BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
ROBERT “BOB” BURNS, CHAIRMAN
BOYD DUNN
SANDRA D. KENNEDY
JUSTIN OLSON
LEA MÁRQUEZ PETERSON

IN THE MATTER OF THE APPLICATION OF
TUCSON ELECTRIC POWER COMPANY FOR
THE ESTABLISHMENT OF JUST AND
REASONABLE RATES AND CHARGES
DESIGNED TO REALIZE A REASONABLE
RATE OF RETURN ON THE FAIR VALUE OF
THE PROPERTIES OF TUCSON ELECTRIC
POWER COMPANY DEVOTED TO ITS
OPERATIONS THROUGHOUT THE STATE OF
ARIZONA AND FOR RELATED APPROVALS.

Docket No. E-01933A-19-0028

Direct Testimony of

Mike Eisenfeld

on behalf of

The San Juan Citizens Alliance, the Black Mesa Water Coalition, Diné CARE,
and Tó Nizhóní Ání (“Citizen Groups”)

October 11, 2019
Direct Testimony of Mike Eisenfeld, Citizen Groups

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I. Introduction

Q. Please state your name and business address.

A. My name is Mike Eisenfeld. I am the Energy and Climate Program Manager for the San Juan Citizens Alliance. My business address is 665 West Main, Farmington, New Mexico, 87401.

Q. What are your professional qualifications?

A. I have worked for more than 20 years on energy and environmental issues impacting the Four Corners region. My areas of expertise include energy, coal, oil, gas, air quality and public lands. I also have experience working on issues related to the National Environmental Policy Act, Federal Land Policy & Management Act, and Endangered Species Act compliance. I have a B.A. from Bates College and an M.A. in Environmental Policy and Management from the University of Denver. Please reference my resumé, which is included as Attachment 1.

Q. For whom are you testifying?

A. I am testifying on behalf of the San Juan Citizens Alliance, the Black Mesa Water Coalition, Diné CARE, and Tó Nizhóní Ání — collectively, the “Citizen Groups.”

Q. Please describe the four organizations that comprise the Citizen Groups.

The San Juan Citizens Alliance (SJCA) is a community-based nonprofit membership organization with over 500 members in the Four Corners region. SJCA works to protect clean air, pure water and healthy lands across the San Juan Basin in northwestern New Mexico and southwestern Colorado. The organization’s energy program is focused on cleaning up decades of impacts related to fossil fuel development and use in the region and transitioning to a just, clean energy future.

Black Mesa Water Coalition (BMWC) was established in 2001 as a Navajo grassroots community organization dedicated to preserving and protecting Mother Earth and the integrity of indigenous cultures by addressing issues such as water depletion, natural resource exploitation and improvement of the health of Navajo and Hopi communities. BMWC’s mission is to help build sustainable and healthy communities. The organization’s work is grounded in traditional teachings of respect for and protection of Mother Earth and encompasses three main program areas: ending tribal reliance on fossil fuels, building a green economy, and leadership development.

Tó Nizhóní Ání (TNA) is a Navajo grassroots community organization established to preserve and protect the environment, land, water, sky and people and to advocate for the wise and responsible use of the natural resources in the Black Mesa region and throughout the Navajo Nation. Through its work, TNA educates and brings awareness...
to local Navajo communities and to Navajo Nation leadership in Window Rock on issues that include energy and resource development. TNA aims to help move the Tribe to a more sustainable economy that is not dependent on coal.

Diné CARE is an indigenous community organization based within the Navajo homeland, with staff in both Arizona and New Mexico. It strives to educate and advocate for traditional Diné teachings as a means of protecting and providing a voice for all life living among the Four Sacred Mountains. Diné CARE promotes alternative uses of natural resources that are consistent with the Diné philosophy, and it assists local and traditional communities to organize, speak out, and determine their own destinies.

Between our four organizations, we represent a large and diverse cross-section of tribal and non-tribal communities that have been impacted by decades of operation and will be further affected by the retirement of three power plants in the Four Corners region and on the Navajo Nation in northern Arizona in which TEP has ownership shares.

Q. How are the Citizen Groups connected to the Four Corners region, the Four Corners Power Plant (FCPP) and the San Juan Generating Station (SJGS)?

A. The Citizen Groups have members who are directly impacted by the operations of FCPP, SJGS and the Navajo Generating Station (NGS). They monitor and scrutinize government and utility actions related to all three power plants in order to ensure that impacts to local and tribal communities are evaluated and considered as part of decision-making processes that impact the plants, their operations, and their closures.

Q. Are any other witnesses testifying on behalf of the Citizen Groups?

A. Yes. Nicole Horseherder, Executive Director of Tó Nizhóní Ání, is also testifying on behalf of the Citizen Groups.

Q. What is the purpose of Ms. Horseherder’s testimony?

A. Ms. Horseherder’s testimony will:

1. Discuss the environmental and public health impacts of NGS and the surrounding coal complex on tribal communities.

2. Discuss the impact of FCPP, SJGS and NGS on tribal jobs and the economy.

3. Support the immediate commencement of planning and implementation efforts for a just transition of local communities impacted by the imminent closures of SJGS and NGS and the eventual retirement of FCPP.

4. Explain how just transition efforts align with the Fundamental Law of the Diné. And,
5. Offer additional perspectives on the Citizen Groups’ five recommendations that should be implemented as part of this proceeding.

Q. Do you support Ms. Horseherder’s testimony?

A. Yes, I do.

Q. What is the context and purpose of your testimony?

A. TEP is part owner of three coal-burning power plants whose operations and retirements directly impact communities of concern to the Citizen Groups: FPCC and SJGS in the Four Corners region of northwestern New Mexico and NGS in northern Arizona.

NGS will close within two months and SJGS within the next three years. Additionally, market pressures are leading more and more utilities to make surprise announcements about accelerating the retirement dates for their coal-burning units, which makes it entirely plausible that FCPP, which currently has a tentative but unofficial closure date of 2038,\(^1\) will be phased out much earlier than anticipated.

SJCA’s work is most relevant to the Four Corners region, so my testimony will focus specifically on the environmental and economic impacts of the two plants in New Mexico: FCPP and SJGS.

In my testimony, I will:

1. Discuss the economic impacts of the FCPP and SJGS on local communities of the Four Corners region.

2. Discuss the environmental and public health impacts of the FCPP and SJGS on people and communities of the Four Corners region.

3. Explain why the FCPP will likely retire much sooner than 2038.

4. Explain what is meant by a “just transition” for communities economically dependent on coal.

5. Explain why TEP bears some responsibility for a just transition of NGS, FCPP and SJGS.

6. Describe what a just transition of NGS, FCPP and SJGS would look like for local and tribal communities.

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7. Explain why planning and implementation for a just transition must begin immediately. And,

8. Detail the Citizen Groups’ five recommendations that should be implemented as part of this proceeding to ensure a just transition.

II. The Economic Impacts of FCPP and SJGS on Four Corners Communities

Q. Please describe the “Four Corners” region.

A. The Four Corners region comprises the southwestern corner of Colorado, southeastern corner of Utah, northeastern corner of Arizona and northwestern corner of New Mexico. Much of the region belongs to semi-autonomous Native American nations, including the Navajo Nation. The region also includes New Mexico’s San Juan County and the city of Farmington.

Q. What is the importance of coal to the Four Corners region?

A. Coal has been a cornerstone of the Four Corners economy for more than a half century, with coal-burning power plants in which TEP has ownership shares and the coal mining complexes that provide fuel for these plants.

