

U.S.-JORDAN ELECTRIC POWER TRANSMISSION PARTNERSHIP EXECUTIVE EXCHANGE VISIT

April 05, 2010

Phoenix, Arizona



Overview of APS

Bob Smith

Director Energy Delivery Asset Management and Planning



Agenda

- Welcome
- APS Corporate Structure
- Transmission System
- Forecast and Generation
- Loads and Resources
- Conclusions

Pinnacle West Capital Corporation



APS Organization Chart



Donald Brandt
Chairman/CEO
and President – PNW
Chairman/CEO – APS

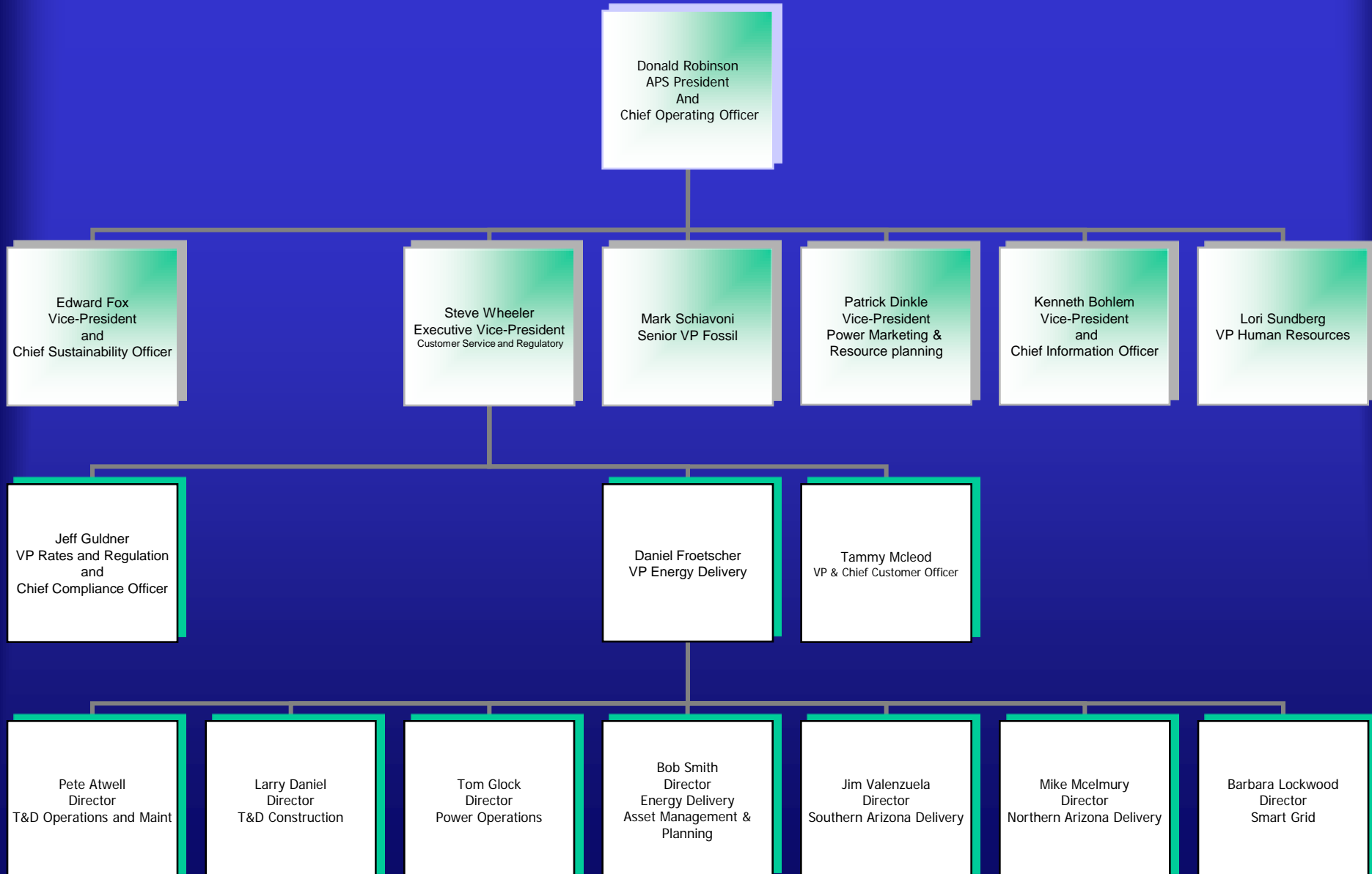
Donald Robinson
APS President
And
Chief Operating Officer

Randall Edington
Executive Vice-President Nuclear
Chief Nuclear Officer

James Hatfield
Senior Vice-President
Chief Financial Officer

David Falck
Executive VP General Counsel
Secretary PNW

APS Organization Chart



APS Overview

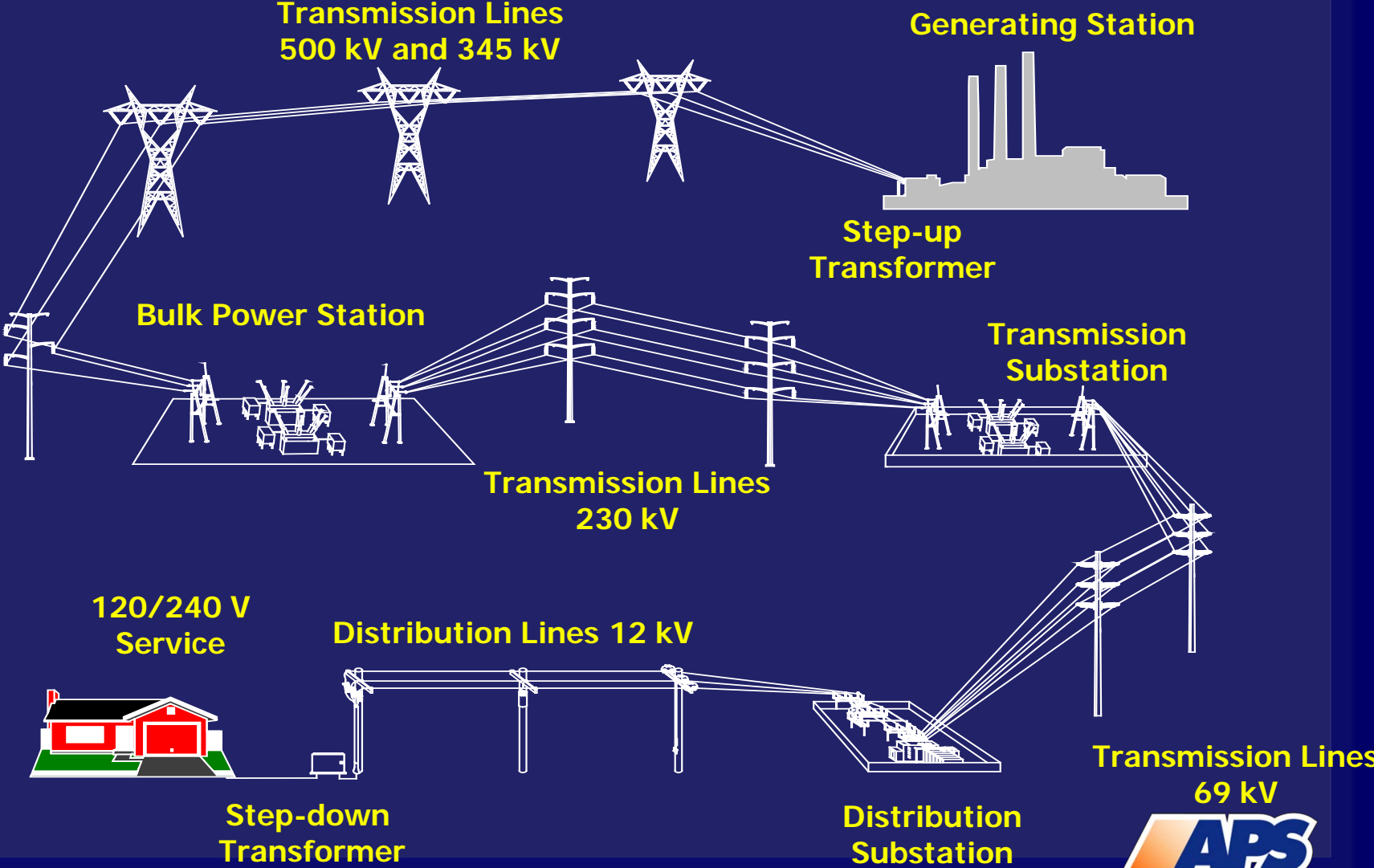
- Investor owned utility
- Over 1.1 million customers
- 2009 revenue - \$3,090 million
- 2009 net income - \$251.2 million
- 2009 system peak – 7,218MW (5,033 MW in metro Phoenix)
- Largest electric utility in Arizona

