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Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection

Dear Commissioners,

American Farmland Trust (AFT) is pleased to submit the following comments to the Federal Energy Regulatory Commission (FERC) regarding Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection, and the advanced notice of proposed rulemaking.

Founded in 1980, AFT is the only national organization that takes a holistic approach to agriculture, focusing on the land itself, the agricultural practices used on that land, and the farmers and ranchers who do the work. AFT has been engaging in "smart solar" siting work for more than four years to achieve renewable energy buildout while conserving farmland and supporting farm businesses. This work has included mapping, engaging in least-conflict processes, and providing technical assistance to state and local governments to accelerate the expansion of renewable energy development – specifically solar – while maintaining the nation's most productive, versatile, and resilient farmland. Because of this experience, AFT is uniquely positioned to offer recommendations for how the FERC can pursue transmission siting reforms while minimizing impacts on our nation's farm and ranch lands and achieving our nation's climate and grid decarbonization goals.

As an organization dedicated to mitigating the impacts of climate change, AFT is supportive of the Administration's efforts to scale up solar energy generation from 4 percent to 45 percent by 2050, and to build out the related infrastructure to meet this goal. We applaud the Commission's efforts to reform existing regulations for transmission siting to modernize our electric grid, while maintaining safe, reliable, and low-cost electricity to customers. We also recognize that our nation will need significant transmission buildout to realize ambitious climate goals, and that reforms are necessary to deploy more efficient and cost-effective technologies benefitting customers and industry.

However, the physical placement of high voltage transmission lines and new renewable energy projects, particularly utility-scale solar and wind, will have environmental, economic, and land use impacts on the communities in which they are sited. Poorly planned and sited transmission and renewable energy projects could present a major threat to the agricultural land that our nation depends on to produce food, feed, fiber, and fuel, as well as to provide ecosystem services such as habitat, carbon sequestration, water filtration, and more. AFT's 2020 Farms Under Threat: The State of the States report showed that the US is already losing 2,000 acres of agricultural land *every single day*, a trend that would only be exacerbated by poorly planned renewable energy development and transmission siting.

In particular, AFT is concerned about the impact poorly planned solar and transmission development could have on our nation's most productive, versatile, and resilient agricultural land, and other lands most well-suited to agricultural production. The best farmland is typically flat, open, and near existing infrastructure, which also makes it highly attractive both for renewable energy development and transmission corridors. Without proper foresight and policies, poor siting could push agricultural production from our most productive farmland to land less well-suited to supporting viable farm businesses over time. This could negatively impact our nation's food supply, rural economies, and the environmental sustainability of agriculture by increasing soil erosion and the use of greenhouse-gas (GHG) intensive inputs.

AFT recommends that the FERC advance three reforms for transmission siting and planning that identify and properly value our nation's best agricultural lands. First, we must anticipate where future generation and, subsequently, transmission will be sited to meet our clean energy needs, and reduce the overlap with the land best suited to agricultural production. We expect that utility-scale project placement will drive transmission siting choices, and vice versa. Second, we must support local, state, and regional planning processes that consider and reduce agricultural and other land use conflict so that projects are sited in alignment with local priorities – and therefore get built. Third, we must avoid, minimize, and mitigate the displacement of farming and ranching, especially on our best farmlands, as a result of transmission and renewable energy development – particularly utility scale solar. This could also be accomplished through research and development of new technologies and approaches, such as "dual-use solar" (also known as agrivoltaics).

Without these strategies, millions of our nation's best agricultural acres will be lost to renewable energy generation and transmission buildout. However, this does not need to be the case. Properly planned and sited designs for renewable energy and transmission not only can coexist with agricultural use, but can also support viable operations by providing stable income to landowners, thereby preventing the conversion of this land to other forms of development. In essence, the impact of new renewable energy development on agriculture depends on the care we take with the choices we make today.

Modeling and Mapping to Balance Climate Goals with Agricultural Production

AFT's 2020 Farms Under Threat: The State of the States report shows that during the 15-year period from 2001-2016 alone, 11 million acres of agricultural land (equivalent to all US farmland devoted to fruit, nut, and vegetable production in 2017) were paved over or converted to uses that threaten the future of agriculture.[1] This includes 4.4 million acres of "nationally

[1] J. Freedgood, M. Hunter, J. Dempsey, and A. Sorensen, "Farms Under Threat: The State of the States." American Farmland Trust, 2020. https://farmland.org/project/farms-under-threat/

significant land," our nation's most productive, versatile, and resilient (PVR) land. Lost with these acres is not just the production of food, feed, fiber, and fuel, but also the ability of that land to function as a carbon sink, wildlife habitat, and to support farm and local economic viability.

