Maricopa Solar Park Project (AZA-35927)
Variance Application Review

Marisol Energy 2 LLC (Marisol Energy 2) is proposing the development and operation of the Maricopa Solar Park Project (Project), a photovoltaic (PV) solar power plant with a planned generating capacity of up to 300 megawatts (MW).

The Project would be located on approximately 1,730 acres of public land administered by the Bureau of Land Management (BLM), Phoenix District Office, Lower Sonoran Field Office in Maricopa County, Arizona. The site is approximately 30 miles southwest of Phoenix. The Project would require construction of a 2.3 mile high-voltage transmission line connecting the Project to the Pinal West substation. The facility would be expected to operate for 30 years.

Marisol Energy 2 filed a right-of-way application (AZA-35927) with the BLM Arizona State Office on April 5, 2012, for the Project. The pre-application meetings required by the variance application process were held in May 2012. The company filed a plan of development for the proposed Project and a cost recovery agreement was signed on June 18, 2012. The public meeting required by the variance application process was held on February 5, 2013, in Maricopa, Arizona.

Marisol Energy 2 has submitted a request for a variance that would allow consideration of the development of the Project outside of an identified Solar Energy Zone (SEZ). This variance request, which identifies specific site advantages of the Maricopa Project site location, is in accordance with the requirements in the Solar Energy Programmatic Environmental Impact Statement, Record of Decision, signed October 12, 2012 (Solar PEIS).

The following are factors considered in this variance request, as identified in the Solar PEIS Record of Decision (ROD), Appendix B.5.3.

1. The availability of lands in a SEZ that could meet the applicant's needs, including adequate access to available transmission.

The Solar PEIS designated two SEZs in Arizona, the Brenda SEZ and the Gillespie SEZ.

The **Brenda SEZ** is located in La Paz County in west-central Arizona, 32 miles east of the Colorado River, on public land administered by the BLM Lake Havasu Field Office. The 3,348-acre Brenda SEZ is in the Ranegras Plain, which is a semi-arid basin. The SEZ is primarily undeveloped scrubland.

As stated in Section 8.1.1.2 of the Final Solar PEIS, a "full development of the Brenda SEZ would allow development of facilities with an estimated total of between 298 MW (power tower, dish engine, or photovoltaic technologies, 9 acres/MW) and 536 MW (solar trough technologies, 5 acres/MW) of electrical power capacity." There are no pending solar energy project applications within the Brenda SEZ. However, there are multiple solar energy project applications on lands within a 25-mile radius of the SEZ.

There is no certainty of the availability of transmission for projects that could potentially be located in the Brenda SEZ or the technical or economic feasibility of connecting the SEZ to the existing transmission grid. There is currently no planned additional transmission capacity identified in the area. Section 8.1.1.2 of the Solar PEIS states that "updated data indicate that the nearest existing transmission line is a 500-kilovolt (kV) east-west line located about 12 miles south of the SEZ. It is possible that a new transmission line could be constructed from the SEZ to the existing line, but the available capacity on the existing 500-kV line could be inadequate for 298 to 536 MW of new capacity. Therefore, at full build-out capacity, new transmission and/or upgrades of existing transmission lines would likely be required to bring electricity from the proposed Brenda SEZ to load centers." The applicant considered the Brenda SEZ location, but determined that the proposed Maricopa site location provided access to available transmission capacity and a shorter distance for a transmission interconnection.

The **Gillespie SEZ** is located in Maricopa County in west-central Arizona on land administered by the BLM, Lower Sonoran Field Office. The 2,618-acre Gillespie SEZ is a semiarid basin with undeveloped scrubland, southeast of the Harquahala Basin.

According to the SEZ-specific analysis included in the Solar PEIS, "full development of the Gillespie SEZ would allow solar facilities with an estimated capacity ranging from 233 MW (power tower, dish engine, or PV technologies, 9 acres/MW) and 419 MW (solar trough technologies, 5 acres/MW). There are no pending solar energy project applications within the Gillespie SEZ.

Section 8.3.1.2 of the Solar PEIS states that the "availability of transmission from SEZs to load centers will be an important consideration for future development in SEZs. For the proposed Gillespie SEZ, the nearest existing transmission line is a 500-kV line that runs less than 1 mile west of the SEZ. It is possible that the existing line could be used to provide access from the SEZ to the transmission grid, but the capacity of the line could be inadequate for the possible 233 to 419 MW of new capacity. Therefore, at full build-out capacity, new transmission and/or upgrades of existing transmission lines would be required to bring electricity from the proposed Gillespie SEZ to load centers."

