UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

Inquiry Regarding the Commission's	**)**	**PL19-3-000**
Transmission Electric Incentives Policy	**)**	

WATT COALITION REPLY COMMENTS

August 26, 2019

"The managers of the network… were given incentives that would pay them more if congestion (and thus the cost of redispatch from cheap to expensive power plants) were diminished. This incentive led to low-cost investment that reduced congestion, to the benefit of electricity consumers."[1]

– Dr. Jean Tirole, Winner of the Nobel Prize in Economics in 2014 for his research on regulating natural monopolies. Quote refers to British electric industry regulatory regime.

I. Introduction

We appreciate the opportunity to respond to other comments in this proceeding. The WATT Coalition is a signatory to joint comments with the Grid Advancement Coalition. In this comment we address others' comments and questions regarding the specific topic of incentives for operating the existing network more efficiently, which is our focus.

II. A grid operation incentive was supported by a large and diverse set of stakeholders.

Twenty-three organizations submitted initial comments in this proceeding supporting some form of incentive for operating the existing network more efficiently. The organizations are listed in the Appendix to this comment along with the relevant statements made by each organization. This reflects wide and deep support for the Commission to take action of the sort requested by the WATT Coalition. This issue is much less controversial than other issues in the proceeding. It is also a separate and separable issue from all the others, so focused action on this issue need not wait for resolution of all the other issues.

III. A Variety of Approaches May Work

[1] Jean Tirole, 2017, Economics for the Common Good, Princeton University Press, p. 462.

Our initial comments provided a review of different approaches employed in Great Britain and Australia. We provided one specific option to further the discussion. That does not mean it is the only option. We believe other commenters will be suggesting alternatives including some that are not based on measurable congestion cost reduction. The Commission may wish to consider a variety of approaches, and allow a variety of approaches to be used in different situations.

Approaches based on Return on Equity (ROE) may be possible, and may fit in with the Commission's actions in other aspects of this NOI. The Commission should keep in mind that the ROE may need to be on the full rate base of the transmission owner, because with low capital cost investments such as those advocated by the WATT Coalition, the return on equity for the invested capital for the project can be miniscule and would not motivate any changed behavior. FERC incentives under Order 679 apply to specific projects, not the whole system. We are open to the idea of an ROE adder, however we believe a better approach is the shared savings approach.

The initial comments submitted by WATT contained an outline for two separate proposals – one focused on the advanced planning timeframe and one focused on the operations planning time frame. We see them as complimentary, yet separate, and think that opportunities exist for efficiency improvements in both time horizons.

IV. The WATT Coalition proposal is implementable and benefits consumers

We not yet seen much in response since reply comments have not yet been submitted. We look forward to seeing comments and are open to alternative approaches.

One concern we heard was about what types of technologies would qualify, and specifically whether technologies and activities that are not traditionally considered "transmission" would qualify. We suggested the following definition: "hardware, software and associated protocols applied to existing transmission facilities that increase the network's operational transfer capacity." This technology-neutral definition would include DLR, Topology Optimization, and Power Flow Control, and likely others now or in the future. These technologies are clearly part of the transmission delivery system. It was not our intent to stretch the boundary of what is considered transmission. Also our proposal is only addressing operations of the existing network and thus for this incentive as part of 219b3, new conductors and other such forms of new transmission lines and assets would not be included.

We have heard of some utility interest in aggregations of projects. That is a great idea from our perspective. Dynamic Line Ratings and topology and power flow control all complement each other and fit together well, and deployments can be done on different parts of the network.

The only other specific proposal of which we are aware is that of Potomac Economics. We consider that proposal conceptually consistent with the WATT Coalition proposal, as it provides for utility sharing in the savings from dynamically rating lines. That proposal only specifically addresses line ratings so would need to be broadened to include other technologies and practices that increase delivery over existing lines.

V. We request a near-term policy statement and a longer-term rulemaking

We urge the Commission to act with haste to provide opportunities for utilities to adopt incentives for operating their networks more efficiently. We are pleased with the Commission's Technical Conference on Dynamic Line Ratings September 10-11. Further public discussion of the related technologies of power flow and topology control, and the incentives affecting deployment of all of these technologies would also be beneficial. We also support the following formal actions:

Near-term Policy Statement

We urge the Commission to issue a Policy Statement inviting proposals under FPA Section 205 and 219. This action could be taken this fall, and utility filings could be filed by the end of 2019. The Commission could accept or reject the proposals on a case by case basis, and the whole industry could learn from experience. It is worth considering that open access transmission tariffs were developed individually in the 1990s before they were standardized in Order No. 888. In the Policy Statement, the Commission could lay out guidelines for applicants and intervenors on policy standards. It could offer a strawman approach while inviting alternatives. The Commission could clarify how FPA Section 219 can be invoked, within the current "risks and challenges" criteria. We believe there are sufficient "challenges" for utilities to change the way they rate and operate lines that the current criteria can apply.

