

ARIZONA SOLAR ONE



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January 30, 2012

Steven Olea
Director, Utilities Division
Arizona Corporation Commission
1200 W. Washington St.
Phoenix, Arizona 85007

ARIZONA CORPORATION COMMISSION
DOCKET CONTROL

Subject: Abengoa Solar Inc. – Ten Year Plan Filing

Docket No.: E-00000D-11-0017

Dear Mr. Olea,

In conformance with A.R.S. § 40-360.02 and pursuant to the Arizona Corporation Commission's Decision No. 63876 (July 25, 2001), Arizona Solar One, LLC ("Arizona Solar One") is pleased to submit the 2012-2021 Ten Year Plan. As previously mentioned in our 2011-2020 Ten Year Plan, Arizona Solar One is a special purpose entity created to develop, construct, and operate the 280 MW Solana Generating Station near Gila Bend, Arizona, and is a wholly owned subsidiary of Abengoa Solar Inc. Arizona Solar One is currently constructing the 280 MW Solana Solar Generating Facility near Gila Bend, AZ, and the transmission line that will exclusively connect the generating station with "Panda Sub Station," an APS facility. An update of the generating station project and its associated transmission line are further discussed in this filing.

If you have questions or need further information regarding this filing, please contact me at 480-705-0028.

Sincerely,

Kate Maracas
Vice President, Operations
Abengoa Solar Inc.

Arizona Corporation Commission
DOCKETED

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cc: Docket Control

2012 – 2021 Ten Year Plan

Submitted By:

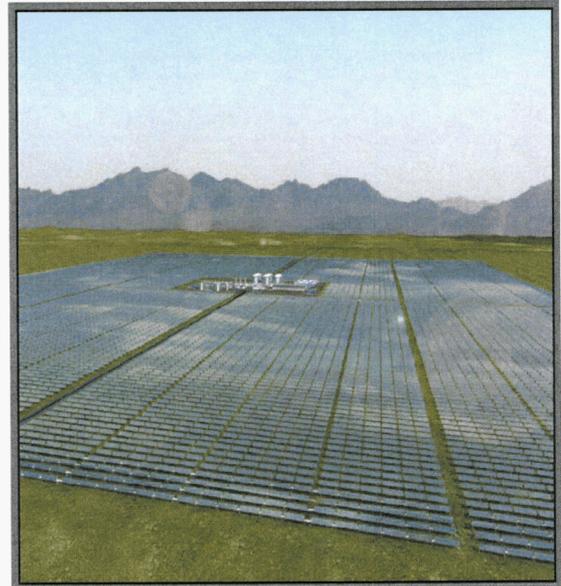
**ARIZONA
SOLAR ONE,
LLC**



Submitted to:

The Arizona Corporation Commission
Pursuant to ARS §40-360.02

January 2012



Technical Contact:

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Vice President of Operations, Arizona
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ARIZONA SOLAR ONE, LLC

**2012 – 2021
Ten Year Plan**

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ARIZONA SOLAR ONE, LLC
2012 – 2021
Ten Year Plan

General Information, Summary, and Overview

In conformance with A.R.S. § 40-360.02, Arizona Solar One, LLC (“Arizona Solar One”) is pleased to submit this Ten Year Plan corresponding to the period 2012 - 2021. Arizona Solar One is a special purpose entity created to develop, construct, and operate the 280 MW Solana Generating Station near Gila Bend, Arizona, and is a wholly owned subsidiary of Abengoa Solar Inc. (“Abengoa Solar”). Abengoa Solar is currently constructing the 280 MW Solana Solar Generating Facility near Gila Bend, AZ. That project and its associated transmission line are further discussed in this filing.

A.R.S. § 40-360.02 requires that:

“Every person contemplating construction of any transmission line within the state during any ten year period shall file a ten year plan with the Commission on or before January 31 of each year.”

Pursuant to those requirements, Arizona Solar One submits this document, which provides further details about its only planned transmission facility as of January 31, 2012. That planned facility is a 230 kV overhead transmission line that will span approximately 20.2 miles between a substation located at the Solana plant site and APS’s Panda¹ 230 kV substation. The transmission line will be a dedicated generator intertie (“Gen-Tie”) line, delivering power directly to APS’s transmission system.

Also pursuant to A.R.S. § 40-360.02, Abengoa Solar Inc, on behalf of Arizona Solar One, filed with the ACC on July 17, 2008 a “90 Day” Solana Project Plan, which described in detail the location, operation date, average and maximum power output, capacity factor, and power flow and stability analysis for the Solana Generating Station.

