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Black Forest Partners Comments on 12216 TTIG Workshop & Southline Transmission Project Presentation

Additional submitted attachment is included below.

Doug Patterson <doug@blackforestpartners.com>

RETI TTIG 1/22/16 Workshop--Black Forest Partners Comments

Doug Patterson <doug@blackforestpartners.com> Sun, Jan 24, 2016 at 3:08 PM
To: Doug Patterson <doug@blackforestpartners.com>

RETI TTIG 1/22/16 Workshop

15-RETI-02

Black Forest Partners Comments

Questions for stakeholders:

1. Is the information presented today the type of information needed to inform the RETI 2.0 Process?

2. What other information and sources of information should the TTIG turn to?

3. What relevant information can you provide?

4. How does your proposal support/improve renewable integration in California and across the West?

Black Forest Partners is a California based investment and development firm focused on transmission, storage and efficiency. Black Forest is an ITDO member of the WestConnect Planning Management Committee, and the project manager of the Southline Transmission Project (Southline).

Black Forest Partners commends the RETI Transmission Technical Input Group (TTIG) for the valuable information provided and discussed at the 1/22/16 workshop.

Black Forest appreciates the opportunity to provide input, and offers the following comments regarding the TTIG objective to “Compile transmission planning information on potential WECC-wide system reinforcements that may provide or improve access to renewable generation or to integration resources,” and how they might help advance RETI 2.0 Objectives to:

“help meet statewide GHG and renewable energy goals. Explore combinations of renewable generation resources in California and throughout the West that can best meet goals. Identify land use and environmental opportunities and constraints to accessing these resources. Build understanding of transmission implications of renewable scenarios, and identify common transmission elements.”

In considering potential out of state resources as an option to meet statewide goals, the TTIG was presented with a number of large-scale inter-regional transmission proposals.

The TTIG may also want to consider how coordinating with the existing, planned, and proposed neighboring regional system could best be leveraged and improved to meet potential mutual inter-regional needs.

In the same way that existing transmission capability was evaluated inside California to account for existing and planned reinforcements, it might be instructive to gather information and evaluate to what extent capacity in neighboring regional systems could be utilized and reinforced to optimize benefits, while minimizing costs and environmental impacts.

Please consider including the Southline Transmission Project in TTIG's compilation of potential WECC-wide reinforcements that may provide or improve access to renewable generation or to integration resources. Southline, in combination with a number of recently completed, planned and proposed projects in the WestConnect region might provide significant benefits with low costs, and minimized environmental impacts.

The Southline Transmission Project would connect the existing New Mexico and Arizona systems, creating up to 1,000MW of bi-directional capability. With Southline, the existing system could be used to access and deliver high quality renewable resources to California at Palo Verde, Mead and other interfaces. Southline would improve regional reliability and would provide an eastward export outlet for excess California generation. Southline also interconnects with multiple existing stations with access to multiple existing thermal generators, which could be used to provide operational support to California through firming and resource capacity support. Finally, by upgrading existing lines and paralleling existing linear corridors, Southline would provide these benefits with minimal environmental impacts.

Southline is at an advanced stage of development. A Final EIS was published in November 2015, Records of Decision from BLM & Western Area Power Administration are expected in Q1 2016, an Accepted WECC Phase 3 Rating was granted in March 2015, and FERC approved a request for negotiated rate authority and a proposed open solicitation process for the project's capacity will begin in Q1 2016.

As TTIG considers out of state resources, it may be useful to collect information and compare alternate transmission solutions across a full range of factors including benefits, costs, risks and environmental impacts.

Incremental reinforcements, like Southline, could help provide options to access and improve integration of desired resources, with lower risk, lower costs, and fewer environmental impacts than other proposals.

We would be happy to provide TTIG with additional information, if desired.

Thank you for the opportunity to participate.

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SOUTHLINE TRANSMISSION PROJECT