Request for Rulemaking

In the longer term, we urge the Commission to undertake a rule-making to change the current regulations on "risks and challenges" to also allow for "benefits" criteria under Section 219. The WATT Coalition proposal is based on benefits, and we believe that is consistent with the FPA for the legal reasons discussed below. We recognize that a rule-making would be needed to make this change to the criteria.

VI. The incentive proposed by the WATT Coalition is reasonable in size

A shared savings approach based on the quantifiable congestion cost reduction benefits at the levels proposed in the WATT Coalition comments is reasonable in size. It is important to note that these investments tend to be on the order of 1 percent of the size of new transmission lines, so the risks of consumer harm are minimal in comparison. Some risk is inherent in all economic regulation, as decisions must be made on imperfect information. But it is important from a consumer perspective to consider the range of possible positive and negative impacts which in this case are *de minimus* relative to other decisions that are frequently made in the transmission sector.

The *ex ante*, or prospective, aspect of the WATT Coalition proposal makes it very conservative. Congestion after-the-fact tends to be much greater than what is predicted in advance. Models

predicting congestion in advance tend to have more facilities in operation while in reality more assets get taken out of service creating congestion that wasn't expected ahead of time, as described by Chang, Pfeifenberger, and Hagerty.[2]

The proposal is reasonable in size compared to typical project and asset returns. As described in the Smart Wires reply comments, the ROE equivalent of the shared savings approach is 13 percent, for a project with a 2 to 1 benefit/cost ratio under standard assumptions. For such a project, consumers benefit by $36 million for a $25 million project.

VII. The WATT proposal is within Commission legal authority and meets the just and reasonable standard

The Commission would be well within its authority to approve the WATT proposal. The relevant text in FPA 219 states:

> "16 U.S. Code § 824s. Transmission infrastructure investment
>
> (a) Rulemaking requirement. Not later than 1 year after August 8, 2005, the Commission shall establish, by rule, incentive-based (including performance-based) rate treatments for the transmission of electric energy in interstate commerce by public utilities for the purpose of benefitting consumers by ensuring reliability and reducing the cost of delivered power by reducing transmission congestion.

[22] Chang, Pfeifenberger, and Hagerty, The Benefits of Electric Transmission: Identifying and Analyzing the Value of Investments, July 2013, pages 35-46, https://brattlefiles.blob.core.windows.net/files/6257_the_benefits_of_electric_transmission_-_identifying_and_analyzing_the_value_of_investments_chang_pfeifenberger_hagerty_jul_2013.pdf . "PROMOD's assumption of a fully intact transmission system is perhaps the most intuitive reason for why the simulations tend to understate congestion and curtailments. By assuming that transmission facilities are available 100 percent of the time, the simulation analyses tend to under-estimate both congestion and curtailments. This is because outages, when they occur, typically cause transmission constraints to bind more frequently and increase transmission congestion and the associated customer costs significantly. For example, a 2005 study of PJM assessed the impact of transmission outages. That analysis showed that without transmission outages, total PJM congestion charges would have been 20 percent lower; the value of FTRs from the AEP Generation Hub to the PJM Eastern Hub would have been 37 percent lower; the value of FTRs into Atlantic Electric, for example, would have been more than 50 percent lower; and that simulations without outages generally understated prices in eastern PJM load zones and overall west-east price differentials." Pp 37-39. "Similarly, uncertainties associated with load, generation, and outages can impose additional costs during unexpected real-time conditions, including over-generation conditions that impose additional congestion costs. For example, comparing the number of negatively priced hours in the real-time versus the day-ahead markets in the ComEd load zone of PJM provides an example of how dramatically load and intermittent resource conditions can change. From 2008 to 2010, there were 763 negatively priced hours in the real-time market, but only 99 negatively priced hours in the day-ahead market. The increase in negative prices in the real-time, relative to the day-ahead, market is due to the combined effects of lower-than-anticipated loads with the significantly higher-than-predicted output of intermittent wind resources. While this example illustrates the impact of uncertainties within the day-ahead time frame, traditional production cost simulations approximate day-ahead conditions (i.e., perfect foresight) and consequently do not consider these uncertainties and their impacts." P. 41.

