

Exhibit 1 – Arizona Transmission System Map

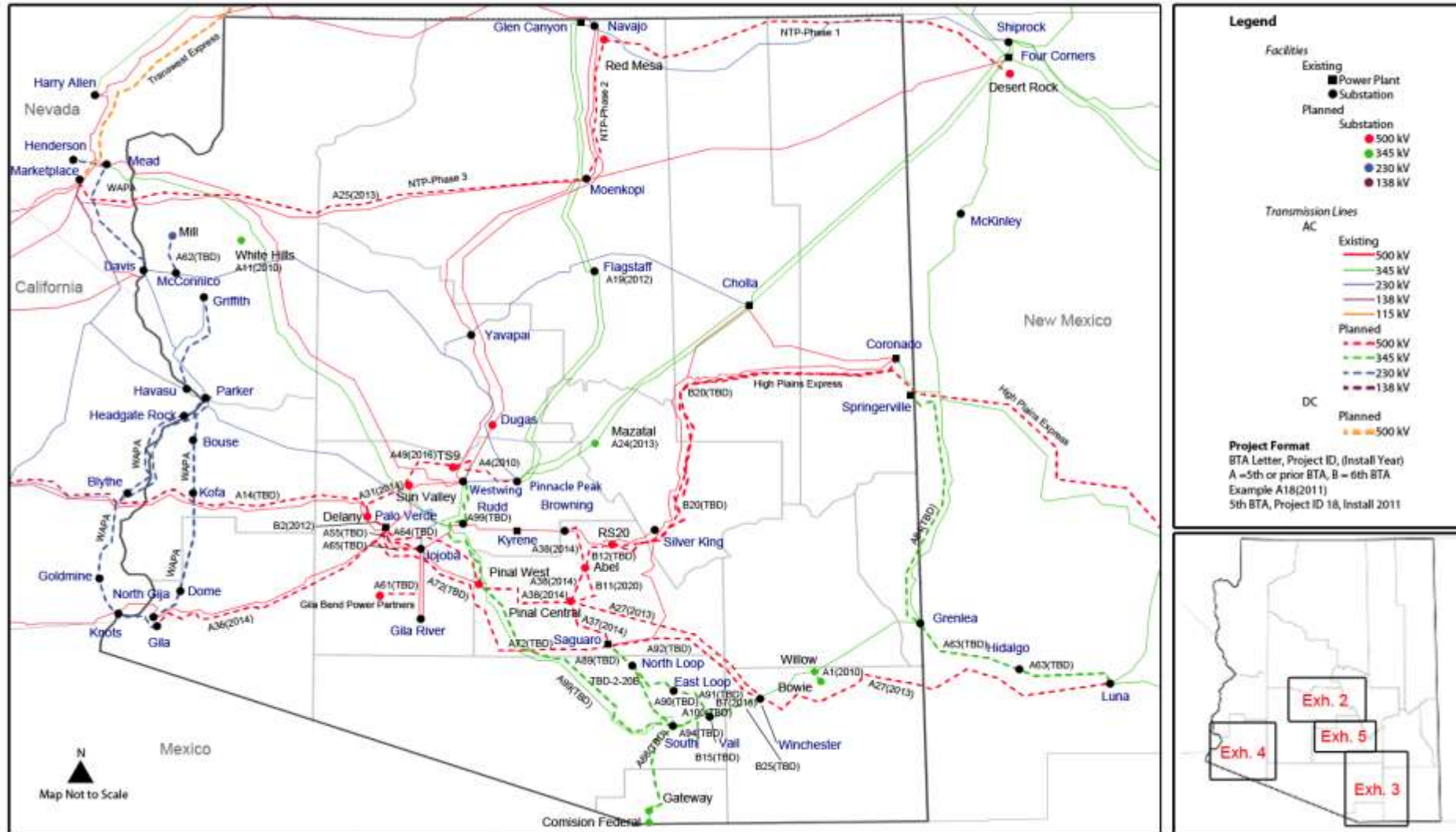


Exhibit 2 – Phoenix Metro Transmission System Map

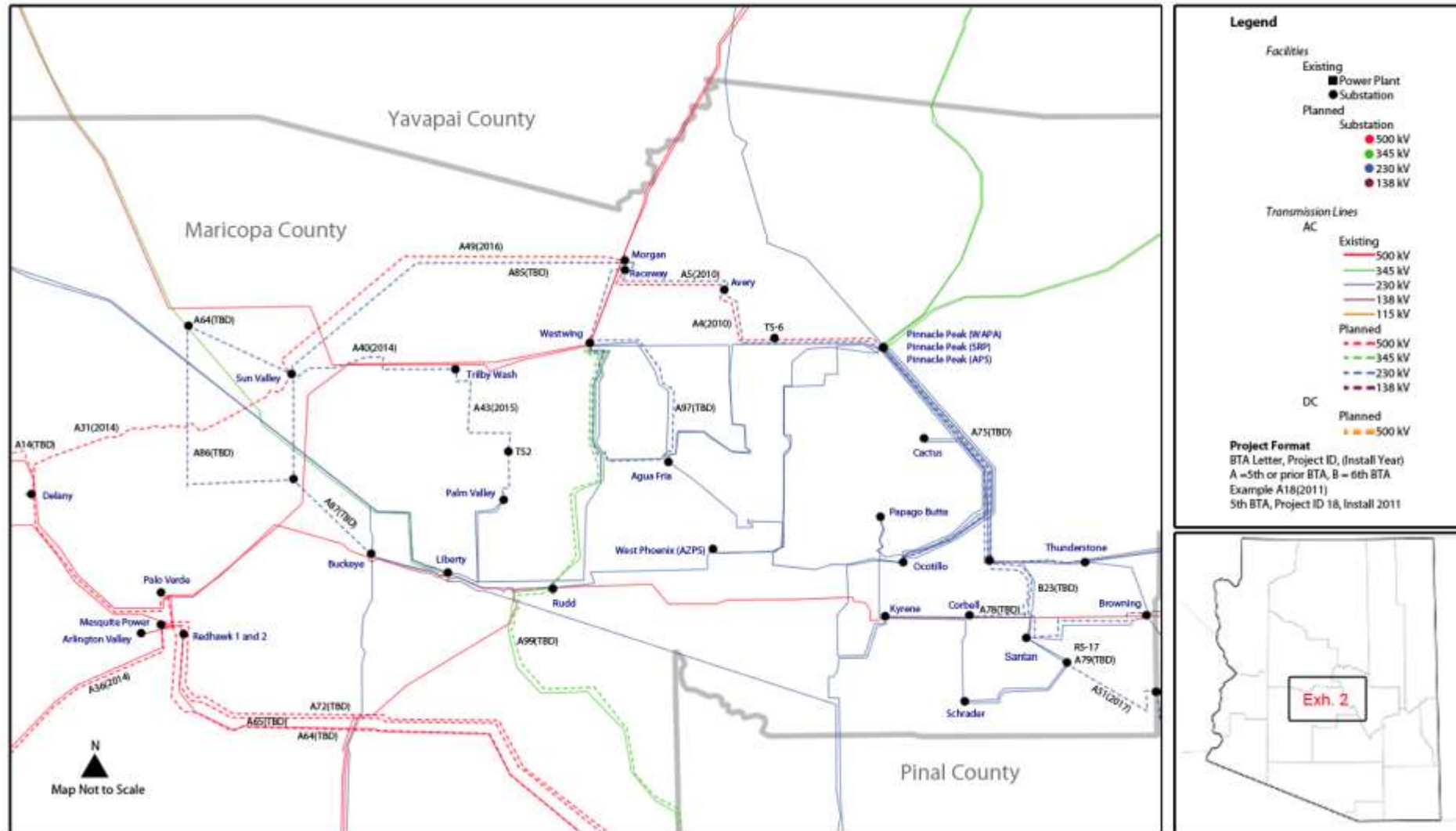


Exhibit 3 – Southeastern Transmission System Map

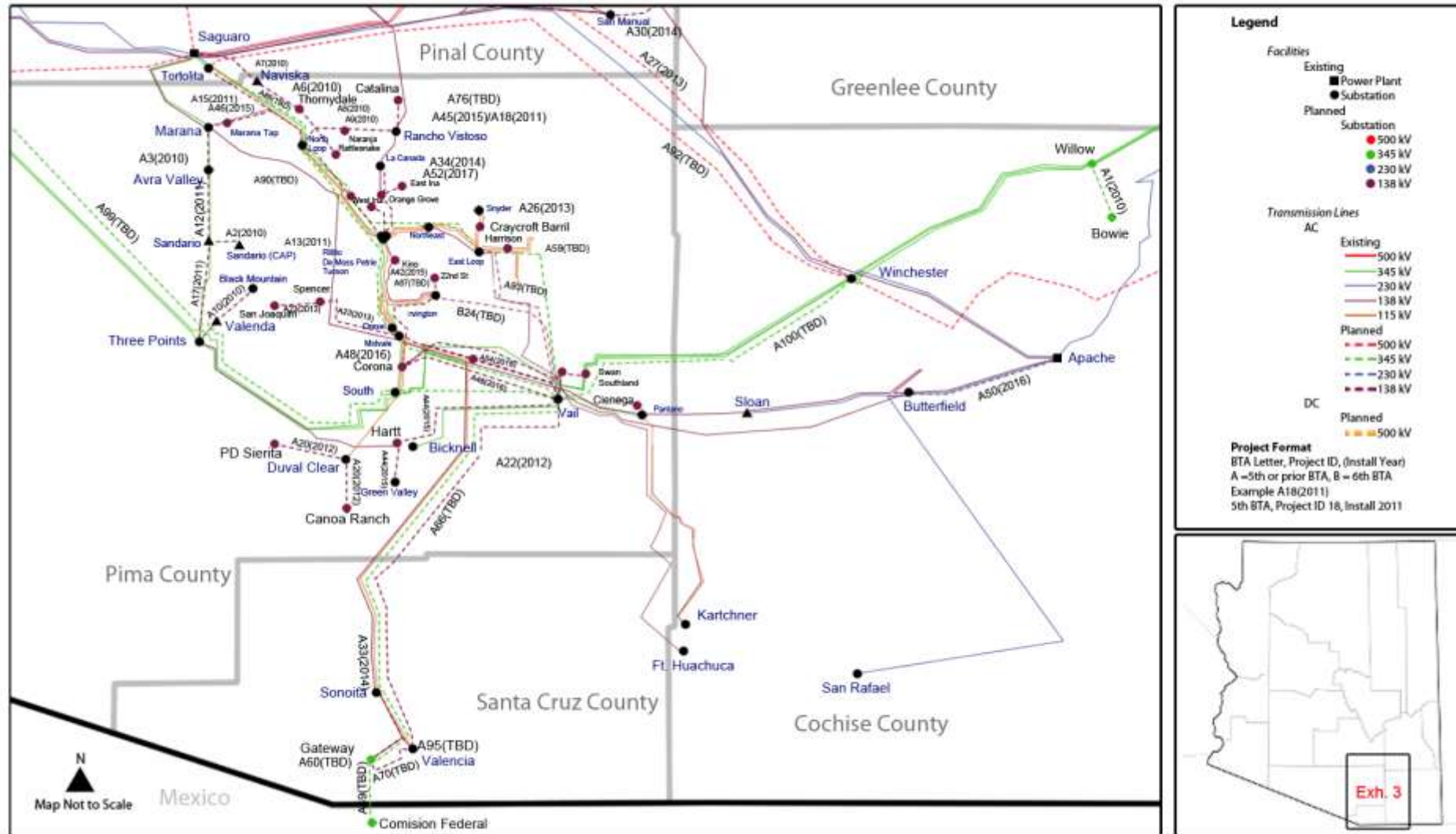


Exhibit 4 – Yuma Transmission System Map

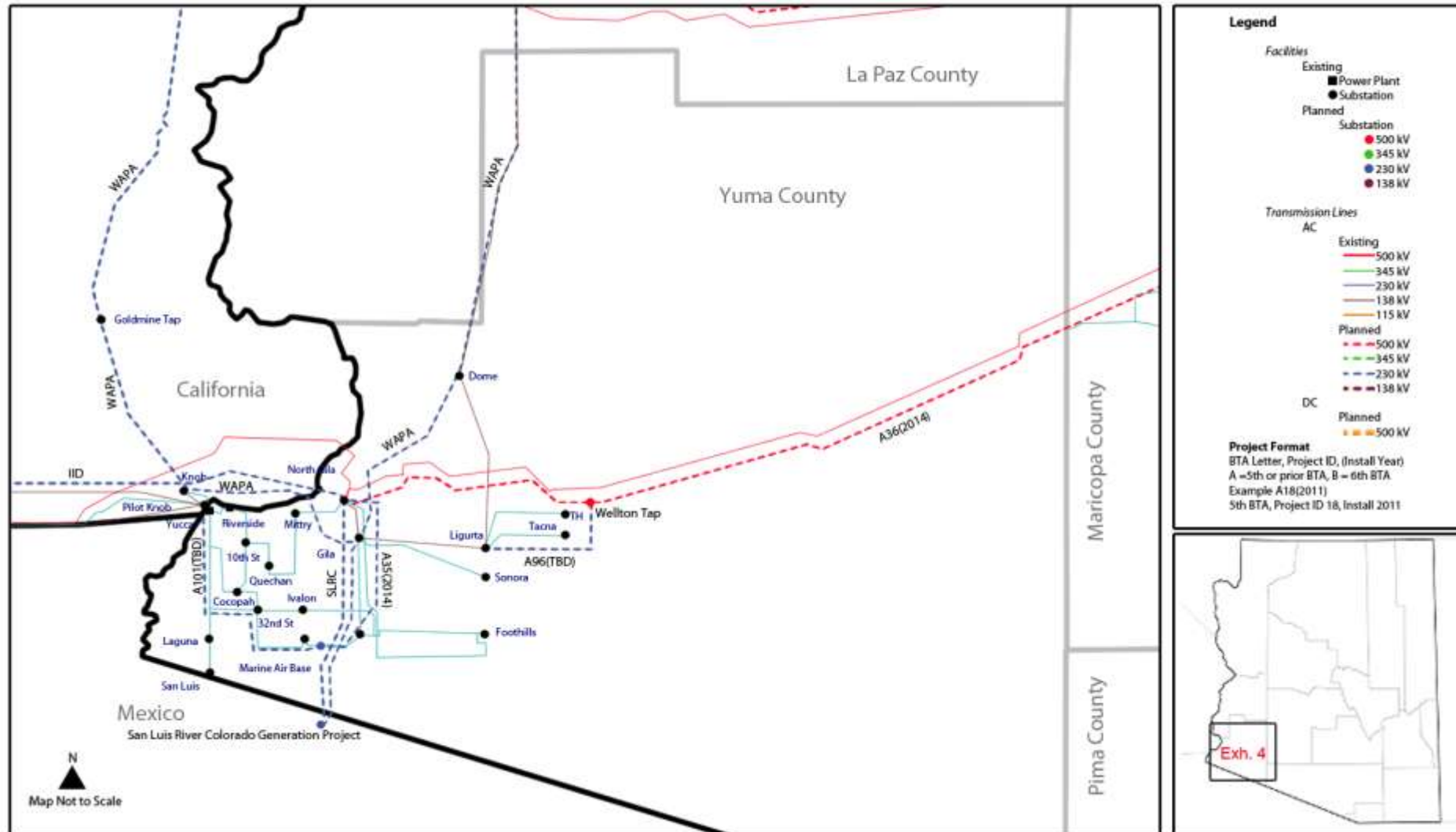


Exhibit 5 – Pinal County Transmission System Map

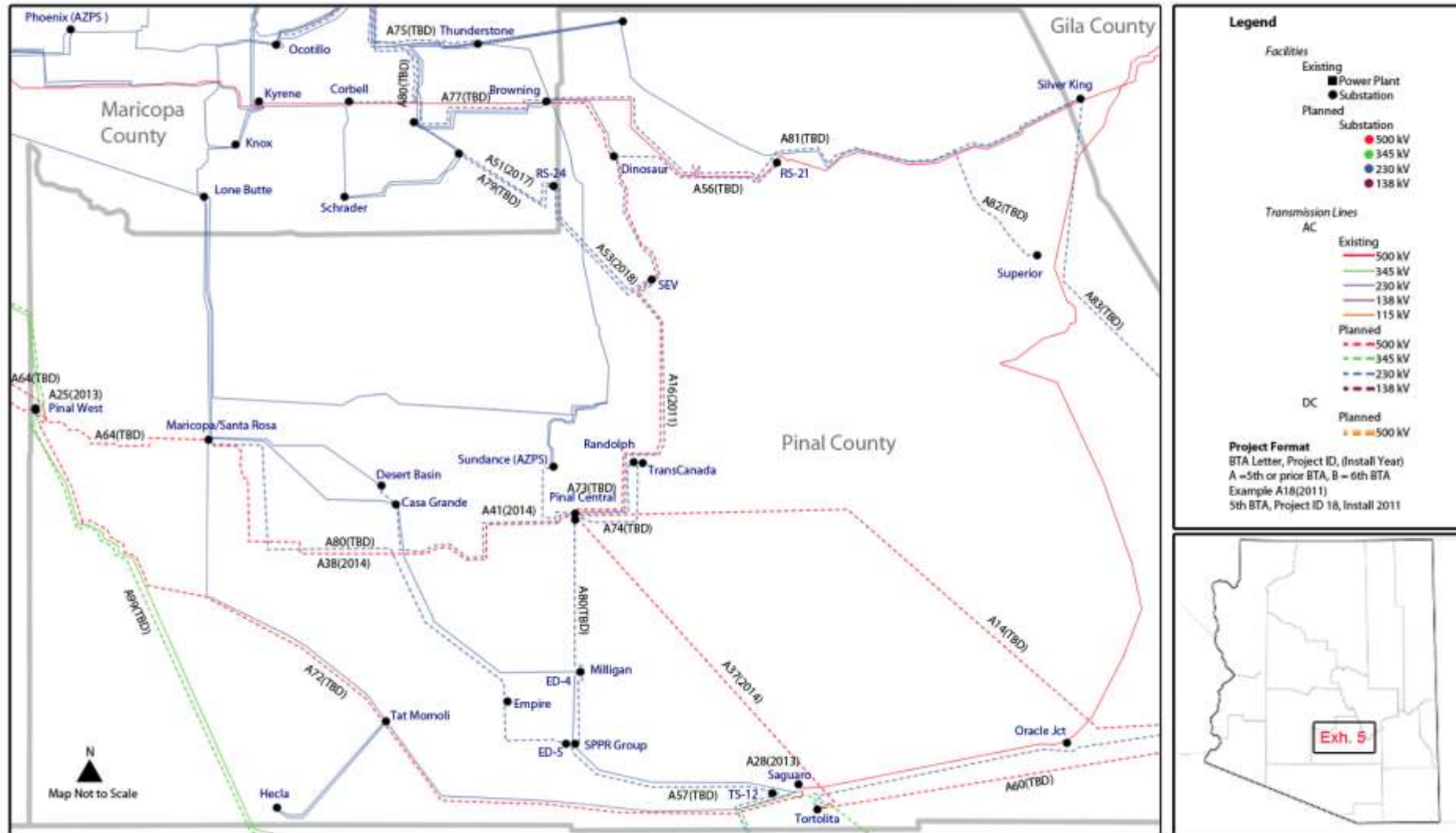


Exhibit 6 – WECC Paths Affecting Arizona

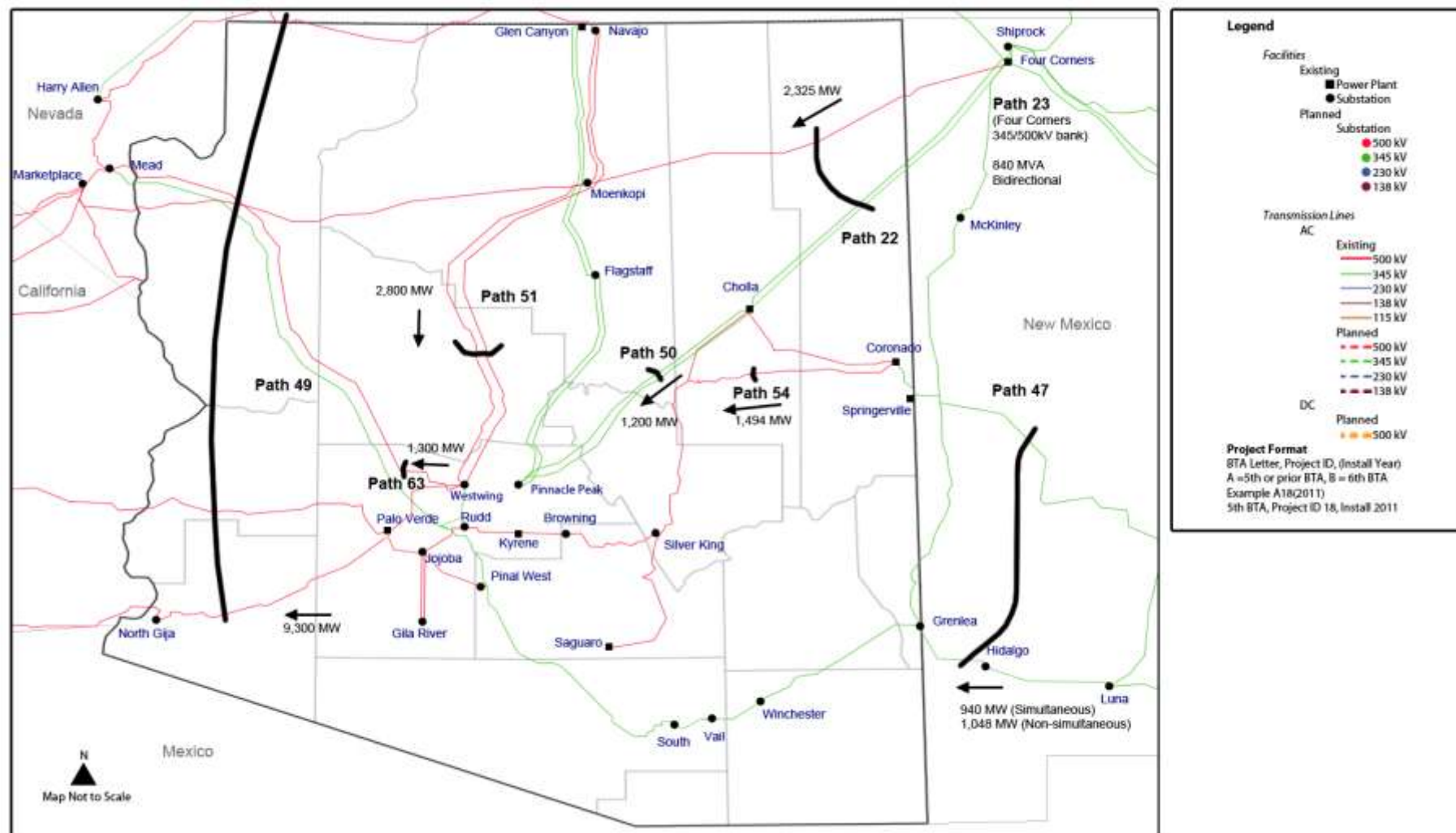


Exhibit 7 – Arizona Planned Project Lookup Table

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A1	Bowie Power Project	BOWIE	15	CEC Approved – Decision #64626	2010	345
A2	CAP 115 kV line loop-in to SWTC Sandario	SWTC	0.6	CEC Approved – Case #152	2010	115
A3	Marana-Avra Valley 115 kV Line Upgrade	SWTC	8.75	CEC Not Yet Filed	2010	115
A4	Morgan-Pinnacle Peak 500 KV line	APS, SRP	26	CEC Approved – Decision #69343	2010	500
A5	Morgan-Raceway-Avery-Scatter Wash-Pinnacle Peak 230 kV line	APS	27	CEC Approved – Decision #69343	2010	230
A6	Naviska-Thornsdale 115 kV line	SWTC	7	CEC Approved – Case #149	2010	115
A7	Saguaro to North Loop	SWTC	3.2	CEC approved – Case #149	2010	115
A8	Thornsdale-Rattlesnake 115 kV line	SWTC	19	CEC Approved – Case #152	2010	115
A9	Tortolita-North Loop-Rancho Vistoso and Tortolita-Rancho Vistoso corridor expansion and reconfiguration Project - Phase 2	TEP	11.1	CEC Approved – Case #149	2011	138
A10	Valencia-CAP Black Mountain 115 kV line	SWTC	2.6	CEC Approved – Case #152	2010	115
A11	White Hills substation	UNSE	0	CEC Not Required	2010	345/69
A12	Avra Valley-Sandario Tap 115 kV Line Upgrade	SWTC	2.8	CEC Not Yet Filed	2011	115
A13	DeMoss Petrie-Tucson 138 kV line	TEP	4.5	CEC Not Yet Filed	2011	138
B1	Dinosaur – Abel – Randolph 230kV line	SRP	TBD	CEC Approved – Case #126	2011	230
A15	Marana Tap-Marana 115 kV Line Upgrade	SWTC	0.2	CEC Not Required	2011	115
A16	Pinal South-Southeast Valley/RS22	SRP	30	CEC Approved - Decisions #68093 and #69291	2011	230
A17	Sandario Tap-Three Points 115 kV Line Upgrade	SWTC	13.71	CEC Not Yet Filed	2011	115
B22	TEP System – Rosemont 138 kV line	TEP	24	CEC Not Yet Filed	2011	138
A19	345/69 kV Interconnection at Western's Flagstaff 345kV bus	APS	0.95	CEC Not Required	2012	345
B2	Delany – Palo Verde 500kV line	APS	15	CEC Approved – Decision #68063	2012	500
A22	Upgrade existing 115 kV transmission line to Nogales	UNSE	60	CEC Approved – Case #111	2012	115

A20	South-Duval CLEAR - Phase 2b - Extend 138 kV line from Canoa Ranch-(Future) Duval	TEP	24	CEC Approved - Case #84	2013	138
A24	Mazatzal Loop-in of Cholla-Pinnacle Peak 345 kV line	APS	0.95	CEC Not Required	2013	345
A25	Moenkopi-Eldorado 500 kV Series Capacitor Upgrade Project	SCE, APS	0	CEC Not Required	2013	500
A26	Northeast-Snyder 138 kV Tap for Craycroft-Barril substations	TEP	8	CEC Not Required	2013	138
A27	SunZia Project	SWPG, SRP, TEP, ECP, Shell, TSGT	500	CEC Not Yet Filed	2013	500
A28	TS12 Loop-in of Saguaro-Casa Grande 230 kV line	APS	0.95	Not Required	2013	230
A29	Vail-East Loop - Phase 4 - Harrison Tap of Roberts-East Loop 138 kV line	TEP	0	CEC Approved - Case #8	2013	138
A30	Apache/Hayden-San Manuel 115 kV line	SWTC	4.5	CEC Approved – Case #142	2014	115
A31	Delany-Sun Valley 500 kV line	APS, SRP, CAWCD	28	CEC Approved – Decision #68063	2014	500
A32	Desert Basin-Pinal Central 230 kV	APS, SRP	21	CEC Approved – Decisions #68093, #68291, #69183 and #69647	2014	230
A33	Gateway-Sonoita 138 kV line	UNSE	10	CEC Not Yet Filed	2014	138
A34	La Canada-Orange Grove-Rillito 138 kV line	TEP	5.4	CEC Not Yet Filed	2014	138
A35	North Gila-TS8 230 kV line	APS	15	To be Filed in 2008	2014	230
A36	Palo Verde Hub-North Gila 500 kV #2 line	APS, SRP, IID, WMIDD	110	CEC Approved – Decision #70127	2014	500
A37	Pinal Central-Tortolita 500 kV line	TEP, SWTC, SRP, SunZia	40	CEC Not Yet Filed	2014	500
A38	Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	SRP, TEP, SWTC, ED2, ED3, ED4	50	CEC Approved - Case #126 - Decisions #68093 and #69291	2014	500
A39	RS26-Fountain Hill substation	SRP	TBD	CEC Not Yet Filed	2014	115/230/345
A40	Sun Valley-Trilby Wash - 230 kV line	APS	15	CEC Approved – Decision #67828	2014	230
A41	Sundance-Pinal Central 230 kV line	APS, ED2	6	CEC Filed – Case #136	2014	230
B3	Three Terminal Plan Circuit 1 Participation	SWTC	23	CEC Not Yet Filed	2014	115
B4	Three Terminal Plan Circuit 2 Participation	SWTC	31	CEC Not Yet Filed	2014	115
B5	Three Terminal Plan Circuit 3 Participation	SWTC	19	CEC Not Yet Filed	2014	115

A23	Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 1.	TEP	20	CEC Not Yet Filed	2015	138
A42	Irvington Substation –Tucson Station #2 138 kV Phase 1	TEP	10.9	CEC Not Yet Filed	2015	138
A42	Irvington Substation –Tucson Station #2 138 kV Phase 2	TEP	10.9	CEC Not Yet Filed	2019	138
A43	Palm Valley-TS2-Trilby Wash 230 kV line	APS	12	CEC Approved - Decisions #66646 and #67828	2015	230
B6	Saguaro to Adonis 115 kV Line Loop-in to Naviska	SWTC	0	CEC Not Required	2015	115
A44	South-Hartt-Green Valley 138 kV line	TEP	14.5	CEC Not Yet Filed	2015	138
A45	Tortolita - Rancho Vistoso 138kV line tap for future Naranja substation.	TEP	24.5	CEC Not Yet Filed	2015	138
A46	Interconnection of Tortolita – North Loop 138 kV with future Marana 138 kV Substation.	TEP	22	CEC Not Yet Filed	2015	138
B24	Vail-UA Tech Park-Irvington 138 kV line	TEP	2	CEC Not Yet Filed	2015	138
B8	Del Cerro-Anklam-Tucson 138 kV line	TEP	2	CEC Not Yet Filed	2016	138
A47	Griffith-North Havasu 230 kV line	UNSE	40	CEC Approved/Extended - Case #88, CEC Extension request not yet filled	2016	230
A48	Irvington Substation – Corona Substation – South Substation 138kV.	TEP	16.1	CEC Not Yet Filed	2016	138
A49	Sun Valley-Morgan 500 kV line	APS, SRP, CAWCD	TBD	CEC Approved – Decision #70850	2016	500
A50	Upgrade of Apache-Butterfield 230 kV line	SWTC	16	CEC Not Yet Filed	2016	230
A51	Abel (RS24)-Moody (RS17) 230 kV #1	SRP	20	CEC Approved – Decision #71441	2017	230
B9	Butterfield to Bicknell 230 kV Line Upgrade	SWTC	68.7	CEC Not Yet Filed	2017	230
A52	Orange Grove-East Ina 138 kV line	TEP	3.6	CEC Not Yet Filed	2017	138
A53	Abel (RS24)-Mody (RS17) 230 kV #2	SRP	20	CEC Approved – Decision #71441	2018	230
B10	CAP 115 kV Line Loop-in to Picture Rocks	SWTC	0	CEC Not Required	2018	115
A54	Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 2	TEP	13	CEC Not Yet Filed	2018	138
	Midvale - Spencer - Medina - Raytheon - South 138kV Line - Phase 3.				2019	
B11	Pinal Central – Abel #2 500kV line	SRP	TBD	CEC Not Yet Filed	2020	500
