



**DESERT TORTOISE COUNCIL**

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**Via email**

21 September 2020

Chip Lewis, Regional Environmental Protection Officer  
Bureau of Indian Affairs, Western Regional Office  
Branch of Environmental Quality Services  
2600 North Central Avenue, 4th Floor Mail Room  
Phoenix, Arizona 85004-3008  
[chip.lewis@bia.gov](mailto:chip.lewis@bia.gov)

Re: Draft Supplemental Environmental Impact Statement for the Arrow Canyon Solar Project

Dear Mr. Lewis,

The Desert Tortoise Council (Council) is a non-profit organization comprised of hundreds of professionals and laypersons who share a common concern for wild desert tortoises and a commitment to advancing the public's understanding of desert tortoise species. Established in 1975 to promote conservation of tortoises in the deserts of the southwestern United States and Mexico, the Council routinely provides information and other forms of assistance to individuals, organizations, and management and regulatory agencies on matters potentially affecting desert tortoises within their geographic ranges.

We appreciate this opportunity to provide comments on the above-referenced project. Given the location of the Arrow Canyon Solar Project and areas nearby occur in habitats likely occupied by the Mojave desert tortoise (*Gopherus agassizii*) (also known as "Agassiz's desert tortoise"), a threatened species under the Federal Endangered Species Act, our comments pertain to enhancing protection of this species during activities authorized by the Bureau of Indian Affairs (BIA) (lead agency), and the Bureau of Land Management (BLM), U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), and the Moapa Band of Paiute Indians (Moapa Band) as cooperating agencies.

Arrow Canyon Solar, LLC (Applicant), a wholly owned subsidiary of EDF Renewables Development, Inc. (EDFR), plans to expand the solar field for the previously-approved Moapa Solar Energy Center (MSEC) Project located on the Moapa River Indian Reservation (Reservation) in Clark County, Nevada. The expanded project is now referred to as the Arrow Canyon Solar Project (ACSP or Project). The Project is expected to operate at a minimum for the life of its lease with the Tribe (i.e., 30 years) and the term of its Power Purchase Agreement (PPA) or other energy contracts.

## **Description of the Proposed Action**

The Applicant currently plans to expand the previously-approved MSEC photovoltaic (PV) solar field on the tribal lands of the Moapa Band. The Project, located adjacent to the MSEC site, would expand the solar facility on the Reservation by 1,350 acres or from 850 acres to a total of 2,200 acres within in a lease study area of 2,683 acres. This expansion would be located entirely on the Reservation. No changes would occur to the ancillary facilities of the MSEC Project on federal public lands that the BLM approved when it issued the right-of-way in 2015.

## **Alternatives Analyzed**

The Draft Supplemental Environmental Impact Statement for the Arrow Canyon Solar Project (DSEIS) analyzes two alternatives, the Proposed Action Alternative (Project) and the No Action Alternative.

The Proposed Action Alternative includes:

- Expansion of an approved but yet to be built solar field from 850 acres to up to 2,200 acres;
- Addition of a battery energy storage system (BESS). The most likely BESS technology would be either lithium-ion (Li-ion) or redox flow battery distributed throughout the Project site or confined to one site;
- Increasing in maximum height of solar panels from 12 feet to 18 feet;
- Increasing water consumption during construction from 50 acre-feet per year (AFY) to 100-300 AFY;
- Modifying site preparation techniques to mow vegetation to a height of 18 inches and drive over and crush the remaining vegetation with equipment as needed during construction;
- Modifying the site perimeter fencing around groups of arrays instead of the entire Project perimeter and to leave a gap of 6-8 inches at the bottom of the fence to allow movement of animals, including desert tortoises, onto and through the solar site after construction;
- Utilizing a septic system for wastewater management during operations instead of evaporation ponds;
- Using trucks to bring in water during operations;
- Using trenching equipment to install cable and wiring;
- Installing a small operations building and the proposed electric substation; and,
- Pile driving or pre-drilling H-pile foundations to support the PV panel mounting system.

The No Action Alternative assumes that the expansion of the lease area would be denied and only the originally approved 850-acre lease area would be developed as a solar power facility.