FCPP was the first to come online in 1963, followed by SJGS in 1973. Situated only 11 miles apart, the two plants and their adjoining coal mines make San Juan County and the area around Farmington, New Mexico, one of the largest coal complexes in the United States.

Together, FCPP and SJGS and the two nearby coal mines that supply them, have historically employed an estimated 2,500 workers in the Four Corners region, approximately 1,000 jobs in coal-fired electric power generation and 1,500 jobs in coal mining, representing about 2.4% of the region’s total employment.²

When it operated with all four of its original units at full capacity prior to 2018, SJGS employed about 400 workers,³ and the nearby San Juan Mine, the plant’s sole fuel supplier, employed another 500. When two of SJGS’s units were closed down at the end of 2017 to comply with Clean Air Act emissions limits, combined employment at the plant and the mine dropped to roughly 450 people.⁴

FCPP, at full capacity with all five of its original units running, employed approximately

³ Ibid, Pages 13-14.
500 people, while the Navajo Mine, which supplies its fuel, employed around 320 workers. Similar to SJGS, FCPP had three of its units phase out in 2013, with the shutdown cutting about 150 jobs at the plant. Nonetheless, even with the unit retirements and the scaling back of workforces at both power plant and both mines, the coal sector is still one of the largest employers in the region.

SJGS and the San Juan Mine also are an important contributor to property tax revenue in the region, responsible for significant portions of the tax base that provides funding for emergency and social services as well as the Central Consolidated School District that serves ~6,000 students in the Four Corners region. According to San Juan County tax data, property taxes from SJGS generated just over $9 million in 2017, comprising 3% of the County’s entire budget, 2.6% of San Juan Community College’s budgeted revenue, and 4% of the school district’s budgeted revenue. See chart below.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Total PT Revenue</th>
<th>SJGS &amp; SJM % of Total PT Revenue</th>
<th>Total Revenue (all sources)</th>
<th>SJGS &amp; SJM % Total Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Juan County</td>
<td>$3,184,207</td>
<td>4.1%</td>
<td>$100,059,388</td>
<td>3.2%</td>
</tr>
<tr>
<td>Central Consolidated School District</td>
<td>$3,489,891</td>
<td>49%</td>
<td>$85,838,167</td>
<td>4.1%</td>
</tr>
<tr>
<td>San Juan Community College</td>
<td>$1,910,524</td>
<td>11%</td>
<td>$72,405,837</td>
<td>2.6%</td>
</tr>
</tbody>
</table>


Q. How have recent power plant retirements impacted employment in the region?

A. As I mentioned above, FCPP retired three of its five generating units six years ago; and SJGS closed two of its four units in late 2017. These retirement decisions have caused significant job losses in the region, as shown in the table below. The loss of 350 jobs reduced labor income in the region by about $52.5 million.
Table 2-3: Reduced Generation and Employment:
NW New Mexico Coal-Fired Power Generation Plants

<table>
<thead>
<tr>
<th>Power Plant</th>
<th>Peak Generation Capacity (MW)</th>
<th>Reduced Generation Capacity (MW)</th>
<th>Change in Jobs</th>
<th>Change in Labor Income (Including Benefits), Millions 2016$</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Juan Generating Plant</td>
<td>1,683</td>
<td>~400</td>
<td>~200</td>
<td>-200</td>
</tr>
<tr>
<td>Four Corners Generating Plant</td>
<td>2,104</td>
<td>~500</td>
<td>~350</td>
<td>-150</td>
</tr>
<tr>
<td>Escalante Generating Station</td>
<td>247</td>
<td>~120</td>
<td>~120</td>
<td>-350</td>
</tr>
<tr>
<td>Total</td>
<td>4,034</td>
<td>~1,020</td>
<td>~670</td>
<td>-350</td>
</tr>
</tbody>
</table>

Note: Totals may not sum due to rounding.
1/Estimated assuming that the jobs per MW of generation capacity remains constant.
2/Based on Evans, James, and Madley (2013) study of Four Corners Generating Plant employment and income for units 1, 2, and 3.

Table from the report, “Regional Economic Assessment & Strategy for the Coal-Impacted Four Corners Region,” prepared for the Northwest New Mexico Council of Governments, February 2017.

Q. **How will the closure of SGJS in 2022 and the eventual closure of FCPP at some point in the future impact the local economy?**

A. Significant additional job losses are anticipated when SJGS closes in 2022 — decades ahead of schedule — along with the San Juan coal Mine that supplies it since the plant is its sole customer. Closure of the plant and mine will remove two substantial assets from San Juan County property tax rolls and decrease revenue to the County, to San Juan Community College and to the Central Consolidated School District by an average of 3%.11

Although there is no definitive date yet for the retirement of FCPP, the estimated total employment and income impacts from the combined closure of SJGS and FCPP, including indirect and induced ripple effects in other economic sectors, will cause a loss of 2,260-3,180 jobs and a decrease in $195.2-$213.3 million in annual income.12

Q. **Does TEP own a share of any of these power plants?**

A. Yes, TEP currently owns a 7% share of units 4 and 5 at the FCPP, giving the utility 115 MW of the plant’s nameplate generating capacity. It also owns a 50% share of Unit 1 at SJGS, giving it 185 MW of the plant’s nameplate output. Prior to its closure in 2017, TEP also owned an identical share of Unit 2 at SJGS.

11 Ibid.
Q. Has a closure date for SJGS been announced?

A. Yes. Units 2 and 3 at SJGS were retired in 2017 in order to comply with federal emissions limits under the Clean Air Act.\textsuperscript{13} Public Service of New Mexico (PNM), the majority owner and operator of SJGS, first signaled in its 2017 Integrated Resource Plan (IRP) that “the most cost-effective portfolio to serve New Mexico customers with affordable, reliable and environmentally responsible power” would be to retire the remaining two units at SJGS – Units 1 and 4 – in 2022,\textsuperscript{14} which is decades earlier than the initial scheduled end of operations in 2053. The Energy Transition Act, signed into law by New Mexico’s governor in March 2019, includes provisions allowing PNM to retire Units 1 and 4 by 2022.\textsuperscript{15} Following enactment of the law, PNM initiated abandonment proceedings before the New Mexico Public Regulation Commission to formally retire the plant in 2022.\textsuperscript{16} In addition, TEP has provided written notification that it does not wish to extend its participation agreement in SJGS nor the coal supply contract the plant owners have with the San Juan Mine beyond July 1, 2022.\textsuperscript{17}

Q. Has a closure date for FCPP been announced?

A. No official retirement date has been set for FCPP. However, as part of its 2017 IRP, PNM indicated that it intends to exit its 13% ownership in FCPP in 2031. Arizona Public Service, the operator and majority owner of FCPP, indicated in filings with the Arizona Corporation Commission that the utility has made an “overall commitment to exit coal by 2038,”\textsuperscript{18} but it has taken no official steps for setting a retirement date for FCPP.

However, as I address later on in my testimony, there are many reasons and indications suggesting that FCPP will close much earlier than 2038.

III. The Environmental and Public Health Impacts of FCPP and SJGS on Four Corners Communities

\textsuperscript{13} https://www.pnm.com/112017-siqs-units2and3
\textsuperscript{15} Energy Transition Act. https://www.nmlegis.gov/Sessions/19%20Regular/bills/senate/SB0489.html
\textsuperscript{16} Notice of Proceeding and hearing on San Juan Abandonment and Securitization of Energy Transition Costs. https://www.pnm.com/documents/396023/14794762/PNM-19-00018-UT-Abandon+SJGS-6.125x16-072919.pdf\textsuperscript{2} f0bdcab2-e6ce-d5d2-1809-95a2251e4eff\textsuperscript{2} t=1564585251391
Q. Please describe the public health impacts of FCPP and SJGS on local communities of the Four Corners region.

