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Via Electronic Mail and Federal Express

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Dear State Director Kenna and Field Manager Symons:

Enclosed please find comments by the National Parks Conservation Association ("NPCA") on the solar and wind projects proposed by Iberdrola Renewables, Inc., in Silurian Valley, California.

We understand that the U.S. Bureau of Land Management ("BLM") is currently considering whether to grant the Silurian Valley Solar Project a variance under the October 2012 Record of Decision for Solar Energy Development in Six Southwestern States. We also understand that BLM is currently evaluating the Silurian Valley Wind Project under the National Environmental Policy Act. As the enclosed comments make clear, NPCA has serious concerns about the proposed projects' compliance with applicable laws and policies, and about their potentially significant adverse effects on the Silurian Valley and surrounding region.

We thank you for your consideration of these comments. NPCA looks forward to participating further in the administrative processes associated with the proposed projects.

Respectfully submitted,



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COMMENTS ON THE SOLAR AND WIND PROJECTS
PROPOSED BY IBERDROLA RENEWABLES, INC.,
IN SILURIAN VALLEY, CALIFORNIA

U.S. BUREAU OF LAND MANAGEMENT
CALIFORNIA DESERT DISTRICT
BARSTOW FIELD OFFICE

September 9, 2014

prepared on behalf of
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I. Executive summary

The National Parks Conservation Association (“NPCA”) recognizes and supports large-scale renewable energy development on public lands as one of many tools for confronting the growing challenges posed by climate change. The urgent need to develop renewable energy sources, however, must be balanced against the potentially severe and irreversible impacts of that development. Renewable energy need not – indeed, must not – come at the expense of irreplaceable natural and cultural resources. The fragile lands of the desert Southwest must be protected against well-intended but poorly planned development.

Iberdrola Renewables, Inc., through its subsidiaries Aurora Solar, LLC, and Pacific Wind Development, LLC, has proposed two renewable energy projects in the Silurian Valley in southeastern California. The Valley is a northeast-trending basin in a remote region of the Mojave Desert, and follows State Route 127 after it leaves the small, unincorporated community of Baker at Interstate 15 and wanders north toward Death Valley National Park. Bounded by the Avawatz Mountains on the west and the Silurian Hills to the east, the Silurian Valley is an unusually intact landscape replete with important natural and cultural resources found in few other places. In light of the Silurian Valley’s special features, several federal and state agencies, including the National Park Service (“NPS”), the U.S. Fish and Wildlife Service (“FWS”), and the California Department of Fish and Wildlife (“CDFW”), have reviewed the plans of development for Iberdrola’s proposed solar and wind projects and expressed deep concerns about their potential impacts. Numerous other stakeholders, including NPCA and other non-profit organizations, have also raised concerns over the proposed projects and their potential for significant resource conflicts.

We understand that the U.S. Bureau of Land Management (“BLM”) is currently considering whether to grant the Silurian Valley Solar Project a variance under the Solar Programmatic Environmental Impact Statement Record of Decision (“Solar PEIS ROD”). Regardless of whether BLM grants or denies a variance, that decision will be the first of its kind in California, and therefore will set the standard for variances under the Solar PEIS ROD. While only the proposed solar project requires a variance, how BLM treats Iberdrola’s proposed wind project will help determine where other wind projects are proposed and how they are developed. Apart from the projects themselves, the development of new transmission infrastructure would encourage more industrial-scale energy development in a region of high resource conflict. The potential for these projects to set precedent for future decision-making, and to significantly affect the Silurian Valley and the larger Mojave Desert, means that BLM should consider the two proposals together.

NPCA and other organizations have expressed their concerns about these projects from the start. This paper elaborates on our earlier comments and is intended to provide BLM

information that will be useful for deciding whether to grant a variance for the proposed solar project and for evaluating the proposed wind project. As we explain below, the proposed projects would threaten sensitive animal and plant life; destroy and fragment habitat and impair protected species' movement; physically and visually degrade prehistoric and historic cultural sites and landscapes; diminish the region's uniquely high scenic value; reduce the recreational value of the Silurian Valley and nearby units of the National Park System; harm the surrounding communities that treasure and depend on the intact nature of the Silurian Valley; and contribute to unacceptable cumulative impacts.

For these reasons, the proposed projects conflict with applicable laws and BLM's regulations, management plans, and policies, and ignore that more appropriate locations exist for large-scale renewable energy development outside the Silurian Valley. And to reiterate: BLM's decisions about whether to allow these projects to go forward will set precedent for decisions regarding other large-scale renewable projects. Those decisions will, in turn, have profound consequences for the future of large-scale renewable energy projects, the Silurian Valley, and the desert Southwest.

II. Legal background

A. FLPMA

The Federal Land Policy Management Act of 1976 ("FLPMA"), 43 U.S.C. §§ 1701-1787, is the primary law governing how BLM administers public lands. FLPMA requires BLM to manage public lands "under principles of multiple use and sustained yield,"¹ and mandates that the Secretary of the Interior "take any action necessary to prevent unnecessary or undue degradation" of these lands.² FLPMA also provides that public lands must "be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."³

Under the multiple and sustained use principle, BLM must manage its "various resources without permanent impairment of the productivity of the land and the quality of the environment."⁴ BLM "takes into account the long-term needs of future generations for renewable and non-renewable resources" while considering "the relative values of the resources and not necessarily . . . the combination of uses that will give the greatest economic return or the greatest unit output."⁵

¹ 43 U.S.C. §§ 1701(a)(7), 1732(a).

² *Id.* § 1732(b).

³ *Id.* § 1701(a)(8).

⁴ *Id.* § 1702(c).

⁵ *Id.*

FLPMA directs BLM to maintain a current inventory of its public lands and resources and develop resource management plans (“RMPs”).⁶ RMPs are long-term strategic plans that identify the permitted uses of certain BLM-administered lands and resources.⁷ In developing RMPs, FLPMA requires BLM to consider, among other things, the “present and potential uses of the public lands”⁸ and the “relative scarcity of the values involved and the availability of alternative means . . . and sites for realization of those values.”⁹ BLM must also “weigh long-term benefits to the public against short-term benefits”¹⁰ and “use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.”¹¹ BLM is required to manage some resources more restrictively depending on their designated status. Wilderness areas and wilderness study areas, for example, must be managed so as not to impair the wilderness characteristics of those lands.¹²

The Secretary of the Interior has the authority to grant rights of way for energy generation, transmission, and distribution.¹³ Proposed renewable energy development projects must conform to applicable RMPs,¹⁴ and they must be designed to “minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment.”¹⁵ When considering whether to grant a right-of-way for a renewable energy proposal, BLM must decide whether the development would trigger an amendment to an existing RMP and is supported by adequate plan-level analysis under the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321-4347.¹⁶

B. CDCA

When it passed FLPMA in 1976, Congress recognized that one area in particular needed heightened protection and special management: the California Desert Conservation Area (“CDCA”), a huge swath of fragile desert in southern California.¹⁷ Congress explained that:

⁶ *Id.* §§ 1711(a), 1712(a).

⁷ *Id.* § 1712(a), (c).

⁸ *Id.* § 1712(c)(5).

⁹ *Id.* § 1712(c)(6).

¹⁰ *Id.* § 1712(c)(7).

¹¹ *Id.* § 1712(c)(2).

¹² *Id.* § 1782(c); Wilderness Act of 1964, 16 U.S.C. § 1131(a).

¹³ 43 U.S.C. § 1761(a)(4).

¹⁴ *Id.* § 1761(a); Rights-of-Way under the Federal Land Policy Management Act, 43 C.F.R. § 2804.26(a)(1) (2005). All regulatory citations are to the 2005 edition of the Code of Federal Regulations unless otherwise noted.

¹⁵ 43 U.S.C. § 1765(a)(ii).

¹⁶ *Id.* § 1712(a); Resource Management Planning, 43 C.F.R. §§ 1610.5-3(c), 1610.5-5.

¹⁷ 43 U.S.C. § 1781; *see also* BLM, CALIFORNIA DESERT CONSERVATION AREA: 30TH ANNIVERSARY 1976-2006, 2 (2006), *available at*

(1) the California desert contains historical, scenic, archeological, environmental, biological, cultural, scientific, educational, recreational, and economic resources that are uniquely located adjacent to an area of large population;

(2) the California desert environment is a total ecosystem that is extremely fragile, easily scarred, and slowly healed; [and]

(3) the California desert environment and its resources, including certain rare and endangered species of wildlife, plants, and fishes, and numerous archeological and historic sites, are seriously threatened by air pollution, inadequate Federal management authority, and pressures of increased use, particularly recreational use, which are certain to intensify because of the rapidly growing population of southern California.¹⁸

Today the CDCA covers more than 25 million acres of Mojave, Sonoran, and Great Basin desert, more than 10 million of which BLM administers.¹⁹ Many special management areas that prohibit or restrict development have been established within the CDCA, including Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, Areas of Critical Environmental Concern (“ACECs”), Desert Wildlife Management Areas, and critical habitat for species listed as threatened or endangered under the Endangered Species Act, 16 U.S.C. §§ 1531-1544.

The 1980 California Desert Conservation Area Plan (“CDCA Plan”) guides management of the CDCA,²⁰ and region-specific RMPs amending the CDCA Plan are now in place for a number of areas, including the West Mojave and the Northern and Eastern Mojave regions.²¹ The CDCA Plan presents management approaches “to help in allowing for the use of desert lands and resources while preventing their undue degradation or impairment.”²² Those approaches are aimed at “responding to national priority needs for resource use and

<http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/caso/publications.Par.67970.File.dat/CDCA.pdf>.

All websites were last visited on September 1, 2014.

¹⁸ 43 U.S.C. §§ 1781(a)(1), (2), (3).

¹⁹ See BLM, *Introduction – The California Desert Conservation Area (CDCA)*, available at

http://www.blm.gov/ca/st/en/fo/cdd/cdca_q_a.html (last updated Sept. 19, 2012).

²⁰ See BLM, CALIFORNIA DESERT CONSERVATION AREA PLAN 1980, AS AMENDED (1999), available at

http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/cdd/cdcaplan.Par.15259.File.dat/CA_Desert_.pdf (hereinafter “CDCA PLAN”).

²¹ See BLM, RECORD OF DECISION WEST MOJAVE PLAN AMENDMENT TO THE CALIFORNIA DESERT CONSERVATION AREA PLAN (Mar. 2006), available at

http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pdfs/cdd_pdfs/wemo_pdfs.Par.4dfb777f.File.pdf/wemo_rod_3-06.pdf; BLM, PROPOSED NORTHERN AND EASTERN MOJAVE DESERT MANAGEMENT PLAN AMENDMENT TO THE CALIFORNIA DESERT CONSERVATION AREA PLAN AND FINAL ENVIRONMENTAL IMPACT STATEMENT (July 2002), available at <http://www.blm.gov/ca/st/en/fo/cdd/nemo.html> (hereinafter “NEMO”).

²² CDCA PLAN at 6.

development, both today and in the future, including such paramount priorities as energy development and transmission, without compromising the basic desert resources” while “erring on the side of conservation in order not to risk today what we cannot replace tomorrow.”²³

The CDCA Plan establishes multiple use classes for BLM lands in the CDCA and develops a structure for managing those lands.²⁴ Class C (“Controlled Use”) lands include wilderness and wilderness study areas; Class L (“Limited Use”) lands are “managed to provide for generally lower-intensity, carefully controlled multiple use of resources, while ensuring that sensitive values are not significantly diminished” and to protect “natural, scenic, ecological, and cultural resource values”; Class M (“Moderate Use”) lands allow for energy and utility development and are a “controlled balance between higher intensity use and protection of public lands”; and Class I (“Intensive Use”) lands “provide for concentrated use of lands and resources to meet human needs.”²⁵ BLM has left some scattered lands unclassified and administers them on a case-by-case basis.²⁶ Energy development is not permitted on lands designated as Class C but may be allowed on lands identified as Class L, M, or I if the development is consistent with FLPMA and the CDCA Plan, and if the procedural requirements of NEPA are met.²⁷ However, development associated with energy generation or transmission that is not identified in the CDCA Plan or an existing regional plan amendment may be considered through the land use plan amendment process.²⁸

The 1994 California Desert Protection Act (“CDPA”) established additional protections for the southern California desert region by establishing two National Parks, a national preserve, and millions of acres of wilderness.²⁹ These designations underscore the fact that the southern California desert is a “public wildland resource of extraordinary and inestimable value for this and future generations.”³⁰ BLM therefore has an affirmative obligation to treat the region with care, particularly in the face of a growing population and increasing development.

C. Solar and Wind PEISs

In 2012, pursuant to NEPA, BLM and the Department of Energy released a final programmatic environmental impact statement (“PEIS”) and record of decision (“ROD”) for their “Western Solar Plan” to guide large-scale solar energy development on public lands in six

²³ *Id.*

²⁴ *Id.* at 13.

²⁵ *Id.*

²⁶ *Id.* at 14.

²⁷ *Id.* at 15.

²⁸ See 43 U.S.C. § 1712; 43 C.F.R. § 1610.5-5.

²⁹ See California Desert Protection Act of 1994, 16 U.S.C. §§ 410aaa-410aaa83.

³⁰ California Desert Protection Act of 1994, Pub. L. No. 103-433, § 2, 108 Stat. 4471 (1994).

southwestern states (“Solar PEIS ROD”).³¹ The Solar PEIS ROD excludes 79 million acres of public land from solar energy development and identifies “solar energy zones” where BLM will prioritize development.³² The ROD also designates approximately 19 million acres of public land as “variance areas” where BLM may permit utility-scale solar energy development outside of identified solar energy zones.³³ Specifically, BLM identifies “all lands outside of exclusion areas and [solar energy zones] as variance areas[,]”³⁴ or “area[s] that may be available for . . . utility-scale solar energy [rights-of-way] with special stipulations or considerations.”³⁵ The CDCA contains approximately 730,616 acres of variance land.³⁶ The Solar PEIS ROD sets forth planning, design, and screening criteria and processes for such variance areas.³⁷

BLM has also completed a PEIS and ROD for large-scale wind energy projects proposed on BLM-managed lands (“Wind PEIS ROD”).³⁸ Covering 11 states and amending 52 land use plans, the Wind PEIS ROD establishes policies and best management practices (“BMPs”) for proposed wind projects. The policies and BMPs identify specific lands where wind development will be prohibited and present standards designed to protect natural and cultural resources.³⁹ The Wind PEIS ROD does not amend any land use plans in California, including the CDCA Plan.⁴⁰ As with proposed solar projects, proposed wind projects that are not consistent with existing RMPs may be denied or approved with plan amendments.

1. Solar PEIS ROD variance process

BLM’s Western Solar Plan recognizes the importance of containing large-scale solar development to suitable locations, where resource conflicts will be lowest. The Western Solar Plan accordingly identifies solar energy development zones and creates a strong presumption against development outside those zones. To rebut this presumption, a developer who suggests

³¹ See BLM, FINAL SOLAR ENERGY DEVELOPMENT PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (July 2012), available at <http://solareis.anl.gov/Documents/fpeis/index.cfm> (hereinafter “SOLAR PEIS”); BLM, APPROVED RESOURCE MANAGEMENT PLAN AMENDMENTS/RECORD OF DECISION (ROD) FOR SOLAR ENERGY DEVELOPMENT IN SIX SOUTHWESTERN STATES (Oct. 2012), available at http://solareis.anl.gov/documents/docs/Solar_PEIS_ROD.pdf (hereinafter “SOLAR PEIS ROD”).

³² SOLAR PEIS ROD at 2, 37. Two solar energy zones have been identified in California. *Id.* at 41.

³³ *Id.* at 2.

³⁴ *Id.* at 43.

³⁵ *Id.*

³⁶ *Id.* at 29.

³⁷ *Id.* at App. B.5 177-86.

³⁸ See BLM, WIND ENERGY FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (June 2005), available at <http://www.windeis.anl.gov/documents/fpeis/index.cfm> (hereinafter “WIND PEIS”); RECORD OF DECISION FOR IMPLEMENTATION OF A WIND ENERGY DEVELOPMENT PROGRAM AND ASSOCIATED LAND USE PLAN AMENDMENTS (Dec. 2005), available at <http://windeis.anl.gov/documents/docs/WindPEISROD.pdf> (hereinafter “WIND PEIS ROD”).

³⁹ WIND PEIS ROD at 1-2, 4.

⁴⁰ *Id.* at 2.

a project outside the solar energy zones must use the variance process outlined in Appendix B of the Solar PEIS ROD to show that such development is necessary and appropriate and will “avoid, minimize, and/or mitigate, as necessary, sensitive resources.”⁴¹ BLM expects variances to be the exception, not the rule, and will consider variance applications on a case-by-case basis based on environmental concerns, coordination with federal, state, local, and tribal stakeholders, and public outreach.⁴²

Per Appendix B, BLM considers many factors when evaluating right-of-way applications in variance areas. These factors include, among other things:

- “the availability of lands in [a] [solar energy zone] that could meet the applicant’s needs, including access to transmission”;
- “documentation that the proposed project will be consistent with priority conservation, restoration, and/or adaptation objectives in the best available landscape-scale information (*e.g.*, landscape conservation cooperatives, rapid ecological assessments, and state and regional-level crucial habitat assessment tools [CHATs])”;
- “documentation that the proposed project is in an area with low or comparatively low resource conflicts and where conflicts can be resolved (as demonstrated through many of the factors that follow)”;
- “documentation that the proposed project will optimize the use of existing roads”;
- “documentation that the proposed project will minimize adverse impacts on access and recreational opportunities on public lands (including hunting, fishing, and other fish- and wildlife-related activities)”;
- “documentation that the proposed project will minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors”;
- “documentation that the proposed project will minimize impacts on lands with wilderness characteristics and the values associated with these lands (*e.g.*, scenic values, recreation, and wildlife habitat)”;

⁴¹ SOLAR PEIS ROD at App. B.5 177.

⁴² *Id.*

- “documentation that significant cumulative impacts on resources of concern should not occur as a result of the proposed project (*i.e.*, exceedance of an established threshold such as air quality standards).”⁴³

Development in certain sensitive areas must satisfy additional criteria.⁴⁴ For example, a project proposed in desert tortoise habitat must be designed to support adequate connectivity and avoid fragmenting habitat and populations.⁴⁵ Similarly, in areas that have been identified as having a high potential for conflict with a National Park unit, an applicant must submit additional documentation including, among other things, information about the sensitivity of cultural resources in the area, the potential for diminished habitat integrity and connectedness, and any reduced wilderness, viewshed, or night-sky values within and outside the National Park unit boundaries.⁴⁶

2. Solar PEIS ROD exclusions

The Solar PEIS ROD also identifies areas where solar development is not permitted under any circumstances. The designation of these exclusion areas “allows the BLM to support the highest and best use of public lands by avoiding potential resource conflicts and reserving for other uses public lands that are not well suited for utility-scale solar energy development.”⁴⁷ Certain exclusion areas are identified by their geographic boundaries while others are defined by their associated land use plans or the presence of specific resources or conditions. Exclusion areas under the Solar PEIS ROD include all ACECs and designated and proposed critical habitat areas for species protected under the Endangered Species Act; areas protected by land use plans for their wilderness characteristics; and habitat for Mohave ground squirrel, flat-tailed lizard, and fringe-toed lizard, and “all other areas where the BLM has agreements with state agency partners and other entities to manage sensitive species habitat in a manner that would preclude solar energy development.”⁴⁸

Additional exclusions include lands classified as Class C in the CDCA; “Big Game” migratory corridors and “Big Game” winter ranges identified in applicable land use plans; lands classified as Visual Resource Management Class I or II; all units of the BLM National Landscape Conservation System; “congressionally designated National Scenic and Historic Trails and trails recommended as suitable for designation through a congressionally authorized National Trail Feasibility Study, or such qualifying trails identified as additional routes in law

⁴³ *Id.* at App. B.5 at 177-86.

⁴⁴ *Id.* at 182-86.

⁴⁵ *Id.* at 183.

⁴⁶ *Id.* at 185-86.

⁴⁷ *Id.* at 37.

⁴⁸ *Id.* at 38.

(e.g., West Fork of the Old Spanish National Historic Trail), including any trail management corridors identified for protection through an applicable land use plan”; lands within the boundaries of properties listed in the National Register of Historic Places; traditional cultural properties and Native American sacred sites identified through consultation with tribes and recognized by the BLM; and congressionally designated Wild, Scenic, and Recreational Rivers and associated river corridors.⁴⁹

3. Wind PEIS ROD BMPs and policies

The Wind PEIS ROD also presents relevant policies and BMPs that BLM must follow and implement in approving development plans. These policies and BMPs overlap to some degree with the variance factors described in the Solar PEIS ROD. For example, BLM “will not issue [right-of-way] authorizations for wind energy development on lands on which wind energy development is incompatible with specific resource values.”⁵⁰ Lands that are part of the National Landscape Conservation System will be excluded from wind energy site monitoring, testing, and development, along with lands where “resource impacts . . . cannot be mitigated and/or conflict with existing and planned multiple-use activities or land use plans.”⁵¹ In addition, “[t]o the extent possible, wind energy projects shall be developed in a manner that will not prevent other land uses, including minerals extraction, livestock grazing, recreational use, and other [right-of-way] uses.”⁵² BLM must also “incorporate management goals and objectives specific to habitat conservation for species of concern . . . into the [plan of development] for proposed wind energy projects” and “consider the visual resource values of the public lands involved in proposed wind energy development projects, consistent with BLM Visual Resource Management (VRM) policies and guidance.”⁵³

Approved wind projects must follow BMPs aimed at, for example: using existing roads as much as possible and avoiding the construction of new roads; siting meteorological towers outside sensitive habitats and ecological areas; identifying important or vulnerable habitats near the project and planning to develop the project in other less environmentally sensitive areas; and studying avian and bat use in the area so the project can be planned to avoid, minimize, and mitigate the potential for conflict.⁵⁴

⁴⁹ *Id.* at 38-39.