A14	Devers - Palo Verde 500 kV #2 line	SCE	230	CEC Denied - Case #130	TBD	500

B7	Vail – Irvington 345 kV line	TEP	11	CEC Not Yet Filed	TBD	345
B12	Abel – RS20 500kV	SRP	TBD	CEC Not Yet Filed	TBD	500
A55	Arlington Power Plant	Dynergy Arlington Valley	TBD	CEC Approved – Decision #64357	TBD	500
B13	CS2 Substation	SWTC	0	CEC Not Yet Filed	TBD	230/115
A56	Dinosaur-RS21 230 kV line	SRP	TBD	CEC Not Yet Filed	TBD	230
A57	ED5-Marana 230 kV line	SCWPDA, SPPR	28	CEC Not Yet Filed	TBD	230
A58	ED5-Pinal South (Pinal Central) 230 kV line	SCWPDA, SPPR	18	CEC Not Yet Filed	TBD	230
A59	Future Gateway-Comision Federale de Electricidad 345 kV line	TEP	2	CEC Approved - Case #111	TBD	345
A60	Gateway 345/115 kV or 345/138 kV substations	UNSE	60	CEC Approved - Case #111	TBD	345/138
A61	Gila Bend Power Plant	GBPP	0	CEC Approved – Case#109 – Extension Request Pending	TBD	500
A62	Golden Valley 230 kV Project - McConico-Mercator Mill 230 kV line	UNSE	20	CEC Not Yet Filed	TBD	230
A63	Greenlee switching station through Hidalgo to Luna	ELPE, PNM, TXNMPC	28	CEC Approved – Case #21	TBD	345
A64	Hassayampa - Pinal West 500 kV #2 line	SRP, TEP, SWTC, ED2, ED3, ED4	51	CEC Approved – Case #124	TBD	500
A65	Hassayampa-Jojoba 500 kV line	GBPP	19	CEC Not Required	TBD	500
A66	Interconnection line -South-future Gateway 345 kV line	TEP, UNSE	60	CEC Approved - Case #111	TBD	345
B14	Interconnection of Greenlee-Winchester 345kV line with future Willow Substation	TEP, Bowie	0	CEC obtained by Southwestern Power Group – Case #118	TBD	345
B15	Irvington – South 345 kV line	TEP	16	CEC Not Yet Filed	TBD	345
A67	Irvington-East Loop Project - Phase 3 - Irvington-22nd Street 2nd Circuit	TEP	9	CEC Approved - Case #66	TBD	138
A68	Jojoba Loop-in of TS4-Panda 230 kV line	APS	0.95	CEC Approved – Decision #62960	TBD	230
B16	Kartchner to CS2 230 kV Line	SWTC	2	CEC Not Yet Filed	TBD	230
B17	Mural – San Rafael 230kV line	APS, ED3	TBD	CEC Not Yet Filed	TBD	230
A69	New Hayden 115 kV Station Loop-in	SRP	0.75	CEC Not Yet Filed	TBD	115
A70	Nogales Transmission line #2 (Gateway – Valencia)	UNSE	3	CEC Approved - Case #111	TBD	115/138
B18	North Gila-Ligurta 230kV Line	WMIID	35	CEC Not Yet Filed	TBD	230

A71	Palm Valley-TS2-Trilby Wash 230 kV line # 2	APS	12	CEC Approved – Decision #67828	TBD	230
A72	Palo Verde-Saguaro 500 kV line	CATS Sub-regional Planning Group	130	CEC Approved – Decision#46802	TBD	500
B19	Pantano to Kartchner 115 kV Line Upgrade	SWTC	36	CEC Not Yet Filed	TBD	115
A73	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #1	SCWPDA, SPPR	6	CEC Not Yet Filed	TBD	230
A74	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #2	SCWPDA, SPPR	6	CEC Not Yet Filed	TBD	230
A75	Pinnacle Peak-Brandow 230 kV line	SRP	TBD	CEC Approved - Case #69	TBD	230
A76	Rancho Vistoso-(Future) Sun City 138 kV line	TEP	3.5	CEC Not Required	TBD	138
A77	Rogers-Browning 230 kV line	SRP	9	CEC Not Yet Filed	TBD	230
A78	Rogers-Corbell 230 kV line	SRP	12	CEC Not Required	TBD	230
A79	RS17 230 kV Loop-in line	SRP	0.95	CEC Approved - Decisions #59791 and #60099	TBD	230
B20	RS20 – Coronado 500kV	SRP	TBD	CEC Not Yet Filed	TBD	500
B21	San Rafael to CS2 230 kV Line	SWTC	8	CEC Not Yet Filed	TBD	230
A80	Santa Rosa-ED5 230 kV line	SCWPDA, SPPR	38	CEC Not Yet Filed	TBD	230
A81	Silver King-Browning 230 kV line	SRP	38	CEC Approved - Case #20	TBD	230
A82	Silver King-Browning/Superior 230 kV tie	SRP	0.5	CEC Not Yet Filed	TBD	230
A83	Silver King-Knoll-Future Hayden 230 kV line	SRP	35	CEC Not Yet Filed	TBD	230
A84	Springerville-Greenlee 345 kV line - 2nd circuit	TEP	110	CEC Not Yet Filed	TBD	345
A85	Sun Valley-Morgan 230 kV line	APS	TBD	CEC Approved – Decision #70850	TBD	230
A86	Sun Valley-TS10-TS11 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A87	Sun Valley-TS11-Buckeye 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A88	Test Track-Empire-ED4 230 kV line	WAPA, SCWPDA	20	CEC Not Yet Filed	TBD	230
B23	Thunderstone-Santan 230 kV line #2	SRP	13	CEC Not Yet Filed	TBD	230
A89	Tortolita North Loop 345 kV line	TEP	60	CEC Not Yet Filed	TBD	345
A90	Tortolita-South 345 kV line	TEP	68	CEC Approved - Case #50	TBD	345
A92	Tortolita-Winchester 500 kV line	TEP	80	CEC Approved - Case #23	TBD	500
A93	Vail-East Loop - Phase 3 - Third Vail-East Loop 138 kV line	TEP	22	CEC Approved - Case #8	TBD	138
A94	Vail-South 345 kV line - 2nd circuit	TEP	14	CEC Not Required	TBD	345

A96	Wellton-Mohawk 230 kV Line Project	WMIDD	35	CEC Not Yet Filed	TBD	230
A97	Westwing-EI Sol 230 kV line	APS	11	CEC Approved – Docket#U-1345	TBD	230
A98	Westwing-Raceway 230 kV line	APS	7	CEC Approved – Decision#64473	TBD	230
A99	Westwing-South 345 kV line - 2nd circuit	TEP	178	CEC Approved - Case #15	TBD	345
A100	Winchester-Vail 345 kV line #2 and #3	TEP	40	CEC Not Yet Filed	TBD	345
A101	Yucca-TS8 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230

Exhibit 8 – Arizona Demand Forecast Data (5th BTA vs. 6th BTA)¹

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
APS										
5th BTA Loads (MW)	8,041	8,314	8,575	8,834	9,096	9,355	9,624	9,888	NA	NA
6th BTA Loads (MW)	7,299	7,403	7,536	7,764	8,047	8,264	8,591	8,922	9,229	9,539
Change (MW)	-742	-911	-1,039	-1,070	-1,049	-1,091	-1,033	-966	NA	NA
Change (% of 5th BTA)	-9.2%	-11.0%	-12.1%	-12.1%	-11.5%	-11.7%	-10.7%	-9.8%	NA	NA
SRP										
5th BTA Loads (MW)	7,726	7,989	8,253	8,519	8,786	9,054	9,323	NA	NA	NA
6th BTA Loads (MW)	7,100	7,295	7,502	7,720	7,955	8,194	8,428	8,702	8,984	NA
Change (MW)	-626	-694	-751	-799	-831	-860	-895	NA	NA	NA
Change (% of 5th BTA)	-8.1%	-8.7%	-9.1%	-9.4%	-9.5%	-9.5%	-9.6%	NA	NA	NA
TEP										
5th BTA Loads (MW)	2,556	2,629	2,702	2,777	2,853	2,931	3,010	3,091	NA	NA
6th BTA Loads (MW)	2,384	2,430	2,484	2,527	2,572	2,618	2,662	2,707	2,750	2,792
Change (MW)	-172	-199	-218	-250	-281	-313	-348	-384	NA	NA
Change (% of 5th BTA)	-6.7%	-7.6%	-8.1%	-9.0%	-9.8%	-10.7%	-11.6%	-12.4%	NA	NA
UNSE										
5th BTA Loads (MW)	616	652	690	725	759	791	819	845	NA	NA
6th BTA Loads (MW)	460	483	493	502	515	526	535	544	554	563
Change (MW)	-156	-169	-197	-223	-244	-265	-284	-301	NA	NA
Change (% of 5th BTA)	-25.3%	-25.9%	-28.6%	-30.8%	-32.1%	-33.5%	-34.7%	-35.6%	NA	NA
AZ TOTAL										
5th BTA Loads (MW)	18,939	19,584	20,220	20,855	21,494	22,131	22,776	NA	NA	NA
6th BTA Loads (MW)	17,243	17,611	18,015	18,513	19,089	19,602	20,216	20,875	21,517	NA
Change (MW)	-1,696	-1,973	-2,205	-2,342	-2,405	-2,529	-2,560	NA	NA	NA
Change (% of 5th BTA)	-9.0%	-10.1%	-10.9%	-11.2%	-11.2%	-11.4%	-11.2%	NA	NA	NA

¹ AZ TOTAL does not include the demand forecast for the Cooperatives in the State.