## **Comments Submitted during Scoping**

We were unable to find in the DSEIS that BIA had addressed many of our issues provided in our scoping comments submitted in our February 28, 2020 comment letter, which is attached. These unaddressed issues include:

- Urging the BIA to include in the translocation plan, legal safeguards to protect the translocation areas from future development or disturbance.
- Ensuring adequate nutritional plants are present at the translocation site.

- Questioning whether the Project footprint has been predetermined such that if there are areas of lower tortoise densities adjacent to the 850-acre existing site where impacts could be minimized, those areas would not be considered.
- Documenting how methods may need to be modified for this expansion compared to the 850-acre project. Specifically, will new tortoises be displaced into the same areas as the previous tortoises? How long will these new tortoises be monitored?
- Documenting the current conditions of the proposed translocation area for this project. This includes, at a minimum, the quality of the habitat into which tortoises will be displaced. Are there any degraded habitats or barren areas that may impair success of the translocation? Are there incompatible human uses in the new translocation area that need to be eliminated or managed to protect newly-translocated tortoise?
- Identifying a range of alternatives for various translocation areas. Importantly, protocol-level surveys must be conducted, with planning input from the USFWS that will result in density estimates for tortoises at the alternative translocation sites. Based on these comparisons and resulting field data that should be provided in the Supplemental EIS, we expect that the DSEIS will identify a preferred alternative for the one translocation area that will facilitate successful translocation.
- Identifying a formal translocation plan based on these survey results and analyses that is include in the DSEIS. The translocation plan should be responsive to lessons learned from earlier translocation efforts and available for review as part of the DSEIS.
- Summarizing the successes and failures of past translocation efforts for the tortoise and demonstrating how the current project will be planned to enhance translocation success. Specifically, how will the proponent minimize predation of translocated tortoises and avoid adverse climatic conditions, such as low winter rainfall conditions, that may exacerbate translocation success?
- Analyzing how the health of tortoises may be jeopardized if tortoises are displaced during drought conditions, which is known to undermine translocation successes (Esque et al. 2010). If drought conditions are present at the time of project development, we request that the proponent confer with the USFWS immediately prior to displacing tortoises and seek input on ways to avoid loss of tortoises due to stressors associated with drought. One viable alternative if such adverse conditions exist is to postpone site development until a time when conditions are favorable to enhance translocation success.
- Analyzing how the proposed action would contribute to the spread and proliferation of nonnative invasive plant species, and how this spread/proliferation would affect the desert tortoise and its habitats (including the frequency and size of human-caused fires).
- Discussing all project impacts within the region since development of the 2014 project and include future state, federal, and private actions affecting listed species on state, federal, and private lands. Please ensure that the Council on Environmental Quality's (CEQ) "Considering Cumulative Effects under the National Environmental Policy Act" (1997) is followed, including the eight principles, when analyzing cumulative effects of the proposed action to the tortoise and its habitats.
- Providing a detailed analysis of the "heat sink" effects of solar development on adjacent desert areas and particularly the Mojave desert tortoise. We expect the DSEIS to describe how this project will impact the movement of tortoises relative to linkage corridors, and how this project may impact proximate conservation areas, such as BLM designated Areas of Critical Environmental Concern (ACECs).

Given that none of these issues identified in our scoping letter were addressed, the Council finds the DSEIS to be deficient, and expects that these deficiencies will be discussed and analyzed in the Final SEIS (FSEIS).

### **Specific Comments on the DSEIS**

The Council is concerned that the DSEIS does not describe or analyze all the impacts to the Mojave desert tortoise and its habitat from implementation of all phases of the Project, and consequently, will not implement effective mitigation (including monitoring and adaptive management) to offset these impacts. The following are some examples of impacts to the tortoise that we did not find analyzed in the DSEIS and/or commitments to implement mitigation, monitoring, and adaptive management to effectively offset these impacts.

1. Proposed Action and Alternatives, page 2-14: Additional geotechnical testing may be needed prior to beginning construction of the Project (also, Appendix G – Biological Assessment, page 22). This pre-construction activity includes cross-country vehicle use that may result in adverse impacts to/incidental take of tortoises and degradation/loss of tortoise habitat. Please ensure this activity is minimized and that an authorized biologist accompanies each vehicle to clear the path the vehicle and equipment will use so as not to crush tortoises, especially those in cover sites.

