

**DRAFT FOR COMMENT: Brenda Solar Energy Zone: Resources, Impacts, & On-site Mitigation**

In La Paz County in west-central Arizona, Lake Havasu Field Office — 3,348 developable acres; up to 536 MW generation capacity, assuming 80% development  
 Source: Draft and Final Solar PEIS for Brenda SEZ (available at: <http://blmsolar.anl.gov/sez/az/brenda/>)

Resource/Issue	Impacts <sup>1</sup>	On-site Mitigation <sup>2</sup>		Unavoidable Adverse Impacts? <sup>3</sup>	May Warrant Regional Mitigation?
		Avoidance	Minimization		
Acoustics Section 8.1.15 <sup>4</sup>	<p><b>Direct:</b> Increased noise levels during construction, operation, and decommissioning.</p> <p><b>Indirect:</b> The estimated noise level at the Plomosa SRMA is below the significance threshold.</p> <p><b>Cumulative<sup>5</sup>:</b> If multiple facilities were to be constructed close to the SEZ, residents nearby could be affected by the noise generated, particularly during construction and/or at night when the noise is more discernible due to relatively low background levels.</p> <p><b>Data Gaps<sup>6</sup>:</b> Refined modeling would be warranted along with background noise measurements during project-specific assessments.</p>	<p>Solar facilities must be located far enough away from residences, or include engineering and/or operational methods such that county, state, and/or federal regulations for noise are not exceeded.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Noise.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Noise.pdf</a></p>	<p>Limiting the hours of daily activities, construction of noise barriers if needed and practicable, coordination with nearby residents.</p> <p>See programmatic design features.</p>	Maybe (depends on technology)	No

<sup>1</sup> The impacts assessment assumed 80% of the SEZ area will be used for solar development.

<sup>2</sup> Avoidance is accomplished by imposing spatial and/or temporal restrictions, including those specified in programmatic and SEZ-specific design features (DFs) (as presented in the Record of Decision for the Final Solar PEIS). Minimization is accomplished using programmatic and SEZ-specific DFs (as presented in the Record of Decision for the Final Solar PEIS), and/or best management practices. (Note: In general only SEZ-specific DFs and SEZ-specific application of programmatic DFs are presented in this table.) Monitoring is planned to verify the implementation and effectiveness of design features. Additional avoidance measures could be introduced during the Solar Regional Mitigation Strategy process for identified unavoidable impacts.

<sup>3</sup> Unavoidable impacts are those that cannot be adequately mitigated on-site by avoidance and/or minimization. Preliminary assessments are provided for comment.

<sup>4</sup> Section numbers are the same in both the Draft and Final Solar PEIS.

<sup>5</sup> Sections 8.1.22.4 of the Draft and Final Solar PEIS address cumulative impacts, which consider ongoing and reasonably foreseeable activities in the vicinity of the SEZ such as wind, geothermal, mining, agricultural, and commercial development; new roads, traffic, and off-highway vehicle use; and infrastructure including transmission lines, pipelines, canals, fences, and communication systems.

<sup>6</sup> Data gaps have not been identified for all resources in this table. Additional data gaps may be identified during future SEZ- or project-specific assessments.

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Air Quality Section 8.1.13	<p><b>Direct:</b> Fugitive dust and equipment exhaust emissions during construction could result in exceedance of Ambient Air Quality Standards (AAQS) for particulate matter (PM) at SEZ boundaries. Specifically, predicted 24-hour PM<sub>10</sub> and 24-hour and annual PM<sub>2.5</sub> concentrations could exceed AAQS at the SEZ boundaries and in the immediate surrounding areas during construction of solar facilities. High PM<sub>10</sub> concentrations would be limited, however, to the immediate areas surrounding the SEZ boundary and would decrease quickly with distance.</p> <p>Generation of fugitive dust may result in exposure to respirable particulates and/or microbes (human health impacts). The majority of the soils on the SEZ have been characterized as having high potential for wind erosion.</p> <p><b>Indirect:</b> Decreased visibility in nearby residential or specially-designated areas due to elevated PM levels from soil disturbance/grading during construction.</p> <p><b>Cumulative:</b> Cumulative effects due to dust emissions would greatest if multiple solar projects had overlapping construction periods.</p> <p><b>Data Gaps:</b> Monitoring for PM during all phases of development will be required to identify levels exceeding AAQS.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Air_Quality_Climate.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Air_Quality_Climate.pdf</a>	<p>Dust suppression measures will be implemented during all phases of development.(construction, operations, and decommissioning)</p> <p>See programmatic design features.</p>	Yes if site is graded.	No, unless monitoring identifies high PM levels.