(b) Contents. The rule shall—

(1) promote reliable and economically efficient transmission and generation of electricity by promoting capital investment in the enlargement, improvement, maintenance, and operation of all facilities for the transmission of electric energy in interstate commerce, regardless of the ownership of the facilities;
(2) provide a return on equity that attracts new investment in transmission facilities (including related transmission technologies);
(3) encourage deployment of transmission technologies and other measures to increase the capacity and efficiency of existing transmission facilities and improve the operation of the facilities; and
(4) allow recovery of—

(A) all prudently incurred costs necessary to comply with mandatory reliability standards issued pursuant to section 824o of this title; and
(B) all prudently incurred costs related to transmission infrastructure development pursuant to section 824p of this title.

(c) Incentives. In the rule issued under this section, the Commission shall, to the extent within its jurisdiction, provide for incentives to each transmitting utility or electric utility that joins a Transmission Organization. The Commission shall ensure that any costs recoverable pursuant to this subsection may be recovered by such utility through the transmission rates charged by such utility or through the transmission rates charged by the Transmission Organization that provides transmission service to such utility.

(d) Just and reasonable rates. All rates approved under the rules adopted pursuant to this section, including any revisions to the rules, are subject to the requirements of sections 824d and 824e of this title that all rates, charges, terms, and conditions be just and reasonable and not unduly discriminatory or preferential."

The Commission has broad discretion in reviewing and setting jurisdictional rates. The J&R standard in FPA 205 and FPA 219 can accommodate alternatives to straight cost-of-service ratemaking. For example, most wholesale rates are now market-based rates which are not based on cost of service. The direction from Congress in FPA 219 is essentially a direction to deviate from cost-of-service rates, but within the bounds of the just and reasonable standard. Shared savings power sales contracts have a long history in the electric industry, were approved as just and reasonable by the Commission, and were the foundation for trading within tight power pools.

FPA 219(a) expressly contemplates that "performance-based" rate treatments will be considered. Performance-based rates are deviations from straight cost-of-service ratemaking, providing added return to the utility for efficient performance. A ratemaking scheme that shares between the customers and the utility the benefits of particular transmission investments that are customer beneficial fits within the broad rubric of "performance-based rates."

FPA 219 directs FERC to adopt incentives policies "for the purpose of benefitting consumers," so benefits to consumers are a permissible consideration. The particular consumer benefits mentioned in FPA 219 are reliability and reduced congestion. The WATT proposal, described in our initial comment, includes a demonstration that there are net benefits to consumers after the incentive is paid. Thus consumers do benefit overall, after paying the incentive and paying less in congestion than they otherwise would.

We disagree with the Joint Comments which allege that the Commission cannot eliminate the "risks and challenges" test.[3] The Joint Comments urge the Commission to retain the current "risks and challenges" approach rather than substituting an approach that focuses on consumer benefits. The "risks and challenges" approach that is embedded in the current Order No. 679 policies is not required by, or even mentioned in, FPA Section 219. Under FERC's nexus test, an applicant is required to establish a nexus between the risks and challenges faced by a transmission developer, and the incentives requested. This approach is supported by the idea that any incentive rate treatment should be supported by a showing that the requested rate treatment will be an effective means of incenting the applicant to make the proposed investment or take the proposed action. But this nexus linkage is not in the statute – it is in FERC's existing policies. The Commission can change or supplement its current approach as long as it explains a rational basis for its change in course, and explains how the new course is within its statutory authority.

The Joint Comments state that moving from a risks and challenges approach to a consumer benefits approach "would sever the link between incentive and project investment necessary to comply with the FPA's just and reasonable requirement." The notion that FERC should provide incentives that are "just enough" to drive the construction of a needed project is not found in the FPA. The WATT proposal links the incentive to the consumer benefit, which is directly found in the law.

The Joint Comments point to three cases, discussed below, to support their legal argument. The cases do not provide compelling support for their claim.

[3] APPA, et al. state "The requirement to show a nexus between the incentives and project investment conforms the Commission's regulations to precedent requiring the Commission, in awarding rate incentives under the just and reasonable standard, to "see to it that the increase is in fact needed, and is no more than is needed, for the purpose." Evaluating applications for project-specific incentives to ensure that there is a nexus between the incentive and the applicant's investment decision is also necessary to verify that incentives are not awarded for actions that a utility has already taken or is already required to take. Thus, to the extent that the NOI is inquiring whether the Commission should eliminate the current "risks and challenges" component from its regulations, the answer is that the Commission cannot do so, as this would sever the link between incentive and project investment necessary to comply with the FPA's just and reasonable requirement, in contravention of FPA section 219." Joint Comments at 17 (footnotes omitted).

