

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

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

**COMMENTS OF
THE RAIL ELECTRIFICATION COUNCIL
ON THE
NOTICE OF PROPOSED RULEMAKING**

I. Introduction

The Rail Electrification Council (“REC” or “Council”)¹ hereby submits these comments in response to the Notice of Proposed Rulemaking (“NOPR” or “Proposal”)² issued in this docket on April 21, 2022, by the Federal Energy Regulatory Commission (“FERC” or “Commission”). The REC shares the Commission’s forward-looking vision of the “grid of the future” and what it will take to get there. The proposals in the NOPR, if adopted and supported in this record, will help ensure the efficient local and regional planning and cost allocation of major electric transmission facilities as the Nation moves toward a more decarbonized grid, a cleaner electric generation mix, more resilient and reliable electric service, and a more integrated high voltage electric power delivery system. The REC supports these goals but submits suggestions for improvements that will further advance the

¹ Founded in 2020, the Council is a diverse coalition of electrical manufacturers, technology companies, transportation companies, renewable energy providers, and other stakeholders that seek to enhance the strength and efficiency of two of our most critical infrastructure networks – the North American high voltage electric transmission grid and the international, national, and regional networks of North American railroads. The Council is an affiliate of the National Electrical Manufacturers Association, but its membership is open to all interested companies and institutions seeking to advance modern energy and transportation policies. The Council’s agenda addresses North American freight and passenger transportation, economic efficiency issues, mitigation of the climate impacts from the transportation and electric power industries, and infrastructure challenges in the U.S. and Canada. In particular the REC addresses development and integration of the high voltage transmission grid. For more information, please visit [Rail Electrification Council](#)

² *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection*, 179 FERC ¶ 61,028, 179 Fed. Reg. ¶61,028 (2022)

development of an integrated, flexible, resilient, and ubiquitous transmission system in the next 20 years.

Our Comments are summarized as follows:

First, interregional transmission will be more instrumental in achieving the “grid of the future” than the NOPR indicates. The Commission should develop a more effective planning process for this challenging category of projects in the interest of optimizing the delivery of location-constrained renewable resources and strengthening the resilience of the grid nationally. The REC requests issuance of an additional NOPR dedicated to interregional planning and cost allocation because the need for reform and the REC’s recommendations are beyond the scope of the NOPR. Interregional planning reform and an interregional NOPR should be the highest priority of the Commission, even higher than this current NOPR proposal.

Second, interregional transmission requires a more holistic planning approach than the NOPR appears to promote. The REC believes that the Commission should push for a less siloed, more integrated approach to determining the benefits of large-scale projects that would accrue to beneficiaries across multiple markets, states, and regions. New partnerships with the railroad industry and its regulators and new investment from market entrants can be instrumental in reducing the historical siting and permitting barriers to transmission infrastructure development. But that progress is less attainable without FERC support and leadership. Identifying and seizing opportunities to site transmission along the available interstate transportation rights-of-way (“ROWs”) owned or controlled by railroads can advance the grid of the future more quickly with fewer downsides.

Finally, and more specifically, the REC requests that the Commission include in its Long-Term Regional Transmission Plan (“LTRTP”) a requirement that transmission planners and transmission providers actively consider utilizing existing railroad ROWs³ to site transmission projects. This is especially important for interregional projects that will inevitably confront multiple differing and often inconsistent state and federal regulatory and

³ The Council’s use of the term “rights-of-way” or ROWs in this Comment relates to lands and related property rights generally adjacent to railbeds that railroad companies historically own or lease, and not to the shared use of actual trackage to which multiple transportation companies may seek access for competing mobility operations. While ROWs are generally thought of a longitudinal, track-side property rights, they may also be rail yards and other real estate assets proximate or integral to railroad operations. See, Federal Railroad Administration, USDOT, *Report to Congress: Shared-Use of Railroad Rights of Way*, (July 2019) <https://railroads.dot.gov/elibrary/shared-use-railroad-rights-way>

physical/environmental requirements if project proponents are required to site major, continuous facilities one state, local, or federal regulatory jurisdiction or unit of property at a time. Railroad ROWs are the missing key to more expedited grid integration.

II. CORRESPONDENCE AND COMMUNICATIONS

In accordance with Rule 203 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.203, all communications should be addressed to the following individuals:

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III. BACKGROUND

A. The Transportation-Electric Power Ecosystem

In the REC's view, there's more work to be done if our nation's goals of expanding, upgrading, and strengthening the grid are to be met in the coming decade or two. This year marks a quarter century since the free market commoditization of electric transmission capacity began under FERC Order No. 888 and 45 years since the Carter-era National Energy Act installed competition and technological innovation as the guiding principles of the nation's electricity policy. Yet, the restructuring of the electricity industry is still a work in progress. Nothing rivals it in complexity. The REC therefore admires the Commission's sustained commitment to grid modernization using forward-looking analyses, industry input, and collaboration with state and other federal policy makers.