A. Over the past half century, pollution from FCPP and SJGS has made surrounding communities in northwestern New Mexico among some of the most polluted in the United States. Before three of FCPP’s five coal-burning units closed in 2013 and two of SJGS’s units closed in 2017, San Juan County, New Mexico, was among the worst 10% of counties nationally for toxic releases, particulate air pollution, and sulfur dioxide air pollution. Even after the closure of units at both FCPP and SJGS, San Juan County remains in the worst 25% of counties nationally for the quantity of toxic releases into the surrounding air, land and water.

Residents in San Juan County suffer elevated incidence of chronic lower respiratory disease, such as bronchitis, asthma and emphysema, which can be linked to elevated levels of ozone pollution, of which nitrous oxide (NOx) emissions, such as those from coal-burning power plants, are a major contributor. According to the U.S. Environmental Protection Agency (EPA), historically FCPP was responsible for almost a third of the entire NOx emissions for the entire Four Corners region. In comments on permitting for FCPP and the adjacent Navajo Mine, EPA officials described the area as having “Severely compromised ... public health.”

According to a study conducted by the Clean Air Task Force in 2018, the combined pollution from FCPP and SJGS annually results in 47 deaths, 16 heart attacks, 194 asthma attacks, 18 hospital admissions or emergency room visits, 7 cases of chronic bronchitis and 1,422 lost days of work.

Q. Please describe the air pollution caused by the operations of FCPP and SJGS.

A. FCPP is notorious for its pollution. In a settlement agreement with APS and the other owners of the plant that resulted in the installation of new pollution controls, an official in the U.S. EPA’s Office of Enforcement and Compliance Assurance called the plant, “One

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19 2012 EPA Toxics Release Inventory data cited in U.S. District Court Case No. 3:16-cv-08077-SPL; Comments filed by the Western Environmental Law Center and other plaintiffs, April 20, 2016.
20 Ibid.
22 This was according to San Juan County’s 2010 Community Health Profile, which includes a comprehensive overview of health indicators, including respiratory health. The study was cited in the EPA’s draft environmental impact statement for FCPP, Chapter 4, “Affected Environment, Impacts and Mitigation” https://www.wrcc.osmre.gov/initiatives/fourCorners/documents/FC_sec4.pdf
24 Cited in U.S. District Court Case No. 3:16-cv-08077-SPL; Comments filed by the Western Environmental Law Center and other plaintiffs, April 20, 2016.
25 Data reflects health effects based on 2016 emissions, subsequent to the closure of Units 1-3 at FCPP. http://www.catf.us/fossil/problems/power_plants/
of the largest sources of harmful pollution in the country.”25 It was for many years the largest source of ozone-forming NOx pollution in the United States, emitting over 45,000 tons annually.27 Ozone can aggravate pulmonary and other health problems, especially in vulnerable populations (like children, seniors, and people with lung diseases like asthma).26

Historically, FCPP was one of the largest domestic point sources of carbon dioxide, a significant greenhouse gas; and mercury, a neurotoxin for people and wildlife.29 A 2014 study published by the Los Alamos National Laboratory called the combined output of the SJGS and FCPP “the largest point source of pollution in the United States” and it identified FCPP as the worse of the two culprits. The study concluded that 75% of the atmosphere (up to an altitude of around 10 kilometers) in the San Juan Basin is polluted.30

As the estimates in the table below show, FCPP Units 4 and 5 emit millions of tons of carbon dioxide annually; as well as mercury, arsenic, lead, and selenium — all of which can be toxic to people and wildlife.

Table 2

<table>
<thead>
<tr>
<th>Criteria Pollutants, Greenhouse Gases and Target Metals</th>
<th>Historic Pre-2014 Baseline Emissions Units 1, 2, 3, 4, 5 tons/yr</th>
<th>Estimated Post-2018 Baseline Emissions Units 4 &amp; 5 tons/yr</th>
<th>Estimated Cumulative 2016-2041 Emissions Units 4 &amp; 5 tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfur Dioxide (SO2)</td>
<td>11,971</td>
<td>9,800</td>
<td>245,000</td>
</tr>
<tr>
<td>Nitrogen Oxides (NOx)</td>
<td>41,121</td>
<td>5,420</td>
<td>178,850</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>2,096</td>
<td>1,580</td>
<td>39,500</td>
</tr>
<tr>
<td>Filterable Particulate</td>
<td>1,976</td>
<td>830</td>
<td>20,750</td>
</tr>
<tr>
<td>Carbon Dioxide Equivalents (CO2e)</td>
<td>15,439,236</td>
<td>11,396,710</td>
<td>284,917,750</td>
</tr>
<tr>
<td>Arsenic (As)</td>
<td>1.78</td>
<td>0.06</td>
<td>1.5</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>1.82</td>
<td>0.07</td>
<td>1.75</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>0.36</td>
<td>0.07</td>
<td>1.75</td>
</tr>
<tr>
<td>Selenium (Se)</td>
<td>5.63</td>
<td>0.28</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Table from the Final Record of Decision by the Federal Office of Surface Mining, Reclamation and Enforcement for permitting of the Four Corners Power Plant and Navajo Mine Energy Project.31

28 https://www.epa.gov/ozone-pollution/health-effects-ozone-pollution
29 https://www.epa.gov/mercury/health-effects-exposures-mercury
30 Los Alamos National Laboratory media release: https://www.sciencedaily.com/releases/2014/05/140520100527.htm
Prior to the shutdown of Units 2 and 3 at SJGS, it also was one of the main contributors to air pollution in the Four Corners region, as the table below summarizes. And although NOx and SO2 emissions fell by 57% to 6,404 tons and 1,247 tons respectively after half of the plant’s capacity was taken offline at the end of 2017, it still was a significant contributor to the region’s poor air quality.

![Criteria Pollutant, HAP and VOC Emissions (tons) for Reporting Year 2016](image)

Q. Please describe the water pollution issues resulting from the operations of FCPP and SJGS.

A. The San Juan River Basin has been associated with energy production and its concomitant environmental pollution problems for more than half a century.

There are strong indications that leakage from Morgan Lake, which serves as the cooling water supply for FCPP, is leaching pollutants and then discharging contaminated effluent to the Chaco River, which flows into the San Juan River just a few miles downstream of FCPP. A hydrologic map included in APS’s 2013 Groundwater Monitoring Data shows groundwater from Morgan Lake flowing through current and former disposal sites for toxic coal-ash waste. A hydrological analysis conducted by the Federal Office of Surface Mining, Reclamation and Enforcement (in relation to a proposed mine expansion for Navajo Mine, which is the sole source of coal for FCPP) found increased levels of chemical constituents indicating potential coal-ash waste contamination (boron, chloride, fluoride, nitrate, selenium, sulfate, dissolved solids, and conductivity) in the Chaco River downstream from FCPP’s coal ash impoundments.