2. Affected Environment and Environmental Consequences, page 3-36: “BIA is drafting a fire management plan that includes the project area to improve direction in the future.” This statement implies that BIA has not yet addressed the very serious issue of fire at the Project site.

3. Proposed Action and Alternatives, page 2-7: Equipment to help detect and suppress fires is mentioned at a few locations in the DSEIS. There is a fire protection water system of up to “three above-ground raw water storage tanks located on the Project site holding up to 12,000 gallons each.” In addition, each BESS container would have its own fire detection system. (Appendix F – Weed Management Plan, page 3, Appendix J – Raven Control Plan, Appendix G – Biological Assessment, page 24, Appendix L – Traffic Plan, page 9 – Emergency Services). We presume the water in the storage tanks must be accessed and used by personnel to suppress any fires and that the fire detection system for the batteries only alerts people that a fire is occurring but does not include equipment with non-aquatic materials to automatically suppress a fire (We note that water and lithium ion batteries result in fires and explosions). We were unable to find information on where the closest fire station is with personnel trained to fight fires. We found no consolidated information that could be called a plan to prevent and suppress fires in the DSEIS. We request that this plan be developed and included in the FSEIS. In addition, this fire prevention/suppression plan should discuss the ecological liability of a fire. If a fire occurs at the Project site and spreads to an adjacent area, the Project proponent should be responsible for the resulting degradation/loss of tortoise habitat and tortoises and should be obligated to fully compensate for this degradation/loss. Please include this commitment in the FSEIS.

4. Appendix G – Biological Assessment, page 18: “Improvements including armored channelization and/or berms would be incorporated as needed to direct and maintain flow within the primary drainage paths and away from the solar arrays.” We request that these improvements be “tortoise friendly;” that is, tortoises of any size should be able to traverse these armored channels or berms and not become trapped or overturned. Please include this commitment in the FSEIS.

5. Affected Environment and Environmental Consequences, page 3-21: A translocation plan was referred to in the DSEIS and in Appendix G – Biological Assessment, but not included for public review and comment. Because translocation and relocation of tortoises is a mitigation measure, the lands where these tortoises are being moved to should be protected in perpetuity from ground disturbance or other activities that are not compatible with tortoise survival. In addition, these lands should be managed for the benefit of the tortoise in perpetuity (Specifically identified in our scoping comments). Other issues, such as the status of the recipient populations and how they will be affected, must also be studied prior to translocation.

6. Proposed Action and Alternatives, Page 2-15: Disturbed “areas where vegetation was removed during construction activities and that are no longer needed for future operation and maintenance would be restored in a manner consistent with BLM and Tribal requirements to encourage natural revegetation.” Encouraging natural revegetation does not mitigate for the temporal or spatial loss of habitat for the tortoise. The FSEIS must include a science-based restoration plan with success criteria for perennial and annual native plant species such that the functions and values of the habitat prior to its degradation/loss are replaced. Please add this commitment to the FDEIS.

7. During operation and maintenance activities (Appendix G – Biological Assessment, page 51), desert tortoise “[e]xclusion fencing would be removed after construction, allowing tortoises to move onto and through the site during operations, except around the substation, O&M area and central BESS (if chosen), where the exclusion fencing would remain intact.” Additionally, page 2-15 of DSEIS: “No heavy equipment would be used during normal plant operation. Operation and maintenance vehicles would include trucks (pickups, flatbeds, and dump trucks), forklifts, and loaders for routine and unscheduled maintenance, and occasionally water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the site infrequently for equipment repair or replacement.” We presume there are roadways throughout the Project site so vehicles and equipment may routinely access the solar field, BESS, small operations building and the proposed electric substation, and other facilities within the Project site for maintenance. Please explain in the FSEIS the measures that would be implemented to ensure that take of tortoises (e.g., injury, mortality, collection, etc.) does not occur during O&M activities at the Project site for all areas, not just off-road areas.