Southline Transmission Project

January 2016

Background

SOUTHLINE TRANSMISSION PROJECT

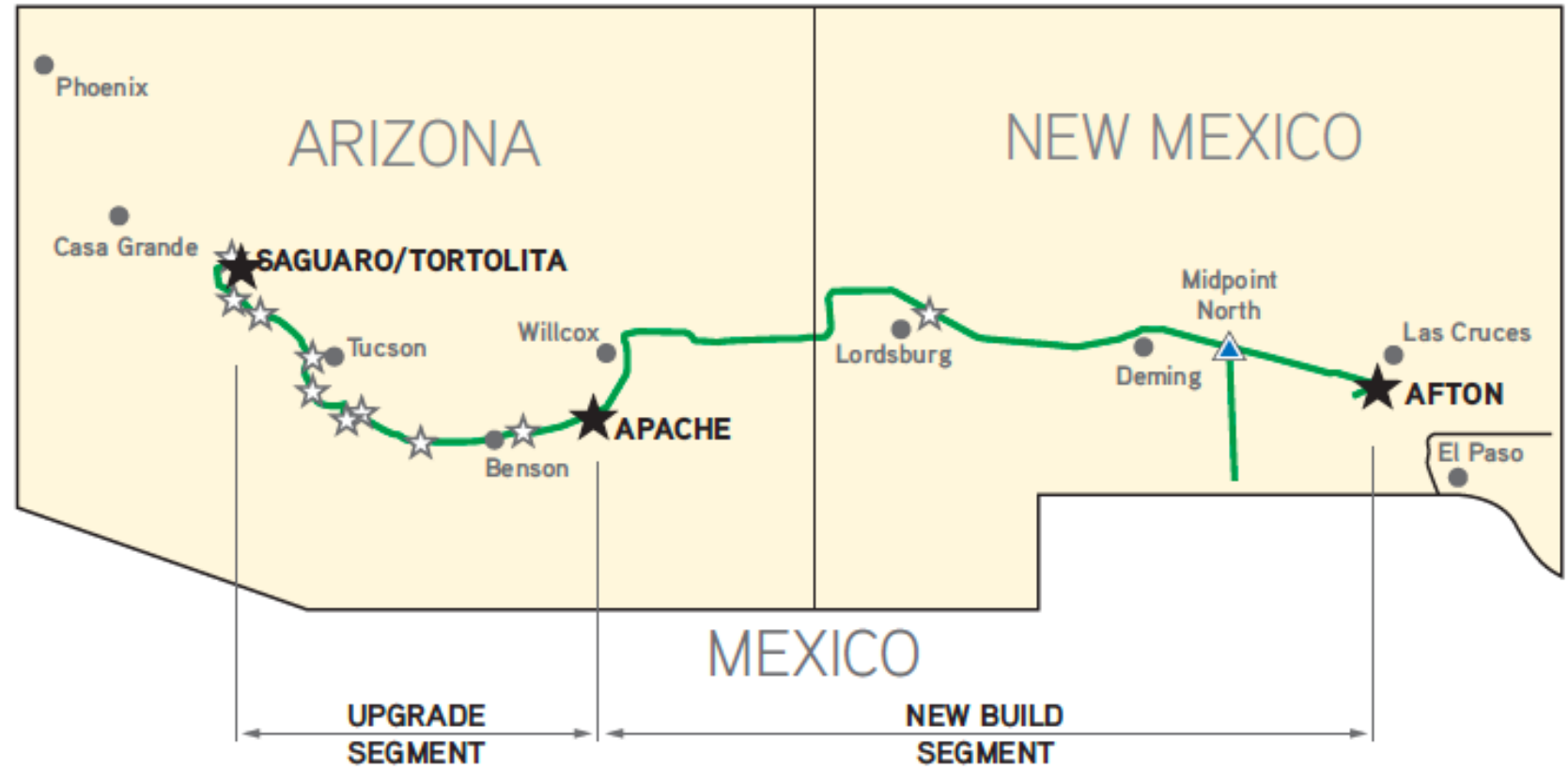
- Southline Transmission, L.L.C., a subsidiary of Hunt Power, is the sponsor of the Southline Transmission Project.
  - Hunt Power develops and invests in entrepreneurial electric and gas opportunities, and is part of a larger privately-owned group of companies managed by the Ray L. Hunt family that engages in oil and gas exploration, refining, power, real estate, ranching and private equity investments.
  - Southline Transmission, L.L.C. is a passive investment entity that will hold project assets and rights, and will lease them to SU FERC, L.L.C.
  - SU FERC, L.L.C., is a wholly-owned subsidiary of Sharyland Utilities, L.P., a Texas-based electric utility headquartered in Dallas, Texas. SU FERC has been granted market based rate authority by FERC and will hold the FERC Open Access Transmission Tariff for capacity rights leased from Southline Transmission, L.L.C..
- Black Forest Partners, L.P. serves as the Project Manager for Southline Transmission, L.L.C.
  - Black Forest is a private investment and development firm focused on electric infrastructure including transmission, efficiency and storage

Project Overview

SOUTHLINE TRANSMISSION PROJECT

- Two Segments, approximately 360 Miles
  - New Build — 345kV double-circuit Afton-Apache, 240 Miles
  - Upgrade — 230kV double-circuit Apache-Saguaro/Tortolita, 120 Miles
- Meet Multiple Needs
  - Improve Reliability
  - Relieve Congestion
  - Support Growth
  - Facilitate Access to Renewable Resources
- Minimize Environmental Impacts
  - Upgrades existing Western Area Power Administration 115kV lines and follows existing corridors to minimize impacts
- Option for Improved Regional Coordination
  - Multiple interconnections to existing & planned system
  - Bi-directional capability: approximately 1,000 MW (east to west), 400 (west to east)

Route Overview Map



The Project will have a right-of-way up to 200 feet wide.