The water contamination situation is also problematic for the SJGS/San Juan Mine complex. Millions of tons of coal-combustion waste from the plant, in the form of fly ash, bottom ash and sludge, have been disposed of at San Juan Mine starting in 1973 to the present, dumped both in above-ground mined out areas of San Juan Mine (through 2002)
and in the underground mine from 2002-2017. The hazardous constituents of the waste are considerable. According to the Final Environmental Impact Statement for the proposed expansion of the underground portion of San Juan Mine, an average of more than 3 million pounds of toxic materials including arsenic, beryllium, cobalt, lead, mercury and selenium were dumped into the mine through coal-ash waste disposal annually from 2008-2016 (see chart below). The federal Office of Surface Mining has failed to characterize the chemistry of these coal combustion waste dumping practices making it difficult to quantify potential contamination the dumping may have had on groundwater and surface water. However, it is not much of a stretch to say the potential for water contamination is extremely high given the amount of material dumped and findings in one analysis concluding that the vast majority (upward of 90%) of coal-ash waste disposal sites in the U.S, have leaked toxic chemicals into nearby groundwater.

### Table 2.1-4: San Juan Mine Disposal of Minor TRI Constituents (lb/year)

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>30,371</td>
<td>33,002</td>
<td>20,438</td>
<td>30,000</td>
<td>28,000</td>
<td>27,000</td>
<td>57,000</td>
<td>22,000</td>
<td>23,000</td>
</tr>
<tr>
<td>Barium</td>
<td>2,112,319</td>
<td>2,400,074</td>
<td>2,077,291</td>
<td>2,100,000</td>
<td>1,900,000</td>
<td>2,000,000</td>
<td>1,900,000</td>
<td>1,600,000</td>
<td>1,600,000</td>
</tr>
<tr>
<td>Beryllium</td>
<td>37,071</td>
<td>11,271</td>
<td>10,000</td>
<td>9,100</td>
<td>9,600</td>
<td>9,300</td>
<td>7,800</td>
<td>8,200</td>
<td></td>
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<tr>
<td>Cobalt</td>
<td>30,139</td>
<td>32,200</td>
<td>27,160</td>
<td>21,000</td>
<td>21,000</td>
<td>21,000</td>
<td>27,000</td>
<td>30,000</td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>145,342</td>
<td>170,040</td>
<td>136,719</td>
<td>150,000</td>
<td>140,000</td>
<td>140,000</td>
<td>140,000</td>
<td>140,000</td>
<td>110,000</td>
</tr>
<tr>
<td>Lead</td>
<td>124,399</td>
<td>138,895</td>
<td>88,173</td>
<td>123,000</td>
<td>109,000</td>
<td>114,000</td>
<td>111,000</td>
<td>90,200</td>
<td>93,600</td>
</tr>
<tr>
<td>Manganese</td>
<td>312,277</td>
<td>550,014</td>
<td>183,818</td>
<td>490,000</td>
<td>470,000</td>
<td>430,000</td>
<td>440,000</td>
<td>370,000</td>
<td>390,000</td>
</tr>
<tr>
<td>Mercury</td>
<td>590</td>
<td>562</td>
<td>1,209</td>
<td>1,510</td>
<td>1,970</td>
<td>865</td>
<td>1,340</td>
<td>1,200</td>
<td>1,310</td>
</tr>
<tr>
<td>Nickel</td>
<td>44,942</td>
<td>48,023</td>
<td>26,050</td>
<td>44,000</td>
<td>43,000</td>
<td>38,000</td>
<td>40,000</td>
<td>34,000</td>
<td>36,000</td>
</tr>
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Another indicator of the toxic legacy of two large coal-burning plants operating for a half century is documented mercury contamination. The New Mexico Surface Water Quality Bureau has issued fish consumption advisories warning anglers about limiting the amount of fish they eat from reservoirs in San Juan County, including Navajo Lake and Farmington Lake, both downwind of FCPP and SJGS, because of high mercury levels in

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Mercury is a potent neurotoxin that is harmful even in trace amounts. The most significant source of environmental mercury is coal-fired power plants, which are responsible for about 40% of emissions. And research has shown that emissions from power plants can result in local “hotspots” of mercury accumulation such as those seen in the Four Corners’ water bodies.

Q. Please describe the impact on water levels and water availability resulting from the operations of FCPP and the SJGS.

A. Flowing from its headwaters in southwestern Colorado through New Mexico and Utah into Lake Powell and then the Colorado River, the San Juan River Basin is the primary drainage for the Four Corners region. It is one of the most important waterways in the Southwest and one of the most heavily exploited. FCPP has an allocated right to withdraw 51,600 acre-feet per year of water from the San Juan River. On average, FCPP pumps approximately 27,500 acre-feet annually from the river, drawing off approximately 3% of the river’s average annual discharge. SJGS similarly consumes around 22,000 acre-feet of water per year.

According to the U.S. Bureau of Reclamation, the average natural runoff from the San Juan Basin from 1906–2014 totaled more than 2 million acre-feet per year. The combination of heavy water use and persistent drought conditions have significantly reduced the flow of the river. The average annual discharge dropped to under 1 million acre-feet between 2000 and 2016.

More importantly, future water availability from the San Juan and rivers throughout the Southwest is projected to become increasingly scarce as snowpack and streamflow amounts decline — decreasing water supplies for cities, agriculture and industrial use and for use by the Navajo Nation. The U.S. Geological Survey’s Disaster Risk Assessment Study concluded that a long-term drying trend and decreasing snowpack, superimposed on the regional drought cycles, will magnify water-related impacts on the Navajo Nation and leave the Navajo people increasingly vulnerable. Decreased water

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44 http://octane.nmt.edu/sw-pttc/proceedings/ProducedWater04Proc/PMN.pdf
availability is particularly concerning considering that 40% of Navajo Nation members do not have access to running water in their homes.49

Q. Do FCPP and SJGS have adverse impacts on Tribal communities?

A. Yes they do. These impacts are addressed by Citizen Groups witness Nicole Horseherder.

Q. Will closure of SJGS in 2022 impact the the Tribal communities economically?

A. Yes it will. These impacts are discussed by Citizen Groups witness Nicole Horseherder.

Q. Will the eventual closure of FCPP impact the Tribal communities economically?

Yes it will. The closure of FCPP will also exacerbate the economic impacts for the Navajo Nation. These impacts are discussed by Citizen Groups witness Nicole Horseherder.

IV. Factors Suggesting an Early Retirement of FCPP

Q. Are there any reasons or indications that suggest that FCPP could close earlier than 2038?

Yes. There are strong indications that suggest that FCPP could close sooner rather than later.

First, New Mexico’s Public Regulation Commission recently finalized its review of a request by PNM for an electric rate increase. As part of its case, PNM sought cost recovery of expenditures related to the installation of pollution controls at FCPP. The Hearing Examiners in the docket determined that cost data and modeling used by the utility were outdated and substantially flawed. They also concluded that it would have been more economical to close the two units than to make capital expenditures on pollution controls and to continue operating the plant.50 The Examiners cited the “increasingly poor performance of Four Corners and its related need for capital improvements.” Although the final decision in the case allowed PNM to recover some of the costs of the pollution controls, the Commission agreed with the Examiners’ finding of facts on the economics and operations of the plant.51

Second, the cost of electricity generated from FCPP is well above other resource costs. This is demonstrated in recent filings by TEP and APS. In an April 2018 filing with the

50 Certification of Stipulation in PRC Case No. 16-00276-UT, Oct. 31, 2017 (page 45).
51 New Mexico PRC Final Revised Order Order Partially Accepting Certification of Stipulation in Case No. 16-00276-UT, Jan 11, 2018, at 40 (page 12).
Commission, TEP indicated that solar, wind, natural gas, and other coal resources outcompete generation costs from FCPP from 2020-2030. See the chart from TEP below. In addition to this forward-looking analysis from TEP, recent historical costs indicate generation costs at the plant ranging from $0.04-$0.05 per kWh in 2017.