8. Affected Environment and Environmental Consequences, page 3-1: The DSEIS defines terms used in this chapter including “Short-term: impacts that would be less than 5 years in duration. Long-term: impacts that would be 5 years or greater in duration.” However, in reviewing the remainder of the document, these terms were not found. Rather, the terms “temporary” and “permanent” are used with no definition for these terms. If they are considered the same as short-term and long-term, then we conclude that their use is inaccurate with respect to the impacts to the tortoise and its habitat. For example, “Where grading is not necessary, vegetation would be mowed to a height of approximately 18 inches and driven over / crushed during construction activities where feasible and where it does not pose a safety risk.” “Vegetation would be allowed to regrow within the solar field area, including the ephemeral washes that cross the site.” This disturbance is calculated as temporary but the impacts would be long-term as it will take longer than 5 years for the woody vegetation to return to its preconstruction cover, in many cases decades. Using “temporary” and “permanent” without using “short-term” and “long-term” give the public an inaccurate description of the temporal nature of the impacts and the loss of the

functions and values of the vegetation impacted by the Project, especially with respect to the tortoise. When the terms temporary and permanent are used in the FSEIS, please add the appropriate terms, “short-term” or “long-term,” to the description of the impact. Please recalculate the numbers in tables in the FSEIS to include the appropriate amounts for short-term and long-term impacts, especially for impacts to all aspects of tortoise habitat.

9. According to the SDEIS (page ES-6), the Project would have “Short-term direct and indirect effects on more acres of tortoise habitat than the original MSEC Project (up to 1,937 vs 850 acres) from construction and long-term impact to 187 acres of tortoise habitat and foraging area, potential more rapid restoration of tortoise habitat because of mowing vs grading on most of the site, long-term impacts to tortoise following construction would be less than the original MSEC Project because perimeter fencing would be raised at the bottom allowing tortoises to reoccupy and move through the site.”

We question the determination that short-term impacts would affect only 1,937 acres of tortoise habitat from construction of the solar array fields. During construction, these areas will be accessed by vehicles and heavy equipment for pile driving frames for array, crushing perennial woody and annual vegetation, disrupting/destroying soil crusts, and whatever vegetation remains will be mowed to a height of 18 inches. These impacts to desert vegetation will reduce/remove vegetation that provides needed forage and cover from predators and thermal extremes. It will take much longer than 5 years for the vegetation to recover and provide the current functions and values to the tortoise. Therefore, the area experiencing these impacts should be classified as long-term impacts. Please be sure the FSEIS accurately reflects these impacts.

10. Proposed Action and Alternatives, page 2-15: “Operation of the [Project] site would be expected to generate only up to 10 to 15 round trips per day from maintenance and security personnel. Trips for water trucks to deliver water to the site to clean the panels could also occur but would be relatively infrequent as the panels could be cleaned only periodically. If panel washing were to occur, each event would generate up to 33 water truck trips. There could also be other deliveries of supplies or equipment that could occur to support operations and maintenance. This would result in a maximum of up to 34 daily round trips (during washing events) and more commonly less than one daily round trip during the operational phase of the Project. Potable water would be stored in a 15,000-gallon storage tank.”

The Project would result in an increase in vehicle traffic along a recently approved right-of-way road in tortoise habitat that is south of the Project solar field. This new road likely crosses the home ranges of several tortoises. Injury and mortality to tortoises on roads from vehicle collisions are well-documented (Homer et al. 1998, von Seckendorff Hoff and Marlow 2002, Hughson and Darby 2013). To avoid or minimize this impact, we request that mitigation for this increased traffic include constructing and maintaining desert tortoise exclusion fencing along the access roadway for the life of the Project and removal/restoration of the roadway during the decommissioning phase. In addition, we request that use of the road be limited to those vehicles with business directly tied to the Project. To maintain tortoise connectivity that would bisect the home ranges of tortoises, at least one tortoise connectivity structure should be provided so tortoises may move from habitat on one side of the roadway to the other side without the risk of injury or mortality from vehicles.

11. Affected Environment and Environmental Consequences, pages 3-13 and 3-14: The results of surveys for the Mojave desert tortoise are confusing. During spring 2019 protocol surveys for Mojave desert tortoise, 13 adult tortoises and 6 juveniles were located on the expanded solar site. In spring 2020, 43 adults and 8 juveniles were found using different survey methods and more time spent surveying.