1) Farmers Union Cent. Exch. Inc. v. FERC, 734 F.2d 1486, 1503 (D.C. Cir. 1984) (quoting City of Detroit, 230 F.2d 810, 817 (D.C. Cir. 1955)). The Farmers Union precedent stands for the proposition that FERC must explain what it is doing and why it is doing it, when deviating from straight cost-of-service ratemaking. The precedent is also from a natural gas pipeline case, not electric transmission, and Section 219 did not apply to that instance as it does for electric transmission presently. The cited passage states:

> We recognize, of course, that "non-cost" factors may play a legitimate role in the setting of just and reasonable rates. In Williams, FERC invoked the need to stimulate additional oil pipeline capacity as one reason for setting maximum rates at such high levels. See supra at 1494–95. As this court has observed before, "[r]eliance on non-cost factors has been endorsed by the courts primarily in recognition of the need to stimulate new supplies." Consumers Union v. FPC, 510 F.2d 656, 660 (D.C.Cir.1974) (footnote omitted) (discussing Permian and Mobil Oil). However, in this case FERC failed to forecast or otherwise estimate the dimensions of the need for additional capacity, and did not even attempt to calibrate the relationship between increased rates and the attraction of new capital. See supra note 27.
>
> In the absence of such a reasoned inquiry, we cannot countenance FERC's approval of oil pipeline rates which, by FERC's own admission, ensure "creamy returns" to the carriers, 21 FERC at 61,650, and are "far more generous than those [rates] that [FERC] or other regulators give elsewhere," id. at 61,646. In a similar context, this court explained:
>
> > If the Commission contemplates increasing rates for the purpose of encouraging exploration and development ... it must see to it that the increase is in fact needed, and is no more than is needed, for the purpose. Further than this we think the Commission cannot go without additional authority from Congress.
>
> City of Detroit v. FPC, 230 F.2d 810, 817 (D.C.Cir.1955), cert. denied sub nom. Panhandle Eastern Pipe Line Co. v. City of Detroit, 352 U.S. 829, 77 S.Ct. 34, 1 L.Ed.2d 48 (1956); see San Antonio v. United States, 631 F.2d 831, 851–52 (D.C.Cir.1980) (ICC action, adding seven percent above costs in setting rates, is arbitrary and capricious because it lacks "adequate justification for [the] choice of a particular increment above fully allocated costs"), rev'd on other grounds sub nom. Burlington Northern, Inc. v. United States, 459 U.S. 1229, 103 S.Ct. 1238, 75 L.Ed.2d 471 (1983); Public Service Commission v. FERC, 589 F.2d at 553–54 (citing cases). In the Williams proceeding, FERC "made no attempt at all to verify the accuracy of its prediction that granting pipeline [rate] incentives will

spur increased investment." City of Charlottesville v. FERC, 661 F.2d 945, 955 (D.C.Cir.1981) (Wald, J., concurring). Indeed, FERC here failed to make its prediction with any specificity beyond the bald statement that "[e]verybody agrees that the nation needs and will need more pipeline plant." 21 FERC at 61,614.

2) San Diego Gas & Elec. Co. v. FERC, 913 F.3d 127, 137 (D.C. Cir. 2019). In this case, the Court sustained the Commission's decision to limit the coverage of an abandonment incentive granted to SDG&E to the period after the incentive was granted. There is no conflict between the WATT proposal and/or a shift to a forward-looking consumer benefits approach. The Joint Comments also point to language that "there must be a connection between the incentive and the conduct meant to be induced." The WATT proposal does contain such a direct connection.

3) City of Charlottesville v. FERC, 661 F.2d 945, 953-54 (D.C. Cir. 1981). In this 1981 gas case, the court found that FERC has authority to provide rate incentives, but that it had failed to offer substantial evidence for the incentives provided. The WATT proposal provides for a demonstration of benefits to be made before providing incentives. The relevant passage of this case states:

> "Thus, as justification for allowing the parent corporation to keep tax savings created by e & d companies by attributing stand-alone tax costs to the affiliates, the Commission suggests that retention will result in greater e & d. While the Commission did not fully explain its incentive theory, it appears that the incentive to invest may take effect in two ways: (1) a company may initially invest in e & d with the knowledge that some of the investment will be returned through a tax benefit for general use; or (2) a company may reinvest money returned by e & d losses. Under the first form of incentive, it would not matter to what use the returned investment is put since a company would spend more in the first place knowing that some of the money would be returned. Under the alternative formulation, the money returned via a tax benefit would have to be reinvested for the incentive to work.
>
> The Commission's reliance on the incentive effect of retained tax benefits is not supported by evidence in the record. There is no indication that Columbia's e & d investments were any greater after FERC's change in tax cost policy than before the supposed incentive was created. And it appears that there was only a partial incentive to reinvest. The FERC ALJ found that only a portion of the tax savings were routed to e & d companies, with the remainder being used for general corporate purposes.