Exhibit 9 – SunZia Southwest Transmission Project

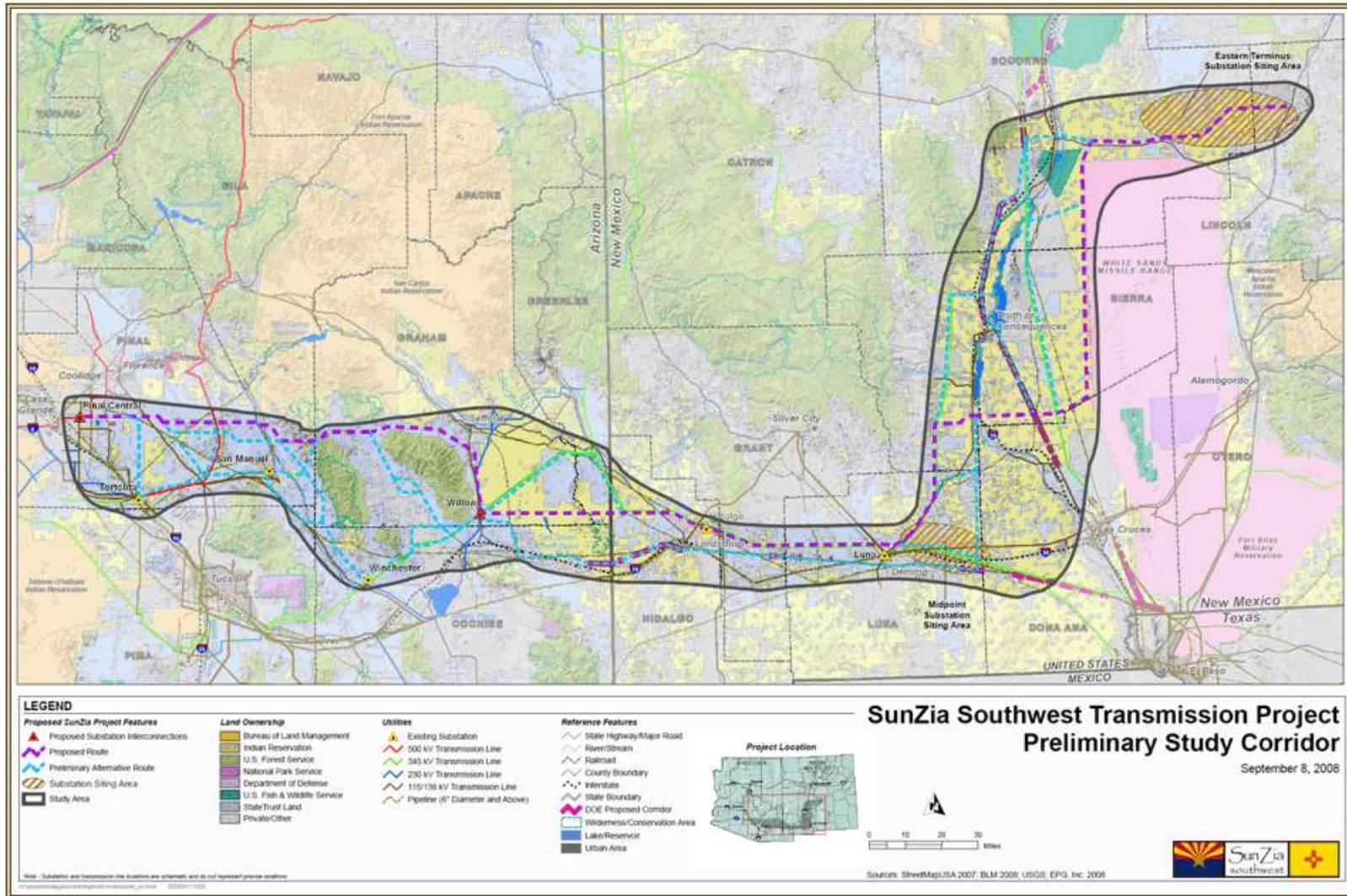
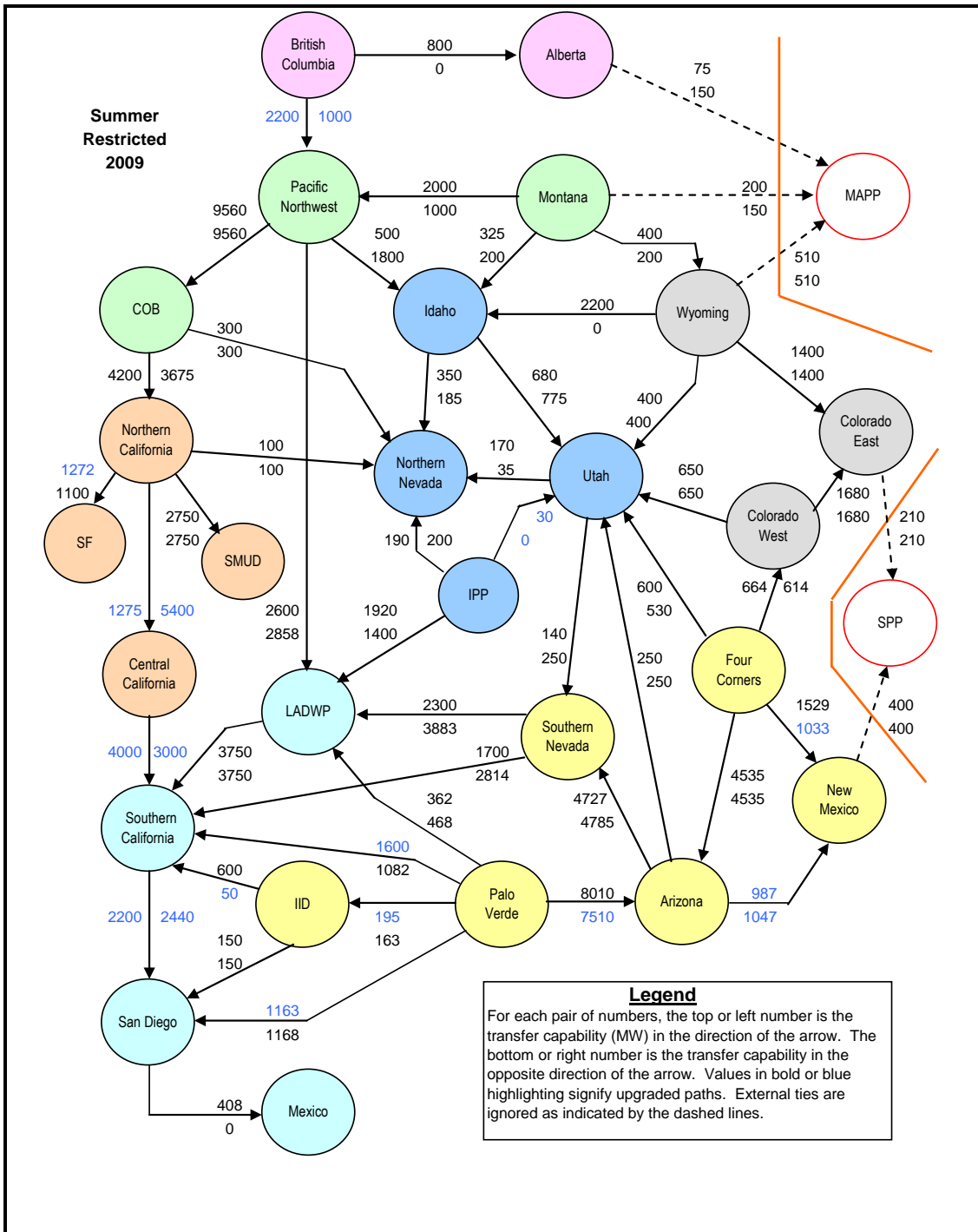


Exhibit 10 – High Plains Express (HPX) Map



Exhibit 11 – WECC Transfer Path “Bubble Diagram” (2009)