Third, as noted earlier, both PNM and TEP have indicated that they plan to exit their ownership in FCPP in 2031. In its April 2018 filing with the Commission, TEP includes an Updated Resource Plan for 2018-2030 that retires the utility’s ownership share in the FCPP in 2031. PNM’s 2017-2036 IRP targets the same retirement date. The fact that two of the major owners, with a combined 20% stake in the power plant, anticipate retiring their share in 2031 suggests that the plant could close by this date if other owners are not found.

And fourth, a cost analysis recently conducted by Strategen Consulting on behalf of the Sierra Club of all the coal plants serving Arizona utility customers – both those operating

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53 Ibid.
54 S&P Global based on FERC Form 1 data.
in the state and those located in other states – showed that every single unit, 11 in all operating in three states, is more expensive to operate on a levelized cost than alternatives such as solar and wind. In fact, the two FCPP units were the worst performing economically of all 11 units analyzed (see chart below). Data show that were the owners to close down FCPP in 2023 and switch to solar plus storage, the avoided cost of operations and maintenance costs, along with “must take” provisions in FCPP’s coal supply contract with the Navajo Mine, would save customers nearly $750 million.

In combination with the broader market trends discussed below, these factors suggest a high-level of uncertainty around the future operations of the FCPP and provide strong evidence that the plant’s retirement will happen far earlier than 2038.

Q. What are these broader market trends to which you are referring?

A. Sweeping changes are altering the landscape of power generation in the West and are changing the economics of coal. Most notably, generation alternatives including natural gas, wind and solar have become highly affordable and regularly outcompete coal. Due to these changing economics, the FCPP could close much sooner than anticipated, especially since the cost of renewable energy is now routinely less expensive than coal.

Just two years ago, the owners and operators of several coal-burning power plants said they planned to keep operating their plants for decades. Now, many of those same plants are on the verge of retirement due to the changing economics of the coal sector.


58 Ibid. Appendix C, Table 2, Page 32.
Q. Can you provide some examples?

A. Yes, there are dozens of examples from across the country of power providers deciding suddenly to change course and retire coal-burning plants that previously were slated to run for decades more. My testimony, however, focuses specifically on recent examples from western energy markets that are most relevant to TEP’s rate case:

- PNM has now committed through an abandonment filing with New Mexico regulators to fully retire SJGS by 2022\textsuperscript{59} – three decades ahead of schedule. Prior to indicating in 2017 that it was considering an early retirement, PNM considered running the plant into the 2050s.\textsuperscript{60}

- In November 2016, the owners of NGS in Arizona – which includes TEP – argued in federal court to continue operating the plant possibly beyond 2044.\textsuperscript{61} Less than two months later, they announced that they would close NGS, the largest coal-burning power plant in the West, by the end of 2019 – 25 years early.\textsuperscript{62}

- In Nevada, the two units at the Valmy coal-fired power plant were supposed to run until 2031 and 2035, respectively, but the plant’s two owners in 2017 asked their respective utilities commissions in Nevada and Idaho for permission to close them well ahead of schedule.\textsuperscript{63} Idaho Power has proposed closing one unit in 2019 and the other in 2025, while NV Energy has suggested a 2025 closure date for both units.

- A decade ago, the owners of Utah’s biggest coal plant – Intermountain Power Project – were talking about adding 950 MW of new coal-fired generation capacity, but scrapped their plans based on uncertain economics.\textsuperscript{64} In May 2017, they decided to go even further and shutter the existing two units at the plant in 2025.

\textsuperscript{59} Notice of Proceeding and hearing on San Juan Abandonment and Securitization of Energy Transition Costs. 

\textsuperscript{60} In PNM’s application to the New Mexico Public Regulation Commission to retire units 2 and 3 at San Juan Generating Station as part of its compliance with EPA’s regional haze requirements, the utility stated that the depreciation schedule allowed for a “remaining life of SJGS Units 1 and 4 through 2053.”See testimony of Henry Monroy, the utility’s Cost of Service and Corporate Budget Director, in PRC Case No. 13-00390-UT.

\textsuperscript{61} See SRP’s brief as an intervenor/respondent in U.S. Court of Appeals for the 9th Circuit, Case No. 14-73055. In its filing, SRP emphasized that as part of EPA’s ruling on compliance with EPA’s regional haze requirements, there remained a possibility that “NGS can continue operation beyond 2044, so long as it ceases conventional coal-firing at that time.”


\textsuperscript{64} http://archive.sltrib.com/story.php?ref=/ci_13255691
and build a new gas plant on the site instead.\textsuperscript{65}

- In Montana, the retirement date for the four units at Colstrip Generating Station, the second largest coal-burning power plant in the West, continues to creep earlier and earlier. Just three years ago, the plant was expected to run until the 2040s.\textsuperscript{66} Through a negotiated settlement over Clean Air Act violations, the owners of the plant agreed in 2016 to close the two oldest units at Colstrip by July 2022.\textsuperscript{67} Earlier this year, they accelerated that retirement date by an additional two-and-a-half years, determining that it made sense to shut Units 1 and 2 down at the end of 2019 because of deteriorating economics.\textsuperscript{68} In a rate case settlement in Washington state in 2017, Puget Sound Energy, the majority owner of Colstrip, laid the groundwork to fully depreciate its share of the plant by 2027 — two decades ahead of schedule.\textsuperscript{69} Other owners have since followed suit. In its 2019 IRP, PacifiCorp announced that it planned to retire its 10% stake in Units 3 and 4 by 2027, 19 years ahead of schedule.\textsuperscript{70}

- The 116 MW Hardin Power Plant in Montana, built in 2006, is one of the newest coal plants in the country. In 2017, the owners said they had lost too much money to keep running the plant and would likely have to close it in 2018 unless a new owner materialized.\textsuperscript{71} A cryptocurrency firm purchased the plant in early 2019,\textsuperscript{72} but it’s not clear whether it has made the necessary investments to continue operations.

- As part of its ambitious Colorado Clean Energy Plan, Xcel Energy announced in June 2018 that it would shut down one unit at its Comanche Generating Station in Pueblo 11 years early in 2022, and the other 10 years ahead of schedule in 2025.\textsuperscript{73}

\textsuperscript{71} http://www.coloradoenergy.com/clients/hardin.html
• Also in Colorado, Tri-State Generation and Transmission, the operator of the 125-MW Nucla coal plant, announced in September that it had shut down the four-unit plant more than three years ahead of schedule.74

• PacifiCorp, one of the largest utilities in the West, serving 1.9 million customers across six states, announced in its draft 2019 IRP that its preferred portfolio includes a slate of early coal plant retirements that will take nearly 2,800 MW offline by 2030, far ahead of schedule. They include PacifiCorp’s exit from: Unit 1 at the Jim Bridger plant in Wyoming 14 years ahead of schedule, in 2023 instead of 2037, and Unit 2 at Bridger nine years early, in 2028 instead of 2037; Units 1 and 2 at the Naughton plant in Wyoming four years early, in 2025 instead of 2029; Unit 2 at the Craig plant in Colorado eight years ahead of schedule, in 2026 instead of 2034; and as mentioned above, Units 3 and 4 at Colstrip 19 years early, in 2027 instead of 2046.