APS Service Statistics

- 11 counties
- 34,645 sq. mi. service area
- 1.1 million customers
- 411 substations
- 28,022 distribution line miles
- 5,234 transmission line miles
- 54 generation units



Reliability Supply Chain



Delivery System Construction

	<u>2008</u>	<u>2009</u>	<u>2010</u>
Distribution Sub MVA	717	158	62
Trans. Sub MVA	508	728	2400
Trans. Line Miles, New	17	52	59
Trans. Lines Miles, Rebuild	10	42	41

Total distribution system substation capacity = 13,000 MVA

Total transmission system substation capacity = 25,000 MVA



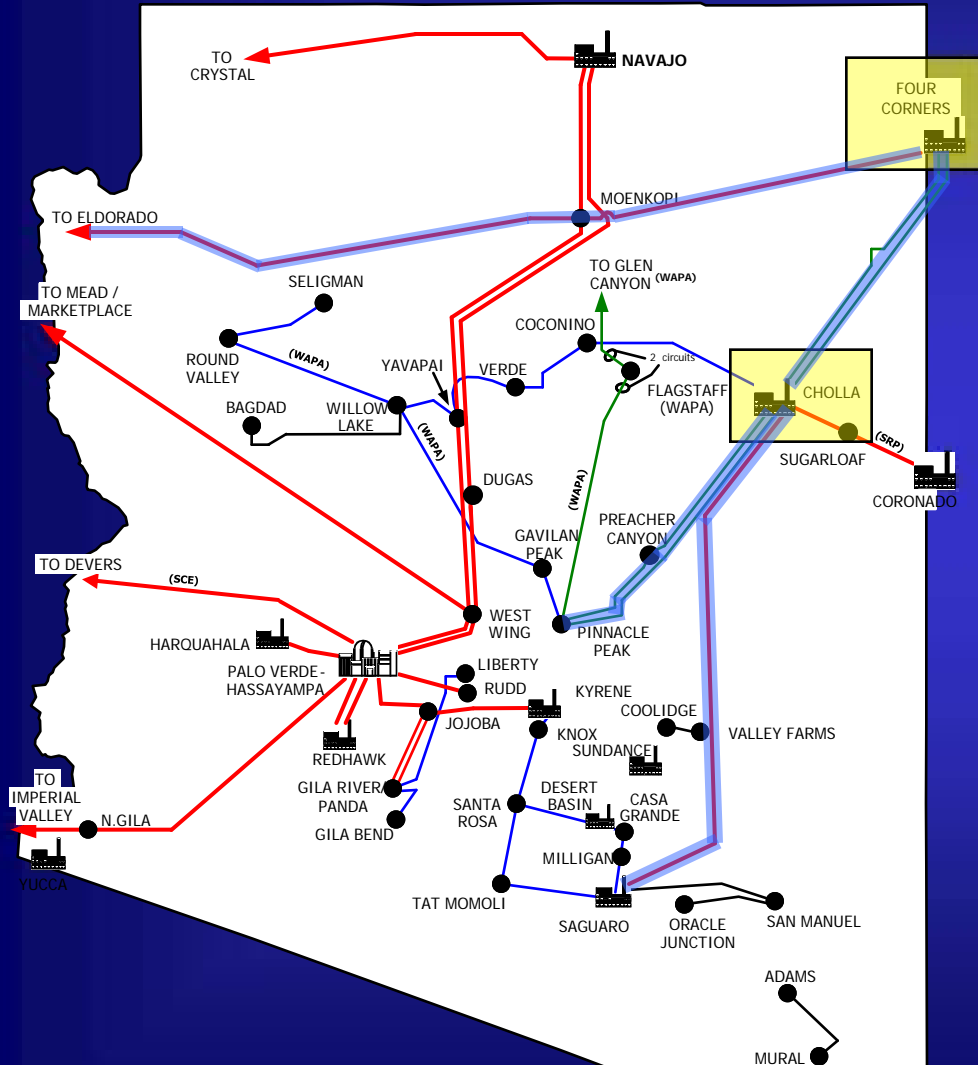
State Area Transmission



Red = 500 kV
Green = 345 kV
