

# The Case (and the Mechanisms) for Utility-Company Reinvestment in Arizona's Coalfield Communities

## *Statewide Risk as Fast-Moving Transition Sweeps Power-Generation Industry*

### Executive Summary

Coal-fired power plants across America are closing, their disappearance part of a market-driven transition that is occurring faster than widely expected and that signals that now is the time to reinvest in coalfield communities.

Nowhere is the issue more pressing than in Arizona, which is at the epicenter of a regional shift in how power is generated. More coal-fired plants will go out of business in the months and years ahead, and the effects will be seen across the state and into northwest New Mexico, an area with which Arizona shares common economic interests. Utilities that are shutting plants can and should reinvest in these communities, where opportunities are abundant, and where timely reinvestment stands to be mutually beneficial to local communities, the state and its citizens.



### *Rural Economies Are Being Upended Overnight*

Utility-company reinvestment would simultaneously protect the overall Arizona economy and avoid near-term fiscal and financial chaos in two counties, in particular, and two others in the longer term:

- **Coconino County**, where Navajo Generating Station (NGS) closed in November;
- **Navajo County**, where Kayenta Mine ceased production last year and where the shutdown of Cholla Generating Station begins this year;

- **Apache County**, where Coronado Generating Station is being kept operational through a life-support program and where even Springerville Generating Station, barely a decade old, is struggling to compete;
- **Cochise County**, where the coal-fired half of Apache Generating Station is 40 years old and well behind the curve in terms of cost and efficiency and whose economic proposition is deteriorating.

Importantly, three of these counties—Apache, Coconino and Navajo—include Hopi and Navajo indigenous communities that have contributed heavily to the electrification of Arizona. Collectively, the four counties above account for 8% of Arizona's economy. Utility-company reinvestment in these communities—through utility-scale renewable power projects, other infrastructure development, worker retraining, education and other meaningful initiatives—is easily in the best interest of Arizona as a whole.

### *While Communities That Fueled the Growth of Arizona Are Ripe for Reinvestment Now, Utility Companies Have Done Next to Nothing*

Communities most immediately affected are ripe for reinvestment now. All still have skilled work forces and plentiful transmission infrastructure. All have abundant land, sunshine or wind, making them potential regional clean energy powerhouses.

Yet Arizona utilities have done next to nothing in terms of reinvesting in these communities. Salt River Project (SRP), the water-and-electricity provider in Phoenix, has taken some small steps toward utility-scale solar development in northern Arizona. Arizona Public Service Company (APS), the largest utility company in the state, has announced that it will drop coal-fired power in favor of electricity-generation modernization, but has said very little about when, where or even if it will reinvest locally. Tucson Electric Power Company (TEP) has ignored a petition for it to reinvest in communities where coal-fired power generation and coal-mining activities have recently ceased.

The proposal before TEP, filed in a current rate case, stands out for the hard numbers it puts forth, calling for TEP to reinvest \$100,000 for every megawatt of ownership it has in three coal-fired plants in the Four Corners area. The total would come to \$61.2 million and would be considered an initial reinvestment.

### *Utility-Company Reinvestment Is Under Way Elsewhere*

U.S. coalfield reinvestment initiatives have taken root already in Colorado, Illinois, New Mexico, Washington and Wyoming. Some are far more meaningful than others, but each in its own way suggests elements of a model Arizona could follow. Germany, in its recent adoption of a national coalfield reinvestment agenda, indicates a potential way forward for Arizona utility-company reinvestment as well.

All of these initiatives are built around community or regulatory input, where the reinvestment decisions are informed and/or often managed by local groups or boards. None of the initiatives have been wholly voluntary or unilateral—all have

been mandated by the courts, or mandated and/or managed through regulatory or legislative actions.

### Arizona Has Regulatory and Policy Mechanisms It Can Deploy Now to Drive Utility-Company Reinvestment

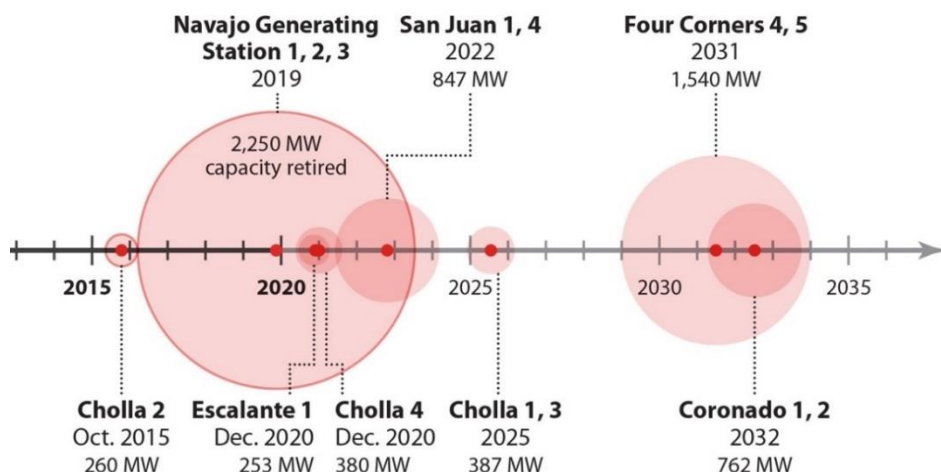
Utility companies are overseen by regulatory bodies, publicly elected directors or legislative bodies. Arizona has all three means at its disposal to drive utility-company reinvestment:

- Through rate-case initiatives or rulemaking by the Arizona Corporation Commission (ACC), which regulate APS and TEP in the public interest;
- Through unilateral action by SRP, which is run by a board accountable to customers and to the greater good of Arizona;
- Through legislative action that would direct any of all of these utilities to set aside money for reinvestment or that would mandate a ballot initiative.

Use of any of these tools—or any in combination—would advance utility-company reinvestment in communities that are at greater risk than has been acknowledged to date. If reinvestment doesn’t occur, the cost of public services in these areas will accrue to the state. It will also delay the buildout of a competitive, geographically diverse modern power-generation industry in Arizona.

#### Timeline of Coal-Fired Power Retirements and Conversions

As a fast-moving energy transition sweeps through the electricity sector, Arizona utilities have already shut, or have plans to shut, the majority of coal-fired plants in the region. The largest coal-fired plant in the West, Navajo Generating Station, was retired at the end of 2019; more closures are on the horizon.