As in the case of the Brenda SEZ, there is no certainty of the availability of transmission capacity on the existing transmission line in the area.

The **Agua Caliente SEZ** was designated in the ROD for the Restoration Energy Design Project (RDEP), signed on January 18, 2013. The 2,550-acre Aqua Caliente SEZ is located in Yuma County on land administered by the BLM Yuma Field Office.

A major constraint with development within the Agua Caliente SEZ is the presence of an existing "grandfathered" solar energy application that predates the area's identification as a SEZ. The application is held by First Solar, which has already developed adjacent private land in the area. The First Solar application effectively blocks Marisol Energy 2 from submitting an application for development within the Agua Caliente SEZ at this time.

A summary of the considerations for development on the other SEZs in Arizona are as follows:

- The SEZs could potentially meet the applicant's needs in terms of land availability. These sites are larger than the area required for the Maricopa Solar Park; the Brenda SEZ is approximately twice the required acreage while the Gillespie SEZ and the
  Agua Caliente SEZ are approximately 1.5 times larger than the proposed Maricopa site. The SEZs have adequate physical characteristics, although the Gillespie SEZ, with its irregular shape, would be less efficient than the proposed Maricopa site. Similar concerns are also present with the Agua Caliente SEZ.

- There are no pending solar energy project applications on the Brenda SEZ or the Gillespie SEZ. The Agua Caliente SEZ is encumbered by an existing application for solar development.

- The areas do not meet the applicant's need in terms of access to the transmission grid. None of the areas in the Brenda SEZ or the Gillespie SEZ have adequate access to available transmission facilities. Additionally, as noted, the Brenda SEZ has several other solar energy applications on lands within 25 miles that would further constrain access to any available transmission capacity.

- In contrast, the proposed site for the Project is near the Tucson Electric Power (TEP) Pinal West substation. This allows connection of the Project to a new 345-kV powerline at the Pinal West substation. The gen-tie line from the Project would be 2.3 miles long and run within an existing transmission corridor (see also points 9 and 14 below). TEP anticipates there will be connection availability to the new 345-kV yard of the Pinal West substation.

The proposed Maricopa Solar Park Project site has several site location advantages:

- Compactness of the Maricopa site location and therefore of the proposed Project layout;
- Proximity (2.3 miles) to the Pinal West substation (high-voltage substation);
- Presence of an adjacent transmission corridor (El Paso Natural Gas right-of-way corridor);
- Cost-effective connection to the existing Pinal West substation; and
- Feasibility to develop the Project in 50 MW phases, which allows greater flexibility in meeting the needs of independent power producers (non-utility power developers).

2. Documentation that the proposed Project will be in conformance with decisions in current land use plans (e.g., visual resource management class designations and seasonal restrictions) or, if necessary, represents an acceptable proposal for a land use plan amendment.

The Maricopa Solar Park Project proposed site location is in the BLM Lower Sonoran Planning Area and is managed under the Lower Sonoran Resource Management Plan (RMP). The RMP provides guidance for the management of nearly 1.4 million acres of public lands located southwest of Phoenix and allows for multiple-use of these lands, including utility-scale renewable energy production. The RMP has identified this location as possibly suitable for solar development due to having low resource conflicts. The only resource that may be restrictive, to certain technologies, is the visual resource management (VRM) classification. This area is a VRM class III which allows for moderate change to the landscape. The proposed photovoltaic solar technology is considered compatible with a VRM class III designation. In addition this location was approved as suitable for solar development by the designation of this area as a Renewable Energy Development Area (REDA) in the Record of Decision for the Restoration Design Energy Project (RDEP), signed by the BLM Arizona State Director on January 18, 2013.

Sonoran Desert National Monument (Monument)
The area immediately adjacent to the proposed site has one management objective for recreation setting. That setting is a Back Country setting which is defined as: large and natural landscapes where noticeable human induced modifications are uncommon and mechanized or motorized travel is allocated to the Passage setting. The Passage setting consists of motorized travel corridors - the area immediately south of the Project site also closed three existing roads to discourage vehicle travel. The three zones, Front Country, Back Country and Passage are defined in the Monument plan in Appendix C, page C-1.

Further south from the proposed site, approximately 0.5 miles, is designated desert tortoise habitat Category II. The area within the Monument boundary and adjacent to the proposed site is a VRM Class II.

No other designation exists in the immediate vicinity of the proposed site and within the Monument. Other designations are further into the Monument boundaries.

3. Documentation that the proposed Project will be consistent with priority conservation, restoration, and/or adaptation objectives in best available landscape-scale information (e.g., landscape conservation cooperatives, rapid ecological assessments, and state-level crucial habitat assessment tools).