> The Commission was obviously aware of the conflict between the evidence of record and the Commission declaration on the incentive effect of retained tax savings. Commission counsel attempted to excuse the disparity between the savings retained and tax savings devoted to e & d. The Commission urged in its brief that tax savings not directly reinvested eventually find their way to the e & d companies since the parent company finances exploration and development.46 The Commission cites no evidence that tax savings "trickle down" from the parent e & d affiliates. FERC asks this Court to take it on faith that such funneling of tax savings does occur.
>
> For this Court to uphold the Commission, we must determine that the rate order was premised on substantial evidence. We find evidence of the incentive effect offered as justification for corporate retention of tax savings insubstantial. Moreover, there is substantial evidence that retained tax savings go for general corporate purposes.
>
> When the Commission acts in its ratemaking role, it must act with statutory authority and factual support. Having determined that the Commission had the statutory authority in this case, we reverse because the Commission's orders were not based upon substantial evidence. [footnotes omitted]"

Based on the foregoing, we believe the Commission would be acting within its authority to approve the WATT proposal as just and reasonable. We recognize that to the extent that FERC adopts a different or expanded policy on transmission rate incentives, which would be subject to rehearing and judicial review, it would need to would need to (1) point to substantial evidence in the record that would be developed in the rulemaking/policy process, (2) explain why it is deviating from its prior policy; and (3) explain how the new approach is within its statutory authority.

VIII. Conclusion

We appreciate the discussion the Commission has begun with the industry. We urge the Commission to undertake the formal actions described herein to make rates more just and reasonable rates and allow the Commission to comply with Congress' explicit direction in FPA Section 219(b)3.

Respectfully submitted,

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On behalf of the WATT Coalition: Ampacimon, Lindsey Manufacturing, LineVision, NewGrid, Smart Wires, and WindSim

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202-821-6943

August 26, 2019

Appendix: Supporters of an incentive for operating the existing grid more efficiently

Entities that provided comments in support of incentives for operating the existing network more efficiently include:

1. Advanced Energy Economy
2. Advanced Energy Management Alliance
3. Alliant Energy Corporate Service, Inc. and DTE Electric Company (Collectively, "Certain TDUs [Transmission Dependent Utilities]")
4. American Council on Renewable Energy
5. American Electric Power Company, Inc.
6. Americans for a Clean Energy Grid
7. American Wind Energy Association
8. Ameren Services Company
9. Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc.
10. Duke Energy Corporation
11. Edison Electric Institute
12. Energy Storage Association
13. ITC Holdings Corp.
14. National Electrical Manufacturers Association (NEMA)
15. National Grid USA
16. Oklahoma Corporation Commission ("OCC") Public Utility Division ("PUD")
17. Organization of MISO States ("OMS")
18. PJM Transmission Owners
19. Potomac Economics, LTD
20. Public Interest Organizations
21. R Street Institute
22. Union of Concerned Scientists
23. WIRES

Their verbatim statements are provided below.

Advanced Energy Economy[4]

- "...AEE suggests that the Commission clearly announce its intent to focus incentives the following types of projects for which there is a demonstrable need today, and which will deliver significant consumer and grid benefits:
  ...b. Projects that use advanced transmission technologies and improved operating

  practices to make better use of the existing transmission system, including the adoption of Dynamic Line Rating and standardization of line rating practices;

- "The Commission should establish a policy objective of making better use of the existing transmission system. Ensuring efficient use of existing assets has the benefit of reducing congestion and avoiding or deferring costly investment in new traditional transmission infrastructure, yielding savings for ratepayers while achieving equivalent or improved reliability outcomes" (p. 15).

- "AEE agrees with The WATT Coalition that a shared savings framework would provide strong additional incentives for the adoption of such measures, as Congress intended. In fact, shared savings approaches are a PBR mechanism that, consistent with our recommendations above, should be considered more broadly by the Commission" (p. 22).

Advanced Energy Management Alliance[5]

- "AEMA respectfully requests that the Commission require consideration of non-wires alternatives, as potentially more cost-effective solutions to transmission investment, to be included in all future applications for transmission incentives" (p. 2).

Alliant Energy Corporate Service, Inc. and DTE Electric Company (Collectively, "Certain TDUs [Transmission Dependent Utilities]")[6]

- "Like any other proposed solution for transmission issues, DERs, energy storage devices, or other non-wires alternatives should be evaluated based on a benefit-cost ratio. If these alternatives can demonstrate materially better benefits achieved to costs incurred, such alternatives should be approved by the Commission and considered for incentive treatment, if requested. The Commission should encourage transmission providers and owners to consider non-wires alternatives to transmission issues where they provide

[4] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15283713
[5] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282891
[6] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15283815

benefits to the grid and to customers through better asset utilization" (p. 24).