Over the next decade, almost every coal-fired powered plant in and around Arizona will close, potentially leaving behind ruin in the small communities where these plants are located and harming the state overall. While the impact and timelines are all but certain, discussion and decision-making on reinvestment is only just beginning. Now is the time for initiatives to ensure adequate time for transition.

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## The Case for Utility-Company Reinvestment in Arizona

### *Rural Communities Are Being Upended Overnight; State's Overall Economic Health Is at Risk*

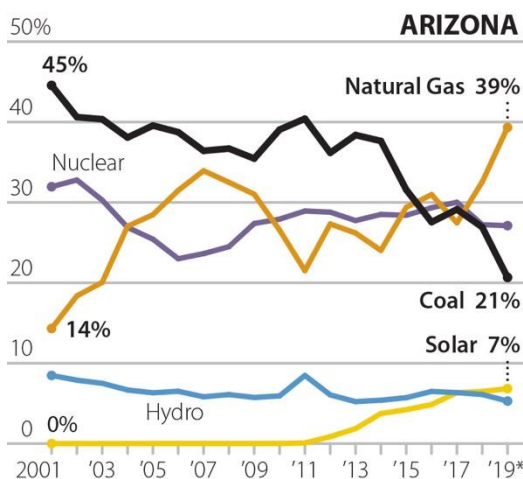
Arizona's coal-fired power industry is in freefall, as the chart here shows, with coal accounting for barely one-fifth of electricity generation in the state through most of 2019—roughly half what it was a decade ago.

Coal's share of the Arizona power market will only continue to decrease, as indicated by the growth of renewable and gas, and as shown elsewhere in this report in utility company plans for coal-fired plants. Much of the transition is happening faster than policymakers and utility companies expected, and the pace of change is laying bare the effects of poor planning.

Closures of coal plants and mines bring overnight trauma to households, businesses, and local governments. Pay checks disappear, retail trade slows or ceases, tax bases shrivel. Rural communities like those described here are more vulnerable to the social and economic impacts of coal plant/mine closures than their urban or suburban counterparts, which have more diverse economies. The impact bleeds ultimately back to Phoenix, where state government is responsible for public services that run the gamut from healthcare and education to law enforcement and highway maintenance.

Examples of the effects of regional coalfield economic trauma include recent tax-base damage to Coconino County<sup>1</sup> and to Navajo and Hopi tribal governments<sup>2</sup> as a result of the linked closures last year of Navajo Generating Station (NGS) and Kayenta Mine. The NGS/Kayenta Mine story is one that will be repeated elsewhere regionally in the months and years ahead as momentum around market-driven

**Fuel Share for Electric Power Generation**  
All sectors; includes small-scale residential solar.



\*2019 figures are based on 11 months ended November.  
Only fuels with 1% or more share in any year are shown.

Source: Energy Information Administration

<sup>1</sup> IEEFA. [Bill to Spark Federal Post-Coal Reinvestment in Arizona Tribal Communities Is a Good Beginning](#). September 2019.

<sup>2</sup> IEEFA. [As Coal Economy Collapses, Imminent Public Budget Crisis Confronts Hopi-Navajo Tribes](#). May 2019.

electricity-generation modernization grows (see Appendix 2: Regional and National Trends Away From Coal).

While the decline of the Arizona coal industry is felt most immediately at the community level, it undermines the economy of the entire state.

Arizona’s GDP grew by 4 percent in 2018 (the most recent year for which full data is available), an increase over 2017 that was the fourth biggest nationally,<sup>3</sup> suggesting a wealth of available reinvestment resources.

For comparative purposes, Maricopa County (which includes Phoenix and the suburban cities of Chandler, Gilbert, Mesa, Scottsdale, and Tempe) is far and away the single biggest of the state’s 15 counties in terms of economic activity. Its GDP in 2018 totalled \$221 billion, or about 70 percent of all economic activity in Arizona. That said, coalfield-community counties—Apache, Cochise, Coconino, and Navajo (tribal lands included) —collectively accounted for \$17.3 billion of economic activity, almost 8% of Arizona’s GDP in 2018,<sup>4</sup> a not-inconsequential amount.

No state can let a significant portion of its economy deteriorate without jeopardizing its overall financial well-being and its ability to compete economically with others.

### *Coalfield Communities That Fueled the Growth of Greater Arizona Are Ripe for Reinvestment Now*

In a filing in late January with the Arizona Corporation Commission, Jonathan Nez, president of the Navajo Nation, presented a concise mutual-benefit case for utility-company reinvestment in Arizona coalfield communities.<sup>5</sup> The Nez filing is part of a rate case involving Tucson Electric Power Co., which has 417,000 customers and is one of the three main utilities in Arizona. Salt River Project, with 1.06 million customers, and Arizona Public Service Electric, with 2.7 million customers, are the two others. (Navajo Nation officials this month filed a motion to intervene—presumably along the same lines—in an APS rate case as well.)<sup>6</sup>

The filing could be seen as a template for coalfield communities elsewhere in Arizona and one utilities and regulators can follow as they begin to consider how—and how much—to reinvest.

Nez suggests specifically that TEP be required to reinvest \$61.8 million “in initial just transition funding” locally. The \$61.8 million figure is derived from a formula that assigns \$100,000 in reinvestment funds to every megawatt of ownership held

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<sup>3</sup> U.S. Bureau of Economic Analysis. [Gross Domestic Product by State, Fourth Quarter and Annual 2018; Table 4, Percent Change in Real Gross Domestic Product \(GDP\) by State 2015-2018](#). May 2019.

<sup>4</sup> U.S. Bureau of Economic Analysis. [Local Area Gross Domestic Product, 2018; Table 1, Real Gross Domestic Product by County, 2015 - 2018](#). December 2019.

<sup>5</sup> Navajo Nation. [Tucson Electric Power Company Rate Case. Docket No. E-01933A-19-0028](#). January 2020.

<sup>6</sup> Arizona Corporate Commission. [Docket No. E-01345A-19-0236 Application for Navajo Nation for Leave to Intervene](#). February 2020.

by Tucson Electric in three plants in the Four Corners area of Arizona and New Mexico. It follows a similar initiative and calculation being used in New Mexico around the closure of San Juan Generating Station and would require Tucson Electric shareholders and ratepayers to split the reinvestment cost.

“Affordable, reliable coal-fired generation” like that produced for years by the recently retired Navajo Generation Station in Coconino County on the Navajo Nation—and by other coal plants in the area—provided an “essential source of electricity” crucial to “a growing population and economy,” Nez wrote in his filing, an assertion that no one disputes and that underscores the close historic ties between urban and coalfield Arizona.

