

2014 Summer Preparedness

John Tolo

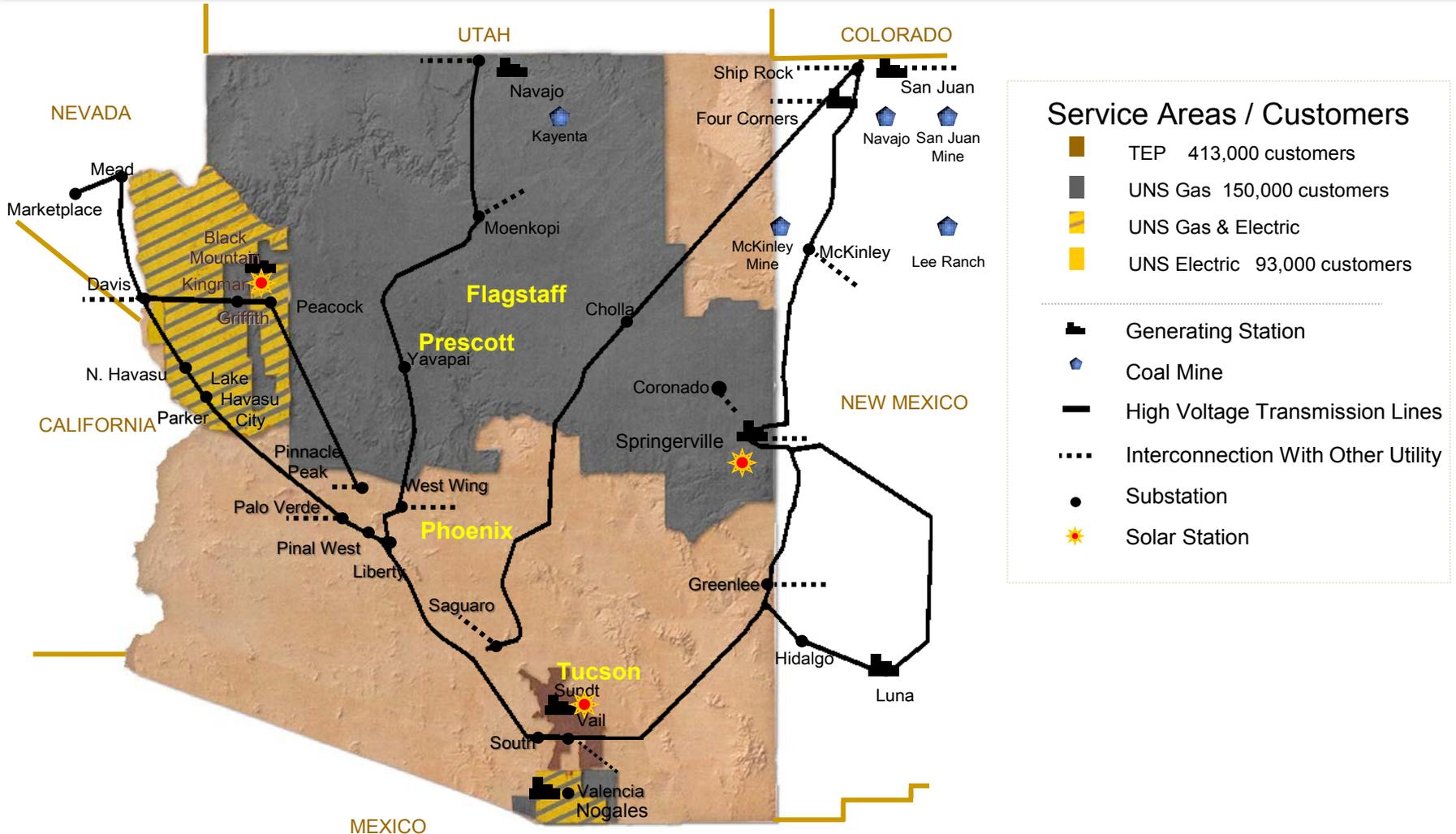
**Senior Director
System Control & Reliability**



