

RE Papago Solar Gen-tie Project

Project Description

RE Papago LLC (Applicant) respectfully submits this application for a Certificate of Environmental Compatibility (CEC) for construction of the RE Papago Solar Gen-tie Project (Project). The Project is for a proposed substation and associated 500 kilovolt (kV) transmission gen-tie line in western Maricopa County, Arizona. The substation and 500-kV transmission line Project would connect with the Applicant's solar photovoltaic (PV) electricity-generating and energy storage facility (Solar Facility) that would be constructed in the vicinity. The Project would transmit clean and renewable electricity generated from the Solar Facility to the nearby existing Delaney Substation, which is owned and operated by Arizona Public Service (APS), and ultimately to the regional electric grid.

Project Location

The proposed Project is located in western Maricopa County, south of Interstate-10, and is approximately 5.5 miles west of the community of Tonopah, Arizona. The legal description is the southwest $\frac{1}{4}$ of Township 2 North, Range 8 West, Section 25 of the Gila and Salt River Baseline and Meridian, Arizona. The proposed Project would be located within the southeast corner of the Applicant's Solar Facility site on private land under site control by the Applicant (APN 506-31-006C). This parcel borders the Delaney Substation to the west and north. The proposed Project location is shown in **Figure 1**.

Transmission Gen-tie Line

The Project would consist of a 500-kV generation intertie electric transmission line (gen-tie line) that would be approximately 0.3 mile in length. The gen-tie line would consist of metal transmission towers, conductors, insulators, optical fiber cables, and safety equipment. The gen-tie line would connect ("tie-in") to APS's existing Delaney Substation, which is adjacent to the Project area, to bring solar-generated power to the nearby regional electricity grid.

The gen-tie line would be supported by up to four high-voltage support structures consisting of a combination of A-frame dead-end structures and either H-frame, 3-pole, or monopole structures. The number of support structures would be kept to the minimum needed based on potential engineering constraints. The support structures are anticipated to be approximately 126 feet in height but not more than 140 feet in height. Alignment of the gen-tie will likely be a linear connection to the Delaney Substation and not require the utilization of any turning structures. However, designs at this stage of the project development are preliminary and the final location of the proposed substation may be required to be shifted a few hundred feet away, which might necessitate the use of a turning structure. The likely, linear gen-tie configuration and substation location scenario is displayed in **Figure 2**.

For the gen-tie line connection, overhead structure foundations would be installed by excavating foundation holes to a depth of approximately 35 feet using a truck-mounted drill rig. The size of the footprint for construction of the pole foundation would be approximately 100 square feet. Poles and support structures would be delivered on a flat-bed trailer and hoisted into place by a crane. The annular space between poles and holes would be backfilled with concrete or soil. Conductors would be strung between poles with heavy-duty trucks.