When Navajo Generation Station was retired this past November, SRP’s CEO acknowledged that the plant and its hundreds of employees “were one reason why this region, the state of Arizona and the Phoenix metropolitan area have been able to grow and thrive.”<sup>7</sup>

The longstanding relationship between power-generation communities and power-consumption communities runs deep. Arizona, broadly speaking, would be ill-served by anything other than reinvesting in Coconino County, Navajo County, Cochise County, and Apache County—specifically across Hopi and Navajo lands and in and around the communities of Apache, Cochise, Joseph City/Holbrook, Kayenta, Page, Springerville and St. Johns.

Nez’s filing draws from a history in which Arizona utilities “invested in more than 6,000 MW of coal capacity across three plants” over several decades in a mutually beneficial relationship that is now unravelling. The three plants he focuses on either have recently closed or are likely to in the near future. Navajo Generating Station, near Page, was retired this past November. The other two are across the state line in New Mexico (Four Corners Power Plant and San Juan Generating Station) but are important elements of a workforce and energy-investment economy that is part of greater Arizona. To that point, the Nez filing details how roughly one-fourth of the retail electricity consumed statewide over the past decade came from these three plants. The following table, from the Nez filing, lays out the numbers.

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<sup>7</sup> SRP. [Decommissioning of the Coal-Fired Power Plant to Begin in 2020](#). November 2019.

Year	Total Arizona Retail Electricity Sales (GWh)	Generation from NGS, FCPP and SJGS for Arizona Utility Owners (GWh)	% of Total Arizona Retail Electricity Sales
2010	72,833	21,617	29.7%
2011	74,944	22,261	29.7%
2012	75,063	17,206	22.9%
2013	75,662	20,530	27.1%
2014	76,298	16,540	21.7%
2015	77,349	21,152	27.3%
2016	78,238	15,346	19.6%
2017	77,646	16,294	21.0%
2018	78,346	15,334	19.6%
<i>Average</i>	76,264	18,476	24.3%

Nez argues, persuasively, that policymakers and the utility industry could avoid local and regional chaos and long-term damage to the Arizona economy by doing a better job of reinvestment and transition planning.

The Nez proposal includes other provisions of note, including one that ensures local equity in reinvestment, and it suggests that the reinvestment model can be applied to coalfield communities in eastern Arizona, too.

## Where Utility-Company Reinvestment Is or Will Be Required in the Months and Years Ahead

### *Coconino County (Navajo Generating Station)*

Navajo Generating Station (NGS) was a 2,250MW plant located on Navajo land in Coconino County.

NGS, which came online in phases in the mid-1970s, supplied power to more than 1 million customers—mostly in Arizona but also in California and Nevada. NGS provided more than 90 percent of the power used by the Central Arizona Project (CAP), a federal Bureau of Reclamation project that delivered water crucial to Arizona’s development —especially its urban and suburban areas.

While reclamation activity around NGS contributes to the local economy, the plant’s closure is a serious blow to the larger regional economy of northeast Arizona—especially to Hopi and Navajo interests, whose tribal budgets relied on the plant for 80% and 20% of their annual revenues, respectively. Local community groups<sup>8</sup> were the first to press for reinvestment, and while they have made some progress they have yet to meet with much success beyond as-yet unfulfilled promises by SRP and a recent statement by the Los Angeles Department of Water and Power, once one of the co-owners of NGS, to study the issue. Similarly, APS has put out a press release saying it may reinvest but has said also through a spokesman, “We don’t have a

<sup>8</sup> Diné-CARE, San Juan Citizens Alliance, and Tó Nizhóní Ání,



specific plan right now.”<sup>9</sup>

SRP, which owns the largest stake in NGS, has signaled post-NGS to purchase 200MW of utility-scale solar generation from the Navajo Nation,<sup>10</sup> which would be a small move but clearly a move in the right direction. That said, SRP’s activity has been nowhere near enough to replace the holes left by the closure of Navajo Generating Station. While the company has offered “career and financial planning services, including finding possible positions elsewhere within SRP,” and promises to “continue to work closely with communities and employees to address the significant implications associated with the potential retirement of coal generation assets in the future,”<sup>11</sup> it has yet to reinvest at scale in these areas.

Larger reinvestment opportunities remain in coalfield Arizona, including on tribal lands. Among the latter: Control of 500MW of transmission capacity now owned by the Navajo Nation after the closure of NGS; repurposing parts of the power plant itself; repurposing of the coal-freight railroad track and water pumps and other infrastructure; and, more broadly, investment and reinvestment that includes infrastructure buildout (roads, broadband, public works), healthcare and education.

The Navajo Nation has made it clear that it is open for post-NGS and post-Kayenta business through recently updated policies that emphasize the buildout of renewables,<sup>12 13</sup> a sector that remains regionally underdeveloped but that holds huge potential.<sup>14 15</sup> In Nez’s January filing with the Arizona Corporation Commission, he wrote that the Navajo government, “sees great potential to become a leader in the development of renewable energy projects,” and he offered an explicit invitation to private and public sector interests alike. “We would like to partner with the Arizona Corporation Commission, utility companies, and other energy stakeholders.”<sup>16</sup>

The electricity-generation arm of the tribal government, the Navajo Tribal Utility Authority, is behind several utility-scale solar power generation initiatives already, including deals with Utah Associated Municipal Power Systems and Salt River Project. Utility-scale solar is proceeding regionally and at a pace that promises to bring more economic activity to bordering states—including California, Colorado,

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<sup>9</sup> KNUA Flagstaff: [APS Vows Assistance To Tribal Communities Impacted By Planned Coal Closure](#), February 2020.

<sup>10</sup> Salt River Project. [Salt River Project Issues RFP to Procure up to 400 MW of Solar and Seeks Competitive Proposals for Projects Sited on the Navajo Nation](#). January 2019.

<sup>11</sup> SRP. [Integrated Resource Plan Report 2017-2018](#).

<sup>12</sup> Navajo Nation. [Nez-Lizer proclaim clean renewable energy development as the Navajo Nation’s top energy priority](#). April 2019.

<sup>13</sup> Navajo Nation. [President Nez advocates for renewable energy, youth, and economic partnerships in address to the Arizona State Legislature](#). January 2019.

<sup>14</sup> IEEFA. [Tribal Utility-Scale Solar Initiatives Advance Across Southwest U.S.](#) October 2019.

<sup>15</sup> IEEFA. [Growing Interest in Developing Navajo Utility-Scale Solar Industry](#). October 2018.