⁵⁰ WIND PEIS ROD at A-2.

⁵¹ *Id.*

⁵² *Id.*

⁵³ *Id.* at A-5.

⁵⁴ *Id.* at A-6 to A-8.

D. Other management policies

1. DRECP

The Desert Renewable Energy Conservation Plan (“DRECP”) is a landscape-level planning effort to help California meet state and federal renewable energy objectives. When it is released in final form, the DRECP will cover more than 22.5 million acres and will help “conserv[e] and manage[] plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects.”⁵⁵ Specifically, the DRECP will identify the most appropriate areas in California’s Mojave and Colorado deserts for utility-scale solar and wind development where conflict with sensitive and protected resources will be limited.⁵⁶ Development will be prioritized in these locations and will benefit from assured and streamlined permitting.⁵⁷

A Renewable Energy Action Team composed of the California Energy Commission, CDFW, FWS, and BLM is preparing the DRECP.⁵⁸ In 2012, these agencies released a series of draft documents for the DRECP, including a description and comparison of alternatives and a preliminary conservation strategy.⁵⁹ The agencies strive to incorporate research and science into the planning framework and have also developed and released draft biological goals and objectives, as well as habitat suitability and connectivity models, for the many sensitive resources covered by the DRECP.⁶⁰ A joint federal-state environmental review for the DRECP is due out in September 2014.⁶¹

2. Secretarial Order 3330

Recognizing the importance of landscape-level planning efforts like the DRECP, in 2013 the Secretary of the Interior issued Secretarial Order 3330. That order calls for the development of a coordinated national strategy to ensure early and lasting consideration of ecological and cultural resources in long-term infrastructure development planning.⁶² The order states that the Department of the Interior “seeks to avoid potential environmental impacts from projects

⁵⁵ DRECP, *Frequently Asked Questions*, available at <http://www.drecp.org/whatisdrecp/faq.html> (last modified Dec. 5, 2013).

⁵⁶ *Id.*; DRECP, *Interim Document – Fact Sheet*, available at http://www.drecp.org/documents/docs/2012-12-18_DRECP_Interim_Document_Fact_Sheet.pdf.

⁵⁷ DRECP, *Frequently Asked Questions*; DRECP, *Interim Document – Fact Sheet*.

⁵⁸ DRECP, *Frequently Asked Questions*.

⁵⁹ DRECP, *Documents*, available at <http://www.drecp.org/documents> (last modified May 29, 2013).

⁶⁰ DRECP, *Frequently Asked Questions*; DRECP, *Documents*.

⁶¹ BLM – California Desert District, “DRECP Subcommittee” (July 26, 2014), available at <http://www.blm.gov/ca/st/en/info/rac/dac/DesertRenewableEnergyConservationPlanSubcommittee.html>.

⁶² Sally Jewell, Secretary of the Interior, Secretarial Order No. 3330, *Improving Mitigation Policies and Practices of the Department of the Interior* (Oct. 31, 2013), available at <http://www.doi.gov/news/upload/Secretarial-Order-Mitigation.pdf>.

through steps such as advanced landscape-level planning that identifies areas suitable for development because of low or relatively low natural and cultural resource conflicts.”⁶³ The order directed that a plan be established to “effectively offset impacts of large development projects of all types through the use of landscape-level planning” and other mitigation measures.⁶⁴

In response to Order 3330, a designated task force developed a report in 2014 that identified guiding principles and policies needed to implement a landscape-scale, science-based management plan for lands that the Department of the Interior administers. The report addressed the challenges of promoting infrastructure development while advancing conservation objectives on public lands.⁶⁵ Specifically, the report noted that “the landscape approach dictates that it is not sufficient to look narrowly at impacts at the scale of the project; it is necessary to account for impacts to resource values throughout the relevant range of the resource that is being impacted.”⁶⁶ In addition, the report advances the ideas of designing projects and plans that foster resources’ resilience to climate change and ensure durability; promoting transparency in the development of mitigation measures; incorporating advanced mitigation planning and scientific tools and information; and supporting outcome monitoring and evaluation.⁶⁷ These principles are supposed to help guide the Department as it develops a national mitigation framework for lands under its management.

3. National Park general management plans

The general management plans for Death Valley National Park and the Mojave National Preserve identify guidelines for park management and strategies for protecting regionally important resources. Management objectives for these park units include improving dark night skies, preserving scenic and cultural landscapes, and perpetuating the Mojave Desert’s “natural quiet and sense of solitude.”⁶⁸ Both general plans identify visibility as “probably the most important air quality resource in the desert region” and explain that “it is the most easily affected by activities that generate dust (especially fine particulates).”⁶⁹ San Bernardino County

⁶³ *Id.* at 2.

⁶⁴ *Id.* at 3.

⁶⁵ JOEL P. CLEMENT, ET AL., ENERGY AND CLIMATE CHANGE TASK FORCE, A STRATEGY FOR IMPROVING THE MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF THE INTERIOR (Apr. 2014), available at http://www.doi.gov/news/upload/Mitigation-Report-to-the-Secretary_FINAL_04_08_14.pdf.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ NPS, MOJAVE NATIONAL PRESERVE GENERAL MANAGEMENT PROJECT, 5 (April 2002), available at <http://www.nps.gov/moja/parkmgmt/loader.cfm?csModule=security/getfile&PageID=114982>; NPS, DEATH VALLEY GENERAL MANAGEMENT PROJECT, 18-19 (April 2002), available at http://www.nps.gov/deva/parkmgmt/upload/GMP_001.pdf.

⁶⁹ DEATH VALLEY GENERAL MANAGEMENT PROJECT at 18-19; MOJAVE NATIONAL PRESERVE GENERAL MANAGEMENT PROJECT at 31-32.

is already in federal nonattainment for ozone and PM-10, two criteria pollutants that can reduce visibility.⁷⁰

The general management plans also discuss how maintaining high groundwater quality and quantity is “critical to the survival of desert surface waters and their associated plant and animal life.”⁷¹ NPS therefore is tasked with restoring and protecting surface and groundwater because these resources are integral components of the parks’ and the surrounding regions’ ecosystems.⁷² The management plans provide that NPS will monitor the effects of outside activities, including groundwater drawdown, on NPS resources and take all “appropriate steps necessary to protect natural resources.”⁷³

4. Local plans and rules

The San Bernardino County General Plan (“General Plan”) identifies policies for guiding countywide and regional planning.⁷⁴ A significant portion of the Mojave Desert, including the northeastern Mojave, falls within the County’s Desert Planning Region.⁷⁵ The General Plan aims to ensure that commercial and industrial development in the Mojave is compatible with the region’s “rural desert character.”⁷⁶ The General Plan’s objectives include “[m]aintain[ing] land use patterns in the Desert Region that enhance the rural environment and preserve the quality of life of the residents of the region”⁷⁷; “[p]reserv[ing] the unique environmental features and natural resources of the Desert Region, including native wildlife, vegetation, water and scenic vistas”⁷⁸; and “[p]reserv[ing] the dark night sky as a natural resource in the Desert Region communities.”⁷⁹

To achieve these goals, the General Plan includes policies that limit future industrial development to projects that meet the service and employment needs of the region, avoid

⁷⁰ EPA, *Current Nonattainment Counties for All Criteria Pollutants*, <http://www.epa.gov/oaqps001/greenbk/ancl.html> (last updated July 2, 2014).

⁷¹ DEATH VALLEY GENERAL MANAGEMENT PROJECT at 21; MOJAVE NATIONAL PRESERVE GENERAL MANAGEMENT PROJECT at 33.

⁷² DEATH VALLEY GENERAL MANAGEMENT PROJECT at 12; MOJAVE NATIONAL PRESERVE GENERAL MANAGEMENT PROJECT at 34.

⁷³ DEATH VALLEY GENERAL MANAGEMENT PROJECT at 23; MOJAVE NATIONAL PRESERVE GENERAL MANAGEMENT PROJECT at 34.

⁷⁴ COUNTY OF SAN BERNARDINO 2007 GENERAL PLAN, I-16 (Mar. 2007, as amended Apr. 2014), *available at* <http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf>.

⁷⁵ *Id.*

⁷⁶ *Id.* at II-48.

⁷⁷ *Id.* at II-46.

⁷⁸ *Id.* at V-44.

⁷⁹ *Id.* at V-47.

excessive water use, and do not adversely impact the desert environment.⁸⁰ Those policies also call for avoiding commercial development along major roadways that would detract from the region's rural character.⁸¹ Other policies include "[e]ncourag[ing] the greater retention of existing native vegetation for new development projects to help conserve water, retain soil in place and reduce air pollutants"⁸²; requiring future development to be compatible with existing topography and scenic vistas; and "[m]aintain[ing] zoning for low residential density and least intensive uses in areas adjacent to the Joshua Tree National Park, the Mojave National Preserve or [ACECs] to minimize impacts on open space lands and habitat."⁸³ The General Plan also calls for limiting land clearing so as to minimize disturbance to desert soils and reduce fugitive dust.⁸⁴

The General Plan contains county-wide objectives and policies dealing with maintaining and enhancing biological diversity and protecting endangered species, areas with special habitat value, and even populations of commonly occurring species.⁸⁵ Enhancing the visual character of scenic routes is another important goal; the County specifically designates State Route 127, from Interstate 15 at Baker northwest to the Inyo County line, as a scenic highway.⁸⁶

In accordance with policies in the General Plan to promote water conservation and protect groundwater recharge,⁸⁷ the County manages groundwater resources in unincorporated desert areas under an ordinance that calls for "ensuring that extraction of groundwater does not exceed the safe yield of affected groundwater aquifers, considering both the short and long-term impacts of groundwater extraction, including the recovery of groundwater aquifers through natural as well as artificial recharge."⁸⁸ The ordinance explains that protecting

⁸⁰ *Id.* at II-46. Industrial-scale development in the Desert Region must also be compatible with the criteria for the "Community Industrial Land Use Zoning District," which includes areas located within urban areas where full urban services are available; areas with existing industrial uses or physically suited for such activities; areas that are or can be buffered from adjacent uses in other land use categories; and areas adjacent to major transportation terminals and energy facilities. *Id.* at II-18.

⁸¹ *Id.* at II-48.

⁸² *Id.* at V-44.

⁸³ *Id.* at VI-22.

⁸⁴ *Id.* at V-45.

⁸⁵ *Id.* at V-15.

⁸⁶ *Id.* at VI-12, -16.

⁸⁷ *Id.* at III-33 to -37; V-44 to -46. Policies include ensuring that prior to approval of new development, "adequate and reliable water supplies and conveyance systems will be available to support the development, consistent with coordination between land use planning and water system planning" and "consider[ing] retaining existing groundwater recharge and storm flow retention areas as open space lands" because "the recharge of groundwater basins is vital to the supply of water in the County, and because these areas can function only when retained in open space[.]" *Id.* at III-35 to -36.

⁸⁸ Desert Groundwater Management Ordinance, San Bernardino County Code, Art. 5, § 33.06551, available at [http://www.water.ca.gov/lgrant/docs/applications/Mojave%20Water%20Agency%20\(201209870057\)/Att](http://www.water.ca.gov/lgrant/docs/applications/Mojave%20Water%20Agency%20(201209870057)/Att)

groundwater in the desert is especially important due to “[t]he relative lack of significant natural recharge in those areas when compared to the mountain areas and other less arid areas of the County,” as well as “[t]he lack of regulatory or judicial oversight of the groundwater aquifers.”⁸⁹

III. The proposed Silurian Valley projects

Iberdrola proposes to develop a 200-megawatt (MW) solar project in the Silurian Valley composed of 400 pairs of 500-kilowatt (kW) thin film photovoltaic subsystems.⁹⁰ The proposed project right-of-way would cover 7,218 acres of BLM land, 1,518 acres of which would contain the solar arrays.⁹¹ That plan would dedicate roughly 36 acres of land to each MW, yielding an output of roughly 0.03 MW per acre. In addition to an onsite substation, underground and overhead collection lines, and an overhead 287-kV transmission line, the project also would construct 44 miles of new access roads.⁹² Land disturbance during construction would include, among other things, vegetation clearing; excavation for collection lines, vaults, and transmission towers; and site grading.⁹³ The project would employ up to 300 workers during construction and up to 12 during operation.⁹⁴ Though water use would be most intense during construction, the plan of development discusses only the project’s water use during operation, stating that the project would use about 100,000 gallons of water per year during operation, and that the water could come from deliveries, groundwater or “a local source.”⁹⁵ The plan of development does not discuss the potential for impacts to nearby surface water sources like Salt Creek, the Amargosa River, or Saratoga Springs. The proposed project is within the variance areas identified in the Solar PEIS ROD.

Iberdrola’s proposed Silurian Valley Wind Project would generate up to 200 MW and consist of 67 to 133 wind turbines.⁹⁶ Each turbine would be 400 to 480 feet tall and mounted in a

[03_LGA12_Mojave_GWMP_3of3.pdf](#) (“The protection of groundwater resources within San Bernardino County is of utmost importance.”).

⁸⁹ San Bernardino County Code, Art. 5, § 33.06551(b).

⁹⁰ AURORA SOLAR, LLC, SILURIAN VALLEY SOLAR PROJECT PLAN OF DEVELOPMENT, 1-7 (Nov. 2012), available at <http://basinandrangewatch.org/Silurian-public-notice.pdf> (hereinafter “Solar POD”).

⁹¹ *Id.*

⁹² *Id.* at 1-7, 1-9, 2-22.

⁹³ *Id.* at 2-31, 3-1 to -2.

⁹⁴ *Id.* at 2-19, 4-1.

⁹⁵ *Id.* at 1-10, 4-2.

⁹⁶ BLM, BARSTOW OFFICE CA DESERT DISTRICT ADVISORY COUNCIL REPORT FOR MARCH 2014, 5-6 (Mar. 2014), available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/cdd/upcoming_dac_meeting.Par.78716.File.dat/Barstow%20Field%20Office%20DAC%20Report%20March%202014.pdf (hereinafter “MARCH 2014 BARSTOW OFFICE REPORT”); PACIFIC WIND DEVELOPMENT, LLC, SILURIAN VALLEY WIND PROJECT PLAN OF DEVELOPMENT, 1-1 (May 2011), available at http://www.basinandrangewatch.org/Draft_Silurian%20POD_%2013May11.pdf (hereinafter “Wind POD”).

buried concrete foundation.⁹⁷ At a proposed footprint of between 6,720 and 15,849 acres (or 10.5 to 24 square miles),⁹⁸ the site would generate between approximately 0.03 and 0.013 MW per acre. The project plan includes a new substation, underground and overhead collection lines, overhead 287-kV transmission line, and additional ancillary facilities.⁹⁹ Approximately 45 miles of access roads would be newly constructed or enhanced.¹⁰⁰ The project would use 18 million gallons of water during construction and 900,000 per year during operation, and would come from unspecified “permitted commercial or municipal sources.”¹⁰¹

To our knowledge, neither the proposed solar nor wind project has a signed power purchase agreement.¹⁰²

IV. The proposed projects present significant, unavoidable, and unacceptable resource conflicts.

The proposed Silurian Valley Solar and Wind projects will impair the unique ecological, cultural, visual, and recreational resources of the Silurian Valley and surrounding region. Encircled by wilderness and sensitive habitats, the Silurian Valley has been, and continues to be, an important movement corridor for wildlife and humans for thousands of years. The Valley itself is largely undisturbed and supports fragile habitat and species and a rich cultural history. The Valley’s spectacular desert scenery lures visitors to the region for recreation and solitude. The DRECP describes the Silurian Valley as an “undisturbed, irreplaceable, historic [and] scenic landscape” and proposes several protections and development exclusions for the

⁹⁷ WIND POD at 1-6.

⁹⁸ MARCH 2014 BARSTOW OFFICE REPORT, 5; WIND POD at 1-6 to -7; BLM, California Wind Applications, available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy.Par.5556.File.dat/BLM%20Wind%20Applications%20&%20Authorizations%20April%202013.pdf> (updated July 2014). There is a discrepancy in acreage, turbine number, and number of MWs for the proposed wind development between the 2011 Wind POD, the March 2014 Barstow Office Report, and the list of proposed wind projects in California available on BLM’s website (as of July 2014). The Wind POD indicates that 80 to 133 turbines will be placed within a 29,041-acre right-of-way, while the Barstow Office Report states that the right-of-way is 15,849 acres. Meanwhile, BLM’s website indicates that the project will generate 160 MW and have a footprint of 6,720 acres. It appears that the 2011 Wind POD right-of-way included acreage for what is now part of the proposed solar project.

⁹⁹ MARCH 2014 BARSTOW OFFICE REPORT at 5; WIND POD at 1-6 to -7. There are also discrepancies between the types and size of the transmission lines proposed. The 2011 Wind POD suggests that a new transmission line would be constructed and would extend 10 miles south to the Baker substation. The Barstow field office report and the Solar POD suggest a shorter transmission line of 1 to 1.5 miles, which would connect to LADWP’s existing transmission line along Halloran Springs Road.

¹⁰⁰ WIND POD at 2-7.

¹⁰¹ *Id.* at 1-7.

¹⁰² Solar POD at 3-2; Wind POD at 3-3. The plans of development state that power purchase agreements were “expected” in 2011 or 2012, but there is no evidence that such agreements have been signed. *See, e.g.*, Basin & Range Watch, Silurian Valley Wind/Solar Project; Resources Agencies Comment on Solar Project Application (Jan. 20, 2013), available at <http://www.basinandrangewatch.org/Silurian-Wind.html> (“So far, Iberdrola has no Power Purchase Agreement with any utility for this project.”).

Valley under two of the DRECP alternatives.¹⁰³ Because Iberdrola's proposed projects would significantly degrade the landscape and resources of this special region, those projects are not consistent with the variance criteria of the Solar PEIS ROD or the policies of the Wind PEIS ROD.

A. Ecological resources

1. Intactness

Ringed by dramatic and wild mountain ranges, the Silurian Valley is a fragile desert basin still largely untouched by human disturbance.¹⁰⁴ The long-term viability of the Mojave Desert's remarkable biodiversity depends on the preservation of intact landscapes and habitat connectivity, especially in the face of growing development pressures. Because the Silurian Valley is itself an intact natural community and provides connectivity between spring-rich mountain ranges in the Eastern and Northern Mojave, it is essential to sustaining the species, connections, and complex ecological processes of the entire region.

Many sources document the ecological integrity of the Silurian Valley, including the Nature Conservancy's 2010 Ecoregional Assessment of the Mojave Region. That assessment reports that the Silurian Valley contains almost entirely "Ecologically Core" and "Ecologically Intact" lands.¹⁰⁵ The study defines Ecologically Core lands as those lands with the highest conservation value; *i.e.*, they are mostly undisturbed, conserve sensitive species and ecological systems, and are "critical to fully protect for the long-term conservation of the ecoregion's biological diversity."¹⁰⁶ Meanwhile, "Ecologically Intact" lands are "relatively undisturbed and unfragmented[.]" and are "functionally equivalent to Ecologically Core lands and may contain

¹⁰³ DRAFT DESERT RENEWABLE ENERGY CONSERVATION PLAN (DRECP) APP. D, PART 3, SRMA 1, 26-27 (2012), available at http://www.drecp.org/documents/docs/alternatives_eval/Appendices/Appendix_D/Appendix_D_BLM_NLCS_ACEC_SRMA_Part3_SRMA_1.pdf. In its discussion of the Amargosa/Grimshaw Special Recreation Management Area, the DRECP calls for establishing a two-mile wide development exclusion corridor around the Old Spanish Trail in the Silurian Valley or designating a linear special management area for the Old Spanish Trail in the Valley. *Id.*

¹⁰⁴ "This place is unique and special because it has not yet been degraded by development; the vast unencumbered landscape has great beauty and holds important value for many stakeholders." Amargosa Conservancy, Letter to James G. Kenna, State Director, BLM and David Harlow, DRECP Director (Jan. 15, 2014), available at http://www.drecp.org/documents/docs/comments-evals/Amargosa_Conservancy_comments.pdf.

¹⁰⁵ J.M. RANDALL, ET AL., THE NATURE CONSERVANCY, MOJAVE DESERT ECOREGIONAL ASSESSMENT, 74 (2010), available at <http://www.clarkcountynv.gov/Depts/dcp/Documents/Library/other%20reports/collab/Mojave%20Desert%20Ecoregional%20Assessment%202010.pdf>.