- "Utilizing a benefit-cost analysis that examines all possible solutions for a transmission issue can incent transmission owners to consider non-wires alternatives and existing infrastructure, including technologies that enhance the capacity, efficiency, and operation of the transmission grid like dynamic line ratings" (p. 28).

American Council on Renewable Energy[7]

- "Commission should consider incentivizing reductions in congestion and curtailment in a technology-neutral way. Newly available grid operations technologies such as more advanced dynamic line ratings, power flow control systems, and topology optimization can reduce this congestion and curtailment for less cost than new lines... We support a proposal based on the WATT Coalition's approach of a specific, well-defined incentive focused only on low-cost projects that provide quantifiable congestion reduction benefits." (p. 5).

American Electric Power Company, Inc.[8]

- "AEP supports the development of an incentive for the deployment of advanced technologies that allows a transmission owner to identify the technologies and investments that create the most savings for its unique system (and avoids picking winning or losing technologies), and encourages innovation and investment by sharing a portion of the demonstrated savings with the transmission owner. This approach to incentives for advanced technologies would further the Commission's goals of improved grid reliability and resilience by supporting deployment of new enhanced grid technology" (p. 22).

Americans for a Clean Energy Grid[9]

- "Incentives can also help on existing systems that could gain significant capacity, efficiency and operational effectiveness through installation of new technologies, but do not get developed because the economics of new technology roll-out can conflict with the traditional return on rate-based assets business model. ACEG follows its coalition partner, Working with Advanced Transmission Technologies Coalition ("WATT"), in

[7] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15281900
[8] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15283017
[9] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282566

advocating a detailed fix" (p. 6).

American Wind Energy Association[10]

- "The Commission should instead emphasize and reward efficient solutions employing newer and innovative technologies. These solutions may better be rewarded through a shared savings mechanism (potentially including performance-based incentives) focusing on avoided costs of more expensive alternatives and the aggregation of system benefits." (p. 8).
- "... an ex ante forecast would provide the most useful incentive for developers and would encourage efficiency in terms of the selection and implementation of any transmission system improvement (including non-wires alternatives)" (p. 11).
- "Incentives to improve the use of existing transmission could be the most immediately impactful policy shift for the Commission to undertake through this proceeding" (p. 19).
- "AWEA also believes the Commission should consider a proposal by the WATT Coalition that would provide for performance-based incentives designed along the lines of a program in operation in Australia. More generally, within any framework of a framework of purely financial incentives, we encourage the Commission to focus on motivating advanced transmission and technologies to optimize the capacity, management, and control of energy on the grid" (p. 26).

Ameren Services Company[11]

- "The Commission should also offer other ratemaking tools, like "split the savings rates" for investments in efficiency where the investment dollars may not be significant, but the value to customers is. Such an incentive may be particularly applicable to technologies that enable utilities to better control the flow of power" (p. 15).

Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc.[12]

- "The Commission could also structure its incentives to promote investment in certain new technologies that will improve grid operations, for example by allowing cost recovery of storage assets included as part of or in lieu of a traditional transmission project. Such an incentive would be consistent with the statute, as it requires the Commission to establish incentives to "encourage deployment of transmission

[10] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282917
[11] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15283778
[12] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282740

technologies and other measures to increase the capacity and efficiency of existing transmission facilities and improve the operation of the facilities" (p. 6).

Duke Energy Corporation[13]

- "...the Commission could consider allowing capitalization of the expenses related to initiatives that provide for more flexible transmission operations, improve security and resilience, and use new and innovative technologies to improve existing transmission facilities, rather than only considering an ROE adder incentive or in lieu of treating them as O&M expenses. Examples of such initiatives could include: projects that improve the resilience of the transmission grid (e.g., select vegetation management costs, storm hardening, implementation of advanced flow technologies and fiber communications), projects that entail the use of cyber and physical security to improve the operation and security of facilities (e.g., cloud- and subscription-based software), and projects that optimize the use of existing transmission assets (e.g., dynamic line rating, topology optimization, or storage)" (p. 11).

Edison Electric Institute[14]

- "The NOI provides a list of the types of benefits that the Commission should consider when evaluating a request for incentives. These include... efficiently using the transmission system... providing more flexible transmission operations... improving existing facilities... and using advanced technology. This is an appropriate list that highlights the types of criteria the Commission should use in evaluating the benefits that a request for incentives provides to customers" (p. 27).