<sup>16</sup> Arizona Corporate Commission. [Navajo Nation, Jonathan Nez, Re: Tucson Electric Power Company Rate Case. Docket No. E-01933A-19-0028](#). January 2020.

New Mexico, Nevada, and Utah—a trend that Arizona, its tribal interests included, would do well to capitalize on soon.

Despite Arizona’s significant solar resource potential, which rivals any area in the U.S., the state has lagged behind the rest of the country in its use of the clean and increasingly low-cost generation source. Where total U.S. solar utility-scale generation climbed to 100 million megawatt-hours by the end of 2018 from just 2 million in 2006, Arizona sat mostly on the sidelines.

Tribes outside of Arizona like the Moapa Band of Paiutes have been more in sync with the times, counting 1,000MW of utility-scale solar generation in production or in development in Nevada. Those projects include the 200MW Arrow Canyon Solar Project and the 300MW Southern Bighorn Solar Project, both of which include crucial power purchase agreements (PPAs) with NV Energy. The Moapa Band of Paiutes also has deals in place with Southern California Edison, Pacific Gas & Electric and the city of Los Angeles. In New Mexico, the Jicarilla Band of Apaches is doing utility-scale solar deals involving the city of Albuquerque and Public Service Company of New Mexico.

Nevada, as a state, is easily outpacing Arizona. Switch, a company that runs massive data-center complexes, is petitioning the Public Utilities Commission of Nevada for permission to build a 310MW solar-plus-storage facility near Reno as part of the "world's largest, most advanced data center campus." Google also has a proposed deal with NV Energy for an even larger (630MW) solar-storage complex outside Las Vegas.

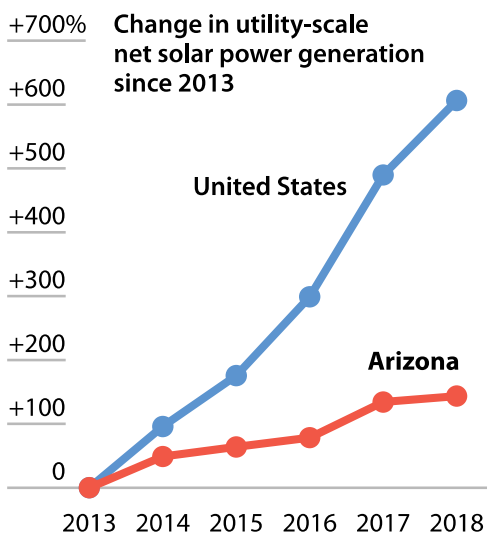
While utility-scale solar is especially promising, it isn’t the only underdeveloped sector of Arizona’s rural and small-town economy. Opportunities also exist to invest in infrastructure healthcare and education—areas that are beyond the scope of this report but that can be seen in the detail of existing coalfield community reinvestment initiatives described in Appendix 3: Where U.S. Utility-Sponsored Transition Initiatives Are in Motion Already.

### Navajo County (Kayenta Mine, Cholla Generating Station)

Like NGS, Kayenta Mine, which ceased operations in August 2019, was an important piece of the regional economy. Owned by Peabody Energy, the mine, whose only customer was NGS, employed a skilled workforce, most of whom—like NGS’—are

### Arizona’s Solar Development Lags Rest of United States

Despite some of the best solar resources in the country, Arizona’s pace of solar energy generation growth is far behind the overall United States since 2013.



Source: Energy Information Administration

still in the area. It was also an important piece of the regional tax base, not just for Navajo County but for Hopi and Navajo governments too.

Peabody, a St. Louis-based company, has shown no interest in reinvesting in northeastern Arizona, essentially turning its back on the state.<sup>17</sup>

The three-unit, 952MW Cholla Power Plant, near Holbrook, is scheduled to be completely shut down within five years. PacifiCorp, a subsidiary of Berkshire Hathaway Energy, will close one unit of the plant earlier than that—by the end of 2020—15 years ahead of its original retirement date, which was set when the unit came online in 1962.<sup>18</sup> The closure is part of a transition initiative PacifiCorp launched in October 2018 that will replace most of its coal-fired power resources across the West with new utility-scale wind and solar projects. PacifiCorp is also moving up retirement dates for coal-fired power plants in Colorado, Montana and Wyoming.

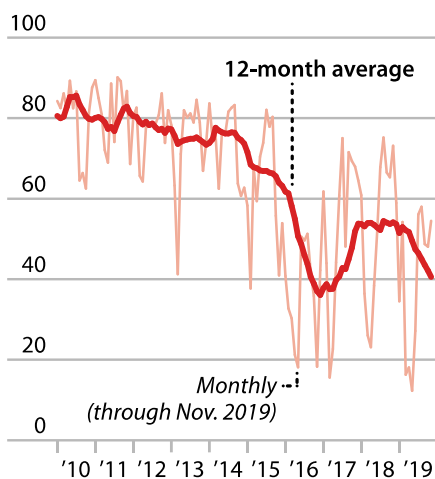
The other two Cholla units are scheduled for closure by 2025, a date that could also be moved up as part of a corporate strategy shift announced in January by APS, which owns those units. APS aims now to be wholly reliant on renewables and nuclear energy by 2050.<sup>19</sup> The utility currently gets about a third its power from gas, about a third from nuclear, about 20 percent from coal and just over 10 percent from renewables.

Capacity factor—which indicates what percentage of a plant’s potential is being used and is a strong measure of the ongoing viability of a power plant—has dropped significantly at Cholla. The plant posted an average capacity factor of more than 80% through 2011, but its performance has fallen steadily since, declining to 61% in 2015, 54% in 2018 and 44% through the first 11 months of 2019.

APS seems intent on executing its coal-exit strategy. In January, it moved up its closure date for the 770MW Four Corners Power Plant in New Mexico to 2031, seven years ahead of schedule.

### Cholla: Capacity Factors

**767 MW, 3-unit plant.** Units 1 and 3 are owned by Arizona Public Service; Unit 4 by PacifiCorp. Unit 2 retired in 2015 and Unit 4 is scheduled to retire in Dec. 2020.



Source: S&P Global

<sup>17</sup> IEEFA. [Peabody, in Kayenta Exit, Is Abandoning Native Workforce Ahead of Reclamation Work.](#) August 2019.

<sup>18</sup> AP. [1 Coal generator at an Arizona power plant to close in 2020.](#) January 2020.

<sup>19</sup> APS. [APS sets course for 100 percent clean energy future.](#) January 2020.