Source – WECC Power Supply Study, Draft Report, Aug. 19, 2009

Exhibit 12 – TransWest Express Project Map

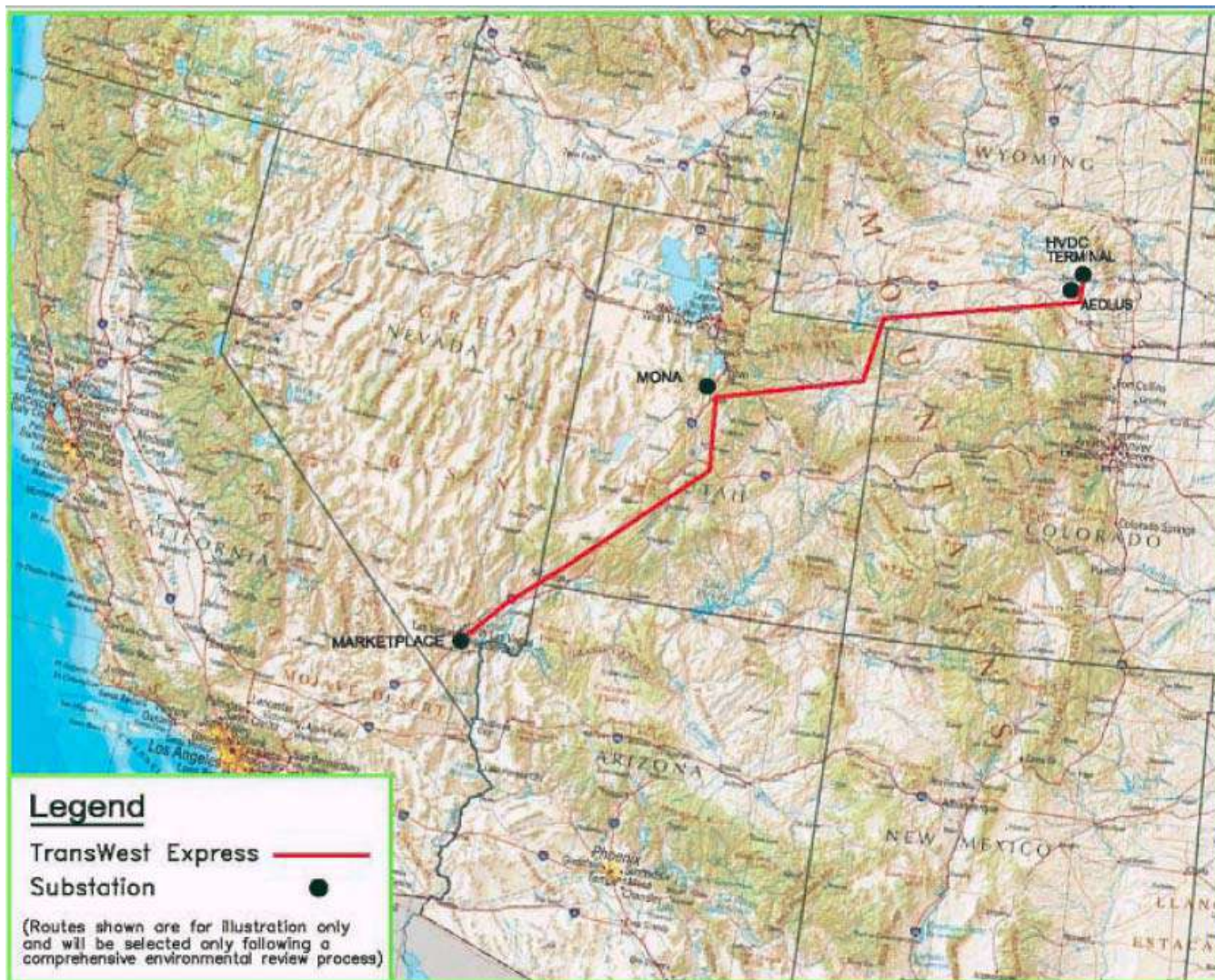


Exhibit 13 – ED5-PV Project

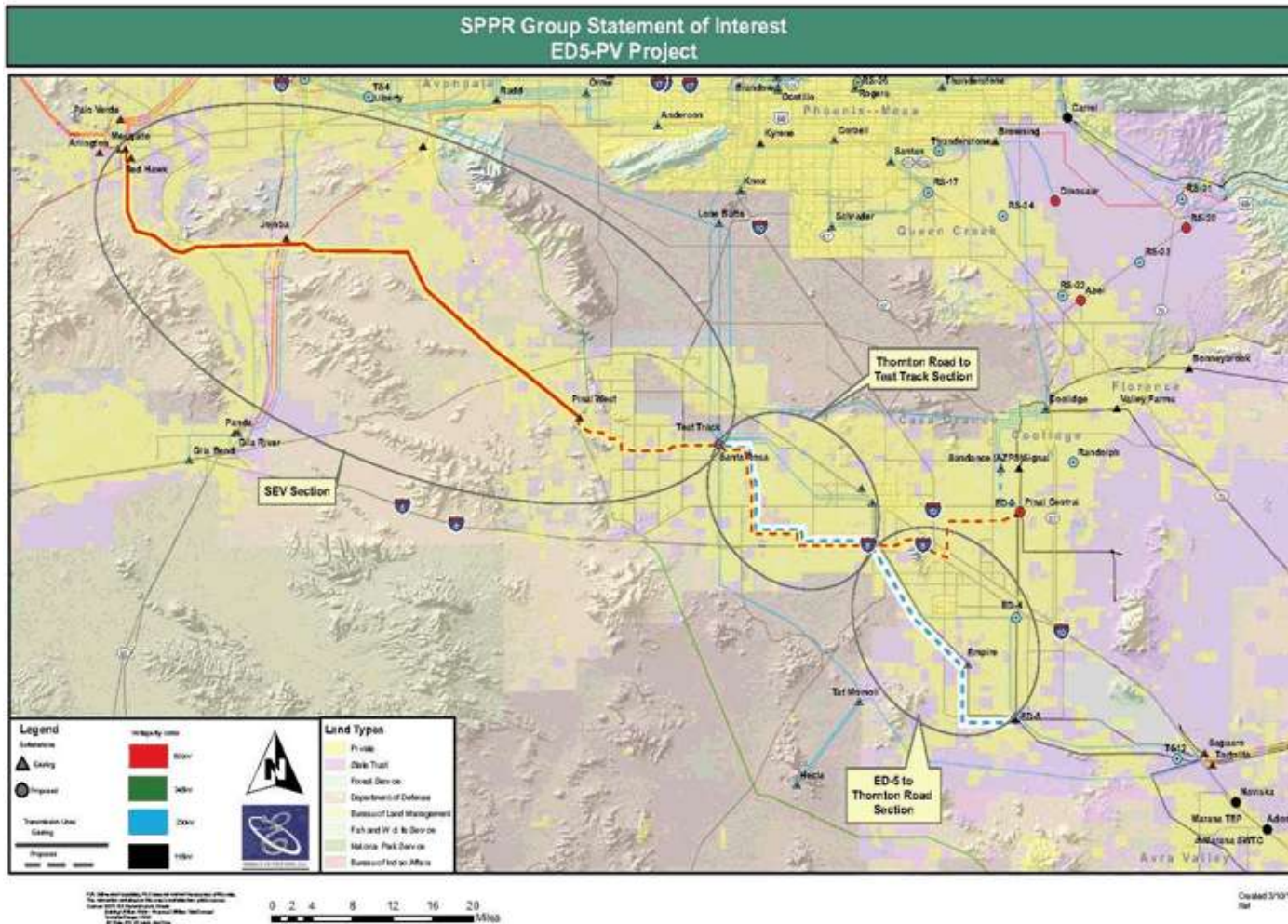


Exhibit 14 – Bowie Power Project

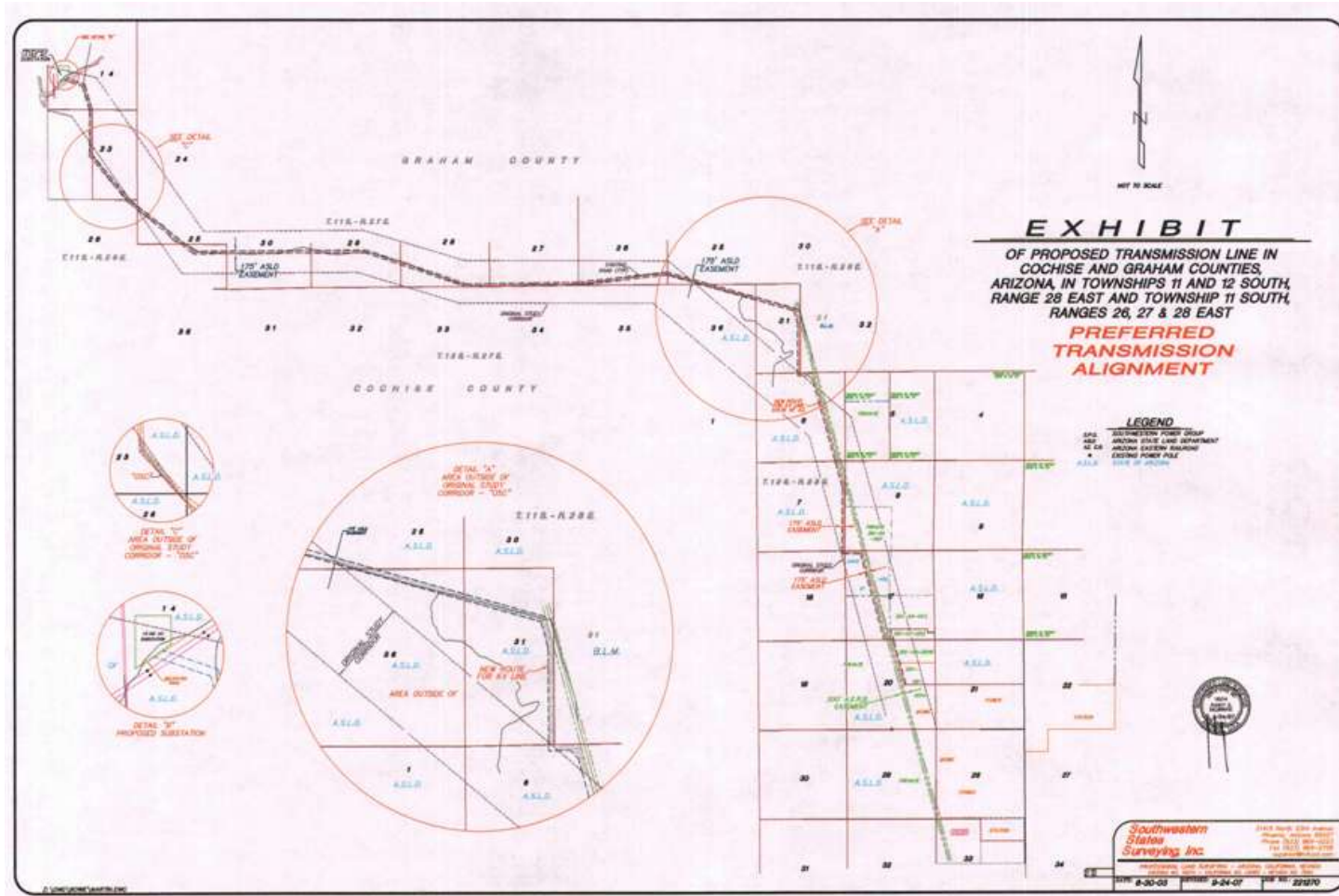


Exhibit 15 – Sonoran Solar Energy Project

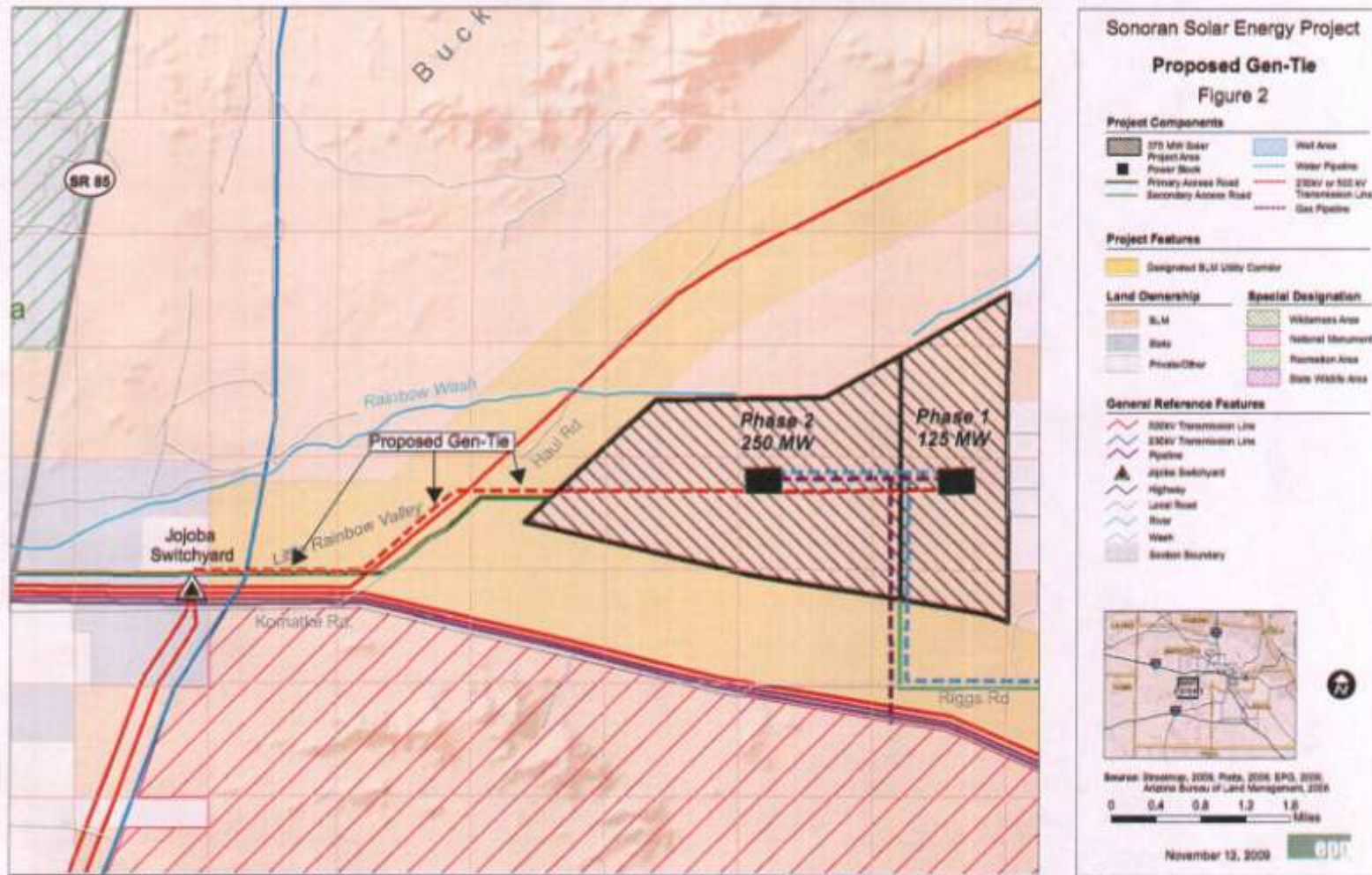


Exhibit 16 – Abengoa Solar Project

Q44 (280MW) - Facilities Study



- A** 247000' corridor East of 1000' wide 2000' LHM 1000' Corridor
- B** 4000' East Corridor South of 1000' wide (Waterman Road Alignment Corridor)
- C** 4000' East Corridor South of 1000' wide (Waterman Road Alignment Corridor)
- D** 10000' corridor South of 1000' wide (Waterman Road Alignment Corridor)
- E** 10000' corridor South of 1000' wide (Waterman Road Alignment Corridor)
- F** 1000' East Corridor extending 1000' East South of Waterman Road Corridor adjacent to Gala Substation
- G** 1000' East Corridor 1000' wide 1000' wide Corridor
- H** 1000' East Corridor 1000' wide 1000' wide Corridor

280KV ROUTE OPTIONS & ACQUISITION ESTIMATE	
Option 1	A, B, C, D, E
Option 2	A, C, D, E, F
Average of Options 1 & 2	
30 mi W. South to Gala Bend Sub.	2,815K
30 mi E. South to Gala Bend Sub.	2,855K
Acquisition Time Required	11 to 21 Months

1

Validation Zone	High End	Midpoint	Conservative	Low End
1	\$10,000K	\$11,000K	\$12,000K	\$13,000K

2

Validation Zone	High End	Midpoint	Conservative	Low End
2	\$12,000K	\$13,000K	\$14,000K	\$15,000K

3

Validation Zone	High End	Midpoint	Conservative	Low End
3	\$14,000K	\$15,000K	\$16,000K	\$17,000K

Last Updated: 11/15/2009 10:00 AM PST

Exhibit 17 – Mesquite Solar Project

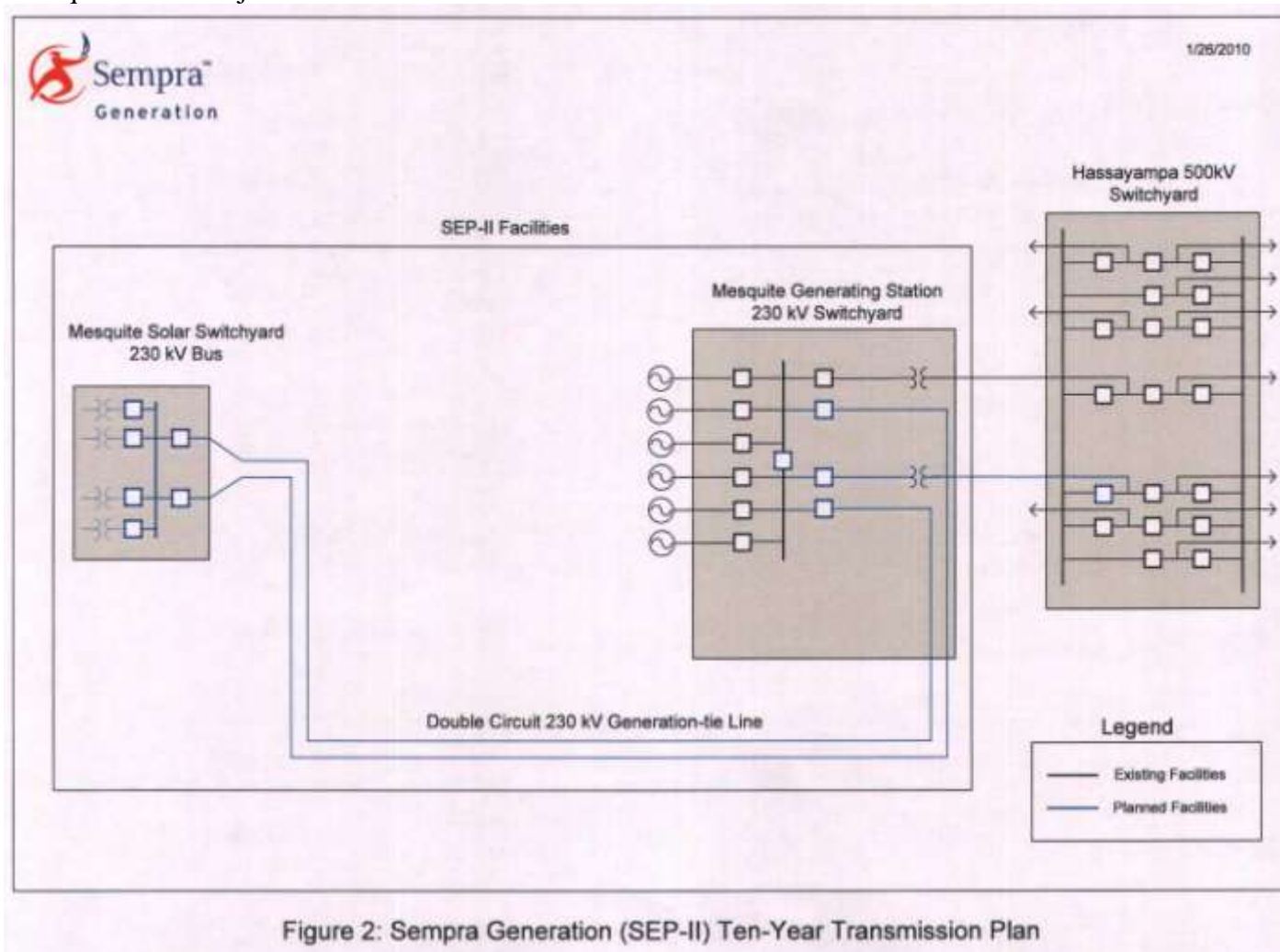


Figure 2: Sempra Generation (SEP-II) Ten-Year Transmission Plan

Exhibit 18 – Plan Changes Between Fifth and Sixth BTA

Description	Year	Changes
Hassayampa-Pinal West 500 kV #1 line	2008	Project Completed
Interconnection of Westwing-South 345kV with future Hassayampa-Pinal West 500 kV	2008	Project Completed
Loop existing West Ina -Tucson 138 kV line	2008	Project Completed
Northeast 138 kV Static Var Compensator (SVC)	2008	Project Completed
Tortolita-North Loop-Rancho Vistoso and Tortolita-Rancho Vistoso corridor expansion and reconfiguration Project - Phase 1	2008	Project Completed
Milligan Loop-in of Saguaro-Casa Grande 230 kV line	2009	Project Completed
Sugarloaf Loop-in of Coronado-Cholla 500 kV line	2009	Project Completed
Dugas Loop-in of Navajo-Westwing 500 kV line	2009	Project Completed
Western 115 kV line loop-in to Pantano	2009	Project Cancelled
Morgan-Pinnacle Peak 500 KV line	2010	Description Updated
Morgan-Raceway-Avery-Scatter Wash-Pinnacle Peak 230 kV line	2010	Description Updated
Saguaro to North Loop	2010	Description, Permitting/Siting Status, Year Updated
CAP 115 kV line loop-in to SWTC Sandario	2010	Permitting/Siting Status, Year Updated
Naviska-Thornydale 115 kV line	2010	Permitting/Siting Status, Year Updated
Thornydale-Rattlesnake 115 kV line	2010	Permitting/Siting Status, Year Updated
Valencia-CAP Black Mountain 115 kV line	2010	Permitting/Siting Status, Year Updated
Vail-Cienega-Spanish Trail Project - Phase 1 - Vail-Cienega 138 kV line	2010	Project Completed
Tortolita-North Loop-Rancho Vistoso and Tortolita-Rancho Vistoso corridor expansion and reconfiguration Project - Phase 2	2011	Description, Permitting/Siting Status, Year Updated
Dinosaur – Abel – Randolph 230kV line	2011	New Project
DeMoss Petrie-Tucson 138 kV line	2011	Year Updated
Marana Tap-Marana 115 kV Line Upgrade	2011	Year Updated
Delany – Palo Verde 500kV line	2012	New Project
Upgrade existing 115 kV transmission line to Nogales	2012	Permitting/Siting Status, Year Updated
345/69 kV Interconnection at Western's Flagstaff 345kV bus	2012	Year Updated
South-Duval CLEAR - Phase 2b - Extend 138 kV line from Canoa Ranch-(Future) Duval	2013	Year Updated

TS12 Loop-in of Saguaro-Casa Grande 230 kV line	2013	Description, Year Updated
SunZia Project	2013	Participants Updated
CS1-Three Points 115 kV line	2013	Project Cancelled
Future CS1-Bicknell 230 kV line	2013	Project Cancelled
Irvington-Vail 138 kV #2 line	2013	Project Cancelled
Mazatzal Loop-in of Cholla-Pinnacle Peak 345 kV line	2013	Year Updated
Moenkopi-Eldorado 500 kV Series Capacitor Upgrade Project	2013	Year Updated
Northeast-Snyder 138 kV Tap for Craycroft-Barril substations	2013	Year Updated
Vail-East Loop - Phase 4 - Harrison Tap of Roberts-East Loop 138 kV line	2013	Year Updated
Delany-Sun Valley 500 kV line	2014	Description, Length, Year Updated
Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	2014	Description, Permitting/Siting Status, Year Updated
Desert Basin-Pinal Central 230 kV	2014	Description, Year Updated
Sun Valley-Trilby Wash - 230 kV line	2014	Description, Year Updated
Sundance-Pinal Central 230 kV line	2014	Description, Year Updated
Three Terminal Plan Circuit 1 Participation	2014	New Project
Three Terminal Plan Circuit 2 Participation	2014	New Project
Three Terminal Plan Circuit 3 Participation	2014	New Project
Pinal Central-Tortolita 500 kV line	2014	Participants, Year Updated
Apache/Hayden-San Manuel 115 kV line	2014	Permitting/Siting Status, Year Updated
La Canada-Orange Grove-Rillito 138 kV line	2014	Year Updated
North Gila-TS8 230 kV line	2014	Year Updated
Palo Verde Hub-North Gila 500 kV #2 line	2014	Year Updated
RS26-Fountain Hill substation	2014	Year Updated
Irvington-Kino–UA Med-Tucson 138 kV line	2015	Description, Year Updated
Palm Valley-TS2-Trilby Wash 230 kV line	2015	Description, Year Updated
Tortolita Rancho Vistoso 138 kV tap for future Naranja substation	2015	Description, Year Updated
Saguaro to Adonis 115 kV Line Loop-in to Naviska	2015	New Project
Vail – Irvington 345 kV line	2015	New Project
South-Hart-Green Valley 138 kV line	2015	Year Updated
Tortolita-Marana-North Loop Project - Phase 1 - Tortolita-Marana 138 kV line	2015	Year Updated
Sun Valley-Morgan 500 kV line	2016	Description, Permitting/Siting Status, Year Updated
Del Cerro-Anklam-Tucson 138 kV line	2016	New Project

Griffith-North Havasu 230 kV line	2016	Permitting/Siting Status, Year Updated
Hartt-SS N029 138 kV line	2016	Project Cancelled
Irvington-South Project - Phase 2 - Corona-SS N026-South 138 kV line	2016	Project Cancelled
Irvington-South Project - Phase 1 - Irvington-Corona-South 138 kV line	2016	Year Updated
Upgrade of Apache-Butterfield 230 kV line	2016	Year Updated
Orange Grove-East Ina 138 kV line	2017	Description Updated
Abel (RS24)-Moody (RS17) 230 kV #1	2017	Description, Length, Permitting/Siting Status, Year Updated
Butterfield to Bicknell 230 kV Line Upgrade	2017	New Project
Abel (RS24)-Moody (RS17) 230 kV #2	2018	Description, Length, Permitting/Siting Status, Year Updated
CAP 115 kV Line Loop-in to Picture Rocks	2018	New Project
Midvale-Spencer-Medina-Raytheon-South 138 kV line	2019	Description, Year Updated
Irvington-South Project - Phase 3 - Corona-Swan Southlands and Swan Southlands-SS NO 26 138 kV lines	2019	Project Cancelled
Pinal Central – Abel #2 500kV line	2020	New Project
Vail-SS N017-Irvington 138 kV line	2020	Project Cancelled
Vail-SSNO27-Cienega-SSNO22-Spanish Trail Project - Phase 2 - Vail-SSN027 138 kV line	2020	Project Cancelled
Tortolita-Marana-North Loop Project - Phase 2 - Marana-SSN01-North Loop 138 kV line	2023	Project Cancelled
Vail-SSNO27-Cienega-SSNo22-Spanish Trail Project - Phase 3 - Cienega-SSN020 138 kV line	2023	Project Cancelled
DeMoss Petrie-SS N014-Northeast 138 kV line	2026	Project Cancelled
North Loop-SS N04-DeMoss Petrie 138 kV line	2030	Project Cancelled
Devers - Palo Verde 500 kV #2 line	TBD	CEC Denied - Case #130
New Hayden 115 kV Station Loop-in	TBD	Description Updated
Nogales Transmission line #2 (Gateway – Valencia)	TBD	Description Updated
Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #1	TBD	Description Updated
Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #2	TBD	Description Updated
Winchester-Vail 345 kV line #2 and #3	TBD	Description Updated
Sun Valley-Morgan 230 kV line	TBD	Description, Permitting/Siting Status Updated
Rancho Vistoso-(Future) Sun City 138 kV line	TBD	Description, Year Updated
Tortolita North Loop 345 kV line	TBD	Description, Year Updated
Abel – RS20 500kV	TBD	New Project

CS2 Substation	TBD	New Project
Interconnection of Greenlee-Winchester 345kV line with future Willow Substation	TBD	New Project
Irvington – South 345 kV line	TBD	New Project
Kartchner to CS2 230 kV Line	TBD	New Project
Mural – San Rafael 230kV line	TBD	New Project
Pantano to Kartchner 115 kV Line Upgrade	TBD	New Project
RS20 – Coronado 500kV	TBD	New Project
San Rafael to CS2 230 kV Line	TBD	New Project
TEP System – Rosemont 138 kV line	TBD	New Project
Thunderstone-Santan 230 kV line #2	TBD	New Project
Vail-UA Tech Park-Irvington 138 kV line	TBD	New Project
Winchester to Vail Double-Circuit 345 kV Line	TBD	New Project
Future Cienega-Mountain View 138 kV line	TBD	Project Cancelled
Future Sloan-Huachuca 230 kV line	TBD	Project Cancelled
North Gila-Yucca 230 kV line	TBD	Project Cancelled
Sun Valley-Trilby Wash – 230 kV line # 2	TBD	Project Cancelled
Tortolita-Rillito 138 kV line	TBD	Project Cancelled
Tortolita-Vail 345 kV Project - Phase 2 - North Loop-East Loop line	TBD	Project Cancelled
Westwing-Pinnacle Peak 230 kV line	TBD	Project Cancelled
East Loop-Northeast 138 kV line	TBD	Project Completed
Golden Valley 230 kV Project - McConico-Mercator Mill 230 kV line	TBD	Year Updated
Jojoba Loop-in of TS4-Panda 230 kV line	TBD	Year Updated

Exhibit 19 – Generation Interconnection Queue(s)

