



Navajo County Public Works Department

PROJECT SUMMARY

PROJECT NAME: Dry Lake II Solar

LOCATION: North of Snowflake approximately 4 miles

ACREAGE: 75.7

PROPOSAL: Special Use Permit to allow Aurora Solar to place a photovoltaic (solar) electrical generating facility within a portion of the Dry Lake II wind farm.

SCHEDULE: Hearings not yet scheduled

ATTACHMENTS: Project Narrative & Exhibits

DATE OF SUMMARY: Tuesday, June 14, 2011

Dry Lake II Photovoltaic Solar Power Generation Facility

Special Use Permit Application



Presented To: Navajo County
100 E. Carter Drive
Holbrook, Arizona 86025

Applicant: **Aurora Solar, LLC**
A wholly owned subsidiary of Iberdrola Renewables

Property Owner: **Langley Holdings**

Submittal Date: May 5, 2011

Project Team

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Table of Contents

Narrative

1. Executive Summary
 - A. Applicant Background
 - B. Site Suitability
 - C. Request
2. Existing Conditions
 - A. Existing Land Uses and Comprehensive Plan Designation
 - B. Relationship to Surrounding Properties
 - C. Physical Characteristics
 - D. Existing Public Services / Utilities
3. Proposed Conceptual Development Plan
 - A. Description of Proposal
 - B. Proposed Land Use
 - i. Solar Array and Associated Structures
 - ii. Inverter Container Units
 - C. Proposed Access and Circulation
 - D. Proposed Public Services / Utilities
 - E. Drainage Management
 - F. Proposed Impacts and Mitigation Measures
4. Comprehensive Plan Compliance
 - A. Conformance of the Proposal
 - B. Land Use Element
5. Conclusion

Exhibits

- A. Special Use Permit Map
- B. Figure 2-1 Site Plan
- C. Base Map
- D. Aerial Map
- E. Topographical Map
- F. Components of a Typical Tracking Solar Array
- G. Representative Photo of Photovoltaic Facility Arrays and Inverter Units

Section One - Executive Summary

A. Applicant Background

Aurora Solar, LLC (Aurora) is a wholly owned subsidiary of Iberdrola Renewables providing renewable energy developments throughout the United States and abroad. Aurora strives to provide solar developments in strategic areas of the United States creating jobs, providing clean energy utilizing natural resources, and improving communities through tax revenue generation.

B. Site Suitability

Aurora proposes to construct a photovoltaic solar power generation facility near the Town of Snowflake, Arizona within Navajo County. Refer to **Exhibit C, Base Map**. The project is anticipated to produce up to 50 megawatts of renewable energy. The facility is planned to be constructed on land which is currently vacant high-desert property comprised of approximately 399 acres.

This area is suitable for a solar power generation facility due to its relatively flat topography and the abundance of sunshine and intense solar radiation levels that Arizona receives. Adjacent land uses surrounding the project site are rural / vacant. The facility will be compatible with adjacent uses, while offering economic opportunities to local town and cities, Navajo County, and the State of Arizona in the form of jobs (both construction and permanent), tax revenues, and introduction of a renewable energy source.

C. Request

This request for a Special Use Permit (SUP) is for the Dry Lake II Solar Photovoltaic Power Generation Facility. Refer to **Exhibit A, Special Use Permit Map**.

The project site and immediately adjacent properties are currently zoned Rural 20. Principal uses permitted in this zoning district include farm and non-farm residential uses, farms, recreational, and institutional uses. It is understood a solar power generation facility, along with its supporting infrastructure, may be allowed under the existing Rural 20 zoning district by obtaining a SUP.

The current Comprehensive Plan designates the site as Rural Edge. The proposed request is consistent with the overall intent of the Comprehensive Plan and is not solely for the good or benefit of a particular landowner or owners at a particular point in time. This SUP request will not increase traffic volumes in the area, nor adversely affect existing or proposed land use patterns. The proposed project will not require additional or new services or infrastructure.

Section Two – Existing Conditions

A. Existing Land Use and Comprehensive Plan Character Area Designation

The proposed site for the Dry Lake II Solar Photovoltaic Power Generation Facility is currently designated Rural Edge Character Area per the Comprehensive Plan. The existing land use is vacant, undeveloped high-desert land. Refer to **Exhibit D, Aerial Map**. Areas designated as Rural Edge are characterized to provide lower density/intensity uses; typically vacant land or rural in character with minimal, if any, public services or infrastructure.

B. Relationship to Surrounding Properties

Adjacent land uses include vacant property to the north, east, south and west. Railroad tracts run along the western property line. This property and surrounding area is zoned Rural 20. See the table below for existing land uses, property ownerships, character area designations and zoning for the site and surrounding property.