BIA says, “To assess the presence of the Mojave desert tortoise in the ACSP area, field surveys were conducted on the expanded solar site (including the original MSEC Project area and expansion area) during May 2019 (Heritage 2019).” “Desert tortoise health assessments were conducted within a larger ‘Action Area’ in the spring of 2020, that is, recipient areas for short- and long-distance tortoise translocations (2,683 acres less the final areas of direct impacts, plus a 1.5 km buffer). The Action Area for this Project includes the 2,683-acre lease study area plus potential recipient areas for tortoise translocations (an additional 1.5-kilometer buffer). More tortoises were found in this larger Action Area during health assessments (43 adults and 8 juveniles).” Thus, it appears the 2019 field surveys for the tortoise were not conducted throughout the action area.

This information is unclear as it appears that only the potential location for the Project was surveyed by Heritage (2019) and not the action area defined by 50 Code of Federal regulations (CFR) 402.2 as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” Using this definition, the action area that should be considered when implementing USFWS-protocol surveys for the tortoise would include the translocation area(s), areas with tortoises affected by the exclusion fence blocking tortoise movements, access road and road effect zone, etc. In the FSEIS, please explain why these additional areas were not included in the action area. Please provide information in the FSEIS that clarifies when and where protocol-level surveys were conducted, the results including the results for the translocation areas, and how the surveyed area compares to the Action Area identified in the DSEIS and the action area as defined in 50 CFR 402.2.

12. Affected Environment and Environmental Consequences, Mojave Desert Tortoise, page 3-19 to 3-21: A desert tortoise exclusion fence would be constructed around the Project site during the construction phase and removed after that. For those tortoises moved to the outside of the exclusion fence, these animals and the resident animals “know” their home range and will pace along the newly constructed exclusion fence trying to get to the other side, becoming overheated and die. We recommend that the Project install shade structures periodically on the outside of the exclusion fencing to minimize the overheating/death of tortoises.

13. Appendix G – Biological Assessment, page 46: The Project is not located in critical habitat designated for the Mojave desert tortoise, but appears to be located in one of the “priority areas for conservation of desert tortoise population connectivity” (USFWS 2012). As such, BIA should ensure that the activities of all phases of the Project do not impede the movement of tortoises through the Project area including roads, berms, channels, and other ancillary features. Please see our comments under #7 above.

14. Appendix D – Decommissioning Plan: Thank you for including this plan in the DSEIS. It refers to a Final Decommissioning Plan (prepared just in advance of project closure) and the Restoration and Revegetation Plan. Unfortunately, we found no consideration of the Mojave desert tortoise in this plan. Because the Project will construct and maintain fences that allow tortoises access to the Project Site, the tortoises may be present during decommissioning activities. These activities have the potential to adversely affect the tortoise and result in incidental take. Consequently, the Mojave desert tortoise and any other listed species should be included in the Decommissioning Plan. We realize that it is difficult to determine exactly what would be required in 30 years or longer in the future when decommissioning occurs. However, the Decommissioning Plan should mention adherence to all applicable federal and state laws and regulations including the Federal Endangered Species Act.

15. Appendix E – Site Restoration and Revegetation Plan, page 1: “The goal of this SRRP [Site Restoration and Revegetation Plan] and its successful implementation is to mitigate the potential impacts associated with the proposed Project and to facilitate managed and natural restoration of the site and impacted areas toward achieving pre-project or similar conditions.” The goal should not be to facilitate restoration; it should be to accomplish restoration.

One of the objectives of the SRRP is to “Return the project site to conditions similar to those that existed prior to project-initiation by restoring soils, topography, plant species and their densities and distribution.” Please ensure that meeting this objective includes both native annual and perennial plant species and biological soil crusts. These soil crusts enhance soil stability and nutrient retention and contribute to soil fertility (Belnap et al. 2008). Soil crusts are a deterrent to the establishment and proliferation of non-native invasive annual plants. They seem to consistently suppress the germination of large-seeded, non-native, annual grasses, such as cheat grass (*Bromus tectorum*) (Belnap and Lange 2003). In addition, the access road to the Project site should be blocked so the public cannot access the Project site and degrade/destroy the restoration and revegetation activities.