Energy Storage Association[15]

- "ESA recommends that the Commission create a specific incentive that rewards maximization of value, delivery of cost-savings, or both, through investments that increase flexibility and other operational capabilities of transmission facilities...Such an incentive could take a several forms. Returns could be performance-based by awarding the transmission owner "shared savings" from the expected operational savings in place of the conventional transmission solution. Alternatively, the Commission could develop a formula accounts for other factors in addition to cost-savings, such as whether the

[13] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282978
[14] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282874
[15] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282078

arrangement provides key resilience benefits; avoids environmental impacts; or other identified values. Or, the Commission could create a portfolio approach wherein transmission owners can earn incentives by keeping the expected benefits-cost ratio of the whole portfolio above a certain threshold" (pp. 5-6).

ITC Holdings Corp.[16]

- "The Commission also should consider granting incentives for projects that involve implementing new technologies to provide quantifiable congestion reduction, resilience, reliability, or other benefits. Such incentives would foster innovative improvements in resilience, transfer capability, and other challenges facing the grid. Examples of such innovations could include improved conductors, new designs, digital control, and monitoring applications, as well as other hardware, software and associated protocol" (p. 10).

National Electrical Manufacturers Association (NEMA)[17]

- "... NEMA requests that FERC... Reinstate transmission incentives for advanced technologies that have the ability to improve transmission reliability, resilience, efficiency, capacity, security/cybersecurity, and provide other beneficial services" (p. 1).
- "NEMA further encourages FERC to use the concept of performance-based ratemaking when designing transmission technology incentives, as it is required to do under Section 219(a) of the Federal Power Act. A performance-based approach would encourage transmission owners and operators to adopt the latest technologies to drive performance outcomes" (p. 3).

National Grid USA[18]

- "National Grid sees customer value in most of the benefits listed and believes that incentives treatment can be particularly useful in several areas... grid management technologies, including dynamic line rating and power flow control, can accurately assess power transfer capability, enhance system security, and improve fault detection on transmission lines in real time. As a result, operators can maximize the economic value of the current transmission system" (pp. 7-8).
- "The automatic award of incentives for transmission projects whose inherent

[16] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15282859
[17] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15284271
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characteristics, such as innovation or deployment of advanced technologies, demonstrate the likelihood of benefits, may be appropriate" (p. 19).

- "Continued growth of renewable electricity sources and distributed energy and storage resources is fundamentally changing grid management. Utilizing these new energy sources requires incentivizing transmission capital investment, whether through ROE adders or other mechanisms, to provide for the enlargement, improvement, maintenance and operation of transmission facilities, the deployment of technologies that enhance transmission capabilities, and new ways of managing the electric grid" (pp. 24-25).
- "The Commission should consider the award of both existing incentives (ROE and non-ROE) and of new incentives such as the capitalization of other costs if they are demonstrated to enhance flexibility... Examples of transmission initiatives that can enhance flexibility may include, but should not be limited to: (1) Transmission monitoring (e.g. power flow control, dynamic line/ transformer ratings and topology control) which provides better utilization of equipment capabilities, leading to improved operations, functionality and flexibility of key transmission infrastructure essential to the reliability of the network; (2) Energy storage projects that improve overall network reliability and efficiency, and mitigate power quality issues..." (p. 30).
- "Dynamic line rating (DLR) technology provides benefits for consumers and fulfils the Commission's statutory mandate under FPA Section 219, and therefore, should be considered for incentive rate treatment. Investments in dynamic rating can drastically improve transmission operation utilization" (p. 34).
- "Advanced grid technologies, including energy storage, could provide reliability, increase resilience, and reduce the need for traditional transmission lines. Further, sharing the cost savings benefits of deferring new transmission investment between customers and utilities would provide an incentive for transmission owners to pursue non-wires alternatives or other similar advanced technology" (p. 43).

Oklahoma Corporation Commission ("OCC") Public Utility Division ("PUD")[19]

- "PUD...believes now is the time to bring back an advanced transmission technology adder. PUD believes FERC approved base ROE for transmission projects are unjust and unreasonable which creates an incentive for electric utilities to build more expensive transmission projects and place in rate base in order to get a higher ROE" (p. 1).
- "With the large transmission buildout that took place over the past decade PUD recommends FERC direct utilities to optimize the current BES before upgrading the current system or building new transmission lines. An example of an advanced transmission technology solution could be instead of building a new transmission line, a utility could install equipment and software that provides Dynamic Line Ratings, Real Time Conductor Monitoring and Sensing, and System Reconfiguration. Another option

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instead of building a new transmission line could be a high performance conductor upgrade to an existing transmission line which could satisfy the need at a lower cost and create additional efficiencies in line loss, thermal sag, and improved reliability and grid resilience" (pp. 1-2).