¹⁰⁶ RANDALL, ET AL. at A-15.

many of the same conservation targets, including sensitive species.”¹⁰⁷ The conservation value of Core and Intact lands is “highly dependent on the connections between them” and the “buffering” provided by surrounding, less pristine lands. The assessment notes that “[i]f significant portions of surrounding Ecologically Intact and Moderately Degraded lands are disturbed, developed, or otherwise compromised or further degraded in the future, then the conservation value of nearby Ecologically Core lands will diminish as well.”¹⁰⁸

Numerous ecologically intact desert habitats and protected areas surround the proposed project rights-of-way in the Silurian Valley. The 1.6 million-acre Mojave National Preserve lies to the south of the Silurian Valley, and iconic Death Valley National Park, the largest National Park in the contiguous United States, lies just to the north.¹⁰⁹ A “stark and lonely vastness,” Death Valley comprises 3.3 million acres of undisturbed wilderness, rugged canyons, and striking mountains.¹¹⁰ A remarkable number of other designated wilderness areas and wilderness study areas also encircle the Silurian Valley, including the Soda Mountains Wilderness Study Area to the southwest¹¹¹ and the “primeval” Avawatz Mountain Wilderness Study Area¹¹² immediately west of the proposed solar and wind project rights-of-way. The Hollow Hills Wilderness is located directly southeast of the proposed project sites, and the Nopah Range, South Nopah Range, Ibex, and Saddle Peak Hills Wildernesses are located to the north and northwest.¹¹³ The 210,875-acre Kingston Range Wilderness is an ecological transition zone between the Great Basin and the Mojave Desert and lies just to the northeast of the project rights-of-way.¹¹⁴ It is an area where numerous species reach their distribution limits, creating a place of uniquely high biodiversity.¹¹⁵ In fact, the Kingston Range Wilderness is “botanically

¹⁰⁷ *Id.* Intact lands often support more widespread ecosystems than Core lands, have fewer already-isolated conservation targets, and/or may be at higher risk of degradation and disturbance due to their location. *Id.*

¹⁰⁸ *Id.*

¹⁰⁹ See NPS, Memorandum to James G. Kenna, State Director, BLM-California (Aug. 16, 2013) (regarding proposed renewable energy development in Silurian Valley) (hereinafter “NPS Memorandum”); DEATH VALLEY GENERAL MANAGEMENT PLAN at 2; SOLAR POD at 5-10.

¹¹⁰ NPS, *Death Valley National Park - Natural Features and Ecosystems*, available at <http://www.nps.gov/deva/naturescience/naturalfeaturesandecosystems.htm> (last updated July 9, 2014); see *Death Valley National Park*, DESERT USA, http://www.desertusa.com/dv/du_dvpmain.html (last visited May 19, 2014).

¹¹¹ See SOLAR POD at 5-10; Defenders of Wildlife, et al., Letter to James Kenna, State Director, BLM-California, 2 (Nov. 6, 2013) (hereinafter “Letter from Defenders”); BLM, *Wilderness Study Areas*, available at http://www.blm.gov/ca/pa/wilderness/wsa/fo/wsa_list.html (last visited May 11, 2014).

¹¹² CALIFORNIA DESERT CONSERVATION AREA FINAL ENVIRONMENTAL IMPACT STATEMENT AND PROPOSED PLAN APPENDIX VOL. B, APP. III 299 (Sept. 1980), available at <https://archive.org/details/californiadeserb00unit> (hereinafter “CDCA FEIS VOL. B”).

¹¹³ See SOLAR POD, 5-10; Letter from Defenders, 2; BLM, *Wilderness Areas*, http://www.blm.gov/ca/st/en/prog/wilderness/wa/list_wa.html (last updated Jan. 1, 2014).

¹¹⁴ See BLM, *Kingston Range Wilderness* http://www.blm.gov/ca/st/en/fo/barstow/wilderness/kingston_range.html (last updated Dec. 4, 2013).

¹¹⁵ See *id.*

one of the most diverse areas within the California Desert,”¹¹⁶ supporting 505 native plant species, 32 of which are either endangered, rare, or limited in distribution.¹¹⁷ A portion of the Silurian Hills, the semi-mountainous region overlapping the project rights-of-way on their eastern boundary, falls within the area proposed for addition to the Kingston Range Wilderness.¹¹⁸

In addition to these surrounding wilderness lands, sensitive habitat areas designated as ACECs are found in close proximity to the project rights-of-way. The Salt Creek Hills ACEC, home to rare desert riparian habitat and numerous cultural resources, is located only 13 miles north of the project rights-of-way, and the Halloran Wash ACEC lies approximately fifteen miles to the southeast.¹¹⁹ The Amargosa River ACEC, found just north of the Silurian Valley, includes three sections of the Wild and Scenic Amargosa River and supports lush riparian habitat.¹²⁰ The Amargosa River is considered the “Crown Jewel of the Mojave Desert” and is the only free-flowing river in the Death Valley region of the Mojave.¹²¹

The intact condition and high ecological value of the Silurian Valley is inextricably tied to the large number of equally intact, protected areas that surround the Valley. Preserving the Silurian Valley’s undisturbed character is essential to maintaining the ecological viability of the region as a whole. The Silurian Valley and its surrounding areas are, in a word, synergistic; the Valley protects the high ecological value of surrounding lands by acting as a buffer and important link between them, while these adjacent protected areas sustain the intact nature of the Valley.

Under the Solar PEIS ROD, development in a variance area is appropriate only if it is “consistent with priority conservation, restoration, and/or adaptation objectives in the best available landscape-scale information (e.g., landscape conservation cooperatives, rapid

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ BLM, *Kingston Range Wilderness Proposed Additions* (July 15, 2009), available at http://faultline.org/files/CDPA2010maps/KingstonRange_15JULY09.pdf.

¹¹⁹ See SOLAR POD at 5-10; Letter from Defenders at 2; DRAFT DESERT RENEWABLE ENERGY CONSERVATION PLAN (DRECP) APP. D, PART 2, ACEC 3, 48 (2012), available at http://www.drecp.org/documents/docs/alternatives_eval/Appendices/Appendix_D/Appendix_D_BLM_N LCS_ACEC_SRMA_Part2_ACEC_3.pdf (hereinafter “DRAFT DRECP APP. D”); CALIFORNIA DESERT CONSERVATION AREA FINAL ENVIRONMENTAL IMPACT STATEMENT AND PROPOSED PLAN APPENDIX VOL. C, APP. IV 14 (Sept. 1980), available at <https://archive.org/stream/californiadeserc00unit#page/n0/mode/2up> (“The area contains one of the largest riparian vegetation zones in the California Desert.”) (hereinafter “CDCA FEIS VOL. C”).

¹²⁰ See BLM, *Amargosa River Area of Critical Environmental Concern*, http://www.blm.gov/ca/st/en/fo/barstow/amargosa_acec.html (last updated Sept. 15, 2011); BLM, *Wild and Scenic Rivers*, available at http://www.blm.gov/ca/st/en/prog/blm_special_areas/wildrivers.html (last updated Nov. 20, 2013).

¹²¹ BLM, *Wild and Scenic Rivers*.

ecological assessments, and state and regional-level crucial habitat assessment tools [CHATs]).”¹²² Indeed, such objectives were identified in the Nature Conservancy’s 2010 Ecoregional Assessment. Proposed objectives for Ecologically Core lands include protecting large, intact habitat blocks to conserve targeted species and ecological systems; preserving connectivity; and preventing human-driven fragmentation.¹²³ Objectives identified for Ecologically Intact lands include promoting land management practices that preserve or improve landscape integrity and supporting restoration of fragmented landscapes and ecological processes.¹²⁴ The resource impacts and fragmentation associated with solar and wind development on undisturbed lands are inconsistent with these objectives, and development on Ecologically Core and Intact lands like those of the Silurian Valley should be avoided.

In short, the Mojave Ecoregion has been identified as one of the most ecologically intact areas in California,¹²⁵ and all available evidence shows that the Silurian Valley is one of the best representations of these increasingly rare, undisturbed landscapes. Iberdrola’s proposed development within the Silurian Valley would degrade the integrity of the Valley and the surrounding region, including by compromising the functions and values of nearby National Park units, wilderness areas, and other sensitive and protected habitats. Once disturbed, these fragile desert landscapes recover slowly or not at all. BLM’s goal of avoiding and minimizing conflict with sensitive resources¹²⁶ counsels against allowing the proposed projects to proceed.

2. Linkages

The proposed wind and solar projects would degrade the integrity of the Silurian Valley and the surrounding region by fragmenting habitat and severing vital ecological linkages. Habitat linkages and landscape connectivity are fundamental to maintaining natural populations and biodiversity. Population movement through corridors “is essential for gene flow, for recolonizing unoccupied habitat after a local population goes extinct, and for species to shift their geographic range in response to global climate change.”¹²⁷

FWS, CDFW, and NPS have all stressed the importance of preserving the essential, known habitat linkages in the Silurian Valley.¹²⁸ A 2009 study evaluating 47 movement

¹²² SOLAR PEIS ROD at App. B.5 179.

¹²³ RANDALL, ET AL. at 80-81.

¹²⁴ *Id.*

¹²⁵ K. PENROD, ET AL., A LINKAGE NETWORK FOR THE CALIFORNIA DESERTS, 5 (2012), produced for BLM and the Wildlands Conservancy, available at <http://scwildlands.org/reports/ALinkageNetworkForTheCaliforniaDeserts.pdf>.

¹²⁶ See SOLAR PEIS ROD at 37, 50, 177, 182.

¹²⁷ PENROD, ET AL. at 1.

¹²⁸ See FWS, Letter to Field Manager, Barstow Field Office, BLM, 2 (Feb. 6, 2014) (hereinafter “FWS Letter”) (“[W]e note that the project site partially overlaps desert tortoise habitat that links the Superior-Cronese desert tortoise conservation area to the west with the Ivanpah desert tortoise conservation area to the

corridors in California's deserts (whose existence are particularly crucial to conserving biodiversity) modeled habitat suitability and movement needs of the species associated with the identified linkages.¹²⁹ Three of those 47 corridors run through the Silurian Valley region: a north-south linkage in the Amargosa watershed; an east-west linkage between the Soda Mountains and the Kingston/Mesquite Mountains; and an east-west linkage between the Avawatz Mountains and the Kingston/Mesquite Mountains.¹³⁰ These lower elevation corridors are particularly important for wide-ranging species that rely on the corridors to disperse and for seasonal habitat.¹³¹

In sum, the Silurian Valley is an important part of a broader system of landscape connections in the Mojave region. Allowing Iberdrola's proposed projects to move forward in the Valley would fragment population movement, diminish the value of the existing linkages, and reduce the ability of plants and animals to adapt to future stressors, including climate change. The proposed solar project is therefore inconsistent with the variance criterion to "minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors."¹³² The proposed wind project is similarly inconsistent with the Wind PEIS ROD BMPs calling for projects to be located in the "least environmentally sensitive areas" and for towers to avoid "areas where ecological resources known to be sensitive to human activities . . . are present."¹³³ As CDFW notes, "[i]n an already fragmented habitat, it is important to maintain [existing] linkages and keep them free of large-scale industrial developments which result in further losses of habitat and introduce more sources of direct mortality."¹³⁴ Similarly, as more land in the region is allocated for development to meet renewable energy needs, intact and connected areas must be prioritized for conservation to protect wide-ranging species and wilderness values consistent with Secretarial Order 3330 and NPS objectives.

east; protecting the functionality of such linkages is a high priority."); CDFW, Letter to Katrina Symons, Field Manager, Barstow Field Office, BLM 2 (Feb. 28, 2014) (hereinafter "CDFW Letter"), *available at* <http://www.basinandrangewatch.org/Silurian-CDFW-comments.pdf> ("The project site lies in an area that provides a vital linkage between tortoise conservation areas; such a linkage makes desert tortoise conservation networks more robust."); NPS Memorandum at 3 (discussing the importance of the region as a migratory bird corridor).

¹²⁹ PENROD, ET AL. at 2-3.

¹³⁰ *Id.* at 23, 32-33, 35-36, 50, 51, 63-64; Letter from Defenders at 5; BLM, DRAFT DRECP 3.1-165 (Dec. 2012), *available at* http://www.drecp.org/documents/docs/alternatives_eval/Section_3-1_Biological_Resources.pdf (Figure 3.1-30: Habitat Linkages and Wildlife Movement Corridors within the Plan Area - Mojave and Silurian Valley Subarea); RANDALL, ET AL. at D-24 (identifying the Silurian Valley as a linkage between the Avawatz and Kingston ranges).

¹³¹ *See* Letter from Defenders at 4.

¹³² SOLAR PEIS ROD at App. B.5 179.

¹³³ WIND PEIS ROD at A-6 to -7.

¹³⁴ CDFW Letter at 2; *see also* FWS Letter at 2 ("Development within key habitat linkages such as this will lead to further fragmentation of desert tortoise habitat and could compromise the viability of demographic and genetic connection in the area.").

3. Sensitive habitats and water resources

Iberdrola's proposed renewable development in the Silurian Valley would immediately destroy more than 20 square miles of intact land. The fragile Valley supports habitat for sensitive species like desert tortoise, bighorn sheep, and golden eagles. Moreover, the projects would be located in, and therefore fragment, intact linkage areas for these and other species.

In addition to directly impacting habitat in the Valley, the proposed projects might also compromise nearby sensitive habitats by disrupting the unique hydrology of the region and impacting the critical riparian habitats and species supported by the Mojave's rare water sources. Riparian communities are an especially important resource in the Mojave Desert, where they exist in isolated patches surrounded by an otherwise harsh and arid environment. They serve as a significant source of foraging, sheltering, and nesting habitat for birds and other wildlife.¹³⁵ Though uncommon and small in total area, "riparian communities in this region are critical centers of biodiversity," and "[m]ore than 75% of the species in the region are strongly associated with riparian vegetation, including 80% of the birds and 70% of the butterflies."¹³⁶

The Silurian Valley straddles the Amargosa and Mojave River watersheds and lies at the heart of a unique concentration of desert water resources. The Amargosa and Mojave Rivers are two of the few perennial water sources in the Mojave Desert. The Amargosa flows year-round and supports biologically rich and diverse wetland and riparian habitat.¹³⁷ It is the only river that flows into Death Valley and is the "focal hydrological system of the northern and eastern Mojave Desert [("NEMO")] planning area."¹³⁸ Though the river flows underground for much of its course, it surfaces for approximately 17 miles around the communities of Shoshone and Tecopa and in the Amargosa River ACEC, just north of the Silurian Valley.¹³⁹

Other important sources of water in the Amargosa Watershed near the Silurian Valley are Salt Creek and Saratoga Springs. Salt Creek originates near Silver Lake and flows underground for most of its length north through the Silurian Valley until it surfaces for several

¹³⁵ See DRECP, APP. D, PART 1, NLCS, 1, 13, available at http://www.drecp.org/documents/docs/alternatives_eval/Appendices/Appendix_D/Appendix_D_BLM_NLCS_ACEC_SRMA_Part1_NLCS_1.pdf.

¹³⁶ PETER F. BRUSSARD, ET AL., USGS, STATUS AND TRENDS OF THE NATION'S BIOLOGICAL RESOURCES, VOL. 2, 508-09 (1998), available at <http://www.nwrc.usgs.gov/sandt/Great-bn.pdf> (internal citations omitted).

¹³⁷ BLM, AMARGOSA RIVER ACEC IMPLEMENTATION PLAN AND ENVIRONMENTAL ASSESSMENT, (I)(A) (Oct. 2006), available at http://www.blm.gov/ca/pdfs/barstow_pdfs/amargosa_ea/Complete.pdf (hereinafter "AMARGOSA ACEC PLAN").

¹³⁸ *Id.*; NEMO at 3-1, -4, -14 ("Riparian communities occur near desert springs and along flowing streams and are of special interest. Under the CDCA Plan, all riparian areas in the planning area are designated as Unusual Plant Assemblages (UPAs), which are to be given special consideration in management decisions.").

¹³⁹ AMARGOSA ACEC PLAN at (I)(A).

hundred meters in the Salt Creek Hills ACEC.¹⁴⁰ The ACEC supports one of the largest riparian communities in the California desert and provides habitat for resident and migratory wildlife, including 82 species of birds.¹⁴¹ Like the Salt Creek Hills ACEC, Saratoga Springs is a critical natural resource and is one the largest wetlands in the northern Mojave Desert region.¹⁴² Additional sources of perennial and ephemeral water found in the Silurian Valley region include seeps and springs in the nearby Kingston and Avawatz Mountains.¹⁴³ Silurian, Silver, and Soda Dry Lakes also periodically hold water after major rainfall events that supports seasonal wetland habitat. The habitat attracts migratory species and forms a chain of connected ephemeral water resources running through the Silurian Valley.¹⁴⁴ The concentration of water resources in this region is unique, and the Silurian Valley's central location among them makes the Valley especially deserving of protection.

The Draft DRECP has identified proposed goals and objectives for biological resources. These biological goals and objectives ("BGOs") stress how important it is to conserve essential water resources. For example, BGO L2.4 calls for "[c]onserv[ing] undeveloped and natural areas within the watersheds of important riverine and drainage systems identified in the DRECP reserve system, including" the Amargosa watershed and Salt Creek/Death Valley watershed.¹⁴⁵ BGO WETC3.1 describes "[c]onserv[ing] open water, marshes, seeps, springs, and areas of surface water (oases)," such as the Amargosa River (including Shoshone, Tecopa and Amargosa Canyon areas), Saratoga Springs, and Salt Creek.¹⁴⁶ And BGO RIPC3.1 supports "[c]onserv[ing] . . . areas . . . associated with desert riparian and dry wash woodland

¹⁴⁰ *Desert Landscape of the Silurian Valley*, in SPRINGS AND LAKES IN A DESERT LANDSCAPE: ARCHEOLOGICAL AND PALEOENVIRONMENTAL INVESTIGATIONS IN THE SILURIAN VALLEY AND ADJACENT AREAS OF SOUTHEASTERN CALIFORNIA, 225 (Brian F. Byrd ed., 1998), available at <http://quest.nasa.gov/projects/spacewardbound/docs/III.B.1.pdf>; BLM, MANAGEMENT PLAN FOR DUMONT DUNES OFF-HIGHWAY VEHICLE AREA, Part II, 8 (June 1990), available at <https://archive.org/stream/managementplanfo00alle#page/n0/mode/2up>.

¹⁴¹ BioHere, *Inventory of California Natural Areas*, available at http://biohere.com/natural_areas/california/San_Bernardino_County/salt_creek.htm (last modified Dec. 6, 2005).

¹⁴² Letter from Defenders at 5-6.

¹⁴³ At least nine springs in the Avawatz Mountains provide important sources of water for wildlife. See CDCA FEIS VOL. B, APP. III at 301.

¹⁴⁴ Though the "basin no longer receives overland flow from the Mojave River," Silurian Lake "receives enough water from local runoff to produce wet playa conditions." *Desert Landscape of the Silurian Valley* at 231.

¹⁴⁵ Dudek & ICF International, Memorandum on Draft Revised DRECP Biological Goals and Objectives for DRECP Independent Science Panel, 14-15 (June 14, 2012), available at http://drecp.org/meetings/2012-06-26_meeting/background/01d_DRECP_Draft_Biological_Goals_and_Objectives.pdf (updating the March 2012 Draft Biological Goals and Objectives) (hereinafter "Draft DRECP BGOs").

¹⁴⁶ *Id.* at 31-32.

communities . . . including, but not limited to,” the Amargosa River, Saratoga Springs, Grimshaw Lake Complex, and Kingston Mountain Springs and Amargosa Canyon Springs.¹⁴⁷

The solar and wind projects proposed for the Silurian Valley do not respect these DRECP objectives. The projects would place additional pressure on rare, essential desert water resources strained by record drought and an expanding population. By Iberdrola’s own estimates, construction of the wind project alone would use 18 million gallons of water.¹⁴⁸ The wind plan of development also predicts an annual usage of nearly a million gallons of water per year for sewer and other related uses.¹⁴⁹ While the plan of development acknowledges that water would also be needed for dust control and compaction, it provides no estimate of that usage.¹⁵⁰ Nor does it specify where water supplies would come from, other than citing vague “permitted commercial and municipal sources.”¹⁵¹ The plan of development also fails to consider the probable long-term increase in fugitive dust resulting from ground disturbance activities during project construction.

Water use for the proposed solar project would supposedly be limited to washing solar arrays and controlling dust.¹⁵² Iberdrola predicts needing up to 100,000 gallons per year to wash the solar panels,¹⁵³ but this number likely underestimates the amount of water that would be used during operation. Iberdrola has not figured out where the water for the proposed project would come from, saying only that groundwater and other “local source[s]” are being considered.¹⁵⁴ The high mineral content of groundwater in the region¹⁵⁵ may mean more water than expected will be required to clean the panels; mineralized water can cause scale and corrode solar panels, which can increase water consumption and detergent use. Iberdrola’s plan of development does not address these issues.

Other large-scale solar projects in the region have required more water than developers anticipated, especially during construction. For example, the 550-MW, 3,912-acre Desert Sunlight Solar development in Riverside County was supposed to consume 1,200 to 1,300 acre-

¹⁴⁷ *Id.* at 24-25.

¹⁴⁸ WIND POD at 1-7.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² SOLAR POD at 1-10.