## Apache County (Coronado Generating Station, Springerville Generating Station)

The 40-year-old Coronado Generating Station, a 762MW plant outside the town of St. John’s, is in trouble too.

The plant’s capacity factor has declined significantly over the past decade—from over 80% a decade ago to 47% at Unit 1 and 61 percent at Unit 2 in 2018, and then falling below 35% for the first 11 months of 2019. The trend indicates—as with most coal-fired generators—that Coronado is not being used nearly as much as it once was as cheaper gas-fired and renewable power is dispatched ahead of coal.

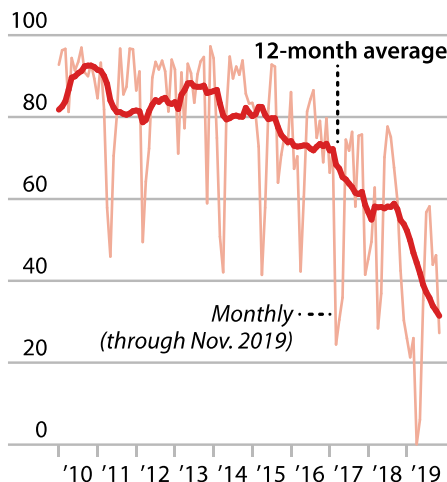
Coronado’s owner, SRP, has responded with what amounts to a closure-delay program rather than a reinvestment strategy, announcing in January that it would keep both units running through 2032 by rejiggering the plant’s pollution controls. Unit 1 had been scheduled to close in 2025.

“The selected course of action will allow SRP to close other coal units, postpone the need for 380 megawatts of fossil generation to meet future peak load and provide the time necessary for the workers and communities impacted by the closure of CGS to plan for changes,” SRP said in announcing the change. “It also provides time for battery storage technology to further develop as SRP continues to increase its investments in renewable energy.”

SRP is buying time with its new plan, in other words, but the plant’s rapid decline in performance suggests that it remains to be seen whether Coronado will indeed survive until 2032. In an update<sup>20</sup> to its 2018 integrated resource plan, the company in February 2019 said it planned to increase its utility-scale solar capacity six-fold, to 1,200MW by 2025.

### Coronado: Capacity Factors

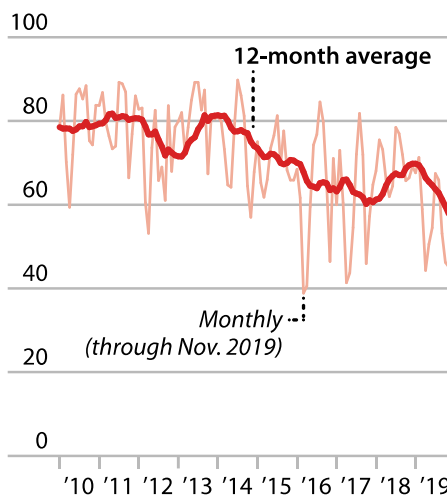
762 MW, 2-unit plant. Owned by Salt River Project.



Source: S&P Global

### Springerville: Capacity Factors

1,625 MW, 4-unit plant. Units 1 and 2 are owned by Tuscon Electric; Unit 3 by the Tri-State Generation and Transmission Association; Unit 4 by Salt River Project.



Source: S&P Global

<sup>20</sup> SRP. [Appendix A: February 2019 Update](#). February 2019.

Meanwhile, Springerville Generating Station is in a capacity-factor downward spiral as well, having fallen to less than 60 percent.

The plant, which is about 30 miles south of Coronado, is co-owned by Tucson Electric Power, SRP and Colorado-based Tri-State Generation and Transmission Association. The latter, a 42-member co-op announced unexpectedly in January that it is moving aggressively away from coal and into renewables across its four-state footprint.

### Cochise County (Apache Generating Station)

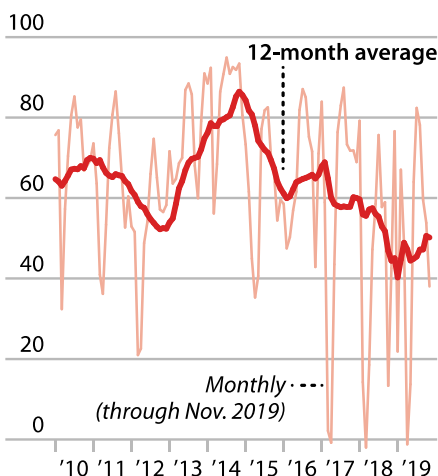
The 175MW coal-fired half of the two-unit Apache Generating Station is showing the same strains as other Arizona coal plants. It is 40 years old and is owned by and is the primary source of power for Arizona Electric Power Cooperative Inc. (AEPCO).

The plant, about 75 miles east of Tucson, has drawn little attention because it is small and is not owned by utilities that have announced transition initiatives. Its coal-side capacity-factor trend speaks for itself. Having outperformed in 2007 with a capacity factor close to 100% as a two-coal-unit plant, its performance dropped, even after one unit was converted to gas in 2017. In 2018, Unit 3 reported a capacity factor of 45.3%, the lowest of the four coal-fired generators in Arizona.

AEPCO has six member co-ops—five in Arizona and one in California, all of which are probably aware of the general increasing costliness of coal-fired power.

#### Apache: Capacity Factors

**350 MW, 2-unit plant.** Owned by the Arizona Electric Power Cooperative. Unit 2 was converted from coal to gas in 2017; Unit 3 (175 MW) continues to burn coal.



Note: Figures are for both units from 2009 through 2016, and for Unit 3 only from 2017 through 2019.

Source: S&P Global

## Potential Reinvestment Models

Several utility-company coalfield reinvestment initiatives have been established in recent years across the U.S., most mandated and all managed by regulatory, legislative or court-overseen actions.

Utility companies, left to their own impulses, do not always act in the public interest or even in the best interest of the economy of the state or region upon which they themselves depend.