The RDEP considered all resources and possible impacts and identified lands having the least amount of resources that could be impacted by renewable energy development. Those lands having low resource conflicts were identified as Renewable Energy Development Areas (REDA). The Maricopa site location is within an REDA.

4. Documentation that the proposed Project can meet applicable programmatic design features adopted in the Solar PEIS.

The applicant will be required to meet the design features in Appendix A, Section A.4 of the Solar PEIS ROD, as well as the design features included in Appendix B of the RDEP ROD. The following plans for the Maricopa Solar Park Project will be prepared and implemented, as necessary.

- Decommissioning and Site Reclamation Plan
- Dust Abatement Plan
- Hazardous Materials and Waste Management Plan
- Health and Safety Plan
- Stormwater Pollution Prevention Plan
- Worker Education and Awareness Plan

The proposed technology is PV which is the least intrusive technologies and the easiest to build. These aspects make it adaptable to differing settings and implementation of the identified design features.

5. Documentation that the applicant has coordinated with State and local (county and/or municipal) governments, including consideration of consistency with officially adopted plans and policies (e.g., comprehensive land use plans, open space plans, and conservation plans) and permit requirements (e.g., special use permits).

The applicant has committed to regular and consistent communications with state and local authorities. The applicant has also indicated a commitment to adhere to officially adopted plans, policies, and permit requirements. Marisol Energy 2 has held meetings with local entities to discuss compliance with local plans. The Project proposal appears to be consistent with local plans. In addition, local agency representatives from the county and City of Maricopa attended the public meeting on February 5, 2013. This public meeting invited local members of the public and local officials to discuss the proposal. The local agencies did not disclose non-conformance issues with local planning documents.

6. Documentation of the financial and technical capability of the applicant, including but not limited to: (i) the international or domestic experience with solar projects on Federal or nonfederal lands; and (ii) sufficient capitalization to carry out development, monitoring, and decommissioning, including the preliminary study phase of the Project and the environmental review and clearance process.

Marisol Energy 2 is a sister company of the Italian-based Siderurgica lnvestimenti. It is the holding company of an industrial group operating at an international level in the sectors of steel and metal production, renewable energy, and natural gas. The company identifies the group as Marisol Energy 2 Group Companies. The Group is Italy's largest manufacturer of construction steel. It also is one of the largest ferrous and metal scrap operators in the world, with 11 million tons of material and a turnover of 3 billion euros after the acquisition of the German-based

Thyssen Sonnenberg Recycling GmbH.

Marisol Energy 2 Group Companies are in the process of developing three PV projects that will have a total installed capacity of 118 MW. A Group member was awarded preferred bidder status by the Department of Energy of the Republic of South Africa. Other Marisol Energy 2 Group Companies are developing PV projects in Brazil for an additional 120 MW of overall capacity.

7. 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).

The RDEP analyzed lands and identified those with low resources and designated them as REDAs. The proposed Project area was designated as a REDA in the RDEP programmatic analysis. This designation is a result of extensive screening for resources that could have conflicted with renewable energy development.

8. Documentation that the proposed Project will minimize the need to build new roads.

No new roads outside the proposed Project site are required for access to the Project. Existing roads will provide access for equipment, suppliers, workers and contractors.

Access to the Project will be from a secondary road starting from Komatke Road (formerly Gas Pipeline Road), reachable either from Maricopa Road or from West Fulcar Road. This secondary road may be upgraded to accommodate heavy trucks during the construction phase. Internal roads will be gravel surfaced in order to minimize environmental impacts.

9. Documentation that the proposed Project will meet one or more of the following transmission sub-criteria: (1) transmission with existing capacity and substations is already available; (2) lands are adjacent to designated transmission corridors; (3) only incremental transmission is needed (e.g.,re-conductoring or network upgrades and development of substations); or (4) new transmission upgrades or additions to serve the area have been permitted or are reasonably expected to be permitted in time to serve the generation Project.

The proposed Project will meet all the transmission subcriteria:

- Transmission with existing capacity and a substation is already available;
- The Project site is adjacent to designated transmission corridors and within 2 miles of the Pinal West substation that is proposed for expansion;
- Only incremental transmission is needed because of a new overhead powerline that provides an upgrade to the network; and
- Marisol Energy 2 anticipates that a proposal for new transmission upgrades to serve the generation Project will be permitted by the Arizona Corporation Commission (ACC).

The energy generated by the proposed solar Project would be delivered to the Pinal West substation through a new 2.3-mile, 345-kV overhead gen-tie powerline. The gen-tie line would be within the existing El Paso Natural Gas Utility Corridor, which is a designated transmission corridor. Tucson Electric Power anticipates that there will be availability for the planned 300-MW capacity of the Project in the 345-kV yard of the Pinal West substation, with the addition of one or more 345-kV busbars.