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *See, e.g.*, Riggs Valley Groundwater Basin, California’s Groundwater Bulletin 118, http://www.water.ca.gov/pubs/groundwater/bulletin_118/basindescriptions/6-23.pdf (last updated Feb. 27, 2004) (“Groundwater from Silver Lake Valley Groundwater Basin and Riggs Valley Groundwater Basin have high concentrations of fluoride, chloride, and TDS (DWR 1964).”). Riggs Wash is in the northeast part of the Silurian Valley, and some older documents occasionally refer to the Silurian Valley as “Riggs Valley.”

feet of water, or 250,000 to 1.3 million gallons per day, during construction.¹⁵⁶ But in March 2014, the developer requested permission to pump at least 1,400 acre-feet, which BLM granted.¹⁵⁷ The latest estimate is that Desert Sunlight's construction will require 1,755 acre-feet – nearly 572 million gallons.¹⁵⁸

Finally, Iberdrola observes that “the water used for panel cleaning is not anticipated to require disposal due to the extremely high evaporation rate at the site.”¹⁵⁹ This statement means that recharge of withdrawn groundwater from runoff and return flows is unlikely. Withdrawal of water from the Silurian Valley's already stressed water sources has the potential to further diminish water supplies in the arid Mojave, which could in turn adversely impact sensitive habitats and species. As discussed in Section III, the general management plans for the National Park units near the Silurian Valley are concerned with maintaining groundwater and sustaining the plants and animals associated with rare surface waters. In its comments on the nearby Soda Mountain Solar Project, NPS identified groundwater drawdown as one of several threats posed by the project to the species in the region: “Consumptive use of groundwater during construction and operation in an area of limited recharge, for instance, may threaten nearby natural spring discharge. . . [Seeps and springs] are frequently and heavily used by bighorn sheep; if drawdown from the groundwater table adversely impacts these features, desert bighorn will also be negatively affected.”¹⁶⁰

The Solar PEIS ROD's variance criteria, in addition to requiring that proposed projects be sited in areas “with low or comparatively low resource conflicts,”¹⁶¹ call for projects to be “designed, constructed, and operated to optimize their specific generation technology's efficiencies with respect to water impacts,” and to ensure that any groundwater withdrawal for the projects does not “cause or contribute to withdrawals over the perennial yield of the basin, or cause an adverse effect on ESA-listed or other special status species or their habitats over the long term.”¹⁶² The proposed solar project would not meet these criteria. While the Wind ROD

¹⁵⁶ BLM, DESERT SUNLIGHT SOLAR FARM PROJECT FINAL EIS AND CDCA PLAN AMENDMENT, 2-38 (Apr. 2011), available at http://www.blm.gov/ca/st/en/fo/palmsprings/Solar_Projects/Desert_Sunlight.html.

¹⁵⁷ WEST YOST ASSOCIATES, DESERT SUNLIGHT SOLAR FARM SECOND QUARTER 2014 GROUNDWATER LEVEL MONITORING REPORT FOR FIRST SOLAR ELECTRIC, INC., 2-1 (July 2014), available at <http://www.firstsolar.com/en/about-us/projects/desert-sunlight-solar-farm>; WEST YOST ASSOCIATES, DESERT SUNLIGHT SOLAR FARM FIRST QUARTER 2014 GROUNDWATER LEVEL MONITORING REPORT FOR FIRST SOLAR ELECTRIC, INC., 2-1 (Apr. 2014), available at <http://www.firstsolar.com/en/about-us/projects/desert-sunlight-solar-farm>.

¹⁵⁸ DESERT SUNLIGHT SOLAR FARM FIRST QUARTER 2014 GROUNDWATER LEVEL MONITORING REPORT FOR FIRST SOLAR ELECTRIC, INC., at 2-1.

¹⁵⁹ SOLAR POD at 1-10.

¹⁶⁰ NPS, Memorandum to BLM Project Manager, Proposed Soda Mountain Solar Project, BLM, California Desert District, 4 (Mar. 3, 2014), available at http://www.kcet.org/news/rewire/document_gw_01.pdf.

¹⁶¹ SOLAR PEIS ROD at 180.

¹⁶² *Id.* at 181.

PEIS BMPs do not specifically address water impacts, they direct projects to identify sensitive habitats like riparian and wetland communities in the vicinity of the project and “design the project to avoid (if possible), minimize, or mitigate impacts to these habitats”¹⁶³ The proposed wind project would not do this. Given the direct impacts of the proposed projects on the fragile desert habitats in the Silurian Valley, as well as the projects’ potential to draw on the basin’s groundwater supply and impact nearby sensitive riparian areas, Iberdrola’s proposed solar and wind projects are not consistent with the Solar or Wind PEIS RODs.

4. Adverse impacts to specific species

The Great Basin–Mojave Desert region “is a land of striking contrasts” and significant biological diversity produced by the “blending of the surrounding region’s flora and fauna with the unique species of the Great Basin and Mojave Desert.”¹⁶⁴ Among these species are some of the world’s oldest living organisms, including the creosote scrub colonies of the Mojave that can live more than 10,000 years.¹⁶⁵ The Mojave is the desert region with the greatest floristic endemism in California.¹⁶⁶ In fact, in some years, the Mojave region “supports more endemic plants per square meter than any other place in the United States.”¹⁶⁷

The perennial and ephemeral water sources near the Silurian Valley have created riparian and wetland communities that support diverse endemic species and serve as critical stopover habitat for migrating species. The riparian habitats found along the Amargosa River, for instance, “have been isolated for so long that they have begun to take on special significance”; species that exist nowhere else in the world, such as the Amargosa vole, Amargosa pupfish, and Amargosa dace, depend on these distinct habitats for survival.¹⁶⁸

The proposed Silurian Valley Solar and Wind Projects would threaten many of the unique and sensitive species of the Valley and surrounding region.

a. Migratory birds

NPS, FWS, and CDFW have all described the importance of the Silurian Valley to migratory birds and explained how the proposed solar and wind projects would endanger them. The region’s perennial and ephemeral water sources and associated riparian habitats

¹⁶³ WIND PEIS ROD at A-7.

¹⁶⁴ BRUSSARD, ET AL. at 1.

¹⁶⁵ *Id.*; see Anna K. Marshall, *Larrea tridentata*, USFS FIRE EFFECTS INFORMATION SYSTEM (1995), available at <http://www.fs.fed.us/database/feis/plants/shrub/lartri/all.html>.

¹⁶⁶ THE JEPSON DESERT MANUAL: VASCULAR PLANTS OF SOUTHEASTERN CALIFORNIA, 41 (Bruce G. Baldwin ed., 2002).

¹⁶⁷ WORLD WILDLIFE FUND, *Mojave Desert Ecoregion*, available at <https://www.worldwildlife.org/ecoregions/na1308>.

¹⁶⁸ AMARGOSA ACEC PLAN at (I)(B).

support a natural flyway through the Silurian Valley, connecting stopover habitat in the Mojave National Preserve and the Mojave River with Death Valley National Park and the Amargosa watershed.¹⁶⁹ Perennial flows support abundant life and create “ecological islands” in the otherwise arid Mojave.¹⁷⁰ According to BLM, the Amargosa ACEC, a critical water source just north of the Silurian Valley, is “a classic vagrant bird trap,” and has the “highest riparian species richness of any site in the Mojave Desert in California.”¹⁷¹ More than 250 different bird species have been observed in the Amargosa ACEC, including the loggerhead shrike, northern harrier, and least Bell’s vireo. The first two are state and federal species of special concern and the least Bell’s vireo is federally endangered.¹⁷² The Silurian Valley also includes suitable habitat for the bank swallow, a state-threatened and BLM sensitive species.¹⁷³

As mentioned previously, Saratoga Springs, another perennial water source located north of the Silurian Valley, is an important wetland site in the Mojave that provides year-round habitat for migrating birds.¹⁷⁴ The Springs are one of the top birding sites in Death Valley National Park,¹⁷⁵ and migratory species observed here include sensitive species like Swainson’s hawks, ospreys, and great blue herons.¹⁷⁶ In addition to these perennial sources of water, the dry lakes in the Silurian Valley region are essential to the survival of many migratory and wintering species. When rainfall or runoff events fill Silver and Silurian Dry Lakes, seasonal wetlands form that numerous species use for resting and feeding.¹⁷⁷

Large-scale wind and solar projects must comply with the terms of the Migratory Bird Treaty Act, 16 U.S.C. §§ 703-711. Yet compliance can be hard to come by, as migratory species are particularly vulnerable to impacts from such projects.¹⁷⁸ Those projects can cause the loss of

¹⁶⁹ See NPS Memorandum at 3; see also Draft DRECP BGOs at 25 (RIPC3.2) (identifying these same regions as important habitat and stating the objective as “[c]onserve migration stopover, breeding areas and wintering sites for migrant birds and subregional dispersers” in riverine systems including the Mojave and Amargosa Rivers).

¹⁷⁰ BLM, *Amargosa River Natural Area*, available at <http://www.blm.gov/ca/st/en/fo/barstow/amargosa.html> (last updated Feb. 9, 2010) (hereinafter “BLM, *Amargosa River Natural Area*”).

¹⁷¹ *Id.*

¹⁷² *Id.*

¹⁷³ DRAFT DRECP BASELINE BIOLOGY REPORT (2012), available at http://www.drecp.org/documents/docs/baseline_biology_report/05_Baseline_Biology_Report_Section_5.pdf.

¹⁷⁴ NPS Memorandum at 3.

¹⁷⁵ Letter from Defenders at 6.

¹⁷⁶ NPS Memorandum at 3.

¹⁷⁷ CDCA FEIS, VOL. C at 274; Letter from Defenders at 4.

¹⁷⁸ See T. Katzner, et al., *Challenges and Opportunities for Animal Conservation from Renewable Energy Development*, ANIMAL CONSERVATION, 367-68 (2013), available at https://www.researchgate.net/publication/256254567_Challenges_and_opportunities_for_animal_conservation_from_renewable_energy_development (discussing direct and indirect impacts of renewable development on birds and bats); M. McCrary, *Avian Mortality at a Solar Energy Power Plant*, 57 J. FIELD ORNITHOL. 135-41

breeding and foraging habitat as well as direct mortality to migrating species.¹⁷⁹ Birds and bats collide with turbines and other structures used in wind projects, and migratory and resident birds die in solar fields. Deaths in solar fields may be occurring because, in birds' eyes, solar arrays mimic water bodies and therefore seem like a safe place to land. Certain migratory birds like grebes have difficulty taking flight outside of the water; when they mistakenly land in a solar array, they cannot take off again and become trapped.¹⁸⁰ Collisions with solar arrays, associated facilities, and power lines also kill birds directly.¹⁸¹

FWS has stressed that proposed renewable development "within the migratory pathway through the Silurian Valley that connects . . . important stopover sites would have substantial adverse impacts on migratory birds."¹⁸² Unfortunately, neither the solar nor the wind plan of development even mentions migratory species or migration corridors.¹⁸³ Such omissions are incompatible with the solar variance criteria, which require projects to be located in areas with "low or comparatively low resource conflicts," and to "minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors . . ."¹⁸⁴ These criteria presume full analyses and identification of resource conflicts in evaluating appropriate sites for development. The Wind PEIS ROD BMPs are even more prescriptive, calling for projects to be designed to "minimize or mitigate the potential for bird and bat strikes" and avoid "known [bat] migration corridors."¹⁸⁵ If the development plans had addressed migratory birds or migration corridors, they would have been forced to note the serious threats that the projects pose.¹⁸⁶

(1986), available at <http://www.drecr.com/Exhibit515McCraryetal986AvianMortalityatsolarenergyplant.pdf>; Allan L. Drewitt & Rowena H. W. Langston, *Collision Effects of Wind-power Generators and Other Obstacles on Birds*, 1134 ANNALS OF THE NEW YORK ACADEMY OF SCIENCES 233, 252-53 (2008), available at <http://onlinelibrary.wiley.com/doi/10.1196/annals.1439.015/pdf> (identifying location as the single most important factor in minimizing collisions, and proposing several best practices for structures with which birds could collide, including locating wind farms "away from wetlands and other areas where large numbers of vulnerable birds concentrate to nest, feed, or roost, known migratory or daily flight routes, and especially areas that support scarce and threatened species").

¹⁷⁹ See FWS Letter at 3; CDFW Letter at 2.

¹⁸⁰ See *id.*

¹⁸¹ A recent report documented avian deaths at three solar facilities in southern California. The studies found impact trauma to be the primary cause of death at two of the sites and solar flux and trauma to be the leading causes of death at the other site. Bird species represented in the studies included resident, non-resident, diurnal, and nocturnal species. See REBECCA A. KAGAN, ET AL., NATIONAL FISH & WILDLIFE FORENSICS LABORATORY, AVIAN MORTALITY AT SOLAR ENERGY FACILITIES IN SOUTHERN CALIFORNIA: A PRELIMINARY ANALYSIS, 1-2 (Apr. 2014), available at <http://www.ourenergypolicy.org/wp-content/uploads/2014/04/avian-mortality.pdf>.

¹⁸² FWS Letter at 3.

¹⁸³ *Id.*; see generally SOLAR POD; WIND POD.

¹⁸⁴ SOLAR PEIS ROD at 180-81.

¹⁸⁵ WIND PEIS ROD at A-7.

¹⁸⁶ Other NGOs have expressed their concerns over the impact of the Silurian Solar Project on migratory species. See, e.g., Basin and Range Watch, Letter to Katrina Symons, Field Manager, Barstow Field

b. Golden eagles

Golden eagles (*Aquila chrysaetos*) and other raptor species, many of which are protected by the Bald and Golden Eagle Protection Act, 16 U.S.C. §§ 668-668d, face significant threats from wind and solar development. Vegetation clearing reduces foraging habitat and general human disturbance can discourage nesting or reduce nesting productivity in nearby cliffs and mountains.¹⁸⁷ Eagles can also be killed by colliding with turbines, power lines, and other associated tower and transmission structures.¹⁸⁸ Direct mortality is considered the biggest danger to eagles from wind development, and FWS's recently released Eagle Conservation Plan Guidance ("ECPG") is primarily concerned with this threat.¹⁸⁹

The ECPG explains that the siting of a wind project is the most important factor to consider when examining impacts to eagles.¹⁹⁰ It advises developers to revisit the decision to site a project in a particular location once site-specific assessments have been conducted and even to relocate the project if necessary to reduce conflict.¹⁹¹ In the case of the Silurian Valley, the potential for significant conflict is already evident.¹⁹² Wide-ranging species like golden eagles need large, undisturbed areas in which to nest and forage. It is unsurprising, then, that golden eagle nesting territories surround the Silurian Valley. At least 18 nests have been located in the mountainous areas around the Valley, including in the Soda and Avawatz Mountains, Silurian Hills, and Salt Creek Hills,¹⁹³ and several nests have been documented within a 10-mile radius of the project rights-of-way.¹⁹⁴ The Valley itself serves as a foraging and dispersal area,¹⁹⁵ and the Silurian solar and wind plans of development indicate that golden

Office, BLM (May 24, 2014), available at http://www.drecp.org/documents/docs/comments-general/Silurian_Valley/2014-05-24_Basin_and_Range_Watch_comments_on_Silurian_Valley.pdf.

¹⁸⁷ See NPS Memorandum at 3; FWS Letter at 4; CDFW Letter at 2.

¹⁸⁸ See *id.*

¹⁸⁹ FWS, Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy, ii (Apr. 2013), available at <http://www.fws.gov/migratorybirds/PDFs/Eagle%20Conservation%20Plan%20Guidance-Module%201.pdf>.

¹⁹⁰ *Id.* at 78.

¹⁹¹ *Id.*

¹⁹² See BLM, SODA MOUNTAIN SOLAR PROJECT DRAFT PLAN AMENDMENT/ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT 3.4-49 (Nov. 2013) (hereinafter "SODA MOUNTAIN EIS"), available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/Barstow/soda_mountain.Par.95802.File.dat/Vol%201_Soda%20Mtn%20EIS-EIR_508.pdf ("Based on a review of known and historic golden eagle breeding sites in the 10-mile golden eagle study buffer, it is likely that wind turbines installed for the Silurian Valley Wind Project could impact golden eagles both through direct mortality and habitat loss.").

¹⁹³ Letter from Defenders at 7.

¹⁹⁴ FWS Letter at 3-4.

¹⁹⁵ *Id.*; see also DRAFT DRECP BASELINE BIOLOGY REPORT, APP. C: SPECIES HABITAT MODELS, Figure SM-B11A: Draft Species Habitat Model Results for Golden Eagle (Foraging) (showing suitable foraging habitat over the entire region and recent occurrences in mountain ranges to the east and west of Silurian Valley) (2012), available at

eagles have at least “moderate” potential to be found in or near the project rights-of-way.¹⁹⁶ Given the presence of golden eagles in the Silurian Valley and the sensitivity of eagles to wind and solar development, the proposed projects could have serious adverse impacts on eagles in the region and should not be located in the Valley.

The Wind PEIS ROD clearly directs projects to consider such impacts to sensitive raptor species. The BMPs call for developers to identify nests located near the project sites, consider measures to reduce raptor use of the sites, and prepare “to mitigate potential impacts to special status species[,]” including through “avoidance, relocation of project facilities or lay-down areas, and /or relocation of biota.”¹⁹⁷ As already discussed, the solar variance criteria similarly call for projects to minimize impacts on important wildlife habitats.¹⁹⁸ Considering the high potential for the proposed projects to conflict with golden eagles and their habitat, the projects are likely inconsistent with the Wind PEIS ROD and the solar variance criteria under the Solar PEIS ROD.

c. Bats

In addition to providing important habitat for sensitive bird species like golden eagles, the Silurian Valley and the surrounding mountain ranges support numerous species of resident and migratory bats. The rich riparian resources concentrated around the Silurian Valley provide important foraging habitat for bats, and the rugged landscape of the surrounding hills and mountains contains ample roosting habitat. In fact, the Amargosa River watershed, along with the Kingston Mountain-Silurian Hills-Kingston Wash area, is recognized as a “bat concentration zone.”¹⁹⁹ The Silurian Hills, located along the eastern boundary of the Valley, contain numerous cliff faces, crevices, and abandoned mine structures that support bat roosting, hibernation, and maternity sites.²⁰⁰ The Salt Creek Hills to the north of the proposed project sites are “a major bat foraging and roosting area, and are suspected to serve as a crucial flight travel corridor into the Avawatz Mountains, where numerous spring foraging and roosting sites occur.”²⁰¹ Among the bat species that call the Silurian Valley region home are several

http://www.drecp.org/documents/docs/baseline_biology_report/11_Appendix_C_Species_Models/11a_Expert_Models/Expert-Based%20Models/BIRD%20-%20golden%20eagle_Foraging.pdf; DRAFT DRECP, APP. C: SPECIES HABITAT MODELS, Figure SM-B11B: Draft Species Habitat Model Results for Golden Eagle (Primary Breeding) (showing current occurrences in surrounding mountains and suitable habitat in many of the surrounding ranges) (2012), available at

http://www.drecp.org/documents/docs/baseline_biology_report/11_Appendix_C_Species_Models/11a_Expert_Models/Expert-Based%20Models/BIRD%20-%20golden%20eagle_Breeding.pdf.

¹⁹⁶ SOLAR POD at 5-9; WIND POD at 5-6.

¹⁹⁷ WIND PEIS ROD at A-8.

¹⁹⁸ SOLAR PEIS ROD at 181.

¹⁹⁹ NEMO at 3-9.

²⁰⁰ *Id.*

²⁰¹ NEMO at 3-9, 3-57; see also PENROD, ET AL. at 6.

BLM-designated sensitive species, including the western pipistrelle (*Pipistrellus hesperus*), big brown bat (*Eptesicus fuscus*), Brazilian free-tailed bat (*Tadarida brasiliensis*), spotted bat (*Euderma maculatum*), and leaf-nosed bat (*Macrotus californicus*).²⁰²

The bats of this region are highly vulnerable to large-scale renewable energy development, particularly wind projects. NPS has expressed concern over development in the Silurian Valley and its potential to impact a maternity colony of California leaf-nosed bats to the northeast of the project rights-of-way, noting that “[t]his colony and hibernacula likely represent the extreme northeast of this species’ range, and should be considered at risk from the proposed wind development.”²⁰³ Turbine-related bat fatalities from collisions and barotrauma are well-documented; as a result, most development proposals and guidance documents address the importance of locating projects away from sensitive habitats and corridors.²⁰⁴

The DRECP’s Draft BGOs explicitly direct that, “[w]henver possible, locate wind turbine areas several miles from known pallid bat and western mastiff bat roosting sites. Do not locate wind turbine areas between known roosting sites and frequented foraging sites.”²⁰⁵ Similarly, the Wind PEIS ROD advises operators, in creating plans of development, to identify potential conflicts with species and habitat in the vicinity of the project, locate turbines and roads away from riparian and critical wildlife habitats, and evaluate bat use of the project area and design the project to minimize or mitigate the potential for bat strikes.²⁰⁶ Perhaps most important, the ROD directs operators to avoid siting turbines near known bat hibernation, breeding, and maternity colonies, in known migration corridors, or in known flight paths between colonies and feeding areas.²⁰⁷ Iberdrola’s proposed wind project would, if approved, do precisely what the Draft DRECP and Wind PEIS ROD counsel against.