Location	Existing Land Use	Property Ownership	Existing Character Area Designation	Existing Zoning
Subject Property	vacant desert	Langley NZ Ranches, LLC F Bar Cattle Co.	Rural Edge	Rural 20
North	vacant desert/Wind Farm	BLM	Rural Edge	Rural 20
East	vacant desert/Wind Farm	State	Rural Edge	Rural 20
South	vacant desert	BLM	Rural Edge	Rural 20
West	vacant desert/Wind Farm	State	Rural Edge	Rural 20

The majority of the area surrounding the site is State Trust Land, or managed by the Bureau of Land Management (BLM), with the exception of property immediately adjacent to the west of the project site, which is owned by the Apache Railway. Within the northeast corner of Section 17, is the existing O&M facilities, substation, well and septic system servicing the Dry Lake II Wind Farm Facility. Southeast of the property, approximately one (1) mile is the Town of Snowflake Planning Area Boundary.

C. Physical Characteristics

Topography

The subject property is relatively flat, gently sloping from the southwest to the northeast. Refer to **Exhibit E, Topographical Map**.

Drainage

The site drains generally from the southwest to the northeast at a grade of 1%. The FEMA Flood Insurance Rate Map (FIRM), Panel 4025 of 5250 identifies the property to be within a Zone X Flood Hazard Area.

FEMA defines the flood hazard for this area as:

“Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths less than 1 foot or drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.”

Vegetation

Arizona’s Comprehensive Wildlife Conservation Strategy: 2005-2015 identifies the site as Plains and Great Basin Grassland within the Colorado Plateau Ecoregion. This habitat type is characterized by mixed and shortgrass communities with dominant grass species consisting of blue, black, and sideoats gramas, buffalograss, Indian rice grass, Galleta grass, prairie junegrass, and alkali sacaton, among others. Common shrubs including four-wing saltbush, sagebrush, cholla, winterfat, and rabbitbrush may be scattered through the habitat. Junipers may also be present, as they have invaded many areas of southwestern grasslands. A site visit performed in conjunction with a biological assessment of the site confirmed the site is composed of grassland habitat which has been subject to moderate levels of juniper and shrub invasion. Dominant species observed during the site reconnaissance include blue grama, winterfat, blackbrush, four-wing saltbush, cholla, milkvetch, and prickly pear.

Wildlife

A biological assessment performed for the site indicates the site is likely to provide suitable habitat for a variety of wildlife species commonly associated with Colorado Plateau grasslands. The list of threatened and endangered and species of concern for Navajo County was reviewed relative to the habitat observed on the site. The site does not appear to provide significant suitable habitat for species of conservation concern, except for the mountain plover, which is proposed for federal listing, and the state species of concern, ferruginous hawk. The grassland habitats on the site may provide suitable habitat for these species, though the likelihood is low, since these grassland habitats have been degraded by invasion of shrubs and junipers, likely resulting from fire suppression. Wildlife species observed during the site visit consisted of common species in the region.

D. Existing Public Services / Utilities

There are currently no services in the location of the subject property.

Potable Water

The project site is not within the service area of a municipal or private water service company.

Wastewater

The property is not located within the service area of an existing wastewater utility company.

Electrical Service

The property is located within the service area of Arizona Public Service (APS).

Gas Service

The property is located within the service area of Unisource.

Telephone Service

The property is located within the service area of Frontier Communications.

Fire and Emergency/Rescue Services

The property is located within the service area of the Taylor/Snowflake Ambulance Service.

Section Three – Proposed Conceptual Development Plan

A. Description of Proposal

Aurora Solar, LLC respectfully requests with this application that Navajo County consider issuing a Special Use Permit necessary to construct the proposed Dry Lake II Solar Photovoltaic Power Generation Facility. The proposed facility will be incorporated on a portion of land which is part of an overall larger renewable energy facility within the County.

B. Proposed Land Use

Aurora Solar, LLC proposes to construct the Dry Lake II Solar Photovoltaic Power Generation Facility on approximately 399 acres near the Town of Snowflake, Arizona. Refer to **Exhibit B, Figure 2-1 Site Plan**.

Dry Lake II Solar Photovoltaic Power Generation Facility is adjacent to the existing Dry Lake II Wind Facility. It is anticipated the two (2) facilities will share the collection system, O&M building, parking, water and wastewater facilities.

The objective of the solar facility is to generate electricity from sunlight, taking advantage of Arizona's abundant sunshine and high solar radiation level. The project will use photovoltaic solar power (PV) technology to meet regional needs for power consumption as a green, renewable alternative to traditional carbon burning technologies.