In the REC's opinion, the NOPR opens the door to a leap forward in grid integration, principally in the form of both the potential solutions and challenges that the transportation sector offers to the electric system. The developing relationship between the grid and highway vehicles is already evident. A significant amount of the \$1 trillion spent each year on hydrocarbon fuels to power that form of surface transportation will instead be spent on electricity in the near future. Over 5% of new vehicles currently sold are already plug-in electric. The electric and transportation convergence will only pick up steam, aided by

massive federal spending on charging stations, government investment in transmission projects, and electrification of the economy.⁴

A new ecosystem will emerge requiring adequate capacity and energy for charging vehicles but also for the much more complex use cases of V2X (vehicles in a bi-directional communication with any entity that affects, or may be affected by, energy storage systems, commercial and residential buildings, any energy consuming customer, and the electric grid itself). The growth in these mobile, grid-connected assets will help empower grid management with a flow of data as well as electrons. Other transportation sectors, namely railroads of all classes, represent both potential electric load growth and the potential availability of real estate (i.e., trackside ROWs and rail yards) that could host various kinds of electric generation, distribution, and transmission facilities including charging stations, AC/DC converter stations, catenary, and solar and wind generation facilities and inverters. Of course, passenger rail is no stranger to this new synchronistic relationship with electric power. Moreover, electric traction motors are the motive force driving most modern freight trains as well. This a potential “ecosystem” of which the Commission should take note as a major element of grid modernization. Planners and regulators must therefore be encouraged to consider utilizing railroad longitudinal private property rights – the most extensive and ubiquitous such network of brownfield ROWs that exist in North America.

B. A Coordinated Effort Is Required to Meet the Siting Challenge

One aspect of the transportation–electric power convergence is particularly relevant to the NOPR. Deployment of high voltage transmission along the (longitudinal and often continuous) existing ROWs of the rail network can potentially minimize if not eliminate the impediments, delays, and unjustifiable costs of multiple state regulatory regimes, public opposition, or new land disturbances so often occasioned by transmission project development. We acknowledge that close coordination of the operations of these two great

⁴ The Infrastructure Investment and Jobs Act of 2021 (“IIJA”), Public Law 117-58, has added impetus to grid expansion, surface transportation, alternative fuels vehicles and investment in advanced technologies including freight transportation research; see e.g., sections 40105, 40106, 11401 and 21204. Division J creates the Joint Office of Energy and Transportation to study, *inter alia*, “[e]lectric infrastructure and utility accommodation planning in transportation rights-of-way.” Jurgen Weiss, et al., *The Coming Electrification of the North American Economy: Why We Need A Robust Transmission Grid*, The Brattle Group (March 2019) <https://wiresgroup.com/wp-content/uploads/2020/05/2019-03-06-Brattle-Group-The-Coming-Electrification-of-the-NA-Economy.pdf>

network industries may be challenging. Class I freight and regional railroads differ historically and operationally from the electric power grid. Despite being infrastructural foundations of the Nation, the two industries are planned differently and regulated differently by different agencies. They are parts of separate supply chains. But, as stated above, that may be changing because the mutual benefit of greater collaboration, regulatory coordination, and commercial interaction will become apparent.

The REC submits that all classes of rail transportation will be influenced if not driven by climate concerns, the increased availability of lower-cost fuels and clean energy technologies, public policy, and shipper demands for modernization. Railroads are no different than other corporations that must respect the predilections of investors which insist that meeting ESG and other reputational demands will affect corporate strategy.

However, the REC's immediate focus in this docket is its contention that railroads will sooner or later participate in electrification trends, including support for enlargement and upgrade of the electric transmission grid, which the electricity business will promote to ensure resilience of its systems and access low-cost renewable resources.⁵ While any argument about rail service driven primarily by electrical energy (including no-carbon fuels) is beyond the scope of this proceeding and this Comment, access to location-constrained renewables necessarily requires grid expansion and integration. The REC contends that the Commission must therefore require consideration of transmission "co-location" within existing ROWs wherever possible as part of its forward-looking transmission planning requirements in this docket. Railroad ROWs are a vital network asset that could be employed to create value for both industries. The REC submits that, as the Commission deploys its conventional FPA remedies, it can also take a wholistic and innovative approach to one of the vexing barriers to efficient transmission development that will only become more difficult as transmission is being planning across multiple jurisdictions and markets.

⁵ Pfeifenberger J., et al., (2019). *Cost Savings Offered by Competition in Electric Transmission Experience to Date and Potential Additional Customer Value*, The Brattle Group Inc. https://www.brattle.com/wpcontent/uploads/2021/05/16726_cost_savings_offered_by_competition_in_electric_transmission.pdf; Pfeifenberger J., et al., (The Brattle Group Inc.) and Gramlich, R., et al. (Grid Strategies). (2021), *Transmission Planning for the 21st Century: Proven Practices That Increase Value and Reduce Costs*. <https://www.brattle.com/wp-content/uploads/2021/10/Transmission-Planning-for-the-21st-Century-Proven-Practices-that-Increase-Value-and-Reduce-Costs.pdf>

C. Recapping ANOPR Comments

The REC has already placed Comments in the record pursuant to the ANOPR. Since the ANOPR requested more information on interregional transmission, we take the liberty of summarizing our responses again here.

1. The U.S. now requires a more integrated and extensive transmission grid, for reasons stated over and over in the record of this proceeding.⁶ Failure to move forward proactively will place the nation at a major competitive disadvantage and future purchasers of electricity may pay an unnecessary economic and environmental penalty. With net-zero emissions deadlines looming and the need to reinforce the Nation's infrastructure quickly,⁷ siting delays and the potential for sub-optimal siting decisions cannot be ignored during project design.