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<p><b>Climate Change</b> Section 5.11.4 of DPEIS for soil storage capacity; 8.1.13 for emissions avoided</p>	<p><b>Direct:</b> Possible impact through loss of carbon storage capacity of the soil (estimated at 100 g carbon/m<sup>2</sup>). Preliminary calculations show loss of CO<sub>2</sub> storage capacity as 1.6 tons/acre/yr (4,947 tons/yr for SEZ full build-out), less than 1% of the CO<sub>2</sub> emissions avoided by operation of a solar facility (see below)</p> <p><b>Positive impact:</b> Solar power generation reduces demand for energy from fossil fuels, and thereby reduces greenhouse gas emissions (from about 509,000-917,000 tons/yr CO<sub>2</sub> avoided at full build-out depending on technology).</p> <p><b>Cumulative:</b> Over the long term the development of solar energy may contribute to reduced greenhouse gas emissions (if the development offsets electricity generation by fossil fuel plants). About 65% of electricity in AZ is produced in fossil fuel plants. Based on data from the Sonoran Desert Rapid Ecoregional Assessment, the SEZ is situated in an area with moderately high to very high potential for future climate change (e.g., increased temperature, decreased precipitation, and changes in vegetation and habitat).</p>	<p>Maintaining native vegetation cover and soils and minimizing grading.</p> <p>See programmatic design features for vegetation at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf</a></p>	<p>See programmatic design features.</p>	<p>No</p>	<p>No</p>

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Cultural Section 8.1.17	<p><b>Direct:</b> Direct impacts on significant cultural resources could occur in the Brenda SEZ; however, further investigation is needed. The SEZ falls within the boundaries of the Desert Training Center/California-Arizona Maneuver Area, which contains scattered resources related to a World War II era training area. Burial locations may be present within or near the Brenda SEZ.</p> <p><b>Indirect:</b> Erosion impacts on the cultural landscape outside of the SEZ resulting from land disturbances and modified hydrologic patterns; increased accessibility and potential for damage to eligible sites outside of the SEZ (if present). There are several Areas of Critical Environmental Concern (ACECs) in the vicinity of the SEZ that have been determined to be rich in cultural resources. The Harcuvar Mountain West Special Cultural Resource Management Areas is also located 18 mi (29km) to the northeast. Increased human and vehicle traffic associated with the solar development could impact cultural resources in adjacent or nearby ACECs.</p> <p><b>Cumulative:</b> Dependent on whether eligible sites or landscapes are present and impacted in the SEZ and adjacent areas.</p> <p><b>Data Gaps:</b> Pre-development cultural inventory and evaluation will be completed as part of the Section 106 consultation process.</p>	<p>Significant cultural resources clustered in specific areas which retain sufficient integrity will be avoided.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Cultural.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Cultural.pdf</a></p>	<p>A memorandum of agreement will be developed and executed (including implementation of a Historic Property Treatment Plan) if eligible sites are discovered within the SEZ to determine how the eligible properties will be treated (avoided or mitigated to minimize impacts)<sup>5</sup>.</p> <p>Impacts on culturally significant sites and landscapes in the vicinity of the SEZ at locations such as Ranegras Plain, Granite Wash Pass, Harquahala Mountains, and nearby ACECs and SCRMAAs would need to be avoided, minimized, or otherwise mitigated if solar energy development is initiated in the SEZ.</p> <p>See programmatic design features.</p>	Yes	Yes

<sup>5</sup> On-site mitigation strategies to avoid cultural resources are preferred.

