



Tucson Electric Power Company & UNS Electric, Inc.

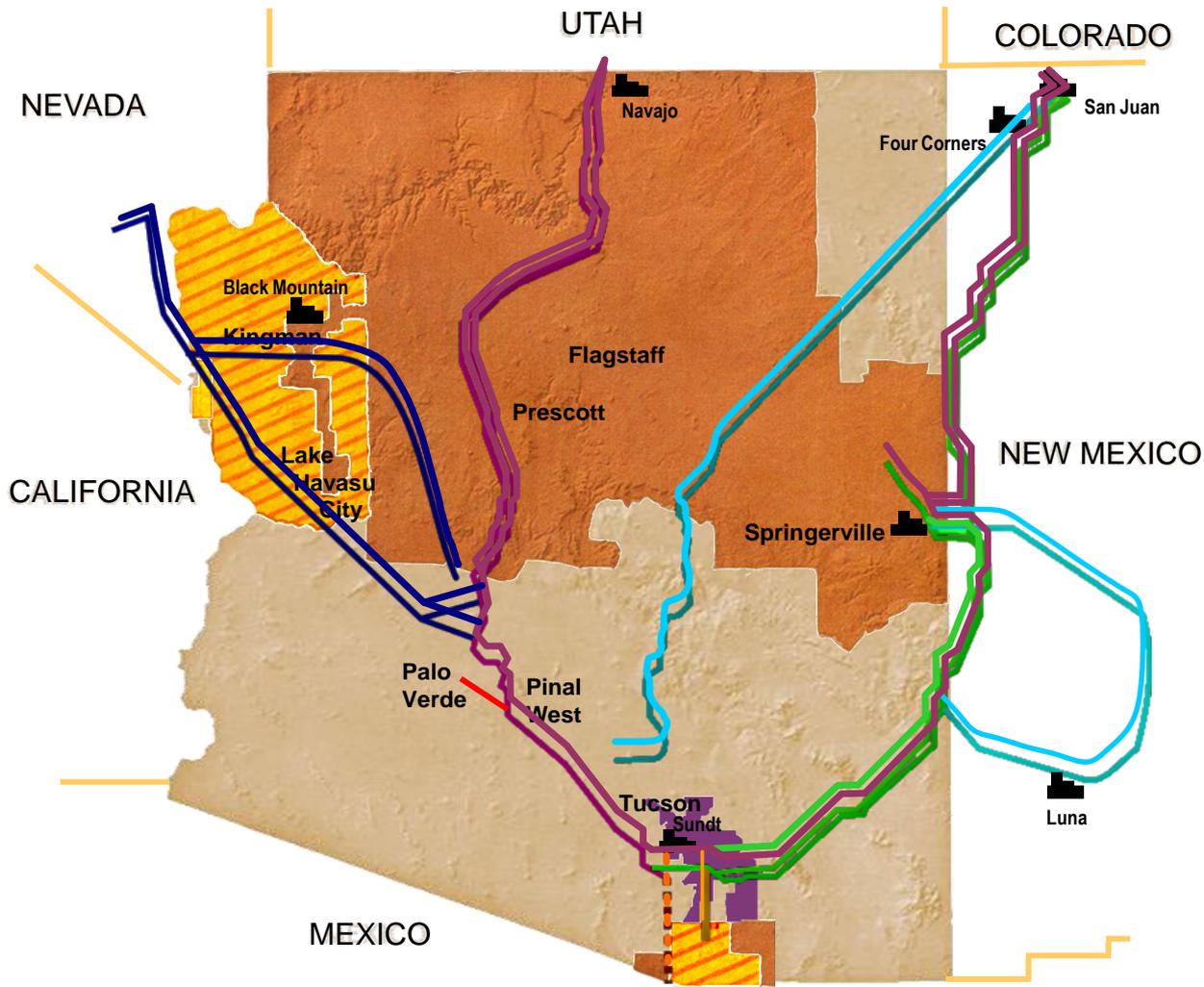
2011 Summer Preparedness
April 11, 2011

Presenters:

Ron Belval, Supervisor of Transmission Planning

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Service Territories



Service Areas

- TEP Electric Service Area
- UNS Gas Service Areas
- UNS Gas & Electric Service Areas
- UNS Electric Service Area

High Voltage Transmission Lines

- TEP Owned & Operated
- TEP Joint Ownership
- Proposed Mexico Transmission Line
- TEP Transmission Rights
- WAPA Transmission Rights
- UNS Electric

Other

- Generating Station
- TEP: 1,155 Sq. Miles / 403,000 Customers
 UNSE: 8,056 Sq. Miles / 91,000 Customers

Transmission & Distribution Executive Summary



- TEP and UNS Electric (“UNSE”) have sufficient capacity to meet anticipated demand.
- The Companies are positioned to respond to emergencies quickly and efficiently.
- The transmission and distribution systems are reliable and have adequate capacity.
- System growth for both Companies is minimal.
- Distribution system additions since 2010 to accommodate low rate of load growth.
- Load forecasts are consistent with level of economic activity.