LEGEND

Agency Preferred Route

Substation End Point

Intermediate Substation Location

Proposed Substation Location

City/Town

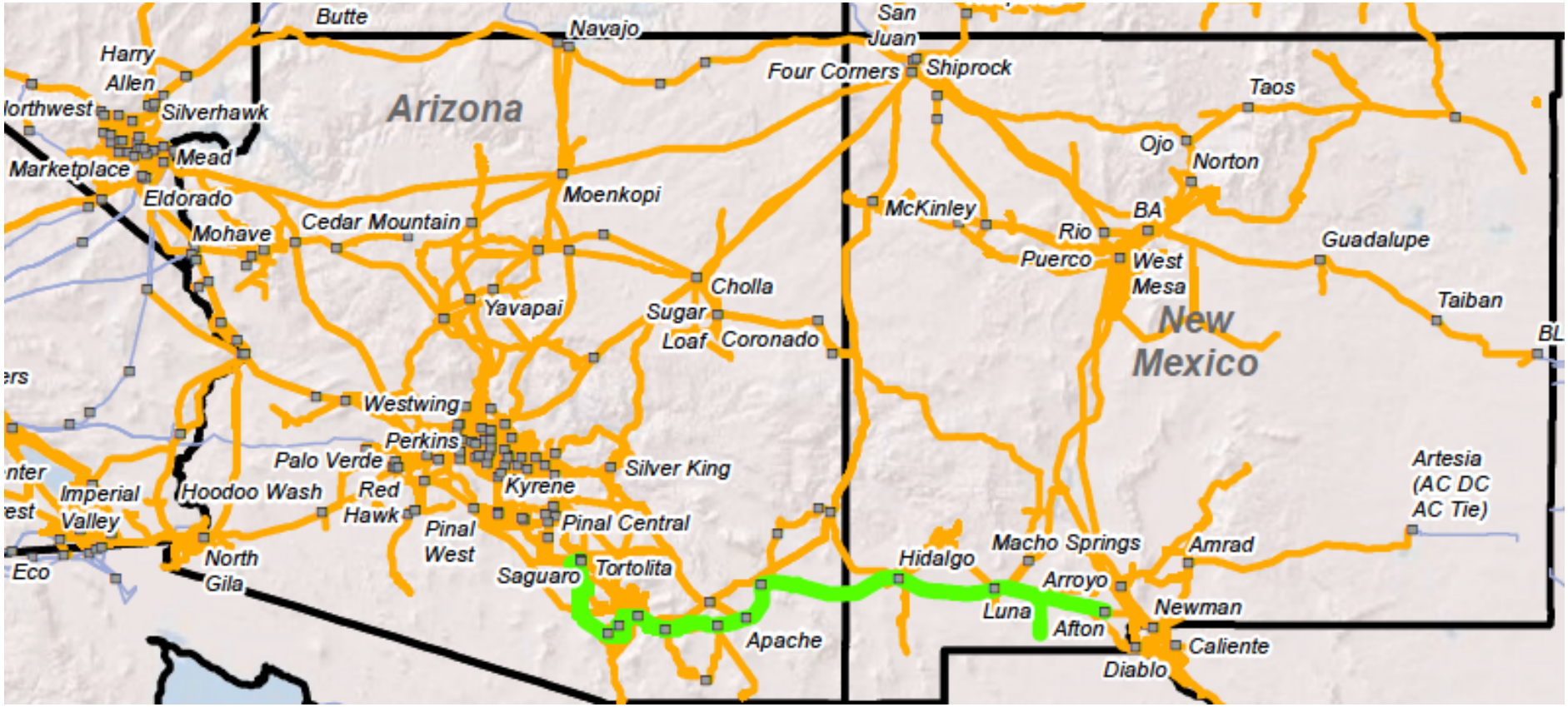
0 12.5 25 50

MILES

N

WestConnect Overview Map

SOUTHLINE TRANSMISSION PROJECT



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community
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file: WestConnectPlaningCommitteeSouthLine
Note: USE, Inc. makes every effort to produce high quality map(s) for its clients; however, the overall accuracy of this map is only as good as the best publicly available data obtained by USE, Inc. at the time of the map's construction.
Source: Ventyx Velocity Suite

WEST CONNECT

0 50 100 Miles
0 50 100 Kilometers

Proposed Southline Project

Transmission Network

- Substation
- Other Existing System (>230kV)
- WestConnect Planning Region (all voltages)

WestConnect Planning Management Committee Members

USE Utility System Efficiencies, Inc.

Figure 1
Drawn By: M. Wood
11/14/2015

Updates

SOUTHLINE TRANSMISSION PROJECT

Environmental / Permitting

- **FEIS Published Nov 6, 2015**

http://www.blm.gov/nm/st/en/prog/more/lands_realty/southline_transmission.html

- ROD Expected Q1 2016

- BLM & Western joint lead agencies for NEPA
- Extensive public outreach, including Pre-NEPA open houses
- Department of Defense conflicts minimized
- Utilizing existing ROW minimizes impacts

Technical Planning

- WECC Phase 3 Accepted Path Rating:
  - East-to-West 1038MW Afton to Apache
  - East-to-West 1000MW Apache to Saguaro/Tortolita
  - West-to-East 430MW Saguaro/Tortolita to Apache (715MW if Tucson-Oracle re-conductered)
  - West-to-East 971MW Apache to Afton
- Bi-directional usage and multiple on and off-ramps provides benefits throughout the project corridor
- Project size consistent with existing system and planned upgrades

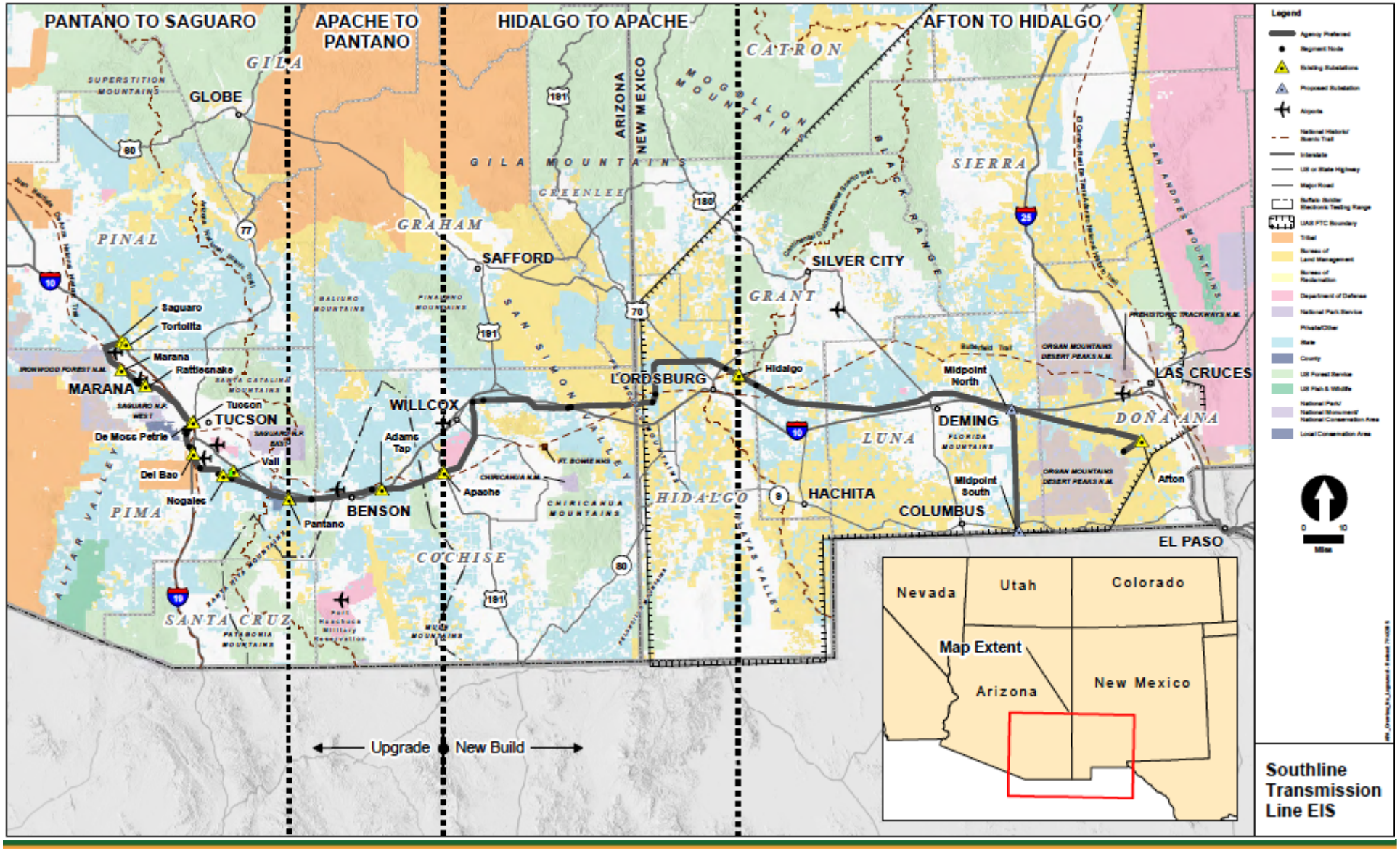
Initial Regional Planning	2009
WECC Phase 2A	2012
WECC Phase 2B	2013
Entered WECC Phase 3	**2015**