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<p><b>Ecology: Vegetation and Riparian Areas; Invasive and Noxious Weeds</b> Section 8.1.10</p>	<p><b>Direct:</b> Development will adversely affect characteristic vegetation (e.g., creosote bush, saguaro cactus, palo verde, ironwood, acacia, ocotillo) through destruction and loss of habitat. Development will result in small impacts to the following land types which comprise the SEZ: - Creosotebush-White Bursage Desert Scrub and Paloverde-Mixed Cacti Desert Scrub. Sensitive habitats on the SEZ include desert dry wash and dry wash woodland. Development, including vegetation removal, land clearing, grading, and changes in surface water flow may alter soils and vegetation communities and result in the establishment of invasive species and noxious weeds within the SEZ.</p> <p><b>Indirect:</b> Loss of native vegetation, increased surface water runoff and related erosion, or through the introduction of invasive species. Establishment of noxious weeds in the SEZ may result in their spreading to adjacent areas.</p> <p><b>Cumulative:</b> Solar energy development could be a contributor to cumulative impacts on some vegetation communities, depending on the type, number, and location of other developments in the region.</p>	<p>Dry wash, dry wash woodland, saguaro cactus, and ironwood (including those outside of washes) vegetation communities within the SEZ will be avoided to the extent practicable. A buffer area will be maintained around dry washes and dry wash woodland habitats to reduce the impact potential.</p> <p>Travel through weed-infested areas will be avoided; vehicles and equipment will be inspected and cleaned to avoid the spread of weeds; ground disturbance will be limited; creation of soil conditions that promote weed germination and establishment will be avoided; seed and plant parts will be disposed of.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf</a></p>	<p>Appropriate engineering controls will be used to minimize impacts on dry wash, dry wash woodland, and chenopod scrub, including downstream occurrences, resulting from surface water runoff, erosion, sedimentation, altered hydrology, accidental spills, or fugitive dust deposition to these habitats. Appropriate buffers and engineering controls will be determined through agency consultation.</p> <p>Impacts will be minimized through development of a Weed Management Plan and use of weed-free seed to support re-vegetation efforts, control invasive species, and prevent increase in fires.</p> <p>See programmatic design features.</p>	Yes	Yes, as a critical component of a functioning ecosystem

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<b>Ecology: Terrestrial Wildlife and Aquatic Biota</b> Section 8.1.11	<p><b>Direct:</b> Loss of habitat and connectivity for several species of amphibians, reptiles, mammals, bats, and invertebrates. Ground disturbance, fugitive dust generated by project activities, lighting, vegetation clearing, spread of invasive species, accidental spills, harassment, and impacts on ephemeral washes could impact wildlife within the SEZ. Impacts from noise on wildlife could occur, especially on bat species, if the SEZ is located near any bat roosts.</p> <p><b>Indirect:</b> Outside the SEZ, impacts could occur from habitat loss or modification increased human presence in the area, surface runoff, dust, noise, lighting, or accidental spills.</p> <p><b>Cumulative:</b> Cumulative effects on some species could rise to a level of moderate, given the large acreages potentially disturbed and depending on the type, number, and location of other developments in the region.</p> <p><b>Data Gaps:</b> Impacts on terrestrial wildlife from construction noise would have to be considered on a project-specific basis, especially for bat species.</p>	<p>Development will avoid any wetlands, washes, and riparian areas identified during site-specific surveys.</p> <p>The fencing around the solar energy development should not block the migratory corridors of mammals, particularly big game species.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf</a></p>	<p>Appropriate engineering controls will be implemented to minimize the amount of contaminants and sediment entering Bouse Wash.</p> <p>See programmatic design features.</p>	Yes	Yes

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<b>Ecology:</b> <b>Migratory Birds</b> Section 8.1.11.2	<p><b>Direct:</b> Loss of habitat and connectivity for several species. Noise, lighting, and vegetation clearing could impact migratory birds using the SEZ. There is potential for water birds to be attracted to solar fields (because they look like water) and collide with solar panels. Burning of wings in the solar radiation field between heliostats and power towers has been observed. There may also be impacts on night sky that may alter bird migratory behavior and habitat use. Priority migratory bird species that may occur on or near the SEZ include Gila woodpecker and gilded flicker.<sup>7</sup></p> <p><b>Indirect:</b> Outside the SEZ, impacts could occur from habitat loss.</p> <p><b>Cumulative:</b> Impacts to migratory birds could occur; depending on the number and location of other developments in the region.</p> <p><b>Data Gaps:</b> Additional research needed on solar development impacts on migratory birds, Impacts on migratory birds from construction noise would have to be considered on a project-specific basis.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf</a>	See programmatic design features.	Yes	Yes

<sup>7</sup> Priority migratory bird species for the SEZ were determined based on those species discussed in the Havasu RMP, the distribution of Arizona Natural Heritage Program tracked species, and USFWS Birds of Conservation Concern in the Arizona Habimap tool (<http://www.habimap.org/>).