April 2014

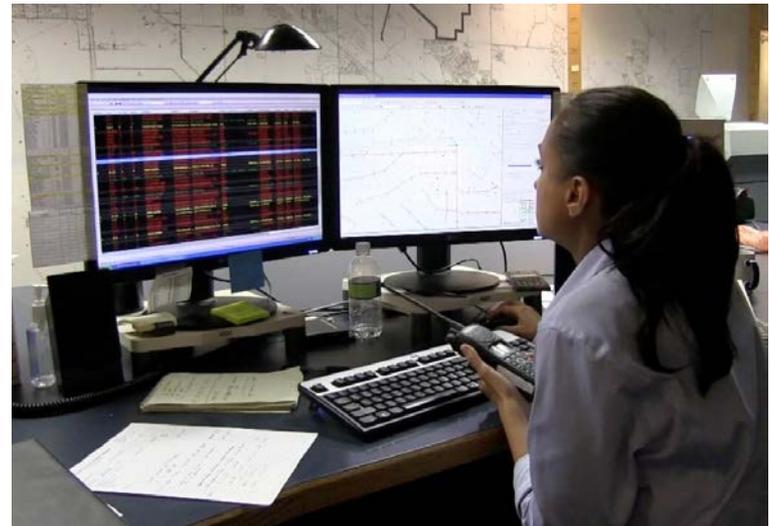


Utility Service Areas

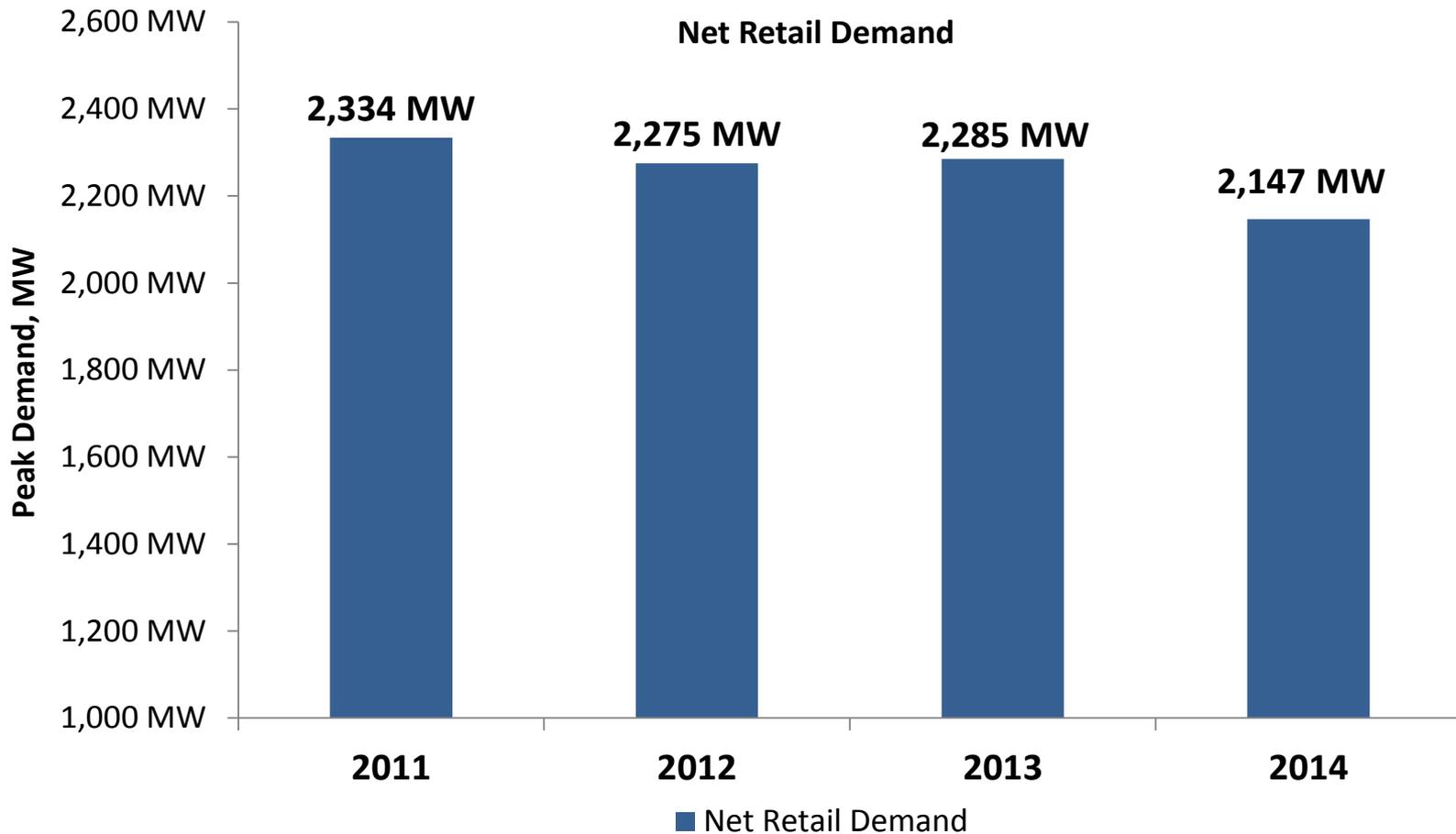


TEP & UNSE Operations

- 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
- 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