All development on the project site will comply with building codes and regulations required by Navajo County and State agencies, as necessary.

i. Solar Array and Associated Structures

The proposed solar array is arranged in units called "blocks". A typical block extends approximately 140 feet in a N-S direction and 300 feet E-W. Block sizes will vary based on site conditions and the overall project configuration. Each block contains approximately 18 motorized solar tracker units supported on driven pier foundations. Each of these tracker units, in turn, supports 40-100 or more solar panels. During the course of the day, the tracker units pivot to allow the solar panels to follow the sun as it moves across the sky.

The arrays are supported by pier foundations that are approximately 5 feet tall from the ground surface. With the solar panels, the total height of the arrays is no more than about 6 feet tall. A typical solar array diagram is shown in **Exhibit F**. An additional photo of the solar array is shown on the following page as **Exhibit G**.

ii. Inverter Container Units

Each block will also include a contained inverter unit for DC to AC voltage conversion, and associated transformer. For a 50 MW project, there will be 50 1-MW inverter units. Each invert unit will be no taller than 15 feet high, and will be mounted on a concrete pad of 42 feet by 12 feet. From the inverter units, the power is then carried by cables - usually underground - to a central collection area where it is transmitted to a local utility.

The plant is bisected by roads and passageways to allow maintenance and emergency access to the inverters, trackers and panels.

Exhibit F - Components of a Typical Tracking Solar Array

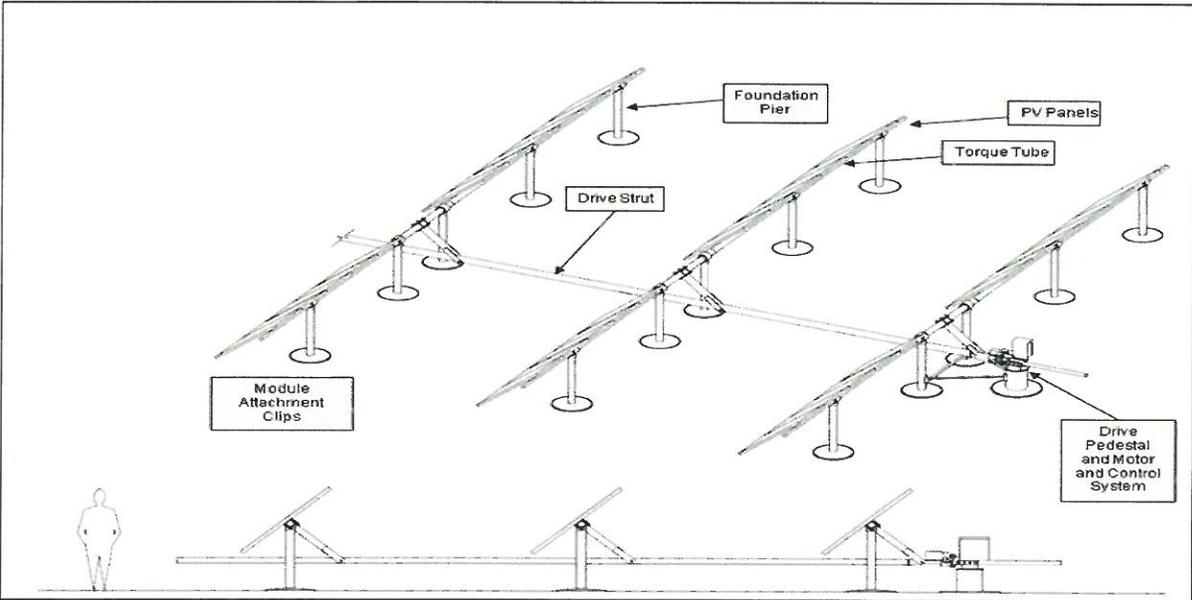


Exhibit G - Representative Photo of Photovoltaic Facility Arrays and Inverter Units



C. Proposed Access and Circulation

The proposed solar Project access road is through an existing facility, and is not a part of this proposal. The access road extends west from the highway (SR 77), approximately one (1) mile north of the Town of Snowflake Planning Area. A small driveway/accessway will turn south off of this access road near the existing substation and collection system and O&M building.

Internal circulation to the site will be strictly controlled and privately maintained. General traffic movements within the property will be concentrated on private service roads (see site plan for access road dimensions and locations). A portion of Reidhead Avenue as it crosses through the project site is proposed to be vacated. An access road will be re-routed to the existing corral site (F Bar Cattle Co.) to provide continued access to the parcel.