10. Documentation that the proposed Project will make efficient use of the land considering the solar resource, the technology to be used, and the proposed Project layout.

The Project area has some of the highest solar irradiation values (6.0-6.5 kWh/m2/day). The Project would generate up to 300 MW of electricity. This translates to between 625 gigawatt hours/year (GWh/y) and 645 GWh/y.

The Project will use mono/polycrystalline ("thin film") PV modules mounted on horizontal single-axis trackers. The types of PV modules and mounting systems selected by Marisol Energy 2 is intended to maximize efficiency and energy production of the proposed Project. The planned footprint of the proposed Project is 1,492 acres (out of 1,730 acres identified in the application). This footprint translates to 4.97 acres per megawatt capacity, compared with 9 acres per megawatt for PV projects assumed by Chapter 8 of the Solar Energy PEIS. The final Project development layout will be designed based on issues identified in the Project's scoping phase.

The Project is designed to minimize visual and noise impacts. The proposed PV technology has a high level of reliability, low maintenance, and requires very little water for operations.

11. If applicable, documentation that the Project will be located in an area identified as suitable for solar energy development in an applicable BLM land use plan and/or by another the related process such as the California Desert Renewable Energy Conservation Plan (e.g. Development Focus Area) or Arizona RDEP (e.g., REDAs).

The Project falls within the "Mobile Proposed Disposal" REDA identified in the Arizona RDEP. The proposed Project location is characterized by the presence of few natural resource and management conflicts, proximity to transmission and distribution lines, and proximity to known electrical load centers. More information about the Mobile REDA is available in Appendix C of the RDEP Final EIS.

The Mobile REDA has the following characteristics:

- 98 percent of the area has a slope of 5 percent or less;
- A solar direct normal irradiance of 6.5 kWh/m^2/day, which makes the land suitable for both PV and concentrated solar power technologies;

- Distance to transmission lines/interconnection of 2.3 miles; and
- Less than one mile to graded roads.

12. If applicable, special circumstances associated with an application such as an expansion or repowering of an existing project or unique interagency partnership.

Not applicable to the Project.

13. If applicable, opportunities to combine Federal and non-Federal lands for optimum siting (e.g., combining BLM-administered land with adjacent previously disturbed private lands).

Not applicable to the Project.

14. If applicable, documentation that the proposed Project will be located in, or adjacent to, previously contaminated or disturbed lands such as brownfields identified by the Environmental Protection Agency's (EPA) RE-Powering America's Land Initiative (http://www.epa.gov/renewableenergyland); mechanically altered lands such as mine-scarred lands and fallowed agricultural lands; idle or underutilized industrial areas; lands adjacent to urbanized areas and/or load centers; or areas repeatedly burned and invaded by fire-promoting non-native grasses where the probability of restoration is determined to be limited.

The proposed Project site is undeveloped; however, the area is bounded on the north by a BLM-designated transmission corridor. The proposed Project area is partially disturbed from development in the corridor as well as roads in and around the site. Portions of the site have been used for target shooting and remnants of these activities are visible. To the north is SR283 which parallels a railroad track. Existing roads traverse the site providing access to areas that may be, otherwise, undisturbed. The BLM parcel of land is surrounded by private and state land in all directions except to the south. The private land has existing infrastructure, such as private airstrips but mostly sparsely occupied. To the east, slightly over 2 miles is the existing Pinal West substation which has several transmission lines feeding into and out of it. From the substation to the east is a planned and approved new transmission line not yet built. This will connect the Pinal West to the planned Pinal Central substation. The Pinal West substation is planned for expansion.

15. 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).

Marisol Energy 2 will be required to develop appropriate measures to minimize adverse impacts to access and recreational opportunities on the public lands that may result in

connection with the construction and operation of the Project. This will include maintaining or rerouting BLM-identified transportation routes or roads used by the community that may be impacted by the Project. The location has been used for general all-terrain vehicle off road use, target shooting, and some hiking further south in the Monument. No other recreational activities have been documented. If the Project is approved and built, it will, by standard fencing practices, block off unapproved off-road vehicle use. This area has existing roads not approved in BLM travel management plans, therefore blocking and mitigating adjacent roads will prevent further unapproved off-road use. Additionally, in the Monument adjacent to the proposed site, three existing roads were identified to be closed per the Monument RMP.