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## *Washington, Colorado, New Mexico, Montana, Illinois*

Utility-company reinvestment initiatives in the U.S. (more complete details around the following examples are in Appendix 3: Where U.S. Utility-Sponsored Transition Initiatives Are in Motion Already) include:

- A memorandum of agreement between the state of Washington and TransAlta Centralia Generation, owner of the 1,340MW Centralia Coal Plant, which outlines the process of closure, with both units retiring by 2025 under terms that require \$55 million in various forms of local reinvestment by TransAlta (see Appendix 3: Where U.S. Utility-Sponsored Transition Initiatives Are in Motion Already).
- A negotiated agreement between the Colorado Public Utilities Commission and Xcel Energy to close two units (totalling 660MW of capacity) at the 1,410MW Comanche Generating Station in two stages, in 2022 and 2025, and to replace its power with utility-scale wind and solar plants and new transmission infrastructure. The PUC accepted the proposal after Xcel pitched its benefits on several points, including ratepayer savings and \$2.5 billion in power-generation modernization investments across eight Colorado counties (see Appendix 3: Where U.S. Utility-Sponsored Transition Initiatives Are in Motion Already).
- Enactment in New Mexico of a state law that requires Public Service Company of New Mexico to reinvest \$40 million locally in connection with closure of the 847MW San Juan Generating Station by mid-2022. The law earmarks \$20 million in bond proceeds specifically for worker retraining and includes a formula by which PNM’s \$375 million in cost-recovery bonding for San Juan’s retirement will include additional specific community reinvestment, with 0.5 percent of the proceeds going to a Navajo tribal reinvestment fund; 1.65 percent earmarked for an “energy transition economic transition development;” and 3.35 percent dedicated to a “displaced worker assistance fund.” Use of these funds is to be decided by commissions made up of local leaders in affected communities, defined by the law as those within 100 miles of a plant closing (see Appendix 3: Where U.S. Utility-Sponsored Transition Initiatives Are in Motion Already).
- Settlements around the closure of Colstrip Power Plant in Montana agreed to by two of six companies that have an ownership stake in the plant—Puget Sound Energy of Bellevue, Wash., and Avista Corp. of Spokane. The deals commit \$10 million and \$3 million, respectively, to a reinvestment fund to be administered by the Colstrip Impacts Foundation. The money goes to a “Non-permanent Fund of \$7.5 million for “immediate granting and possibly short-term loans” and a “Permanent Endowment” of \$2.5 million set aside “for the perpetual benefit of the impacted Colstrip workers and community. (see Appendix 3: Where U.S. Utility-Sponsored Transition Initiatives Are in Motion Already).”

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An agreement by Texas-based Vistra Energy Corp to close the 585MW E.D. Edwards Power Station outside Peoria, Ill., by the end of 2022 and dedicate \$8.6 million toward creation of a \$1.72 million Economic Transition Fund “to pay for projects that provide funding for job training and/or re-training programs” and a \$6.88 million Beneficial Projects Fund for public-health and cleanup initiatives.

These five initiatives all support the common-sense premise that what is good for small-town economies is good for the larger economy as well. In addition, one common and well-advised thread in all the examples is the reliance on local participation and/or regulation in how reinvestment money is spent.

## *Germany*

Germany serves as a potentially useful example, too, in its roughly \$45 billion initiative to reinvest in coalfield communities as it moves aggressively to modernize its power generation. The country gets about one-third of its power from coal now but aims to be 65 percent carbon-neutral by 2030 and to be off coal entirely by 2038.<sup>21</sup>

“This is not just an exit from coal, it’s an entry into renewable energy,”<sup>22</sup> the German energy minister said in late January as the initiative advanced through government channels with buy-in from labor groups, environmentalists and industry interests.

While the German initiative is a publicly financed program— not a utility-company reinvestment—it includes characteristics that could be instructive in Arizona, which would benefit by adopting the expectation that initial reinvestment will engender more investment, both public and private, and that reinvestment is in the best interest of the state’s entire economy.

The German plan goes hyper-local<sup>23</sup>—“the town of Cottbus,” “the town of Leipzig,” “the town of Braunschweig,” and so on—emphasizing the importance of rebuilding at a micro level in a way meant to create macroeconomic benefits as well. Priorities are stated with explicit if sometimes wordy intent, including passages that stress the importance of building an “underlying framework for long-term investment and the creation of new jobs and prospects for companies” alongside “measures to finance the structural change” while “safeguarding industrial competitiveness and retaining and developing industrial value chains.”

Arizona could very well take a page from the German playbook, if only by adopting the belief and the expectation that initial reinvestment will engender more investment, both public and private, and that reinvestment is in the best interest of the state’s entire economy.

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<sup>21</sup> BBC. [Germany agrees plan to phase out coal power by 2038](#). January 2020.

<sup>22</sup> Reuters. [Aiming to go green, German cabinet backs coal exit by 2038](#). January 2020.

<sup>23</sup> Commission on Growth, Structural Change and Employment. [Final Report](#). January 2019.

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## Mechanisms for Utility-Company Reinvestment in Arizona’s Coalfield Communities

Arizona has several regulatory and policy options that could be deployed to create and fund reinvestment initiatives (for a full description of each mechanism see Appendix 1: Details on Mechanisms for Utility-Company Reinvestment in Arizona Coalfield Communities).

Utility-company reinvestment dollars could be dedicated to communities to support economic transition, to workers for compensation or job retraining, to educational entities to provide services to workers or to state agencies to develop programs for the benefit of affected communities, businesses and individuals.

They could also be put sensibly into utility-scale renewable energy, which remains an underdeveloped segment of the state’s energy economy. Utility-scale renewables have short-and long-term local benefits, creating jobs and supporting tax bases. They benefit both utility companies and customers, driving profits and providing ratepayers with zero-fuel-cost power.

### *Arizona Corporation Commission*

The ACC—through rate case initiatives or rulemaking—can require that APS and TEP reinvest responsibly in the state.

Whereas rate cases are utility-specific, a rules process applies equally to all utilities unless otherwise specified. This can be especially important in shaping reinvestment for closing coal plants, which are often jointly owned, requiring reinvestment agreements by multiple owners.

The rules process is the best ACC regulatory forum for developing a reinvestment requirement because it can engage a range of stakeholders, has relatively low barriers to participation and has the flexibility to take up complex issues.

### *Salt River Project*

SRP can establish a reinvestment initiative in one of two ways: Management can propose creation of a reinvestment fund for approval by the board, or the board can direct management to create a proposal that it would review and approve.

Either way, the utility conducts a public process that encourages participation by various stakeholders. SRP, because it is unregulated, can move quickly, to roll out a reinvestment initiative if it decides to do so.

SRP could develop a reinvestment initiative based on its recent, successful 2035 Sustainability Goal development process, which the board approved last year. This process addressed critical utility issues and involved heavy stakeholder engagement, resulting in a widely supported new policy direction.



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## Arizona Legislature

While the legislature cannot infringe on the ACC's ratemaking authority, it could direct the ACC to collect and dedicate funds for coalfield reinvestment.

Similarly, the legislature could require SRP, which is a municipal subdivision of the state, to collect funds for reinvestment.

