

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Building for the Future Through Electric Regional) Docket No. RM21-17-000
Transmission Planning and Cost Allocation and)
Generation Interconnection)

COMMENTS OF GRID UNITED LLC

Grid United LLC (“Grid United”) appreciates the opportunity to provide comments to the Federal Energy Regulatory Commission (“FERC” or “Commission”) in response to the Federal Energy Regulatory Commission’s (“Commission” or “FERC”) Advance Notice of Proposed Rulemaking (“ANOPR”) on Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generation Interconnection.¹

I. Grid United’s Investment in The Pathway to New Interregional Transmission

Grid United was founded by a group of energy industry veterans who share the vision of building infrastructure projects that will help modernize the U.S. electric grid. We seek to accomplish what our name implies—unite the U.S. electric grid by building new long-distance interregional transmission lines to ensure that Americans have access to low-cost power when and where it is needed. Grid United is focused on accelerating the much-needed expansion and modernization of America’s electric power infrastructure to build a more reliable grid, create good-paying jobs, and deliver low cost, clean, domestically-produced energy to businesses and homeowners across the country.

¹ *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generation Interconnection*, Advance Notice of Proposed Rulemaking, 176 FERC ¶ 61,024 (2021), 86 Fed. Reg. 40,266 (July 27, 2021) (“ANOPR”).

The “Rubik’s Cube” of developing new interregional transmission requires solving a complex puzzle of regulatory regimes, state right of first refusal statutes, siting considerations, planning and reliability reviews, integration of operations within existing market rules and design of a project to connect resources to load in a manner that achieves a value proposition for the generators and load customers that will be interconnected and served. This work is made harder by existing market rules, fees and processes that delay project development or disrupt the necessary market signals—to financing parties and potential customers—for the identification and development of interregional transmission solutions. These market barriers are clearly hindering the development of new interregional transmission facilities.

II. Reconsideration of the Need for and Design of Through and Out-Service Charges is Necessary

In the ANOPR, the Commission has expressed concerns that the existing transmission planning process is not promoting efficient and cost-effective transmission solutions that will accommodate our anticipated future generation resource mix.² Likewise, the Commission noted that its own existing policies may be impeding the development of efficient, cost-effective interregional projects.³ Recognizing these concerns, the Commission has sought input on (i) whether changes are needed to interregional transmission coordination processes; (ii) how to align federal and state efforts on the development of interregional facilities; (iii) whether to mandate further interregional transmission planning; and (iv) how to ensure that timely decisions are made on the development and selection of interregional projects to address identified needs. Each of these efforts is necessary and will further support the development of interregional projects. However, other critical issues also must be addressed.

² ANOPR at P. 37.

³ *Id.* at 63.

The Commission also must prioritize the removal of market barriers to interregional transmission facilities—the most prominent of which is the counter-productive design and assessment of excessive Through and Out-Service charges. In most ISO/RTOs, as well as in non-organized markets, the Through and Out-Service charge is designed under the premise that exports utilize the transmission system in the same manner as network load and should then pay for “all” costs of a system that is planned to meet peak load demands within the control area. This assumption is incorrect. Interregional interchange is a price-sensitive transaction where schedules for export or import reflect day-ahead and real-time commercial commitments and conditions. When a system has excess generation and neighboring control area prices are higher, an arbitrage exists that will drive scheduling of exports. Where internal load demands are at peak or generation is limited, the wholesale market signal will drive imports. Thus, with the exception of external capacity commitments scheduled under firm service, exports are highly unlikely to occur at network peak conditions (because imports will prevail).

The ability for a system to lean upon imports over existing and new interregional transmission facilities is precisely the goal of interregional planning. Interregional transmission schedules, particularly exports, are reflective of real-time market conditions between the producing and receiving zones. Indeed, at peak load conditions, exports are likely to be economically interrupted to ensure that reliable system operations. Simply put, exports do not act like, or use a transmission system in the same manner as network load.

Through and Out-Service charges are based on revenue requirements for the internal network transmission build-out. This design has several flaws. First, at even present levels, an export charge takes away a piece of the market arbitrage for exports and redirects that revenue to network load (through revenue credits). However, the arbitrage between markets should be going

toward investment in new interregional transmission that the Commission seeks—not repayment of legacy system costs. Second, rate design for exports should not be tied to network system costs that are designed to meet internal network needs at peak load. For example, existing ISO/RTO plans primarily identify internal transmission upgrades focused on end-of-life replacement, internal load pockets and similar facility improvements directly needed to reliably serve network load. All of these planning designs are locally driven and inwardly focused—to the exclusion of interregional facilities that might resolve such internal constraints and provide other regional and interregional benefits.