Without adequate consideration, policies, and planning, expansion of renewable energy production – particularly utility-scale solar and new transmission – could translate into the loss of additional millions of agricultural acres. This is because the typical characteristics of high-quality farmland – flat, sunny, dry, open, and close to existing infrastructure – are the very characteristics that make land highly suitable for solar development.[2] Recent research confirms that rural areas are the most likely target for solar expansion. The September 2021 Department of Energy Solar Futures Study indicates that for solar capacity to reach 45 percent of total US generation needs by 2050, 90 percent of utility-scale solar development would need to be installed in rural areas. A 2021 Cornell study similarly concluded that 80-85 percent of solar development in New York is likely to take place on agricultural land.[3]

AFT supports shifting our economy and energy supply away from the carbon-based fuels that drive climate change, and toward renewable energy. However, because not all land is created equal in its ability to support agriculture, AFT believes that the quality of the land should be an important factor when planning for future renewable energy generation and transmission development. To minimize the impact on our farm economy and food supply, we must anticipate where future renewable energy generation and transmission development could take place, and then take action to reduce impacts. These types of mapping exercises can help local communities understand where development may occur, and inform the creation of policies, such as incentives and disincentives, that will guide siting to least-conflict sites, including land less well-suited for agriculture. Such maps can also be useful in the kind of stakeholder collaboration critical to getting projects built, helping developers and state and local governments identify priority areas for land protection as well as least-conflict, or least-impact, sites for renewable energy generation and transmission development.

Since 1986, AFT has been using mapping to target and prioritize land protection efforts. Our latest effort, Farms Under Threat: The State of the States, is a partnership with Conservation Science Partners and USDA's National Resource Conservation Service (NRCS). The Farms Under Threat database depicts the agricultural and forested landscape at 10-meter resolution, including both land cover and land quality (productivity, versatility, and resiliency). It identifies where industrial, urban, and residential development is converting and fragmenting the rural landscape. The Energy Zone Mapping Tool (EZMT), which was developed by the EISPC Energy Zones Workgroup in collaboration with three DOE National Laboratories, utilizes the Farms Under Threat dataset to identify the most important agricultural lands in each state. It allows stakeholders to better understand the best areas to site clean energy resources by mapping potential site development and corridors, while using existing stakeholder resources that can reduce siting and land use conflicts. Since completing the study in 2013, additional resources have been added to maximize this tool for clean energy developers in the target region. There is an opportunity to expand this mapping tool beyond the Eastern Interconnection States and include additional datasets.

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[2] T. Grout and J. Ifft, "Approaches to Balancing Solar Expansion and Farmland Preservation: A Comparison across Selected States." Cornell University, 2018. https://s30428.pcdn.co/wp-content/uploads/sites/2/2020/09/Cornell-Dyson-eb1804.pdf

[3] V. Venktesh, J. Sward, A. Worsley, and K. Zhang, "Strategic Land Use Analysis for Solar Energy Development in New York State." Renewable Energy, 2021. https://doi.org/10.1016/j.renene.2021.03.128

Additionally, AFT is working on the next iteration of the Farms Under Threat project, known as "Farms Under Threat 2040: Future Scenarios," which is a comprehensive assessment of the future threats posed to agricultural lands by development and climate change. Farms Under Threat 2040 will include analyses and mapping tools designed to identify threats to certain sensitive lands, including high-quality agricultural land, high-value wildlife land, and other land use considerations in the face of climate change and development pressure. Included in these analyses are two key products intended to further support and predict the potential for solar development on rural lands. These products are:

- A map that identifies locations that are suitable for solar development based on their landscape characteristics (e.g., slope), proximity to supportive technology (e.g., transmission lines and substations), and economic potential (e.g., land value/costs)
- A predictive model that can place new solar development based on the above technical suitability map and other land use characteristics. This model will be able to map where solar could be sited with or without respect to sensitive lands (e.g., PVR, wildlife)

The forthcoming Farms Under Threat 2040 predictive solar model projects new solar development on the landscape by accounting for state-level demand for utility scale solar (how much), landscape development suitability (where), spatial attributes (size and density), and past trends in land-use transition (how likely it has been for a given land use to be developed). This model will allow AFT to assess the degree to which our agricultural resources could be threatened by business-as-usual solar development, and how smart-solar siting policies could improve outcomes for farmland. AFT's goal is to utilize this analysis to better inform solar siting policy and practice, while protecting our nation's most valued and productive lands for agricultural, wildlife, and conservation purposes. AFT welcomes the opportunity to put these tools to use and collaborate with the FERC, the Department of Energy, industry, public and private sector landowners, and solar developers to better understand and guide solar siting and transmission development on rural lands.