D. Proposed Public Services / Utilities

Potable Water

Dry Lake II Solar Photovoltaic Power Generation Facility will utilize the O&M facility for the existing wind plant, and thus, will utilize water service via the existing well serving the O&M facility for the wind operation. The solar facility will have one to two permanent full-time staff.

Wastewater

Dry Lake II Solar Photovoltaic Power Generation Facility will utilize the O&M facility for the existing wind plant, and thus, will utilize wastewater service via the existing septic system serving the O&M facility for the wind operation. As noted above, the solar facility will have 1 to 2 permanent full-time staff.

Electrical Service

Dry Lake II Solar Photovoltaic Power Generation Facility will share electric service via the existing project substation serving the O&M facility for the wind operation.

Fire and Emergency/Rescue Services

The property is located within the service area of the Taylor/Snowflake Ambulance Service.

E. Drainage Management

The subject property is comprised of unimproved high-desert land with a general fall from southwest to the northeast. Under developed conditions, historic outfall points will be maintained with on-site drainage improvements. There is an existing drainage corridor located within the northwest corner of the development. A 200-foot setback will be maintained. There will be no imposed or additional impacts to the existing drainage corridor. Drainage that occurs on-site will be maintained in compliance with existing County regulations.

All flows from off-site watersheds surrounding the subject property will be conveyed to their historic locations per Navajo County design standards.

F. Proposed Impacts and Mitigation Measures

Hazardous Materials

No hazardous releases are anticipated with the operation and maintenance of the Dry Lake II Solar Photovoltaic Power Generation Facility. Aurora Solar, LLC will be in compliance with all State and Federal rules and regulations.

Dust

During operation, the facility will not produce a significant amount of dust. Dust negatively impacts the efficiency of the solar collectors and therefore dust prevention is critical and part of routine facility maintenance. During construction, dust control measures will be implemented through the construction permitting process as required by Navajo County. This may include the use of water for dust suppression.

Glare

The photovoltaic technology proposed for this project is designed specifically to absorb light rather than reflect it, thus minimizing glare. The cellular panels are protected with a special low iron, non-reflective glass cover.

Noise

Off-site noise, if any, may be produced during construction activities, this may include some clearing and grading, and pier driving. During operation of the facility, adjacent properties will not be impacted and no discernible noise will be heard off-site.

Odor

Activities associated with solar power generation do not produce noxious odors.

Operations Traffic

The facility will not produce a significant amount of traffic once it is operational. Once operational, the project facility will employ approximately one to two full-time employees, resulting in very few trips per day and well below acceptable levels of service for the current rural road status.

Section Four – Comprehensive Plan Compliance

A. Conformance of the Proposal

This section of the SUP request provides information on how the proposed project satisfies the intent of the Comprehensive Plan.

1. How does this SUP request constitute an overall improvement to the Comprehensive Plan and not solely be for the good or benefit of a particular landowner or owners at a particular point in time?

This SUP request for a land use change will allow for the future development of the Dry Lake II Solar Photovoltaic Power Generation Facility. The project will use photovoltaic solar power technology to meet regional needs for power consumption as a green, renewable alternative to traditional carbon burning technologies. Solar energy assists protect the environment by eliminating the production of greenhouse gasses and other harmful emissions, as well as decreasing our reliance on fossil and imported fuels. Solar energy is growing in awareness and will play an important role in energy markets in the future.

2. Does the SUP adversely impact all or a portion of the planning area?

a. Does the SUP alter acceptable land use patterns to the detriment of the plan?

Currently the project site and adjacent area is undeveloped desert with a Rural Edge land use designation and zoning designation of Rural 20. Principal uses permitted in the Rural 20 zoning district include both farm and non-farm residential uses, farms, recreational and uses. The Dry Lake II Solar Photovoltaic Power Generation Facility is compatible with current and planned rural land uses in the area.

b. Does the SUP require public expenditures for larger and more expensive infrastructure improvements to roads, sewer, or water systems than are needed to support planned land uses?

This SUP request will not require additional expenditures for roads, sewer, or water systems for the area. Access to the project site will utilize the current wind project access road. There is no intention at this time to connect to a regional sewer system, and project water demands are very low (potentially utilizing potable and non-potable water delivered by water truck).

3. Does the SUP adversely impact planned uses because of increased traffic?

The proposed solar power generation facility will have minimal impact on area roads. The project site will be accessed via the existing wind project access road from SR 77. Once operational, the project facility will employ approximately one to two full-time employees, resulting in very few trips per day and a well below acceptable level of service for the current rural road status. Access

to the site will be strictly controlled and privately maintained with internal traffic movements concentrated on private service roads.