Separately, the legislature could call for a ballot initiative around a proposal requiring utility companies to reinvest in coalfield communities.

## Statewide Policy Forums

As noted above, several regulatory and policy mechanisms exist for creating utility-company reinvestment plans. Unfortunately, each is siloed, with no single statewide jurisdictional organization that could compel investment.<sup>24</sup> As the issue of reinvestment is complex and new in Arizona it may be beneficial to identify a forum or organization to lead an initiative that would allow for a statewide discussion of reinvestment to expediently and effectively address this issue.

The number of stakeholders affected by coal plant closures that would want to be part of a statewide dialogue will be long and will include: utilities; utility regulators/directors and staff; city, county and state elected officials and managers; public interest organizations; Native American representatives; unions or other worker representatives; and consumer advocates, among others.

A statewide discussion could be supported by one or more of the state's universities or their institutes, a task force or study committee set up by the governor or legislature or credible neutral organization.

## Variables to Consider for Statewide Discussion

Many financing and design elements need consideration, whether through a rate case, adopted voluntarily by a utility or by way of other mechanisms. These include but are not limited to:

- Whether the process is to be formal (with voting rights) or informal;
- What issues will be covered by the initiative;
- Whether reinvestment is to be short or longterm;
- Who will be the beneficiaries (e.g., communities, workers, local businesses, etc.);
- Whether funds should be collected from electricity customers, shareholders

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<sup>24</sup> While the legislature may be able to direct utilities to collect funds, in the case of regulated utilities any provisions affecting the finances of a utility would need to be included in a rate case at the ACC.

and/or other sources;

- What amount should be collected and over what period of time;
- What method would be used to collect funds (e.g., surcharge on electric service, a fixed fee on generation owned by utility, etc.);
- Who will manage the reinvestment fund and where oversight will rest; and
- Whether out-of-state customers who have received electricity from an Arizona utility would or could be included among those who will pay into a reinvestment/transition fund.

## Conclusion

Arizona can simultaneously protect its overall economy and avoid near-term fiscal and financial chaos in local economies by compelling utility companies to reinvest in coalfield communities across the state now.

The concept is not novel and is being undertaken elsewhere, most notably perhaps in Colorado and Washington. Germany is the midst of a coalfield reinvestment program that suggests some ways forward as well.

Arizona's coal-fired electricity-generation industry is collapsing quickly, much faster than expected, and at a pace that puts not just local communities but the state's entire economy at risk.

Arizona has three mechanisms immediately at its disposal to catalyze utility-company reinvestment across coalfield communities:

- Rate case and rulemaking processes at the Arizona Corporation Commission;
- Unilateral action by Salt River Project, the utility whose customer base has deep ties to Arizona's coalfield communities;
- Legislative authority to mandate reinvestment.

Any and all of those mechanisms can be used to direct utility-company reinvestment now and to encourage transition initiatives in a way that best serves the interests of the most immediately affected communities, the state, the utilities and their ratepayers.

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## Appendix 1: Details on Mechanisms for Utility- Company Reinvestment in Arizona Coalfield Communities

This appendix details the utility-reinvestment options available through the Arizona Corporation Commission, Salt River Project, and the state legislature.

### *Arizona Corporation Commission*

The **Arizona Corporation Commission** (ACC) is tasked in the state’s constitution with making “reasonable rules, regulations, and orders, by which... [monopoly public service] corporations shall be governed in the transaction of business within the state.”<sup>25</sup> This applies to companies that provide electricity and gas for power, heating or cooling.

Rules governing the ACC are contained in **Arizona Administrative Code Title 14, Chapter 2**,<sup>26</sup> which has detailed guidance on rate setting, provisions of service for a public service corporation, billing, collection and termination of service, administrative and hearing processes, conservation, resource planning and procurement, and other procedures.

As the regulators of **Arizona Public Service Company, Tucson Electric Power** and rural co-ops, which collectively own and operate a fleet of coal and natural gas plants and some renewable resources, the ACC has the authority to create rules or regulations that direct utilities to collect and distribute reinvestment, or transition funding, across the state.

### Rate Cases as a Reinvestment Forum

Part of the responsibility of the ACC is to balance the needs of for-profit public service companies to earn a reasonable profit with the interests of customers, that is, electric service that is reliable and affordable. To determine how much utilities should charge customers for electric service, the ACC is mandated to establish just and reasonable rates through a litigated or settled judicial process. Utilities are required to file rate cases to seek changes to established rates and profits.

For reinvestment or transition funding to be considered in a rate case, an advocate for the proposal is required. This advocate can be the utility itself, a local government, a non-governmental organization, a for-profit company, a tribal government, the state’s consumer advocate (**Residential Utility Consumer Office**), one or more of the ACC’s elected members, or any combination of those parties.

An entity that wants to support such an initiative must be willing to become a formal party in the case by seeking and being granted intervener status by the ACC.

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<sup>25</sup> Arizona Constitution, Article 15, Section 3 set out the duties of the Arizona Corporation Commission,

<https://www.azleg.gov/viewDocument/?docName=http://www.azleg.gov/const/15/3.htm>

<sup>26</sup> [https://apps.azsos.gov/public\\_services/Title\\_14/14-02.pdf](https://apps.azsos.gov/public_services/Title_14/14-02.pdf)

This requires showing legal standing to participate by demonstrating that the party is “directly and substantially affected by the proceedings.”<sup>27</sup> The entity or entities that support reinvestment funding must put forward a proposal, justification and rationale for their proposal.<sup>28</sup>

Rate cases are complicated legal proceedings. Participation is limited to those who can clear high participation-requirement hurdles. Rate cases require a substantial commitment of time, as cases usually last a year or more. They also require representation by an attorney and staff or experts with substantial technical knowledge who can present compelling legal arguments demonstrating that collection of funding from ratepayers or utility shareholders is justified and in the public interest. Hundreds of hours and tens of thousands of dollars are typically required to effectively participate in a rate case. Further, rate cases may only be filed every few years, which means they present infrequent opportunities to establish utility-company reinvestment initiatives.

On the positive side, decisions resulting from rate cases are durable, legally binding agreements. Thus, reinvestment/transition funding established in a rate case ensures that changes to the design or funding amounts and be made only through subsequent rate case or through a commission decision to open and modify a previous decision. This is a rare occurrence.

However, the formal, legal nature of utility rate cases do not generally provide opportunity for discussion, creative thinking or collaborative decision making. Thus, rate cases do not bring the kind of flexible forum that is most useful in addressing complex, new proposals like establishing reinvestment/transition funding.