2. The relative impacts, benefits, or equities of pursuing "greenfield" transmission projects (development within pristine or undisturbed areas, often privately owned) versus "brownfield" projects (utilizing sites having existing ground-disturbing, such as existing transmission lines or pipelines, railroads, or highways) are not considered and are not required to be considered. That should change. Facilities siting cases can turn politically toxic, in part because they can result in the exercise of eminent domain or community impacts. Public opposition, regulatory delay, including disagreements among state regulatory bodies about a project's merits, can result in significant expense, delay, or the

⁶ The Council's support for a stronger, more integrated grid is part of its clean energy agenda. Although the Commission is historically fuel-neutral in administering the Federal Power Act, modernizing transmission policy has become key to advancing low-cost, non-fossil energy technologies and the participation of energy storage in wholesale markets. The best such resources often exist far from major load centers. Joskow P.L. (2020). *Transmission Capacity Expansion is Needed to Decarbonize the Electricity Sector Efficiently*, Joule, 4(1), 1-3. <https://doi.org/10.1016/j.joule.2019.10.011>; Hagerty, J.M. et al., (2017). *Transmission Planning Strategies to Accommodate Renewables*, The Brattle Group. https://www.brattle.com/wpcontent/uploads/2017/10/5610_transmission_planning_strategies_to_accommodate_renewables.pdf

⁷ Adoption of the IJA in 2021 has shined a light on the need to expedite the regulatory reviews of large-scale critical infrastructure projects, including high voltage transmission. Christian, M. (2022). *White House launches effort to speed permitting of energy, other infrastructure*. S&P Global Market Intelligence. <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/white-house-launches-effort-to-speed-permitting-of-energy-other-infrastructure-70273680>. The Commission should take a fresh look at how it might help transmission developers and States find innovative siting and permitting solutions.

rejection of projects that could otherwise yield major regional or national benefits.⁸ By siting major lines along railroad and other ROWs, many of these challenges can be minimized or even circumvented.

3. The siloes in which regulated energy and transportation companies separately plan and operate extend to their regulators as well. The Council therefore encourages the Commission work more closely with the Federal Railroad Administration, U.S. Department of Transportation (“FRA”). The Council has been active in encouraging the Administrator of the FRA and the Secretary of Energy to work with the railroad companies of all classes to raise awareness of the financial and operational opportunities associated with transmission co-location and the benefits that it could bring to national energy policy.⁹

4. The Commission can begin removing the obstacles to greater utilization of railroad ROWs by incorporating the issue into this transmission planning initiative. There are tremendous benefits to be gained for both the transportation and energy industries.¹⁰ It also holds the potential to lessen or simplify difficult siting decisions from state regulators. The immediate opportunity for electrification and more efficient expansion and upgrade of the

⁸ See, e.g., Zevin, A., et al., (2020). *Building A New Grid Without New Legislation: A Path to Revitalizing Federal Transmission Authorities*, Columbia University Center on Global Energy Policy.

https://policyintegrity.org/files/publications/New_Grid_Without_Legislation_report.pdf. The frustration with this aspect of project development has entered public discourse. For example, “If you can’t install the transmission lines – to get that sun and wind power from the vast open spaces where it is generated to the big urban areas where it is needed – and if you cannot set aside land to install the scale of solar and wind farms you need to replace coal, gas, or nuclear, it doesn’t matter that your renewables are cheaper on a per-kilowatt-hour basis. And today transmission is a huge problem in the US. And Europe, where many people don’t want wind farms, solar fields, electricity lines . . . I wish this were not the case but there is no immaculate pathway from brown energy to green energy. The road is paved with cruel trade-offs. Pick your poison – but grow up.” Thomas L. Friedman (May 18, 2022), *We Keep Falling for the Same Big Talk*, New York Times, Section A, p. 22.

⁹ The Council therefore recommends that the Commission convene a technical conference focused on (a) the benefits of transmission-transportation co-location, and (b) how the potential of co-location should be incorporated as a factor in transmission planning.

¹⁰ Rail Electrification Council, “[The Benefits of Rail Electrification](#)”[updated] The migration of rail operations from diesel-electric to fully electric motive power and more renewable energy, especially for Class 1 freight rail, is another powerful part of the transportation electrification story. That is a long-term and ambitious undertaking that will require major investment, technological innovation, and an acknowledgement of the full costs of the petroleum fuel supply chain. We contend that such innovation should be incorporated into State rail plans and are increasingly incorporated into corporate strategies. Current experiments with battery-driven electric locomotives, the exciting potential of hydrogen fuel cell technology, developments in high-speed passenger rail, and the examples set by electrification among European railroads are prime indicators that the time will come when fully electric freight and passenger operations will be a viable option. See The Nevada Department of Transportation. (2021). *Nevada State Rail Plan*. (2021). [State of Nevada Department of Transportation, 2021 State Rail Plan](#) The Nevada Rail Plan is among the first to identify rail electrification as a potential objective for railroad companies. The Council supplied NDOT with this element of the State Plan.

transmission grid on existing ROWs -- so often stymied by intractable regulatory barriers to siting and opposition to the use of private lands for even the most critical infrastructure – has gone largely unexploited.¹¹