16. Documentation that the proposed Project will minimize adverse impacts on important fish and wildlife habitats and migration/movement corridors (e.g., utilizing the Western Wildlife Crucial Habitat Assessment Tool (CHAT), administered by the Western Governor's Wildlife Council [http://www.westgov.org/wildlife/380- chat] and coordinating with state fish and wildlife agencies).

The applicant will be required to minimize any adverse impacts on fish and wildlife habitats and migration/movement corridors. Early discussions with the Arizona Game and Fish Department identified the Project as possibly encroaching on a small corner of a wildlife migration corridor. Discussions included possible mitigation options, such as enhancement projects to redirect migration routes that may be impacted. Mitigation options will continue to be discussed if the Project moves into the EIS process.

17. Documentation that the proposed Project will be designed, constructed, and operated to use the best available technology for limiting water use that is applicable to the specific generation technology.

The choice of PV technology for the proposed Project will minimize the amount of water required to support the Project. Any use of water for the Project will be coordinated with and permitted through the appropriate State and local authorities, including Maricopa County and the Arizona Department of Water Resources.

During the 2-year construction phase of the Project, the overall water consumption will be about 3.15 million gallons (an equivalent of 4,302 gallons/day). During the operational phase, the daily water requirement will be approximately 1,270 gallons/day for sanitary use. The daily water requirement will increase up to 62,908 gallons/day during the yearly cleaning of the solar modules. Cleaning of the solar panels will take about a month and will be done only when necessary. The PV modules are designed to be self-cleaning during rainstorms.

Marisol Energy 2 plans call for storing 105,670 gallons of water onsite for fire, emergency, and washing of PV modules. The anticipated total consumption per year during the operational phase is 2,312,000 gallon/year or 6,335 gallon/day, considering the proposed action for a 300-MW solar plant.

The following tables show the consumption data in gallons and acre-feet.

WATER REQUIREMENT DURING THE CONSTRUCTION PHASE		
DESCRIPTION Working days (over 24 months = 528 days)	GALLONS	ACRE-FEET
Overall water consumption for internal roads	2,020,916	6.2
Overall water consumption for sanitary use	697,414	2.1
Overall water consumption for concrete production	422,675	1.3
Overall water consumption	3,141,005	9.6
Daily water consumption per working day	5,949	0.018

WATER REQUIREMENT DURING THE OPERATIONAL PHASE		
DESCRIPTION	GALLONS	ACRE-FEET
Annual water consumption for sanitary use (gal/year)	462,829	1.4
Annual water consumption for PV modules cleaning activity	1,849,209	5.7
Annual water consumption during operation (gal/year)	2,312,039	7.1
Average daily water consumption during operation (gal/day)	6,334.35	0.019

18. Documentation that any groundwater withdrawal associated with a proposed Project will not cause or contribute to withdrawals over the perennial yield of the basin, or cause an adverse effect on the Endangered Species Act-listed or other special status species or their habitats over the long term. However, where groundwater extraction may affect groundwater-dependent ecosystems, and especially within groundwater basins that have been over appropriated by State water resource agencies, an application may be acceptable if commitments are made to provide mitigation measures that will provide a net benefit to that specific groundwater resource over the duration of the Project. Determination of impacts on groundwater will likely require applicants to undertake hydrological studies using available data and accepted models.

No groundwater withdrawal is anticipated for construction or operation of the Project.

19. Documentation that the proposed Project will not adversely affect lands donated or acquired for conservation purposes or mitigation lands identified in previously approved projects such as translocation areas for desert tortoise.

Not applicable to the Project. The Project area is not adjacent to or otherwise near any donated or acquired conservation or mitigation lands.

20. 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).

No significant cumulative impacts on resources of concern are known or anticipated as a result of construction or operation of the proposed Project. During construction and operation, the Maricopa Energy 2 would be required to meet air quality standards of Maricopa County and the Arizona Department of Environmental Quality.

21. Desert Tortoise concerns.

The site does not have a known desert tortoise population. However two miles south in the uplands, the area is a desert tortoise Category II habit but is a considerable distance from the site.

22. Greater Sage-Grouse concerns.

Not applicable. Arizona does not have a Greater Sage-Grouse population.

23. Protecting Resources and Values of Units of the National Park System and Other Special Status Areas under National Park Service Administration.

The Project site is less than 5 miles from the Juan Bautista de Anza National Historic Trail (Trail) corridor, which is managed by the National Park Service and BLM. However, any potential impacts on the Trail are expected to be minimal. Intervening topography shields the Trail from the proposed Project site, and existing development in the area, including homes, a landfill, electrical transmission lines, a railroad right-of-way, and a highway have already affected the viewshed between the Trail and the proposed Project area.