Finally, also pursuant to A.R.S. § 40-360.02, this filing includes technical study results for the planned Solana 230 kV Gen-Tie line.

¹ The APS Panda Substation is referred to in the APS interconnection studies as the “Gila River 230 kV Substation”. Although the actual APS point of delivery is the Panda Substation, the interconnection studies refer to the station as Gila River, known as a major hub in the APS bulk power transmission system. Exhibit 2 of this document references the Gila River Facility, in the interest of conformance with the APS Facilities Study.

Transmission Project Description

About Solana

Solana is located approximately 70 miles southwest of Phoenix and eight miles west of the Town of Gila Bend, Arizona. The Solana site is located on 2,339 acres of private land north of Interstate 8 (I-8), west of Painted Rock Dam Road, south of Powerline Road and east of Bureau of Land Management ("BLM") lands within unincorporated Maricopa County. Solana will use Concentrating Solar Power ("CSP") technology with storage capability. The technology uses parabolic mirrors to focus the sun's heat on receiver tubes containing heat transfer fluid. The fluid can reach a temperature of 735 degrees Fahrenheit. To produce electricity, the hot fluid transfers its heat energy to water, creating steam for two 140 MW conventional steam turbines. The heat energy in the fluid also can be diverted to molten salt storage tanks that can create steam for energy production up to six hours after sunset, or through cloudy periods. Solana will use conventional cooling towers and evaporation ponds. The source of water will be groundwater supplied through process wells to be located on the project site.

Updated Information on the Configuration of the Solana Gen-Tie Line

On December 5th, 2008, the ACC affirmed a recommendation by the Arizona Power Plant and Transmission Line Siting Committee and thereby granted individual Certificates of Environmental Compatibility ("CECs") for both the Solana Generating Facility and the 230 kV Gen-Tie line (see Docket Numbers L-00000GG-08-0407-00139 - Decision No. 70638, and L-00000GG-08-0407-00140 - Decision No. 70639).

Originally the size of the Gen-Tie line was described as a single circuit 230 kV line having a rated capacity of 560 MVA , with a configuration of steel monopole structures, a single 954 kcmil ACSR conductor, and structural capacity for a future second (double) circuit.

As a result of comprehensive technical studies during the first semester of 2011 the size of the Gen-Tie was upgraded. Pursuant to A.R.S. § 40-252 Arizona Solar One introduced in September 29, 2011 an application to amend the Arizona Corporation Commission's Decision No. 70639. Such amendment comprised a request, first, to allow Arizona Solar One to place a second set of conductors on the double circuit towers that will increase the efficiency and reliability of the Gen-Tie, and, second, to allow Arizona Solar One to use four (4) H-frame transmission structures rather than monopole in particular locations, facilitating a crossing underneath existing APS's 230 kV Panda-Gila Bend transmission line, and to span existing wastewater treatment ponds. Letters of support from Paloma Irrigation & drainage District, Sierra Club – Grand Canyon Chapter and from town of Gila Bend were obtained and duly docketed before the Arizona Corporation Commission. Detail information can be

found in Docket L-00000GG-08-0407-00139. On November 17, 2011, the Arizona Corporation Commission issued the decision No. 72680 authorizing Arizona Solar One to use the proposed four H-frame transmission structures and to construct the line with the use of a double set of conductors, hence modifying decision No 70639 of December 11, 2008.

The actual size and configuration of the Gen-Tie line is as follows:

- Voltage: 230 kV
- Configuration: Mostly steel monopole structures, with four H-frame transmission structures in particular locations, and the use of a double 954 kcmil ACSR conductor.
- Rated Capacity: 990A (Primary Amps)

Route of the Solana Gen-Tie Line

The certificated route for the Solana Gen-tie originates at a 230 kV substation now under construction within the Solana site. The Solana Gen-tie would begin at the center of Solana site, proceeding east to the edge of the Solana site at Painted Rock Dam Road, then north in an alignment on Painted Rock Dam Road to Watermelon Road. At Watermelon Road, the route would turn east and continue in an alignment adjacent to Watermelon Road all the way to the Gila River Substation. The total length of this route is approximately 20.2 miles.

General vicinity maps and a map of the Certificated route for the Solana Gen-Tie line are shown in Figures 1 and 2 below.