Despite that, railroad ROWs remain incredibly valuable assets, and the widespread co-location of fiber-optic communications lines has demonstrated the feasibility and value of co-location. The potential benefit of a longitudinal ROW under agreements with a single private landowner like a railroad is incalculable. Benefits include less public opposition on aesthetic and environmental grounds and reduced land-use disturbance, which therefore translate to less development time and expense. Of course, such co-location must always be consistent with the operational, communications, and safety requirements of railroad operations.¹²

IV. Principal Comments

Planning for large interregional transmission projects is a critical component of the “grid of the future.” The ANOPR and NOPR raised important questions about interregional project planning but changed very little about how to proceed with timely grid integration across multi-state and multi-region electrical systems. The REC views such large projects as key to greater resilience and decarbonization of the entire system. To quote a recent comment to the Department of Energy--

[L]arge-scale transmission buildout is vital to achieving climate policies and bringing on the lower-cost and cleaner resources that utilities, states, and consumers have been calling for. Independent estimates indicate that high voltage transmission will need to double by 2030 and triple by 2050 at a cost of \$360 billion through 2030 and \$2.2 trillion by 2050 in order to

¹¹ Congressional Research Service, “Federal Railroad Rights of Way,” RL32140 (2006). See also, Justin G. Cook, *How the Supreme Court Jeopardized Thousands of Miles of Abandoned Railroad Tracks with a Single Opinion [Brandt Revocable Trust v. United States]*, 134 S. Ct. 1257 (2014), 54 Washburn LJ 227 (2014). Jeffrey M. Heftman, “Railroad Rights-of-Way Easements, Utility Apportionments, and Shifting Technological Realities,” 2002 Ill. L. Rev. 1401 (2002). See also, FERC Staff, *Report on Barriers and Opportunities for High Voltage Transmission: A Report to The Committees on Appropriations of Both Houses of Congress Pursuant to the 2020 Further Consolidated Appropriations Act*, (June 2020). <https://www.congress.gov/116/meeting/house/111020/documents/HHRG-116-II06-20200922-SD003.pdf> Staff’s broad analysis of the challenges of transmission planning focuses in part on the opportunities and possible prohibitions and restrictions related to transmission co-location in transportation corridors, pp. 30 et seq

¹² See, e.g., Cisco, R., *The Effect of Transmission Lines on Railroads*, T&D World (Oct. 2018), <https://www.tdworld.com/overhead-distribution/article/20971744/the-effect-of-transmission-lines-on-railroads>

achieve a zero-carbon future by 2050. [FN Omitted] Because both the need for transmission expansion, and the investment needed to achieve that goal, are significant, policies and incentives that support transmission buildout—such as [DOE’s] Transmission Facilitation Program at issue here—have the capacity to deliver huge benefits for America.”¹³

The Council supports the Commission’s pragmatic focus on issues at hand, such as the need for proactive, long-term transmission planning and cost allocation that recognizes the multiple kinds of benefits that transmission is capable of delivering over time. More transmission investment is a national imperative. A great deal of attention will be paid to encouraging transmission providers to strengthen regional systems without ignoring local needs. However, the NOPR leaves many interregional planning issues unresolved and a further proceeding on several aspects of interregional transmission planning would be appropriate. Among the issues raised but not resolved are (a) how to enhance interregional or “state-to-state” coordination; potentially requiring interregional planning, not just coordination, to avoid selection in each region impede development of cost-effective interregional projects; (b) requiring joint planning; (c) should interregional planning be designed to serve specific geographical renewable energy zones; (d) what basic or “core” planning criteria or inputs should be considered in each case; (d) alternative pathways for transmission facilities that benefit multiple regions. Assessment of the need for an independent market monitor for either regional or interregional planning was also raised by the Commission.

That said, the REC believes the Commission can adopt pragmatic reforms to interregional planning and cost allocation within the scope of the existing NOPR. We concur with many commenters that today’s transmission planning is “overwhelmingly reactive”¹⁴ and often responds to reliability problems, sponsors’ proposals, incumbent priorities, and

¹³ Americans For A Clean Energy Grid, *Comments on the Department of Energy’s Notice of Intent and Request for Information Regarding the Establishment of a Transmission Facilitation Program*, Reference No. 2022-10137 (TFP Request), June 13, 2022, at p. 2. The comment goes on to observe, based on numerous studies, that the large transmission expansion programs of the Southwest Power Pool (Priority Projects) and the MidContinent ISO (Multi-Value Project portfolio) had yielded benefits two to three times their cost.

¹⁴ Testimony of Jay Caspary, Vice President, Grid Strategies, Regional Transmission Planning Conference, FERC Docket RM21-17-000, (November 15, 2021).

not to longer-term regional or national objectives. Planning should be more proactive. It can address system needs and benefits more holistically. From planning protocols and practices to evaluation of potential system benefits, conventional planning also tends to perpetuate siloes that make processes less efficient,¹⁵ diminishing full consideration of project benefits, resulting in inefficiencies and potentially sub-optimal transmission expansions or upgrades. The current planning process helps perpetuate several of the existing silos that inhibit efficient transmission planning and cost allocation: economic versus reliability versus public policy benefits and objectives; lowest common denominator instead of multi-value projects; interregional planning as the offspring of regional priorities and processes. The Commission's long-term regional transmission planning ("LTRTP") can be used to encourage RTOs/ISOs and other regional planners to take a more holistic approach to transmission expansions and upgrades at all levels, such as by requiring (a) consideration of all potential transmission benefits when evaluating competing or alternative projects and plans as seen through the prism of 20+ years of anticipated technological, public policy, economic, operational, climate, and other changes; and (b) the use of public private partnerships.