Analyzing an extreme case perhaps helps illustrate the point. Assume RTO A has a robust process to build out its grid for resiliency and renewables. The cost of this build out will be billed to transmission customers. The more robust the build out, the more renewables will get built, and the more clean energy will be available. However, because of how Through and Out-Service charges are designed, the higher export fees will climb, further inhibiting interregional resource integration.

Under the existing Through and Out-Service rate design, exports are a function of charges associated with such internally focused projects. This autarkic approach imposes additional, excessive charges on exports. In sum, not only are such costs further disrupting market signals for interregional transmission (by claiming a bigger share of any arbitrage) but also they further build an inward looking system that physically hinders reliable interchange of low cost energy and facilitate the broadened access to clean energy resources that the Commission seeks.

The level of Through and Out Service charges are excessive. As detailed below, exports face significant charges for interregional interchange, including instances of pancaking, upcharges where delivery occurs over three ISOs (e.g. generation sourcing in the Southeastern U.S., delivering through PJM into New York).

| ISO | Through and Out-Service Charge (\$/MWh) |
|--------------|--|
| CAISO | \$13.81 |
| MISO | \$5.57 |
| PJM | \$7.20 |

Simply, the existing approach to Through and Out-Service charges is counter-productive. These charges fundamentally disrupt new investment in interregional transmission by extracting the energy pricing arbitrage between markets. And, in doing so, they disrupt the necessary value proposition and pricing signal for the development of interregional facilities. As such, the continuation of Through and Out-Service charges, in their present form at present levels, is a direct barrier to the realizing the Commission’s goals of increased interregional transmission.

III. Balkanized Through and Out-Service Charges are Disrupting Solutions to Grid Reliability and Delivery of Low Cost, Clean Energy

Interregional facilities can resolve critical transmission bottlenecks hindering inter-control area support as well as bolster import/export capability allowing delivery of remote generation into areas at risk of outages due to localized or even regional events.⁴ Further, day-to-day system operations are made stronger through a broader resource mix that can respond to routine fluctuations in generator availability and increasing the delivery of new, low cost, clean energy.

These reliability improvements are acutely necessary because the existing ISO/RTO tariffs and procedures intrinsically look inward to solutions rather than considering the reliability benefits that can be achieved by turning, outward, to interregional solutions. In its ANOPR, the

⁴ The reliability and other benefits of new transmission development have been recently reinforced by the Commission in its own technical conference dockets, industry studies and other governmental reviews. *See e.g.*, AD21-13, Notice of Technical Conference: Climate Change, Extreme Weather and Electric System Reliability (Mar. 5, 2021); Michael Goggin, Grid Strategies LLC “Transmission Makes the Power System Resilient to Extreme Weather” (July 2021); and Dept. of Energy, Transmission Innovation Symposium, Modernizing the U.S. Electric Grid (June 2021).

Commission has recognized the structural failing of the existing planning process. However, the balkanization is not merely a product of misguided planning systems. Rather, there is a more systemic balkanization within market structures—the continuation and growth of excessively high Through and Out-Service charges.

Today, we have a checkerboard of Through and Out-Service charges between ISOs and RTOs. ISO New England and the NYISO have reciprocally waived Through and Out-Service charges; yet NYISO maintains such charges for exports to PJM. In PJM, Through and Out-Service charges apply to exports to the Southern interface and to New York; but the western border, with MISO, is set at zero. Between MISO and SPP, export charges apply, while a reciprocal waiver is in place between PJM and MISO (except for costs associated with MISO's recent MVP program). Meanwhile, SPP employs a markets imports policy for external transactions sinking in SPP, while charging for Through and Out-Service. Likewise, while it is an overwhelmingly net importer, the CAISO also maintains a wheeling access charge for exports (including assessing such charges to non-participating systems within the CAISO footprint).

The structural balkanization produced by this checkerboard of differing charges and pricing regimes is exacerbated by excessive, and ongoing ratcheting-up, Through and Out-Service Charges. Just between 2017 and 2021, firm Through and Out-Service charges within SPP, CAISO, PJM, NYISO and MISO, each, have increased in excess of at least 25% and, in the case of PJM, by a shift of 230% . The levels of these charges—now typically in the range of \$5 - \$13 per MWH for firm service and climbing—is impeding new transmission development and also adversely affecting interregional interchange.