FERC

- Filed Petition for Declaratory Order May 2015
- FERC Granted Declaratory Order September 2015
- **Expect to Initiate Open Solicitation in Q1 2016**

FEIS Agency Preferred Route Map

SOUTHLINE TRANSMISSION PROJECT



FEIS Mileage Route Summary

SOUTHLINE TRANSMISSION PROJECT

Mileage By Segment

New Build Segment	BLM	State	Private	Other	Total
Parallel Existing	68	66	63	0.0	196
New Corridor	32	10	7.3	0.0	49
Total	99.7	76	70	0.0	246

Upgrade Segment	BLM	State	Private	Other	Total
Upgrade Existing	0.6	52.8	62	4.2	119
New Corridor	0	0.6	1	0	2
Total	0.6	53.4	63	4.2	121

Total project	BLM	State	Private	Other	Total
Upgrade/Parallel Existing	68	119	124	4	315
New Corridor	**32**	**11**	**8**	**0**	**51**
Total	100	129	133	4	367

Mileage By State

New Mexico	BLM	State	Private	Other	Total
Parallel Existing	49	42	39	0.0	131
New Corridor	32	10	7	0.0	49
Total	81.6	52	47	0.0	180

Arizona	BLM	State	Private	Other	Total
Upgrade/Parallel Existing	19	77	85	4.2	185
New Corridor	0	1	1	0	2
Total	18.7	77.3	86	4.2	186

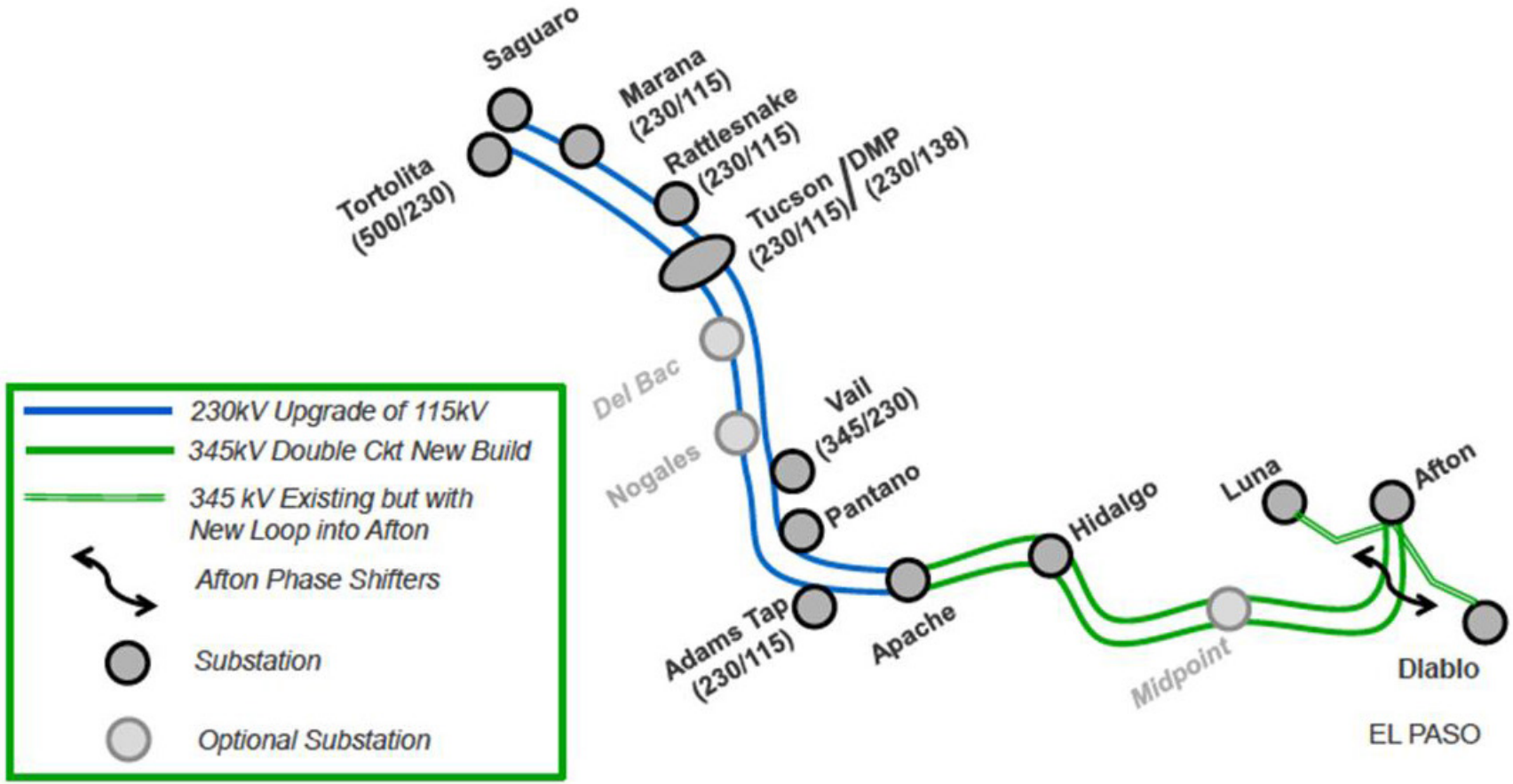
Total Project	BLM	State	Private	Other	Total
Upgrade/Parallel Existing	68	119	124	4	315
New Corridor	**32**	**11**	**8**	**0**	**51**
Total	100	129	133	4	367

