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"Plugging in Public Lands: Transmission Infrastructure for Renewable Energy"
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Thank you for the opportunity to provide testimony on the transmission of renewable energy from Federal lands and waters. In one of his first actions, President Biden issued Executive Order (EO) *14008, "Tackling the Climate Crisis at Home and Abroad,"* to restore balance on public lands and waters, create jobs, and provide a path to align the management of America's public lands and waters with our nation's climate, conservation, and clean energy goals. The EO set ambitious renewable energy goals to have a carbon pollution-free electricity sector no later than 2035. These goals will ensure America and the world can meet the urgent demands of the climate crisis, while empowering American workers and businesses to lead a clean energy revolution. Section 207 of EO 14008 further directed the Secretary to review siting and permitting processes on public lands and in offshore waters to identify ways we can increase renewable energy production while ensuring robust protection for our lands, waters, and biodiversity.

In addition to the EO, the Energy Act of 2020 (P.L. 116-260) directed the Bureau of Land Management (BLM) to create Renewable Energy Coordination Offices (RECOs), and to set a national goal of authorizing at least 25 GWs of onshore wind, solar, and geothermal energy production on Federal lands by 2025. The EO and Congressional direction provide the BLM a clear mandate to support and prioritize expanding renewable energy development on public lands. The Bureau of Ocean Energy Management (BOEM) is working to unlock the development potential of offshore wind by advancing new lease sales, catalyzing new economic opportunities, and delivering offshore energy across the country.

Modernizing and expanding the electric transmission grid is critical to unlocking access to renewable energy across public, private, and state lands, while improving the reliability and resilience of electricity delivery as demand increases and climate-related disruptions intensify. The Administration is committed to protecting against the loss of valuable natural resources and keeping our ecosystems intact and healthy. The Department of the Interior (Department) recognizes the enormous role its bureaus will play in connecting renewable energy generation with load centers and looks forward to working with Congress on this matter further.

By the Numbers: Renewable Energy Development on Public Lands

The BLM manages approximately 245 million surface acres, located primarily in 12 western states, as well as 30 percent of the nation's onshore mineral resources across 700 million subsurface acres, overlain by properties owned by private landowners, states, or managed by other Federal agencies. Under the BLM's multiple use mandate, the BLM manages public lands for a broad range of uses, such as renewable and conventional energy development, livestock grazing, timber production, hunting and fishing, recreation, and conservation – including protecting cultural and historic resources. Lands managed by the BLM also provide vital habitat for more than 3,000 species of wildlife and support fisheries of exceptional regional and national value. In furtherance of the BLM's statutory mission, the bureau recently reinstated its long-standing mitigation policies to avoid and minimize the impacts of development and to offset unavoidable impacts with conservation actions to preserve and protect the ecological integrity of landscapes.

Over the past two fiscal years, the BLM permitted roughly 4,800 megawatts (MWs) of new electricity generation capacity from wind, solar, and geothermal sources on public lands, including 2,650 MWs permitted in 2021. As of October 2021, permitted projects on BLM-managed lands include 34 solar projects and 36 wind projects with a combined permitted capacity of approximately 9,400 MWs. Additionally, the BLM has 47 operating geothermal power plants with one under construction for an installed capacity of approximately 2,500 MWs. Taken together, that's enough energy to power roughly 5 million homes. The BLM also prioritizes the processing of transmission connections that directly supports renewable energy development on non-Federal land. BLM is continuing to see an increase in storage as part of renewable energy projects as an important part of incorporating clean generation into the grid.

The most recent large-scale approval of a project on BLM-managed lands occurred on May 3, 2021, when the BLM announced the final approval of the 350 MW Crimson Solar Project in the California desert. The Crimson Solar Project represents an investment of roughly $550 million and has the potential to deliver enough electricity to power approximately 87,500 homes. The BLM is also currently processing dozens of utility-scale renewable energy applications like the Oberon Solar Project in California.

On November 4, 2021, the BLM announced it is conducting an auction for utility-scale solar energy development leases covering 8,500 acres in each of the three Solar Energy Zones (SEZs) in Arizona. The BLM estimates that if all three SEZs are fully developed, they will be capable of producing roughly 825 MWs of electricity, or enough to power 280,000 homes and businesses. This follows the first solar lease auction in Utah covering 4,800 acres inside the Milford Flats South SEZ in September 2021. The Milford Flats South SEZ has an estimated potential for projects that could generate over 600 MWs of electricity, providing power to approximately 100,000 homes.