Interconnecting Utility and Queue list	Maximum Output	Interconnection Location	In-Service Date	Technology
SRP Transmission	562	Randolph	9/1/2010	Natural Gas
SRP-ANPP	720	Hassayampa 500 kV	3/1 / 2010 – 2014 (one 180MW unit per year)	Photovoltaic
SRP-ANPP	500	Jojoba	12/1/2012	Concentrated Solar Power
SRP-ANPP	125	Hassayampa 500 kV	2011	Concentrated Solar Power
SRP-ANPP	125	Hassayampa 500 kV	2011	Concentrated Solar Power
SRP-ANPP	200	Hassayampa 500 kV	5/12/2013	Photovoltaic
SRP-ANPP	250	Jojoba	1/1/2013	Concentrated Solar Power
SRP-MP	500	Mead-Perkins	10/1/2009	Wind
SRP-MP	250	Mead-Perkins	10/1/2013	Concentrated Solar Power
SRP-MP	250	Mead-Perkins	4/8/2013	Concentrated Solar Power
SRP Transmission	700	Coronado 500kV	9/15/2012	Wind
SRP Transmission	658	Abel 230	9/1/2011	Natural Gas
SRP Transmission	304	Abel 69	9/1/2011	Natural Gas
SRP Transmission	1315	Pinal New Sub	9/1/2013	Natural Gas
SRP Transmission	200	CO-CH	12/1/2013	Wind
SRP Transmission	150	Cholla-Sugarloaf 500kV	12/31/2012	Wind
SRP Transmission	150	Cholla-Sugarloaf 500kV	12/31/2012	Wind
SRP-Joint Participation	125	Pinal Central 230kV	11/1/2012	Solar (steam)
SRP-Joint Participation	520	Pinal Central 500kV	6/15/2012	Natural Gas
SRP-Joint Participation	125	Pinal Central 500kV	6/15/2012	Natural Gas
SRP-Joint Participation	125	Pinal Central 500kV	6/15/2012	Natural Gas
APS	Unit 1 – 700	Four Corners 500kV Switchyard	8/1/2015	Coal
APS	Unit 2 – 700		8/1/2015	
	128	Cholla/Zeniff/Show Low Western 69kV line and Cholla/Show Low Eastern 69kV line	West = 8/17/2009 East = 10/1/2010	Wind
APS	22	Cholla/Zeniff/Show Low Western 36kV line	Q2 2008	Biomass
APS	100	Existing Yucca 36kV substation	6/1/2008	Gas Combustion Turbine
APS	Units 1-4 – 583 each (63 MW Net Increase per Unit)	Gila River 500kV		Gas Combined Cycle
APS	260	Ashfork-Pollock 69kV System and Seligman 230 kV to be studied	3/13/2012	Wind
APS	125	Cholla/Show Low Eastern 69 kV line	12/1/2012	Wind
APS	100	Adams – Mural 115kV line	12/31/2010	Wind
APS	102	Proposed Harquahala Junction (Delany) Switchyard	10/1/10-	Solar

			12/1/2011	
APS	87	Paloma 69kV Substation	10/1/10-12/1/2011	Solar
APS	400	North Gila Substation	Q4 2012	Solar
APS	1000	Moenkopi 500kV	2015	Wind
APS	300	Cholla 500kV Substation	11/1/2010	Wind
APS	400	Proposed Harquahala Junction (Delany) Switchyard	7/31/2011-12/31/2012	Solar
APS	800	Proposed Harquahala Junction (Delany) Switchyard	1/1/2013-12/31/2014	Solar
APS	500	Moenkopi – El Dorado 500kV line	7/1/2010	Wind
APS	250	North Gila Substation	Q4 2012	Solar Thermal
APS	500	Proposed Harquahala Junction (Delany) Switchyard	6/30/2012	Solar
APS	500	PV-NG1 500kV line (New Hoodoo Wash 500kV Switchyard)	12/2011	Solar
APS	280	Panda 230 kV Substation	12/1/2011	Solar
APS	300	PV-NG1 500kV Line	10/1/2011 11/1/2011 3/1/2012	Solar
APS	250	Gila Bend 230kV Switchyard or Panda 230kV Switchyard	Q2 2013	Solar
APS	80	SW6 Substation	3/1/2013	Solar
APS	150	North Gila System	7/1/2012	Solar
APS	150	Cholla-PNPK 345 kV line	12/31/2013	Wind
APS	300	Proposed Delany Switchyard	9/1/2012	Solar
APS	99	Hassayampa-N Gila 500 kV line	Q2 and Q4 2012	Solar
APS	99	Hassayampa-N Gila 500 kV line	Q2 and Q4 2013	Solar
APS	40	Hassayampa-N Gila 500 kV line	Q2 2012	Solar
APS	500	Moenkopi 500 kV Switchyard	Q2 2012	Wind
APS	150	Gila Bend 230kV Substation	7/1/2013	Solar
APS	480	Hassayampa-N Gila 500 kV line	1/1/2014	Solar
APS	200	Panda Switchyard 230 kV or Gila Bend Substation 230 kV	PH-1 – 100MW 12/2014 PH2 – 100MW 12/2015	Solar
APS	600	PV-NG 500 kV Line (Q43 Switchyard)	6/1/2013	Solar
APS	300	Sun Valley 230 kV Switchyard	6/1/2015	Solar
APS	480	Hassayampa-N Gila 500 kV line	1/1/2014	Solar
APS	297	San Manuel 115kV Switchyard	12/30/2011	Solar
APS	20	Aztec Substation	3/31/2011	Solar
APS	20	Hyder Substation	3/31/2011	Solar
APS	20	Cotton Center Substation	3/31/2011	Solar
APS	20	Cotton Center Substation	3/31/2011	Solar

APS	70	Buckeye – Desert Sky 69 kV line	8/31/2013	Solar
APS	390	Four Corners – Cholla 345 kV line	12/31/2012	Wind
APS	20	Hyder-Saddle Mountain 69 kV line	6/1/2011	Solar
APS	20	ASARCO-SantaRosa 69 kV line	1/31/2011	Solar
APS	20	12 kV Interconnection – Buckeye	11/30/2011	Solar
APS	20	12 kV Interconnection – Ehrenberg	Q4 2010	Solar
APS	20	Vicksburg Area 69 kV	12/31/2012	Solar
APS	200	Cholla – Pinnacle Peak 345 kV line	12/31/2012	Wind
APS	50	69 kV Interconnection – Gila Bend Area	12/31/2011	Solar
APS	50	69 kV Interconnection – Tonopah Area	12/31/2011	Solar
APS	20	12 kV Interconnection – Ehrenberg	Q4 2010	Solar
APS	20	69 kV Interconnection 335 Ave & Dobbins Rd	12/31/2011	Solar
APS	20	69 kV Interconnection 335 Ave & Dobbins Rd	12/31/2011	Solar
APS	20	69 kV Interconnection – Gillespie Sub Area	1/1/2012	Solar
APS	20	69 kV Interconnection – Lower River Sub/or 12 kV into Baseline Sub	11/30/2011	Solar
APS	200	69 kV Interconnection – Sugarloaf Sub Area	12/2012 and 12/2013	Wind
APS	120	Bagdad Area 115 kV Transmission System	12/1/2012	Wind
APS	30	Cotton Center 69 kV Substation	12/15/2012	Solar
APS	30	Tonopah 69 kV Substation	12/15/2012	Solar
APS	101	Moenkopi – Yavapai 500 kV line	8/1/2011	Wind
APS	60	Salome 69kV Substation	12/21/12 6/30/13	Solar
APS	20	69 kV Interconnection – Gila Bend Area	10/1/2012	Solar
APS	20	69 kV Interconnection – Gila Bend Substation Area	2/28/2012	Solar
APS	20	69 kV Interconnection – Gila Bend Substation Area	3/31/2012	Solar
APS	20	69 kV Interconnection – Gila Bend Substation Area	4/30/2012	Solar
APS	20	69 kV Interconnection – Hwy 60 & Farm Access Road	12/31/2011	Solar
APS	20	69 kV Interconnection – Hwy 60 & Farm Access Road	12/31/2011	Solar
APS	20	Lower River – Wintersburg 69 kV line	4/15/2012	Solar
APS	20	Lower River – Wintersburg 69 kV line	12/31/2011	Solar
APS	20	W. Riggs Rd & 170 th Ave	9/1/2011	Solar
APS	20	Indian School Rd & 355 th Ave	9/1/2011	Solar
APS	20	I-10 & 507 th Ave	9/1/2011	Solar
APS	20	12 or 69 kV Interconnection – Hyder Substation	11/30/2011	Solar
APS	20	12 or 69 kV Interconnection – Harquahala Substation	2/28/2012	Solar
APS	20	12 or 69 kV Interconnection – Salome Substation	2/28/2012	Solar
APS	20	12 or 69 kV Interconnection – Arlington Substation	2/28/2012	Solar
APS	20	69 kV Interconnection – 69kV line Palmas Rd and Dateland Rd	12/31/2010	Solar

APS	20	69 kV Interconnection – Gila Bend 69kV Watermelon Rd and 307 Ave	12/31/2010	Solar
APS	20	12 kV bus-bar, transformer at Baseline Substation	11/30/2011	Solar
APS	20	12 or 69 kV Interconnection – Patterson Substation	12/31/2012	Solar
APS	50	Sugarloaf 69 kV Substation	12/1/2012	Solar
APS	20	69 kV between Hyder and Saddle Mountain Sub	2/28/2012	Solar
APS	20	Baseline Substation Area	2/28/2012	Solar
APS	20	69 kV line between Tonopah and Harquahala Subs	2/28/2012	Solar
APS	20	Saddle Mountain 69 kV Substation	8/1/2011	Solar
APS	99	Show Low 69 kV Substation	1/10/2012	Wind
APS	50	Hyder 69 kV Substation	8/1/2011	Solar
APS	20	Harqualaha 69 kV to 12 kV Switch location	5/1/2010	Solar
APS	50	69 kV line between Wintersburg & Lower River	12/31/2012	Solar
APS	20	69 kV Vicksburg Substation	3/31/2011	Solar
APS	20	Wintersburg 69 kV Substation Area	2/28/2012	Solar
APS	20	69 kV Cotton Center Substation	6/5/2012	Solar
TEP	430	Springerville, AZ	Q2 2004	Generator
TEP	95	Between Coronado & Springerville	12/31/2007	Wind
TEP	500	Greenlee-Vail 345 kV line	N/A	Wind
TEP	700	Various	12/31/2010	Wind
TEP	700	Various	12/31/2010	Wind
TEP	250	South-Green Valley 138 kV line	Q4 2012	Solar
TEP	500	Greenlee-Winchester 345 kV line	S 2009	Generator
TEP	700	Springerville 345 kV Yard	Dec 2010	Wind
TEP	150	Springerville 345 kV line	3/15/2013	Wind
TEP	200	Springerville 345 kV line	1/10/2012	Wind
UNSE	80	Dolan Springs Substation	9/12/2005	Wind
UNSE	50	Industrial Substation 69 kV Bus	5/1/2011	Solar
UNSE	20	Steel Park, Old Trails Rd, Kingman, AZ	3/31/2011	Wind/Solar

Exhibit 20 – Listing of Projects by In-Service Date

Year	Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Voltage (kV)
2010	A1	Bowie Power Project	BOWIE	15	CEC Approved – Decision #64626	345
2010	A2	CAP 115 kV line loop-in to SWTC Sandario	SWTC	0.6	CEC Approved – Case #152	115
2010	A3	Marana-Avra Valley 115 kV Line Upgrade	SWTC	8.75	CEC Not Yet Filed	115
2010	A4	Morgan-Pinnacle Peak 500 KV line	APS, SRP	26	CEC Approved – Decision #69343	500
2010	A5	Morgan-Raceway-Avery-Scatter Wash-Pinnacle Peak 230 kV line	APS	27	CEC Approved – Decision #69343	230
2010	A6	Naviska-Thornydale 115 kV line	SWTC	7	CEC Approved – Case #149	115
2010	A7	Saguaro to North Loop	SWTC	3.2	CEC approved – Case #149	115
2010	A8	Thornydale-Rattlesnake 115 kV line	SWTC	19	CEC Approved – Case #152	115
2011	A9	Tortolita-North Loop-Rancho Vistoso and Tortolita-Rancho Vistoso corridor expansion and reconfiguration Project - Phase 2	TEP	11.1	CEC Approved – Case #149	138
2010	A10	Valencia-CAP Black Mountain 115 kV line	SWTC	2.6	CEC Approved – Case #152	115
2010	A11	White Hills substation	UNSE	0	CEC Not Required	345/69
2011	A12	Avra Valley-Sandario Tap 115 kV Line Upgrade	SWTC	2.8	CEC Not Yet Filed	115
2011	A13	DeMoss Petrie-Tucson 138 kV line	TEP	4.5	CEC Not Yet Filed	138
2011	B1	Dinosaur – Abel – Randolph 230kV line	SRP	TBD	CEC Approved – Case #126	230
2011	A15	Marana Tap-Marana 115 kV Line Upgrade	SWTC	0.2	CEC Not Required	115
2011	A16	Pinal South-Southeast Valley/RS22	SRP	30	CEC Approved - Decisions #68093 and #69291	230
2011	A17	Sandario Tap-Three Points 115 kV Line Upgrade	SWTC	13.71	CEC Not Yet Filed	115
2012	A19	345/69 kV Interconnection at Western's Flagstaff 345kV bus	APS	0.95	CEC Not Required	345
2012	B2	Delany – Palo Verde 500kV line	APS	15	CEC Approved – Decision #68063	500
2013	A20	South-Duval CLEAR - Phase 2b - Extend 138 kV line from Canoa Ranch-(Future) Duval	TEP	24	CEC Approved - Case #84	138
2012	A22	Upgrade existing 115 kV transmission line to Nogales	UNSE	60	CEC Approved – Case #111	115

2013	A23	Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 1.	TEP	20	CEC Not Yet Filed	138
2013	A24	Mazatzal Loop-in of Cholla-Pinnacle Peak 345 kV line	APS	0.95	CEC Not Required	345
2013	A25	Moenkopi-Eldorado 500 kV Series Capacitor Upgrade Project	SCE, APS	0	CEC Not Required	500
2013	A26	Northeast-Snyder 138 kV Tap for Craycroft-Barril substations	TEP	8	CEC Not Required	138
2013	A27	SunZia Project	SWPG, SRP, TEP, ECP, Shell, TSGT	500	CEC Not Yet Filed	500
2013	A28	TS12 Loop-in of Saguaro-Casa Grande 230 kV line	APS	0.95	Not Required	230
2013	A29	Vail-East Loop - Phase 4 - Harrison Tap of Roberts-East Loop 138 kV line	TEP	0	CEC Approved - Case #8	138
2014	A30	Apache/Hayden-San Manuel 115 kV line	SWTC	4.5	CEC Approved – Case #142	115
2014	A31	Delany-Sun Valley 500 kV line	APS, SRP, CAWCD	28	CEC Approved – Decision #68063	500
2014	A32	Desert Basin-Pinal Central 230 kV	APS, SRP	21	CEC Approved – Decisions #68093, #68291, #69183 and #69647	230
2014	A33	Gateway-Sonoita 138 kV line	UNSE	10	CEC Not Yet Filed	138
2014	A34	La Canada-Orange Grove-Rillito 138 kV line	TEP	5.4	CEC Not Yet Filed	138
2014	A35	North Gila-TS8 230 kV line	APS	15	To be Filed in 2008	230
2014	A36	Palo Verde Hub-North Gila 500 kV #2 line	APS, SRP, IID, WMIDD	110	CEC Approved – Decision #70127	500
2014	A37	Pinal Central-Tortolita 500 kV line	TEP, SWTC, SRP, SunZia	40	CEC Not Yet Filed	500
2014	A38	Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	SRP, TEP, SWTC, ED2, ED3, ED4	50	CEC Approved - Case #126 - Decisions #68093 and #69291	500
2014	A39	RS26-Fountain Hill substation	SRP	TBD	CEC Not Yet Filed	115/230/345
2014	A40	Sun Valley-Trilby Wash - 230 kV line	APS	15	CEC Approved – Decision #67828	230
2014	A41	Sundance-Pinal Central 230 kV line	APS, ED2	6	CEC Filed – Case #136	230
2014	B3	Three Terminal Plan Circuit 1 Participation	SWTC	23	CEC Not Yet Filed	115
2014	B4	Three Terminal Plan Circuit 2 Participation	SWTC	31	CEC Not Yet Filed	115
2014	B5	Three Terminal Plan Circuit 3 Participation	SWTC	19	CEC Not Yet Filed	115

2015	A42	Irvington-Kino-UA Med-Tucson 138 kV line	TEP	10.9	CEC Not Yet Filed	138
2015	A43	Palm Valley-TS2-Trilby Wash 230 kV line	APS	12	CEC Approved - Decisions #66646 and #67828	230
2015	B6	Saguaro to Adonis 115 kV Line Loop-in to Naviska	SWTC	0	CEC Not Required	115
2015	A44	South-Hartt-Green Valley 138 kV line	TEP	14.5	CEC Not Yet Filed	138
2015	A45	Tortolita - Rancho Vistoso 138kV line tap for future Naranja substation.	TEP	24.5	CEC Not Yet Filed	138
2015	A46	Interconnection of Tortolita – North Loop 138 kV with future Marana 138 kV Substation.	TEP	22	CEC Not Yet Filed	138
2015	B7	Vail – Irvington 345 kV line	TEP	11	CEC Not Yet Filed	345
2016	B8	Del Cerro-Anklam-Tucson 138 kV line	TEP	2	CEC Not Yet Filed	138
2016	A47	Griffith-North Havasu 230 kV line	UNSE	40	CEC Approved/Extended - Case #88, CEC Extension request not yet filled	230
2016	A48	Irvington Substation – Corona Substation – South Substation 138kV.	TEP	16.1	CEC Not Yet Filed	138
2016	A49	Sun Valley-Morgan 500 kV line	APS, SRP, CAWCD	TBD	CEC Approved – Decision #70850	500
2016	A50	Upgrade of Apache-Butterfield 230 kV line	SWTC	16	CEC Not Yet Filed	230
2017	A51	Abel (RS24)-Moody (RS17) 230 kV #1	SRP	20	CEC Approved – Decision #71441	230
2017	B9	Butterfield to Bicknell 230 kV Line Upgrade	SWTC	68.7	CEC Not Yet Filed	230
2017	A52	Orange Grove-East Ina 138 kV line	TEP	3.6	CEC Not Yet Filed	138
2018	A53	Abel (RS24)-Moody (RS17) 230 kV #2	SRP	20	CEC Approved – Decision #71441	230
2018	B10	CAP 115 kV Line Loop-in to Picture Rocks	SWTC	0	CEC Not Required	115
2018	A54	Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 2	TEP	13	CEC Not Yet Filed	138
2019		Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 3				
2020	B11	Pinal Central – Abel #2 500kV line	SRP	TBD	CEC Not Yet Filed	500
TBD	A14	Devers - Palo Verde 500 kV #2 line	SCE	230	CEC Denied - Case #130	500
TBD	B12	Abel – RS20 500kV	SRP	TBD	CEC Not Yet Filed	500
TBD	A55	Arlington Power Plant	Dynegy Arlington Valley	TBD	CEC Approved – Decision #64357	500
TBD	B13	CS2 Substation	SWTC	0	CEC Not Yet Filed	230/115

TBD	A56	Dinosaur-RS21 230 kV line	SRP	TBD	CEC Not Yet Filed	230
TBD	A57	ED5-Marana 230 kV line	SCWPDA, SPPR	28	CEC Not Yet Filed	230
TBD	A58	ED5-Pinal South (Pinal Central) 230 kV line	SCWPDA, SPPR	18	CEC Not Yet Filed	230
TBD	A59	Future Gateway-Comision Federale de Electricidad 345 kV line	TEP	2	CEC Approved - Case #111	345
TBD	A60	Gateway 345/115 kV or 345/138 kV substations	UNSE	60	CEC Approved - Case #111	345/138
TBD	A61	Gila Bend Power Plant	GBPP	0	CEC Approved – Case#109 – Extension Request Pending	500
TBD	A62	Golden Valley 230 kV Project - McConico-Mercator Mill 230 kV line	UNSE	20	CEC Not Yet Filed	230
TBD	A63	Greenlee switching station through Hidalgo to Luna	ELPE, PNM, TXNMPC	28	CEC Approved – Case #21	345
TBD	A64	Hassayampa - Pinal West 500 kV #2 line	SRP, TEP, SWTC, ED2, ED3, ED4	51	CEC Approved – Case #124	500
TBD	A65	Hassayampa-Jojoba 500 kV line	GBPP	19	CEC Not Required	500
TBD	A66	Interconnection line -South-future Gateway 345 kV line	TEP, UNSE	60	CEC Approved - Case #111	345
TBD	B14	Interconnection of Greenlee-Winchester 345kV line with future Willow Substation	TEP, Bowie	0	CEC obtained by Southwestern Power Group – Case #118	345
TBD	B15	Irvington – South 345 kV line	TEP	16	CEC Not Yet Filed	345
TBD	A67	Irvington-East Loop Project - Phase 3 - Irvington-22nd Street 2nd Circuit	TEP	9	CEC Approved - Case #66	138
TBD	A68	Jojoba Loop-in of TS4-Panda 230 kV line	APS	0.95	CEC Approved – Decision #62960	230
TBD	B16	Kartchner to CS2 230 kV Line	SWTC	2	CEC Not Yet Filed	230
TBD	B17	Mural – San Rafael 230kV line	APS	TBD	CEC Not Yet Filed	230
TBD	A69	New Hayden 115 kV Station Loop-in	SRP	0.75	CEC Not Yet Filed	115
TBD	A70	Nogales Transmission line #2 (Gateway – Valencia)	UNSE	3	CEC Approved - Case #111	115/138
TBD	B18	North Gila-Ligurta 230kV Line	WMIID	35	CEC Not Yet Filed	230
TBD	A71	Palm Valley-TS2-Trilby Wash 230 kV line # 2	APS	12	CEC Approved – Decision #67828	230
TBD	A72	Palo Verde-Saguaro 500 kV line	CATS Sub-regional Planning Group	130	CEC Approved – Decision#46802	500
TBD	B19	Pantano to Kartchner 115 kV Line Upgrade	SWTC	36	CEC Not Yet Filed	115

