexibility attributes, in the regional transmission planning process. How do RTOs/ISOs currently measure or consider these benefits? Please provide examples.***

Based on TAPS members interaction with RTOs as stakeholders, RTOs focus on quantifiable benefits, not qualitative benefits, in their regional transmission planning processes. For example, MISO and its stakeholders have generally restricted the focus of transmission planning to economic benefits quantified by Adjusted Production Cost

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[53] *Promoting Transmission through Pricing Reform*, Order No. 679, 116 FERC ¶ 61,057, P 26 (2006) (rightly rejecting such bonuses) (subsequent history omitted).

[54] *See* GETs Tr. Day 2, 249:6-21, 250:11-22; *See also* Gramlich Statement 2-3 (Nov. 12, 2019), eLibrary No. 20191112-4020.

[55] GETs Tr. Day 2, 289:2-3 (Glazer, PJM).

[56] *See supra* note 43.

savings or transmission additions required to cure reliability problems and satisfy NERC planning standards.[57] Southwest Power Pool similarly focuses on quantitative criteria, using production cost modeling for selecting economic projects.

Question 5: What software or other changes would an RTO/ISO need to make to implement GETs? As more of these technologies come onto the system, what challenges exist for coordinating their control in terms of analytics, automation, and optimization?

As discussed in response to Question 2, RTOs should be required to accommodate grid-enhancing technologies, where appropriate, with protections against discriminatory application. For example, based on the Managing Transmission Line Ratings Technical Conference and the GET Workshop, RTOs should be required to modify their systems to accommodate AARs and DLRs in real-time markets.[58]

RTOs, however, must have the authority to assess the value and risks of deploying new technologies beyond AARs and DLRs, and to determine whether the costs of changing RTO systems to support them is justified by the benefits. Integration of new technologies will pose significant challenges. As discussed above, many of the new technologies discussed at the GET Workshop are still unproven; and the fragmented ownership of RTO transmission grids will complicate integration since there may well be multiple proprietary technology products from different vendors operating simultaneously within any given RTO. RTOs will be on the frontlines—dealing with

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[57] This focus is evident from MISO's pending January 21, 2020 filing in Docket No. ER20-857, which proposes to add to Market Efficiency Projects metrics for Avoided Reliability Project Savings and MISO-SPP Settlement Agreement costs. MISO Tariff Filing, *Midcontinent Indep. Sys. Operator, Inc*., Docket No. ER20-857-000 (Jan. 21, 2020), eLibrary No. 20200121-5099.

[58] Leovy Statement at 3, 7-9; GETs Tr. Day 2, 243:14-20 (Leovy, TAPS); TAPS Incentives NOI Reply Comments at 28-29.

problems that may emerge when a given technology is deployed beyond a few isolated locations, or when GET devices interact in unexpected ways.

Finally, RTOs must guard against discriminatory application of new technologies. Safeguards must be developed to assure that TOs do not use or selectively deploy GETs to advantage their own generation while disadvantaging generation owned by others.[59]

> ***Question 6: Workshop participants discussed the benefits of pilot programs. Should the Commission encourage the testing and deployment of technologies that increase the capacity, efficiency, or reliability of transmission facilities through pilot programs and demonstration projects? If so, is there regulatory support that the Commission could provide to support and encourage such efforts? Could the Commission use its transmission incentives policy to encourage such pilot programs and demonstration projects? If so, please describe how the Commission could do so.***

Funding through the United States Department of Energy's ("DOE") grant-making authority is the most effective and fair way to support pilot programs. It would allow pilot proposals to be evaluated on a consistent basis, apply reasonable terms and conditions on all pilots that receive grants, identify clear performance and financial reporting requirements, and assure that pilot results are widely shared. TAPS urges the Commission to coordinate with DOE regarding its efforts to promote new technologies.

If the Commission seeks to separately support pilots through ratepayer funding, it could take regulatory steps to assure cost recovery if the pilot has been evaluated and approved by the RTO in a transparent process, and pilot results are made broadly available. Giving RTOs a role in evaluating and selecting pilots can help assure that ratepayer funds are spent wisely and build confidence that pilot results can be generalized. Such an approach would also allow RTOs to focus pilots on efforts to understand and evaluate the interaction among devices (*see* response to Question 5), and

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[59] TAPS MTLR Comments at 6-7.

to help new technologies achieve the "proven" status needed before they can be widely deployed.

Consistent with Order 1000 cost allocation principles, the allocation of pilot costs should be clear and transparent and fully considered in the RTO process in which the technology pilot is approved. Recipients of ratepayer funding for a GET pilot should also be required to broadly share the results. Information-sharing requirements will help support confidence that pilot results are meaningful and not being selectively reported for marketing purposes, reduce duplicative pilots, identify limitations and concerns with new technologies, and inform decisions on broader deployment.

To avoid disproportionate or otherwise unreasonable expenditures of ratepayer funds, the scale and cost of GET pilots funded through transmission rates should be limited by both a per-pilot cap and a cap on the total pilot expenditures of any given RTO in a given year. To help keep costs down, pilots that may involve broad deployment of GETs should, to the extent possible, be handled competitively through the Order 1000 process.

Although the Commission's current ratemaking practice already favors full cost recovery for new technology pilots, Commission preapproval of the prudence of GET pilots that receive RTO approval through this pilot program process would ensure cost recovery even if the technology does not prove effective. It could also help assure state cost recovery to the extent such costs are included in bundled retail rates, and alleviate any residual cost and risk of being a "first mover" with respect to deploying new technologies.

The Commission is also uniquely positioned to support the industry's adoption of new technologies by broadly disseminating information. The Managing Transmission Line Ratings Technical Conference and Staff Report, for example, significantly raised awareness of both AAR and DLR technologies, and have accelerated development of an industry consensus that much wider deployment of AARs is warranted and could provide significant benefits. The Commission can provide a valuable national stage for new technologies and spur their adoption through periodic events that spotlight and widely publicize information on emerging and proven technologies, pilots that have demonstrated effective and cost-efficient implementation of GETs, and TOs that have successful broader GET deployments.

TAPS, however, strongly opposes granting above-cost incentives to pilots. Under existing Commission policy, the door is already open for TOs to seek risks-and-challenges incentives. As discussed in TAPS' prior submissions, additional incentives are unwarranted as a general matter.[60] Those seeking to promote these technologies, and TOs that partner with them, will be well-positioned to reap significant rewards if the GETs they pilot prove successful. If cost recovery for pilots is assured as described above, no additional incentives are necessary to promote TO participation in GET pilots.

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[60] Leovy Statement at 2, 10-13, TAPS MTLR Comments at 3-6; TAPS Incentives NOI Reply Comments at 23-30.

CONCLUSION

The Commission should take steps to encourage grid-enhancing technologies consistent with TAPS Comments.

Respectfully submitted,

/s/ Cynthia S. Bogorad

Cynthia S. Bogorad
William Huang
Amanda Drennen

Attorneys for
Transmission Access Policy Study Group

Law Offices of:
Spiegel & McDiarmid LLP
1875 Eye Street, NW
Suite 700
Washington, DC 20006
(202) 879-4000

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CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing document to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated on this 14th day of February, 2020.

/s/ Cynthia S. Bogorad
Cynthia S. Bogorad

Law Offices of:
Spiegel & McDiarmid LLP
1875 Eye Street, NW
Suite 700
Washington, DC 20006
(202) 879-4000