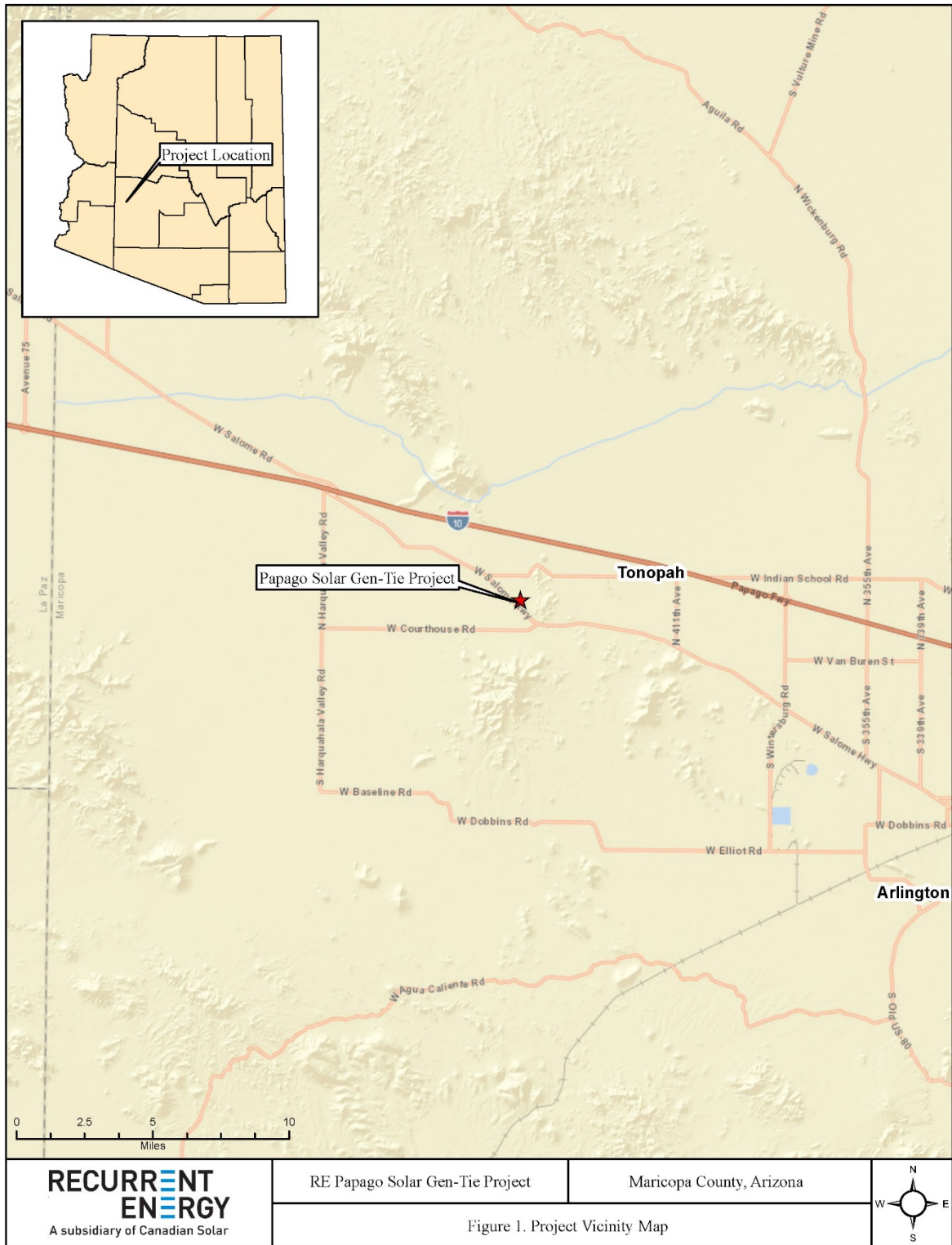


Figure 1. Project vicinity map

Substation

The Project would consist of a substation that would be located within an approximately 306- by 244-foot area (approximately 1.71 acres). The substation would be located just west of the existing Delaney Substation, as shown in **Figure 2**. The substation would receive electricity from consolidated intermediate voltage cables from the Solar Facility's collection system and would increase the voltage up to 500 kV via one high-voltage transformer bank consisting of up to three individual transformers. The substation area would include a control building enclosure that would be used for communication purposes and contain relays and supervisory control and data acquisition (SCADA) equipment. This building would be approximately 40 feet long, 12 feet wide, and 11 feet in height. Conceptual layouts of the Project substation are shown in **Figure 3**.

Electrical transformers, switchgear, and related substation facilities would be designed and constructed to transform medium-voltage power from the delivery system to a voltage of 500 kV and to transmit this power to the Delaney Substation via the gen-tie line (described below). The power would be transformed to 500 kV; therefore, high-voltage dead-end structures up to 140 feet in height may be required. The design and height of the dead-end structures would be refined as building permit applications are completed. Because support structures up to 140 feet in height would be required due to electrical design considerations, the Applicant is seeking a variance to Maricopa County's requirements that structures to support electrical transmission lines observe a maximum height of 120 feet (Article 1111.7 of the Maricopa County Zoning Ordinance).