TBD	A73	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #1	SCWPDA, SPPR	6	CEC Not Yet Filed	230
TBD	A74	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #2	SCWPDA, SPPR	6	CEC Not Yet Filed	230
TBD	A75	Pinnacle Peak-Brandow 230 kV line	SRP	TBD	CEC Approved - Case #69	230
TBD	A76	Rancho Vistoso-(Future) Sun City 138 kV line	TEP	3.5	CEC Not Required	138
TBD	A77	Rogers-Browning 230 kV line	SRP	9	CEC Not Yet Filed	230
TBD	A78	Rogers-Corbell 230 kV line	SRP	12	CEC Not Required	230
TBD	A79	RS17 230 kV Loop-in line	SRP	0.95	CEC Approved - Decisions #59791 and #60099	230
TBD	B20	RS20 – Coronado 500kV	SRP	TBD	CEC Not Yet Filed	500
TBD	B21	San Rafael to CS2 230 kV Line	SWTC	8	CEC Not Yet Filed	230
TBD	A80	Santa Rosa-ED5 230 kV line	SCWPDA, SPPR	38	CEC Not Yet Filed	230
TBD	A81	Silver King-Browning 230 kV line	SRP	38	CEC Approved - Case #20	230
TBD	A82	Silver King-Browning/Superior 230 kV tie	SRP	0.5	CEC Not Yet Filed	230
TBD	A83	Silver King-Knoll-Future Hayden 230 kV line	SRP	35	CEC Not Yet Filed	230
TBD	A84	Springerville-Greenlee 345 kV line - 2nd circuit	TEP	110	CEC Not Yet Filed	345
TBD	A85	Sun Valley-Morgan 230 kV line	APS	TBD	CEC Approved – Decision #70850	230
TBD	A86	Sun Valley-TS10-TS11 230 kV line	APS	TBD	CEC Not Yet Filed	230
TBD	A87	Sun Valley-TS11-Buckeye 230 kV line	APS	TBD	CEC Not Yet Filed	230
2011	B22	TEP System – Rosemont 138 kV line	TEP	24	CEC Not Yet Filed	138
TBD	A88	Test Track-Empire-ED4 230 kV line	WAPA, SCWPDA	20	CEC Not Yet Filed	230
TBD	B23	Thunderstone-Santan 230 kV line #2	SRP	13	CEC Not Yet Filed	230
TBD	A89	Tortolita North Loop 345 kV line	TEP	60	CEC Not Yet Filed	345
TBD	A90	Tortolita-South 345 kV line	TEP	68	CEC Approved - Case #50	345
TBD	A91	Tortolita-Vail 345 kV Project - Phase 3 - East Loop-Vail line	TEP	0	CEC Not Yet Filed	345
TBD	A92	Tortolita-Winchester 500 kV line	TEP	80	CEC Approved - Case #23	500
TBD	A93	Vail-East Loop - Phase 3 - Third Vail-East Loop 138 kV line	TEP	22	CEC Approved - Case #8	138
TBD	A94	Vail-South 345 kV line - 2nd circuit	TEP	14	CEC Not Required	345
TBD	B24	Vail-UA Tech Park-Irvington 138 kV line	TEP	2	CEC Not Yet Filed	138

TBD	A95	Valencia 115 kV substation expansion	UNSE	0	CEC Approved - Case #111	115
TBD	A96	Wellton-Mohawk 230 kV Line Project	WMIDD	35	CEC Not Yet Filed	230
TBD	A97	Westwing-El Sol 230 kV line	APS	11	CEC Approved – Docket#U-1345	230
TBD	A98	Westwing-Raceway 230 kV line	APS	7	CEC Approved – Decision#64473	230
TBD	A99	Westwing-South 345 kV line - 2nd circuit	TEP	178	CEC Approved - Case #15	345
TBD	B25	Winchester to Vail Double-Circuit 345 kV Line	SWTC, TEP	41	CEC Not Yet Filed	345
TBD	A100	Winchester-Vail 345 kV line #2 and #3	TEP	40	CEC Not Yet Filed	345
TBD	A101	Yucca-TS8 230 kV line	APS	TBD	CEC Not Yet Filed	230

Exhibit 21 – Listing of Projects by Voltage Class

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A11	White Hills substation	UNSE	0	CEC Not Required	2010	345/69
A60	Gateway 345/115 kV or 345/138 kV substations	UNSE	60	CEC Approved - Case #111	TBD	345/138
A39	RS26-Fountain Hill substation	SRP	TBD	CEC Not Yet Filed	2014	115/230/345
A70	Nogales Transmission line #2 (Gateway – Valencia)	UNSE	3	CEC Approved - Case #111	TBD	115/138
A4	Morgan-Pinnacle Peak 500 KV line	APS, SRP	26	CEC Approved – Decision #69343	2010	500
A14	Devers - Palo Verde 500 kV #2 line	SCE	230	CEC Denied - Case #130	TBD	500
B2	Delany – Palo Verde 500kV line	APS	15	CEC Approved – Decision #68063	2012	500
A25	Moenkopi-Eldorado 500 kV Series Capacitor Upgrade Project	SCE, APS	0	CEC Not Required	2013	500
A27	SunZia Project	SWPG, SRP, TEP, ECP, Shell, TSGT	500	CEC Not Yet Filed	2013	500
A31	Delany-Sun Valley 500 kV line	APS, SRP, CAWCD	28	CEC Approved – Decision #68063	2014	500
A36	Palo Verde Hub-North Gila 500 kV #2 line	APS, SRP, IID, WMIDD	110	CEC Approved – Decision #70127	2014	500
A37	Pinal Central-Tortolita 500 kV line	TEP, SWTC, SRP, SunZia	40	CEC Not Yet Filed	2014	500
A38	Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	SRP, TEP, SWTC, ED2, ED3, ED4	50	CEC Approved - Case #126 - Decisions #68093 and #69291	2014	500
A49	Sun Valley-Morgan 500 kV line	APS, SRP, CAWCD	TBD	CEC Approved – Decision #70850	2016	500
B11	Pinal Central – Abel #2 500kV line	SRP	TBD	CEC Not Yet Filed	2020	500
B12	Abel – RS20 500kV	SRP	TBD	CEC Not Yet Filed	TBD	500
A55	Arlington Power Plant	Dynegy Arlington Valley	TBD	CEC Approved – Decision #64357	TBD	500
A61	Gila Bend Power Plant	GBPP	0	CEC Approved – Case#109 – Extension Request Pending	TBD	500
A64	Hassayampa - Pinal West 500 kV #2 line	SRP, TEP, SWTC, ED2, ED3, ED4	51	CEC Approved – Case #124	TBD	500

A65	Hassayampa-Jojoba 500 kV line	GBPP	19	CEC Not Required	TBD	500
A72	Palo Verde-Saguaro 500 kV line	CATS Sub-regional Planning Group	130	CEC Approved – Decision#46802	TBD	500
B20	RS20 – Coronado 500kV	SRP	TBD	CEC Not Yet Filed	TBD	500
A92	Tortolita-Winchester 500 kV line	TEP	80	CEC Approved - Case #23	TBD	500
A1	Bowie Power Project	BOWIE	15	CEC Approved – Decision #64626	2010	345
A19	345/69 kV Interconnection at Western's Flagstaff 345kV bus	APS	0.95	CEC Not Required	2012	345
A24	Mazatzal Loop-in of Cholla-Pinnacle Peak 345 kV line	APS	0.95	CEC Not Required	2013	345
B7	Vail – Irvington 345 kV line	TEP	11	CEC Not Yet Filed	TBD	345
A59	Future Gateway-Comision Federale de Electricidad 345 kV line	TEP	2	CEC Approved - Case #111	TBD	345
A63	Greenlee switching station through Hidalgo to Luna	ELPE, PNM, TXNMPC	28	CEC Approved – Case #21	TBD	345
A66	Interconnection line -South-future Gateway 345 kV line	TEP, UNSE	60	CEC Approved - Case #111	TBD	345
B14	Interconnection of Greenlee-Winchester 345kV line with future Willow Substation	TEP, Bowie	0	CEC obtained by Southwestern Power Group – Case #118	TBD	345
B15	Irvington – South 345 kV line	TEP	16	CEC Not Yet Filed	TBD	345
A84	Springerville-Greenlee 345 kV line - 2nd circuit	TEP	110	CEC Not Yet Filed	TBD	345
A89	Tortolita North Loop 345 kV line	TEP	60	CEC Not Yet Filed	TBD	345
A90	Tortolita-South 345 kV line	TEP	68	CEC Approved - Case #50	TBD	345
A91	Tortolita-Vail 345 kV Project - Phase 3 - East Loop-Vail line	TEP	0	CEC Not Yet Filed	TBD	345
A94	Vail-South 345 kV line - 2nd circuit	TEP	14	CEC Not Required	TBD	345
A99	Westwing-South 345 kV line - 2nd circuit	TEP	178	CEC Approved - Case #15	TBD	345
B25	Winchester to Vail Double-Circuit 345 kV Line	SWTC, TEP	41	CEC Not Yet Filed	TBD	345
A100	Winchester-Vail 345 kV line #2 and #3	TEP	40	CEC Not Yet Filed	TBD	345
A5	Morgan-Raceway-Avery-Scatter Wash-Pinnacle Peak 230 kV line	APS	27	CEC Approved – Decision #69343	2010	230
B1	Dinosaur – Abel – Randolph 230kV line	SRP	TBD	CEC Approved – Case #126	2011	230

A16	Pinal South-Southeast Valley/RS22	SRP	30	CEC Approved - Decisions #68093 and #69291	2011	230
A28	TS12 Loop-in of Saguaro-Casa Grande 230 kV line	APS	0.95	Not Required	2013	230
A32	Desert Basin-Pinal Central 230 kV	APS, SRP	21	CEC Approved – Decisions #68093, #68291, #69183 and #69647	2014	230
A35	North Gila-TS8 230 kV line	APS	15	To be Filed in 2008	2014	230
A40	Sun Valley-Trilby Wash - 230 kV line	APS	15	CEC Approved – Decision #67828	2014	230
A41	Sundance-Pinal Central 230 kV line	APS, ED2	6	CEC Filed – Case #136	2014	230
A43	Palm Valley-TS2-Trilby Wash 230 kV line	APS	12	CEC Approved - Decisions #66646 and #67828	2015	230
A47	Griffith-North Havasu 230 kV line	UNSE	40	CEC Approved/Extended - Case #88, CEC Extension request not yet filled	2016	230
A50	Upgrade of Apache-Butterfield 230 kV line	SWTC	16	CEC Not Yet Filed	2016	230
A51	Abel (RS24)-Moody (RS17) 230 kV #1	SRP	20	CEC Approved – Decision #71441	2017	230
B9	Butterfield to Bicknell 230 kV Line Upgrade	SWTC	68.7	CEC Not Yet Filed	2017	230
A53	Abel (RS24)-Moody (RS17) 230 kV #2	SRP	20	CEC Approved – Decision #71441	2018	230
A56	Dinosaur-RS21 230 kV line	SRP	TBD	CEC Not Yet Filed	TBD	230
A57	ED5-Marana 230 kV line	SCWPDA, SPPR	28	CEC Not Yet Filed	TBD	230
A58	ED5-Pinal South (Pinal Central) 230 kV line	SCWPDA, SPPR	18	CEC Not Yet Filed	TBD	230
A62	Golden Valley 230 kV Project - McConico-Mercator Mill 230 kV line	UNSE	20	CEC Not Yet Filed	TBD	230
A68	Jojoba Loop-in of TS4-Panda 230 kV line	APS	0.95	CEC Approved – Decision #62960	TBD	230
B16	Kartchner to CS2 230 kV Line	SWTC	2	CEC Not Yet Filed	TBD	230
B17	Mural – San Rafael 230kV line	APS	TBD	CEC Not Yet Filed	TBD	230
B18	North Gila-Ligurta 230kV Line	WMIID	35	CEC Not Yet Filed	TBD	230
A71	Palm Valley-TS2-Trilby Wash 230 kV line # 2	APS	12	CEC Approved – Decision #67828	TBD	230
A73	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #1	SCWPDA, SPPR	6	CEC Not Yet Filed	TBD	230
A74	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #2	SCWPDA, SPPR	6	CEC Not Yet Filed	TBD	230
A75	Pinnacle Peak-Brandow 230 kV line	SRP	TBD	CEC Approved - Case #69	TBD	230
A77	Rogers-Browning 230 kV line	SRP	9	CEC Not Yet Filed	TBD	230
A78	Rogers-Corbell 230 kV line	SRP	12	CEC Not Required	TBD	230

A79	RS17 230 kV Loop-in line	SRP	0.95	CEC Approved - Decisions #59791 and #60099	TBD	230
B21	San Rafael to CS2 230 kV Line	SWTC	8	CEC Not Yet Filed	TBD	230
A80	Santa Rosa-ED5 230 kV line	SCWPDA, SPPR	38	CEC Not Yet Filed	TBD	230
A81	Silver King-Browning 230 kV line	SRP	38	CEC Approved - Case #20	TBD	230
A82	Silver King-Browning/Superior 230 kV tie	SRP	0.5	CEC Not Yet Filed	TBD	230
A83	Silver King-Knoll-Future Hayden 230 kV line	SRP	35	CEC Not Yet Filed	TBD	230
A85	Sun Valley-Morgan 230 kV line	APS	TBD	CEC Approved – Decision #70850	TBD	230
A86	Sun Valley-TS10-TS11 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A87	Sun Valley-TS11-Buckeye 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A88	Test Track-Empire-ED4 230 kV line	WAPA, SCWPDA	20	CEC Not Yet Filed	TBD	230
B23	Thunderstone-Santan 230 kV line #2	SRP	13	CEC Not Yet Filed	TBD	230
A96	Wellton-Mohawk 230 kV Line Project	WMIDD	35	CEC Not Yet Filed	TBD	230
A97	Westwing-EI Sol 230 kV line	APS	11	CEC Approved – Docket#U-1345	TBD	230
A98	Westwing-Raceway 230 kV line	APS	7	CEC Approved – Decision#64473	TBD	230
A101	Yucca-TS8 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A9	Tortolita-North Loop-Rancho Vistoso and Tortolita-Rancho Vistoso corridor expansion and reconfiguration Project - Phase 2	TEP	11.1	CEC Approved – Case #149	2011	138
A13	DeMoss Petrie-Tucson 138 kV line	TEP	4.5	CEC Not Yet Filed	2011	138
A20	South-Duval CLEAR - Phase 2b - Extend 138 kV line from Canoa Ranch-(Future) Duval	TEP	24	CEC Approved - Case #84	2013	138
A23	Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 1.	TEP	20	CEC Not Yet Filed	2015	138
A26	Northeast-Snyder 138 kV Tap for Craycroft-Barril substations	TEP	8	CEC Not Required	2013	138
A29	Vail-East Loop - Phase 4 - Harrison Tap of Roberts-East Loop 138 kV line	TEP	0	CEC Approved - Case #8	2013	138
A33	Gateway-Sonoita 138 kV line	UNSE	10	CEC Not Yet Filed	2014	138
A34	La Canada-Orange Grove-Rillito 138 kV line	TEP	5.4	CEC Not Yet Filed	2014	138
A42	Irvington-Kino–UA Med-Tucson 138 kV line	TEP	10.9	CEC Not Yet Filed	2015	138
A44	South-Hartt-Green Valley 138 kV line	TEP	14.5	CEC Not Yet Filed	2015	138

A45	Tortolita - Rancho Vistoso 138kV line tap for future Naranja substation.	TEP	24.5	CEC Not Yet Filed	2015	138
A46	Interconnection of Tortolita – North Loop 138 kV with future Marana 138 kV Substation	TEP	22	CEC Not Yet Filed	2015	138
B8	Del Cerro-Anklam-Tucson 138 kV line	TEP	2	CEC Not Yet Filed	2016	138
A48	Irvington Substation – Corona Substation – South Substation 138kV.	TEP	16.1	CEC Not Yet Filed	2016	138
A52	Orange Grove-East Ina 138 kV line	TEP	3.6	CEC Not Yet Filed	2017	138
A54	Interconnection of South – Midvale 138 kV circuit with future Spencer, Raytheon, Medina 138kV substations - Phase 2	TEP	13	CEC Not Yet Filed	2018	138
	Midvale - Spencer - Medina - Raytheon - South 138kV Line - Phase 3	TEP		CEC Not Yet Filed	2019	138
A67	Irvington-East Loop Project - Phase 3 - Irvington-22nd Street 2nd Circuit	TEP	9	CEC Approved - Case #66	TBD	138
A76	Rancho Vistoso-(Future) Sun City 138 kV line	TEP	3.5	CEC Not Required	TBD	138
B22	TEP System – Rosemont 138 kV line	TEP	24	CEC Not Yet Filed	2011	138
A93	Vail-East Loop - Phase 3 - Third Vail-East Loop 138 kV line	TEP	22	CEC Approved - Case #8	TBD	138
B24	Vail-UA Tech Park-Irvington 138 kV line	TEP	2	CEC Not Yet Filed	TBD	138
A2	CAP 115 kV line loop-in to SWTC Sandario	SWTC	0.6	CEC Approved – Case #152	2010	115
A3	Marana-Avra Valley 115 kV Line Upgrade	SWTC	8.75	CEC Not Yet Filed	2010	115
A6	Naviska-Thornycroft 115 kV line	SWTC	7	CEC Approved – Case #149	2010	115
A7	Saguaro to North Loop	SWTC	3.2	CEC approved – Case #149	2010	115
A8	Thornycroft-Rattlesnake 115 kV line	SWTC	19	CEC Approved – Case #152	2010	115
A10	Valencia-CAP Black Mountain 115 kV line	SWTC	2.6	CEC Approved – Case #152	2010	115
A12	Avra Valley-Sandario Tap 115 kV Line Upgrade	SWTC	2.8	CEC Not Yet Filed	2011	115
A15	Marana Tap-Marana 115 kV Line Upgrade	SWTC	0.2	CEC Not Required	2011	115
A17	Sandario Tap-Three Points 115 kV Line Upgrade	SWTC	13.71	CEC Not Yet Filed	2011	115
A22	Upgrade existing 115 kV transmission line to Nogales	UNSE	60	CEC Approved – Case #111	2012	115
A30	Apache/Hayden-San Manuel 115 kV line	SWTC	4.5	CEC Approved – Case #142	2014	115
B3	Three Terminal Plan Circuit 1 Participation	SWTC	23	CEC Not Yet Filed	2014	115

B4	Three Terminal Plan Circuit 2 Participation	SWTC	31	CEC Not Yet Filed	2014	115
B5	Three Terminal Plan Circuit 3 Participation	SWTC	19	CEC Not Yet Filed	2014	115
B6	Saguaro to Adonis 115 kV Line Loop-in to Naviska	SWTC	0	CEC Not Required	2015	115
B10	CAP 115 kV Line Loop-in to Picture Rocks	SWTC	0	CEC Not Required	2018	115
A69	New Hayden 115 kV Station Loop-in	SRP	0.75	CEC Not Yet Filed	TBD	115
B19	Pantano to Kartchner 115 kV Line Upgrade	SWTC	36	CEC Not Yet Filed	TBD	115
A95	Valencia 115 kV substation expansion	UNSE	0	CEC Approved - Case #111	TBD	115
B13	CS2 Substation	SWTC	0	CEC Not Yet Filed	TBD	230/115