Blue = 230 kV
Black = 115 kV

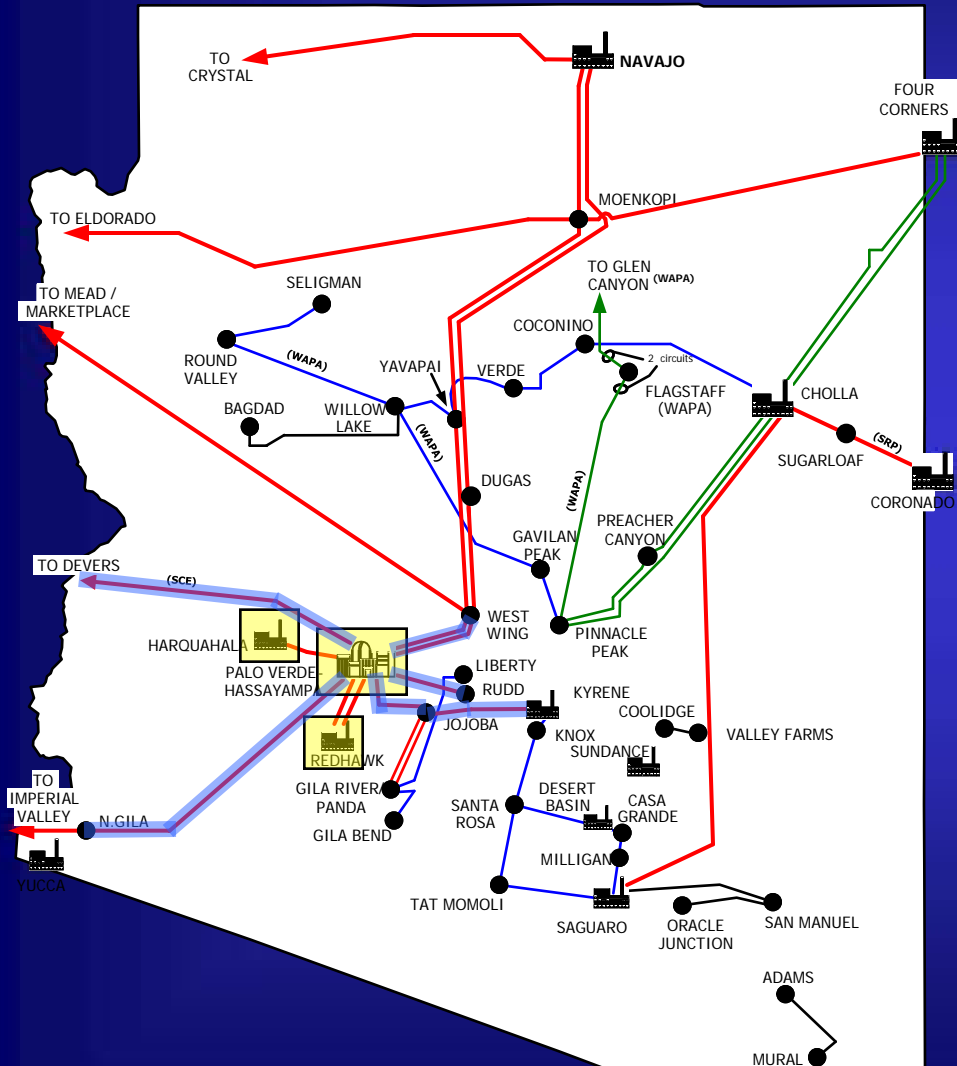


Four Corners/Cholla System Transmission



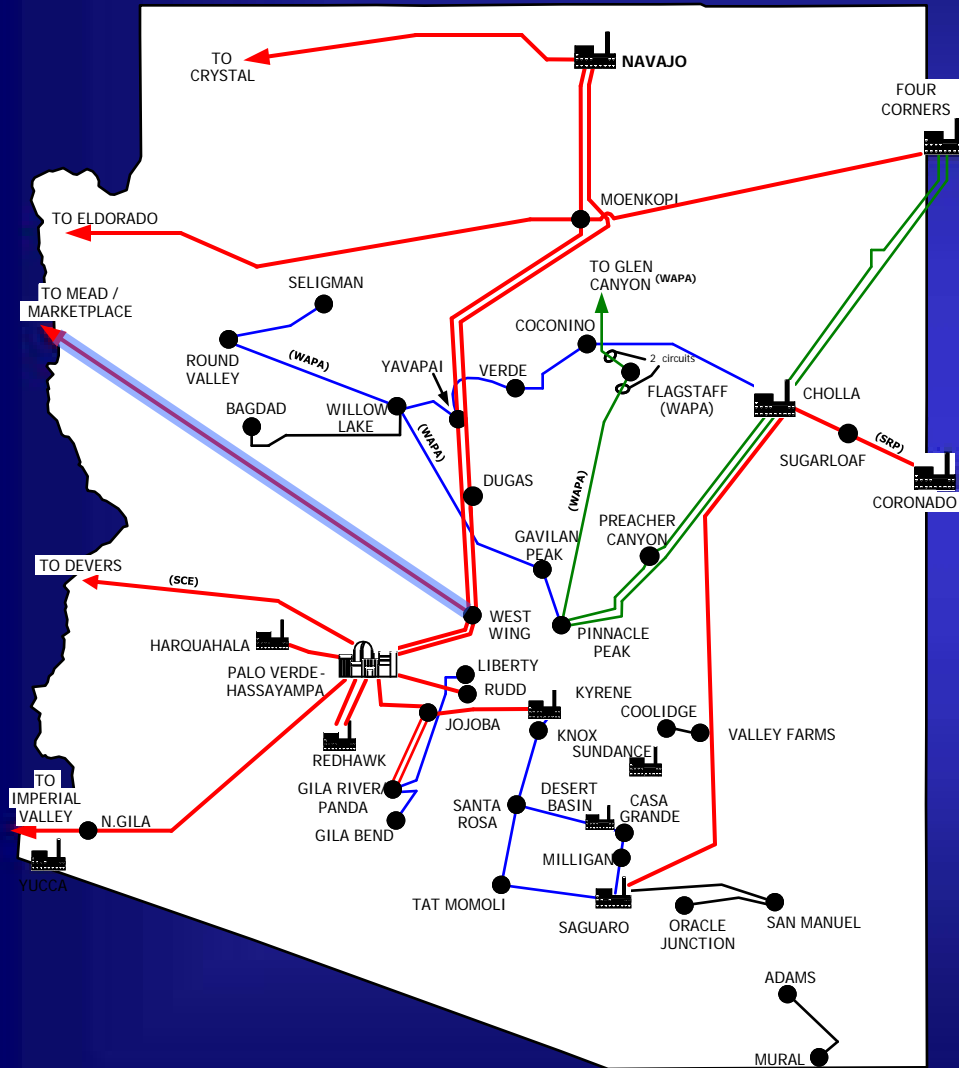
- Four Corners and Cholla Power Plants
- Four Corners-Moenkopi-Eldorado 500kV line
- Four Corners-Cholla 345kV lines
- Cholla-Pinnacle Peak 345kV lines
- Cholla-Saguaro 500kV line

Palo Verde Hub Transmission



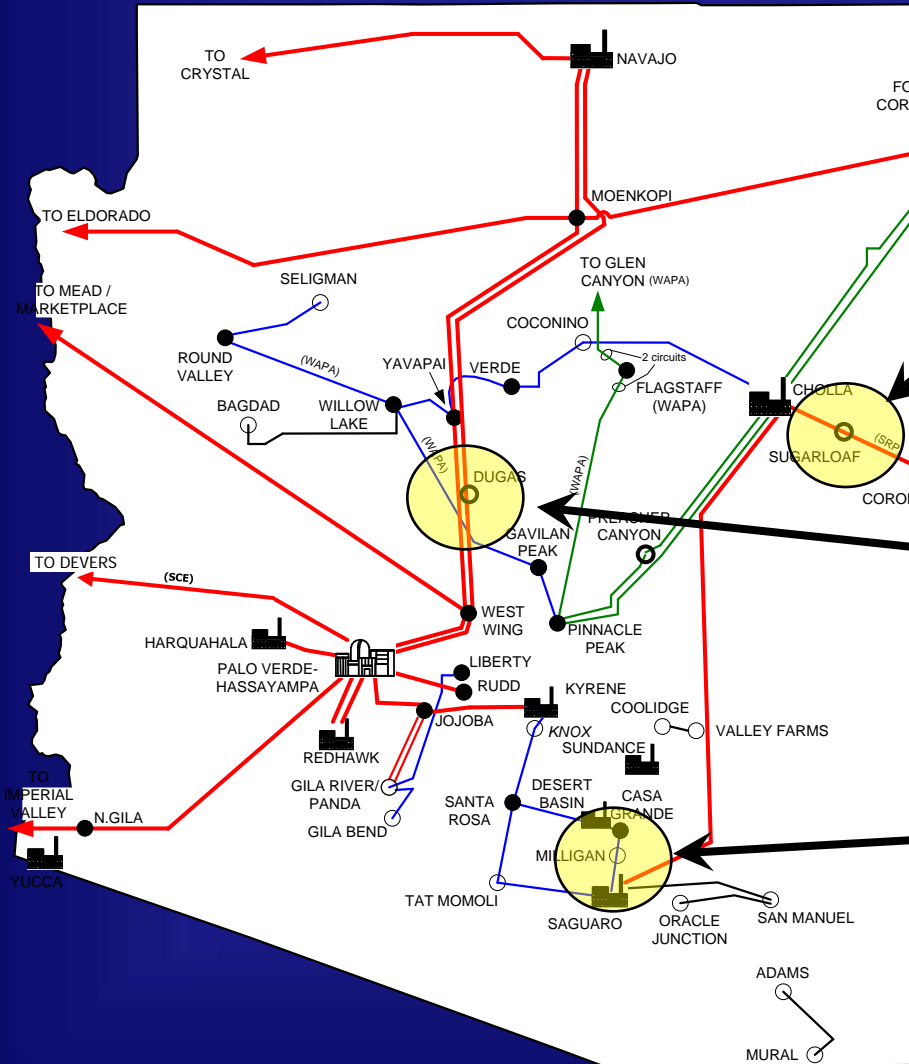
- Palo Verde Nuclear Plant and Hassayampa Gas Power Plants
- Palo Verde West
 - PV-Devers 500kV line
 - Hassayampa-North Gila 500kV line
- Palo Verde East
 - PV-Westwing 500kV lines
 - PV-Rudd 500kV line
 - Hassayampa-Jojoba-Kyrene 500kV line