16. Appendix E – Site Revegetation Restoration Plan, page 10: “Post-decommission restoration will be based on similar regulations, guidelines, practices, and techniques as previously described in this report. The goal of post-decommission restoration is to restore the Project site to pre-construction conditions to the greatest extent practicable.”

The SRRP identifies two phases of restoration. The Post-Construction Restoration and Revegetation Plan should use the latest science to determine the best methods to implement the SRRP. The Post-Decommissioning restoration efforts, presumed to be 30 years or more in the future, should use the latest science at that time to determine the best methods to implement the RSSP. For both phases, the SRRP should include the following attributes: plant species palette of native perennial and annual plants, and the densities, cover, and distribution of these species, as there is more than one vegetation association at the Project site. If the requirement is to return the Project site to pre-project conditions, the SPPR must include pre-project data and aerial photography of the vegetation at the Project site with respect to these attributes. In addition, the SRRP must include the minimum standards/success criteria that the contractor will be required to meet with respect to these attributes. We recommend that success criteria for density be at least 75 percent and plant palette be at least 90 percent each for annual and perennial species per



vegetation association. Given climate change and the extended droughts now and in the future, any restoration and revegetation efforts will likely take longer than in the past. Consequently, the SRRP and issued contract should not have a clause that allows restoration and revegetation efforts to terminate after a few years of effort. It should continue until the success criteria are met.

To assist BIA and the Tribe with its post-construction restoration and revegetation efforts, we have included a copy of Enhancing and Restoring Habitat for the Desert Tortoise, *Gopherus agassizii* by Scott R. Abella and Kristin H. Berry (2016).

17. Appendix G – Biological Assessment, Mitigation – 2.3.1 Management Plans, page 24: “The Applicant would be prepared the following management plans, which would be submitted to the Moapa Band of Paiutes, BIA, and USFWS (as appropriate) for approval:

- Weed Management Plan
- Raven Control Plan
- Decommissioning Plan
- Restoration and Revegetation Plan
- Dust Abatement Plan
- Spill Prevention Control and Countermeasure Plan
- Health and Safety Program
- Fire Management Plan
- Hazardous Materials and Waste Management Plan
- Surface Water Protection Plan
- Site Drainage Plan
- Traffic Management Plan
- Worker Environmental Awareness Program
- Bird and Bat Conservation Strategy”

Several management plans are not provided in the DSEIS or are incomplete, but have a direct bearing on impacts to the tortoise and tortoise habitat. The Council requests that all management plans be included in the FSEIS. These mitigation plans should include an implementation schedule that is tied to key actions of the construction, operations and maintenance, and decommissioning/restoration phases of the Project so that mitigation occurs concurrently with or in advance of the impacts. The plans should specify success criteria, include a monitoring plan to collect data to determine whether success criteria have been met, and identify actions that would be required if the mitigation measures do not meet the success criteria (i.e., adaptive management). Including these plans in the FSEIS is requested so the public and the decisionmaker may review them to determine their adequacy/effectiveness in mitigating the impacts to the tortoise. This information is needed to see if the plans will function as intended.

18. Appendix G – Biological Assessment, page 32: “The compensation for habitat loss under Section 7 of the Endangered Species Act (ESA) is an annually adjusted rate, currently \$923/acre (subject to change annually on March 1).”

We note this per-acre amount is not sufficient to purchase an acre of habitat or the additional expenses of improving the habitat and then managing it in perpetuity for the tortoise. As such, we strongly recommend this amount be recalculated to provide adequate compensation for the degradation/loss of tortoise habitat and its management in perpetuity. The Recovery Action Plan for the Mojave Desert Tortoise in the Northeast Mojave Desert (USFWS 2014) identified habitat restoration as the highest priority action for implementation was habitat restoration. Thus, halting the loss/degradation of tortoise habitat and improving tortoise habitat is very important for tortoise recovery.