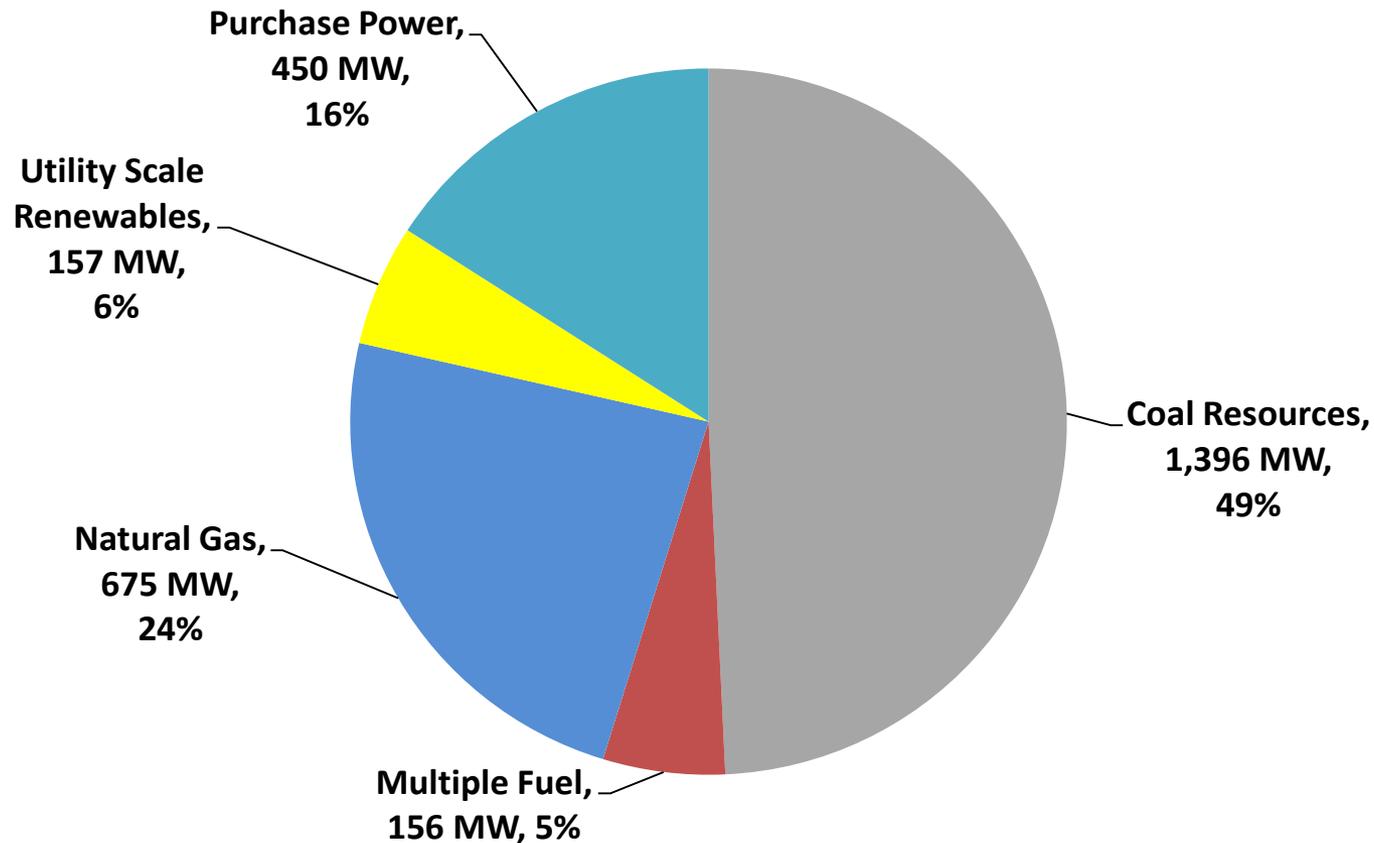


TEP Retail Demand



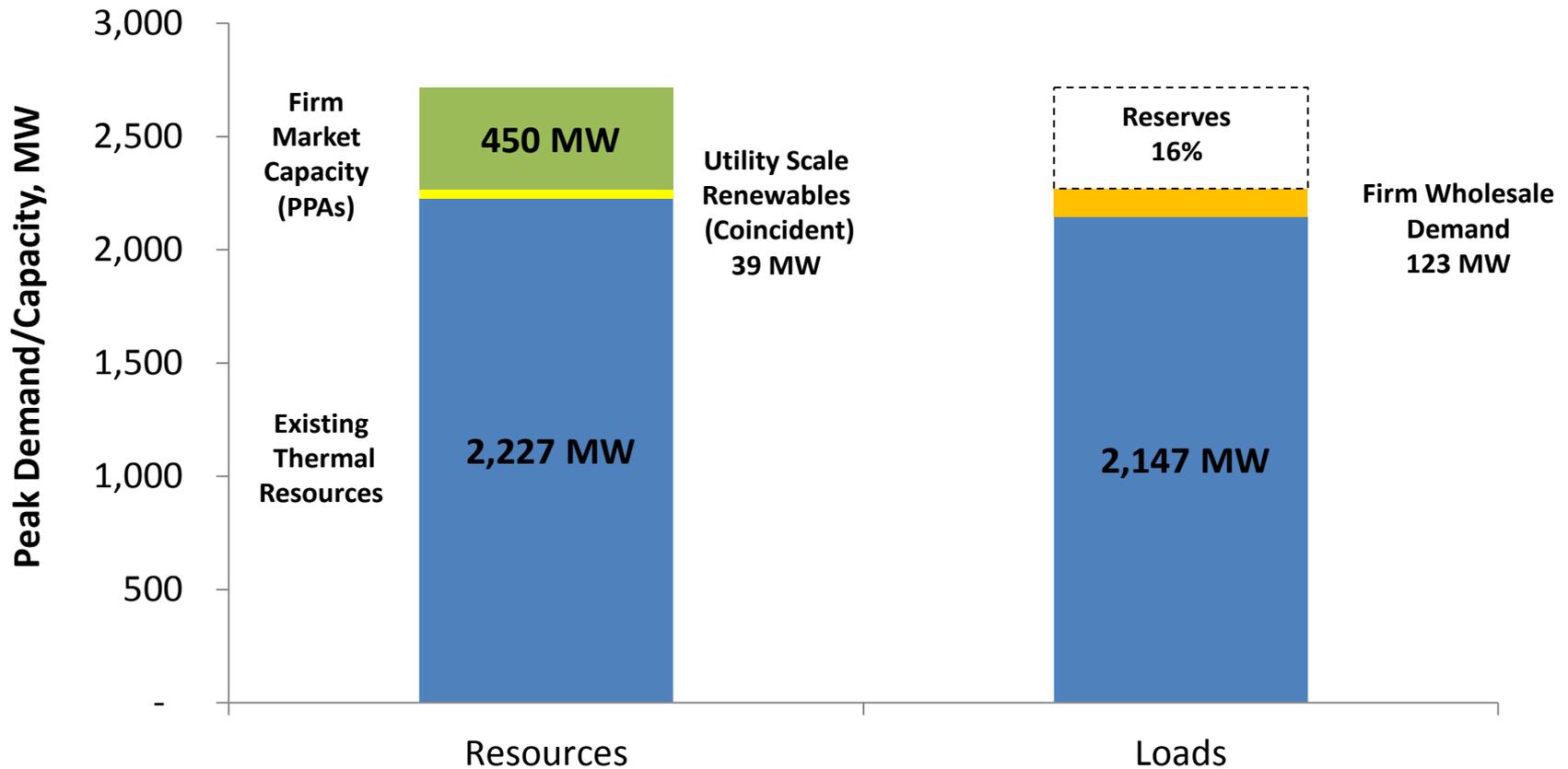
TEP Generation Capacity

Resource Capacity including Renewables (Coincident Peak) and Power Purchases – 2716 MW



- *157 MW of utility scale renewables reflects nameplate capacity (39 MW coincident with system peak)*
- *Multiple Fuel reflects capacity of Sundt Unit 4 on natural gas*

2014 TEP Peak Load & Resources



TEP Firm Market Capacity Resources comprised of 9 PPAs from 5 counterparties / wholesale merchants

TEP Fuel Supply

Coal

- Current and future inventory will meet the projected 2014 requirements.
- Any 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 2014 requirements.
- Variations in demand and/or delivery issues will be addressed through monthly and daily purchases.



