SOUTHLINE TRANSMISSION PROJECT

Project Objectives

Improve Reliability

Recent wildfires and winter storm-related outages have highlighted the **vulnerability of the electric transmission system** in the Desert Southwest. There are limited transmission connections between the southern New Mexico and El Paso, Texas area and the rest of the western United States transmission grid, creating reliability risks in the event of wildfires, storms, or other events. Additionally, the local infrastructure is aging.

Cracked 115-kV wood pole South of Phoenix
Credit: Western Area Power Administration FY2011 Ten Year Capital Program Meeting PowerPoint

Transmission line storm damage
Credit: Western Area Power Administration FY2011 Ten Year Capital Program PowerPoint

The lines in Arizona that the Southline Transmission Project would improve are decades-old wood pole H-frame systems whose deterioration poses reliability and maintenance concerns. If there are any disruptions in the existing regional transmission system, local utilities may not be able to meet energy demands. The Southline project would strengthen the existing electrical system by replacing outdated structures.

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Relieve Congestion

Due to **a lack of sufficient transmission capacity** in the Desert Southwest, local electric utilities are constrained in their ability to consistently access the most cost-efficient energy resources. The Southline Transmission Project team has worked closely with local utilities and other regional transmission providers since 2009 to ensure the Southline Transmission Project can meet local needs and improve the region's electric system. By enabling bidirectional use of power, the Southline Transmission Project will **relieve congestion**.

Sustain and Support Growth

The Desert Southwest is expected to experience **substantial long-term growth**. Local utilities have identified a need for additional transmission access to support the expected **increased demand for energy**.

Tucson, Arizona at night

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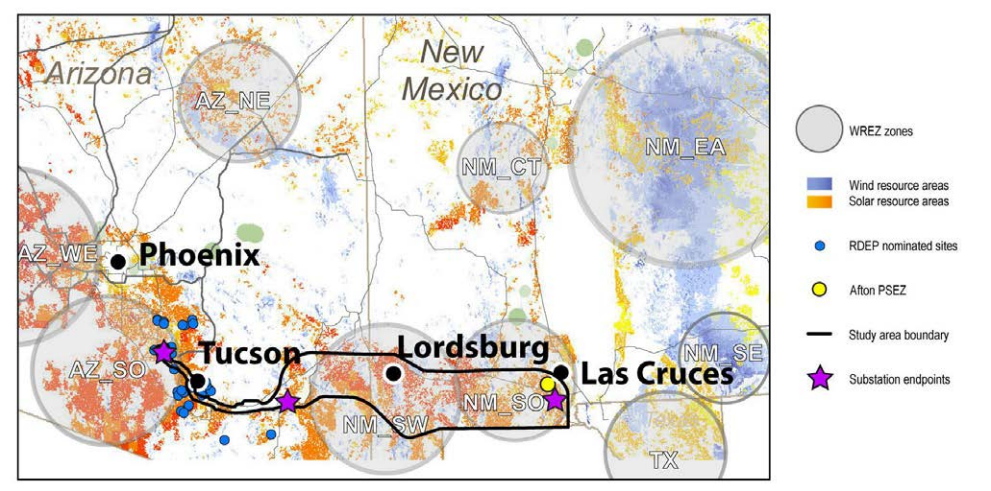
Project Objectives

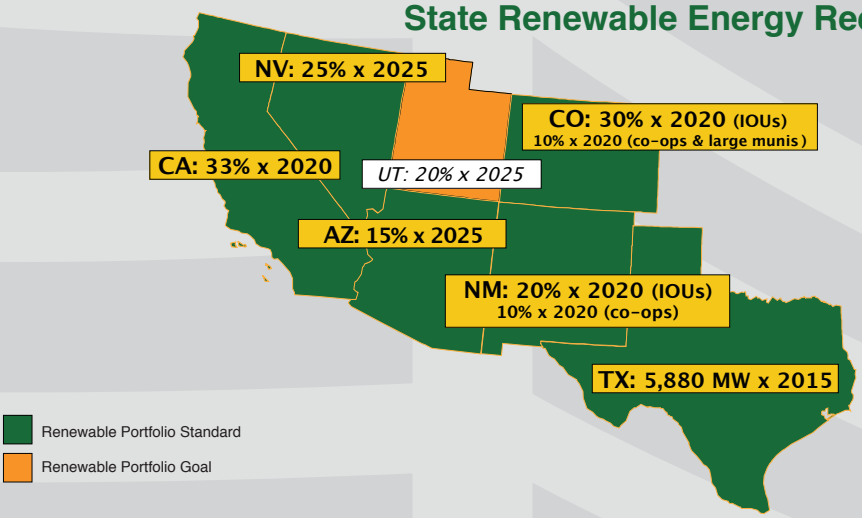
Facilitate Renewable Energy

The U.S. Department of Energy's National Renewable Energy Laboratory and the Western Governors' Association Western Renewable Energy Zones process have identified **great potential for solar and other renewable energy development** in the Southwest. The proposed Southline Transmission Project lies within some of the region's most promising renewable resource areas.