Mead-Phoenix Transmission



- Mead-Phoenix 500kV line

Transmission Substation Additions 2009

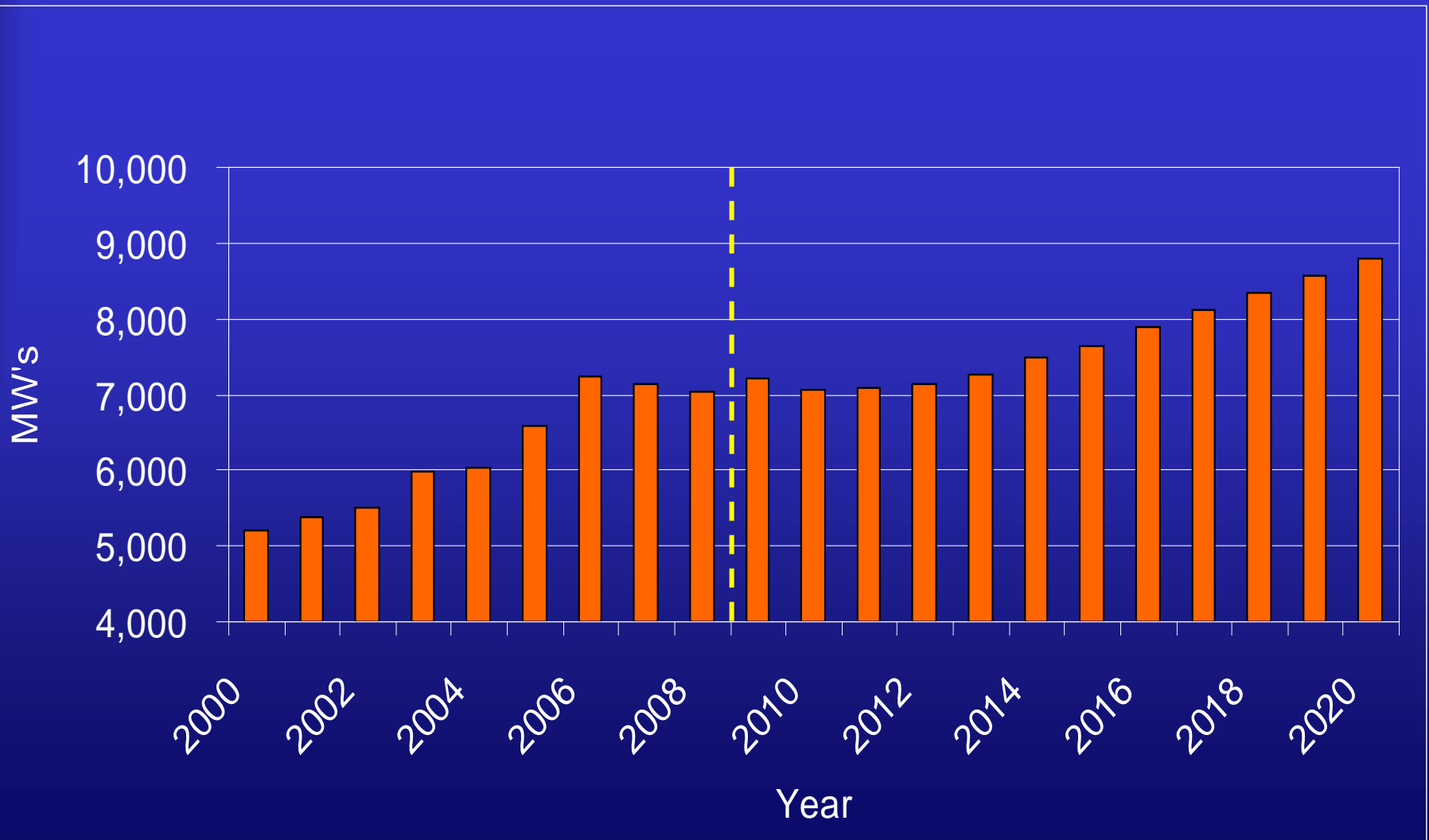


Sugarloaf 500/69kV Substation

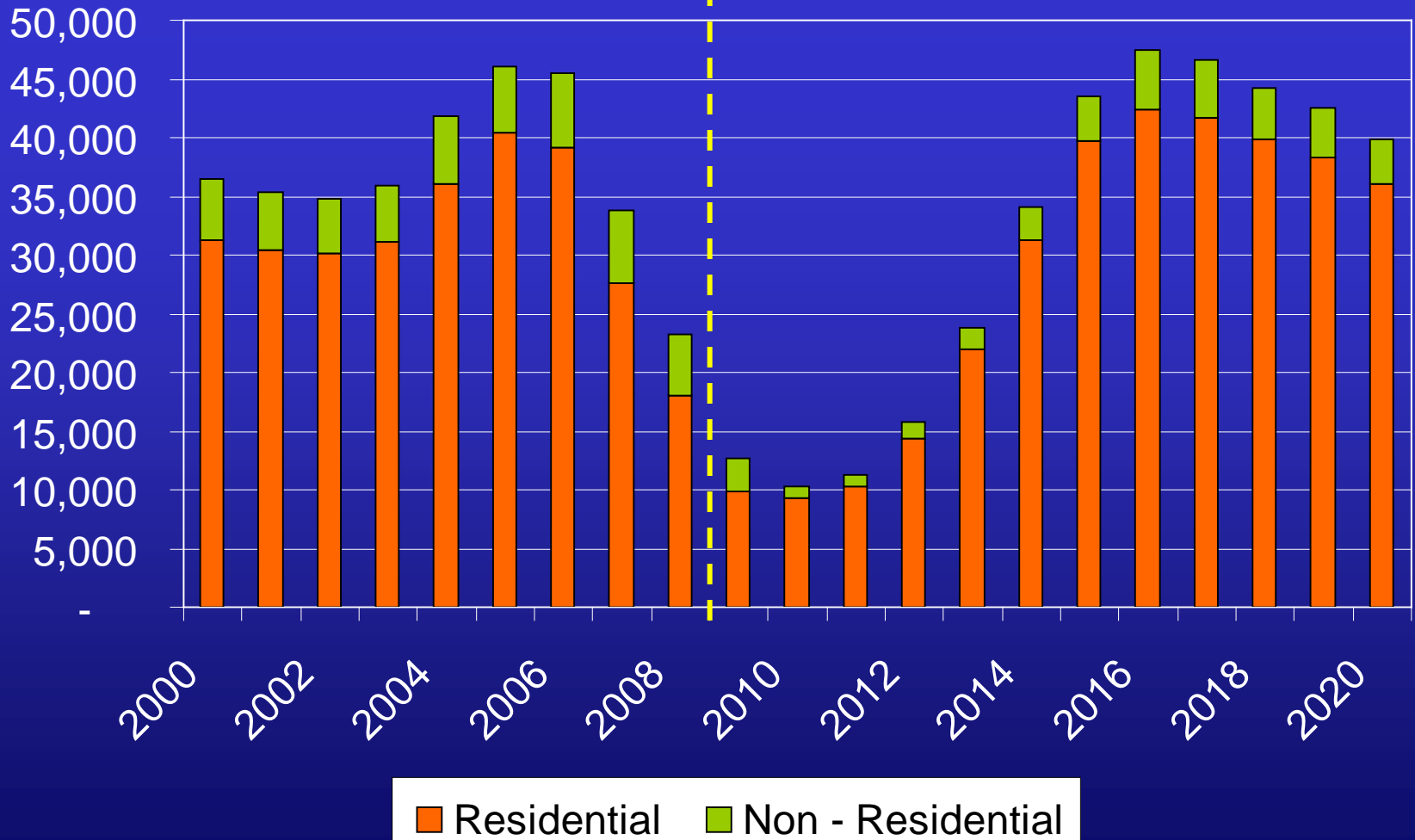
Dugas 500/69kV Substation

Milligan 230/69kV Substation

Historical and Forecast Peak Demand

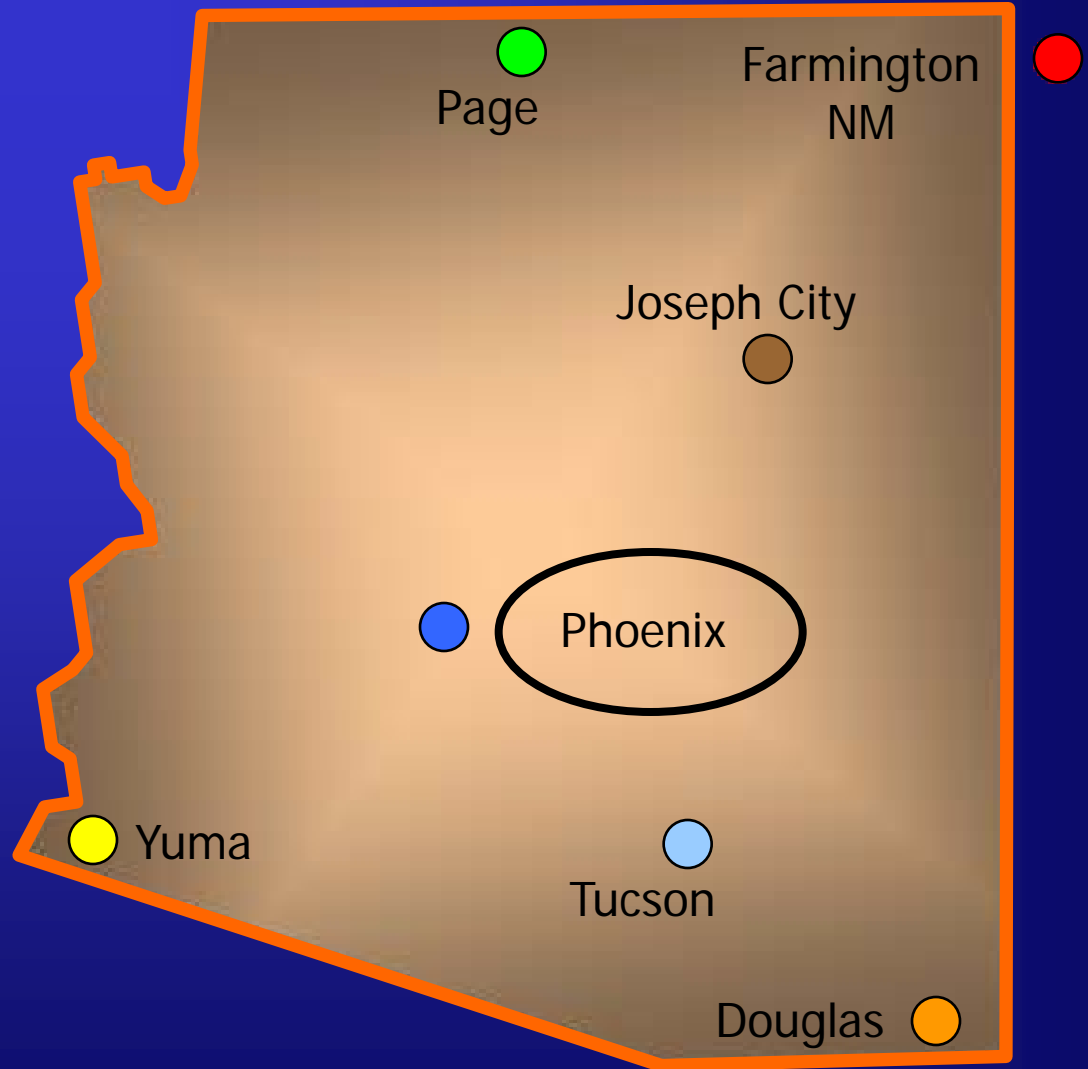


Meter Sets

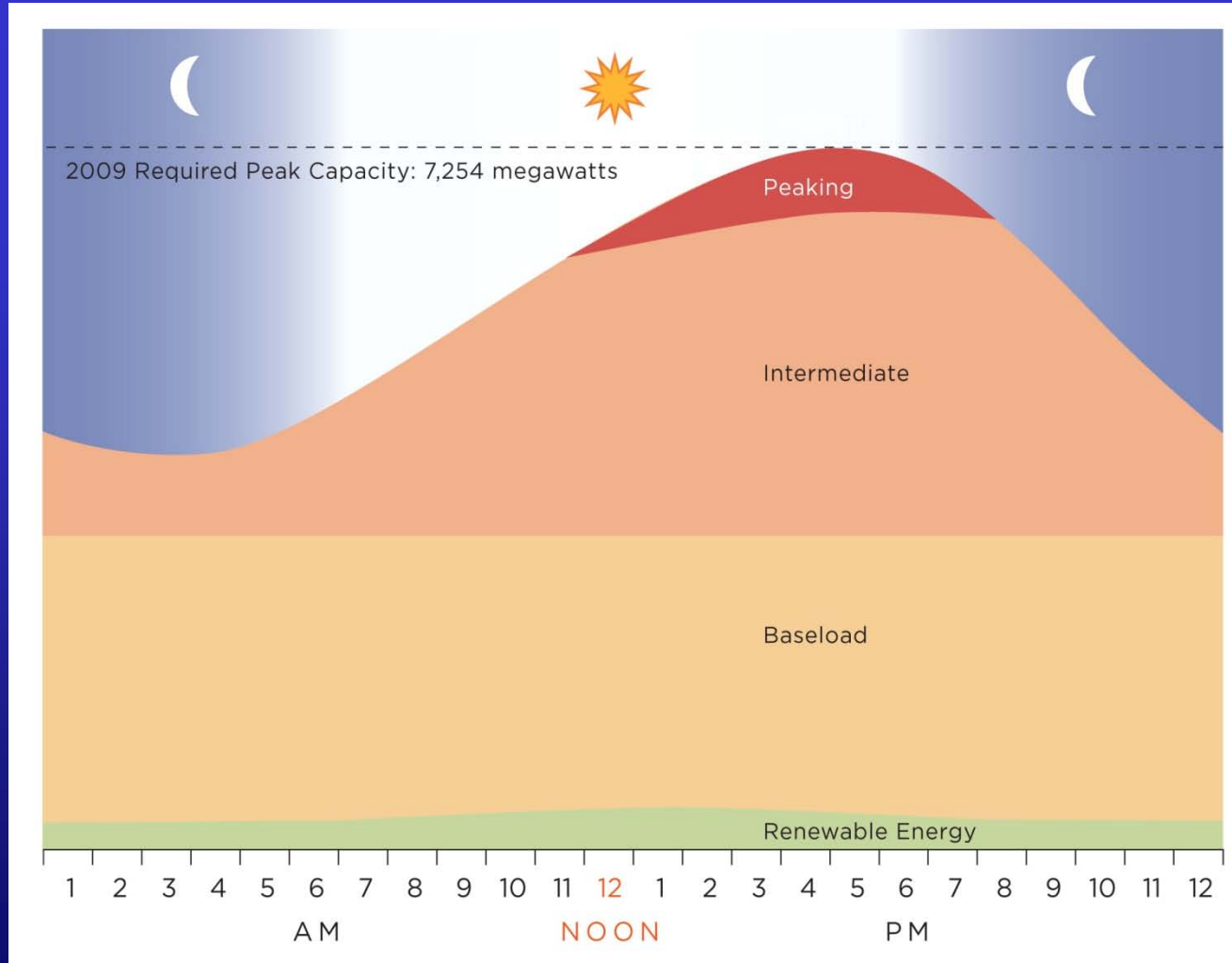


APS Generation

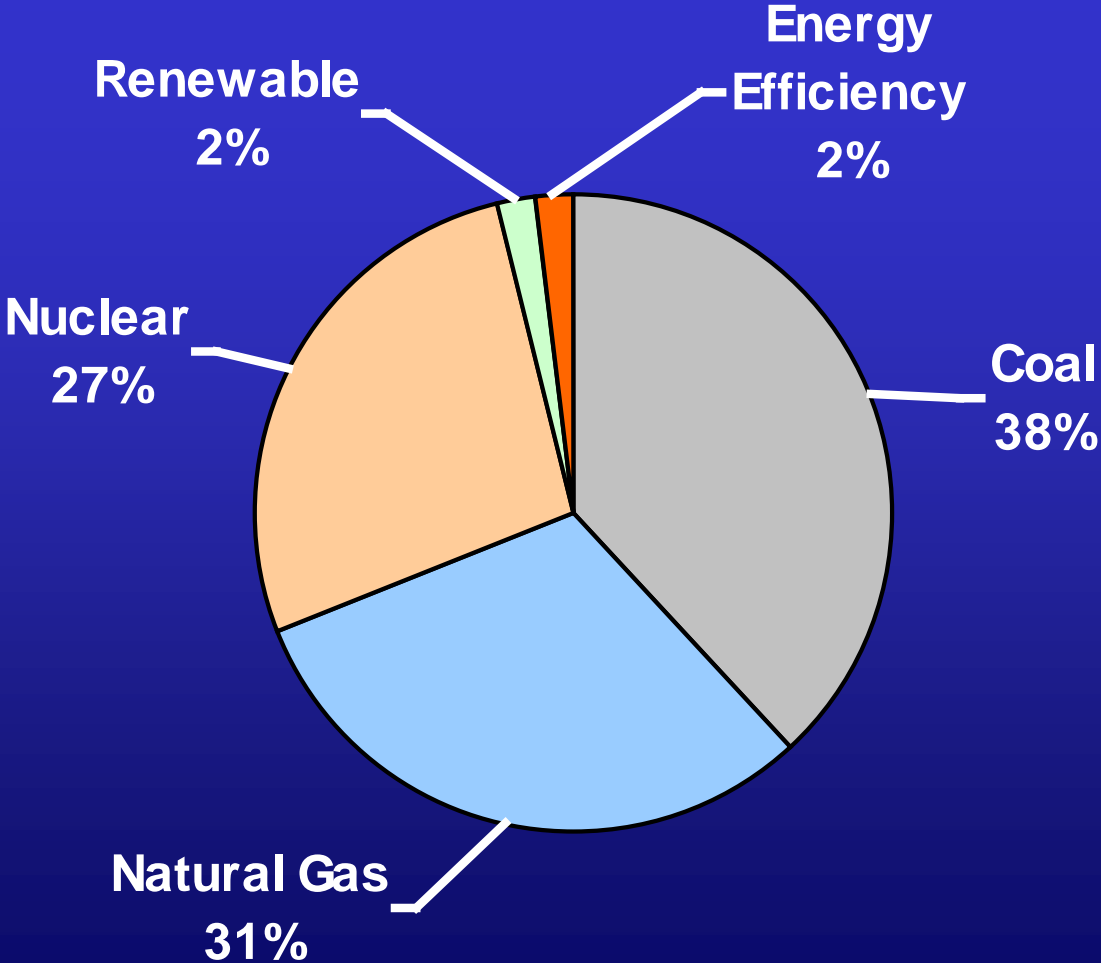