- **More than 85% of FEIS Agency Preferred Route Parallels or Upgrades Existing Corridor**
- **Only 8 miles (2%) of FEIS Route is a New Corridor on Private Lands**

Source: Southline FEIS

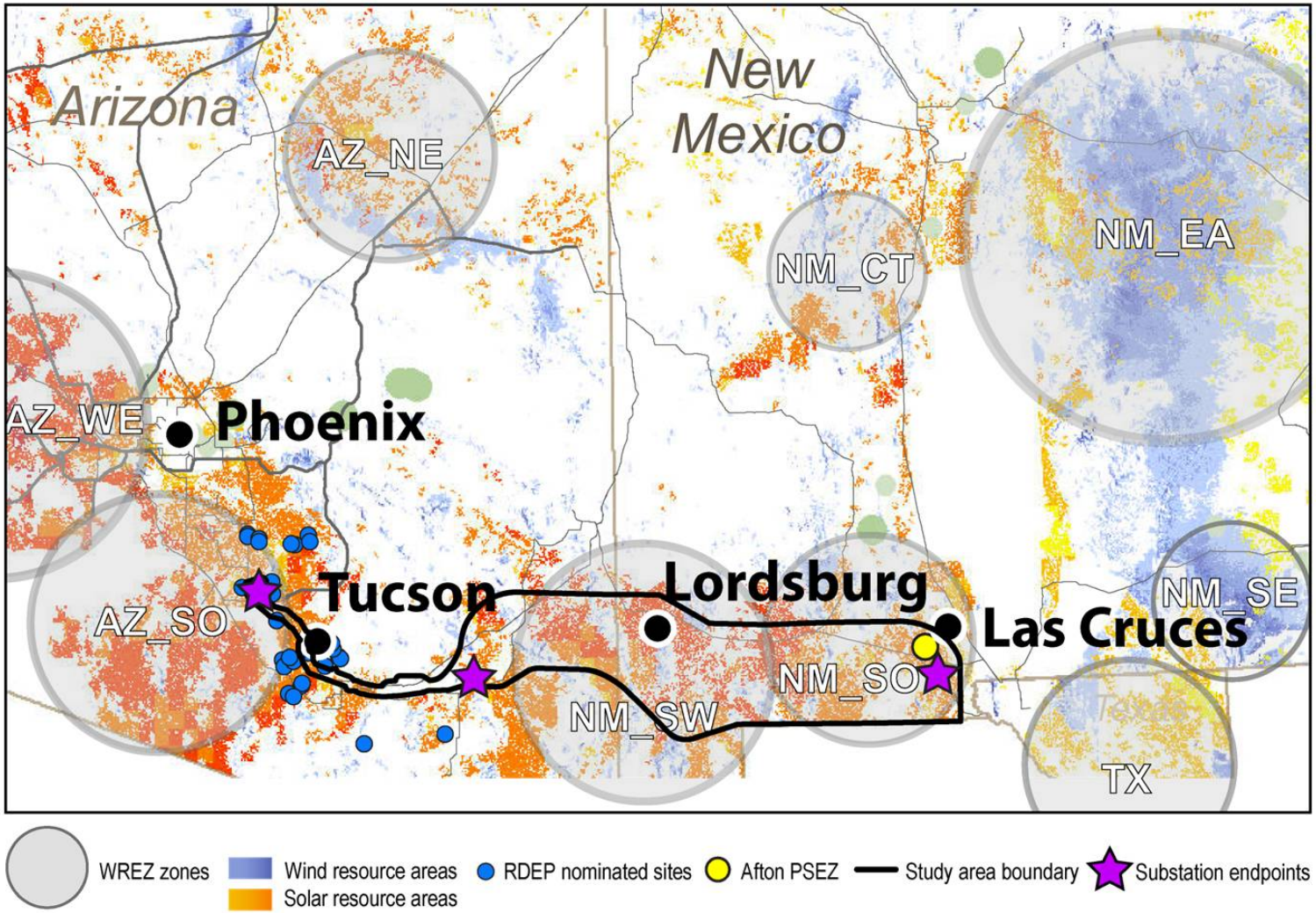
Technical Sketch