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<b>Ecology:</b> <b>Plant Special Status Species</b> Section 8.1.12	<p><b>Direct:</b> No Endangered Species Act (ESA)-listed or BLM-listed sensitive plant species have been identified that have suitable habitat within the SEZ. Ground disturbance, land clearing and grading, fugitive dust generated by project activities, and the spread of invasive species may result in loss of special status plant species habitat, if present, and might result in loss of individual plants.</p> <p><b>Indirect:</b> Indirect impacts to individuals and habitat could occur from surface runoff, dust, or accidental spills. No ESA- or BLM-listed sensitive plant species have been identified that have suitable habitat on or near the SEZ. Potential impacts from groundwater withdrawals.</p> <p><b>Cumulative:</b> Cumulative impacts on special status plant species are expected to be low.</p> <p><b>Data Gaps:</b> Although habitat for listed species has not been identified within the SEZ, pre-disturbance surveys are required to identify the presence and abundance of special status species.</p>	<p>Based on data from pre-disturbance surveys, disturbance to occupied habitats would be avoided to the extent practicable.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf</a></p>	<p>If avoidance is not possible for some species, translocation of individuals from areas of direct effects or compensatory mitigation may be employed.</p> <p>See programmatic design features.</p>	No	No

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<p><b>Ecology:</b> <b>Animal Special Status Species</b> Section 8.1.12</p>	<p><b>Direct:</b> Ground disturbance, land clearing and grading, and fugitive dust generated by project activities would result in loss of special status animal species habitat, if present, and might result in loss of individual animals. Development on the SEZ could disturb individuals or habitat for one candidate species for ESA Sonoran desert tortoise and eight BLM-sensitive special status animal species. Impacts from noise on special status wildlife could occur.</p> <p>No Category 1, 2, or 3 desert tortoise habitat has been identified within the SEZ; however, Category 2 desert tortoise habitat occurs outside the SEZ to the south and west. Desert tortoises may still occur in lower quality habitat on the SEZ where they may be directly impacted by solar development.</p> <p><b>Indirect:</b> Indirect impacts to individuals and animal habitat outside of the SEZ could occur due to surface runoff, dust, noise, lighting, or accidental spills. Suitable habitat for 2 BLM-sensitive animal species occurs within 5 mi (8 km) of the SEZ boundary. However, impacts would be small, with losses of less than 1 percent of these species' habitat in the region.</p> <p><b>Cumulative:</b> There could be cumulative impacts on some special status animal species due to habitat destruction and overall development and fragmentation of the area.</p> <p><b>Data Gaps:</b> Pre-disturbance surveys are required to identify the presence and abundance of special status species.</p>	<p>Compliance with the Bald &amp; Golden Eagle Protection Act would be ensured and Eagle Take Guidance would be followed (if necessary). Based on data from pre-disturbance surveys, disturbance to suitable habitats would be avoided to the extent practicable.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Ecological_Resources.pdf</a></p>	<p>If avoidance is not possible for some species, translocation of individuals from areas of direct effects or compensatory mitigation may be employed.</p> <p>Regarding avoidance and minimization onsite, consultation with the U.S. Fish &amp; Wildlife Service will be conducted to address the potential for impacts on ESA-listed and proposed species and to identify mitigation measures for implementation.</p> <p>See programmatic design features.</p>	Yes	Yes

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<b>Environmental Justice</b> Section 9.1.20	<p><b>Direct:</b> There is a minority population within a 50-mile (80 km) radius of the SEZ, so any adverse impacts of solar projects could affect this population. There are no low-income populations within a 50-mile radius of the SEZ.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> Contributions from solar development in the SEZ would likely be small and would not be expected to significantly contribute to cumulative impacts on minority populations within the 50-mile geographic extent of effects.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Environmental_Justice.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Environmental_Justice.pdf</a>	See programmatic design features.	Maybe	Maybe

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<b>Hydrology:</b> <b>Surface Water</b> Section 8.1.9	<p><b>Direct:</b> Land clearing, land leveling, vegetation removal, and spills and runoff associated with development of the SEZ could increase surface runoff, reduce infiltration/recharge, cause loss of ephemeral stream networks, cause a reduction in evapotranspiration rates, increase sediment transport (by water), change sediment transport (by wind), and degrade water quality.</p> <p>There are no perennial surface water features, flood hazards, or wetlands within Brenda SEZ.</p> <p><b>Indirect:</b> Indirect impacts from development and groundwater use on ephemeral and perennial surface water features could occur.</p> <p><b>Cumulative:</b> Alterations to ephemeral stream networks can alter groundwater recharge and surface runoff processes potentially impacting the basin-scale water balance and water quality aspects of water features receiving surface runoff.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Water.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Water.pdf</a>	See programmatic design features.	Yes	Maybe