Wind turbines are not the only threat to bats; new research is also raising concern about the impacts of solar facilities. A recent study examined how bats recognize extended echo

²⁰² See BLM, *Amargosa River Natural Area*,; NEMO at 3-9; DRAFT DRECP, APP. C: SPECIES HABITAT MODELS, Figure SM-M2: Draft Species Habitat Model Results for California Leaf-nosed Bat (showing that the Silurian Valley is suitable habitat), Figure SM-M5: Draft Species Habitat Model Results for Pallid Bat (indicating suitable habitat exists in the valley and project site), Figure SM-M7: Draft Species Habitat Model Results for Townsend’s Big-eared Bat (same), Figure SM-M8: Draft Species Habitat Model Results for Western Mastiff Bat (same) (2012), available at http://www.drecp.org/documents/docs/baseline_biology_report/11_Appendix_C_Species_Models/11a_Expert_Models/Expert-Based%20Models/.

²⁰³ NPS Memorandum at 3.

²⁰⁴ See U.S. Geological Survey, *Bat Fatalities at Wind Turbines: Investigating the Causes and Consequences*, available at <https://www.fort.usgs.gov/science-feature/96> (last modified May 28, 2014); Duke University, Nicholas School of the Environment and Earth Sciences, *Bats and Wind Turbines* (undated), <https://web.duke.edu/nicholas/bio217/ptb4/batswind.html>.

²⁰⁵ Draft DRECP BGOs at 6 (Objective BAT1).

²⁰⁶ WIND PEIS ROD at A-7 to -8.

²⁰⁷ *Id.*

targets like water in their environment, and found that bats perceive any smooth horizontal object as water.²⁰⁸ Adult wild bats in the study made repeated attempts to drink from horizontal, echo-acoustically smooth mirrors despite conflicting sensory information. Juveniles raised in captivity who had never before encountered a water body spontaneously displayed the same behavior with the mirrors.²⁰⁹ These responses suggest a highly innate behavior that is particularly troubling in the context of solar development in the Mojave. Bats may be attracted to solar panels in this arid landscape where other immediate water sources are limited, mistaking the panels for water bodies and increasing the chances of collision.²¹⁰

Despite the significant threats that Iberdrola's proposed wind and solar projects pose to bat species, neither the solar nor wind plan of development even mentions bats or gives any indication that they were considered when the plans were developed. Given the significant bat habitat in the Silurian Valley and surrounding region, and the potential adverse effects of wind and solar facilities on bats, approving Iberdrola's proposed solar and/or wind projects would compromise resident and migratory bat populations in the region and would be inconsistent with the goals and policies of the Draft DRECP and Wind PEIS ROD.

d. Desert tortoise

Development within the Silurian Valley could adversely impact the threatened desert tortoise (*Gopherus agassizii*) by fragmenting already vulnerable populations and destroying an important regional movement corridor. Various studies have documented the importance of habitat connectivity to the desert tortoise, with one study explaining that "[f]or gene flow to reliably occur across the range, and for populations within existing conservation areas to be buffered against detrimental effects of low numbers or density, populations need to be connected by areas of habitat occupied by tortoises."²¹¹ Conservation of tortoise habitat

²⁰⁸ Stefan Greif & Björn M. Siemers, *Innate Recognition of Water Bodies in Echolocating Bats*, 1:107 NATURE COMMUNICATIONS 2 (Nov. 2010), available at <http://www.nature.com/ncomms/journal/v1/n8/full/ncomms1110.html>.

²⁰⁹ *Id.* at 3-4.

²¹⁰ Additional studies have shown that polarized light pollution from solar arrays may serve as "ecological traps" for species sensitive to polarized light. Polarized light pollution "presents severe problems for organisms associated with water bodies." Numerous insect species use orientation to horizontally polarized light sources as their primary guidance mechanism, and "[b]ecause of their strong horizontal polarization signature, artificial polarizing surfaces . . . are commonly mistaken for bodies of water." Insects attracted to solar panels therefore may also attract bats and insectivorous birds, increasing the chance of collisions for these species. See Gabor Hovarth, et al., *Polarized light pollution: a new kind of ecological photopollution*, 7(6) FRONT. ECOL. ENVIRON. 320, 323 (2009), available at http://avianscience.dbs.umt.edu/products/documents/2009_Horvathetal.pdf; see also KAGAN, ET AL. at 2 (hypothesizing that the solar panels at Ivanpah may act as a "mega-trap" by attracting insects, which then attract birds and bats, which then die and attract other predators to the site).

²¹¹ Roy Averill-Murray, et al., *Conserving Population Linkages for the Mojave Desert Tortoise (Gopherus Agassizii)*, 8 HERP. CONSERVATION & BIOL. 1, 10 (2013), available at

adjacent to existing conservation areas and identified linkages protects against “edge” effects and localized population declines within those conservation areas.²¹² FWS has similarly emphasized the importance of connectivity between tortoise populations, noting that with “utility-scale solar development and other land uses within the range of the species, it is essential that habitat linkages between and among populations are conserved.”²¹³

The Silurian Valley is an important linkage and potential point of genetic exchange for desert tortoise populations in the surrounding region. Several studies, including ones cited in the Solar PEIS and Draft DRECP, have used a “least cost corridor” method (*i.e.*, identified the pathways posing the least relative resistance to a species’ movement) to identify the most critical linkage areas for conserving connections between tortoise populations.²¹⁴ A major least cost corridor connecting the Ivanpah desert tortoise critical habitat unit with the Superior-Cronese critical habitat unit extends east-west across the Silurian Valley between Silurian Dry Lake and Silver Lake.²¹⁵

In addition to serving as an important movement corridor, the Silurian Valley itself supports suitable tortoise habitat and is part of the Desert Tortoise Eastern Mojave Recovery Unit.²¹⁶ In 2009, USGS modeled desert tortoise habitat suitability across the tortoise’s range, and the proposed solar and wind project rights-of-way fall within this modeled habitat.²¹⁷ Moreover, tortoise presence in the Silurian Valley and surrounding region has been well-documented. The plans of development for both proposed projects identify desert tortoise as

http://www.fws.gov/nevada/desert_tortoise/documents/publications/2013-Conserving-popln-linkages-mdt.pdf; see also Taylor Edwards, et al., *Implications of anthropogenic landscape change on inter-population movements of the desert tortoise (Gopherus agassizii)*, 5 CONSERVATION GENETICS 485, 496-97 (2004), available at <http://link.springer.com/article/10.1023%2FB%3AC0GE.0000041031.58192.7c>.

²¹² Averill-Murray, et al. at 11.

²¹³ FWS, STATUS OF THE SPECIES AND ITS CRITICAL HABITAT RANGEWIDE, 12-13 (Feb. 2012), available at http://www.fws.gov/nevada/desert_tortoise/documents/misc/Status_of_the_Species-DT_February_9_2012.pdf.

²¹⁴ Averill-Murray, et al., at 3-4; PENROD, ET AL. at 35; see also FWS, Explanation of Map of FWS—Identified Priority Desert Tortoise Connectivity Areas, 1, available at http://solareis.anl.gov/documents/fpeis/maps/FWS_Connectivity_Explanation.pdf; Draft DRECP Biological Goals and Objectives for 3 Driver Species, 6, 7 (pdf pagination) (May 20, 2013), available at http://www.drecp.org/documents/docs/Memo_three_drivers_BGOs.pdf.

²¹⁵ Averill-Murray, et al. at 2, 5, 6, 8; PENROD, ET AL. at 35.

²¹⁶ FWS, STATUS OF THE SPECIES AND ITS CRITICAL HABITAT RANGEWIDE, at 5.

²¹⁷ KENNETH E. NUSSEAR, ET AL., MODELING HABITAT OF THE DESERT TORTOISE (GOPHERUS AGASSIZII) IN THE MOJAVE AND PARTS OF THE SONORAN DESERTS OF CALIFORNIA, NEVADA, UTAH, AND ARIZONA (2009), available at <http://www.werc.usgs.gov/oldsitedata/pubbriefs/nussearpbmay2009.html>; see also DRAFT DRECP, APP. C: SPECIES HABITAT MODELS, Figure SM-R3C Draft Species Habitat Model Results for Desert Tortoise (FWS-USGS Carlsbad Additions), available at http://www.drecp.org/documents/docs/baseline_biology_report/11_Appendix_C_Species_Models/11a_Expert_Models/Expert-Based%20Models/REPTILE-AMPHIBIAN%20-%20desert%20tortoise.pdf (showing suitable habitat through much of the eastern portion of the valley, east of Hwy 127, and in the project right-of-way).

having a “high” probability of occurrence on the project sites,²¹⁸ and individual live tortoises and tortoise sign have been found on and around the proposed project sites.²¹⁹ The proposed project rights-of-way are also adjacent to a desert tortoise critical habitat unit, and a Desert Wildlife Management Area is located just 10 miles to the northeast.²²⁰

Relying on the habitat and corridor models just discussed, the Draft DRECP developed BGOs for desert tortoise that specifically address the extensive habitat and connectivity in and around the Silurian Valley. One objective is to protect, manage, and acquire habitat within a broad linkage area connecting adjacent critical habitat units, Death Valley National Park, and the Mojave National Preserve, with the goal of “[e]nsur[ing] the long-term connectivity of Tortoise Conservation Areas by maintaining desert tortoise habitat that is of sufficient size and contiguity for maintenance of viable populations within each linkage.”²²¹

Iberdrola’s proposed developments in the Silurian Valley conflict with these BGOs, and therefore would be unable to satisfy the Solar PEIS ROD variance criteria calling for minimization of adverse impacts on important wildlife habitats and migration/movement corridors.²²² The variance criteria also impose additional requirements on developers who propose utility-scale solar projects in areas that overlap with priority desert tortoise connectivity habitat as identified by FWS.²²³ Projects located in these areas must undertake additional survey and data collection efforts. Developers proposing these projects must also demonstrate, among other things, that the projects “can be sited and constructed to allow for adequate connectivity corridors as determined by the BLM and FWS that ensure that the project

²¹⁸ SOLAR POD at 5-8; WIND POD at 5-5.

²¹⁹ SOLAR POD at 5-8; CDFW Letter at 2; FWS Letter at 2; *see also* RICHARD W. STOFFLE, ET AL., DRAFT NATIVE AMERICAN CONCERNS AND STATE OF CALIFORNIA LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITY: MOHAVE, NAVAJO, CHEMEHUEVI, AND NEVADA PAIUTE RESPONSES, 22 (1987) (hereinafter “NATIVE AMERICAN CONCERNS”), *available at* https://arizona.openrepository.com/arizona/bitstream/10150/271233/1/azu_stoffle_cal_llrw_stoffle_report_w.pdf (“Pahrump Paiute elders who had lived in the Tecopa-Baker area all of their lives commented that they often see desert tortoise along the highway between Tecopa and Baker, California.”). The Desert Tortoise Council (“DTC”) has expressed concern over the protocol surveys conducted on the proposed site in 2013, as well as Iberdrola’s and BLM’s failure to disclose in available reports and maps that five tortoise burrows had been found on the site during the surveys. The DTC also expressed concern over the quality of the surveys and their inability to locate other sign commonly associated with the presence of that number of burrows. The DTC questioned the identification of the Silurian Hills region and foothills as unsuitable habitat for tortoise and burrowing owls since it appears no surveys were ever conducted there. *See* DTC, Letter to Joan Patrovsky, Realty Specialists/Project Manager & Katrina Symons, Field Manager, Barstow Field Office, BLM (May 25, 2014), *available at* http://www.deserttortoise.org/dtc/EAC_letters/5-25-2014Silurian%20Valley%20Solar%20Formal%20Comments.pdf.

²²⁰ WIND POD at 5-8.

²²¹ Draft DRECP Biological Goals and Objectives for 3 Driver Species, at 3 (pdf pagination) (Goal DETO 2, Objective DETO 2.1a).

²²² SOLAR PEIS ROD at 181.

²²³ *Id.* at 182-83.

does not isolate or fragment tortoise habitat and populations” and that the “proposed site[s] contain[] low tortoise densities consistent with the best available information for the subject geographic area”²²⁴ Similarly, the Wind PEIS ROD directs that projects be designed “to avoid (if possible), minimize, or mitigate impacts to [protected and special status species].”²²⁵

Iberdrola will not be able to show that its proposed projects are consistent with the solar variance criteria or the Wind PEIS ROD. The proposed projects will degrade tortoise habitat and sever an important movement corridor, increase human disturbance, and have additional direct and indirect impacts on the tortoises in the region. Construction of new roads and greater local traffic will pose an increased risk of direct mortality to tortoise. As the solar and wind plans of development propose to build or enhance 45 and 44 miles of road, respectively, this impact would likely be significant.²²⁶ Water used for dust control, especially during construction, might attract tortoise to the project sites, exacerbating this impact. Road kills of tortoise and other animals drawn to the site will attract opportunistic predators and scavengers like ravens whose impacts on tortoise are well documented. Indeed, because ravens are attracted to human activity, the proposed projects would likely increase local raven populations.²²⁷ Ravens could adversely impact tortoise populations in and surrounding the proposed project areas, as well as populations throughout the surrounding region.²²⁸ In fact, recent research suggests that ravens are exploiting new transmission lines and other infrastructure associated with energy development to expand their range in the western United States.²²⁹ Iberdrola’s development in the Silurian Valley could introduce ravens and extend their range into tortoise habitat in and around the Valley.

e. Bighorn sheep

The Silurian Valley is an important movement corridor for desert bighorn sheep (*Ovis canadensis nelsoni*). Springs and seeps in the nearby Avawatz and Kingston Mountains serve as

²²⁴ *Id.* at 183-84.

²²⁵ WIND PEIS ROD at A-7.

²²⁶ These extensive proposed new road networks are also at odds with the variance criteria and Wind BMPs that call for projects to maximize or optimize the use of existing roads. See SOLAR PEIS ROD at 180; WIND PEIS ROD at A-6.

²²⁷ FWS Letter at 2; CDFW Letter at 3; Peter S. Coates, et al., *Landscape alterations influence differential habitat use of nesting buteos and ravens within sagebrush ecosystem: Implications for transmission line development*, 116 THE CONDOR 341, 342 (2014), available at <http://www.bioone.org/doi/full/10.1650/CONDOR-13-126.1> (“[A]nthropogenically altered landscapes often subsidize raven populations by providing food and water resources and increasing population vital rates and recruitment.” (internal citations omitted)).

²²⁸ FWS Letter at 2; CDFW Letter at 3.

²²⁹ Peter S. Coates, et al., at 353; see also Stephanie Pappas, “Go West, Young Raven: Clever Birds Use Power Lines to Spread to New Territory,” *Livescience* (Jan. 10, 2014), available at <http://www.livescience.com/42492-raven-power-lines-spread.html>.

critical water sources and support known bighorn sheep populations in those ranges.²³⁰ CDFW produced a distribution model for bighorn sheep in California that identifies historic, current, and potential core habitat for bighorn sheep in the DRECP study area.²³¹ The model recognizes the majority of mountain ranges (and semi-mountainous areas) around the proposed project rights-of-way as bighorn sheep habitat. The Draft DRECP relied on this model and others in identifying 12,946,290 acres of suitable mountain and intermountain habitat for bighorn sheep in the plan area, including in and around the rights-of-way.²³²

Furthermore, a least cost linkage corridor running east-west through the Avawatz Mountains has been identified in the Silurian Valley.²³³ The DRECP's Draft BGOs for bighorn sheep specifically call for protecting this important intermountain habitat connection in the Silurian Valley: "Conserve high-priority intermountain habitat as functional dispersal and migration linkages," including the intermountain linkage in the "Silurian Valley between the Avawatz Mountains and the Silurian Hills."²³⁴

The distribution of bighorn sheep around the Silurian Valley is typical of the Mojave region, where bighorn sheep occupy numerous small mountain ranges separated by expansive flat valleys and playas. This structure creates metapopulations, whose individuals infrequently

²³⁰ CDCA FEIS VOL. B, APP. III at 301 (stating that the Avawatz have 75 square miles of seasonal DBS habitat); CDCA FEIS VOL. C at 11 ("The area requires protection of scenic, floral, and faunal values, which is accomplished on the main (southern) portion through recommendation for Wilderness (Class C) status. . . . In order to protect bighorn sheep, the northern, Class M area is recommended for ACEC designation.").

²³¹ Conservation Biology Institute, Protected Areas Center, *Desert Bighorn Sheep – Species Distribution Model*, DRECP, produced for CDFW, A Conservation Plan for Desert Bighorn Sheep in California (April 2013), available at <http://protectedareas.databasin.org/datasets/c3256fdac3944912a0772d8c8f2280eb>.

²³² DRAFT DRECP, APP. C: SPECIES HABITAT MODELS, Figure SM-1B: Draft Species Habitat Model Results for Bighorn Sheep (inter-mountain), Figure SM-1C: Draft Species Habitat Model Results for Bighorn Sheep (mountain), Figure SM-M2: Draft Occurrence Areas for Bighorn Sheep Species (indicating sheep habitat overlaps portions of Silurian Valley and covers surrounding mountain ranges), available at http://www.drecp.org/documents/docs/baseline_biology_report/11_Appendix_C_Species_Models/11a_Expert_Models/Expert-Based%20Models/; DRAFT DRECP BASELINE BIOLOGY REPORT, APP. B: SPECIES PROFILES, BIGHORN SHEEP, 23 (2012), available at http://www.drecp.org/documents/docs/baseline_biology_report/10_Appendix_B_Species_Profiles/10d_Mammal/Bighorn%20Sheep.pdf; see also BLM, MOJAVE BASIN & RANGE RAPID ECOREGIONAL ASSESSMENT FINAL REPORT 73 (June 2013) (showing the current distribution of Desert Bighorn Sheep in the Mojave region), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/landscape_approach/documents1.Par.99875.File.dat/MBR_1_ReportBody.pdf.

²³³ PENROD, ET AL. at 32-33.

²³⁴ Draft DRECP Biological Goals and Objectives for 4 Driver Species, 5, 12 (pdf pagination) (Apr. 10, 2013) (Objective BISH1.2, App. 2), available at http://www.drecp.org/documents/docs/Memo_Four_driver_BGOs.pdf. Objective BISH1.1 states, "[i]n each desert bighorn sheep metapopulation fragment, conserve occupied habitat supporting well-distributed desert bighorn sheep mountain range herd units," while Goal BISH2 is to "[r]emove or reduce potential threats and environmental stressors to maintain and enhance bighorn sheep mountain range herd units." *Id.* at 5, 7 (pdf pagination).

but continually cross the flat intermountain regions between populations. The “relative isolation and small size of bighorn populations makes them very vulnerable to loss of genetic diversity . . . but dispersal between mountain ranges counteracts this loss through gene flow and thereby works to maintain genetic diversity, and ultimately the ability of the species to adapt to changing environmental conditions.”²³⁵ Maintaining or restoring corridors and intermountain habitat is critical to bighorn sheep populations, as habitat fragmentation is a major factor in the decline of California desert bighorn sheep populations.²³⁶ Linkages between mountain ranges allow for new (or re-) colonization of suitable habitat and are “essential for the persistence of the population.”²³⁷

The proposed solar and wind projects in the Silurian Valley would degrade or destroy an important intermountain habitat linkage for bighorn sheep, isolating their populations and creating barriers to their migration and movement.²³⁸ These impacts are in direct conflict with the solar variance criteria, which direct proposed projects to avoid impacts on important wildlife habitats and migration corridors and avoid, minimize, or mitigate impacts on protected species and species of concern.²³⁹ The impacts are also inconsistent with the Wind PEIS ROD BMP, which call for developers to locate projects in the “least environmentally sensitive areas.”²⁴⁰ In sum, it is difficult to reconcile the Solar and Wind PEIS RODs with the proposed developments’ impacts on desert bighorn sheep in the Silurian Valley and surrounding region.

f. Other species

Numerous additional sensitive and protected species occur in the Silurian Valley region and would be threatened by the proposed solar and wind projects. Iberdrola admits that the Mojave Fringe-toed Lizard (*Uma scoparia*), a California Species of Special Concern, and the Swainson’s Hawk (*Buteo swainsoni*), a state threatened species, have at least “moderate” potential to occur on the solar project right-of-way.²⁴¹ Three other state Species of Special Concern – the Loggerhead Shrike (*Lanius ludovicianus*), Burrowing Owl (*Athene cunicularia*), and

²³⁵ CLINTON W. EPPS, ET AL., POTENTIAL IMPACTS OF PROPOSED SOLAR ENERGY DEVELOPMENT NEAR THE SOUTH SODA MOUNTAINS ON DESERT BIGHORN SHEEP CONNECTIVITY, REPORT TO THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, NATIONAL PARK SERVICE, AND BUREAU OF LAND MANAGEMENT, 2 (2013), available at http://www.cawsf.org/pdf/Soda_Mountains_Report.pdf.

²³⁶ University of Michigan School of Natural Resources & Environment, Renewable Energy in the California Desert: Mechanisms for Evaluating Solar Development on Public Lands – *Desert Bighorn Sheep* (2010), available at <http://webservices.itcs.umich.edu/drupal/recd/?q=node/128>.

²³⁷ *Id.*

²³⁸ *Id.* (“In a 2005 study . . . highways, developed areas, and other human-made barriers were found to eliminate gene flow in desert bighorn sheep populations, representing a ‘severe threat’ to the persistence of the populations.”).