Where the Council asks the Commission to take a major step forward is regarding the siting and permitting of large interregional projects. The NOPR asks whether transmission providers should be required to develop sensitivities for each of the four Long-Term Scenarios to identify more efficient transmission facilities for selection in the regional transmission plan for purposes of cost allocation as part of LTRTP. (P126) To minimize uncertainty, it asks elsewhere whether the assumptions underlying scenario planning should be periodically revisited (P100) and how to capture the best available data. (P134) Long-term planning demands a measure of risk mitigation as circumstances change. However, one factor that adds a measure of certainty to the process is the availability of certain sites for long distance transmission. The Council requests inclusion in the process of identifying

¹⁵ All projects have reliability, economic and public policy benefits but a more proactive and less reactive approach by planners will reveal a broad if various array of benefits. "To serve the triple goals of reliability, affordability, and sustainability, [studies by the Energy Systems Integration Group or ESIG] found that proactive, planned transmission to geographic zones is critical to provide certainty for transmission for developing the most cost-effective clean energy resources. Wind and solar energy are currently the least-cost clean resources and the highest quality resources are distant from load centers." Testimony of Dr. Deborah Lew, Assoc. Director, ESIG, *Id. See*, ESIG (2022), *Multi-Value Transmission Planning for a Clean Energy Future*. <https://www.esig.energy/wp-content/uploads/2022/07/ESIG-Multi-Value-Transmission-Planning-report-2022a.pdf>.

the more efficient or cost-effective transmission facilities in the LTRTP an examination of the prospects for locating transmission wholly or partly within railroad's trackside brownfield ROWs and appurtenant real estate such as rail yards.

Finally, the NOPR's LTRTP provides opportunities to encourage planners and transmission providers to explore and ascertain the most efficient and environmentally benign facilities from among the options presented. The REC requests that consideration of railroad ROWs be identified by the Commission as an integral part of project evaluation during the planning process. In that regard, the FPA places responsibility on planning processes to ensure just and reasonable rates and practices which reflect or accommodate trends of electrification, the generation mix, distributed generation, reliability and economic planning, and evolution of affected public policies. The REC asserts that the Commission can provide reasonable and constructive guidance to planners and transmission providers on siting and permitting practices in the context of its FPA authority over planning. Its support is based on fostering new partnerships between railroad owners of ROWs and grid planners and transmission providers, incumbents, and new market entrants alike, that will be a vital link to the grid of the future.

This comports with the probability that FERC will be required to exercise even greater authority to site and permit transmission under FPA Section 216 once National Interest Electric Transmission Corridor designations are made by the Department of Energy. That will impose a set of obligations akin to Section 7 of the Natural Gas Act to examine the impacts and implications of where transmission facilities are located. The Commission must prepare for that eventuality.¹⁶ For now, it can facilitate effective siting as it promotes effective transmission planning.

The prospect of even more massive and diverse investments in the grid over the next quarter century begs a question about how transmission providers and their economic and environmental regulators can ensure timely, rational, and responsible installation of facilities that will deliver the massive benefits that consumers and industry experts are coming to expect. The Council's contention here is that interregional transmission projects may amp up both the scope, benefits, and the complexities of grid planning and operations. That is

¹⁶ See revised FPA Section 216 (a) and (b), Infrastructure Investment and Jobs Act, Section 40105, in Section 40105 (November 15, 2021)

doubly the case for the visionary efforts like the Macrogrid¹⁷ and other HVDC transmission project proposals capable of delivering gigawatts of power great distances to provide flexible services to the grid.

In that light, planning to use the existing network of railroad ROWs makes strategic sense. For that to occur, siting and permitting will need to be less of an afterthought and more a top priority. Through this rulemaking and support for new partnerships with railroad companies that share objectives related to electrification, grid integration, and transportation innovation and flexibility, the Commission can assist the creation of a forward-looking siting and permitting regime that will become a key component of its reformed planning system for regional and interregional transmission projects.

No more dramatic case can be made for investment in a grid expansion that is national in scope and capable of moving gigawatts of power to where it is needed most in real time than this summer's heat waves and the resulting stresses on the reliability of regional grids, or the critical (and largely avoidable) grid meltdown in Texas during Winter Storm Uri in 2021. The Council contends that interregional transmission has assumed greater importance since these events. So has the concept of "macrogrid." While its configuration is far from clear today, such an advanced hybrid HVDC transmission grid concept should be part of the Commission's thinking about planning the grid of the future. Macrogrid is described by industry experts as an "overarching layer on the existing grid management structure, enabling the coordination of national and regional energy flows."¹⁸ The Council contends that the reforms announced in the NOPR are incomplete without the Commission eventually taking account of macrogrid as a potentially key part of the grid of the future, how its costs will be shared, and its relationship to the AC grid and to the planning, cost allocation, and interconnection reforms that FERC will adopt. These questions are among the many uncertainties surrounding interregional transmission that only an additional rulemaking on the subject can resolve.