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<b>Hydrology: Water Quality and Groundwater Availability</b> Section 8.1.9	<p><b>Direct:</b> Groundwater withdrawals for development may cause declines in groundwater elevations that can impact water availability for surface water features, vegetation, ecological habitats, regional groundwater flow paths, and other groundwater users in the basin. The SEZ is located in the Ranegras Plain groundwater basin where available groundwater occurs primarily in basin-fill deposits.</p> <p><b>Indirect:</b> Groundwater withdrawals for solar energy facilities may affect other groundwater users in the basin.</p> <p><b>Cumulative:</b> Cumulative impacts on groundwater could occur when combined with other future developments in the region.</p>	<p>Groundwater analyses suggest that full build-out of wet-cooled technologies is not feasible.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Water.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Water.pdf</a></p>	<p>For mixed-technology development scenarios, any proposed wet-cooled projects should utilize water conservation practices.</p> <p>See programmatic design features.</p>	Maybe <sup>7</sup>	Maybe

<sup>7</sup> Unavoidable adverse impacts are possible if groundwater is used. However, wet-cooling was not considered a feasible option in the Solar PEIS ROD; a hybrid cooling system could be feasible and is the reason for the “maybe” entry for the impacts assessment.

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Lands & Realty Section 8.1.2	<p><b>Direct:</b> Development of the SEZ could disturb 3,348 acres (13.5 km<sup>2</sup>). There is a small portion of a right-of-way for a fiber-optic line that parallels Highway 60 that overlaps the SEZ.</p> <p><b>Indirect:</b> Increased traffic and increased access to previously remote areas also could change the overall character of the landscape.</p> <p><b>Cumulative:</b> Projects within the SEZ would make only a small contribution to cumulative impacts because of its relatively small size.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Lands_and_Realty.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Lands_and_Realty.pdf</a>	See programmatic design features.	No	No
Livestock Grazing Section 8.3.4.1	<p><b>Direct:</b> SEZ is located within the Crowder-Weisser Grazing Allotment; the land within the SEZ constitutes less than 2 percent of the allotment. Due to the large size of the allotment, it might be possible to accommodate any lost animal unit months elsewhere in the allotment. If that is not possible, there would be an undetermined adverse economic impact upon the permittee.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> Other development in the area of the SEZ could result in cumulative impacts on grazing.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Rangeland_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Rangeland_Resources.pdf</a>	See programmatic design features.	No	No

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<b>Military &amp; Civilian Aviation</b> Section 8.1.6	<p><b>Direct:</b> The SEZ is located within an extensive web of military training routes (MTRs), and the entire SEZ is covered by a combination of three MTRs with 300-foot (91-meter) above-ground-level operating limits. The military has said that solar or transmission facilities in excess of 250 feet (76 meters) tall would adversely affect the use of the MTRs.</p> <p>The Blythe Airport is about 48 miles (77 km) west of the SEZ, and the Parker airport (Avi Suquilla Airport) is about 38 miles (61 km) northwest of the SEZ. Neither of these airports has regularly scheduled passenger or freight service.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> Solar development occurring throughout the region, which is currently largely undeveloped, could result in small cumulative effects on the system of MTRs. Such effects would be limited by mitigations developed in consultation with the military.</p>	<p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Military_Civilian_Aviation.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Military_Civilian_Aviation.pdf</a></p>	<p>Coordination with the military will be required on a project-specific basis to ensure that solar facilities do not interfere with operations.</p> <p>See programmatic design features.</p>	<p>Maybe (with respect to MTRs)</p>	<p>No</p>
<b>Minerals</b> Section 8.1.8 and Section 8.1.24 of the Final PEIS	<p><b>Direct:</b> There are no locatable mining claims within the SEZ. The SEZ has been withdrawn from mineral entry for a period of 20 years, precluding impacts from many types of mining activities.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> None identified.</p>	<p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Mineral_Resources.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Mineral_Resources.pdf</a></p>	<p>See programmatic design features.</p>	<p>No</p>	<p>No</p>