No utility and no coal plant is immune to the market forces driving these retirement decisions. These forces are pushing utilities to swiftly alter plans that previously had their coal assets operating for decades. If we’re to learn anything from the examples above, it’s that planning and preparation for retirements needs to happen now because decisions with the potential to dramatically affect coal-dependent communities may be coming far sooner than previously anticipated.

V. Ensuring a Just Transition for Communities Economically Dependent on Coal

Q. What is meant by a “just transition”?

A. A “just transition” means that local communities that are economically dependent on coal and hardest hit by global changes in energy technology are not left behind as coal-fired power plants and coal mines close and the world transitions to cleaner energy. It means that power generators and users make concerted efforts to assist these communities in their transition to new modes of economic development.

Q. Why should TEP bear some responsibility for a just transition of FCPP, SJGS, and NGS?

A. These power plants have helped ensure a reliable supply of electricity for TEP and its customers for over 50 years. As Nicole Horseherder and I have testified, the Navajo and non-tribal communities of the Four Corners region and in the area surrounding the Navajo Generating Station are economically dependent on these plants, and their future remains uncertain after these plants close. TEP and its customers have benefited from these communities for decades. As such, they have an obligation to ensure that proactive steps are taken now to help these communities transition to new economic bases as these power plants close.

Q. When should planning and implementation of a just transition for these plants begin?

A. The time to start planning for the planned and eventual closure of these plants and a transition to new economic drivers is now — even if power plant retirement is more than a decade or two away, as may be the case of FCPP.

It is necessary and appropriate to bring together affected constituencies, plant owners, regulators and other stakeholders to begin discussions well in advance of power plant closure to resolve issues that should be addressed to minimize the negative effects of closure. Sweeping economic changes such as those inherent in the retirement of centralized power plants do not — and cannot — happen overnight. They must be systematically implemented over time scales that can encompass a decade or more. While a few states, such as Oregon, have dealt with the complex issues of plant closure and the effects on local communities, Arizona has not closed a major coal-fired power plant in its entirety, so there is more limited experience in the state on what a just and reasonable transition process should look like.

Q. Is there anything else that you would like to add on why planning and implementation of a just transition must begin now?

A. Yes. We know from my testimony and the testimony of Citizen Groups witness Nicole Horseherder that plants like NGS, FCPP, and SJGS are significant contributors to local economies through jobs and tax revenues, and that power plant closure can have a material and sometimes devastating effect on local economies and communities. These effects can be ameliorated if there is proactive discussion, consideration and implementation of mitigation strategies and planning for development of alternate economic opportunities prior to and well in advance of closure.

Now more than ever, as utilities across the West change direction and consider retiring coal-fired power plants that have operated for decades, the communities in which they are situated need sound economic and workforce development models that can create a pathway to a sustainable future. These models are needed now.

Q. Is the principle of gradualism applicable to a just transition?

A. Yes. The Commission is a proponent of gradualism, which supports incremental adjustments and progress to avoid and mitigate against dramatic change. Often the principle of gradualism is applied to utility rate increases so that ratepayers can more easily adapt to changing prices.

It is also logical to apply the principle of gradualism to power plant closure. Protecting

75 Portland General Electric announced the 2020 retirement of the Boardman power plant in Oregon in 2010, giving stakeholders 10 years to plan for the facility’s closure.
76 Individual units within a plant have been retired such as Cholla Unit 2.
communities from the sudden impacts of coal plant retirements and the sudden disappearance of an important part of their tax and employment base is similar to protecting ratepayers from the shock of large rate increases. Beginning to plan for the significant economic impact of a coal plant closure early can help put in place a plan and strategies to address the economics of plant closure and to plan for the development of alternative economic drivers. Additionally, planning early would allow a just transition fund (discussed later in my testimony) to be established and built up over time, avoiding rate shock by spreading the costs over a longer period of time (if utility ratepayers contribute to the fund).

Q. Does TEP acknowledge an obligation to ensure that proactive steps are taken to help communities impacted by the closure of NGS, SJGS, and the FCPP?

A. TEP acknowledges the impacts that plant closures may have on local communities and has stated that it will participate in any transition efforts that all or other plant owners support.  

VI. Five Recommendations to Ensure a Just Transition as Part of This Proceeding

Q. What do the Citizen Groups recommend to ensure a “just transition” as part of this proceeding?

A. We have five recommendations to help ensure a just transition as part of this proceeding.

1. TEP should establish two separate Transition Funds to provide financial resources to the communities impacted by the closure of the SGJS, FCPP, and NGS. Specifically, TEP should commit at least $21 million to support a just transition fund for Four Corners region; and at least $8 million to support a just transition fund for the communities impacted by the closure of NGS.

2. TEP should provide financial support to help establish and implement two separate transition collaboratives that it also participates in: (1) A Four Corners Transition Collaborative comprised of stakeholders from northwestern New Mexico, and (2) A NGS Transition Collaborative comprised of stakeholders from the Navajo Nation, the Hopi Tribe, and the City of Page, Arizona.

3. TEP should support tribal communities through commitments to providing transmission capabilities and renewable energy development opportunities on Tribal Lands, including through working with the Navajo to facilitate Tribally-owned and operated projects.

See Tucson Electric Power Company's Response to the Citizen Groups 1st Set of Data Requests including Citizen 1.01, 1.02, and 1.03.
4. TEP should develop and deploy energy efficiency programs to benefit both Tribal and Non-Tribal communities and work cooperatively with the other owners of FCPP, NGS, and SJGS to ensure coordinated, comprehensive energy efficiency offerings and delivery.

5. TEP should provide in-kind and regular assistance to the Navajo Nation to aid in economic development efforts through the development of electric infrastructure that serves Tribal communities.

I discuss each of these recommendations in my testimony below.

A. Recommendation 1: TEP should establish two separate Transition Funds to provide financial resources to the communities impacted by the closure of SGJS, FCPP, and NGS.

Q. What are the two proposed Transition Funds?

A. The Four Corners Transition Fund would ensure that communities and workers most affected by the closure of the SJGS and the FCPP are not left behind. The Fund would provide financial resources to help these communities build strong, resilient, and diversified new clean energy economies as they transition beyond coal. Similarly, the NGS Transition Fund would support the communities impacted by the closure of NGS.

For example both transition funds could allocate resources to support advanced skills training programs for impacted workers including job retraining programs.

Q. Have similar Transition Funds been created?

A. Yes. For example:

- In December 2017, the Washington Utilities and Transportation Commission approved a settlement agreement supporting a planning and transition process for the Colstrip Power Plant in Montana. The plant’s two oldest units are now scheduled to close by the end of 2019. The plant’s majority owner, Puget Sound Energy (PSE), has received approval to fully depreciate its stake in the plant by 2027 (which is a likely precursor to a retirement decision). As part of the proceeding, PSE agreed to provide $10 million in funding to support transition planning and assistance for the community of Colstrip. Of that amount, $5 million comes from utility shareholders. In addition to these funds, Avista Corp., another one of Colstrip’s owners, agreed in unsuccessful merger proceedings to augment the Fund with $4.5 million, with 100% ownership.