TEP System Reliability Enhancements

- Completing phase 3 of 138kV breaker upgrades to North Loop substation
- Construction of new 138kV line between DeMoss Petrie Substation and Tucson Substation



TEP 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

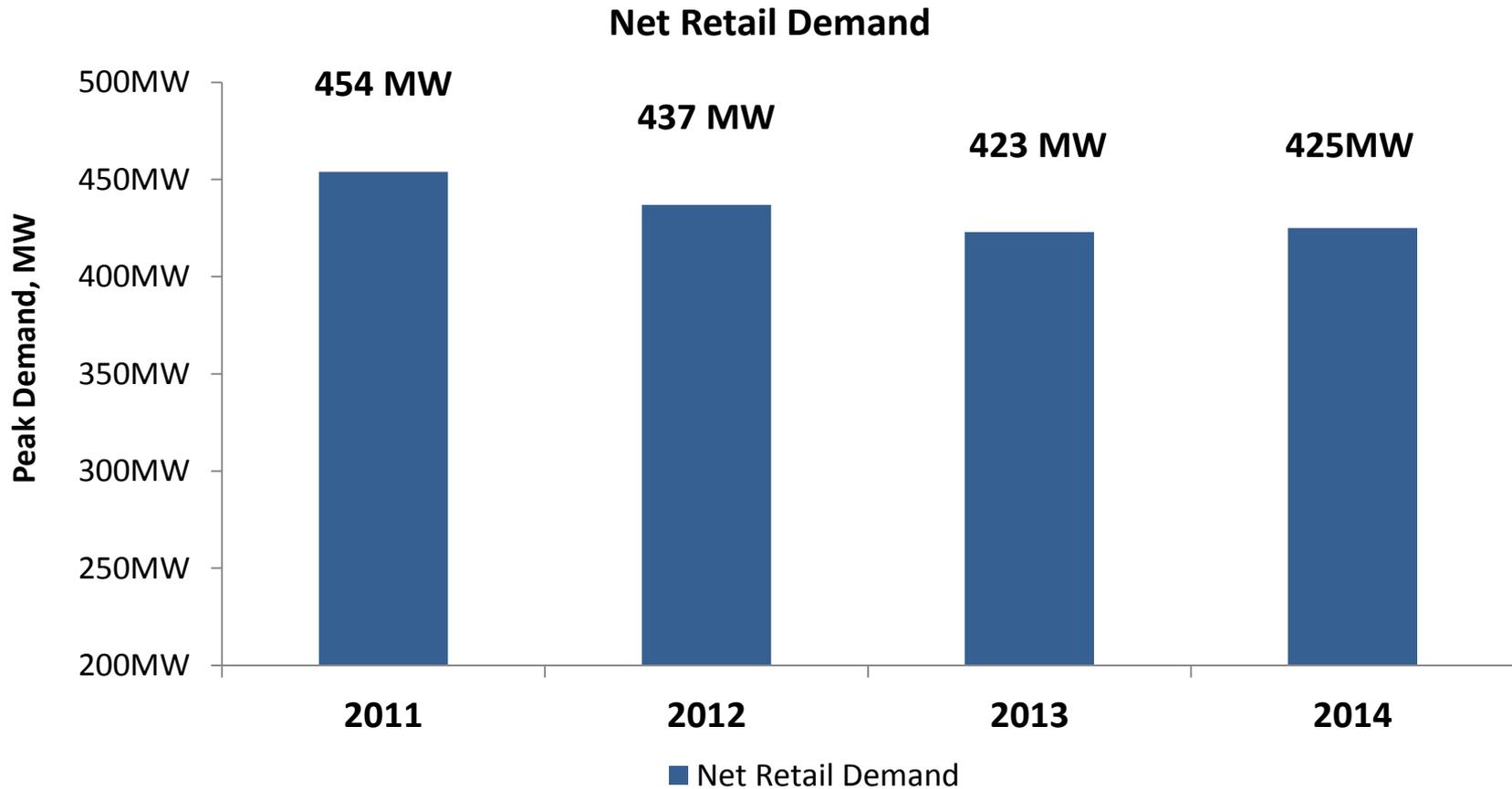


TEP Emergency Equipment

- **Mobile / Portable Transformers (138/115/46kV)**
 - One 25 MVA – (138kV or 46kV)/14kV or 4kV
 - One 40 MVA – (138kV or 115kV)/14/13.2kV
 - One 100 MVA – (138kV/46kV/14kV or 7.2kV)
- **Spare Transformers (138/46kV)**
 - One 138/14 kV (30/40/50 MVA)
 - Four 46/14 kV
 - Two 46/4kV