²³⁹ SOLAR PEIS ROD at 181.

²⁴⁰ WIND PEIS ROD at A-7.

²⁴¹ SOLAR POD at 5-7, -8.

Northern Harrier (*Circus cyaneus*)—have “high” potential to occur in the solar project right-of-way.²⁴² The Draft DRECP Species Habitat Model for Burrowing Owl and Mojave Fringe-toed Lizard also show that suitable habitat for both species is located in Silurian Valley.²⁴³ The proposed solar and wind projects could impact these species by removing and fragmenting habitat, disturbing essential behaviors, and directly killing individuals.

Based on the information discussed above, it is unlikely that the Silurian solar project will be able to document under the variance process that “the proposed project is in an area with low or comparatively low resource conflicts and where conflicts can be resolved,” or that “the proposed project will minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors.”²⁴⁴ Additionally, according to the Wind PEIS ROD, BLM “will not issue [right-of-way] authorizations for wind energy development on lands on which wind energy development is incompatible with specific resource values.”²⁴⁵ Iberdrola’s proposed solar and wind projects therefore are inconsistent with the Solar and Wind PEIS RODs because they will destroy and fragment habitat, kill migratory species, sever vital linkages, and disrupt essential nesting and foraging behaviors. In short, the proposed solar and wind projects would degrade rare and vital ecological resources, and therefore would conflict with how BLM manages public lands in the California desert.

B. Historic and cultural resources

The Silurian Valley and surrounding area have a rich human history and, as a result, contain many important cultural resources. As we explore in greater detail below, the riparian oases that sustain the many sensitive plant and animal species discussed above have been visited by people, including Native American tribes, for thousands of years. The Silurian Valley contains countless remnants of this past occupation, which serve as a rare resource for recreation and research. In light of the significant cultural and historic values of the Silurian Valley, NPS has concluded that “[t]he scope of the proposed wind and solar generation facilities under the current proposal would have permanent adverse effects to the historic and prehistoric cultural landscapes present here.”²⁴⁶

²⁴² *Id.* at 5-7, -8, -10. Curiously, the Wind POD, which appears to include the land now designated for the Solar POD, identifies the burrowing owl as having “low” potential to occur on site and fails to mention the Swainson’s hawk at all. WIND POD at 5-3 to -4.

²⁴³ DRAFT DRECP, APP. C: SPECIES HABITAT MODELS, Figure SM-B4 (showing suitable burrowing owl habitat throughout the valley), Figure SM-R5 (showing suitable Mojave fringe-toed lizard habitat in the valley, historic occurrence in the valley, current observations to the north of the valley).

²⁴⁴ SOLAR PEIS ROD at 181.

²⁴⁵ WIND PEIS ROD at A-2.

²⁴⁶ NPS Memorandum at 2.

1. Ethnographic resources

The Mojave Desert, like all deserts, is dry. The long and irregular distances between its surface water sources have long made it difficult to travel through. So, like plants and animals, people have sought out and congregated around the Silurian Valley region's rare water resources for thousands of years. Offering food, shelter, and precious water in the harsh Mojave environment, these rare water resources attracted early humans and became centers of prehistoric and historic occupation. The Valley and surrounding region contain a wealth of important historic and prehistoric artifacts and archeological sites as a result. For example, the numerous ACECs in the area, including the Amargosa, Salt Creek Hills, and Halloran Wash ACECs, have long histories of human use and occupation.²⁴⁷ These areas contain paleolithic human sites up to 10,000 years old, as well as many historic cultural sites.²⁴⁸ Pottery shards, midden sites, pieces of stone tools and weapons, temporary camps, aboriginal trails, and even rock art petroglyphs have all been found in the region.²⁴⁹

A major concentration of habitation sites and nearly intact archeological sites has also been recorded in the nearby Kingston Range. The Kingston Mountains contain one of the region's few Pinon-Juniper woodlands, and sites and ground stone artifacts related to pinon use dating back 5,000 years have been found there.²⁵⁰ Native Americans also harvested pygmy agave in the Kingston Mountains, and agave roasting pits are found throughout the Kingston Range ACEC.²⁵¹

Many of these places still hold special significance to modern-day Native American tribes, particularly the Chemehuevi and Southern Paiute, Mohave, and Shoshone peoples. The Chemehuevi traditionally used Silurian Dry Lake for seasonal collecting in the spring and early summer, and temporary dwelling sites of "some contemporary significance" are found in the valley and foothills.²⁵² The Southern Paiute also consider the Silurian Valley an important traditional "border-keeping area" between themselves and other neighboring tribes.²⁵³ Nearby

²⁴⁷ See CDCA FEIS, VOL. C at 11, 14; Friends of the River, Amargosa Wild and Scenic River Fact Sheet, available at

http://www.friendsoftheriver.org/site/DocServer/Amargosa_Fact_Sheet_for_website.pdf?docID=2921; see also CLAUDE N. WARREN, ET AL., A CULTURAL RESOURCE OVERVIEW FOR THE AMARGOSA-MOJAVE BASIN PLANNING UNITS, 50, 62-63, 73-74, 81-83, 88 (1980), available at

http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/coop_agencies/new_documents/ca1.Par.74071.File.dat/amargosa_mojave_basin.pdf.

²⁴⁸ See CDCA FEIS, VOL. C at 14; Friends of the River, Amargosa Wild and Scenic River Fact Sheet.

²⁴⁹ See CDCA FEIS, VOL. C at 14; RUSSELL L. KALDENBERG, A CONSTRAINTS STUDY OF CULTURAL RESOURCE SENSITIVITY WITHIN THE CALIFORNIA DESERT, 30, 31, 42 (2008), available at

<http://www.drecre.com/Kaldenberg%20Cultural%20Sites%20Desert.pdf>.

²⁵⁰ See AMARGOSA ACEC PLAN at App. E; KALDENBERG at 41.

²⁵¹ KALDENBERG at 41.

²⁵² CDCA FEIS, VOL. C at 274.

²⁵³ NATIVE AMERICAN CONCERNS at 20, 23.

Dumont Dunes, Avawatz Mountains, Salt Spring Hills, Tecopa hot springs, and other places along the Amargosa River are also highly valued by Native peoples in the region as traditional collecting and hunting sites, physical and spiritual landmarks, spiritual cleansing and healing sites, pilgrimage destinations, and ceremonial sites.²⁵⁴

The Timbisha Shoshone have expressed serious concerns over the proposed solar and wind development in the Silurian Valley, particularly because Iberdrola is relying on an outdated ethnographic study as its primary source of information on the Valley's cultural resources.²⁵⁵ Iberdrola has not consulted with the Timbisha on the potential impacts of the proposed projects on sacred sites located in and adjacent to the Silurian Valley.²⁵⁶ NPS has rightly encouraged Iberdrola and BLM to, at a minimum, conduct a detailed cultural resource analysis for the projects and develop a new ethnographic study focused on the Silurian Valley.²⁵⁷

2. Historic trails

Visitors travelling through the arid Mojave were drawn to the rare water resources near the Silurian Valley and used them as critical stopping points on their journeys. The Silurian Valley was an important corridor between these sites. Explorers and traders moved through the Valley on trails and routes now recognized and protected for their historic and recreational value.

Historic and scenic trails are managed as one program under the National Landscape Conservation System. Historic trails generally consist of remnant sites and trail segments and are not necessarily contiguous.²⁵⁸ By definition, a National Historic Trail must "be a trail or route established by historic use and must be historically significant as a result of that use"; "be of national significance with respect to any of several broad facets of American history, such as trade and commerce, exploration, migration and settlement, or military campaigns"; and "have significant potential for public recreational use or historical interest based on historic interpretation and appreciation."²⁵⁹ One trail embodying these characteristics is the celebrated

²⁵⁴ RICHARD STOFFLE, ET AL., *AMERICAN INDIANS AND THE OLD SPANISH TRAIL*, 311, 318-19, 327, 331, 340, 343 (2008), available at <http://arizona.openrepository.com/arizona/handle/10150/270965> (hereinafter "AMERICAN INDIANS AND THE OLD SPANISH TRAIL").

²⁵⁵ See NPS, Letter to Katrina Symons, Field Manager, Barstow Field Office, BLM, 1-2 (June 3, 2014), available at http://www.deserttortoise.org/dtc/EAC_letters/5-25-2014Silurian%20Valley%20Solar%20Formal%20Comments.pdf (letter recommending ethnographic study for proposed renewable development in Silurian Valley).

²⁵⁶ *Id.*

²⁵⁷ *Id.*

²⁵⁸ NPS, *Old Spanish Trail National Historic Trail*, available at <http://www.nps.gov/olsp/parkmgmt/index.htm> (last updated July 7, 2014).

²⁵⁹ National Trails System Act, 16 U.S.C. § 1244(b)(11).

Old Spanish Trail (“OST”), a portion of which runs through the Silurian Valley near Iberdrola’s proposed project rights-of-way.

Designated as a National Historic Trail in 2002 (there are only 19 such trails in the United States), the OST is a network of more than 2,700 miles of trail segments that cross New Mexico, Colorado, Arizona, Utah, Nevada, and California.²⁶⁰ The OST was the first viable Euro-American overland trade route linking what were once Mexico’s isolated provinces of New Mexico and California.²⁶¹ During its peak, between 1830 and the late 1840s, the OST was primarily a pack trail used for trading blankets and other woolen goods from New Mexico for horses and mules in California,²⁶² though it was also used by famous explorers like John C. Fremont and Kit Carson.²⁶³ Use of the trail waned and then mostly ceased after the Mexican-American War as wagon routes and other trails were established and became more attractive alternatives.²⁶⁴ One of the most famous wagon trails, the Mormon Road, followed parts of the western OST and brought Mormons and other emigrants to southern California.²⁶⁵ The OST brought international trade to Utah and Santa Fe and was instrumental in Las Vegas’s founding.²⁶⁶

The OST evolved from known trails used by Spanish and European explorers, traders, and settlers and an extensive network of Native American trade routes.²⁶⁷ The extreme topographic and climatic barriers between Mexico’s eastern and western provinces, particularly in the California deserts, long delayed its completion. Despite explorations for an overland route that began as early as 1776,²⁶⁸ a functional commercial route was not established until 1829.²⁶⁹ That year, Mexican trader Antonio Armijo successfully connected the scattered

²⁶⁰ NPS, *Old Spanish Trail National Historic Trail*; BLM, *Old Spanish Trail*, available at http://www.blm.gov/nm/st/en/prog/recreation/old_spanish_trail.html (last updated Oct. 25, 2011).

²⁶¹ OLD SPANISH TRAIL FEASIBILITY STUDY AND ENVIRONMENTAL ASSESSMENT at 5.

²⁶² *Id.* at 5, 9.

²⁶³ *Id.* at 11.

²⁶⁴ *See id.* at 13.

²⁶⁵ *See id.* at 11, 121. For more information on the historic importance of the OST to Mormons, see William B. Smart, OLD UTAH TRAILS (1988), *excerpt available at* http://historytogo.utah.gov/utah_chapters/trappers,_traders,_and_explorers/utahhistorictrails.html; Marilyn Mills, “Wagon trek to re-trace pioneer steps to California,” *Church News* (Dec. 23, 2000), available at <http://www.ldschurchnewsarchive.com/articles/39076/Wagon-trek-to-re-trace-pioneer-steps-to-California.html>.

²⁶⁶ Elizabeth von Till Warren, “The Old Spanish National Historic Trail” (2004), available at http://www.oldspanishtrail.org/learn/trail_history.php; Gary Topping, Diocese of Salt Lake City, “The Old Spanish Trail brought trade to Utah” (Jan. 10, 2014), available at <http://www.icatholic.org/article/the-old-spanish-trail-brought-trade-to-utah-7856340>; Keith Rogers, “Old Spanish Trail set path for Sin City’s rise,” *Las Vegas Review-Journal* (May 10, 2014; last updated May 11, 2014), available at <http://www.reviewjournal.com/nevada-150/old-spanish-trail-set-path-sin-city-s-rise>.

²⁶⁷ *See id.* at 5-8.

²⁶⁸ *Id.* at 6.

²⁶⁹ *Id.* at 7.

exploration and trade routes across the California deserts and opened the OST.²⁷⁰ Armijo's route through the Mojave passed south of Death Valley and followed sporadic water sources east through the region until turning south and continuing along what is now State Route 127 and the eastern base of the Avawatz Mountains.²⁷¹ Shortly after Armijo's success, another route that followed the Mojave River was established and gained popularity.²⁷² Several alternate routes near the OST were eventually developed and used for different kinds of transportation.²⁷³ The Armijo Route is one of three principal routes of the OST now recognized for their historical significance.²⁷⁴

Because the original OST was primarily used by horse and mule trains and was largely a diffuse network of trails in some areas, clear physical traces of the route have seldom endured and are only infrequently identified.²⁷⁵ It is all the more remarkable, then, that a BLM study uncovered such rare physical evidence of an OST segment in the Silurian Valley in 2012.²⁷⁶ Several segments of the OST in California are currently under consideration as "high potential," including the "Red Pass" segment that runs southwest from State Route 127, just a few miles north of the proposed project rights-of-way.²⁷⁷ A "high potential route segment" is a segment "which would afford high quality recreation experience, such as in a portion of the route having greater than average scenic values or affording an opportunity to vicariously share the

²⁷⁰ *Id.* at 7, 115.

²⁷¹ *See id.* at 16; Map of the Old Spanish National Historic Trail for Barstow, California Public Scoping Meetings (May 9, 2006), *available at* <http://www.riversimulator.org/Resources/farcountry/BLM/OldSpanishTrail/OldSpanishTrailMapsCombined.pdf>.

²⁷² OLD SPANISH TRAIL FEASIBILITY STUDY AND ENVIRONMENTAL ASSESSMENT at 7.

²⁷³ *See id.* at 8.

²⁷⁴ *See id.* at 13.

²⁷⁵ BLM & NPS, OLD SPANISH TRAIL NATIONAL HISTORIC TRAIL COMPREHENSIVE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT SCOPING REPORT, 2 (Aug. 2006), *available at* http://www.nps.gov/olsp/parkmgmt/upload/OSTScoping_Rpt_082506.pdf ("The historic trail route is expressed as a physically-defined trace at only a small number of places along its 2,700-mile length, and the width of the trail route, or trail corridor, varies considerably from place to place."); *see also* WESTEC SERVICES, INC., A HISTORY OF LAND USE IN THE CALIFORNIA DESERT CONSERVATION AREA, 21-22 (1978) (hereinafter "A HISTORY OF LAND USE IN THE CDCA"), *available at* <https://archive.org/stream/historyoflanduse00west#page/n3/mode/2up> (noting that the "[t]he effect of Old Spanish Trail on historic land use in the CDCA was minimal because the trail served as a passage route between New Mexico and coastal California rather than as an artery to serve the desert regions").

²⁷⁶ BLM, *Old Spanish Trail Segment "Found"* (2012), *available at* <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/Barstow.Par.36848.File.dat/Old%20Spanish%20Trail%20Segment.pdf>. BLM invested stimulus money from the American Reinvestment and Recovery Act of 2009 to "study some 900 miles of the [OST] and five other historic trails." Tamara Stewart, "Working to Manage the Trails," *American Archaeology*, at 25 (Fall 2012), *available at* <http://www.oldspanishtrail.org/assets/PDFs/AmericanArchaeology-Fall2012.pdf>.

²⁷⁷ Email from Jack Prichett, President, Old Spanish Trail Association (May 12, 2014) (on file).

experience of the original users of a historic route.”²⁷⁸ Critically, the OST has always been defined by its wild character; as LeRoy and Ann Hafen wrote in their 1954 book, the OST “was the longest, crookedest, most arduous pack mule route in the history of America.”²⁷⁹ Iberdrola’s proposed development in the Silurian Valley would deprive visitors of the opportunity to have an “authentic” OST experience in one the few places along the trail where actual physical evidence of the route has been found.

Even if Iberdrola’s proposed solar and wind projects were sited to avoid physically disturbing the actual OST, the projects’ impacts to the trail’s currently intact viewsheds and related visitor experience would be impossible to mitigate. NPS has already expressed its concerns over the proposed projects’ impacts on the visual resources of the area, calling attention to the recently discovered physical traces in the Silurian Valley and warning that the development would “likely diminish the potential for visitors to experience an authentic cultural perspective that is currently attributed to experiencing the [OST] within the undeveloped valley.”²⁸⁰ Whatever modifications Iberdrola or BLM might make to the proposed projects, they would impair a critical segment of one of the West’s earliest and most important road systems.²⁸¹

3. Other historic properties

The proposed solar and wind projects also threaten the relics of the Silurian Valley region’s interesting and important mining and rail legacy. Prospectors first flocked to the region when gold was discovered north of the Silurian Valley in the Salt Creek Hills area in 1849.²⁸² Mining operations in the Salt Creek area continued sporadically into the 1900s.²⁸³ Other scattered precious metal mines and mining camps sprang up throughout the region but were generally short-lived,²⁸⁴ and by World War I, interest in mining for precious metals in the region

²⁷⁸ BLM, MANUAL 6280 – MANAGEMENT OF NATIONAL SCENIC AND HISTORIC TRAILS AND TRAILS UNDER STUDY OR RECOMMENDED AS SUITABLE FOR CONGRESSIONAL DESIGNATION, 1-8 (2012), available at [http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.1039.File.dat/M6280%20NSHT%20Management_Final_091212%20\(2\).pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.1039.File.dat/M6280%20NSHT%20Management_Final_091212%20(2).pdf).

²⁷⁹ LeRoy & Ann Hafen, OLD SPANISH TRAIL: SANTA FE TO LOS ANGELES (1954), as quoted in Hunt Janin & Ursula Carson, TRAILS OF HISTORIC NEW MEXICO: ROUTES USED BY INDIAN, SPANISH AND AMERICAN TRAVELERS THROUGH 1886, 73 (2010).

²⁸⁰ NPS Memorandum at 2.

²⁸¹ Jeremy Miller, *Following the Old Spanish Trail across the Southwest*, HIGH COUNTRY NEWS (Mar. 19, 2012), available at https://www.hcn.org/issues/44.5/following-the-old-spanish-trail-across-the-southwest/article_view?b_start:int=0.

²⁸² CDCA FEIS, VOL. C at 14; AMERICAN INDIANS AND THE OLD SPANISH TRAIL at 344.

²⁸³ GARY B. COOMBS, ARCHEOLOGY OF THE NORTHEAST MOJAVE DESERT 26 (1979), available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/coop_agencies/new_documents/ca3.Par.66871.File.dat/northeast_mojave.pdf.

²⁸⁴ *Id.*; AMARGOSA ACEC PLAN at App. E (Historic Resources: Mining).

was quickly fading.²⁸⁵ In its place, more permanent and profitable operations mining gypsum, borax, salt, and talc took hold.²⁸⁶

Railroads were constructed in the region to transport mined ores to market and also became important means of travel in the area, expanding visitation into the more remote reaches of the Mojave. Few main lines were established, but one of the few was the famed Tonopah and Tidewater Railroad (“T&T”), an entirely new north-south line serving Death Valley and adjacent mines in the northern Mojave.²⁸⁷ The T&T extended north from its connection to the Santa Fe line through the Amargosa River region and into southern Nevada, linking with several short lines along the way and covering more than 200 miles.²⁸⁸

Francis Marion “Borax” Smith, founder of the Pacific Coast Borax Company, built the T&T between 1905 and 1907 in order access his borate mine holdings east of Death Valley.²⁸⁹ The T&T operated until 1938, sustaining several mines and spurring the development of new (or re-opening) mines previously too uneconomical to operate without the presence of a line to take ore to market.²⁹⁰ When more profitable borate mining was established elsewhere, and freight traffic on the line declined in the late 1920s, the T&T shifted its focus to include tourism and passenger travel.²⁹¹ Pacific Coast Borax converted its offices near Death Valley into the Amargosa Hotel and built the Furnace Creek Inn and Furnace Creek Ranch golf course in Death Valley.²⁹² Still in operation today, these attractions are renowned landmarks and tourist destinations.

Several towns also grew up around the T&T. Though most disappeared with the decline of the T&T, a few survived after the line was gone, including Baker, Tecopa, and Shoshone.²⁹³ The T&T had been plagued by extreme flooding events and rock slides during its operation, and with the onset of the Great Depression, it could no longer overcome these hardships.²⁹⁴ Pacific Coast Borax eventually abandoned the line, and the government began

²⁸⁵ A HISTORY OF LAND USE IN THE CDCA at vii. Small-scale recreational precious metal mining continues today. *Id.*

²⁸⁶ *Id.*; WARREN, ET AL. at 242.

²⁸⁷ WARREN, ET AL. at 232.

²⁸⁸ *Id.*; Stephen P. Mulqueen, *Borax Smith and the Tonopah and Tidewater Railroad*, TONOPAH AND TIDEWATER RAILROAD, available at http://www.ttrr.org/tt_text/tpb_004.html (last updated Dec. 10, 2013).

²⁸⁹ DRAFT DRECP APP. D at 7; Mulqueen, *Borax Smith and the Tonopah and Tidewater Railroad*, TONOPAH AND TIDEWATER RAILROAD; see also Gordon Chappell, *Railroads Around Mojave National Preserve*, in OLD ORES: MINING HISTORY IN THE EASTERN MOJAVE DESERT, 45-46 (Robert E. Reynolds, ed. 2005), available at <http://nsm.fullerton.edu/dsc/images/DSCdocs/2005oldores.pdf>.