19. Appendix G – Biological Assessment – 5.2 Desert Tortoise, 5.2.1 Injury and Mortality, page 50: “An estimated 24 desert tortoises are expected to occupy the Action Area (95% CI: 12.91 - 45.64 (based on 2019 USFWS protocol calculations). Therefore, construction of the Proposed Action may result in impacts to up to 24 adult desert tortoises through injury or direct mortality of desert tortoise.”

We found no discussion of the juvenile tortoises that were found during the 2019 tortoise surveys and how they would be impacted by Project implementation. Furthermore, we found no discussion and analysis of the results of the 2020 surveys when more tortoises were found (43 adults and 8 juveniles). Please include an analysis of the impacts of the Project on all size classes of tortoises and include the impacts of translocation on the moved tortoises and the resident tortoises. Please include a discussion and analysis of the issues reiterated above from our February scoping comments, specifically the first, second, fourth, fifth, sixth, seventh, eighth, and ninth bulleted items above under Comments Submitted during Scoping.

20. Appendix G – Biological Assessment, page 50 and other locations: This page mentions the Project’s translocation plan for the Mojave desert tortoise. However, we were unable to find this plan. Please include the tortoise translocation plan in the FSEIS.

21. Appendix G – Biological Assessment, page 51 – “Because most vegetation would be maintained on the Project site, and the perimeter fence would remain permeable to allow tortoises to occupy and move through the solar arrays, project activities would be unlikely to further reduce genetic connectivity in the area.” Please provide citations to support this conclusion. Given the extensive degradation to perennial woody vegetation from mowing and crushing vegetation, surface disturbance from vehicles and heavy equipment during construction and operation and maintenance activities (see language from page 2-15 of the DSEIS O&M Activities above), and other solar facilities planned and built in the area, we request an analysis of these cumulative impacts to the tortoise, tortoise habitat, and connectivity of tortoise populations in the area.

22. Appendix G – Biological Assessment, 5.2.5 Vibration and Noise, page 52: “Vibration is unlikely to be noticeable more than 40 or 50 feet beyond the source; noise would be increased at greater distances though would also be temporary and sporadic.” Please provide citations to support these conclusions.

Given that pile driving, trenching, operation of generators and a batch plant, and other construction activities using heavy equipment (size was not specified) would be used during the Project's construction phase, vibration and noise would likely be heard/felt at distances greater than 40 or 50 feet. For example, a pile driver has an average decibel level of 110 dBA. According to Washington State Department of Transportation (2012), noise reduction over a distance of 50 feet from a 95 dBA source from a construction point source would be none. The sound would be 95 dBA 50 feet from the source. Please revise this section and provide a scientific analysis of the impacts of noise and vibration to tortoises generated from the various sources during construction, operation and maintenance, and decommissioning/restoration phases of the Project.

In addition, the statement about noise is confusing. We do not understand what "noise would be increased at greater distances" means. Please clarify this statement.

23. Appendix G – Biological Assessment, 5.2.6 Dust, page 52: BIA says, "It is assumed that this low-level dusting effect during construction would be minimal and most likely washed away during rainstorms."

If the solar panels are constructed over the mowed/crushed vegetation, how would sufficient precipitation reach the vegetation to wash away the dust on the vegetation? Given the infrequency of a rainfall event in the Mojave Desert, what would be the time that plants would be covered with increased levels of dust, which adversely affect their respiration, photosynthesis, growth, and reproduction (Sharifi et al. 1997, Wijayratne et al. 2009) before it is removed by precipitation? Please answer these questions and provide citations to support conclusions presented in the FSEIS.

24. Raven Control Plan – Appendix J, pages 8 through 11: "To prevent nesting on Project structures, the Applicant will implement the following measures:

"1. Limiting Raptor Enhancement Measures. Utility pole construction will include raptor friendly designs or retrofits (outlined in the Avian Power Line Interaction Committee guidelines [APLIC 2006]) that are intended to encourage or enhance the potential for raptor nests that could also be used by ravens."

This commitment appears to provide nesting substrates for ravens rather than prevent nesting creation of nesting substrates for ravens. Please change this measure so utility pole construction will **not** provide surfaces for raven nesting.

"2. Utility and building structures. Acquire a MBTA Depredation Permit in order to remove any raven nests that are found on project infrastructure." While this effort should be implemented, another effort that should be implemented weekly during the raven breeding season the removal of raven nests that do not have eggs. As a nest is being built, it can be destroyed and there is no requirement for a permit under the MBTA. Please add this measure to the Raven Control Plan in the FSEIS.