Organization of MISO States ("OMS")[20]

- "Non-ROE incentives can help encourage deployment of technologies and other measures that enhance capacity, efficiency, and operation of existing transmission facilities." (p. 11).

PJM Transmission Owners[21]

- "In the NOI, the Commission highlights a number of potential benefits that may warrant incentive treatment, including projects that provide for more flexible transmission operations, improve security and resilience, and use new and innovative technologies to improve existing transmission facilities... While the Commission does not need to create specific incentives for these types of projects, it can and should give strong consideration to the benefits those projects provide when evaluating the scope and extent of incentives requested by a project" (p. 26).

Potomac Economics, LTD[22]

- "We believe new market-based incentives, incentivizing increased grid capacity, facility ratings, and efficient grid utilization rather than specific technologies will provide flexibility to transmission owners and other market participants and best achieve the Commission's goals" (p. 3).
- "...existing incentives help explain why few transmission owners in RTO/ISO areas have provided dynamic ratings that would allow the RTO to maximize utilization of the transmission network, despite the enormous economic benefits of doing so. The best, and perhaps only, solution to this problem is to provide market-based incentives for transmission owners that allow them to realize some of the benefits of improving the utilization of the transmission network" (p. 8).
- "...we recommend the Commission issue a rulemaking that encourages RTOs/ISOs to develop market-based incentives to utilize dynamic transmission ratings, including the

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use of emergency ratings on contingent constraints" (pp. 10-11).

- "Flexible transmission system operation or topology optimization options could be expanded or enhanced to include the use of other existing controllable devices such as the use of phase angle regulators (PARs) that can be used to control flows. Since some of these options could put load at risk or result in wear and tear on equipment, they may require capital investment (i.e. to enhance controls, telemetry). Again, transmission owners generally have no market-based incentives to make these investments or make topology changes to reduce congestion costs. Consequently, the Commission should explore the development of market-based incentives in this area as well" (p. 14).

Public Interest Organizations[23]

- "The Commission also should use Section 219 … to support the use of non-financial incentives and other reforms necessary to address the increasingly glaring shortcomings in regional and interregional planning and cost allocation. Our specific policy reforms supporting these recommendations include: Adopt performance-based and shared-savings incentives for a more efficient use of the existing system and allow new transmission technologies and non-transmission alternatives to compete to achieve such savings at least cost, with transmission owners sharing a small portion of the cost savings from not making larger investments than necessary" (p. 6).
- "Economic efficiency improvements created by transmission operation...warrant incentives, to the extent incentives are demonstrated to help both reduce congestion and connect new resources to load" (p. 16).
- "Improving transmission capacity or efficiency through adoption of upgraded technology and power management technologies that enhance the capability of the existing grid warrants incentives... Examples of these technologies and management approaches include: dynamic line ratings, power flow control, storage-as-transmission, an topology optimization among others" (p. 21).
- "...a technology specific incentive might be useful to accelerate the adoption of such tools as flow controllers, high-capacity conductors and automation, topology optimization, and other technologies that enhance operations and optimization, and maximize utilization of the existing system. Given the relatively low cost of these measures individually, the Commission should consider bundling measures into a portfolio of upgrades to create a more financially beneficial and therefore more effective incentive" (pp. 22-23)."
- "We support the WATT Coalition proposal for a shared-savings approach to provide transmission owners with an incentive in cases where consumers would benefit from quantifiable congestion reduction" (p. 36).

[23] https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=15283735

R Street Institute

- "Discrete transmission upgrades that reduce production cost savings should obtain rewards commensurate with the benefits they unlock."[24] (p. 5)

Union of Concerned Scientists[25]

- "The Commission should provide policy, perhaps through incentives or other means, to make more use of the flexibility of the transmission system available. The benefits of increasing system capacity and capability to respond to change are much greater than the costs, when calculated in financial terms.... The Commission may be better able to affect the use of flexibility for improving the capability of system by widening the set of tools that the system planners are allowed to use" (pp. 16-17).

WIRES[26]

- "The Commission should open the door to specific, well-defined incentives focused on projects that provide quantifiable congestion reduction or other benefits. It can thereby help foster test beds for improvements, big or small, in resilience or transfer capability or other measures that could grow exponentially to benefit grid operations over the coming decades. Beyond improved conductors, new designs, dynamic line ratings, digital control, and monitoring applications lies the need to invest in other hardware, software, and associated protocols that can have significant reliability and resilience benefits. One focus should be hardware, software and associated protocols that promise to increase the operational transfer capacity of existing facilities and/or infrastructure. While representing little in terms of cost to ratepayers, incentives for incremental innovations regarding the delivery of wholesale power could pay significant dividends" (p. 10).

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