²⁹⁰ WARREN, ET AL. at 232, 234; NEMO at 3-32; A HISTORY OF LAND USE IN THE CDCA at 70.

²⁹¹ Chappell, *Railroads Around Mojave National Preserve* at 46.

²⁹² *Id.*

²⁹³ WARREN, ET AL. at 237.

²⁹⁴ *Id.* at 236; Chappell, *Railroads Around Mojave National Preserve* at 46.

dismantling it for scrap during World War II.²⁹⁵ But the T&T had left its mark on the history of the region, opening a remote area of the northern Mojave that previously had been accessible only by foot, horseback, or wagon.²⁹⁶

The region's rich and colorful mining and rail history is evident in the Silurian Valley and surrounding area where the T&T grade and other remnants of the mining past can still be found. The T&T grade runs just west of the proposed solar and wind project rights-of-way, and scattered relics of significant mines, like the profitable Riggs silver mine, can be found just to the east in the Silurian Hills.²⁹⁷ The opportunity for visitors to the region to explore this storied past could be lost if the solar and wind projects in the Silurian Valley are allowed to proceed. Though Iberdrola's proposed projects would not necessarily physically impinge on historical ruins in the region, they could limit access to some of the sites, particularly those in the nearby Silurian Hills. Even worse, the projects would mar the open viewsheds that are essential to the experience associated with exploring these sites.

Iberdrola's proposed solar and wind projects would permanently impair the Silurian Valley's rich historical and cultural landscape.

C. Visual resources

1. Intactness

The vast, undisturbed Silurian Valley is flanked by spectacular and rugged mountains, and visitors to its remarkable landscape can experience nearly pristine desert vistas. To ensure that visual resources of places like the Silurian Valley are considered in resource management decisions, BLM uses a Visual Resource Management ("VRM") system to catalog the lands it manages. BLM assigns VRM classifications by considering Visual Resource Inventory ("VRI") designations and applicable resource and management plans, and then uses the classifications to evaluate proposed uses and management decisions.²⁹⁸ The VRI is used to categorize and record the existing status and condition of visual resources on BLM-administered lands, and

²⁹⁵ *Id.*

²⁹⁶ WARREN, ET AL. at 207, 232.

²⁹⁷ Letter from Defenders at 7-8.

²⁹⁸ DRAFT DRECP at 3.4-2; BLM, *Visual Resource Management, available at http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS.html* (last updated May 21, 2014).

considers scenic quality, public sensitivity, and distance zones in assessing a landscape.²⁹⁹ Classes I and II are “the most valued” out of four possible class ratings.³⁰⁰

The lands Iberdrola has proposed for large-scale solar and wind energy development in the Silurian Valley are primarily VRI Class II.³⁰¹ Some of the surrounding peaks and wilderness areas are Class I.³⁰² The proposed project rights-of-way have a multiple-use class designation of M (“Moderate” use), which calls for a controlled balance between higher intensity use and protecting public lands.³⁰³ The region bounding the western side of the project rights-of-way has an even more restrictive class designation of L (“Limited” use).³⁰⁴ None of the proposed project area is identified as I (“Intensive” use), which would permit the concentrated use of lands and resources to meet human needs.³⁰⁵

BLM has not yet established a VRM classification for the Silurian Valley. If BLM were to establish one, a VRM class reflective of the Valley’s exceptional viewshed values and current VRI classes would be most appropriate. For example, the Kingston Range, which exemplifies the many striking features that frame the vast and undisturbed landscape of the Silurian Valley, is “a prominent regional landmark, an ‘island mountain’ with outstanding scenic values.”³⁰⁶ The preservation of such scenic values is especially important.

2. Proximity to protected or sensitive lands

NPS has identified the Silurian Valley as a “high potential conflict area” for solar energy development because there is a high likelihood of “direct and cumulative cross-boundary effects with NPS administered resources” if such development is approved.³⁰⁷ This

²⁹⁹ BLM, MANUAL H-8410-1 – VISUAL RESOURCE INVENTORY (1986), *available at* http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_han_dbook.Par.31679.File.dat/H-8410.pdf.

³⁰⁰ DRAFT DRECP at 3.4-2 to -4.

³⁰¹ *Id.* at 3.4-33 (Figure 3.4-4), *available at* http://www.drecp.org/documents/docs/alternatives_eval/Section_3-4_Visual.pdf; DRAFT DRECP APP. D at 52; Letter from Defenders at 7.

³⁰² DRAFT DRECP at 3.4-33 (Figure 3.4-4); *Id.* APP. D at 52; Letter from Defenders at 7.

³⁰³ DRAFT DRECP Figure 3.7-1: Multiple Use Classes within the Kingston and Funeral Mountains Ecoregion, *available at* http://www.drecp.org/documents/docs/alternatives_eval/Section_3-7_BLM_LandDesignations.pdf.

³⁰⁴ *Id.*

³⁰⁵ *Id.*

³⁰⁶ CDCA FEIS VOL. C at 11.

³⁰⁷ NPS, Explanation of Resource Conflict Analysis Used to Determine NPS-Identified Areas of High Potential for Resource Conflict 1, *available at* http://solareis.anl.gov/documents/fpeis/maps/Explanation_NPS_High_Potential_for_Resource_Conflict.pdf; NPS, NPS IDENTIFIED AREAS OF HIGH POTENTIAL FOR RESOURCE CONFLICT: AREA SPECIFIC, 40-43, 83-86 (Aug. 2012), *available at* http://solareis.anl.gov/documents/fpeis/maps/NPS_High_Potential_for_Resource_Conflict_Area_Specific.pdf.

determination is partly due to the adverse impacts that solar development in the Valley would have on nearby National Park units.³⁰⁸ In particular, NPS is concerned with the impacts that Iberdrola's proposed projects would have on the view into nearby parklands, as well as visitors' views and experiences from within those units.³⁰⁹ For example, within the Amargosa ACEC's viewshed fall the boundaries of eight wilderness areas and two wilderness study areas, as well as the boundaries of Death Valley National Park.³¹⁰ Iberdrola's proposed projects would introduce industrial-scale solar arrays and 400-foot wind turbines into these fragile, unimpaired viewsheds, blighting the scenic vistas that are so important to the quality of visitor experiences in the surrounding Park units.

The Silurian Valley is similarly surrounded by abundant protected and sensitive lands, and its viewshed contains multiple wilderness areas, National Park units, and critical habitats. State Route 127, eligible as a state scenic highway,³¹¹ links Death Valley National Park to the Mojave National Preserve and Joshua Tree National Park, and is a gateway to Death Valley. As visitors travel on the highway through the Silurian Valley toward isolated Death Valley, they experience miles of uninterrupted desert scenery unfolding before them. Industrial-scale solar or wind development in the Silurian Valley would spoil that experience and the sense of connection between the many National Park units in the region. The horizon along State Route 127 is currently defined by rugged and dramatic mountain ranges; the proposed projects would degrade that viewshed with 400-foot tall wind turbines and the glare from massive solar arrays.³¹² Iberdrola's proposed solar and wind projects therefore would have lasting adverse impacts to the visual character and resources of the Silurian Valley and the surrounding region.

³⁰⁸ NPS, NPS IDENTIFIED AREAS OF HIGH POTENTIAL FOR RESOURCE CONFLICT: AREA SPECIFIC, 40-43, 83-86 (Aug. 2012), *available at* http://solareis.anl.gov/documents/fpeis/maps/NPS_High_Potential_for_Resource_Conflict_Area_Specific.pdf.

³⁰⁹ NPS Memorandum at 2.

³¹⁰ AMARGOSA ACEC PLAN at I(B)(C).

³¹¹ California Department of Transportation, *Eligible and Officially Designated Routes*, *available at* <http://www.caltrans.ca.gov/hq/LandArch/scenic/cahisys.htm> (last updated Dec. 19, 2013).

³¹² A recent study examined various solar facilities and characterized visual contrasts associated with several types of utility-scale solar installations. The report noted that, because the landscape in the desert Southwest typically lacks screening vegetation or structures and has open sightlines and relatively clean air, "solar facilities may be visible for long distances, and their large size and distinctive visual qualities can give rise to strong visual contrasts in some circumstances." ROBERT SULLIVAN & JENNIFER ABPLANALP, ARGONNE NATIONAL LABORATORY, UTILITY-SCALE SOLAR ENERGY FACILITY VISUAL IMPACT CHARACTERIZATION AND MITIGATION STUDY PROJECT REPORT, 1 (Dec. 2013), *available at* http://www.researchgate.net/publication/261559543_Utility-Scale_Solar_Energy_Facility_Visual_Impact_Characterization_and_Mitigation_Study_Project_Report. The report explained that mitigation might be able to "reduce visual impacts to sensitive visual resource areas, such as National Park units, national scenic and historic trails, and other scenic resources[,]" *id.* at 2, but that the large size of solar facilities makes any mitigation short of siting facilities in different locations "very difficult," *id.* at 37.

In addition to marring the scenic vistas of the region with industrial-scale development, the proposed projects (especially the solar project) would have immediate and long-term impacts on the air quality and visibility in the Valley and surrounding areas. Vegetation clearing and ground disturbance during construction would result in increased airborne dust and fine particulate matter that would adversely impact visual values, reduce air quality, and affect visitors' ability to enjoy the desert landscape. While these impacts would be worst during construction, they would persist during operation; fugitive dust and airborne particulate matter continue to be mobilized once vegetation and crust are removed from fragile desert soils.

3. Old Spanish Trail

The OST provides real recreational value to many people. Along the trail are stops for the National Park System Passport program, which encourages National Park visitors to collect stamps from each park or National Monument they visit. The Old Spanish Trail Association has an annual conference and collects dues.³¹³ The Back Country Horsemen of California plans to traverse the entire OST on horseback, while filming, in 2014 and 2015 to raise awareness of the trail.³¹⁴ The OST has been the subject of many books, ranging from LeRoy and Ann Hafen's *Old Spanish Trail: Santa Fe to Los Angeles* (1954) to Harold Steiner's *The Old Spanish Trail Across the Mojave Desert* (1999). Finally, in 2013, the Aztec Ruins National Monument in Arizona received a nearly \$100,000 grant to restore part of the OST.³¹⁵

In the Silurian Valley, the OST "bisects the [Kingston-Amargosa subregion] and travels through one of the most intact and spectacular viewsheds on the California segment of the trail."³¹⁶ As mentioned earlier, NPS has already cautioned that the proposed Silurian solar and wind projects would likely ruin the visitor experience of the OST and the opportunity for people to experience the trail in an authentic way.³¹⁷ NPS has protested that "[t]he visual impacts to these historic and prehistoric cultural landscapes would be significant, irreversible, and likely unmitigatable."³¹⁸ The experience of the OST from an undeveloped valley surrounded by unimpaired vistas, as an historic traveler on the OST might once have experienced it, cannot be replicated once lost. This experience is necessary to preserve the

³¹³ See generally <http://www.oldspanishtrail.org/>.

³¹⁴ Sarah Wynne Jackson, Back Country Horsemen of America Trek the Old Spanish National Historic Trail (Apr. 1, 2014), available at <http://www.backcountryhorse.com/blog/2014/04/01/bch-trek-old-spanish-national-historic-trail/>.

³¹⁵ NPS, "Aztec Ruins Receives Grant to Retrace Part of Old Spanish Trail" (Nov. 21, 2013), available at <http://www.nps.gov/azru/parknews/aztec-ruins-receives-grant-to-retrace-part-of-old-spanish-trail.htm>.

³¹⁶ DRAFT DRECP APP. D at 7.

³¹⁷ NPS Memorandum at 2.

³¹⁸ *Id.*

OST's legacy and its purpose as a National Historic Trail.³¹⁹ Iberdrola's proposed projects would degrade the ability to experience the history evident in the Silurian Valley's scenic landscape.

Under the variance process, BLM must consider an applicant's "documentation that the proposed project will minimize impacts on lands with wilderness characteristics and the values associated with these lands (e.g., scenic values, recreation, and wildlife habitat)."³²⁰ The Wind PEIS ROD similarly directs BLM to "consider the visual resource values of the public lands involved in proposed wind energy development projects" and work with the developer to "design the project to minimize potential visual impacts of the proposal."³²¹ It is doubtful, if not impossible, that the proposed projects could meet these criteria given the significant viewshed impacts they would have on the Silurian Valley and surrounding areas.

D. Recreation

Besides possessing important ecological, historic, cultural, and visual resources, the Silurian Valley provides high-quality opportunities for recreation. Those opportunities include hiking, rock climbing, scrambling, horseback riding, rockhounding, nature study, astronomy, off-roading, and photography. Visitors enjoy the Valley itself as well as the nearby National Parks and wilderness areas. Iberdrola's proposed solar and wind projects would degrade the Silurian Valley's exceptional recreational values. Among other things, the projects would eliminate any opportunity to recreate within their footprints, industrialize viewsheds, and eliminate the intact landscape currently treasured by hikers and photographers.

1. Primitive recreation

The undeveloped character of the Silurian Valley provides excellent primitive recreation opportunities, including hiking, camping, and backpacking. The region's intact and remote character offers a visitor the solitary experience of the open, uninterrupted desert.³²² BLM's own website for the nearby Amargosa ACEC advertises: "Here you may enjoy the serenity of the natural world. Explore wild lands, hike trails, watch sunsets, and ponder vast, unpolluted, night scenes."³²³ As discussed earlier, the Amargosa ACEC is one of several rare riparian areas

³¹⁹ Carlos Harrison, *Location, Location, Location: What do many proposed energy projects and priceless historic resources have in common? They occupy the same fragile sites*, NATIONAL TRUST FOR HISTORIC PRESERVATION (July/Aug. 2011), <http://www.preservationnation.org/magazine/2011/july-august/location.html>.

³²⁰ SOLAR PEIS ROD at 181.

³²¹ WIND PEIS ROD at A-5.

³²² "Traditionally, most camping in the CDCA has been in established campground areas, but in the NEMO planning area camping mainly has been in the open desert where facilities are not available." NEMO at 3-35.

³²³ BLM, *Amargosa River Natural Area*.

concentrated close to the Silurian Valley. These lush riparian habitats, isolated in the barren desert, support a rich and diverse array of plant and animal species. This makes the region an excellent place for birding, wildlife viewing, and photography.

2. Enjoyment of cultural and historic resources

Visitors to the Silurian Valley can also discover the rich history of this region by exploring the vestiges of old mining operations, visiting prehistoric sites like the Halloran Wash rock art petroglyphs, and hiking along historic trails and railroad grades. Many visitors to the area come specifically to hike the Old Spanish Trail or follow portions of the historic T&T railroad grade.³²⁴ The Amargosa River Trail, for example, was established on the T&T grade through Amargosa Canyon and also retraces portions of the OST.³²⁵ The level grade is an ideal hiking and biking trail.³²⁶

3. Off-highway vehicles

The Dumont Dunes Recreation Area covers more than 10,000 acres approximately 20 miles north of the proposed project rights-of-way.³²⁷ Dumont Dunes has long provided a designated place in this region for off highway vehicle use. The distinctive dunes have attracted off roaders since the 1960s,³²⁸ and still attract more than 100,000 visitors annually.³²⁹ Off highway vehicle use is the most significant non-primitive form of recreation in the region. The proposed solar and wind projects would adversely impact this activity by ruining vistas and limiting access to previously open areas.

Much of what makes all of these recreational opportunities special – indeed, impossible to duplicate – is the open and unencumbered character of the Silurian Valley and surrounding region and the experience that only that landscape can impart on the lucky visitor. Whether through hiking portions of the Old Spanish Trail or camping under a quiet and unspoiled night sky, it is the Silurian Valley’s remote and undisturbed character that affords visitors such a special experience. Given that fact, and given the likely impacts of Iberdrola’s proposed projects, it seems unlikely that Iberdrola could “document[] that the proposed project[s] will minimize adverse impacts on access and recreational opportunities on public lands.”³³⁰ Those

³²⁴ DRAFT DRECP APP D at 7.

³²⁵ BLM, *Amargosa River Natural Area*.

³²⁶ WARREN, ET AL. at 248.

³²⁷ BLM, Barstow Field Office, Presentation to the California Recreation Resource Advisory Committee – Dumont Dunes, 8 (June 2010), *available at* http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_045981.pdf.

³²⁸ NEMO at 3-31.

³²⁹ BLM, Barstow Field Office, Presentation to the California Recreation Resource Advisory Committee – Dumont Dunes, at 8.

³³⁰ SOLAR PEIS ROD at 181.

projects will industrialize the landscape for generations to come, and in so doing degrade the Silurian Valley's precious recreational opportunities for current and future visitors.

E. Socioeconomic impacts

The communities, towns and people who live near the Silurian Valley will bear the most direct consequences of Iberdrola's proposed solar and wind projects. Those constituencies therefore should be given special attention when evaluating whether to approve the proposed projects.

The community of Baker and members of the Tecopa and Shoshone communities have already expressed their opposition to the Silurian solar and wind proposals. These communities understand that the development might yield some economic benefit, but they also recognize that any such benefits will be short-lived while their long-term livelihoods and interests are impaired. They treasure the Silurian Valley as it is and do not believe that utility-scale renewable energy projects are appropriate.

1. Community of Baker

The unincorporated community of Baker is located just south of the proposed project rights-of-way at the junction of Interstate 15 and State Route 127. It was historically one of the few communities in the region to survive the decline of the mining and railroad industries.³³¹ Baker endured because it was and remains an important stopping point for people traveling across the desert, and it is the southern portal to Death Valley.³³²

Baker would be the nearest source of services for the proposed projects. Both the solar and wind plans of development indicate that primary access to the sites during construction and operation will be up State Route 127 out of Baker.³³³ The plans of development also note that this route might require "radius improvements and other upgrades" given the size of many of the components and equipment needed to install hundreds of solar panels or 400-foot wind turbines.³³⁴ The volume of traffic, material, and people moving through this tiny community during construction would be high, and the change in the character of the community, even if temporary, would be significant.³³⁵ While some of this influx might bring temporary economic

³³¹ WARREN, ET AL. at 243.

³³² *Id.*

³³³ Solar POD at 2-18; Wind POD at 2-3.

³³⁴ *Id.*

³³⁵ SODA MOUNTAIN EIS at 3.14-24 ("The influx of construction workers both commuting daily to project sites and those who could choose to temporarily live in the local area would not be likely to noticeably alter the social character and environment within the affected communities, with the possible exception of Baker Because this Project and the Silurian Valley Wind and Solar projects would be the nearest

benefits to the community, the potential long-term loss of tourist and recreational traffic could be devastating.

For these and other reasons, Baker has already expressed formal opposition to Iberdrola's proposed solar and wind projects.³³⁶ The community worries about impacts to the important history of the area including to the Old Spanish Trail, historic mines, Native American sites, and historic railroad remains in the region.³³⁷ The community has also voiced its concerns over the environmental impacts of wind turbines, the effects of land clearing from both solar and wind development, and the implications of using Baker's electrical substation in transmitting electricity to other parts of the state.³³⁸

2. Communities of Tecopa and Shoshone

Shoshone and Tecopa, California, are small communities located to the north of the Silurian Valley and outside the southern boundary of Death Valley National Park. Shoshone supports a few developed facilities, including a gas station, restaurant, campground, museum, and ranger station. A motel and facilities for campers and motor homes are located just outside Shoshone.³³⁹ Nearby Tecopa offers well-known commercial hot springs.³⁴⁰

These small, unincorporated communities depend on local and regional tourism, particularly as gateway communities to Death Valley.³⁴¹ In fact, tourism has been identified by Inyo County as the "primary economic development activity" in these communities based on their "abundance of historic, natural, and recreational assets."³⁴² In addition to Death Valley National Park, nearby attractions include the lush Amargosa Valley, Tecopa Hot Springs, China Ranch Oasis, and the Old Spanish Trail. These communities are committed to preserving their surrounding ecological and cultural resources. In fact, BLM has already worked closely with the community of Tecopa to preserve sections of the T&T Railroad grade and to improve recreational access to the Amargosa River and Salt Creek Hills.³⁴³

cumulative projects to Baker, it is likely that these would have the greatest contributions to potential increases in Baker's population and to visitor use of businesses and other establishments in Baker.").

³³⁶ Letter from Le Hayes, Baker Community Services District, to Congressman Paul Cook, 1 (May 20, 2013) (hereinafter "Baker Letter"), available at http://www.drecp.org/documents/docs/comments-general/2013-05-20_Baker_Community_Services_District_ltr_on_Silurian_Wind_and_Solar_Hybrid_Project.pdf.

³³⁷ *Id.* at 2.

³³⁸ *Id.* at 3-4.

³³⁹ BLM, *Amargosa River Natural Area*.

³⁴⁰ *Id.*

³⁴¹ WARREN, ET AL. at 238.

³⁴² AMARGOSA ACEC PLAN, App. A (CA-680-03-53) at 3(Q).

³⁴³ Letter from Defenders at 8.