TEP's Electric Delivery System Improvements



	2010	2011 (Est)
New Meter Sets	1833	1880
Subs – Distribution	1	2
Distribution Sub MVA	50	65
Feeders	3	5
Distribution Line Miles	2	2-4

UNSE's Electric Delivery System Improvements in Mohave County



	2010	2011 (Est)
New Meter Sets	400	400
Subs – Distribution	2	1
Distribution Sub MVA	20	44
Feeders	0	0
Distribution Line Miles	5	17
69kV Line Miles	7.4	2

UNSE's Electric Delivery System Improvements in Santa Cruz County



	2010	2011 (Est)
New Meter Sets	129	100
Subs – Distribution	0	0
Distribution Sub MVA	0	0
Feeders	0	0
Distribution Line Miles	7	7

TEP's Electric System Emergency Equipment



- Mobile / Portable Transformers (138/115/46kV)
 - One 25 MVA – (138kV or 46kV)/14kV or 4kV
 - One 40 MVA – (138kV or 115kV)/14kV
 - One 100 MVA – (138kV/46kV/14kV or 7.2kV)
- Spare Transformers (138/46kV)
 - One 138/14 kV (30/40/50 MVA)
 - Two 46/14 kV (12/15 MVA)
 - Two 46/4 kV (12/15 MVA)

TEP's Electric System Emergency Equipment



- **Emergency Equipment**
 - Emergency Towers
 - Restoration Kits - (4) 4-pole emergency structures plus (2) hardware kits
 - 10 spare 345 kV towers
 - 8 spare lattice structures of various sizes
 - 1 spare 345 kV monopole
- **Spare Poles (46 kV and 138 kV Class)**
 - 50+ poles capable of supporting 46kV through 138kV loading and framing
 - Specialty kit for Santa Cruz County including multi-pole dead-end structures for emergencies
 - Common standard allows use of structures for Mohave, Tucson, and Santa Cruz