Enhancing Onshore Renewable Energy Permitting

The BLM is taking action to improve its permitting processes and enhance interagency coordination of permitting of renewable energy projects and transmission lines on BLM-

managed lands. To achieve the Administration's renewable energy goals and implement the Energy Act of 2020, the BLM has assessed staffing levels related to its renewable energy program and developed a proposal for the establishment of the RECOs as directed by Congress. Additionally, the BLM is finalizing an interagency Memorandum of Understanding to prioritize renewable energy-related activities as required by the Energy Act of 2020.

Furthermore, the BLM has also prioritized a short list of key programmatic actions, regulation updates, and interim policies to facilitate renewable energy development on BLM lands in the short and medium term. On August 31, the BLM initiated a process to revise its regulations related to renewable energy permitting and linear Rights-of-Way (ROWs) on public land and has held four listening sessions with stakeholders. In accordance with Section 3103 of the Energy Act of 2020, the BLM recently issued a policy to reduce per-acre rental rates for existing and new solar and wind energy development projects on public lands where acreage rents for solar and wind have seen dramatic increases, to promote responsible development in these areas. The BLM is also considering updating the SEZs that were designated in the Western Solar Plan completed in 2012.

Importantly, the BLM also has authority to manage the abundant geothermal resources across approximately 245 million acres of public lands, including 104 million acres of U.S. Forest Service (USFS) lands. Geothermal development projects on public lands are authorized via the issuance of leases and the approval of drilling permits and utilization plans under the Geothermal Steam Act of 1970, as amended. Geothermal was the first renewable energy that the BLM approved for production on public lands, with 2016 marking four decades since the first approved geothermal project in 1976.

Planning for Onshore Renewable Energy Projects

Solar and wind energy development projects on BLM-managed public lands are authorized as ROW grants or leases under Title V of the Federal Land Policy and Management Act (FLPMA). The FLPMA requires the BLM to collaborate with state, local, and Tribal governments, as well as the public, to develop land use plans for managing these diverse public land resources under the principles of multiple use and sustained yield, and in accordance with other applicable laws. The BLM land use plans establish goals and objectives to guide future land and resource management actions implemented by the BLM.

Meeting the President's and Congress' ambitious goals to increase the permitting and construction of renewable energy and transmission projects on Federal lands and waters requires strategic planning. This entails striking a balance between incentivizing responsible renewable energy development in low-conflict areas and minimizing adverse impacts to fish and wildlife habitats and other diverse public land resources. To promote the efficient deployment of renewable energy projects, the BLM leverages existing tools and authorities to aid in designating priority renewable energy development and transmission areas. The agency is also working to expedite permitting for utility-scale projects.

In December 2016, the BLM finalized the Competitive Processes, Terms, and Conditions for Leasing Public Lands for Solar and Wind Energy Development and Technical Changes and

Corrections Rule (known as the Competitive Leasing Rule). Through competitive leasing, the BLM sought to incentivize developers to propose the most efficient and technologically appropriate developments for solar and wind projects, while ensuring an environmentally-sound approach and a means to ensure American taxpayers receive fair market value for the use of public lands and energy resources as required under Section 102 of FLPMA. The Energy Act of 2020 provides the Secretary with tools to promote renewable energy on public lands through reduced acreage rent and capacity fees, or both, for existing and new solar and wind authorizations. As such, the BLM is contemplating regulation revisions and interim policy that would implement these provisions.

Through the 2012 Western Solar Plan, the BLM approved land us plan amendments that designated 285,000 acres of Solar Energy Zones where solar energy development will be prioritized. The BLM has identified another approximately 19 million acres of public lands with solar energy potential outside these zones in six southwestern states: California, Nevada, Arizona, New Mexico, Colorado, and Utah. The BLM also manages more than 20 million acres of public lands that have been identified with wind energy potential in 11 western states. In January 2013, the BLM finalized the Arizona Restoration Design Energy Project, which established 192,100 acres of renewable energy development areas on BLM-managed land throughout Arizona and established the Agua Caliente SEZ. Similar to the SEZs, the project development areas were identified based on development potential and avoiding conflicts with other resources, as well as prioritizing areas that have been previously disturbed.