Renewable energy development has been hindered in the area largely because of a lack of transmission capacity. The Southline Transmission Project will facilitate the connection of renewable energy projects to the electric system, helping states in the Desert Southwest **meet renewable energy requirements.**

State Renewable Energy Requirements



State RPS Policies as Identified by the Database of State Incentives for Renewables & Efficiency, April 2014

While the Southline Transmission Project is not linked to the development of any particular energy generation projects, the study area includes multiple high-quality renewable resource areas where generation project development is likely.

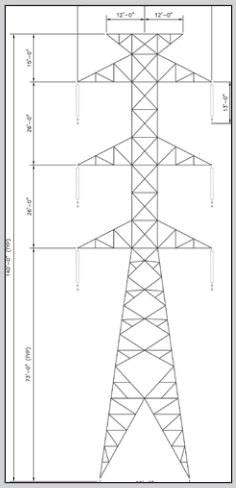
SOUTHLINE TRANSMISSION PROJECT

Southline Transmission Project Design

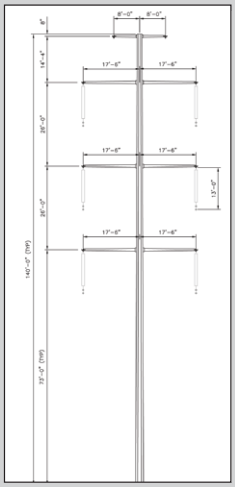
The Southline Transmission Project consists of two proposed sections:

Afton-Apache Section (New Build Section)

The Afton-Apache section will be a new transmission line, connecting existing substations at Afton (located south of Las Cruces, New Mexico) and Apache (located south of Willcox, Arizona).



Potential Afton-Apache transmission structure

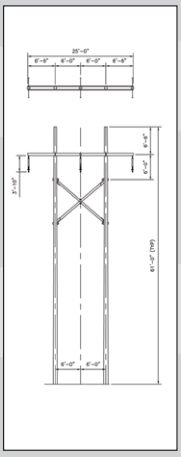


Potential Afton-Apache transmission structure

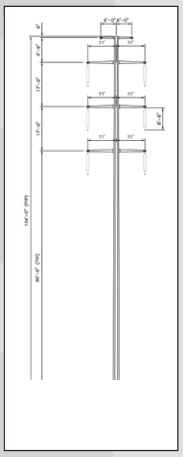
Afton-Apache Section: Double-circuit 345kV	
Anticipated Line Length	240 miles
Type of Structure	Self-supporting lattice towers or tubular steel poles
Approximate Structure Height	110-170 feet
Approximate Structure Spacing	1000-1400 feet
Anticipated Number of Structures Per Mile	4-8 (depending on structure type, terrain, and other factors)
Anticipated Right-of-Way Width	200 feet (larger ROW may be required in some site-specific locations to accommodate rough terrain or long spans)

Apache-Saguaro Section (Upgrade Section)

The Apache-Saguaro section will be an upgrade and rebuild of existing transmission lines connecting existing substations at Apache and Saguaro (located northwest of Tucson, Arizona).



Existing Apache-Saguaro transmission structure



Potential Apache-Saguaro transmission structure

Apache-Saguaro Section: Double-circuit 230kV	
Anticipated Line Length	120 miles
Type of Structure	Tubular steel poles
Approximate Structure Height	100-140 feet
Approximate Structure Spacing	700-1100 feet
Anticipated Number of Structures Per Mile	5-8 (depending on structure type, terrain, and other factors)
Anticipated Right-of-Way Width	150 feet

SOUTHLINE TRANSMISSION PROJECT

Siting Philosophy & Planning

The development of the Southline Transmission Project's route is guided by an approach to minimize impacts by following existing corridors wherever possible. This approach includes:

- Working within or next to existing corridors (such as existing transmission lines, highways and roads, natural gas pipelines, and railroads)
- Avoiding sensitive environmental/cultural areas (e.g., wilderness areas, sensitive riparian zones, and other areas of environmental or cultural concern) during site selection
- Incorporating information from existing federal and state energy and land use planning efforts
- Working closely with interested stakeholders and land managers to understand and, where possible, avoid or minimize impacts to sensitive areas
- Considering sensitive resources during engineering design, construction, and future operations and maintenance

Photo credit: ***Ken Lund***

Photo credit: ***Wesley Fryer***

SOUTHLINE TRANSMISSION PROJECT

DEIS Project Alternatives