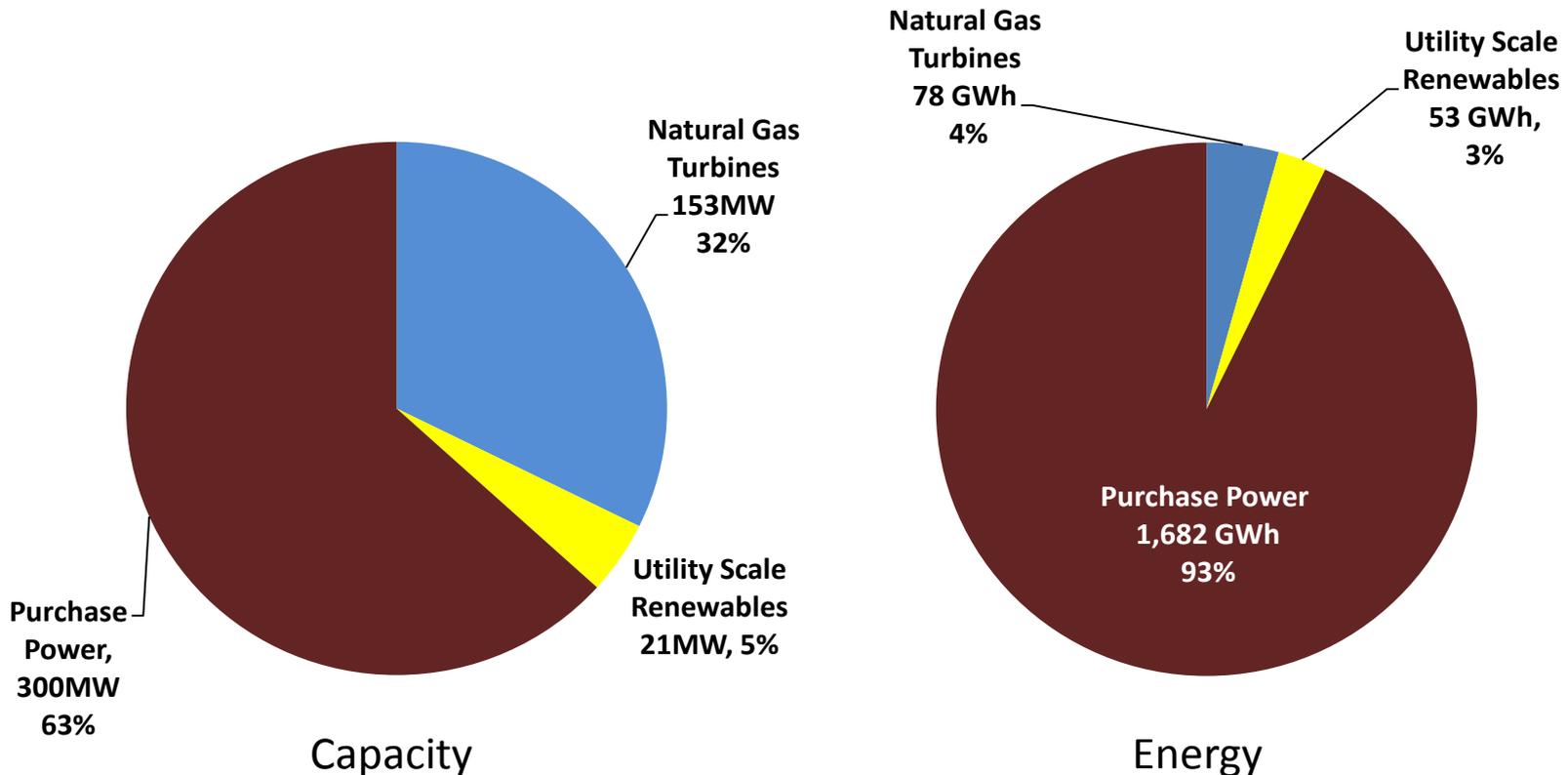


UNSE Retail Demand



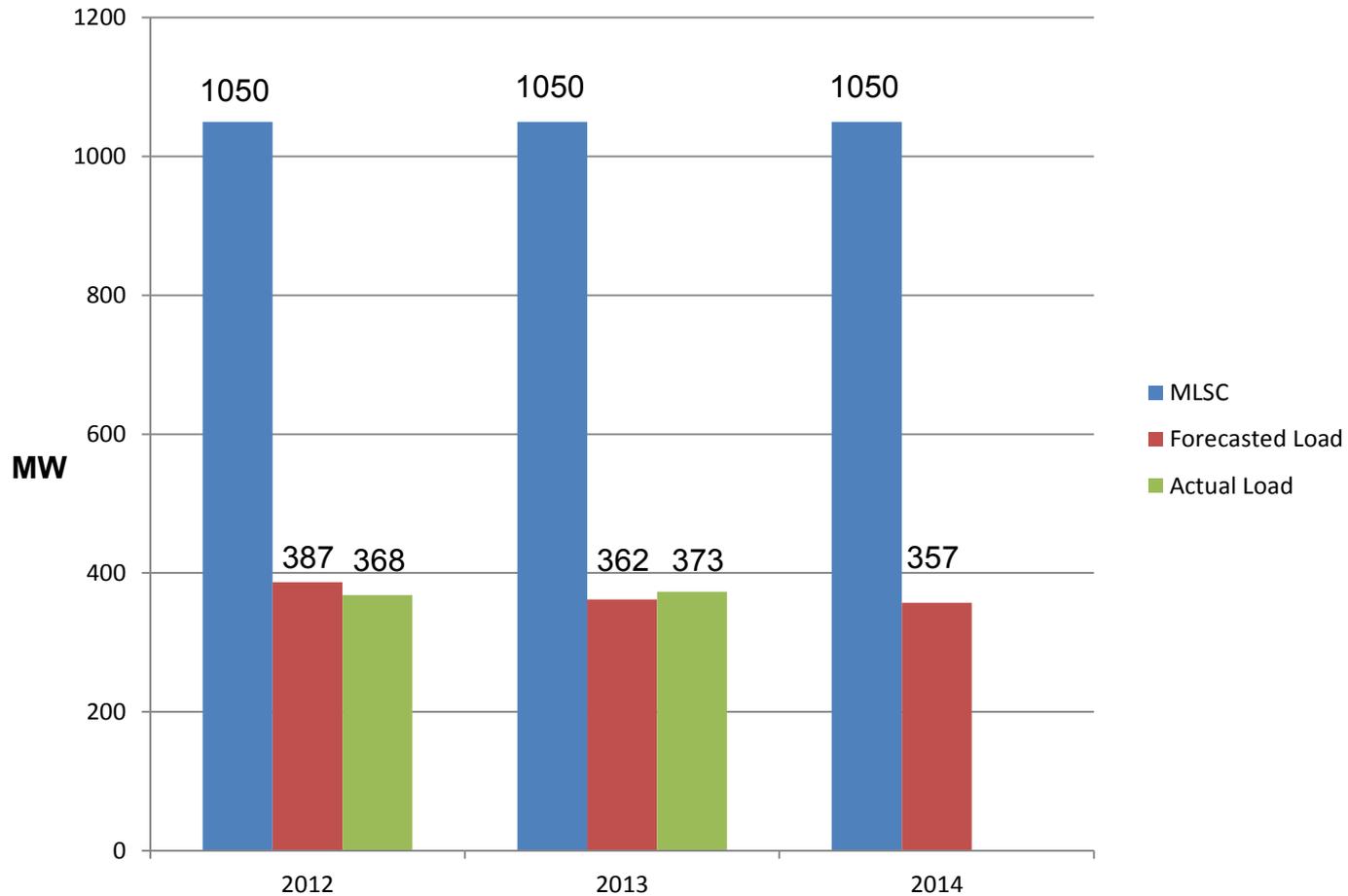
UNSE Resource Capacity & Energy

Resource Capacity including Renewables (Coincident Peak) and Market Purchases – 460 MW