The Raven Control Plan should also add language that as new effective measures are developed, they will be added to this plan for implementation. The Project will operate for at least 30 years. During this time, we are likely to develop new measures that are better/more effective than current measures.

“Roost prevention as a contingency. To avoid the introduction of new roost and nest locations for ravens (and consequently non-target avian species), the Applicant will ensure perch enhancements are not installed. The SPGF [solar power generation plant] will be monitored to identify frequently used locations.”

3.1 Monitoring: “The roads will be driven slowly (10 mph). Binoculars and spotting scopes will be used to observe raven activity within two kilometers of the site. All raven observations will be documented, including date, time, location, habitat, number of individuals, and behavior, as well as locations of occupied and potential nests. Survey visits will occur once monthly during the breeding season (February to August) the year following completion of construction for a total of 3 years and once annually thereafter for the duration of facility operations. Each survey visit will last two days. Each day the survey route will be driven once in the early morning (starting 30 minutes prior to sunrise), a second time in the midday (starting between noon and 2 p.m.), and a third time in the evening (completed within one hour following sunset).”

A survey conducted once a month may be on a day when weather precludes ravens from being active. Consequently, we request that the collection of data on raven occurrence at and around the Action Area should be science- and statistically-based and should consider both the biology of the desert tortoise and the biology of the common raven. The method for collecting data (e.g., biologists using binoculars/ spotting scopes, etc. and/or remote sensing, etc.) should also be described.

3.3 Adaptive Management: “The agencies will review the results of raven control efforts and in cooperation with the Project owner will determine if changes in the plan are warranted following the first year of commercial operation of the Project. If the agencies determine that the raven management program is effective, and the potential for ravens to adversely affect the local wildlife population is less than significant, then the raven surveying and reporting requirement may be discontinued. Components of the Raven Control Plan, such as preventing access to anthropogenic food and water resources, preventing nesting, and discouraging roosting will remain effective throughout the lifetime of the Project.”

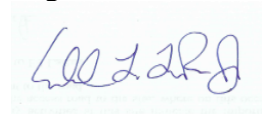
From a scientific and statistical perspective, monitoring for one year of a 30+ year project is not likely to provide sufficient data or assurances that the implementation of the raven control measures are working including eliminating the monitoring component of the Raven Control Plan. The implementation of the Raven Control Plan including its duration should be science-based. Consequently, we are opposed to this language that limits the surveying and reporting to only one year.

In addition, Tracy et al. (2004) reported that numerous impacts to the tortoise are “synergistic causes of desert tortoise declines.” The “multiple threats, ‘death of a thousand cuts,’ perspective is unsatisfying and difficult to accept.” “Unfortunately, we firmly believe that this is the situation

we are forced to deal with.” Tracy et al. (2004) added “the [tortoise] populations are not at all likely to respond significantly if only one threat is dealt with.” Given this synergy of impacts to the tortoise from multiple sources, we assert that if the potential for ravens to adversely affect the local wildlife population, including the tortoise, is less than significant, the surveying and reporting requirements should not be discontinued. Without these data, Applicant and the USFWS would not know if the raven control measures are working. Perhaps after a period of documented success, the monitoring frequency may be adjusted, but it should not be discontinued.

We appreciate this opportunity to provide input and trust that our comments will help protect tortoises during any authorized project activities. Herein, we reiterate our request that the Desert Tortoise Council be identified as an Affected Interest for this and all other BIA projects that may affect species of desert tortoises, and that any subsequent environmental documentation for this particular project is provided to us at the contact information listed above.

Regards,



Edward L. LaRue, Jr., M.S.  
Desert Tortoise Council, Ecosystems Advisory Committee, Chairperson

#### **Attachments:**

Abella, S.R., and K.K. Berry. 2016. Enhancing and Restoring Habitat for the Desert Tortoise, *Gopherus agassizii*. Journal of Fish and Wildlife Management June 2016 7(1):1-25.

Desert Tortoise Council Scoping Comments of February 28, 2020.

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