¹⁷ [ACORE Macro Grid Initiative. James McCalley et al., *Macrogrid in the Mainstream: An International Survey of Plans and Progress*, \(November 2020\).](#)

¹⁸ Energy Systems Integration Group (2022), p.3. *Design Study Requirements for a U.S. Macrogrid: A Path to Achieving the Nation's Energy System Transformation Goals.* <https://www.esig.energy/wp-content/uploads/2022/02/ESIG-Design-Studies-for-US-Macrogrid-2022.pdf>.

Nevertheless, there is at least one aspect of interregional planning on which the Commission can get a head-start now: transmission facilities siting. Big projects require big solutions and network ROWs like those to which the Council draws FERC's attention are ripe for action –

Acquisition of rights-of-way for new transmission is a barrier to any form of grid expansion. Because of the architecture, the HVDC lines comprising the macrogrid would be much longer than new lines that are part of a more conventional grid expansion. Further, utilization in terms of power transfer of the rights-of-way would be much higher.¹⁹

Whether macrogrid and its many challenges are deemed by the Commission to be within the scope of this NOPR or a future rulemaking, the Council contends that siting practices and opportunities potentially affecting transmission cannot be excluded from consideration of the planning reforms in this proceeding. The availability and use of railroad ROWs should be considered by project proponents and grid planners as part of the justification for, and feasibility of, major transmission expansion proposals, including deciding among competitive projects.

The Council does not ask the Commission to preempt or affect state authority to site projects in any way. The law has traditionally assigned to States the primary responsibility to oversee or regulate the siting of facilities that comprise the physical grid. States retain that authority, with a couple significant exceptions provided under the Energy Policy Act of 2005.²⁰ However, while the physical location and features of a project that can affect the environment or communities governed largely by State law and permitting requirements that protect sensitive resources, the actual, executable authority over how the transmission grid is planned and configured in light of the potential benefits to consumers and the economy is

¹⁹ *Id.*, at p. 4. “The convergence of the national push for very high levels of clean electricity and the advances in HVDC transmission technology of the last decade have created a unique opportunity for a detailed exploration of an alternative to the conventional transmission expansion process to address identified challenges for the U.S. electric power system.”

²⁰ EPA Act modified Section 216 of the FPA, to allow transmission developers to seek FERC “backstop” authorization of proposed projects that would be located in a National Interest Electric Transmission Corridor designated by the DOE where State approval was not forthcoming. Certain limitations in the statute as adopted in 2005 prevented its application in any case. Those problems were corrected by Congress in the Infrastructure Investment and Jobs Act in 2021, making it somewhat more likely that FERC will be called upon to authorize and site proposed transmission projects in the future. Infrastructure Investment and Jobs Act, Section 40105, in Section 40105 (November 15, 2021)

assigned to the Commission. In the process of overseeing the planning and development of the interregional, inter-market transmission capacity that the Council so strongly supports, the Commission should be cognizant of the significant challenges that projects will face if proposed for more than one state or region. State siting procedures, “need” determinations, regulatory criteria, and public policies are not often consistent, and coordination can be challenging.

Although it does not ordinarily make siting determinations, the Commission’s planning requirements can foster more efficient and consistent practices that could help expedite needed transmission expansions. Acquisition of the rights to use railroad ROWs should be an important objective in that regard. Major new large-scale projects are likely to require a combination of access to private property and access to public lands, and other potential ROWs to connect clean energy resources and major loads in many cases. The only longitudinal privately-owned ROWs that could accommodate major interregional projects of the size being contemplated by the grid decarbonization proponents are railroad ROWs.²¹ This represents a significant opportunity, not a silver bullet, but the Commission cannot fail to consider how its guidance and direction could help rationalize and accelerate the development of major regional and interregional transmission projects.

Therefore, the Council *does* ask the Commission to require planners and project proponents to study the best, least land-disturbing, most efficient, and expeditious, and community-friendly opportunities which avoid or mitigate the impacts of project development. Such a study, informed by its experience siting natural gas pipelines under Section 7 of the Natural Gas Act, should be the foundation of siting and permitting best practices as gateway determinations for inclusion of projects in regional or interregional transmission plans. Holding planners accountable for investigating the use of trackside or rail yard ROWs and for following best practices could be among the Commission’s basic tools for advancing large-scale transmission more quickly. These steps can and should be taken by transmission providers and developers in conjunction with railroads, for which monetization of valuable ROWs should be attractive but which also entail concerns about safety and reliable operations and communications.

²¹ Access to highway rights of way for potential utility purposes is governed largely by state Departments of Transportation and the Federal Highway Administration of the U.S. Department of Transportation. See 23 CFR Part 645 (2022).

