TEP’s Power Generation Future

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Costs to Achieve Incremental Visibility Improvements (NGS)

<table>
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<tr>
<th>Low NOx Burners</th>
<th>Selective Catalytic Reduction</th>
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<td>$42 million</td>
<td>$663 million</td>
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Humanly Perceptible Change in Visibility

- Low NOx Burners: 0.47 Deciview Change
- Selective Catalytic Reduction: 0.70 Deciview Change
Regional Haze Costs at TEP Remote Plants

San Juan Generating Station
$200M

Navajo Generating Station
$85M

Four Corners Power Plant
$35M

Springerville Generating Station

SCR Required on all units?
BART for Sundt Unit 4

- Sundt Unit 4 ordered by DOE to convert to coal in 1980s

- February 2011 - Arizona regional haze plan
  - Units reconstructed outside of BART time frame (1962-1977) are **not BART eligible**

- December 2012 - EPA disapproved decision regarding Sundt Unit 4
  - Sundt Unit 4 is BART eligible

- EPA regional haze proposal for Arizona due September 6, 2013
  - Will include BART determination for Sundt
  - Final rule due February 6, 2014
Regional Haze Controls

Is this worth $90.2 million per year?

Arizona’s Controls

EPA’s Controls

Grand Canyon National Park, Arizona
EPA - Potential Ozone Nonattainment Areas

Counties With Monitors Violating Proposed Primary 8-hour Ground-level Ozone Standards
0.060 - 0.070 parts per million
(Based on 2006 – 2008 Air Quality Data)

EPA will not designate areas as nonattainment on these data, but likely on 2008 – 2010 data which are expected to show improved air quality.
Industry - Potential Ozone Nonattainment Areas

Not Attaining the Proposed 60 ppb Standard

Source: National Association of Manufacturers
Generation Portfolio

Forecast Year 2012

- Coal Resources: 80.1%
- Natural Gas & Purchase Power: 15.4%
- Energy Efficiency (EE): 1.5%
- Utility Scale Renewable Resources: 2.2%
- Distributed Generation (DG): 0.8%
- Demand Response (DR): 0.0%
Coal Facing Potential Early Retirement

- Springerville Unit 1 (TEP)
- Springerville Unit 2 (TEP)
- Sundt Unit 4 (TEP)
- Four Corners Generating Station (APS)
- Navajo Generating Station (SRP)
- San Juan Generating Station (PNM)

40% of TEP’s Coal Capacity Facing Potential Early Retirement
Renewable Resource Integration

Utility Scale Renewables
- 170 MW (2012)
- 250 MW (2014)
- 325 MW (2018)
- 500 MW (2022)

Distributed Generation
- 75 MW (2014)
- 120 MW (2016)
- 170 MW (2018)
- 250 MW (2024)

Fully Compliant with Arizona Energy Efficiency Standard 22% by 2020
Fully Compliant with Arizona Renewable Energy Standard 15% by 2025

Combustion Turbines
Energy Storage
Demand Response
Future Support for Intermittent Resources
Energy Efficiency - Commercial

Lighting
Mechanical Refrigeration
And more!
Energy Efficiency - Residential
Wind Resources

Macho Springs, Western New Mexico
50 MW
Solar Test Yards

Irvington Test Site 1

Irvington Test Site 2

Irvington Test Site 3

DMP Test Site
AREVA Project

Areva Solar – Sundt Generating Station
TEP’s Distributed Solar Resources Sites