- Base Load, Nuclear
 - Palo Verde 
- Base Load, Coal
 - Four Corners 
 - Cholla 
 - Navajo 
- Intermediate and Peak Load, Gas, Oil back-up
 - Phoenix Area
 - West Phoenix
 - Sundance
 - Redhawk
 - Ocotillo
 - Saguaro 
 - Yucca 
 - Douglas 



Meeting Customers' Needs



2009 Projected Energy Mix



Nuclear: Palo Verde

- Fuel sourced from multiple suppliers
- 100% of 2009 requirements under firm contract



Coal: Four Corners Power Plant

- Mine mouth plant with full supply contract with BHP Navajo Mine
- Contract term currently runs through 2015
- Coal supplier maintains in-pit and processing plant inventory
- 60 days inventory available

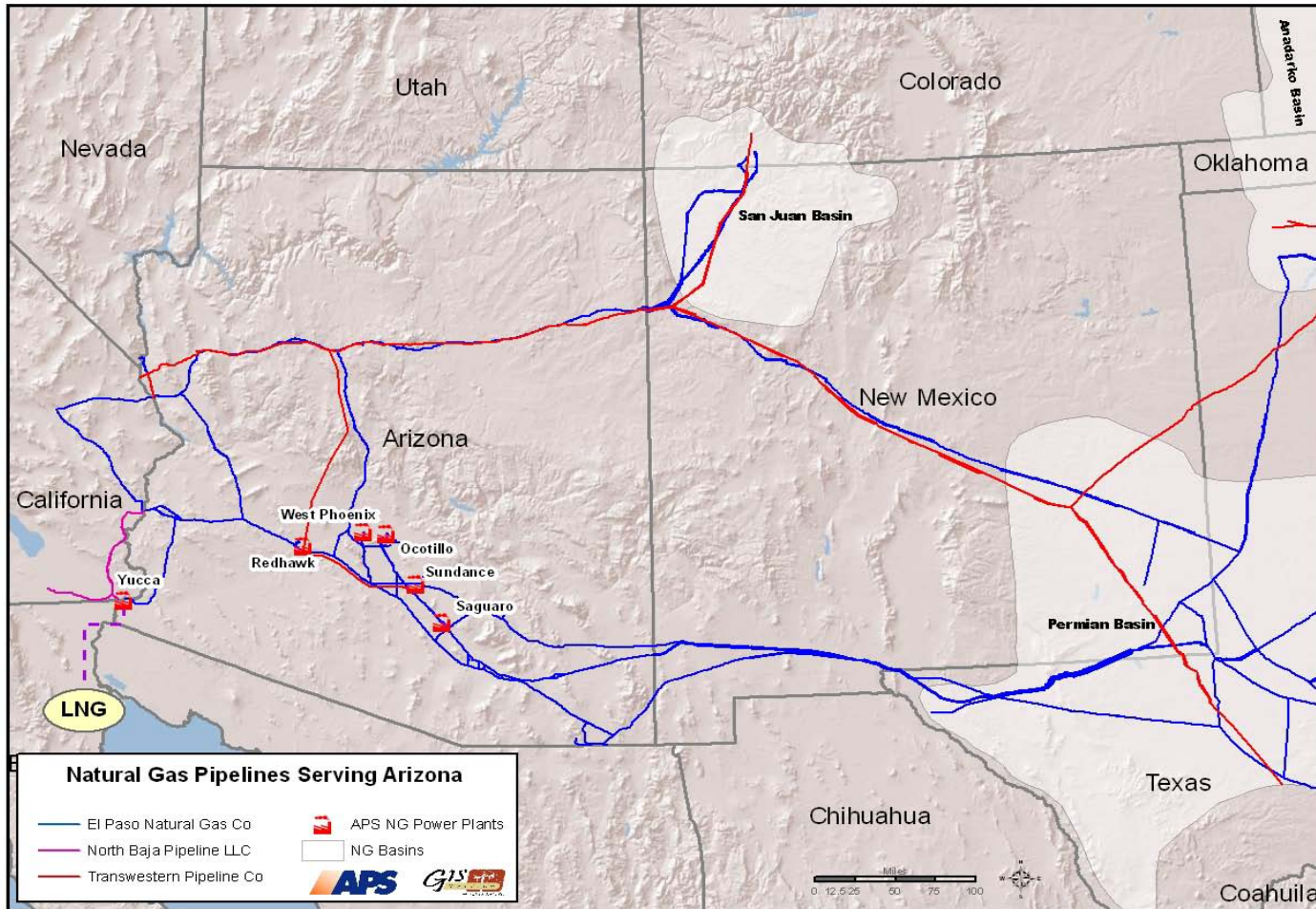


Coal: Cholla Power Plant

- Current inventory and contract commitments provide adequate coal for the projected 2009 burn
- Primary supply source is delivered by rail from the El Segundo Mine near Grants, NM
- Expected inventory 45-60 days