The NOPR specifically permits conditional rights of first refusal (“ROFR”) for incumbent transmission providers based on development of a joint partnership with another entity. By allowing design and use of a ROFR conditioned on a partnership or joint ownership with another incumbent or an unaffiliated entity, FERC hopes to secure the “benefits of joint ownership of transmission facilities, particularly large backbone facilities, both in terms of increased opportunities for investment in the transmission grid, as well as nondiscriminatory access to the transmission grid by transmission customers.” (P359)

Although the Commission’s proposal was probably not drafted with railroad ROWs in mind, the Council points out that railroads, particularly those with useable ROWs, could figure prominently as third parties in grid-related partnerships for the construction and operation of energy and communications infrastructure. In the future, new market entrants and incumbent transmission providers could partner with railroads to develop new transmission along railroad rights of way. SOO Green is a notable example of such a partnership to co-locate and install 350 miles of underground HVDC transmission within Canadian Pacific Railway’s ROW.²² We urge the Commission to take care administering the limited ROFR in this specialized context to treat all railroad-related partnerships similarly as would be the case under Order No. 1000’s “sound theoretical approach.” (P353) The Council shares the Commission’s desire to achieve more “efficient and cost-effective regional transmission development.” Our goal is to encourage utilization of railroad ROWs in pursuit of that goal. No class of transmission developers should be disadvantaged in successfully making such arrangements. The Council supports both traditional transmission-owning utilities and new entrants having the same ‘not unduly discriminatory’ opportunity to partner with railroads for LTRTP and other transmission projects, so that the promise of siting major transmission expansions along the network of railroad ROWs stands the best chance of success.

In summary, it is the REC’s view that FERC has more authority over transmission facilities than it exercises. It is not surprising that the Commission has thus far chosen not to act on our unusual request for action on siting in the ANOPR phase of this proceeding. Transmission siting has traditionally been peripheral to the Commission’s FPA

²² [Co-Location Model - SOO Green HVDC Link](#)

responsibilities. However, the primary jurisdiction of States over facilities siting and land use does not eliminate FERC's ability to oversee or guide transmission siting decisions as part of transmission planning. In the interregional planning area in which this Comment focuses, the potential for siting challenges to thwart or delay is arguably much greater than for local or regional planning. The Commission's expanded use of its broad authority over transmission planning in Order No. 1000 was affirmed by the court in 2014.²³ Moreover, FPA Section 201(b)(1)²⁴ vests the Commission with "jurisdiction over all facilities for such transmission or sale [of electric energy]", although that authority is not plenary.²⁵ Section 206 "empowers the Commission to fix any practice affecting rates" if that practice is unjust or unreasonable, unduly discriminatory or preferential. 16 U.S.C. §824e(a). The objections to the Commission's assertion of its authority over transmission planning and cost allocation as exercised in Order No. 1000 were swept aside in the *South Carolina P.S.C.* case. Based on that opinion, the Council contends that, under the FPA as applied in Order No. 1000, the Commission should establish best practices for the design and location of facilities and related land use, permitting, and development of transmission facilities under as part of its responsibility to ensure that rates and practices are just and reasonable and not unduly discriminatory or preferential.

The Council argues that the conventional siting processes associated with major grid expansion under the rule will directly and discernibly impact transmission and energy rates over their asset lives,²⁶ and should be guided by best practices adopted by the Commission.

²³ In upholding Order No. 1000, the courts have acknowledged the breadth of the Commission's authority over planning. *S. Carolina Pub. Serv. Auth. v. F.E.R. C.*, 762 F. 3d 41 (D.C. Cir. 2014).

²⁴ 16 U.S.C. §824(b)(1),

²⁵ The policy declaration in FPA Section 201(a) makes clear that federal regulation extends only to those matters which are not subject to regulation of the States." Section 201(b)(1) states in part that the Commission "shall not have jurisdiction, except as specifically provided in [Part I], over facilities used for the generation of electric energy or over facilities in local distribution or only for the transmission of electric energy in intrastate commerce . . ." The Council therefore does not advocate hands-on federal siting of transmission, except as it may arise under FPA section 216(a). 16 U.S.C. §824(b)(1)

²⁶ The court in *South Carolina P.S.C. v. FERC* <https://cms.ferc.gov/sites/default/files/2020-05/12-1232.pdf>. Congress was clear about the breadth of the Commission's responsibility: "By its plain terms, Section 206 instructs the Commission to remedy 'any . . . practice' that 'affect[s]' a rate for interstate electricity transmission services demanded or 'charged' by 'any public utility' if such practice 'is unjust, unreasonable, unduly discriminatory or preferential.' [FN omitted]. The text does not define "practice," although use of the word "any" amplifies the breadth of the delegation to the Commission. See *United States v. Gonzales*, 520 U.S. 1, 5 (1997)."

The record of decade-long project delays and the virtual absence of interregional transmission expansion since Order No. 1000 can be corrected with proactive, long-term planning processes, of which reasonable long-term siting consideration should be a part. Permitting and siting is the only piece of transmission development processes that is not currently being reassessed. The need to encourage development of multi-state, multi-region capacity expansion should invade this quiet corner of FERC's FPA jurisdiction.

Among the most prominent principles that the Commission could advance is the use of existing transportation ROWs, especially railroad ROW networks, to the extent that transportation safety and commerce are not compromised. The Council contends that, as important as this collaboration could be, it will not happen without FERC's leadership. Bringing two network industries together for this common purpose would constitute real progress. This work is clearly within the Commission's broad FPA mandate.