UNSE's Electric System Emergency Equipment



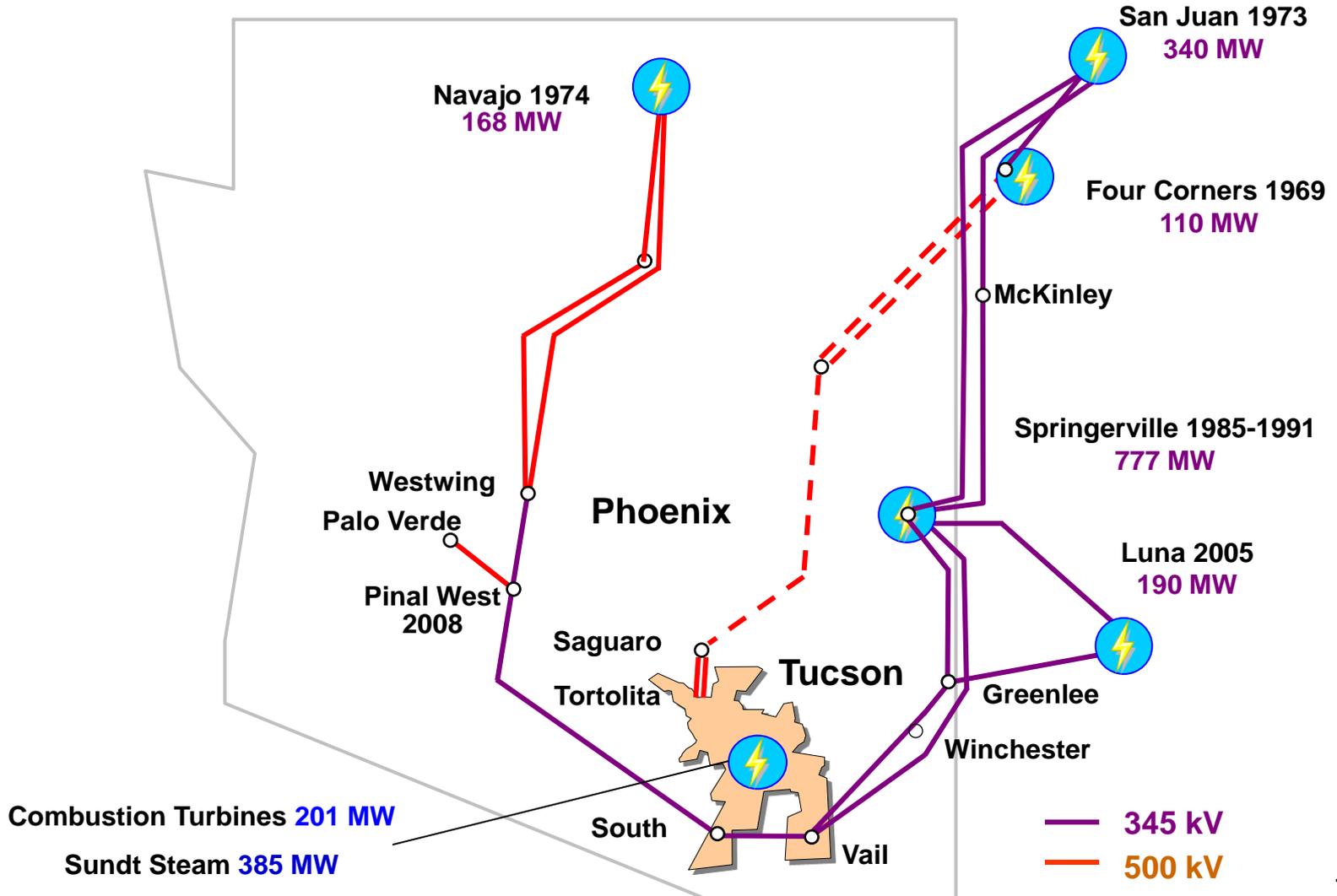
Mohave's Emergency Equipment

- Mobile 69/13.2 X 20.8 X 12 kV Transformer
 - 25MVA Dual Distribution Voltage Mobile
- 20 69 kV poles