SOUTHLINE TRANSMISSION PROJECT



Renewable Energy Resources

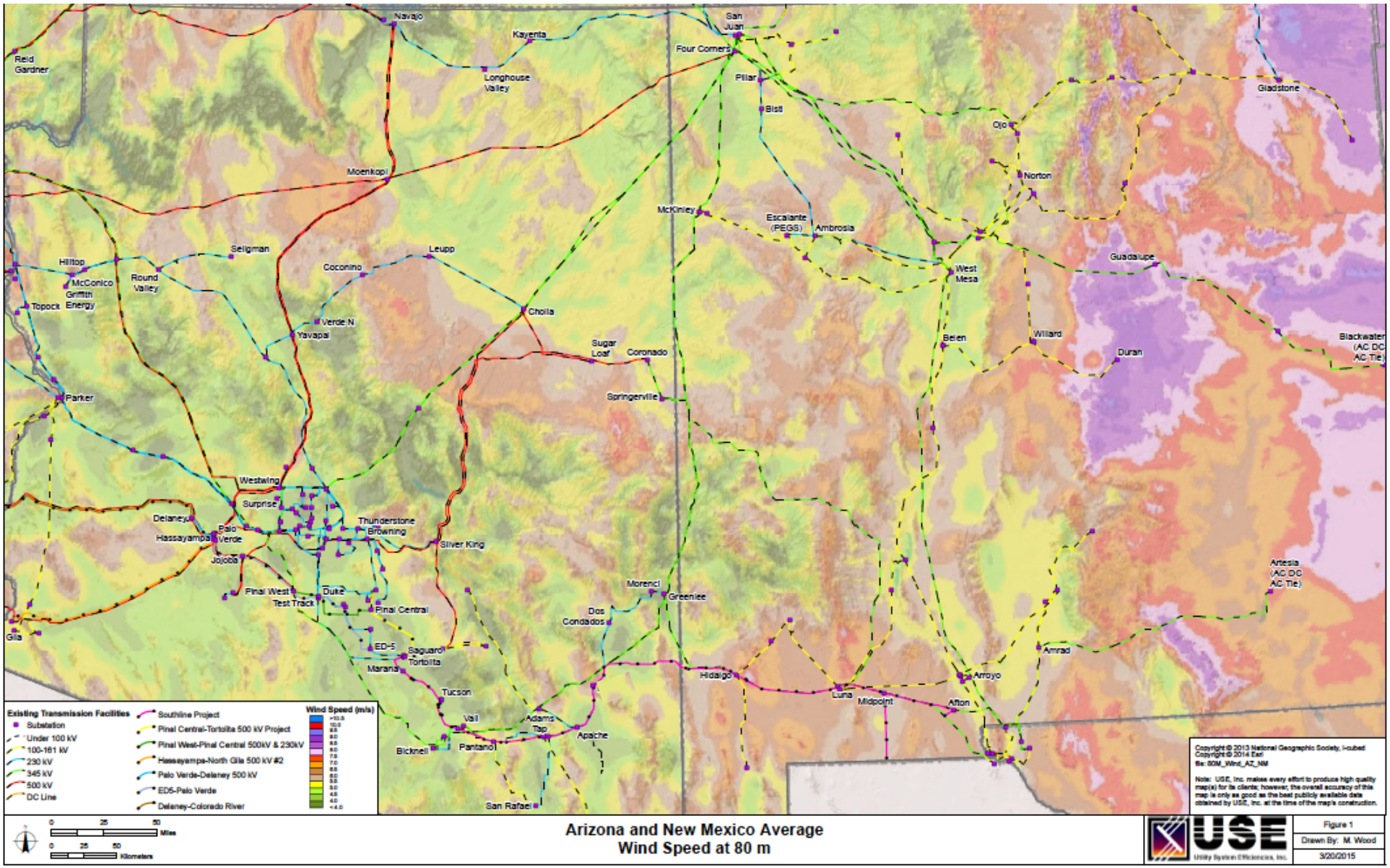
SOUTHLINE TRANSMISSION PROJECT



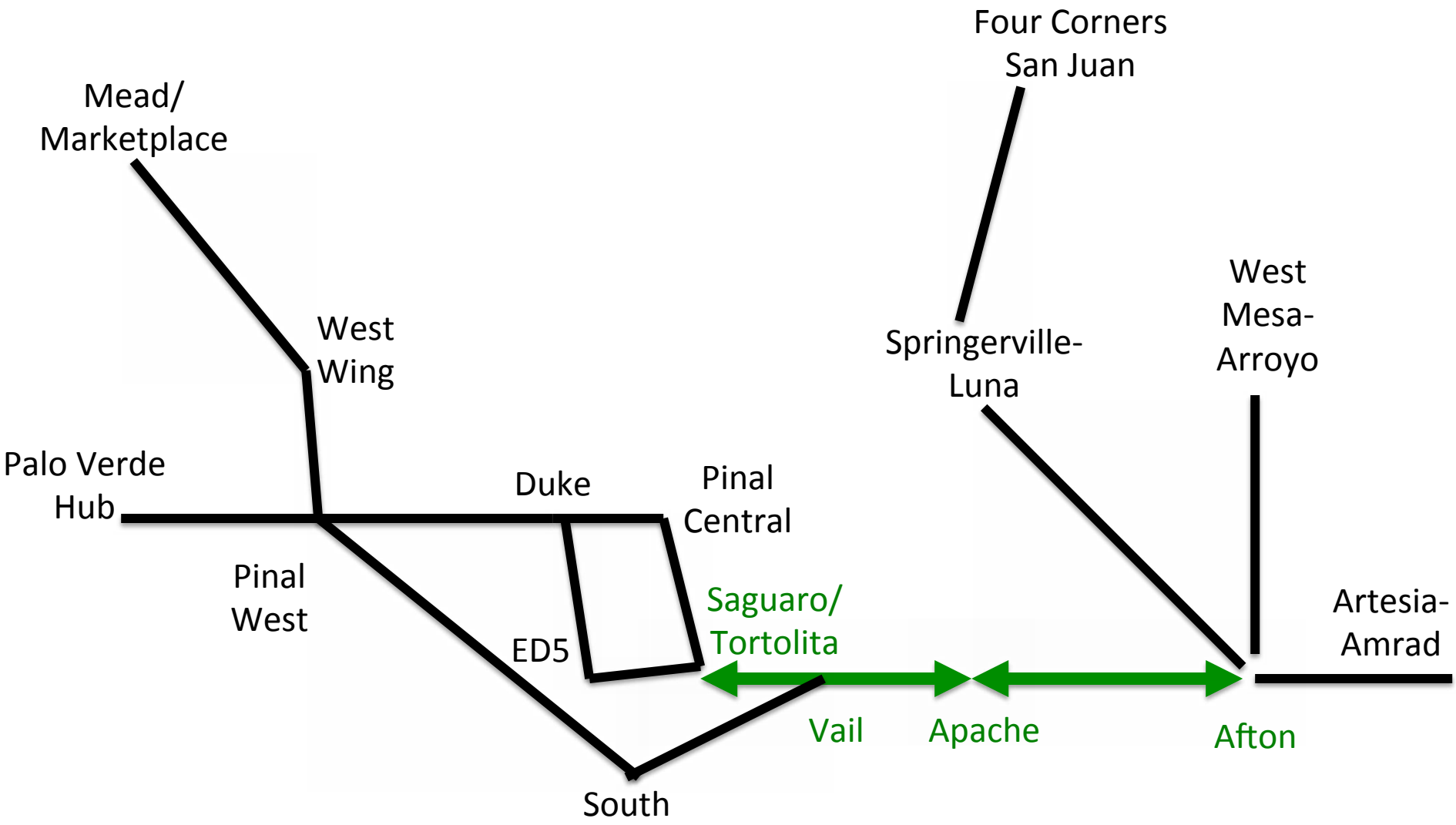
Source: WGA WREZ , BLM Solar PEIS, BLM Restoration Design