Of note, in 2016, the BLM finalized the Desert Renewable Energy Conservation Plan (DRECP) in southern California. The DRECP is a landscape-level plan spanning more than 10 million acres of BLM-managed lands that supports renewable energy development, including through designation of Development Focus Areas, while conserving unique and valuable desert ecosystems and providing outdoor recreation opportunities. The DRECP demonstrates how the BLM, in collaboration with partner agencies, recognized the need for accommodating interest in utility-scale renewable energy projects and associated transmission lines that support Federal and state renewable energy targets through the use of durable regulatory mechanisms. This involved changing land use allocations and management prescriptions within the DRECP planning area to ensure energy generation and transmission are aggregated within high potential areas and minimize transmission sprawl. Future transmission capacity planning would be integrated into the overall transmission system more efficiently by expanding existing corridors and areas with anticipated system upgrades. By utilizing smart from the start planning for renewable energy generation and transmission, siting locations are focused where conflicts with environmental, cultural, and recreational values are minimized.

Transmission on Public Lands - Rights-of-Way

As the largest Federal land manager in the West, the BLM plays a key role in planning critical energy corridors and siting transmission facilities. Each year, the BLM processes thousands of applications for ROW grants on public lands – authorizations to use public lands in support of infrastructure projects across the country. The BLM permits and administers electrical transmission across public lands that involve everything from small residential electricity lines, to interstate, bulk-energy transmission from generation sources to major population demand

centers. These include renewable energy projects, electric transmission lines, communication sites, broadband deployment, highways, trails, railroads, canals, pipelines, and other facilities or systems which are in the public interest. Over half (59,000) of the total 118,000 ROW grants the BLM manages are for energy-related infrastructure and facilities. Increasing transmission capacity is essential for providing access to high-quality renewable energy resources and furthering efforts to meet state and Federal mandates to expand the country's renewable energy portfolio.

Major transmission lines have the capability to unlock numerous opportunities for renewable energy project siting. The BLM is actively working on several large-scale bulk-energy transmission projects, such as Ten West Link between Arizona and California, connecting over 4,000 MW of solar plus energy storage projects to load centers once this line is constructed. Another project the BLM is actively processing, the Greenlink West Transmission project in Nevada, will unlock new potential opportunities for the siting of renewable energy along its pathway. Currently, seven new utility-scale solar project applications have been received by the BLM, all of which are sited near the Esmeralda substation in Nevada, that would connect to the Greenlink West Transmission project. A project the BLM has permitted but is not yet built, the Southwest Intertie Project (SWIP North), is part of a 1,000 MW transmission pathway from Idaho to California that will provide access for utility-scale wind and solar projects and deliver energy to several states. Several other large-scale bulk-electricity transmission projects on Federal lands include the Greenlink North project in Nevada and projects that span state boundaries including Sunzia, Boardman to Hemingway, Gateway West, Gateway South, and Transwest Express.

West-Wide Energy Corridors

Development of utility-scale renewable energy generation and transmission on public lands requires thoughtful planning to facilitate access to high potential areas that maximize utility and minimize impacts on the environment or cultural, scenic, and social resources. In accordance with the requirements of the Energy Policy Act of 2005, the BLM designated approximately 5,000 miles of West-wide energy corridors on public lands in 11 western states including Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. These corridors, also known as "West-wide" or "Section 368" energy corridors, are intended for expedited permitting of electric transmission and distribution lines and for oil, gas, and hydrogen pipelines.

Currently the BLM, USFS, and Department of Energy are undertaking a regional review of existing Section 368 energy corridors to consider adjustments to corridor placement to increase renewable energy production on Federal lands while conserving those lands and resources; to maintain pathways for energy transmission; and to improve stabilization of the electric grid and strengthen America's energy infrastructure. Under this review, the BLM and USFS are also considering changes to interagency operating procedures to improve consistency in administering Section 368 energy corridors. Once the report is finalized, the BLM plans to initiate a programmatic land use planning effort to further engage with stakeholders and appropriately update energy corridors on public lands.

Achieving the national goal of 25 GWs of onshore wind, solar, and geothermal energy production comes with the need to permit additional project-specific interconnect transmission lines to tie renewable energy projects into the western grid. The BLM prioritizes these small-scale interconnection transmission projects that directly serve renewable energy development, regardless of whether the wind, solar, or geothermal project is sited on Federal or non-Federal land. For example, the BLM recently authorized interconnection lines for solar energy generation and storage facilities for the Moapa Band of Paiutes' Southern Bighorn Solar Project in Nevada. The BLM will continue to prioritize these smaller-scale interconnect transmission lines to support renewable projects on Federal land as well as non-Federal land. The BLM is committed to identifying opportunities for improving transmission capacity to ensure new renewable energy generation can be delivered to where the demand is located.