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of those funds contributed by shareholders.⁷⁹

- In Tonawanda, New York, several years prior to the closure of the Huntley Generating Station, a coalition of stakeholders worked together to draft Tonawanda Tomorrow, a blueprint for the town’s trajectory. Participating stakeholders included local community members, organized labor, local businesses, and environmental organizations — among others. The blueprint recommended several strategies to keep schools operational, attract new businesses, and improve the community’s health and environment. Seven months before the power plant’s closure, $30 million in state funding was secured to implement the coalition’s framework.⁸⁰

- As part of the closure plans for the Diablo Canyon nuclear plant near San Luis Obispo along the central California coast, Pacific Gas & Electric crafted a transition plan that included substantial funding for helping the community’s economic transition in light of the accelerated nature of the plant’s shutdown. After a comprehensive stakeholder process local officials, labor and environmental groups, and several rounds of revisions involving the California Public Utilities Commission, the California Legislature and the governor’s office, the final package contributed $350 million toward employee retention and retraining programs for the plant’s 1,200 workers and for local economic development efforts.⁸¹

Additionally, we know of at least two western states that tackled coal-plant transition issues head on in 2019 through legislative efforts. In New Mexico, the landmark Energy Transition Act,⁸² in addition to setting ambitious clean energy targets, also authorized PNM to securitize the full retirement costs of SJGS and include them in its rate base. The measure, signed into law in March, carves out $40 million in funding dedicated to backfilling plant and mine worker wages, job training and economic development efforts for the Four Corners region. In Colorado, no specific plants were identified for retirement as in New Mexico, but a similar bill signed into law in May,⁸³ authorizes utilities to securitize plant retirement costs, mandating that up to 25% of the interest earnings on the bond be set aside for worker and community transition. Notably, the Colorado measure, House Bill 19-1314, also known as the Just Transition from Coal-based Energy Act, establishes a Just Transition Office within the Colorado Department of Labor and Employment, the first such office of its kind in the country with staff dedicated to facilitating transitions for coal-dependent communities. The office will have an Advisory Committee consisting of officials from the state Department of Labor and Employment, the Colorado Energy Office, the Department of Local Affairs, the Governor’s office and the Senate, as well as 12 local representatives, including coal workers, coal community representatives, members from disproportionately impacted communities, and experts on economic development and/or workforce retraining.

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⁸⁰ https://grist.org/justice/a-working-class-buffalo-suburb-retired-a-coal-plant-the-right-way
These examples demonstrate responsible commitments to support funding for just transition efforts well before the power plants in question have closed.

Q. How much funding should TEP shareholders provide as part of this proceeding for both transition funds?

A. TEP should commit to at least $21 million for the Four Corners Transition Fund and $8 million for the NGS Transition Fund as part of this proceeding. Of this total, at least 50% should be funded by TEP shareholders.

As more utilities recognize their responsibility to assist workers and communities in transitioning to post-coal economies, the baseline for what should be considered an acceptable contribution is becoming more firmly established. Based on prior commitments made by the utilities in the examples noted above, this is an entirely reasonable recommendation. On the low end, Puget Sound Energy’s early commitment to transition, set aside the equivalent of $13,387 per megawatt for to cover its 33% ownership in the Colstrip plant, resulting in a funding commitment of $10 million for the community of Colstrip. On the high end, the $40 million dedicated to transition as part of New Mexico’s Energy Transition Act – which was fully supported by PNM – allocates just over $100,000 per megawatt for its 43% ownership in the two still-operating units at SJGS. An average value for the examples in which transition funding has been officially approved comes to $43,500 per megawatt of ownership.

A comparable commitment by TEP to transition efforts in the Four Corners region and on the Navajo Nation for NGS would reasonably be $29 million ($16 million for the retirement of SJGS, $5 million for FCPP and $8 million for NGS.). In the context of both the utility commitments and legislative efforts discussed above, seed funding of $29 million is a fair and justifiable starting point.

Q. Does the $29 million represent a cap on the amount that TEP should commit to these funds?

A. No, absolutely not. This $29 million is not a “cap.” If anything, it represents a floor – the minimum amount that TEP and its customers and shareholders should provide to support a just transition for the communities impacted by the closure of the SGJS, FCPP and NGS.

Q. Has the Arizona Corporation Commission previously ordered utility shareholders to fund certain initiatives, including ones that benefit vulnerable communities?

A. Yes it has in a number of proceedings. For instance:

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84 The calculation for SJGS includes TEP’s ownership shares in both Unit 1, which is still in operation, and Unit 2, which was taken offline at the end of 2017. It is reasonable to factor the latter unit into the transition funding calculation since it was closed down less than two years ago and there was no systematic or coordinated stakeholder process to provide any transition support at the time.
• In Decision No. 72723 dated January 6, 2012, Southwest Gas agreed to provide non-ratepayer funded contributions totaling at least $1 million over five years to support the low income weatherization program.

• In Decision No. 71448 dated December 30, 2009, APS committed to augment the low income bill assistance program with $5 million in funding.

• In Decision No. 74689 approving Fortis Inc.’s acquisition of UNS Energy in August 2014, Fortis Inc., and UNS Energy agreed to provide customer bill credits totaling $30 million over five years to customers of TEP, UNS Electric and UNS Gas.

• In Decision No. 73912 dated June 27, 2013, TEP agreed to a $150,000 annual shareholder contribution to fund low-income bill assistance programs. In its 2017 rate case, TEP recommitted to this amount for the next five years.85

Q. Should TEP ratepayers also contribute to the two transition funds?

A. To make the contributions equitable, as with the Colstrip transition funding, we recommend that TEP shareholders provide 50% of any amount committed to the Four Corners Transition Fund and 50% toward the NGS Transition Fund. The remaining half could be funded by TEP shareholders, TEP ratepayers, or a combination of the two.

Q. Has Commission Staff previously supported just transitioning planning efforts, including the creation of a just transition fund to help communities impacted by power plant closure?

A. Yes it has. In the recent APS rate case on FCPP, Commission Staff stated that it, “Supports a just plan for transition to assist communities dependent on coal” including “a fund of several million dollars to assist the Navajo communities in transitioning to a future that is not heavily dependent on coal.” 86 Notably, in this same proceeding, APS also acknowledged a commitment to just transition when it stated that, “It is committed to working with the Nation and the surrounding community to ensure a smooth transition.” 87

Q. How would transition funding be allocated?

A. Each transition fund would be overseen by a transition collaborative, which I discuss next in my testimony.

B. Recommendation 2: TEP should provide financial support to help establish and implement two separate transition collaboratives that it also commits to participate in.

Q. Describe the two transition collaboratives proposed by the Citizen Groups.

A. The Four Corners Transition Collaborative would provide a neutral venue for diverse stakeholders to meet regularly with TEP and other plant owners to proactively address economic, worker, environmental and transition issues that will result from the closure of the SGJS and the FCPP and their impacts on Navajo and non-tribal communities of the Four Corners region.

The NGS Transition Collaborative would be similarly constituted by representatives of the communities impacted by the closure of NGS.

Q. Why are transition collaboratives needed?

A. It is simply not enough to write a check to fund “transition” activities without a constructive conversation about how financial support could and should be used most effectively. Moreover, because of the complexities related to the closure of these plants – including from the ownership by several utilities; tribal sovereignty issues; and regulatory oversight by state, federal and tribal agencies – decision-making about future economic development will require input from numerous bodies and stakeholders with diverse viewpoints.

Q. What would the transition collaboratives do?

A. The transition collaboratives would support a process to allow diverse stakeholders to come together regularly to discuss and resolve the myriad issues surrounding coal plant closure and subsequent economic development and diversification, including but not limited to:

- Determining the set of stakeholders affected by plant closure that should be involved in each Collaborative. Plant owners, Native American representatives, utility regulators, local community representatives, worker representatives, public interest organizations, and the general public are all key stakeholders. The Citizen Groups would also actively participate.