Figure 2. Proposed substation and gen-tie line location map showing a straight connection to Delaney Substation.

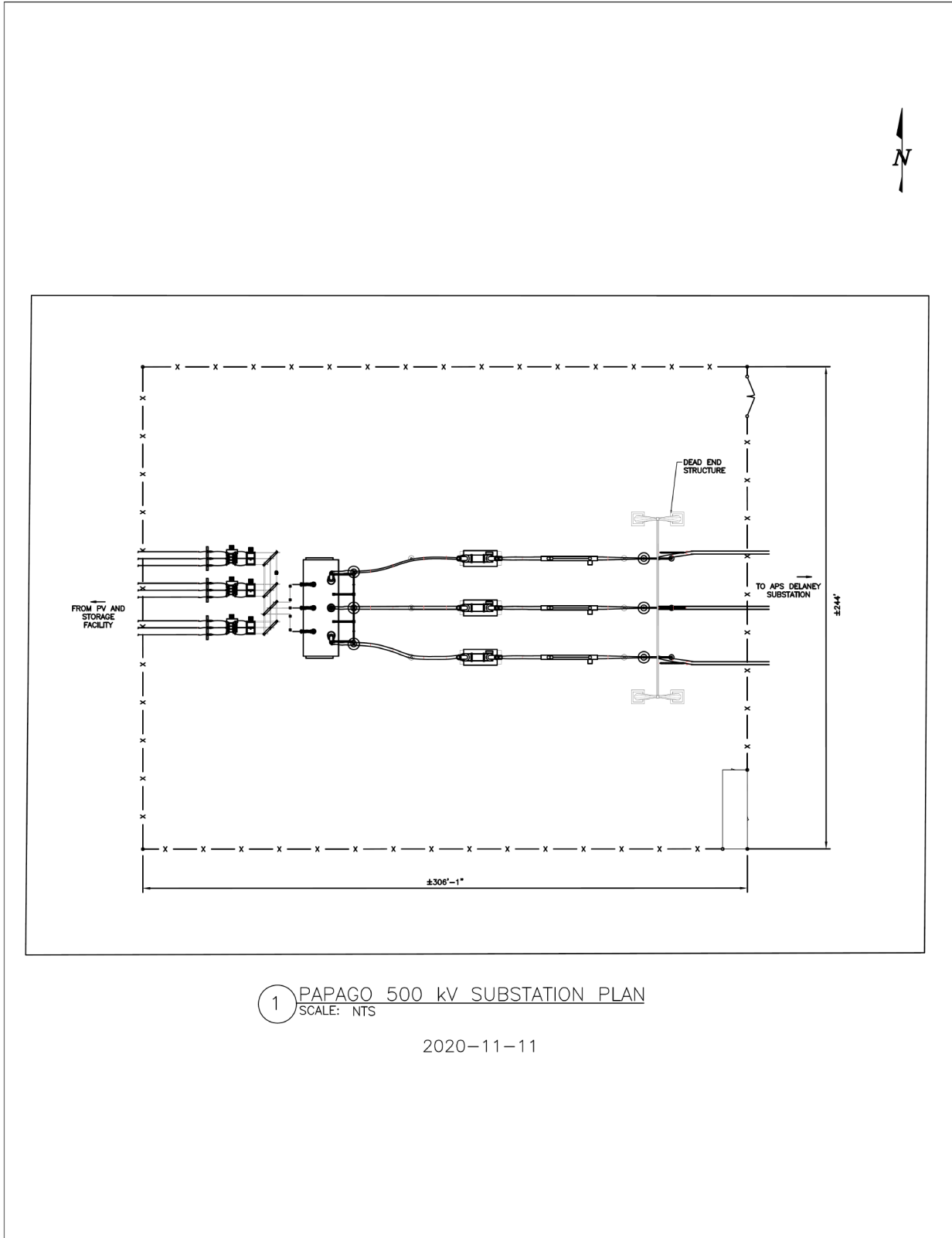


Figure 3. Conceptual Engineering Drawing of Project Substation