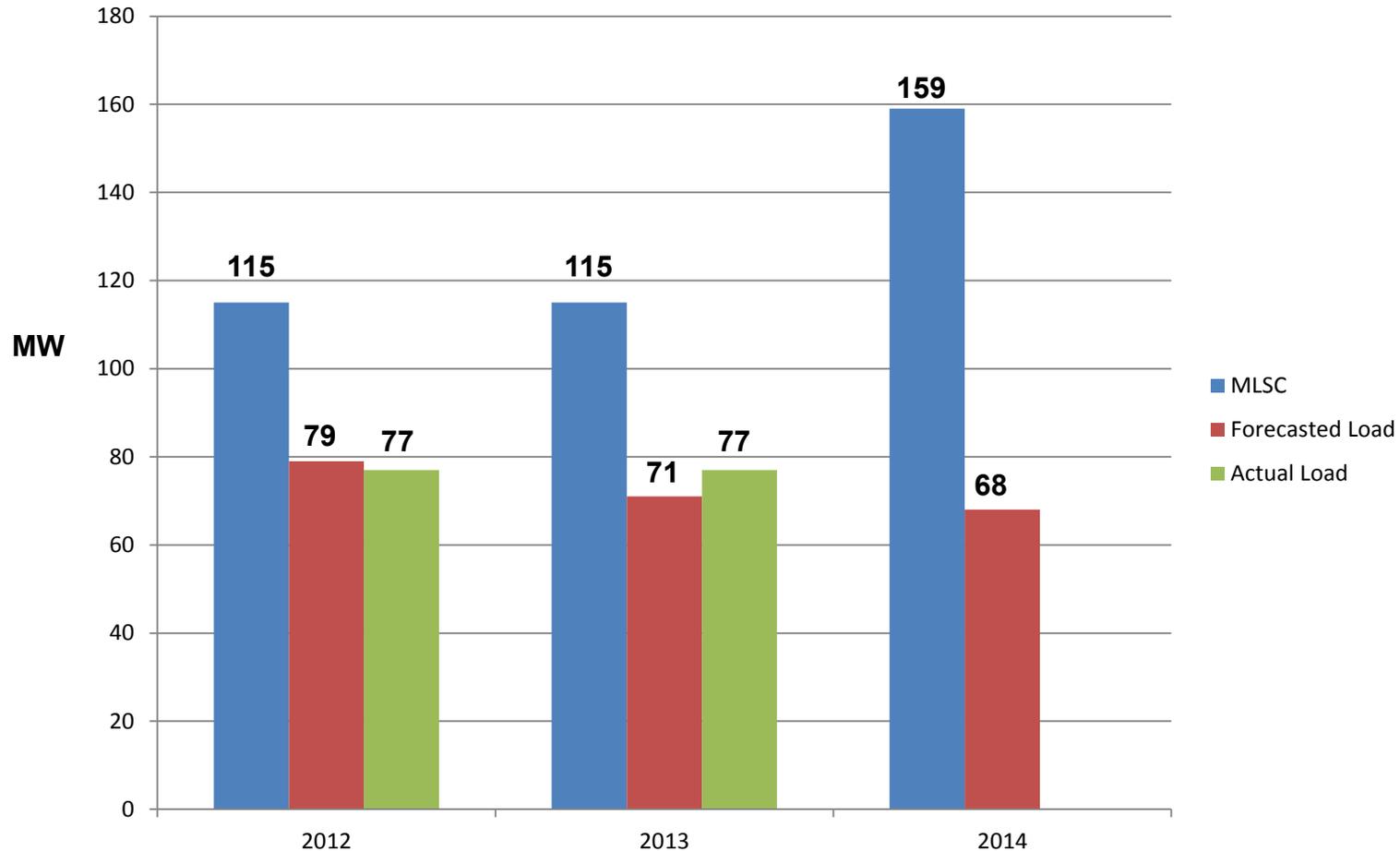


- *21 MW of utility scale renewables reflects nameplate capacity (7 MW coincident with system peak)*