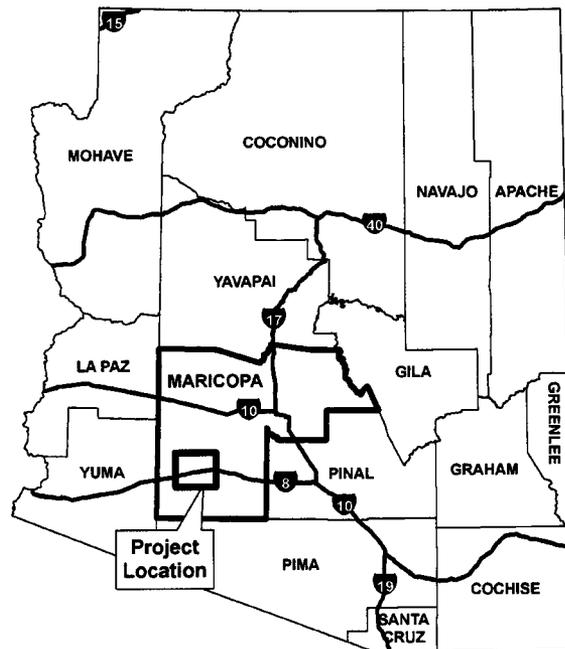


Figure 1. General Vicinity Map

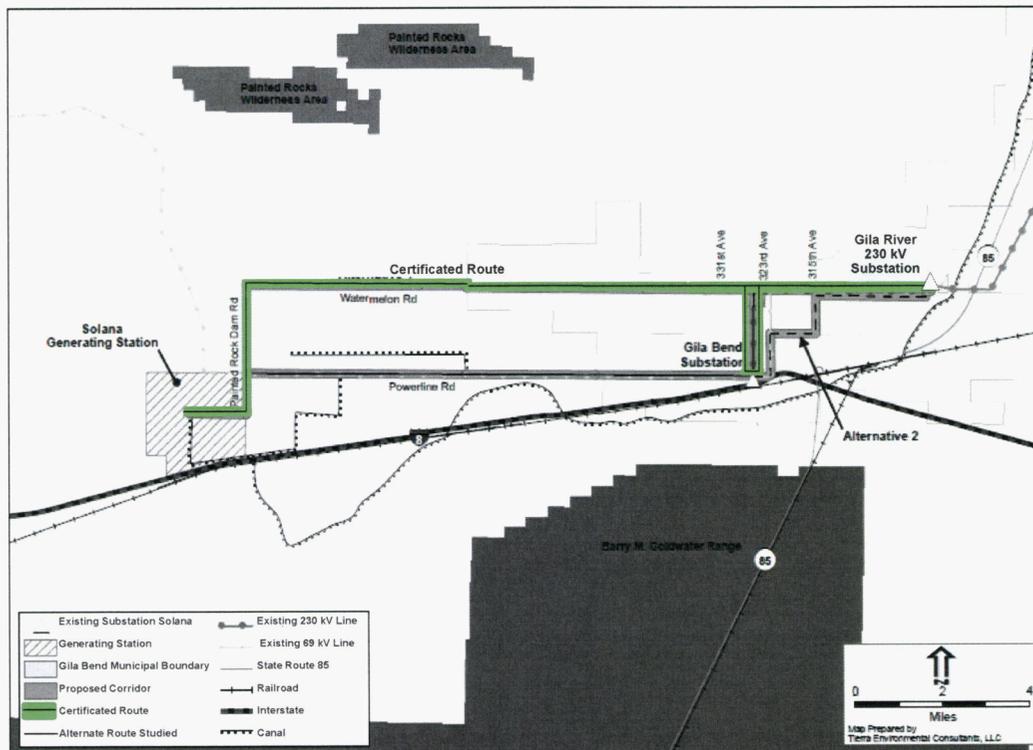


Figure 2. Transmission Route Map

At the time that the Solana Gen-Tie CEC was granted, interconnection studies being conducted by APS were not yet complete, and study analysts then contemplated a possible need for the Project to interconnect with (loop in and out of) the APS Gila Bend Substation in addition to terminating at the existing APS Gila River 230 kV Substation. Thus the CEC authorized that additional loop to and from Gila Bend Substation. Upon completion of the interconnection studies, however, study results indicated that the loop was unnecessary. As a result, the planned route will proceed eastward along Watermelon Road without interconnection to the Gila Bend Substation. Figure 2 depicts the complete certificated route, with the authorized loop to and from the APS Gila Bend 69kV Substation. A detailed Project Description Sheet is enclosed as Exhibit 1 of this Plan.

The final Large Generator Interconnection Agreement (“LGIA”) between APS and Arizona Solar One LLC. was officially executed and accepted by the Federal Energy Regulatory Commission (“FERC”) on August 31, 2010.