Deploying Offshore Wind

The Department is advancing offshore wind on the Outer Continental Shelf (OCS) in an economically and environmentally responsible manner. A key component of this is ensuring that there is a viable method to deliver this clean, renewable, and competitive power to the consumer. The Department recognizes the critical importance of responsible transmission planning to the success of offshore wind procurement goals set by both the Administration and those of individual states.

As part of tackling the climate crisis, the Administration is committed to advancing the Nation's transition to a clean energy future. Secretary of the Interior Deb Haaland has outlined the path forward for future offshore wind leasing to meet the Administration's goal to deploy 30 GWs of offshore wind energy by 2030 and beyond. These ambitious plans include up to seven new offshore lease sales by 2025 in the Gulf of Maine, New York Bight, Central Atlantic, and Gulf of Mexico, as well as offshore the Carolinas, California, and Oregon. The Department is laying out an ambitious roadmap to advance the Administration's plans to confront climate change and create good-paying jobs. Ensuring that the power generated by offshore wind can properly supply an existing energy grid is a complex issue that will require an all-of-government approach that avoids and minimizes impacts to and conflicts with communities and other ocean users while capturing the power that can be harnessed offshore our coastline.

BOEM's Role

BOEM's responsibility as it relates to transmission for offshore renewable energy is the siting of offshore power cables in a way that minimizes conflicts with other ocean users. BOEM regulations state that an offshore wind energy lessee is entitled to one or more non-competitive easements to connect to the grid in order to provide full enjoyment of the lease, while individual states regulate points of interconnection and portions of transmission cables that are located in their waters. While BOEM does not have jurisdiction over the land-based electrical grid, points of interconnection, or nearshore areas, it does analyze impacts of the full project as part of the environmental review process. To date, every lessee has proposed an easement with direct connection to land that is negotiated between the lessee and the applicable utility. It is expected that the current slate of offshore wind projects with a Construction and Operations Plan (COP), or nearing COP submission, will each design an export cable to points of interconnection along

the coast. However, it is expected that future projects will request, or may be required or encouraged to use shared infrastructure, regional transmission systems, and the eventual development of an offshore grid.

BOEM also has the authority to issue ROW grants or right-of-use grants that enable the transmission of renewable energy across the OCS. This authority was used for the Block Island Wind Farm offshore Rhode Island, where the wind turbines are located in state waters and the transmission line had to pass through Federal waters in order to arrive at its point of interconnection. This authority is also the mechanism that would be used for transmission utilizing offshore backbones or connecting multiple projects on the OCS by a third party.

BOEM's Efforts

The offshore transmission landscape is a complicated one, involving many different stakeholders and regulatory entities. BOEM has launched an initiative with the Department of Energy to engage multiple parties to identify a shared path forward to address transmission for offshore wind energy. The agencies have jointly hosted 21 meetings with 15 stakeholder groups including states, independent system operators, utilities, wind developers, fisheries, non-governmental organizations, labor groups, and Tribal Nations to listen to their individual perspectives on the needs, challenges, and opportunities pertaining to offshore wind energy transmission. BOEM expects to convene additional discussion with experts and stakeholders to develop a suite of recommendations to address the future transmission build out and grid planning to facilitate offshore wind development. BOEM is also contributing to multiple transmission studies on the West Coast in coordination with state partners assessing feasibility, scale, and options to inform planning for offshore renewable energy in the Pacific Ocean.

An all-of-government approach in coordination with states that incorporates the expertise of the Department of the Interior, Department of Energy, Department of Commerce, and Federal Energy Regulatory Commission, among others, will assist with the identification of policy changes, best practices, preferred routing strategy for submarine transmission cables, and technology standardization for grid integration as power generation from our offshore wind resources becomes a reality.

Conclusion

As our Nation transitions to a clean energy future, discussions such as these are extraordinarily important. The Department is committed to responsibly mobilizing the tremendous renewable energy resources of our nation's public lands and waters, and we share the Committee's interest in identifying efficiencies in the development of those resources, consistent with environmental protections and public involvement in agency decision-making. The Biden Administration fully understands that 21st century energy solutions cannot rely on 20th century transmission technology to carry them out.

We appreciate Congress' work on the Build Back Better Act, as well the recently enacted Infrastructure and Jobs Act, to reach 100 percent carbon pollution free electricity by 2035. The Department is also committed to facilitating the necessary transmission capacity to accommodate

the growth in renewable energy generation on Federal lands and waters, strengthening the reliability of the grid, meeting our nation's demand for clean energy, while creating good-paying, union jobs. The Department looks forward to continuing to work with the Committee and the Congress as we continue to prioritize supporting the nation's energy and climate goals.