New interregional transmission development depends upon key market indicators—most critically the arbitrage between interconnecting markets, which provides a pricing signal

encouraging exports. In turn, efficient transmission investment will look to develop transmission that connects low cost energy resource to these higher priced region. The value proposition inherent is that load has increased access to lower cost, clean energy, the generating resources gains entry into a stronger market and the cost of the new interregional transmission facilities is recovered via pricing that aligns with the realized arbitrage. Economically, applying a Through and Out-Service Charge to this export/import transaction, facilitated by new transmission development, unilaterally shifts a significant level of that investment value to an interloping incumbent transmission owners. Further, such outcomes will significantly disrupt, if not destroy, the financial underpinning for investment for new interregional transmission.

IV. ISO/RTO Market Operations Also are Adversely Impacted by Excessive Through and Out-Service Pricing Regimes

The adverse effects of continuing the existing Through and Out-Service charges extends to related market mechanisms—particularly the ISO/RTO efforts to improve interregional interchange through coordinated transmission scheduling or “CTS.” This point was raised in the 2020 State of the Markets Report by the NYISO Market Monitor—particularly observing the differences between ISO-NE/New York interchange levels (where there is a reciprocal waiver of Through and Out-Service charges) and New York/PJM interchange (where a Through and Out-Service charge remains in place).⁵ The Market Monitor observed that coordinated transaction scheduling between New England and New York performed better and produced more savings (between the markets) than at the PJM interface “largely because of the effects of the much higher fees and uplift costs imposed on transactions at the PJM interface.”⁶ In particular, firm exports

⁵ 2020 State of the Markets Report for the New York ISO Markets, Potomac Economics (May 2021).

⁶ *Id.* at pp. ix and 130.

from New York into PJM required a significant larger price spread, approximately (~\$7 per MWh), thus resulted in lower interchange scheduling.⁷ Conversely, the Market Monitor observed that “a lower export fee could result in an overall higher collection of fees because it would allow [interchange transactions] to be profitable under a wider range of conditions.”⁸ Given these observations, the Market Monitor explained that interchange scheduling is unlikely to effectively function “while transaction fees and uplift charges are large relative to the expected value of spreads between markets. Hence, we recommend eliminating (or at least reducing) transaction fees and uplift charges between PJM and NYISO.”⁹ For similar reasons, in the 2020 MISO State of the Market Report, the Market Monitor recommended that MISO eliminate all transmission and other charges for MISO’s interregional interchange transactions and that it also should encourage PJM to do the same.¹⁰

For PJM and SPP, a related concern has been identified—with export charges creating a mismatch between transaction scheduling and the reality of physical flow. A resource will seek to identify the lowest cost transmission path from its control area to the receiving market. However, that lowest cost transmission path may not be reflect actual, interregional flows. This scenario was recently discussed in the 2021 State of the Market Report by the PJM Market Monitor.¹¹ Specifically, the Market Monitor observed that, for an export from SPP to PJM, the lowest cost transmission path will be SPP, through MISO and into PJM.¹² A key part of that economic path is that there is a waiver of Through and Out Service charges on the MISO/PJM interface. However, the practical reality is that a transaction sourcing in SPP and sinking in PJM

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ 2020 State of the Market Report for MISO (Potomac Economics) at p. 97.

¹¹ State of the Market Report for PJM: January to June 2021, Monitoring Analytics (Aug. 12, 2021).

¹² *Id.* at pp. 432 and 439.

will actually create physical flows across the southern border. This (1) increases interface pricing at the Southern interface; and (2) then produces a mismatch between scheduled and actual flows along the PJM Border—since scheduled SPP/MISO/PJM reservations are physically entering over the Southern interface. Moreover, additional costs within the system are incurred because PJM has to monitor and manage the interchange differences.