Further, effective October 11, 2010, Arizona Solar One received FERC approval of its Market Based Rate (“MBR”) authority as a Category I seller, and as of December 1, 2010, pursuant to the Public Utility Holding Company Act of 2005 (“PUHCA 2005”), Arizona

Solar One received FERC confirmation of its status as an Exempt Wholesale Generator ("EWG").

Purpose to be Served by the Planned Transmission Line

The purpose to be served by the 230kV Solana Gen Tie Project is to interconnect the Solana Generating Station to the regional transmission grid at the existing APS Panda Substation.

The plant will in turn produce electricity generated by solar thermal energy, which is a renewable resource. Arizona Solar One has a 30-year contract with APS for purchase of all output of the plant. This will provide APS with an energy resource to meet local and regional demand for renewable energy. The Arizona Corporation Commission has implemented Renewable Energy standards for regulated utilities, which require the utilities to acquire increasing amounts of renewable energy, up to fifteen percent of their delivered energy by 2025. The output of the plant will assist APS to meet this requirement, and to enable APS to meet its increasing demand. An additional purpose served by the plant is to provide diversity of fuel supply in the production of electricity. Access to energy produced by renewable resources reduces dependence on fossil fuels, which are subject to market price volatility.

Estimated Date of Operation

The 230 kV Solana Gen-Tie line has a planned in-service date on or before June 2013.

Power Flow and Stability Analysis

In February 2008, Abengoa Solar filed an interconnection request for the Solana Generating Facility with APS. The interconnection request is for a 280 MW net power injection into APS's transmission system. APS completed a System Impact Study ("SIS") on June 24, 2009 and a Facilities Study on August 19, 2009. Results of the studies indicated that no short-circuit or transient stability problems are anticipated as a result of Solana's interconnection. Abengoa Solar Inc. and APS executed the Large Generator Interconnection Agreement ("LGIA") in July 2010, and FERC formally accepted the filing on August 31, 2010.

The complete Facilities Study performed by APS is attached as Exhibit 2. It demonstrates the effect of the Solana project on the current Arizona electric transmission system and illustrates the network upgrades that will be required for this project. The study also investigated a variety of interconnection options, and the possibility of the presence of a "senior queued" 110 MW generation project ("Q31") proposed for interconnection at

the Gila Bend 69 kV Substation or the Gila River (Panda) 230 kV Substation. The conclusion derived from the SIS and the ensuing Facilities Study is that the proposed Solana Project has no adverse power flow or stability impact on the Arizona transmission system provided that the network upgrades recommended in both studies are completed. In accordance with the LGIA, Abengoa Solar has begun to pay for the completion of those upgrades, expected to be completed by APS in early 2013.

Exhibit 1

Project Description Sheet

Exhibit 1: Project Description Sheet**Solana Generating Station Transmission Intertie**

Project Owner / Sponsor: Arizona Solar One, LLC.

Project Description: Interconnect a new 280 MW Solar Generating Plant to the APS 230 kV Panda Substation.

Voltage Class: 230kV AC
 Facility Rating: 990 A (Primary Amps)
 Point of Origin: Solana Generating Station (to be operational in 2013).
 Point of Termination: Panda 230 kV Substation
 Length of Line: 20.2 Miles
 Type of Project: Under Construction
 Routing: The Solana generator intertie line will proceed from the new substation within the Solana site and head to the intersection of Painted Rock Dam Road and Powerline Road. The line will proceed north on the Painted Rock Dam Road alignment and then east on Watermelon Road. The Project will end at the existing APS Gila River Substation (Line Siting Case No. 99) located in Section 20, Township 5 South, Range 4 West, Gila Bend, Arizona.

Purpose of Project: This project is needed to serve APS's growing demand of nearly 300 MW per year, and to provide a clean, reliable, and price-stable resource to APS's customers.

Estimated Cost: Approximately \$15,000,000 (in 2012 Dollars)

Schedule:

Construction Start Date: December 20, 2011
 Planned In-Service Date: Summer 2013

Permitting Status: All permits in place: Certificate of Environmental Compatibility (CEC) granted on December 2008; Amendment of the CEC granted on November 17, 2011; County entitlements completed 2010; ADEQ Construction Permit; RCRA; County Construction Permit; Dust Control Permit; Flood Permit; NOI (Dept. of Agriculture); Owl Removal Permit (Fish & Wildlife); Town of Gila Bend Permit.

CEC Compliance Status: Construction Mitigation and Restoration Plan docketed on July 22, 2011; Compliance with CEC's Condition 15(a) docketed on November 17, 2011; Compliance

with CEC's Condition 15(b) docketed on November 2, 2011; Self Certification Letter docketed on Dec 1, 2011.

Exhibit 2

Solana Solar Project Facilities Study