The Amargosa Conservancy is an organization dedicated to protecting the sensitive resources of the northern Mojave. Headquartered in Shoshone, it was founded by long-time members of the small communities around the southern end of Death Valley.³⁴⁴ The Conservancy stressed the importance of the Silurian Valley in a comment letter on the Draft DRECP. In fact, the letter specifically asks that the Silurian Valley be protected as a National Conservation Land.³⁴⁵ The Conservancy pointed out that “solar companies would like to focus development on the Silurian Valley because it is large, accessible, and close to a transmission corridor[,] but that “large undeveloped valleys such as Silurian are one of the most endangered landscapes in America and once gone, it is forever.”³⁴⁶

Constituencies like the Amargosa Conservancy believe that there is value in leaving the Silurian Valley intact and, for the most part, undisturbed. Like Baker, they recognize that any economic benefits realized during construction of large-scale solar and wind facilities would be temporary and not worth the risk of their long-term livelihoods: “[W]e all know that those jobs are very limited after construction is over, and on average there are less than 10 fulltime positions at a solar facility. This development would irreversibly degrade the ecotourism for the communities that need it to survive, as this is their primary economic driver.”³⁴⁷

In short, communities, groups, and individuals in the northern Mojave have considered the costs and benefits of renewable development in the Silurian Valley and concluded that preventing industrial development in the Valley is in their best interest. Their economies and livelihoods are built on the natural and recreational resources provided by intact and scenic landscapes like the Silurian Valley. BLM should give special consideration to the views of these communities because they will be the ones most closely affected by the proposed development. One person said it best: “I urge you to keep in mind that while solar developers want this land they have no investment like the people that visit and live here.”³⁴⁸

V. Cumulative impacts

Under the variance process, a proposed solar development must “document[] that significant cumulative impacts on resources of concern should not occur as a result of the

³⁴⁴ Judith Lewis Mernit, *Sacrificial Land: Will Renewable Energy Devour the Mojave Desert?*, HIGH COUNTRY NEWS, available at http://www.hcn.org/issues/45.6/sacrificial-land-will-renewable-energy-devour-the-mojave/article_view?b_start:int=0; Susan Sorrells, *Visit the Amargosa Basin*, AMARGOSA CONSERVANCY, <http://www.amargosaconservancy.org/index.php/land>.

³⁴⁵ Comment Letter from Jordan Kelley, Executive Director, Amargosa Conservancy to James G. Kenna, State Director, BLM and David Harlow, Director, DRECP (Jan. 15, 2014), available at http://www.drecp.org/documents/docs/comments-evals/Amargosa_Conservancy_comments.pdf.

³⁴⁶ *Id.* at 2.

³⁴⁷ *Id.*

³⁴⁸ *Id.*

proposed project.”³⁴⁹ The proposed Silurian Valley solar and wind projects almost certainly cannot meet this standard.

As discussed above, the proposed projects would have significant, adverse effects on outstanding ecological, historical, cultural, visual, and recreational resources. These effects would result from construction and operation, and be direct and indirect. Among other things, the projects would kill or displace protected plants and animals, disrupt their essential behaviors, destroy and fragment habitat, and sever habitat linkages. The projects would physically and visually impinge on important cultural and historic sites, trails, and ancestral tribal lands in the Valley, including the Old Spanish Trail. The projects would degrade an unusually intact visual landscape. The projects would deprive visitors of recreational opportunities, particularly those tied to the Silurian Valley’s unusual isolation and integrity. Reduced visitation would harm the communities that surround, treasure, and depend on the Silurian Valley’s beauty.

But of course cumulative impacts are not about just one project’s impacts; rather, they are

the impact[s] on the environment which result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.³⁵⁰

Approval of one or both of Iberdrola’s Silurian Valley proposals would yield significant, adverse cumulative effects. Past activities in the Silurian Valley and surrounding region have been primarily related to mining, military training, grazing, and limited forms of agriculture.³⁵¹ Despite these activities, the Silurian Valley and surrounding region has remained largely free of development. Thus, the potential for significant cumulative impacts comes primarily from the combined effects of Iberdrola’s proposals and other future projects. The projects closest to the Silurian Valley and most likely to yield significant cumulative effects are the Soda Mountain Solar Project to the southwest of Iberdrola’s proposed projects, and the Calnev Pipeline Expansion Project, which parallels Interstate 15 south of the Silurian Valley.³⁵²

³⁴⁹ SOLAR PEIS ROD at 182.

³⁵⁰ 40 C.F.R. § 1508.7 (1978).

³⁵¹ Lori M. Hunter, et al., *Population and land use change in the California Mojave: Natural habitat implications of alternative futures*, 22 POPULATION RESEARCH AND POLICY REVIEW 378 (2003), available at <https://www.umaine.edu/forestry/files/2009/05/Mojave-Futures.pdf>.

³⁵² BLM, SODA MOUNTAIN SOLAR PROJECT, DRAFT PLAN AMENDMENT/ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT, 3.1-9, 3.3-31 (Nov. 2013), available at

The Soda Mountain Solar Project is a 358-MW project located on 4,200 acres of BLM-managed land, about six miles southwest of Baker and 16 miles south of Iberdrola's proposed Silurian Valley projects.³⁵³ The project is within half a mile of the Mojave National Preserve.³⁵⁴ BLM's draft EIS for the Soda Mountain Solar Project concludes, among other things, that the cumulative impacts to sensitive avian and bat species from existing and reasonably foreseeable future projects – including Iberdrola's proposed projects – would be significant and unavoidable. Specifically, the EIS explains that, “[g]iven the large number of proposed solar facilities under the cumulative scenario, construction monitoring results from [other] facilities strongly indicate that ongoing, unmitigated risks will remain at most solar facilities.”³⁵⁵ The draft EIS also finds that the Soda Mountain Project would have significant and unavoidable impacts on regional desert bighorn sheep movement, and that those impacts would be cumulative when combined with other foreseeable renewable energy development.³⁵⁶ The draft EIS further finds that the Soda Mountain Project and present and reasonably foreseeable future development could “inadvertently discover, unearth, expose, or disturb, and thereby damage, archaeological, historic, and Native American resources the locations of which are unknown.”³⁵⁷ Some or all of those resources could be eligible for listing in the National and/or California Register of Historic Places.³⁵⁸ Those potential effects are of particular concern given that only “an estimated 15% of San Bernardino County's 20,000 square miles has been surveyed for cultural resources,” but “more than 11,000 prehistoric archaeological sites and over 2,000 historic structures have been documented within the county.”³⁵⁹ As Iberdrola's solar and wind plans of development note, there is “a high potential for finding previously unknown cultural resources” in and around the Silurian Valley.³⁶⁰

The Soda Mountain Project is also expected to significantly affect the cultural, natural, and visual resources of nearby National Park units.³⁶¹ NPS has determined that Soda Mountain “would cause cumulative long-term adverse impacts to, and degradation of, unique visual resources that characterize the Mojave Desert. These resources include, but are not limited to,

http://www.blm.gov/ca/st/en/fo/barstow/renewableenergy/soda_mountain.html (hereinafter “SODA MOUNTAIN EIS”).

³⁵³ See BLM, Soda Mountain Solar (CACA 49584) (undated) (identifying location as six miles southwest of Baker), available at http://www.blm.gov/ca/st/en/fo/barstow/renewableenergy/soda_mountain.html; BLM, Silurian Valley Solar (Aurora Solar) (undated) (identifying project location as 10 miles north of Baker), available at http://www.blm.gov/ca/st/en/fo/cdd/alternative_energy/suliranwind2.html.

³⁵⁴ SODA MOUNTAIN EIS at 3.13-2.

³⁵⁵ *Id.* at 3.4-49.

³⁵⁶ *Id.* at 3.4-68 to -69.

³⁵⁷ *Id.* at 3.6-29.

³⁵⁸ *Id.*

³⁵⁹ WIND POD at 5-10.

³⁶⁰ *Id.*; SOLAR POD at 5-11.

³⁶¹ NPS, Memorandum to BLM Project Manager, Proposed Soda Mountain Solar Project, BLM, California Desert District, 1 (Mar. 3, 2014).

scenic vistas, cultural landscapes, character and values of adjacent wilderness areas, and dark night skies.”³⁶² In a comment letter to BLM expressing concerns with the location of the Soda Mountain project, NPS explained that desert scenery is a critical resource of the region and that the project would degrade “the unique visual resources that define the Mojave Desert and contribute to the scenic values of the area.”³⁶³ The proposed Silurian Valley solar and wind projects would exacerbate these cumulative impacts on NPS resources.

In addition to the Soda Mountain Solar Project, the Calnev Pipeline Expansion Project will likely contribute to the adverse cumulative effects of the proposed Silurian Valley projects. The Calnev project involves the construction and operation of a new pipeline from San Bernardino County, California to Las Vegas.³⁶⁴ The pipeline parallels Interstate 15 for most of its length. A new pump station and ancillary facilities would be constructed near Baker.³⁶⁵ The Calnev project predicts it “would adversely affect several plant and animal species along the [right-of-way].”³⁶⁶ Though the draft EIS acknowledges that many impacts could be mitigated, “there would be incremental losses in native habitat when combined with other activities in the region.”³⁶⁷ For example, the project would likely adversely affect desert tortoise, and “a cumulative impact to this species is possible given the numbers of projects, including this one, in the tortoises’ habitat in California and Nevada.”³⁶⁸ The draft EIS further explains that other projects within the area studied for cumulative effects would result in the “potential loss of thousands of additional acres of suitable tortoise habitat and affect numerous individuals[,]” and despite mitigation, “ultimately there would likely be a cumulative impact to the species.”³⁶⁹

Beyond the Soda Mountain Solar and the Calnev Pipeline Expansion Projects, numerous other present and foreseeable projects in the region might contribute to the cumulative impacts of Iberdrola’s proposed projects. According to BLM’s website, eight large-scale solar projects have been approved since 2010 in California on over 21,000 acres of BLM land, and six solar projects on private land have been approved to use BLM land for transmission.³⁷⁰ As of July 2014, BLM has received 12 further applications for large-scale solar development (including

³⁶² *Id.* at 2.

³⁶³ *Id.*

³⁶⁴ BLM, *Calnev Pipeline Expansion Project*, http://www.blm.gov/ca/st/en/fo/barstow/calnev_page.html (last updated May 22, 2013).

³⁶⁵ *Id.*

³⁶⁶ BLM, *Calnev Pipeline Expansion Project Draft Environmental Impact Statement/Environmental Impact Report*, 3.18-32 (Mar. 2012), available at http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/Barstow/calnev_pipeline.Par.95926.File.dat/DEIS-EIR%20for%20Calnev%20Pipeline%20Expansion%20Project_FOR%20CD3.pdf.

³⁶⁷ *Id.*

³⁶⁸ *Id.* at 3.18-34.

³⁶⁹ *Id.*

³⁷⁰ BLM, *Approved Renewable Energy Projects*, available at http://www.blm.gov/ca/st/en/prog/energy/Approved_Projects.html (last updated Aug. 15, 2014).

Iberdrola's proposed Silurian Solar Project) on more than 59,000 acres of public land.³⁷¹ BLM indicates that it has 33 pending wind testing project applications and seven development applications (including the Iberdrola's proposed Silurian Wind Project) involving just over 499,000 acres of BLM land.³⁷² Three projects have been approved for wind development, and 26 more for testing, since 2010.³⁷³ In southern Nevada, BLM has approved two solar projects and two transmission projects.³⁷⁴ In Arizona, BLM has approved two solar projects, is actively reviewing two others, has approved one wind project for development, and is reviewing four pending testing applications.³⁷⁵

The sheer number of proposed and approved large-scale renewable energy projects in the desert Southwest, combined with the especially sensitive nature of the resources that these projects affect, means that the potential for significant cumulative effects is high and only getting higher. Iberdrola's proposed solar and wind projects pose serious threats to important resources in the Silurian Valley area. When these threats are combined with the impacts of many other current or planned developments in the region, the impacts of the proposed projects could be especially devastating.

VI. Iberdrola's proposed projects, if approved, would set an unacceptable precedent for future large-scale renewable energy projects.

Under the Solar PEIS ROD, developers must affirmatively demonstrate that any projects they propose in variance areas meet certain criteria. Among other things, a developer must demonstrate that its project will: be consistent with landscape-scale assessments and information; minimize adverse effects on wildlife habitat and migration corridors and on public

³⁷¹ BLM, California Solar Applications, available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy/solar.Par.84447.File.dat/BLM%20Solar%20Applications%20&%20Authorizations%20April%202013.pdf> (last updated July 2014).

³⁷² BLM, California Wind Applications, available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy.Par.5556.File.dat/BLM%20Wind%20Applications%20&%20Authorizations%20April%202013.pdf> (last updated July 2014).

³⁷³ BLM, Approved Renewable Energy Projects, available at <http://www.blm.gov/pgdata/etc/medialib/blm/ca/pdf/pa/energy.Par.5556.File.dat/BLM%20Wind%20Applications%20&%20Authorizations%20April%202013.pdf> (last updated July 2014).

³⁷⁴ BLM, Approved Renewable Energy in Southern Nevada, available at http://www.blm.gov/nv/st/en/fo/lvfo/blm_programs/energy/approved_renewable.html (last updated July 31, 2014).

³⁷⁵ BLM, Solar Development on Public Lands in Arizona, available at <http://www.blm.gov/az/st/en/prog/energy/solar.html> (last updated Feb. 27, 2014); BLM, Pending Arizona BLM Wind Projects, available at <http://www.blm.gov/az/st/en/prog/energy/wind/pend-wind.html> (last updated Nov. 13, 2013).

land access and recreational opportunities; and be in a location of relatively low resource conflict.³⁷⁶

Iberdrola cannot satisfy these variance criteria. As discussed above, the proposed solar project would have intense resource conflicts. The project would destroy, alter, and fragment sensitive habitat, directly threaten protected wildlife, limit species' ability to migrate and adapt in response to climate change, adversely impact historic and prehistoric sites, diminish scenic values, and reduce the recreational value of the Silurian Valley. NPS has already designated the Silurian Valley as an area of high resource conflict and identified the many park resources that could be impacted by the proposed development. The proposed project is also inconsistent with objectives outlined in various guidance documents, habitat assessments, and the Draft DRECP.

While Iberdrola's proposed wind project does not require a variance, that project raises similar concerns under the Wind PEIS ROD. The Wind PEIS ROD calls for projects to avoid lands where resource impacts cannot be mitigated and lands where other uses will be prevented.³⁷⁷ BLM must consider the visual resource values of lands involved in wind projects, towers must be sited outside sensitive habitats and ecological areas, and impacts to certain species like bats must be avoided, minimized, and mitigated.³⁷⁸ We do not see how Iberdrola's proposed wind project can be squared with these policies and practices. In short, approving one or both of Iberdrola's proposed projects would be inconsistent with BLM's governing plans and policies.

Moreover, such approval would yield implications for future large-scale solar and wind projects on public lands. The solar variance factors and the wind BMPs and policies emphasize the need to site projects in areas of low resource conflict. If development is allowed to proceed in a place like the Silurian Valley, that will communicate to developers a clear message: an intact region that supports great connectivity, sustains and buffers surrounding wilderness areas and National Park lands, and provides essential habitat for sensitive species is, in BLM's view, a place of low resource conflict. A living museum, a place that preserves our history and allows us to explore and experience our past in a way impossible anywhere else, is a place of low resource conflict. A place with extraordinary intactness and lacking any other industrial development is a place of low resource conflict. If BLM reaches these incorrect conclusions, and decides to move forward on Iberdrola's proposed solar and/or wind projects, BLM will ignore the sensible policies it adopted in the Solar and Wind PEIS RODs in favor of a toothless standard that permits just about any large-scale renewable energy project to be developed on our public lands.

³⁷⁶ SOLAR PEIS ROD App. B.5 at 177-86.

³⁷⁷ WIND PEIS ROD at A-2.

³⁷⁸ *Id.* at A-6 to A-8.

BLM can and must do better. Abundant land is still available for development in solar energy zones identified in the Solar PEIS ROD. The Riverside East Solar Energy Zone, for example, contains 147,910 acres of public land suitable for solar development.³⁷⁹ Two projects have been approved, and seven projects are pending, in that zone, but even if all these projects are developed, they will comprise only 38% of the developable land in the zone. Besides the solar energy zones identified in the Solar PEIS ROD, there are other locations in the Mojave region that are more suitable for utility-scale renewable development than the Silurian Valley, including previously disturbed lands and brownfields. These locations would have fewer ecological and cultural resource conflicts and would not be inconsistent with BLM's solar or wind siting criteria. In fact, the variance criteria specifically note that "[p]reference will be given to proposed projects that are located in, or adjacent to, previously contaminated or disturbed lands under the variance process, assuming all other factors are adequately considered."³⁸⁰

If development is allowed to proceed in the Silurian Valley, BLM will have shown that it no longer prioritizes avoiding conflict and developers should be discouraged from seeking alternative sites for their proposals, regardless of the potential impacts to a site's resources. The World Wildlife Fund has rightly determined that the "most important conservation activity in the Mojave [D]esert is to protect riparian areas and low elevation valleys," particularly because "[l]ower elevation valleys are largely in private lands and lack protection."³⁸¹

VII. Conclusion

The Silurian Valley is a special place. Surrounded by wilderness, National Park units, and other protected lands, the Valley is a rare spot where isolation, physical and chronological continuity, and silence have managed to persevere despite all the pressures we have applied to the Mojave Desert. Indeed, the Silurian Valley has remained intact and largely undisturbed for thousands of years and, as a result, is home to sensitive species, important habitats, and critical ecological linkages. Preserving such wild places is essential to ensuring the persistence of our nation's natural resources, especially in a quickly changing climate. Recent mitigation guidance from the Department of the Interior identified fostering the resilience of resources as one of the Department's guiding principles.³⁸²

³⁷⁹ *Riverside East*, Solar Energy Development Programmatic EIS Information Center, http://solareis.anl.gov/sez/riverside_east/index.cfm.

³⁸⁰ SOLAR PEIS ROD at 181.

³⁸¹ WORLD WILDLIFE FUND, *Mojave Desert*, available at <https://www.worldwildlife.org/ecoregions/na1308>.

³⁸² JOEL P. CLEMENT, ET AL., ENERGY AND CLIMATE CHANGE TASK FORCE, A STRATEGY FOR IMPROVING THE MITIGATION POLICIES AND PRACTICES OF THE DEPARTMENT OF THE INTERIOR, 11 (Apr. 2014), available at http://www.doi.gov/news/upload/Mitigation-Report-to-the-Secretary_FINAL_04_08_14.pdf.

Apart from ecological values, the Silurian Valley offers exceptional cultural, historical, and recreational resources. The Valley reflects our collective history in the Old Spanish Trail, the T&T railroad, and abandoned mines. It is held dear by tribal peoples. It provides outstanding opportunities for hiking, astronomy, and other recreational uses that help connect us to the viewsheds, soundscapes, and land around us. And the Valley is a gateway to Death Valley National Park, one of the country's largest and most extraordinary conservation areas. The Silurian Valley is integral to sustaining the sensitive resources of Death Valley and the nearby Mojave National Preserve.

Iberdrola's proposed solar and wind projects would unacceptably degrade these exceptional values. The projects would physically occupy 7,218 and 6,720 to 15,849 acres of land, respectively. Those lands would lose their ecological, recreational and other values for the decades-long lives of the projects, and for much longer after they are decommissioned (since the desert takes so long to recover, even with reclamation). Precious water resources would be further taxed, sensitive species would be killed or moved away, and so on. The proposed projects' indirect effects would be even more pernicious. The Silurian Valley is special precisely because it is one of the few ecologically and culturally intact places left in the Mojave Desert. The projects' solar panels, wind turbines, transmission lines, and roads would fragment habitat, sever vital ecological linkages, interrupt unspoiled viewsheds, and turn the Valley into just one more industrialized corner of the Mojave Desert.

Worst of all, approval of Iberdrola's projects would set an unacceptable precedent for future projects. BLM, developers, and environmental groups generally agree that projects should be directed to areas that are already degraded. Indeed, this concept underlies the mitigation hierarchy that the Department of the Interior adopted in its recent mitigation guidance – avoid first, minimize second, mitigate third.³⁸³ Avoidance is especially important for “irreplaceable resources” – resources whose losses cannot be offset somewhere else.³⁸⁴ Approving Iberdrola's proposed projects would repudiate these guidelines and encourage other developers to do the same. Again, we support large-scale renewable energy development, but only in places where it makes sense. BLM has the opportunity to direct large-scale renewable energy projects to those places by choosing to not move forward on Iberdrola's proposed projects.

NPCA appreciates the chance to present this information and our views. We look forward to further opportunities to participate in BLM's decisionmaking process.

³⁸³ *Id.* at 2-3.

³⁸⁴ *Id.*

About NPCA

The National Parks Conservation Association (“NPCA”) is an independent, nonpartisan voice working to address major threats facing the National Park System. NPCA was established in 1919, just three years after the National Park Service. Stephen Mather, the first director of the Park Service, was one of our founders. He felt very strongly that the National Parks would need an independent voice – outside the political system – to ensure these places remained unimpaired for future generations. Now, nearly one hundred years later, NPCA has more than 875,000 members and supporters. In addition to our LEED-certified national headquarters in Washington, D.C., NPCA has 24 regional and field offices around the country. For more information, please visit <http://www.npca.org>.