4. Does the SUP affect the livability of the area or the health or safety of present and future residents?

This SUP request will have little-to-no impact on the livability of the area, or to the health and safety of area residents. The proposed solar power generation facility will not produce dust, glare, noise, odor or wastewater which would adversely impact the existing air quality, visual corridor, ambient noise levels or groundwater quality of adjacent properties. Photovoltaic panels absorb light rather than reflect light, creating little-to-no glare.

5. Does the SUP adversely impact the natural environment or scenic quality of the area in contradiction to the plan?

The proposed solar power generation facility will not affect or adversely impact the natural environment or the scenic quality of the area. The subject property is located in an area with little development beyond the current infrastructure associated with the wind project, such as power lines, roads, and a railroad tract. Dominant species observed during the site reconnaissance include blue grama, winterfat, blackbrush, four-wing saltbush, cholla, milkvetch, and prickly pear. The property will be inspected for wildlife habitat prior to construction and a document of findings will be supplied to the County, if required.

6. Is the SUP consistent with the overall intent of the Comprehensive Plan?

This Amendment is consistent with the overall intent of the Plan's goals, objectives and policies 'to promote vibrant communities by encouraging growth in areas suitable for development, an efficient transportation system, a healthy environment, and a diversified economy'. The project site is well suited for a noninvasive user such as a solar facility with compatible adjacent land uses and access to an established roadway. The addition of the Dry Lake II Solar Photovoltaic Power Generation Facility will provide jobs and revenue for the area, as well as assist in creating a healthy environment for current and future area residents. Solar power is a renewable, clean source of energy that helps reduce the consumption and dependency on carbon burning technologies which generate greenhouse gas and other harmful air emissions.

7. Is the SUP consistent with the specific goals and policies contained within the plan?

This proposed request supports and furthers the following Comprehensive Plan goals and policies:

A. Land Use Element

Goal: Improve the overall appearance of the County.

Policy 5-A: Maintain natural scenic qualities of the County by identifying and protecting cultural resources; protecting wildlife habitat; natural plant communities and riparian areas; and encouraging protection of scenic vistas.

The solar power generation facility will not negatively impact the visual corridor. At installation, the solar panels located on the project site will be approximately five-to-six feet in height, providing less of a visual barrier than a one or two-story home. Additionally, photovoltaic panels absorb light rather than reflect light, creating little to no visual glare. Due to the low level of visual and environmental impacts associated with a photovoltaic solar power generation facility, wildlife in the area should not be detrimentally affected.

Goal: Actively plan to accommodate growth in Navajo County in an appropriate manner.

Policy 9-F: Encourage development/installation of technology improvements including, but not limited to, high speed Internet lines and other communications improvements in Navajo County.

The proposed Dry Lake II Solar Photovoltaic Power Generation Facility has the potential to generate business income, employment, and tax revenue for Navajo County and Arizona. It is anticipated that multiple contractors, sub-contractors, equipment providers and service providers will benefit from this project during construction and operation. The project site was selected for its solar insolation value, site suitability and existing infrastructure. Solar power assists in protecting the environment by eliminating the production of greenhouse gases and other harmful air emissions, while decreasing our reliance on fossil fuels and the need for fossil fueled power plants.

Goal: Improve and maintain circulation infrastructure to meet the needs of residents and to protect the natural environment.

Policy 3-A: Minimize air, water, and noise pollution and disruption of surface water drainage in compliance with federal, state, and local regulations when designing, constructing, and operating circulation infrastructure.

Energy produced by the proposed solar power generation facility will be emission-free energy. The facility will use photovoltaic solar power technology to meet regional needs for power consumption as a green, renewable alternative to traditional carbon burning technologies. Additionally, other harmful pollutants such as nitrogen oxides and sulfur dioxide will not be generated by using this form of solar technology.

Section Five – Conclusion

This request for a Special Use Permit is to establish a solar facility within the land use designation of Rural Edge of the Comprehensive Plan for the proposed Dry Lake II Solar Photovoltaic Power Generation Facility. The proposed use is consistent with the overall intent of the Comprehensive Plan and will have minimal impacts on the existing land use of adjacent properties. The project would not require public expenditures for larger and more expensive infrastructure improvements or negatively impact the livability of the area. The benefits of bringing a solar power generation facility to this area outweigh any perceived negative impacts. The benefits provided by the facility would include, but are not limited to: creation of tax revenues, construction and operations employment, procurement of local goods and services, introduction of a renewable energy source and power for residential and commercial consumers. As a result, the Dry Lake II Solar Photovoltaic Power Generation Facility represents a unique and significant economic opportunity.