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<p><b>Native American Concerns</b> Section 8.1.18</p>	<p><b>Direct:</b> A tribe has indicated that some of the land in the SEZ lies within its tribal traditional use area. The tribe has expressed concerns regarding the loss of many resources, including natural habitat, wild plant resources, game animals, viewsheds, and cremation or burial sites. As consultations continue, it is possible that other Native American concerns regarding solar energy development within the SEZ will emerge. Removal of cultural resources is a concern to the tribes.</p> <p><b>Indirect:</b> General habitat loss with vegetation clearing and water reduction that could affect species and ecosystem health.</p> <p><b>Cumulative:</b> Development of solar energy facilities in combination with the development of other planned and foreseeable projects in the area would likely reduce the traditionally important plant and animal resources available to the tribes. Although some of these plant species are abundant, any level of impact may be of concern for the tribes.</p> <p><b>Data Gaps:</b> Government-to-government consultation for projects will be required to determine issues of Native American concern.</p>	<p>Known human burial sites and rock art (panels of petroglyphs and/or pictographs) will be avoided. The BLM will consult with Indian tribes regarding the potential for unanticipated human remains and associated cultural items (as defined under the Native American Graves Protection and Repatriation Act), before a solar project is authorized. The purpose will be to discuss general guidance on treatment of cultural items.</p> <p>Springs and other water sources that are or may be sacred or culturally important, culturally important plant and wildlife species, and visual intrusion on sacred sites will be avoided to the extent practicable.</p> <p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Native_American_Concerns.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Native_American_Concerns.pdf</a></p>	<p>See programmatic design features.</p>	<p>Yes</p>	<p>Unknown at this time. Consultation on project applications will determine whether regional mitigation for Native American Concerns may be warranted</p>

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Paleontology Section 8.1.16	<p><b>Direct:</b> The SEZ is located in an area classified as Potential Fossil Yield Classification (PFYC) Class 3b. It has a low to undetermined potential for paleontological resources.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> Cumulative impacts are dependent on whether significant resources are found within the SEZ and in additional project areas in the region.</p> <p><b>Data Gaps:</b> Potential for impacts is unknown. A more detailed assessment of the geological deposits of the SEZ is needed to determine whether a paleontological survey is warranted for a specific project.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Paleo.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Paleo.pdf</a>	<p>The BLM will be notified immediately upon discovery of fossils. Work will be halted at the fossil site and continued elsewhere until qualified personnel, such as a paleontologist, can visit the site. He/she will determine if the site is significant and make recommendations for collection or other resource protection, if warranted.</p> <p>See programmatic design features.</p>	No	No

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<p><b>Public Access and Recreation</b> Section 8.1.5</p>	<p><b>Direct:</b> Dispersed recreational users would be displaced from areas developed for solar energy production within the Brenda SEZ.</p> <p><b>Indirect:</b> Indirect effects on recreation use would occur on lands near the solar facilities, primarily the Plomosa SRMA (0.9 mi [1.5 km] from the SEZ), and would result from the change in the overall character of undeveloped BLM-administered lands to an industrialized, developed area. La Posa Destination SRMA and Yuma East Undeveloped SRMA are also within 25 mi (40 km) of the SEZ. People seeking more rural or primitive surroundings for recreation may experience a reduction in recreational opportunities and/or a degraded recreational experience.</p> <p>Privately owned RV parks may be impacted due to limited recreation areas.</p> <p><b>Cumulative:</b> Multiple developments in the vicinity of the SEZ could cumulatively reduce recreational opportunities.</p>	<p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Public_Access_and_Recreation.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Public_Access_and_Recreation.pdf</a></p>	<p>See programmatic design features.</p>	<p>Yes</p>	<p>No</p>

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Socioeconomics Section 8.1.19	<p><b>Direct:</b> Impacts to local economy as a result of expenditures of wages and salaries and the collection of state sales and income taxes. From 118 to 1,557 direct construction jobs and 6 to 117 direct operations jobs could be created (least for PV; most for parabolic trough facilities). Adverse impacts could occur due to the need for services for new workers during project construction and operation (e.g., housing, police, firefighters).</p> <p><b>Indirect:</b> From 236 to 3,126 indirect construction jobs and 2 to 74 indirect operations jobs could be created. Impacts from project wages and salaries, and tax revenues subsequently circulating through the economy would be minor.</p> <p><b>Cumulative:</b> Impacts overall would be positive, through the creation of additional jobs and income. The negative impacts, including some short-term disruption of rural community quality of life, are expected to be small.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Socioeconomics.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Socioeconomics.pdf</a>	See programmatic design features.	No	No