- Establishing a timeline and process for the consideration of issues, including whether it is necessary to have a formal structure, with voting rights or designated seats for representatives, or if an informal process would be effective.

- Determining the issues that should and should not be addressed by each collaborative. Some of the issues may include treatment for displaced workers,
retraining opportunities, and reclamation activities.

- Determining how transition fund monies should be allocated, invested, and spent.

Q. **Would TEP lead these collaboratives?**

A. No. It is critical that both collaboratives be led by a neutral convener or conveners. TEP would help provide the funding to support the formation and implementation of the collaboratives. As part of each collaborative's formation, participating stakeholders would agree on a process to select a neutral convener or conveners.

Q. **Has the Arizona Commission ordered collaborative working groups as part of prior rate case proceedings?**

A. Yes. In Decision No. 67744 approving the Settlement Agreement in APS's rate case, the Commission required APS to, "Implement and maintain a collaborative DSM working group to solicit and facilitate stakeholder input, advise APS on program implementation, develop future DSM programs, and review DSM program performance." The Commission further required that this collaborative at minimum include specific stakeholders including Commission Staff, the Residential Utility Consumer Office, Western Resource Advocates, and the Southwest Energy Efficiency Project, among others.

Q. **Have other Transition Collaboratives been established in other states?**

A. Yes. The Tonawanda, New York, collaborative, which I described earlier in my testimony, is one such example.

C. **Recommendation 3: TEP should support tribal communities through commitments to providing transmission capabilities and renewable energy development opportunities on Tribal Lands**

Q. **Please describe the Citizen Groups' proposal to reserve transmission capabilities to benefit the Navajo Nation as part of this proceeding.**

A. The Citizen Groups recommend that at least 50% of any TEP-owned transmission capacity currently used to deliver power from FCPP be reserved for the benefit of the Navajo Nation in the event that the plant is retired.

Q. **What is the purpose of this recommendation?**

A. Reserving a portion of the transmission capacity for the Navajo Nation would enable the Navajo Nation to benefit from economic development opportunities, including the
development of renewable energy projects on tribal lands that could then be delivered to markets in Arizona, California and/or New Mexico using the FCPP transmission lines.

Q. Is there recent precedent in Arizona for such an action?

A. Yes there is. As part of the Lease Extension between the Navajo Nation and the owners of Navajo Generating Station, including TEP, that secured the operation of the plant through 2019, the owners agreed to provide access to 500 MW of capacity on two transmission systems for a period of 35 years at no cost to the Tribe. In the agreement, the owners also agreed to fully cover all operations and maintenance costs on the two transmission systems for a period of 10 years.88

Q. Please describe the Citizen Groups’ proposal for renewable energy development opportunities on Tribal Lands as part of this proceeding.

A. The Citizen Groups recommend that TEP, as part of this proceeding, commit to develop at least 295 MW of renewable energy projects to replace its ownership shares of generation capacity being retired plants on the Navajo Nation, either through the development of renewable resources on Tribal Lands or the development of renewable resources that utilize Tribal-owned/controlled transmission lines.

Q. Is there recent precedent in Arizona for such an action?

A. Yes, there is. Salt River Project and the Navajo Tribal Utility Authority (NTUA) recently entered into a Memorandum of Understanding (MOU) that SRP will provide technical support in developing interconnection facilities for large-scale renewable development within the Navajo Nation, as well as provide procurement and financing expertise related to the development and ownership of such projects. The agreement targets the development of at least 500 MW of renewable energy projects over the next five to 10 years within the Navajo Nation.89 At the most recent meeting of SRP’s Power Committee, on Sept. 24, 2019, the utility confirmed that it is already in discussions to issue a Request For Proposal for developing up to 200 MW of solar on the Navajo Nation.90

Q. Do the Citizen Groups have other recommendations?

A. Yes. Within six months of the conclusion of this proceeding, TEP should file an independent assessment with the Commission documenting the ability to deliver power to Arizona load-serving entities both from renewable energy projects on Navajo Nation

88 From the 2017 Replacement Lease between the owners of Navajo Generating Station and the Navajo Nation, Sections 8(A)(i) and 8(A)(ii), https://www.usbr.gov/lc/phoenix/reports/NGS/EAFONSI/ExtLeaseNAVSRP.pdf (at page 23)
90 SRP Power Committee Meeting, Sept. 24, 2019, Supporting Material.
land and from renewable projects located elsewhere but delivered via Navajo Nation transmission. TEP should commit to providing renewable energy to its customers based on the capabilities identified in this assessment — above the 295 MW described above.

D. Recommendation 4: TEP should develop and deploy energy efficiency programs to benefit Tribal communities

Q. What do the Citizen Groups recommend on energy efficiency?

A. The closure of the NGS, SGJS, and FCPP represents a critical juncture for the Navajo and non-tribal communities living near the Navajo Generating Station and the Four Corners region. It is also a once-in-a-lifetime opportunity to lay strong economic foundations that will sustain Diné and local communities far beyond the operational life of coal. We believe this economic future should include significant deployment of energy efficiency that benefits Tribal and local communities, especially those communities most impacted by coal-fired power plant operations and closure.

To that end, as part of its commitment to a just transition, we recommend that TEP take immediate steps to help develop, propose, and implement programs to deploy energy efficiency in tribal communities. We also recommend that TEP work with other utilities in the region, including the other plant owners, to coordinate and ensure comprehensive energy efficiency offerings.

Q. Have other utilities in the region deployed energy efficiency programs to benefit tribal communities?

A. Yes. The New Mexico Gas Company offers a “Native American Energy Efficiency Project” which works to weatherize homes on the San Felipe Pueblo in New Mexico. This program could serve as a model.

Q. How would this work if the impacted communities are not in TEP’s service territory?

A. TEP should providing funding and leverage its considerable expertise in implementing nationally-recognized efficiency programs to provide services in tribal communities even if those communities are not in TEP’s service territory. As I discussed above, TEP should work with other utilities in the region, including the other plant owners, to coordinate and ensure comprehensive offerings are made available.

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E. Recommendation 5: TEP should provide in-kind and regular assistance to the Navajo Nation to aid in economic development efforts through the development of electric infrastructure that serves Tribal communities.

Q. Please describe the status of electricity infrastructure on the Navajo Nation.

A. The Navajo Nation has significant needs for basic economic development including the development of basic electricity infrastructure. According to data from the U.S. Energy Information Administration and the U.S. Census Bureau, there are about 18,000 homes on the Navajo Nation lacking electricity – or about one-third of the households on the reservation. According to some estimates, without any additional assistance, it will take the NTUA more than 35 years to electrify the entire reservation.

Q. What do the Citizen Groups recommend as part of this proceeding?

A. Given TEP’s expertise in this area, the company should commit, as part of this proceeding, to provide assistance, including in-kind services, to help the Navajo Nation, including at the Chapter House and Agency levels, to develop its electricity infrastructure. For example, TEP could provide these entities with assistance for distribution grid planning and expansion, and financing expertise related to project development.

Q. Is there recent precedent in Arizona for such an action?

A. Yes. As part of the recent MOU that SRP entered into with the Navajo Nation, SRP agreed to provide technical support to develop interconnection facilities for large-scale renewable development within the Navajo Nation, and provide procurement and financing expertise related to the development and ownership of such projects.

XII. Conclusion

Q. Does this conclude your testimony?

A. Yes.