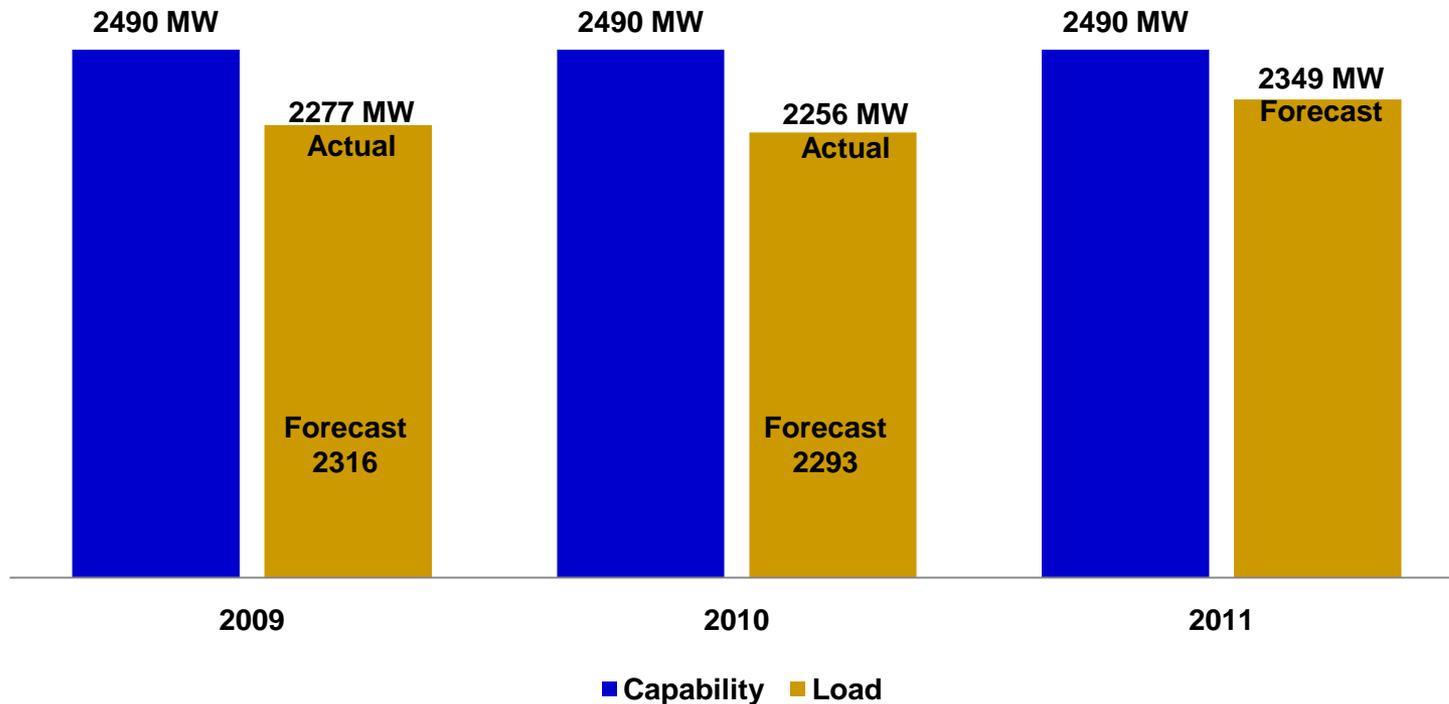
Santa Cruz's Emergency Equipment

- 115 kV Transformer (20 MVA)
- Spare poles provided by TEP

TEP's Resources and Paths



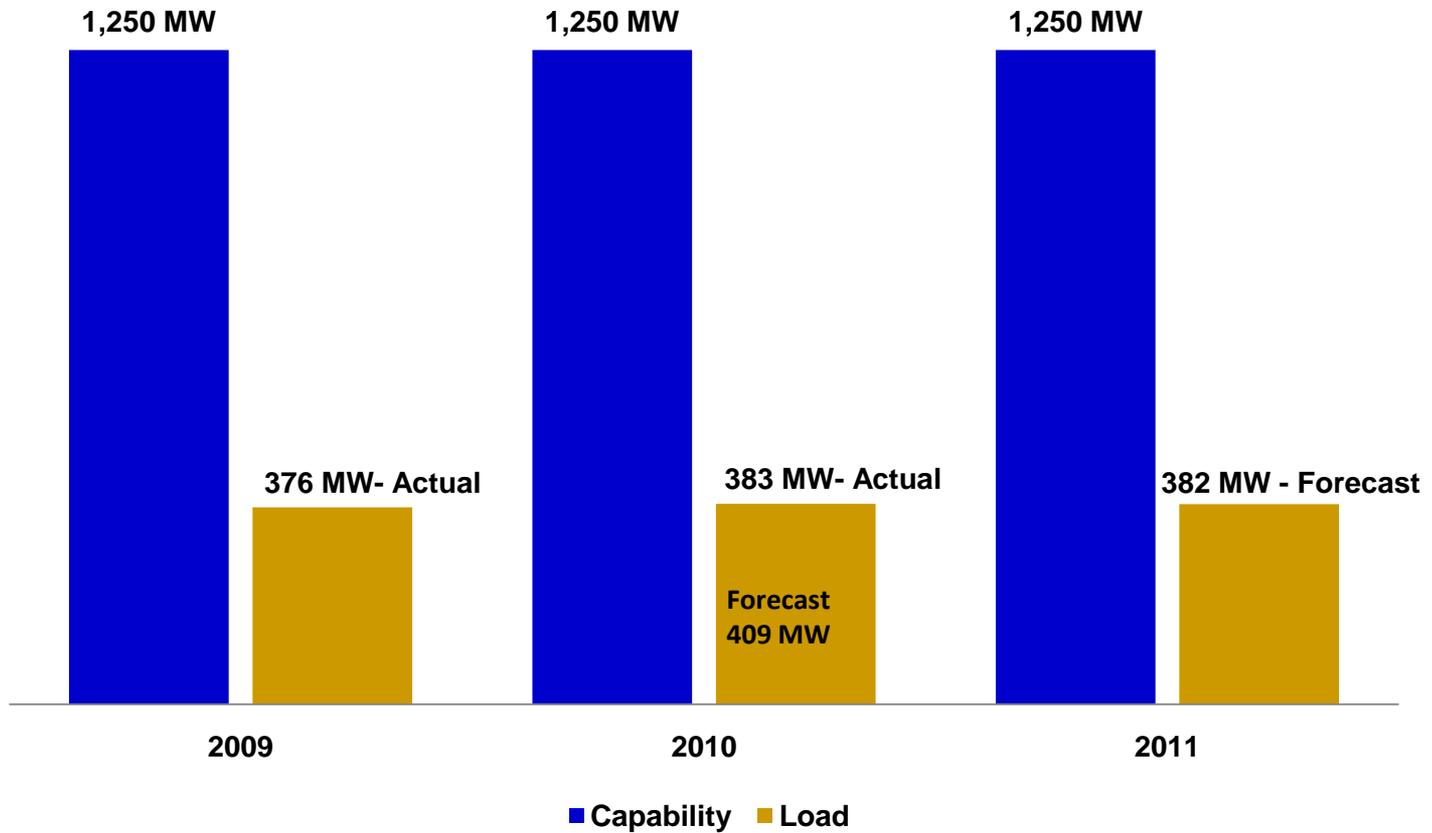
TEP's Maximum Load Serving Capability



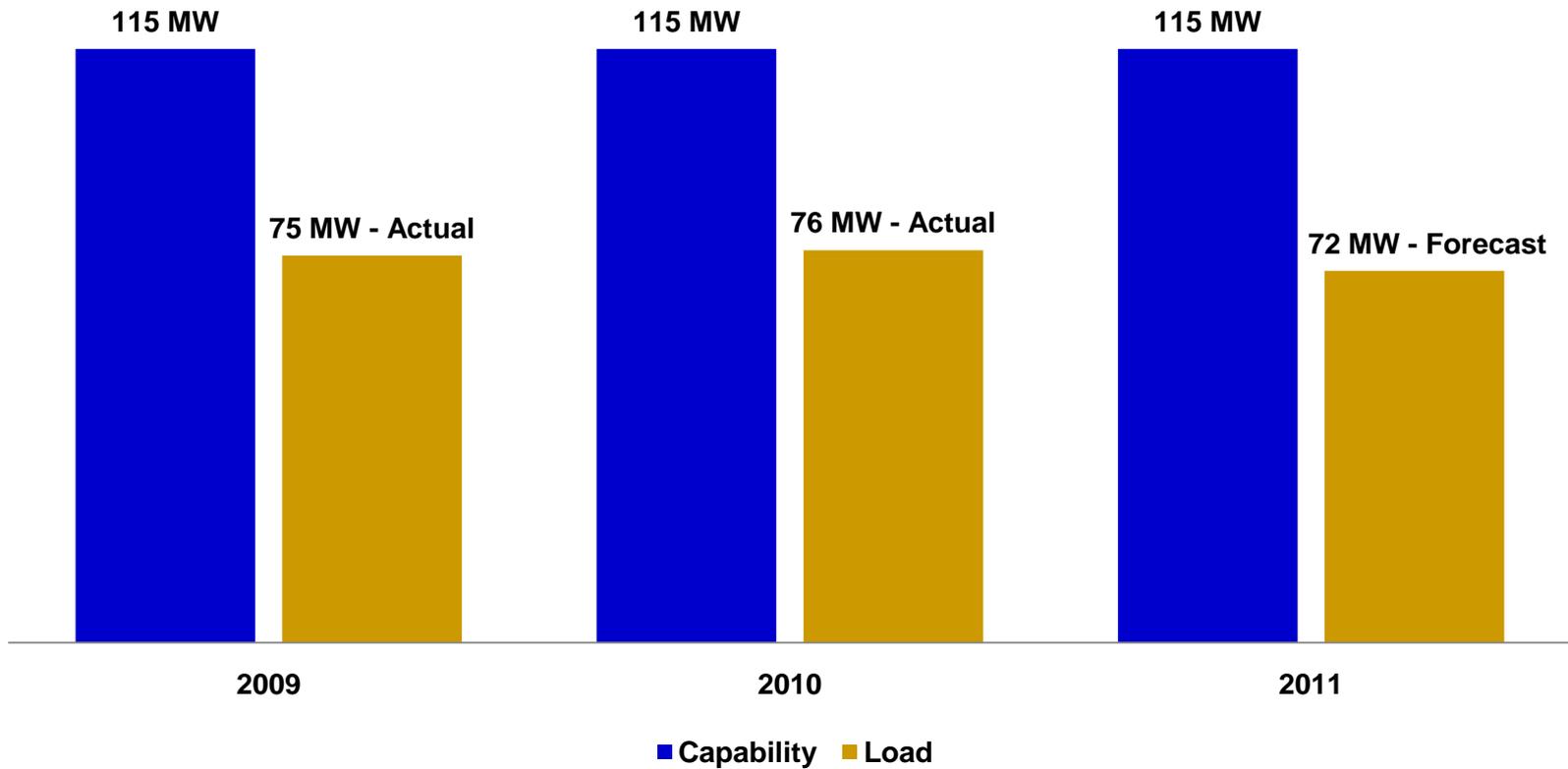
Loads & Capability are metered at 138 kV distribution buses

- Tucson City area served by Tortolita, Vail & South
- Excludes 138 kV System Losses

Mohave's Maximum Load Serving Capability



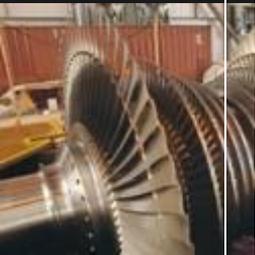
Santa Cruz's Maximum Load Serving Capability



TEP's Operations Preparation



- Regional black start drills between Balancing Authorities and the Reliability Coordinator are completed for the year.
- Verification of TEP's Emergency Operations Center (EOC) readiness scheduled prior to summer 2011.
- Weekly check of EOC systems occurs.
- Daily conference call between Reliability Coordinator and Balancing Authority operators to review system conditions.
- During summer peak AZ entities anticipate holding daily reliability call.
- Weekly updates from Transmission Construction & Maintenance regarding wildfires that may impact TEP facilities.