V. **Concluding Observations About Planning Reform.**

In our view, one of the greatest unmet needs in current electricity law is for new procedures and principles to guide interregional planning and expansion and modernization of the transmission system at the national level. The benefits of liquid bulk power transactions across regional markets and among the three interconnections are very likely to outweigh the costs, especially over the life of transmission investments.²⁷ Drawing on the prevailing post-Order No 888 view among industry participants and policy makers that a strong, integrated transmission grid will be the most efficient platform upon which electric

²⁷ Bloom A. (2018), *Interconnection Seam Study*, NREL. <https://www.nrel.gov/analysis/seams.html>; Chang, J. W. et al., (2013). *The Benefits of Transmission: Identifying and Analyzing the Value of Investment*, The Brattle Group, Inc. <https://www.brattle.com/The-Benefits-of-Electric-Transmission-Identifying-and-Analyzing-the-Value-of-Investments.pdf>; U.S. Gov't Accountability Office, GAO-08-374R (2008). *Transmission Lines Issues Associated with High-Voltage Direct-Current Transmission Lines Along Transportation Rights of Way*; <https://www.gao.gov/assets/gao-08-347r.pdf>. Pfiefenberger, J. et al., (2019). *Cost Savings Offered by Competition in Electric Transmission: Experience To Date and Additional Potential Customer Value*, The Brattle Group Inc; https://www.brattle.com/cost_savings_offered_by_competition_in_electric_transmission.pdf. Chang, J.W. and Pfiefenberger, J. (2016). *Well-planned Electric Transmission Saves Customers Costs: Improved Transmission is Key to the Transition to a Carbon-Constrained Future*, The Brattle Group Inc.

power can be 24/7 reliable, the Final Rule in this proceeding will be a landmark on the road to an efficient national electric system.²⁸

Viewed from that ambitious perspective, long-term solutions to transmission siting barriers become important components of securing the “grid of the future” under long-term planning. To the extent the NOPR’s contemplated reforms are aimed at grid integration and tying regions and interconnections together for the sake of system resilience and economic efficiency, the Final Rule is likely to produce larger, perhaps “macro,” transmission expansions and upgrades. With that realization, it would be remarkable for FERC to ignore the siting complications that such outcomes entail.

The Council asks only that the Commission begin an exploration of the siting practices that will be required, how States and planners can work together to find best available practices and opportunities to avert or mitigate sub-optimally located or designed projects, avoid procedures that become mired in time-wasting eminent domain litigation, resolve disputes among regions or jurisdictions over project location, or address potential installations that impose an unacceptably high burden on landowners or communities.

The Council supports a proactive and forward-looking approach to planning transmission expansions. In other words, the Commission should reaffirm and articulate a commitment to the electric grid of the future which, as the numerous studies over the past two decades have demonstrated,²⁹ will be driven by developing zones of new resources and more decentralized, diverse, and potentially less polluting electric generation. That kind of energy future necessarily depends on more vibrant transmission infrastructure that extends

²⁸ Pfeifenberger, J. et al., (2015). *Toward More Effective Transmission Planning: Addressing the Costs and Risks of an Insufficiently Flexible Electricity Grid*, The Brattle Group Inc. <https://www.brattle.com/toward-more-effective-transmission-planning-addressing-the-costs-and-risks-of-an-insufficiently-flexible-electricity-grid/>; Frayer, J. et al., (2017). *The Truth About the Need for Electric Transmission: Sixteen Myths Debunked*. London Economics. https://www.eesi.org/files/021318_Julia_Frayer.pdf; Caspary, J. and Gramlich, R. (2021). *Planning for the Future: FERC’s Opportunity to Spur More Cost-Effective Transmission Infrastructure*. Grid Strategies. https://cleanenergygrid.org/wp-content/uploads/2021/09/ACEG_Planning-for-the-Future1.pdf. also, Bloom, *Id.*

²⁹ U.S. Dept of Energy. (2015). *Wind Vision: A New Era for Wind Power in The United States*. <https://www.energy.gov/eere/wind/downloads/wind-vision-new-era-wind-power-united-states>; Joskow, P. L. (2020). *Transmission Capacity Expansion is Needed to Decarbonize the Electricity Sector Efficiently*, 4 *JOULE* 1(2020); Hagerty, J. M. et al., (2017). *Transmission Planning Strategies to Accommodate Renewables*. The Brattle Group Inc. https://www.brattle.com/transmission_planning_strategies_to_accommodate_renewables.pdf; Princeton University Andlinger Center. (2020). *Net Zero America: Potential Pathways, Infrastructure, and Impacts*. https://netzeroamerica.princeton.edu/img/Princeton_NZA_Interim_Report_15_Dec_2020_FINAL.pdf.

across state, local, and market boundaries. More importantly, providing guidance so that planners can anticipate that future is essential groundwork for the grid to be a plausible platform for change. As FERC helps the industry and other stakeholders plan transmission for 2030, 2040, and beyond in anticipation of changing electricity demand, emerging technologies, climate changes and other factors, and the evolving transportation-electric power ecosystem, it has an important role inducing participation by incumbent and non-incumbent transmission providers in creating partnerships with regional and national railroad companies. It is these partnerships that will help take the grid of the future to new heights.

Therefore, the Council respectfully requests (1) inclusion of transmission siting best practices as part of the LTRTP planning process as a means of ascertaining the most cost-effective interregional plans for transmission facilities and, as part of that process, (2) an enquiry into the structural and institutional barriers that exist to utilization of existing railroad ROWs as an efficient location for major transmission expansions.

Respectfully submitted,



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