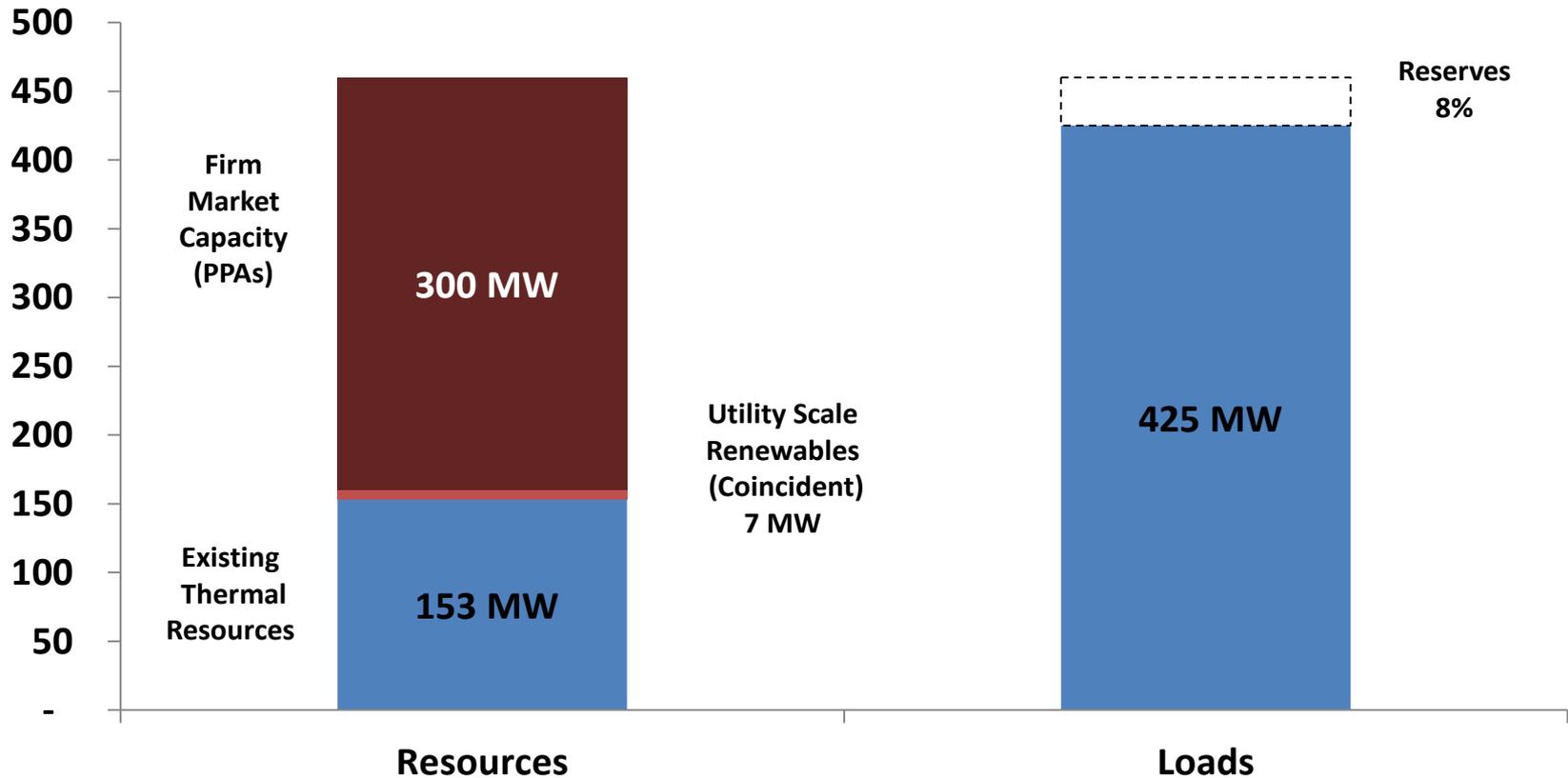
UNSE (Mohave County) Maximum Load Serving Capability



UNSE (Santa Cruz County) Maximum Load Serving Capability

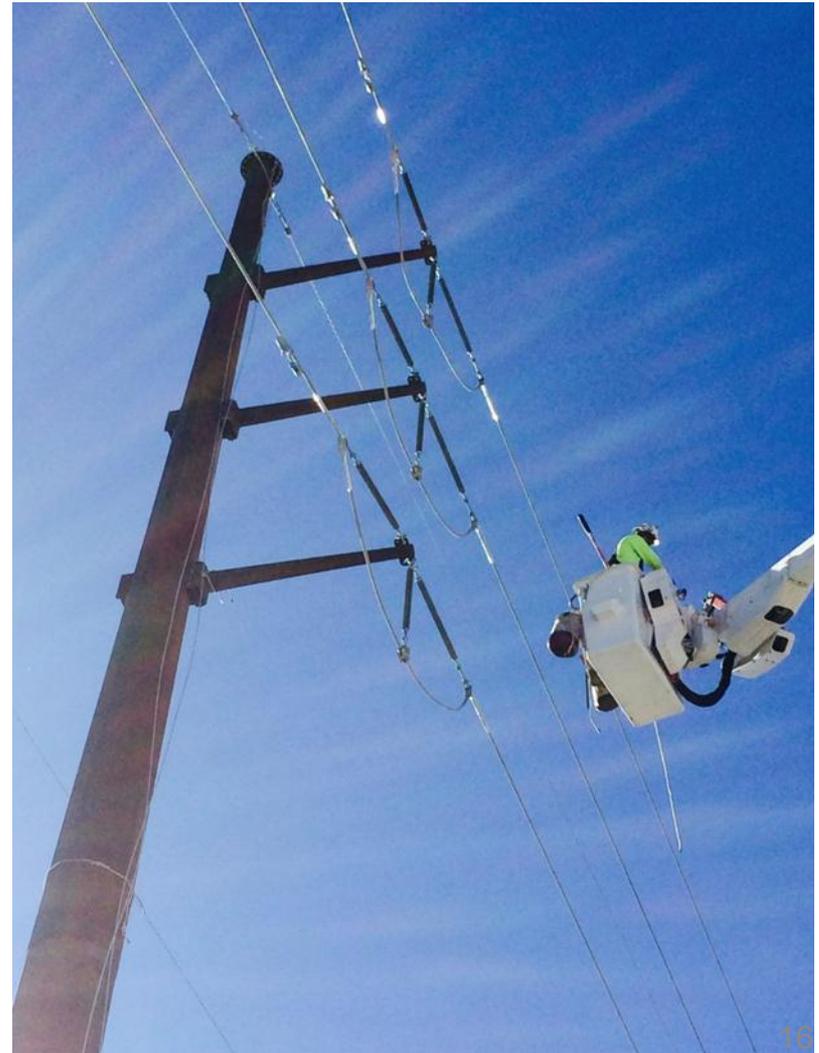


2014 UNSE Peak Load & Resources



UNSE System Reliability Enhancements

- Completed upgrade of transmission line serving Santa Cruz County from 115 kV to 138 kV; connected to TEP's Vail substation



UNSE Fuel Supply

Natural Gas

- Gas transportation agreements will meet projected 2014 requirements
 - El Paso Natural Gas(for Valencia turbines in Nogales)
 - Transwestern Pipeline Co.(for Black Mountain)
- Variations in demand and/or delivery will be addressed through monthly and daily purchases