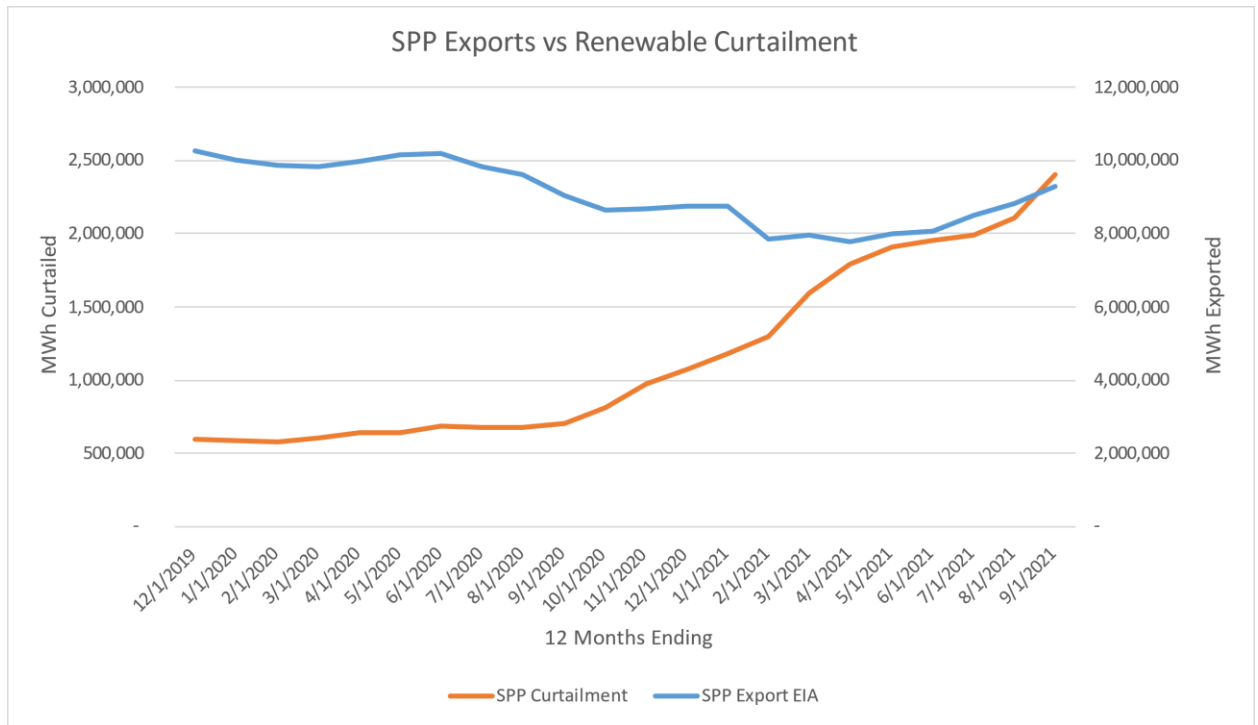
V. Excessively High Through and Out-Service Charges Limit Export Opportunities and Are Driving Increased Curtailment of Renewable Resources

A key element of the ongoing energy transformation is the introduction of intermittent or variable energy resources that can generate excess generation, at low costs, above the local needs. From a markets perspective, when wind and solar are strongest and have excess energy above local needs, an efficient market will take advantage of that low cost energy through increased exports to higher cost markets. Controlling factor within that equation is that, intrinsically, all exports are price sensitive. As such, the level of transaction fees, such as Through and Out-Service charges (as well as other uplift charges) can significantly impact the level of exports.

The disjunct between the availability of excess generation and realization of market efficiencies through export is reflected by the ISO/RTO curtailment rate for renewable resources—due to a lack of effective and affordable export pathways. While some curtailments will be related to transmission system conditions, another contributing factor is the failure of the market to incentivize real-time energy exports through elimination of transmission charges or other dynamic measures. Fundamentally, as the CAISO has observed “[c]urtailing renewables results in lost opportunities for clean resources to generate carbon-free power that otherwise could be

produced.”¹³ Further, the value foregone is significant for both the generator as well as the load—since wind and solar have no fuel costs and present significant value through the production and delivery of clean, low cost energy to consumers.

For these reasons, curtailment of renewable resources has been a closely watched and concerning matter across the ISO/RTO footprints—with energy curtailment rates steadily increasing over the past 5 years, in particular. As an example, the dynamics of curtailment of renewable resources and exports can be seen in comparing EIA data on SPP exports and curtailment rates between December 2019 to present.



¹³ California ISO, Impacts of Renewable Energy on Grid Operations at 1-2 (2017) available at <https://www.caiso.com/documents/curtailmentfastfacts.pdf>.

This chart shows that, over December 2019 to present, curtailments levels rose from approximately 595,000 MWH to a 2,405,000 MWH. In contrast overall exports declined from slightly over 10,200,000 MWH in December 2019 to levels ranging between 7,800,000 MWH and 9,300,000 MWH. However, this chart also reflects that export capability was in excess of 10,000,000 MWH (because such earlier levels were actually met early in the period). The question is why are curtailments increasing? Where a system has significant or excessive Through and Out-Service Charges, one element of the answer is that the economic opportunity for exports is lagging because of the disrupted market signal from export charges. Simply, it is illogical for zero cost generation to be curtailed and higher cost generation in an adjacent area to be dispatched because of an export charge—and that is precisely what is occurring in a number of the ISO/RTOs.