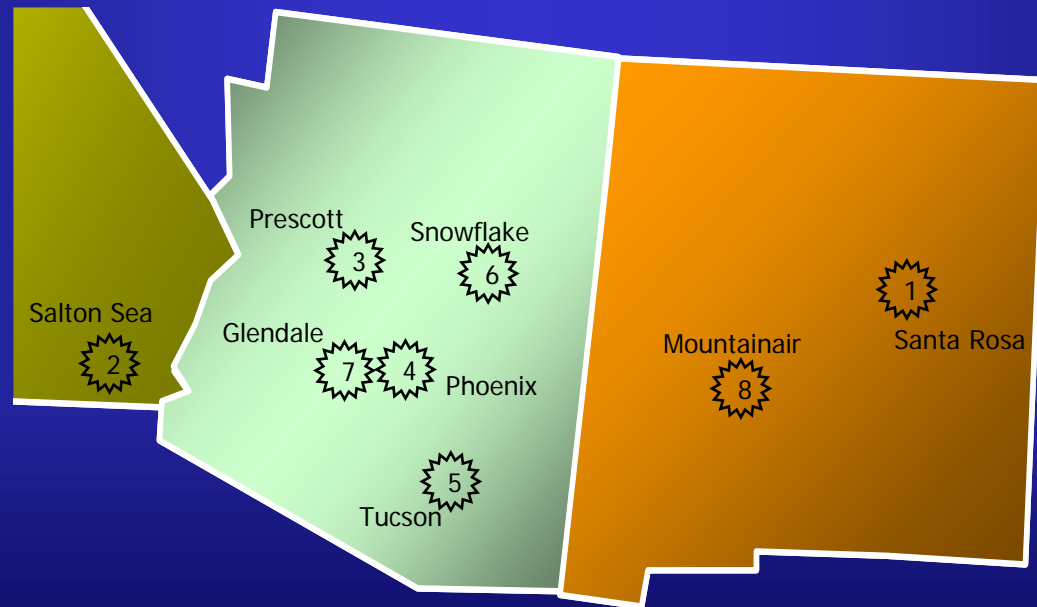


Natural Gas Pipelines Serving Arizona



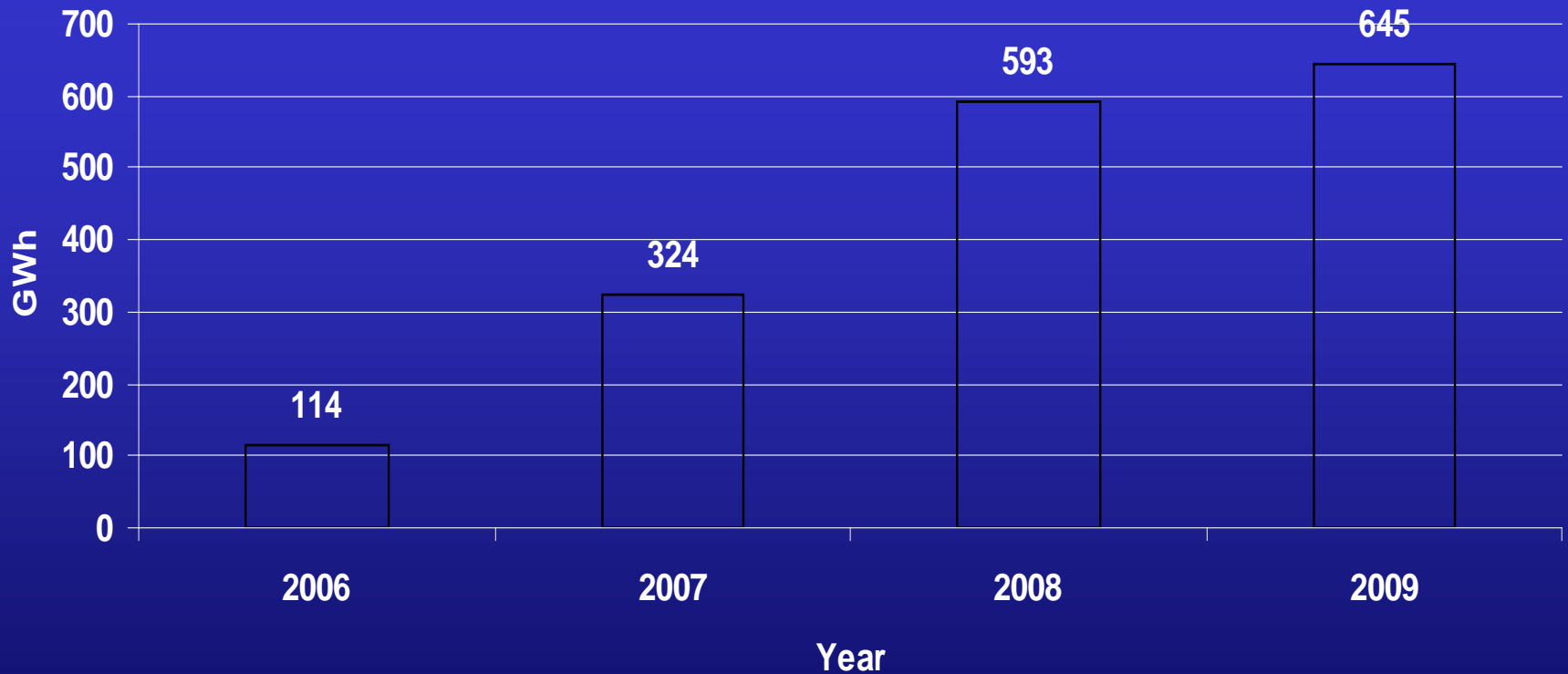
Renewable Resources

1. Aragonne Mesa, 90 MW (Wind)
2. Salton Sea, 10 MW (Geothermal)
3. Prescott Airport, 2.9 MW (Solar)
4. STAR Center, 1.8 MW (Solar)
5. Saguaro, 1 MW (Solar)
6. Snowflake, 14.5 MW (Biomass)
7. Glendale LFG, 3 MW
8. High Lonesome, 100 MW (Wind)



Renewables – Annual Production

Central Station Annual Renewables Production



Distributed Energy Systems

- 2002 – 2008: 2,412 installations (~ 8.5 MW/dc)
- 2008 Installations
 - \$9.1 million incentive payments
 - \$12.2 million commitments
 - Primarily “rooftop” photovoltaic and solar water heating, 60% increase over 2007
- Expect continued increase in participation in 2009

APS Owned Generation

<u>Fuel Source</u>	<u>Capacity - MW</u>
Nuclear	1,146
Coal	1,750
Gas Combined Cycle	1,900
Gas/Oil CT, Steam	1,467
Solar	3
Total	<hr/> 6,266



Renewable Resources

<u>Resource</u>	<u>Planning Peak Contribution</u>	<u>Nameplate Capacity</u>
Aragonne Mesa Wind	16.1	90.0
Salton Sea CE Turbo	10.0	10.0
SWMP Biomass	14.5	14.5
Solar Generation	3.4	5.7
Total (MW)	<hr/> 44.0	<hr/> 120.2