Exhibit 22 – Arizona Public Service Project Summary

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A4	Morgan-Pinnacle Peak 500 kV line	APS, SRP	26	CEC Approved – Decision #69343	2010	500
A5	Morgan-Raceway-Avery-Scatter Wash-Pinnacle Peak 230 kV line	APS	27	CEC Approved – Decision #69343	2010	230
A19	345/69 kV Interconnection at Western's Flagstaff 345kV bus	APS	0.95	CEC Not Required	2012	345
B2	Delany – Palo Verde 500kV line	APS	15	CEC Approved – Decision #68063	2012	500
A24	Mazatzal Loop-in of Cholla-Pinnacle Peak 345 kV line	APS	0.95	CEC Not Required	2013	345
A25	Moenkopi-Eldorado 500 kV Series Capacitor Upgrade Project	SCE, APS	0	CEC Not Required	2013	500
A28	TS12 Loop-in of Saguaro-Casa Grande 230 kV line	APS	0.95	Not Required	2013	230
A31	Delany-Sun Valley 500 kV line	APS, SRP, CAWCD	28	CEC Approved – Decision #68063	2014	500
A32	Desert Basin-Pinal Central 230 kV	APS, SRP	21	CEC Approved – Decisions #68093, #68291, #69183 and #69647	2014	230
A35	North Gila-TS8 230 kV line	APS	15	To be Filed in 2008	2014	230
A36	Palo Verde Hub-North Gila 500 kV #2 line	APS, SRP, IID, WMIDD	110	CEC Approved – Decision #70127	2014	500
A40	Sun Valley-Trilby Wash - 230 kV line	APS	15	CEC Approved – Decision #67828	2014	230
A41	Sundance-Pinal Central 230 kV line	APS, ED2	6	CEC Filed – Case #136	2014	230
A43	Palm Valley-TS2-Trilby Wash 230 kV line	APS	12	CEC Approved - Decisions #66646 and #67828	2015	230
A49	Sun Valley-Morgan 500 kV line	APS, SRP, CAWCD	TBD	CEC Approved – Decision #70850	2016	500
A68	Jojoba Loop-in of TS4-Panda 230 kV line	APS	0.95	CEC Approved – Decision #62960	TBD	230
B17	Mural – San Rafael 230kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A71	Palm Valley-TS2-Trilby Wash 230 kV line # 2	APS	12	CEC Approved – Decision #67828	TBD	230
A85	Sun Valley-Morgan 230 kV line	APS	TBD	CEC Approved – Decision #70850	TBD	230
A86	Sun Valley-TS10-TS11 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230
A87	Sun Valley-TS11-Buckeye 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230

A97	Westwing-EI Sol 230 kV line	APS	11	CEC Approved – Docket#U-1345	TBD	230
A98	Westwing-Raceway 230 kV line	APS	7	CEC Approved – Decision#64473	TBD	230
A101	Yucca-TS8 230 kV line	APS	TBD	CEC Not Yet Filed	TBD	230

Exhibit 23 – Salt River Project Summary

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A4	Morgan-Pinnacle Peak 500 KV line	APS, SRP	26	CEC Approved – Decision #69343	2010	500
B1	Dinosaur – Abel – Randolph 230kV line	SRP	TBD	CEC Approved – Case #126	2011	230
A16	Pinal South-Southeast Valley/RS22	SRP	30	CEC Approved - Decisions #68093 and #69291	2011	230
A27	SunZia Project	SWPG, SRP, TEP, ECP, Shell, TSGT	500	CEC Not Yet Filed	2013	500
A31	Delany-Sun Valley 500 kV line	APS, SRP, CAWCD	28	CEC Approved – Decision #68063	2014	500
A32	Desert Basin-Pinal Central 230 kV	APS, SRP	21	CEC Approved – Decisions #68093, #68291, #69183 and #69647	2014	230
A36	Palo Verde Hub-North Gila 500 kV #2 line	APS, SRP, IID, WMIDD	110	CEC Approved – Decision #70127	2014	500
A37	Pinal Central-Tortolita 500 kV line	TEP, SWTC, SRP, SunZia	40	CEC Not Yet Filed	2014	500
A38	Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	SRP, TEP, SWTC, ED2, ED3, ED4	50	CEC Approved - Case #126 - Decisions #68093 and #69291	2014	500
A39	RS26-Fountain Hill substation	SRP	TBD	CEC Not Yet Filed	2014	115/230/345
A49	Sun Valley-Morgan 500 kV line	APS, SRP, CAWCD	TBD	CEC Approved – Decision #70850	2016	500
A51	Abel (RS24)-Moody (RS17) 230 kV #1	SRP	20	CEC Approved – Decision #71441	2017	230
A53	Abel (RS24)-Moody (RS17) 230 kV #2	SRP	20	CEC Approved – Decision #71441	2018	230
B11	Pinal Central – Abel #2 500kV line	SRP	TBD	CEC Not Yet Filed	2020	500
B12	Abel – RS20 500kV	SRP	TBD	CEC Not Yet Filed	TBD	500
A56	Dinosaur-RS21 230 kV line	SRP	TBD	CEC Not Yet Filed	TBD	230
A64	Hassayampa - Pinal West 500 kV #2 line	SRP, TEP, SWTC, ED2, ED3, ED4	51	CEC Approved – Case #124	TBD	500
A69	New Hayden 115 kV Station Loop-in	SRP	0.75	CEC Not Yet Filed	TBD	115
A75	Pinnacle Peak-Brandow 230 kV line	SRP	TBD	CEC Approved - Case #69	TBD	230

A77	Rogers-Browning 230 kV line	SRP	9	CEC Not Yet Filed	TBD	230
A78	Rogers-Corbell 230 kV line	SRP	12	CEC Not Required	TBD	230
A79	RS17 230 kV Loop-in line	SRP	0.95	CEC Approved - Decisions #59791 and #60099	TBD	230
B20	RS20 – Coronado 500kV	SRP	TBD	CEC Not Yet Filed	TBD	500
A81	Silver King-Browning 230 kV line	SRP	38	CEC Approved - Case #20	TBD	230
A82	Silver King-Browning/Superior 230 kV tie	SRP	0.5	CEC Not Yet Filed	TBD	230
A83	Silver King-Knoll-Future Hayden 230 kV line	SRP	35	CEC Not Yet Filed	TBD	230
B23	Thunderstone-Santan 230 kV line #2	SRP	13	CEC Not Yet Filed	TBD	230

Exhibit 24 – Santa Cruz Water and Power District Summary

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A57	ED5-Marana 230 kV line	SCWPDA, SPPR	28	CEC Not Yet Filed	TBD	230
A58	ED5-Pinal South (Pinal Central) 230 kV line	SCWPDA, SPPR	18	CEC Not Yet Filed	TBD	230
A73	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #1	SCWPDA, SPPR	6	CEC Not Yet Filed	TBD	230
A74	Pinal Central (Pinal South) – Future substation 6 miles northeast 230 kV line #2	SCWPDA, SPPR	6	CEC Not Yet Filed	TBD	230
A80	Santa Rosa-ED5 230 kV line	SCWPDA, SPPR	38	CEC Not Yet Filed	TBD	230
A88	Test Track-Empire-ED4 230 kV line	WAPA, SCWPDA	20	CEC Not Yet Filed	TBD	230

Exhibit 25 – Southwest Transmission Cooperative Project Summary

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A2	CAP 115 kV line loop-in to SWTC Sandario	SWTC	0.6	CEC Approved – Case #152	2010	115
A3	Marana-Avra Valley 115 kV Line Upgrade	SWTC	8.75	CEC Not Yet Filed	2010	115
A6	Naviska-Thornsdale 115 kV line	SWTC	7	CEC Approved – Case #149	2010	115
A7	Saguaro to North Loop	SWTC	3.2	CEC approved – Case #149	2010	115
A8	Thornsdale-Rattlesnake 115 kV line	SWTC	19	CEC Approved – Case #152	2010	115
A10	Valencia-CAP Black Mountain 115 kV line	SWTC	2.6	CEC Approved – Case #152	2010	115
A12	Avra Valley-Sandario Tap 115 kV Line Upgrade	SWTC	2.8	CEC Not Yet Filed	2011	115
A15	Marana Tap-Marana 115 kV Line Upgrade	SWTC	0.2	CEC Not Required	2011	115
A17	Sandario Tap-Three Points 115 kV Line Upgrade	SWTC	13.71	CEC Not Yet Filed	2011	115
A30	Apache/Hayden-San Manuel 115 kV line	SWTC	4.5	CEC Approved – Case #142	2014	115
A37	Pinal Central-Tortolita 500 kV line	TEP, SWTC, SRP, SunZia	40	CEC Not Yet Filed	2014	500
A38	Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	SRP, TEP, SWTC, ED2, ED3, ED4	50	CEC Approved - Case #126 - Decisions #68093 and #69291	2014	500
B3	Three Terminal Plan Circuit 1 Participation	SWTC	23	CEC Not Yet Filed	2014	115
B4	Three Terminal Plan Circuit 2 Participation	SWTC	31	CEC Not Yet Filed	2014	115
B5	Three Terminal Plan Circuit 3 Participation	SWTC	19	CEC Not Yet Filed	2014	115
B6	Saguaro to Adonis 115 kV Line Loop-in to Naviska	SWTC	0	CEC Not Required	2015	115
A50	Upgrade of Apache-Butterfield 230 kV line	SWTC	16	CEC Not Yet Filed	2016	230
B9	Butterfield to Bicknell 230 kV Line Upgrade	SWTC	68.7	CEC Not Yet Filed	2017	230
B10	CAP 115 kV Line Loop-in to Picture Rocks	SWTC	0	CEC Not Required	2018	115
B13	CS2 Substation	SWTC	0	CEC Not Yet Filed	TBD	230/115
A64	Hassayampa - Pinal West 500 kV #2 line	SRP, TEP, SWTC, ED2, ED3, ED4	51	CEC Approved – Case #124	TBD	500
B16	Kartchner to CS2 230 kV Line	SWTC	2	CEC Not Yet Filed	TBD	230

B19	Pantano to Kartchner 115 kV Line Upgrade	SWTC	36	CEC Not Yet Filed	TBD	115
B21	San Rafael to CS2 230 kV Line	SWTC	8	CEC Not Yet Filed	TBD	230
B25	Winchester to Vail Double-Circuit 345 kV Line	SWTC, TEP	41	CEC Not Yet Filed	TBD	345

Exhibit 26 – Tucson Electric Power Project Summary

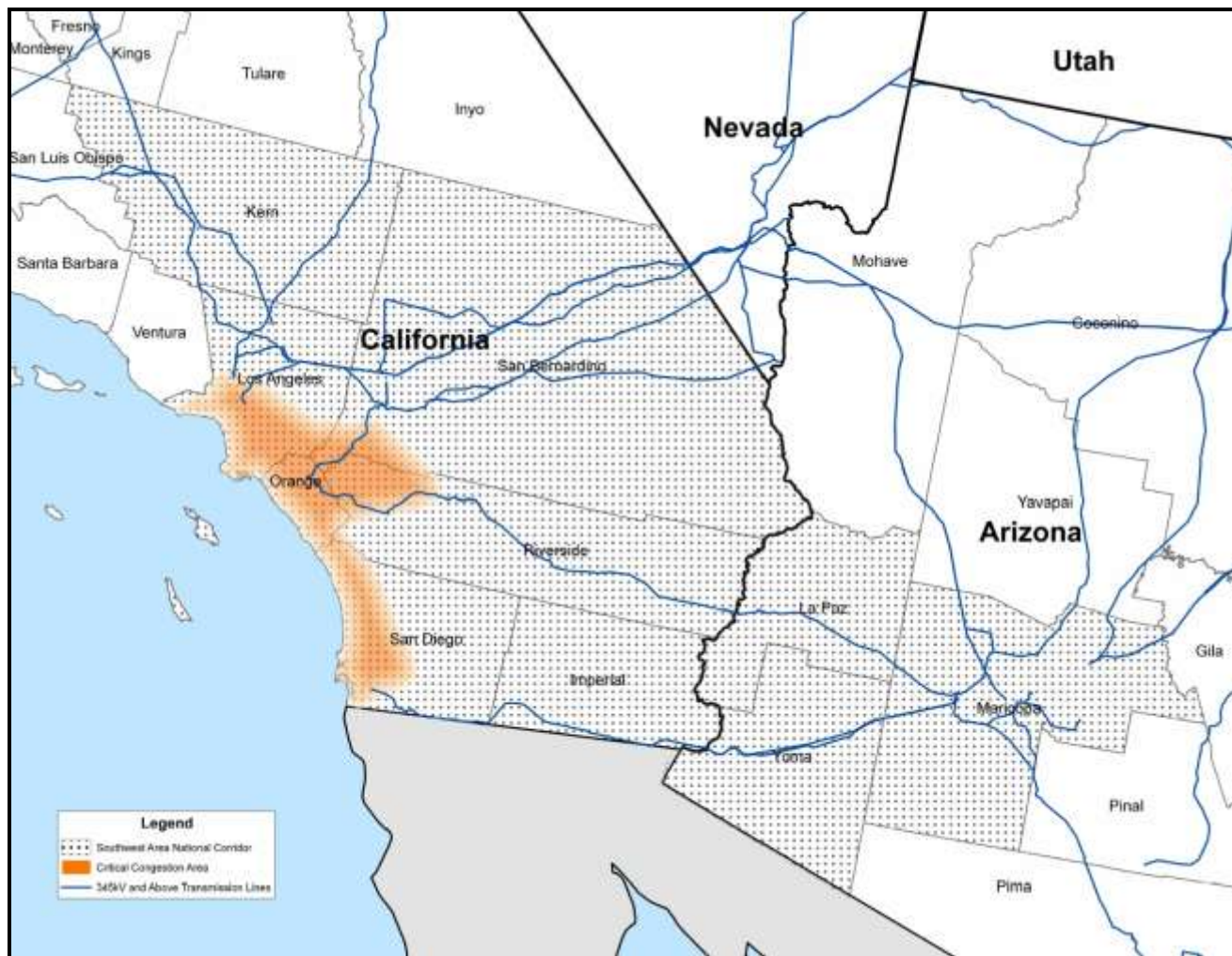
Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A9	Tortolita-North Loop-Rancho Vistoso and Tortolita-Rancho Vistoso corridor expansion and reconfiguration Project - Phase 2	TEP	11.1	CEC Approved – Case #149	2010	138
A13	DeMoss Petrie-Tucson 138 kV line	TEP	4.5	CEC Not Yet Filed	2011	138
A18	Tortolita-North Loop-Rancho Vistoso Project - Phase 3 - Corridor Expansion	TEP	18	CEC Not Yet Filed	2011	138
A20	South-Duval CLEAR - Phase 2b - Extend 138 kV line from Canoa Ranch-(Future) Duval	TEP	24	CEC Approved - Case #84	2012	138
A21	Tucson-Downtown 138 kV line	TEP	1	CEC Not Yet Filed	2012	138
A23	Extend Midvale-(Future) Spencer-(Future) San Joaquin 138 kV line	TEP	20	CEC Not Yet Filed	2013	138
A26	Northeast-Snyder 138 kV Tap for Craycroft-Barril substations	TEP	8	CEC Not Required	2013	138
A27	SunZia Project	SWPG, SRP, TEP, ECP, Shell, TSGT	500	CEC Not Yet Filed	2013	500
A29	Vail-East Loop - Phase 4 - Harrison Tap of Roberts-East Loop 138 kV line	TEP	0	CEC Approved - Case #8	2013	138
A34	La Canada-Orange Grove-Rillito 138 kV line	TEP	5.4	CEC Not Yet Filed	2014	138
A37	Pinal Central-Tortolita 500 kV line	TEP, SWTC, SRP, SunZia	40	CEC Not Yet Filed	2014	500
A38	Pinal West-Pinal Central – Randolph - Abel-Browning 500 kV line	SRP, TEP, SWTC, ED2, ED3, ED4	50	CEC Approved - Case #126 - Decisions #68093 and #69291	2014	500
A42	Irvington-Kino–UA Med-Tucson 138 kV line	TEP	10.9	CEC Not Yet Filed	2015	138
A44	South-Hartt-Green Valley 138 kV line	TEP	14.5	CEC Not Yet Filed	2015	138
A45	Tortolita Rancho Vistoso 138 kV tap for future Naranja substation	TEP	24.5	CEC Not Yet Filed	2015	138
A46	Tortolita-Marana-North Loop Project - Phase 1 - Tortolita-Marana 138 kV line	TEP	22	CEC Not Yet Filed	2015	138
B7	Vail – Irvington 345 kV line	TEP	11	CEC Not Yet Filed	2015	345

B8	Del Cerro-Anklam-Tucson 138 kV line	TEP	2	CEC Not Yet Filed	2016	138
A48	Irvington-South Project - Phase 1 - Irvington-Corona-South 138 kV line	TEP	16.1	CEC Not Yet Filed	2016	138
A52	Orange Grove-East Ina 138 kV line	TEP	3.6	CEC Not Yet Filed	2017	138
A54	Midvale-Spencer-Medina-Raytheon-South 138 kV line	TEP	13	CEC Not Yet Filed	2018	138
A59	Future Gateway-Comision Federale de Electricidad 345 kV line	TEP	2	CEC Approved - Case #111	TBD	345
A64	Hassayampa - Pinal West 500 kV #2 line	SRP, TEP, SWTC, ED2, ED3, ED4	51	CEC Approved – Case #124	TBD	500
A66	Interconnection line -South-future Gateway 345 kV line	TEP, UNSE	60	CEC Approved - Case #111	TBD	345
B14	Interconnection of Greenlee-Winchester 345kV line with future Willow Substation	TEP, Bowie	0	CEC obtained by Southwestern Power Group – Case #118	TBD	345
B15	Irvington – South 345 kV line	TEP	16	CEC Not Yet Filed	TBD	345
A67	Irvington-East Loop Project - Phase 3 - Irvington-22nd Street 2nd Circuit	TEP	9	CEC Approved - Case #66	TBD	138
A76	Rancho Vistoso-(Future) Sun City 138 kV line	TEP	3.5	CEC Not Required	TBD	138
A84	Springerville-Greenlee 345 kV line - 2nd circuit	TEP	110	CEC Not Yet Filed	TBD	345
B22	TEP System – Rosemont 138 kV line	TEP	24	CEC Not Yet Filed	TBD	138
A89	Tortolita North Loop 345 kV line	TEP	60	CEC Not Yet Filed	TBD	345
A90	Tortolita-South 345 kV line	TEP	68	CEC Approved - Case #50	TBD	345
A91	Tortolita-Vail 345 kV Project - Phase 3 - East Loop-Vail line	TEP	0	CEC Not Yet Filed	TBD	345
A92	Tortolita-Winchester 500 kV line	TEP	80	CEC Approved - Case #23	TBD	500
A93	Vail-East Loop - Phase 3 - Third Vail-East Loop 138 kV line	TEP	22	CEC Approved - Case #8	TBD	138
A94	Vail-South 345 kV line - 2nd circuit	TEP	14	CEC Not Required	TBD	345
B24	Vail-UA Tech Park-Irvington 138 kV line	TEP	2	CEC Not Yet Filed	TBD	138
A99	Westwing-South 345 kV line - 2nd circuit	TEP	178	CEC Approved - Case #15	TBD	345
B25	Winchester to Vail Double-Circuit 345 kV Line	SWTC, TEP	41	CEC Not Yet Filed	TBD	345
A100	Winchester-Vail 345 kV line #2 and #3	TEP	40	CEC Not Yet Filed	TBD	345