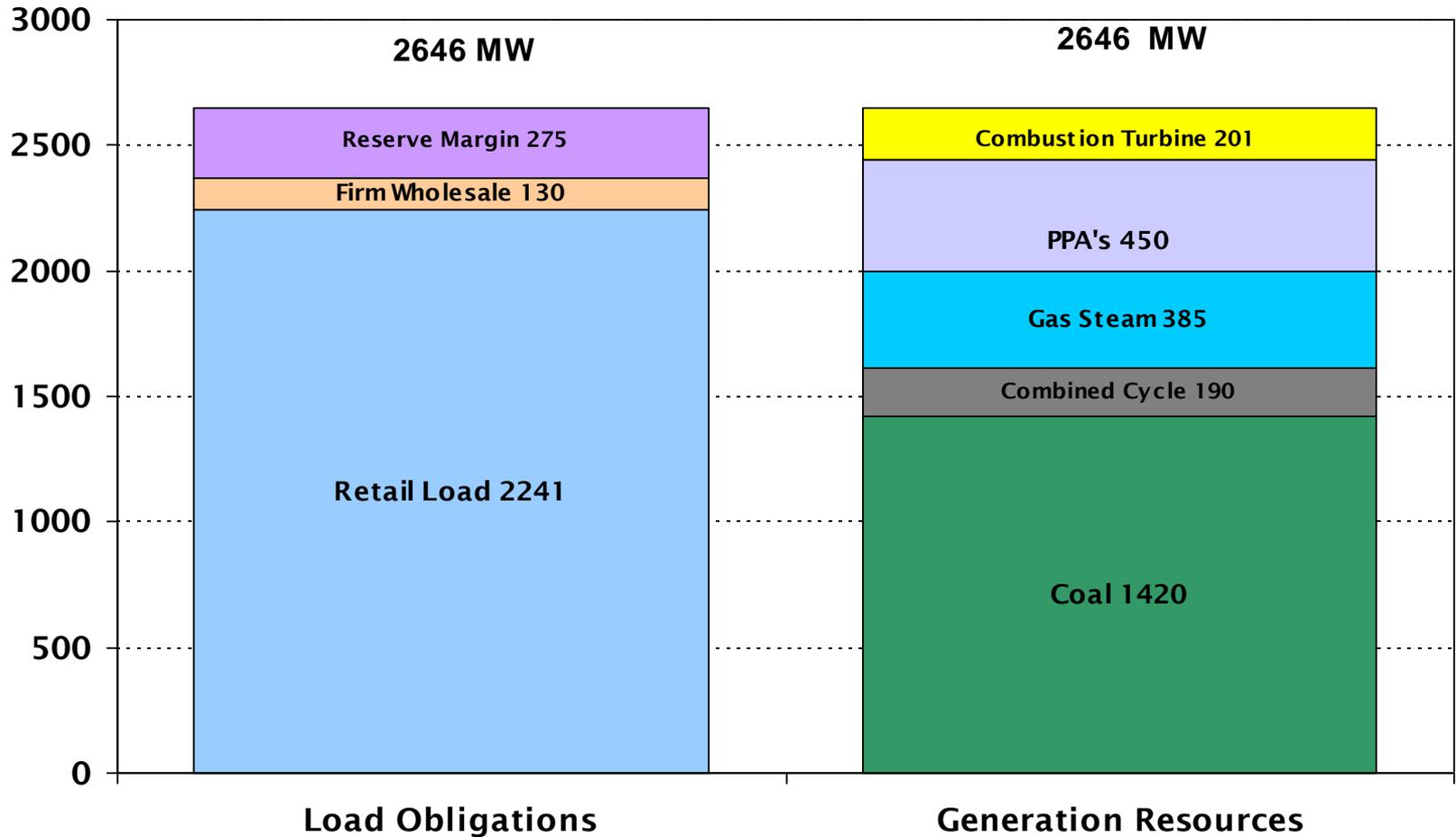
TEP's Energy Supply

2011 Generation Resources



TEP Generation Resources (MW)	
Steam Generation - Coal	1420
Steam Generation – Gas w/ Sundt 4	385
Combined Cycle - Gas	190
Combustion Turbine – Gas	201
Springerville Solar	5
Total Generation Resources (MW)	2,201
Market Based Resources (MW)	
Firm PPAs	450
Total Market Resources (MW)	450
Total Generation & Market Based Resources (MW)	2,651

TEP's 2011 Peak Demand Loads and Resources



TEP's Fuel Supply



Coal:

- Current and future inventory will meet the projected 2011 requirements.
- Source or delivery issues will be mitigated by on-site inventories.