In addition to mapping, it will be critical to invest in research to support non-traditional solar development that enables continued agricultural use. One example of non-traditional development is "dual-use solar" (also known as agrivoltaics), which could help to strike a balance between agricultural use, future energy generation, and transmission planning and siting. AFT uses the term "dual-use" to refer to a solar installation that integrates renewable energy – specifically solar arrays – and farming activity on the same ground. To be considered dual-use, AFT believes a solar installation cannot displace farming activity. Rather, farming activity must be maintained throughout the life of the solar facility in a manner that is consistent with commercial agricultural production as appropriate to the capacity of the land. In addition, after a solar installation is decommissioned, the land must be in a condition suitable for a variety of farming operations, similar to what was possible before the installation. When these conditions are met, the operation not only maintains agricultural production, but also can provide the landowner a secondary source of income through lease payments.

As our country drives forward a massive—and necessary—expansion of renewable energy and transmission development, using mapping as well as non-traditional and smart solar siting practices can help minimize the loss of high-quality farmland, avoid land use conflicts, facilitate rapid deployment of renewable energy, and protect agricultural land for future generations.

Local Planning Resources and Stakeholder Input

Once maps are created, they should be put to work to help communities balance climate and conservation goals. Many local government officials – who often determine land use choices – are scrambling to understand the impact of renewable energy development, and to develop land use policies to guide permitting and siting in a way that supports longstanding community goals, including conserving farmland. Local conflict and permitting moratoriums have been a major contributor to the slowdown of renewable project permitting. Having well-vetted, trusted resources to guide policies and thinking *before* projects are proposed in their communities will help support renewable energy and transmission buildout with less community conflict, thereby expediting renewable installation.

The importance of providing tools and resources to support local stakeholder engagement processes when working to achieve ambitious renewable energy and transmission development goals cannot be overstated. Often, local government officials responsible for making land-use decisions are volunteers burdened with multiple responsibilities, lacking the time and technical expertise to create policies, zoning, and land use laws to address the needs of a new and unfamiliar technology. And although associations, state governments, and others have provided resources to inform local officials, they are often designed at a high-level, focused on solar and wind permitting, and are lacking when it comes to integrating local land use and conservation priorities with societal renewable energy and climate goals. As a result, local community members can feel disenfranchised when a project is permitted in their communities by state or federal government agencies. More can be done to support local and state governments in the proactive work of understanding solar and transmission siting needs, and to help them integrate these needs into longstanding community goals.

Another way to achieve this is through collaborative stakeholder engagement, which can be advanced by uplifting successful models and processes, and by providing funding and resources to support these time-consuming, highly technical efforts. One such example of a replicable least-conflict, consensus-building model comes from the San Joaquin Valley in California, which brought together transmission groups, environmental and farm groups, and developers in dialogue. This effort resulted in collaborative maps, information sharing, and education, identifying ample least-conflict acres to meet renewable energy goals while still supporting agriculture and conservation priorities.

Another example comes from New York state, where local opposition – and a desire to better define local priorities before development occurs – have long prevented projects from being built and therefore contributing to New York's ambitious climate goals. As a result, several collaborative efforts have been undertaken in the state, including a Renewables on the Ground process and a state-facilitated Agricultural Technical Working Group which brings together developers, local government officials, farmers, conservation organizations, and state agency staff to share information and inform policies that will better balance conservation and climate goals. AFT has been integral to both these state and regional efforts and urges FERC to support and proactively engage stakeholders at the state and local level to ensure national goals are developed collaboratively and take local priorities into account.

Finally, planning resources should not just concentrate on stakeholder engagement and renewable energy and transmission development. Rather, resources should be developed and promulgated to support locally identified priorities, such as protecting productive farmland from conversion. This includes:

- Supporting the development of policy tools, such as Purchase of Agricultural Conservation Easement (PACE) programs
- Statewide and local land use planning and local zoning tools that support farm viability and farmland protection while also permitting renewable development
- Information on the development of agricultural districts with right to farm protections
- Education about other programs to mitigate farmland loss in the face of development such as mitigation payments or transfer of development rights
- Establishment of FarmLink programs and other policies to facilitate the transfer of farmland from retiring to aspiring farmers.

Conclusion

AFT appreciates the opportunity to submit our comments on the advanced notice of proposed rulemaking. We look forward to serving as a resource to FERC on these issues and continuing to work together to incorporate farmland protection and farm viability considerations into our nation's renewable energy and transmission planning and siting development.

Respectfully submitted,
American Farmland Trust