AZ & NM Wind, Existing System and Southline

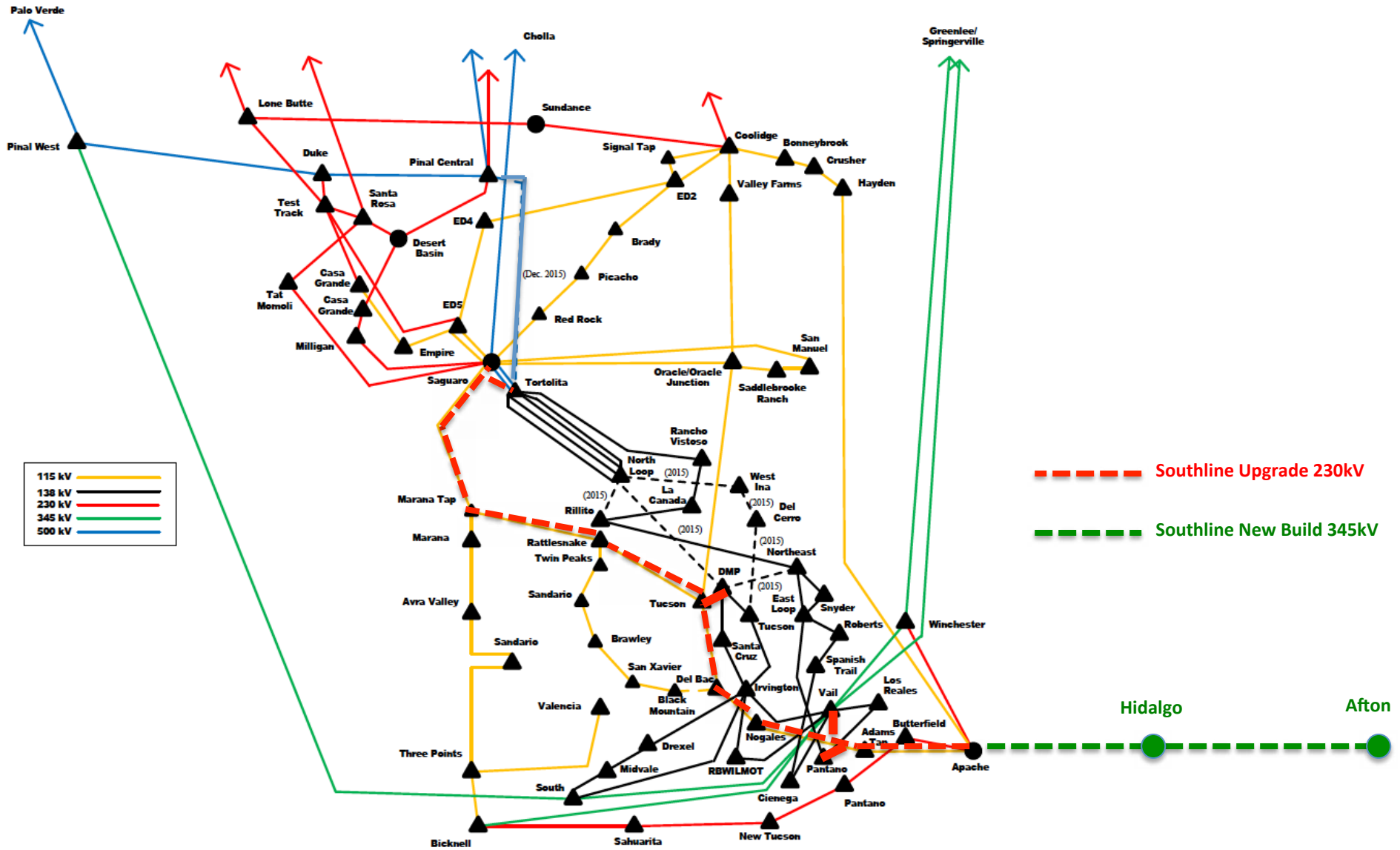
SOUTHLINE TRANSMISSION PROJECT



Potential Paths to Southline & Markets

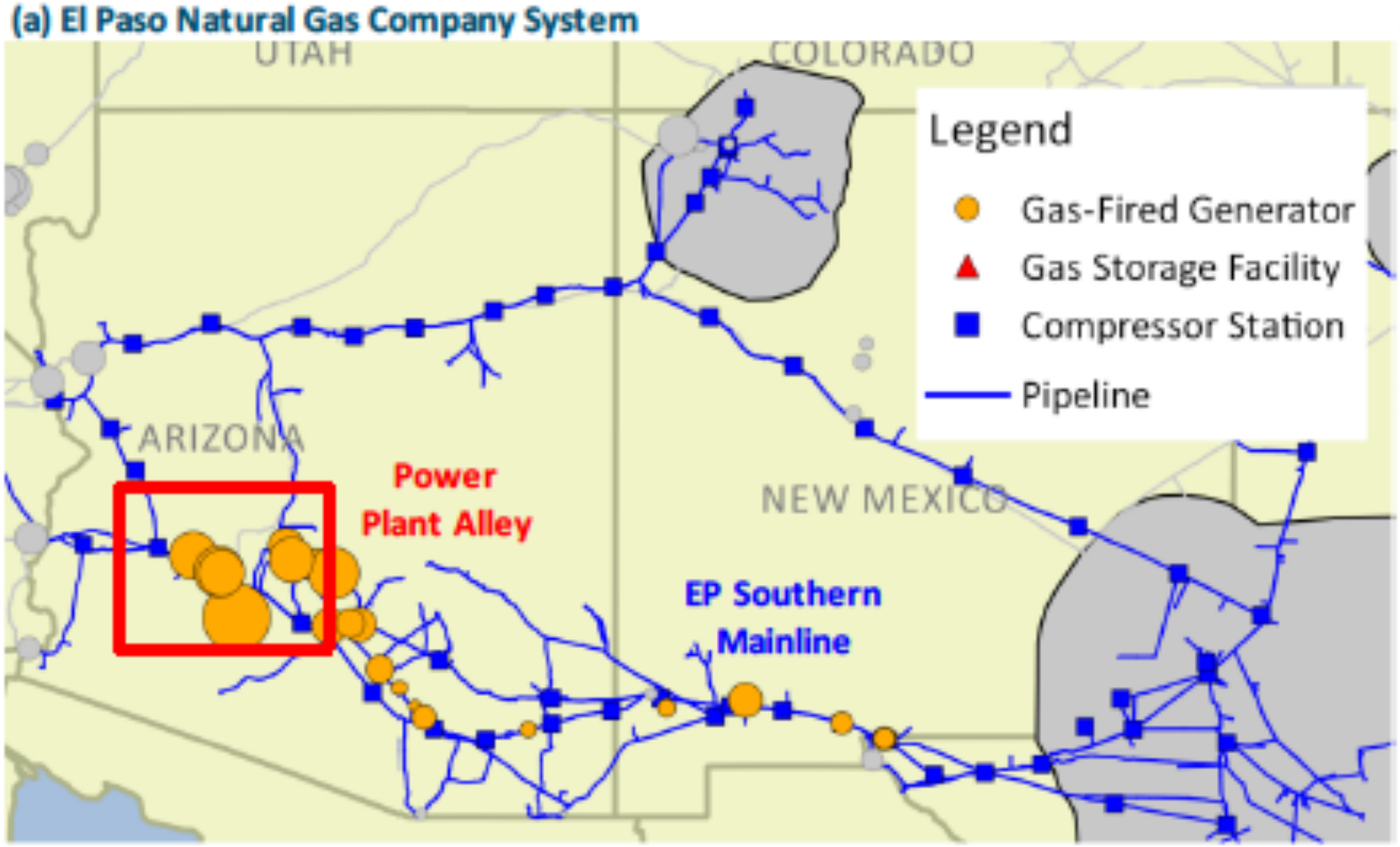


Existing Central AZ System & Southline



Source: SWAT

Gas-Electric System Interface



- Southline Parallels El Paso Southern Mainline and is "upstream" of Arizona & Southern CA supply
- Studies (e.g. E3) indicate increased regional coordination and re-dispatch can mitigate gas supply risks

Source: E3

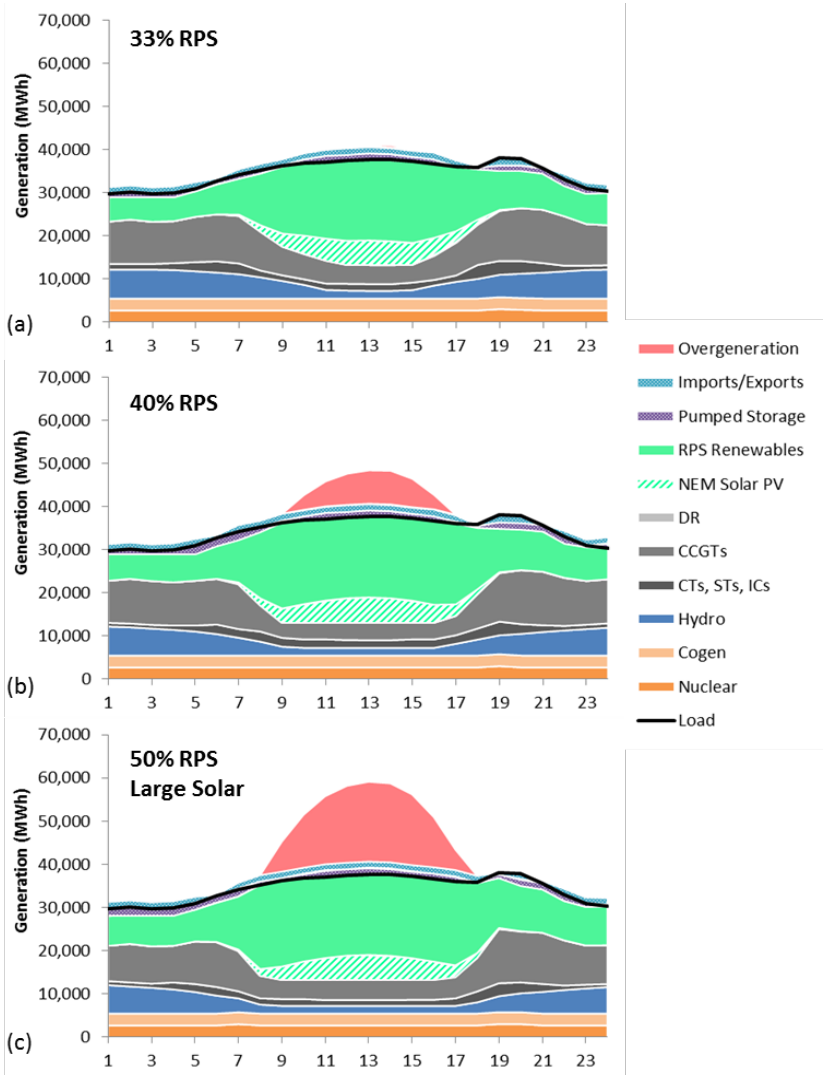
Overgeneration Challenges & Opportunities

SOUTHLINE TRANSMISSION PROJECT

- **Chart shows increasing overgeneration in CA above 33%**
  - Overgeneration is very high on some days under the 50% Large Solar case
  - Fossil generation is reduced to minimum levels needed for reliability
- **CAISO neighboring trading hubs are likely to absorb some of this overgeneration, which will drive down prices in hubs like Palo Verde**

Networked, bi-directional paths like Southline could provide flexibility for CA entities to manage excess generation, and provide opportunities for others to access low prices

Example April Day



Source: Energy + Environmental Economics

Summary

SOUTHLINE TRANSMISSION PROJECT

- Improves Reliability
- Facilitates Access to High Quality, Diverse Renewable Resources
  - Leveraging existing system provides compelling economic option
- Congestion Relief Provides Options for Improved Regional Coordination
  - Multiple Interconnections to Existing & Planned System
  - Flexible, Two-Way Usage Creates Options:
    - Increase Dispatch Flexibility & Optimize Use of Existing Assets
    - Manage Peak Capacity Needs
    - Help Integrate Intermittent Resources
    - Manage Over-Generation
    - Access Attractive Market Sources

Contact

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