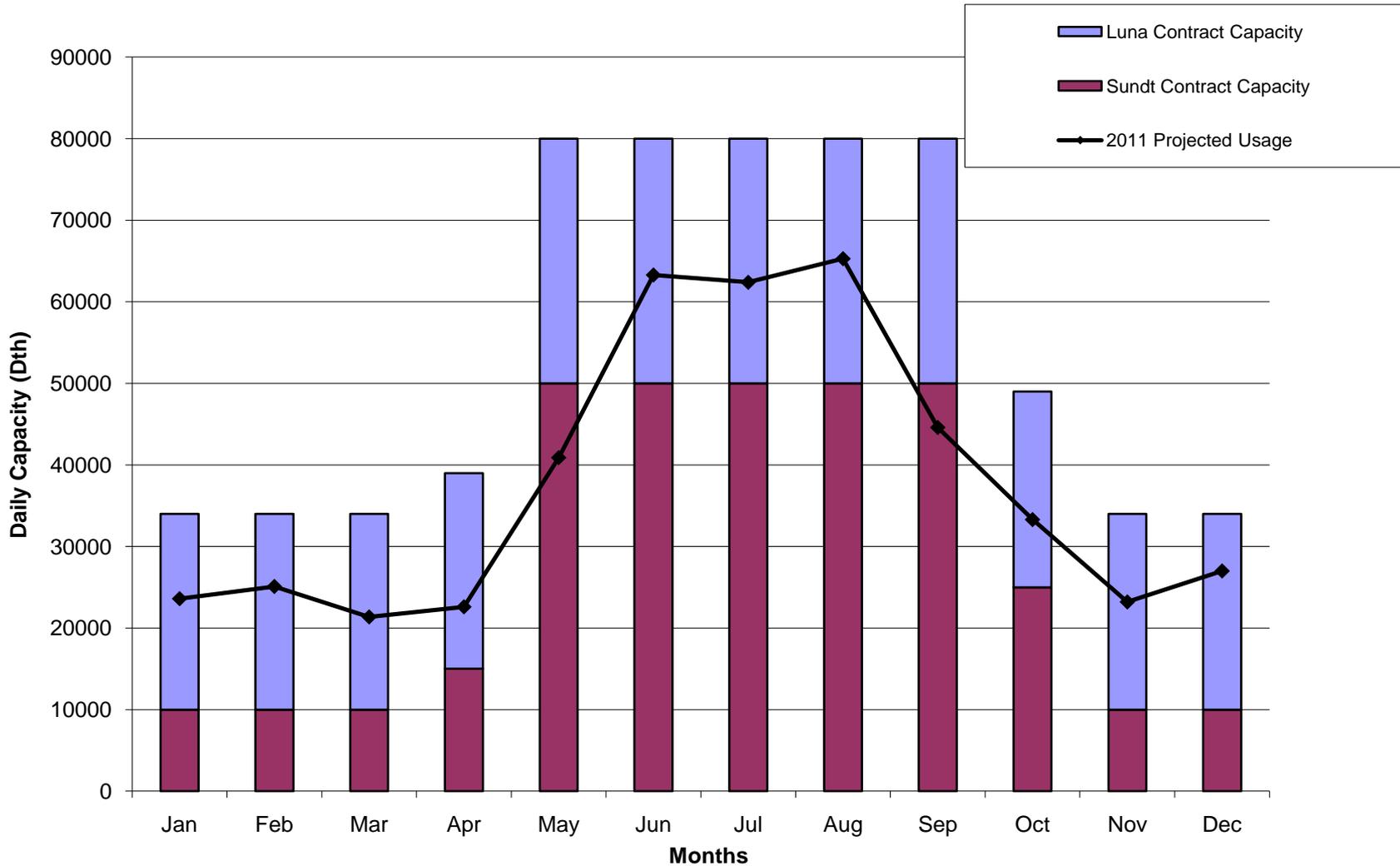
Natural Gas:

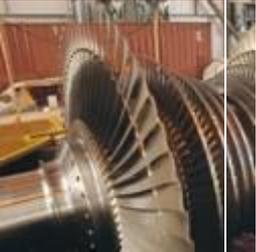
- Inventory via gas transport agreements with El Paso will meet the projected 2011 requirements.
- Variations in demand and/or delivery issues will be addressed through monthly and daily purchases.