Exhibit 27 – UNS Electric Project Summary

Project ID	Description	Participants	Length (mi)	Permitting/Siting Status	Year	Voltage (kV)
A11	White Hills substation	UNSE	0	CEC Not Required	2010	345/69
A22	Upgrade existing 115 kV transmission line to Nogales	UNSE	60	CEC Approved – Case #111	2012	115
A33	Gateway-Sonoita 138 kV line	UNSE	10	CEC Not Yet Filed	2014	138
A47	Griffith-North Havasu 230 kV line	UNSE	40	CEC Approved/Extended - Case #88, CEC Extension request not yet filled	2016	230
A60	Gateway 345/115 kV or 345/138 kV substations	UNSE	60	CEC Approved - Case #111	TBD	345/138
A62	Golden Valley 230 kV Project - McConico-Mercator Mill 230 kV line	UNSE	20	CEC Not Yet Filed	TBD	230
A66	Interconnection line -South-future Gateway 345 kV line	TEP, UNSE	60	CEC Approved - Case #111	TBD	345
A70	Nogales Transmission line #2 (Gateway – Valencia)	UNSE	3	CEC Approved - Case #111	TBD	115/138
A95	Valencia 115 kV substation expansion	UNSE	0	CEC Approved - Case #111	TBD	115

Exhibit 28 – NEITC Corridor Map



The Southline

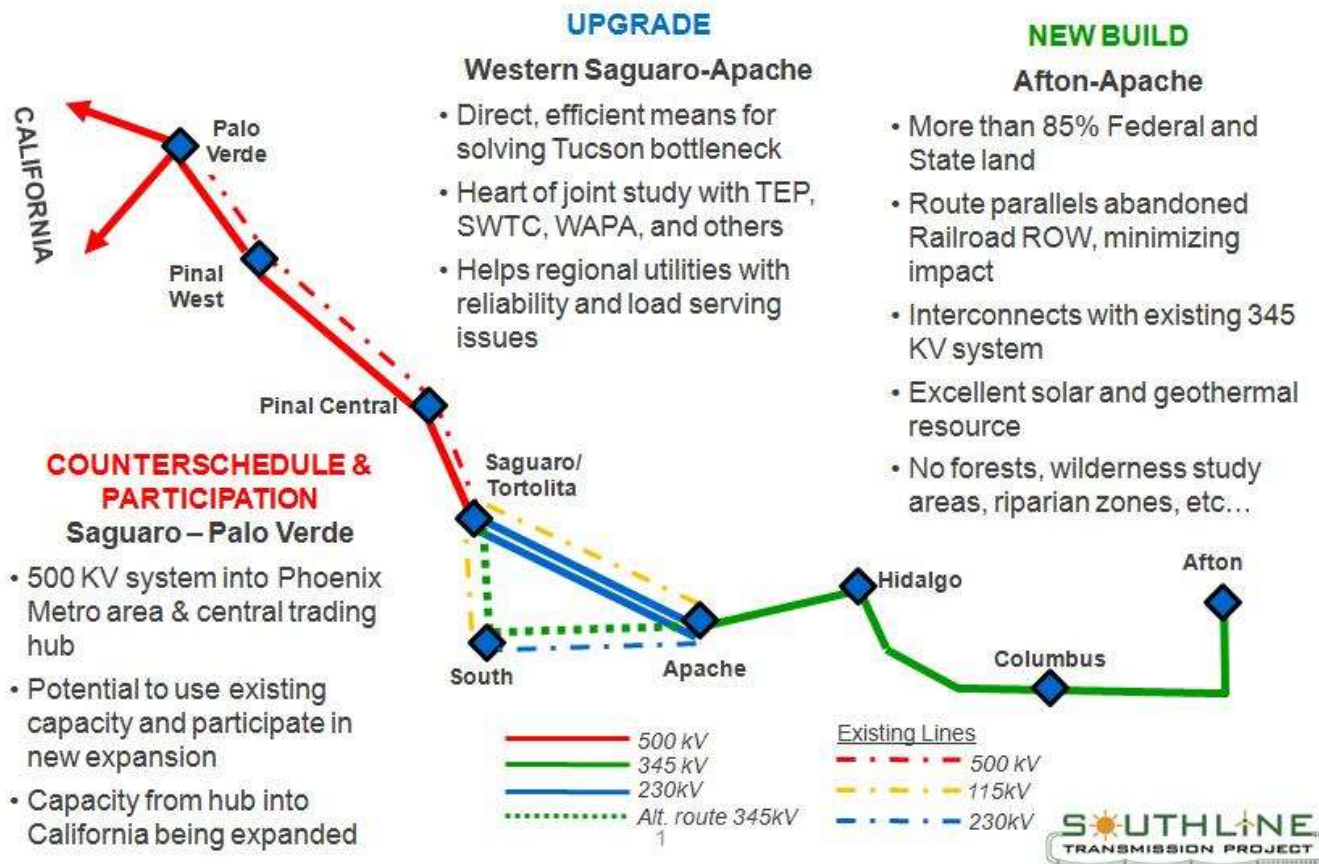


Exhibit 30 – Santa Fe Clean Line



Exhibit 31 – Eldorado Valley Study Group

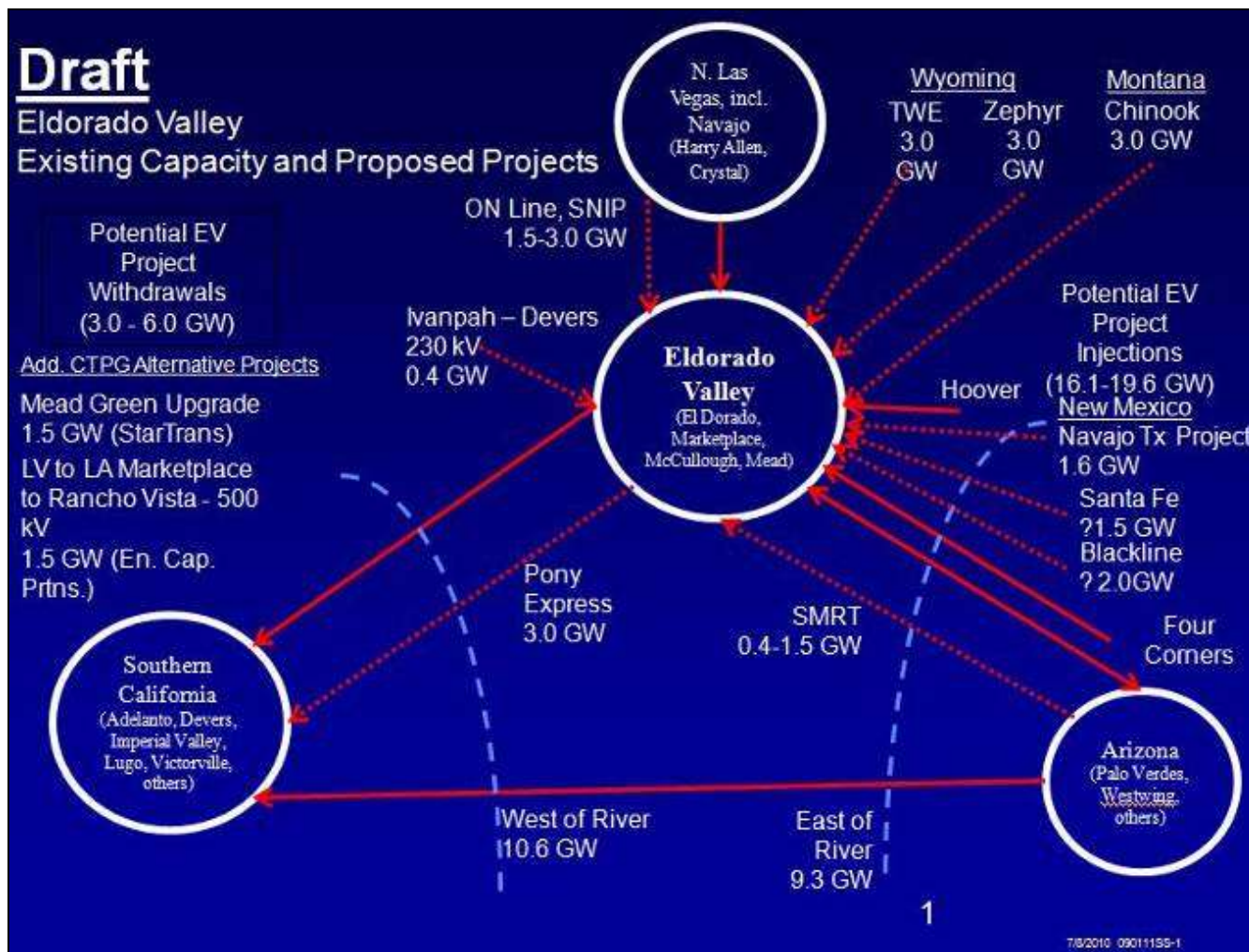


Exhibit 32 – Cochise County Transmission Plan

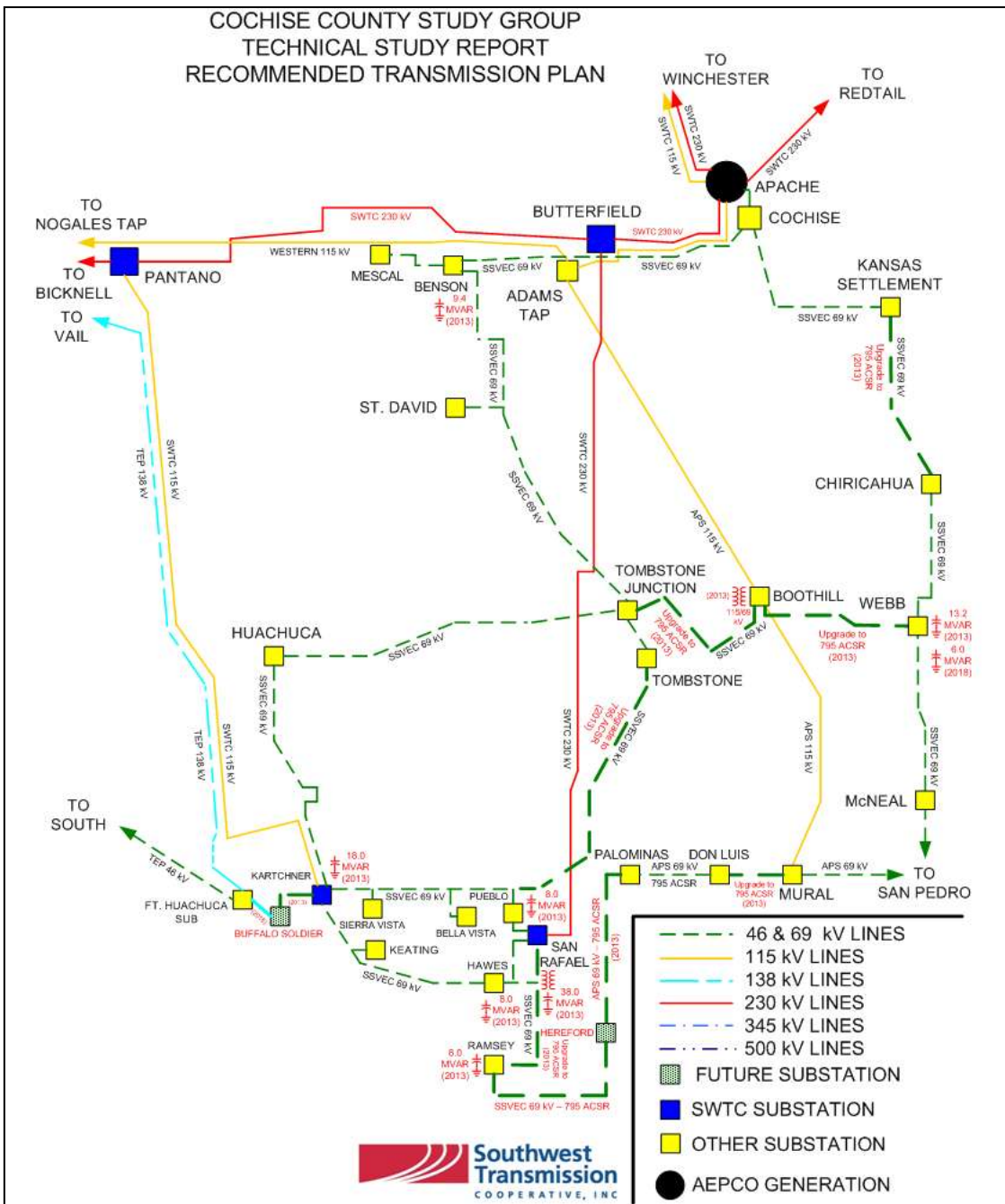


Exhibit 33 – SMRT Project and Study Area

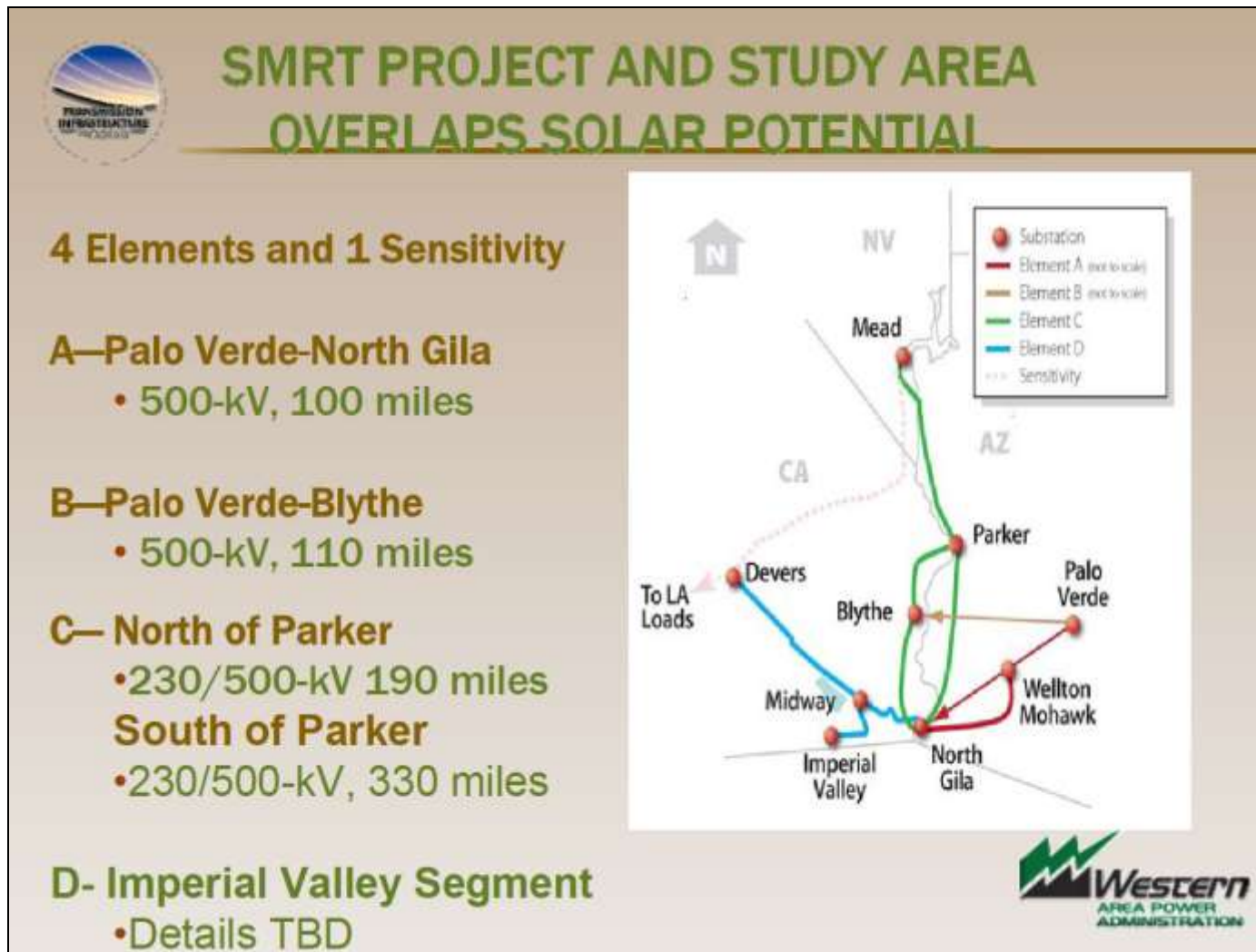


Exhibit 34 – SWTC Renewable Transmission Projects

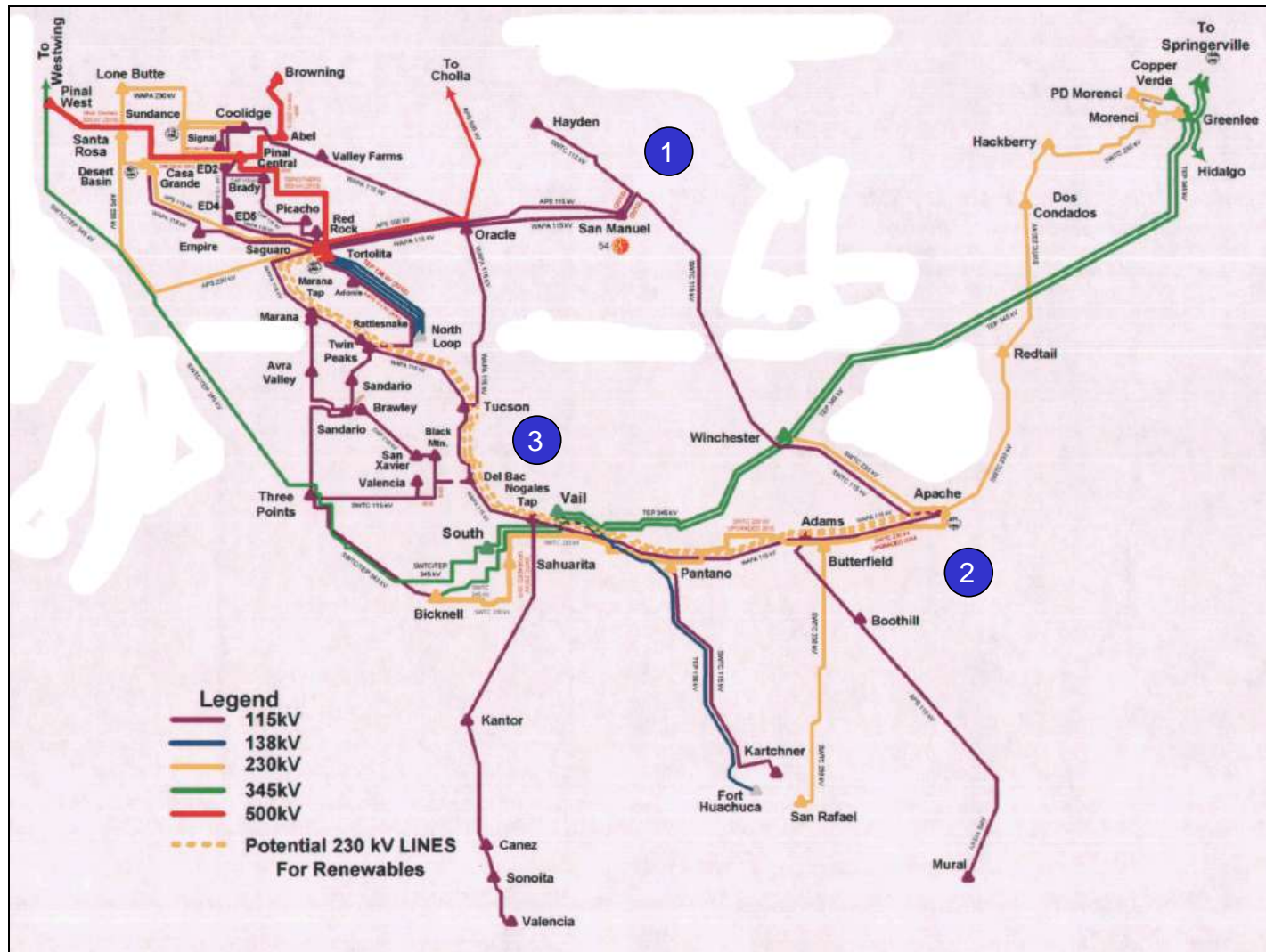


Exhibit 35 – Starwood Solar I Project