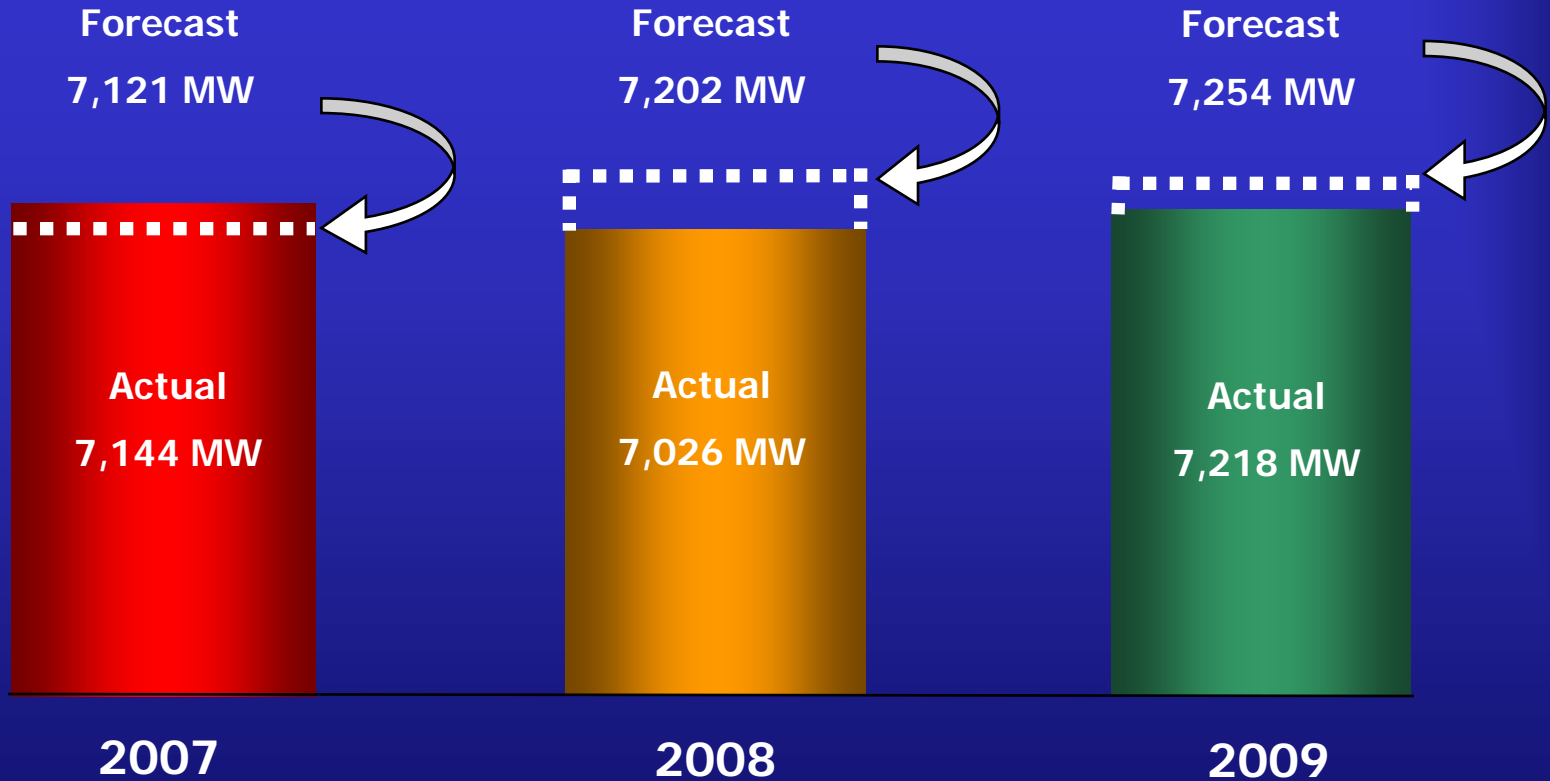


Generation Resources

	<u>Capacity (MW)</u>
Existing Generation	6,266
Long-term Contracts	
PacifiCorp Exchange	480
SRP (Contingent & Territorial)	238
Reliability RFP Purchases	1,150
Market Contract	90
Renewables	44
Subtotal	<u>2,002</u>
Short-term Market Contracts	<u>192</u>
Total Resources	8,460



APS System Peak Loads



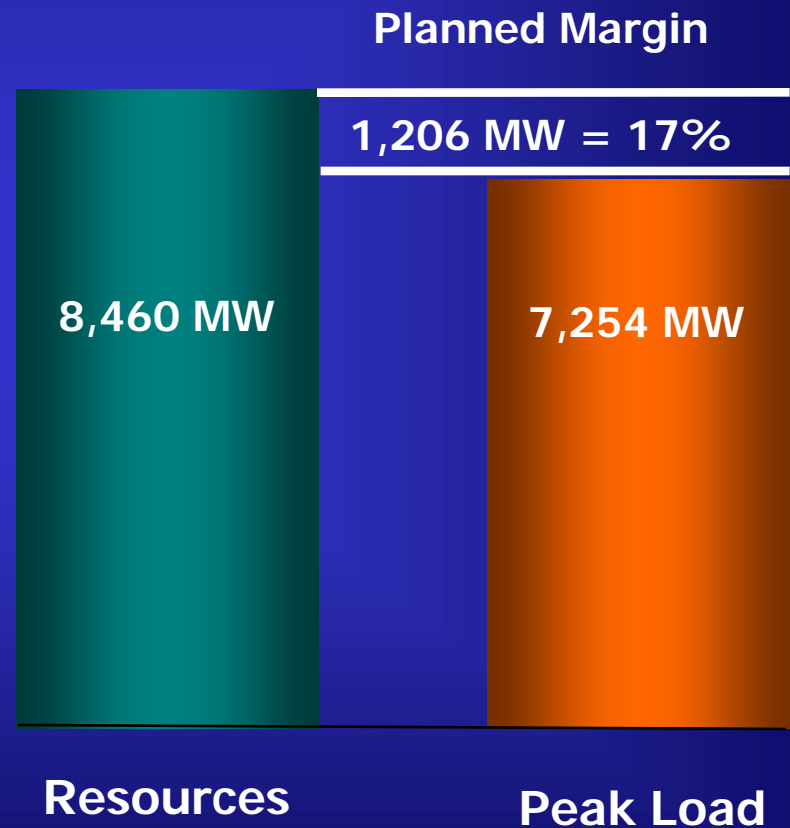
* 2007 excludes UNSE at 401 MW Actual and 421 MW Forecast



2009 Peak Generation Resources and Load

Planned Reserve Margin to manage uncertainties:

1. Load forecast uncertainties
 - a. Extreme Weather
 - b. Economic Changes
2. Multiple generator outages
3. Transmission outages



APS Interconnections

GRMA

PNM

PAC

TEP

IID

LDW

CISCO

WAL

SRP



APS Statistics

- Serve over 1,100,000 customers
- 50,000 square-mile service territory (11 of 15 counties)
- 53 Interconnections/Ties (SRP, WALC, TEP, PNM, CAISO, LADWP, IID, PACE, GRMA)
- 626 RTU's in service
- Serve +/- 45% of Phoenix Valley customers
- APS all-time system peak: 7,652 MW occurred: July 21, 2006 @ 4:00 pm temperature: 118 degrees



APS Statistics

5,201 miles of transmission lines:

1,270 miles of 525 KV

578 miles of 345 KV

738 miles of 230 KV

159 miles of 115 KV

2,456 miles of 69 KV



APS Statistics

6,287 MW of Generation:

53.9 % Natural gas/oil

27.8 % Coal

18.2 % Nuclear

.1 % Renewable





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