UNSE Emergency Equipment

Mohave - Emergency Equipment

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

Santa Cruz - Emergency Equipment

- Mobile 115 kV Transformer (40 MVA shared with TEP)
- Spare poles provided by TEP



Outage Communications

Customers

- Outage status available on recorded phone message
- Automated “power restored” return calls available
- Call center staff available 24 x 7
- For large outages, updates via twitter: @TEPOutageInfo or @UESPowerOutages
- Service alerts on tep.com and uesaz.com home pages if necessary
- Beginning in May 2014, outage map available at tep.com

Media

- 24 x 7 access to media relations staff
- “TEP News Line” recordings
- Local media is very attentive to even modest outages, particularly during monsoon season

Critical Outages

- Press release, press conferences and customer outreach as needed
- Coordination with state and local emergency management officials, law enforcement agencies and public relief agencies like the Red Cross as needed
- Advance notice of scheduled curtailments

Online Service Alerts

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TEP

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Manage Your Account
- Energy Efficiency
Save Energy & Money
- Renewable Energy
Solar & More
- Resources
Safety & Education
- Community
Supporting Arizona

BRIGHT SOLUTIONS
Wildlife Protection Program
TEP works with UA researchers and state wildlife experts to protect raptors and other animals from electrical hazards.
[Learn More](#)

! SERVICE ALERT: Storm damage causes extended outage for 3,400 customers in northwest Tucson.

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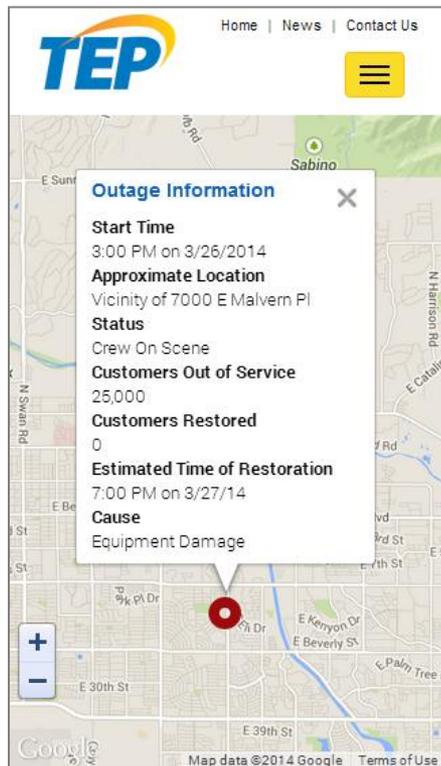
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Be a part of the solution.
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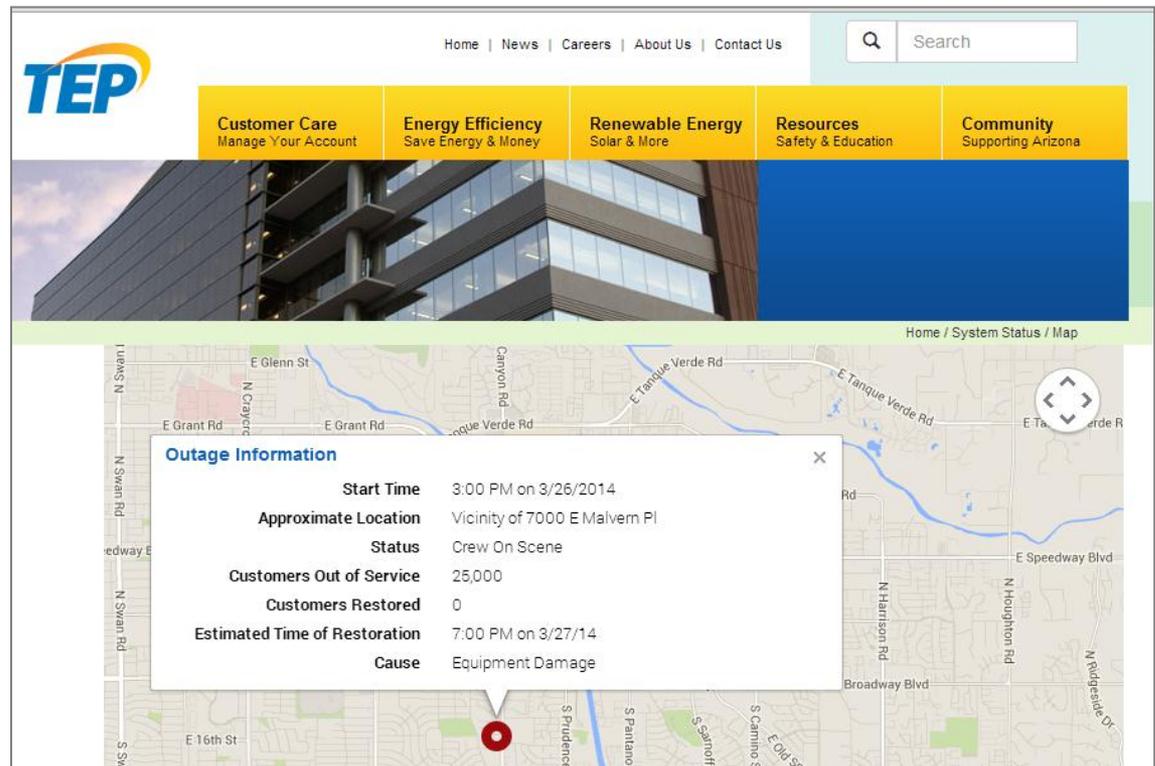
Moving?
Start, stop and transfer service with just a few clicks.
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Outage Map on tep.com

- Publically available beginning in May 2014
- Formatted for both mobile devices and desktop computers
- Outage map will be promoted via news coverage and social media
- Proposed upgrades would allow for development of UES map



Mobile view



Desktop view

TEP & UNSE Summer Preparedness

- Sufficient generation and transmission resources available to meet anticipated loads
- Reliable transmission & distribution systems with adequate capacity
- Operational testing conducted; summer system operations plans in place
- Equipment available to respond to emergencies
- Emergency response plans in place to respond quickly and efficiently