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Soils/Erosion Section 8.1.7	<p><b>Direct:</b> Impacts on soil resources would occur mainly as a result of ground-disturbing activities (e.g., grading, excavating, and drilling), especially during construction of a solar project. These include removal of topsoil, soil compaction, soil horizon mixing, soil erosion and deposition by wind, soil erosion by water and surface runoff, sedimentation, and soil contamination. Soils within the SEZ are predominantly the loams and sandy loams of soil series Pahaka-Estrella-Antho. Because of their fine-grained texture, they are moderately susceptible to wind erosion. Soil contamination from spills could occur.</p> <p>Based on an evaluation of data in the Sonoran Desert REA, the majority of the soils on the SEZ have high potential for wind erosion. Therefore, increased wind erosion is likely if grading occurs.</p> <p><b>Indirect:</b> Disturbance of soil can lead to introduction of invasive species.</p> <p><b>Cumulative:</b> Cumulative impacts would occur from the disturbance of several renewable energy projects, connecting linear facilities, and other projects in the vicinity of the SEZ, but would be limited through application of design features.</p>	See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Soil_Geologic_Hazards.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Soil_Geologic_Hazards.pdf</a>	<p>Construction crews should be educated to stay on designated roads and minimize the construction of new roads to minimize soil disturbance and compaction.</p> <p>See programmatic design features.</p>	Yes	Yes, basic component of ecosystem

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<p><b>Specially Designated Areas and Lands with Wilderness Characteristics</b> Section 10.1.3</p>	<p><b>Direct:</b> Specially designated areas (SDAs) within 25 miles of the SEZ that could be impacted by solar development are East Cactus Plain Wilderness Area (WA), Kofa WA, New Water Mountain WA, Cactus Plain Wilderness Study Area (WSA), Dripping Springs Area of Critical Environmental Concern (ACEC), Harquahala ACEC, and Kofa National Wildlife Refuge (visual impacts estimated as minimal for all). Impacts could include adverse visual effects on the viewshed (including impacts on night sky viewing).</p> <p>There are no undesignated areas with wilderness characteristics near the SEZ.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> Development of solar facilities and other facilities may result in cumulative effects, particularly visual impacts, on SDAs.</p>	<p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/SDAs_and_LWC.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/SDAs_and_LWC.pdf</a></p>	<p>See programmatic design features.</p>	<p>Yes</p>	<p>No</p>

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<b>Transportation</b> Section 8.1.21	<p><b>Direct:</b> Development will add traffic to existing roads serving the area. The volume of traffic on U.S. 60 could represent an increase in traffic of about 130 percent during construction. Such traffic levels would represent an increase in the traffic levels experienced on I-10 or State Route 72 at their junctions with U.S. 60. Local roads would also be impacted.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> Cumulative impacts to traffic could occur with multiple developments in the region.</p>	<p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Transportation.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Transportation.pdf</a></p>	<p>Local roads would require improvements to accommodate additional traffic.</p> <p>See programmatic design features.</p>	No	No
<b>Visual</b> Section 8.1.14	<p><b>Direct:</b> The Visual Resource Inventory (VRI) value for the SEZ and immediate surroundings are VRI Class IV, indicating low visual values. Development will adversely impact visual resources and may impact night skies. The Solar PEIS identified moderate to strong visual contrasts for the Plomosa SRMA, La Posa Destination SRMA, U.S. Highway 60, Interstate 10, and the towns of Vicksburg and Brenda.</p> <p><b>Indirect:</b> None identified.</p> <p><b>Cumulative:</b> If several projects become visible from one location, or in succession as viewers move through the landscape (such as driving on local roads), these cumulative impacts may make the area less visually appealing.</p>	<p>See programmatic design features at <a href="http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Visual.pdf">http://blmsolar.anl.gov/documents/docs/peis/programmatic-design-features/Visual.pdf</a></p>	<p>See programmatic design features.</p>	Yes	Yes

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<b>Wild Horses and Burros</b> Section 8.1.4.2	The Brenda SEZ is 19 miles (31 km) or more from any wild horse and burro Herd Management Areas managed by the BLM and more than 50 mi (80 km) from any wild horse and burro territory administered by the U.S. Forest Service. Solar energy development within the SEZ would not directly or indirectly affect wild horses and burros that are managed by these agencies.	Not applicable	Not applicable	No	No