VI. The Growth of Renewable Energy is Further Expanding the Scope of Our Markets—Making Interregional Transmission and Resulting Interregional Interchange a More Significant Market Element

In December 1999, when the Commission adopted Order No. 2000,¹⁴ the Commission found that creation of RTOs would increase the efficiency of wholesale markets by eliminating pancaked rates within the RTO region, among other things. However, this de-pancaking of rates was limited to reform of transmission pricing within the footprint of the ISO/RTO. For interregional interchange, the Commission settled upon encouraging voluntary reciprocal waivers for access charges across RTO regions in an attempt to further the increase effective trading areas.¹⁵ In doing so, the Commission noted that it would “continue to encourage reciprocal waivers

¹⁴ Regional Transmission Organizations, Order No. 2000, 89 FERC ¶ 61,285 (Jan. 6, 2000), FERC Stats. & Regs. ¶ 31,089 (1999), order on reh’g, Order No. 2000-A, 65 FR 12088 (Mar. 8, 2000), FERC Stats. & Regs. ¶ 31,092 (2000), aff’d sub nom. Public Utility District No. 1 of Snohomish County, Washington v. FERC, 272 F.3d 607 (D.C. Cir. 2001).

¹⁵ *Id.*

of access charges between RTOs as long as they are reasonable in terms of cost recovery, cost shifting, efficiency, and discrimination.”¹⁶

Over two decades later, our transmission system is fundamentally changing—from a resource mix dominated by thermal generation to a grid that is rapidly embracing de-carbonization and reflects a broader, more diverse mix of technologies ultimately serving consumers. Today, the siting of new generation is often driven by the quality of the resource, particularly wind speeds and solar radiation levels. Further, resource-rich areas have generation potential that often far exceeds the demands of local load. The answer, as the Commission has recognized in the ANOPR, is increasing access to these resource-rich areas by developing additional interregional facilities.

That goal requires two independent steps: (i) solving the physical problem of ensuring sufficient transmission capacity to unlock key resource areas; and (2) removing existing economic and market barriers to efficient interchange within current ISO/RTO rules, including Through and Out-Service charges. On the former, the Commission’s ANOPR begins the framework for facilitating better interregional planning and coordination. On the latter, what is further required is the elimination of the archaic ISO/RTO Through and Out-Service pricing regimes.

VII. The Value Proposition for Elimination of Through and Out-Service Charges

Through and Out-Service charges perpetuate an autarkic regime that disfavors interregional transmission and exports. As noted earlier, for firm service, these charges are climbing into the range of between \$40-\$60 MW-Year (or more)—and effectively impose a \$20+ MWh surcharge on interregional trading of energy. Such rates not only create inefficiencies in the market, they disrupt market signals for the timely development and location of interregional

¹⁶ *Id.*

transmission and decrease system reliability by disincentivizing new interregional transmission facilities. For example, there is no doubt that additional interregional transmission lines would have mitigated the impacts of winter storm Uri this past February.¹⁷

If we are to realize the full potential of our transforming generation mix, there must be a coordinated, consistent market signal—in both energy and transmission pricing—for interregional transmission. As weather fronts move across the country, regions of excess power should share their abundance with their neighbors and vice versa. The development of interregional transmission facilities is likely to occur either through merchant transmission projects, with transmission capacity allocated via open season awards, or competitive transmission selections through interregional planning. In each event, beneficiary pays principle will guide the allocation of those costs to transmission customers and consumers. Thus, the costs of new interregional transmission facilities will be adequately addressed.

The value proposition of eliminating Through and Out-Service charges is in the benefits to the producing zones of maximizing the resource potential in energy sales while, commensurately, providing lower cost energy to consumers in the receiving zone. A Through and Out-Service charge imposes an exit fee from the departing zone to the receiving zone. It is, in all respects, a reversal of the inherent value proposition in interregional interchange transactions.

As a matter of policy and economics, the value proposition of new interregional transmission and interchange of low cost, clean energy should not be disrupted by the imposition of a Through and Out-Service charge. These charges, at the rate and level now being seen, raise create significant, long-term barriers to new transmission development, hinder trading energy,

¹⁷ Michael Goggin, Grid Strategies LLC “Transmission Makes the Power System Resilient to Extreme Weather” (July 2021) (Pages 7 – 13)

present a risk of market concentration and increase costs to consumers. Accordingly, we recommend that the Commission eliminate Through and Out-Service charges outright, or fundamentally re-shape such pricing to be more dynamic and ultimately promote, not hinder, exports that maximize the utilization of our diverse generation resources.

Respectively submitted,

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