TEP's Pipeline Capacity



Luna & Sundt Interstate Gas Contract Capacity





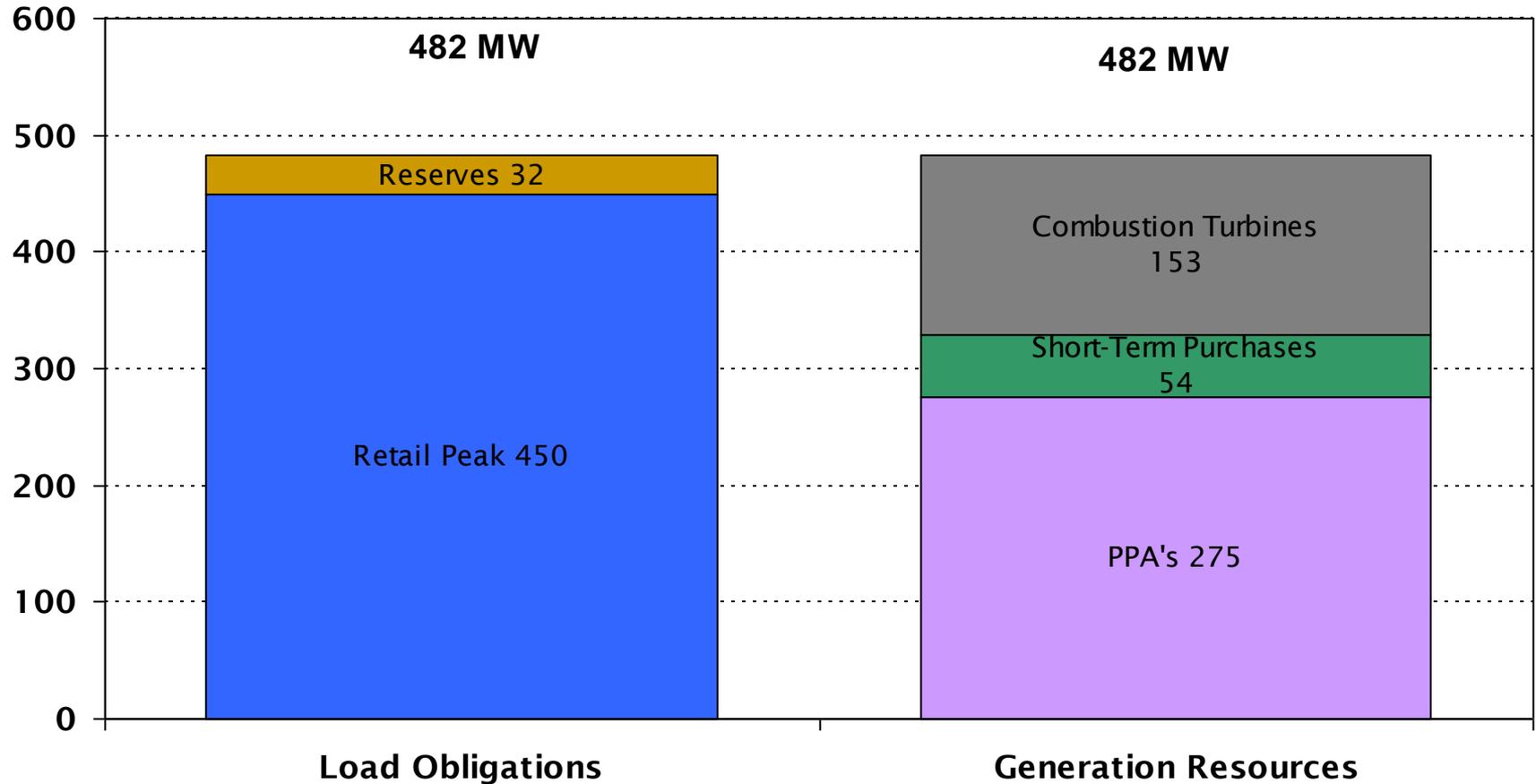
UNSE's Energy Supply

2011 Generation Resources



UNSE Generation Resources (MW)	
Total Generation Resources (MW)	153
Market Based Resources (MW)	
Firm PPAs	275
Short-Term Market Resources	54
Total Market Resources (MW)	329
Total Generation & Market Based Resources (MW)	482

UNSE's 2011 Peak Demand Loads and Resources



UNSE's Fuels Supply



Natural Gas:

- Inventory via gas transport agreements with El Paso (for Valencia) and Transwestern (for Black Mountain) will meet the projected 2011 requirements.
- Variations in demand and/or delivery issues will be addressed through monthly and daily purchases.

Conclusion



- Both TEP and UNSE have sufficient generation resources available to meet their loads.
- Both TEP and UNSE – Mohave have sufficient transmission available to import remote generation and resources.
- UNSE – Santa Cruz has transmission in conjunction with local generation sufficient to meet its load.
- Both Companies have active emergency response plans in place to respond to extreme conditions.