That said, one exception of note to the formal process described above exists. When the parties to a case develop a settlement agreement, that settlement can be voted on by commissioners, who may accept, modify or reject the settlement.<sup>29</sup> While Arizona has a history of settlements around electric utility rate cases, the outcome of process is never assured, which leaves rate cases best viewed as inflexible, high-cost proceedings that may not be the best venues for establishing reinvestment or transition funding.<sup>30</sup>

## **Rules Processes as a Reinvestment Forum**

As noted above, the ACC can develop rules over the operation or actions of utilities. For example, through adoption of a rule, the ACC ordered utilities to procure a

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<sup>27</sup> Arizona Administrative Code - R14-3-105A

<sup>28</sup> Being a party in a rate case requires representation by an attorney, filing testimony and other formal documents; participating in hearings, submitting and responding to data requests, providing evidence, briefs and arguments; sponsoring witnesses, and possibly negotiating with multiple parties.

<sup>29</sup> In a litigated settlement the Administrative Law Judge produces a Recommended Opinion and Order, which is voted on by commissioners.

<sup>30</sup> Rate cases are the proceeding that determine how much utilities can collect from customers for providing electric and other services; known as a utility’s revenue requirements. A TF obligation could be created in a rules process with the financial obligation included in a subsequent rate case.

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certain amount of renewable energy resources in 2001. That rule was updated in in 2007. Rulemaking has its own legal framework,<sup>31</sup> but compared to a rate-case proceeding is more flexible and informal.

Rules processes generally contain the following elements: a proposal by a commissioner or staff to address a certain issue; creation of a docket, or legal folder, for case materials; development of a draft rule; one or more opportunities to provide written comments on the draft; and one or more opportunities for workshops where the proposal can be discussed and refined. Once a rule draft has been completed, it goes through a formal review process that includes publishing notice of the rule and allowing a specified time for public comment. If substantive changes to a draft rule are made, another round of public comment is required. If no changes to a draft rule are made, or if they are considered minor, the rule goes to commissioners for a vote.

While a rules process has some of the same elements as a rate case—submitting facts, evidence, arguments and comments—the process is more fluid. The timeline can vary widely depending on the topic, as can the priority given by staff and commissioners. The complexity or controversy of an issue can affect how fast a proposal is considered and it can affect the amount of opportunity provided for engagement. Any individual or organizations may participate in the process and shape the proposal by submitting written comments to the docket or by participating in workshops and other discussions.

Workshops hosted by the ACC in the rules-development process typically provide opportunities for stakeholders to make presentations and provide verbal input. In developing a draft rule, staff and commissioners may consider what has been implemented by way of reinvestment/transition funding in other jurisdictions. Such information can come from reports, studies, or other material submitted to the docket. It can also include stakeholder arguments. In workshops, ACC staff and commissioners can ask either opened-ended or specific questions on a proposed rule. Usually, there is substantial opportunity to influence any proposal before it becomes a rule.

Developing reinvestment/transition funding in a rules process creates the possibility of establishing uniform requirements for regulated utilities. Whereas rate cases are utility-specific, a rules process applies equally to utilities unless otherwise specified. And, depending on how workshops and discussions are structured, they can include input from a municipal utility, say, or Salt River Project, in discussions.<sup>32</sup> This feature may be especially important for establishing utility-company reinvestment initiatives, as many of Arizona’s coal plants are jointly

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<sup>31</sup> The ACC and other state agencies follow procedures for developing rules as directed by Arizona [Administrative Procedure Act, Arizona Revised Statutes, Title 41, Chapter 6, Articles 1 through 10](#).

<sup>32</sup> While Salt River Project is not regulated by the ACC, it monitors the activities of the ACC and participates in some forums. Examples include transmission planning through the Biennial Transmission Assessment process and the summer and winter preparedness meetings of the ACC.

owned, often requiring agreements by multiple owners for action related to the plants.

A rules process provides the most optimal regulatory forum for developing reinvestment requirements for other reasons as well. It is a flexible process that engages a broad range of stakeholders and has a relatively low barriers to participation. It should be noted, however, that any requirement for collection of funds for reinvestment/transition funding needs to be included in a subsequent affected utility rate case, so that fee collection becomes part of a utility’s ACC-approved finances.

### **Source of Reinvestment Funding**

Regulated utilities are for-profit public service corporations. They make money by selling electricity to retail and wholesale electric customers and by providing services such as distribution and transmission. Utilities are authorized to earn a profit, known as return on equity, which pays utility shareholders.

Utility-company reinvestment initiatives of the type described in this paper typically have two funding sources—ratepayers and shareholders. New costs incurred by a utility, either voluntarily or the result of a regulatory requirement, are usually passed on to ratepaying customers in fees or energy charges. In some cases, however, the ACC has required that a cost be borne by a company’s shareholders. The ACC, in considering requirements that utilities reinvest, could determine that shareholders, who earned a profit from coal-plant operations, should bear some or all of the cost that reinvestment.

### ***Salt River Project***

**Salt River Project**<sup>33</sup> is a political subdivision of the state of Arizona formed to provide electric service.

The utility provides electricity to more than two million people in the Phoenix metropolitan area. SRP is governed by a district board that has a president, vice president and 14 board members elected by landowners from within the boundaries of the SRP service district. The board sets policy, succession planning and rate setting. SRP is also governed by a council of 30 individuals elected from among landowners in the organization’s 10 land districts. The council’s primary function is to approve issuance of bonds to raise funds for the operation of the utility, to manage the bylaws and to determine board salaries.<sup>34</sup>

The board operates on a fiscal year of April 30-May 1. Each year the board approves an annual budget and a six-year financial projection. The council issues bonds to secure funding based on fiscal plans and market conditions. Utility management presents budgets and fiscal issues to the board and council for action.

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<sup>33</sup> Salt River Project Agricultural Improvement and Power District (the "District").

<sup>34</sup> Conversation with Lora Hobaica, Associate Corporate Secretary, February 4, 2020.

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Generally, the processes to approve new funding, levying a fee, or changing what is charged for electricity and other services can be completed in six months or less. An ACC utility rate case, by comparison, takes at least a year to complete. Because it is an unregulated utility, SRP can move faster and generally has more flexibility to implement programs and policies it deems in the interest of customers.

Like regulated utilities, SRP collects monies from customers through fixed and adjustable mechanisms and can collect reinvestment funding through either.

### **Management/Board-Proposed Reinvestment Initiatives**

Two pathways exist for reinvestment/transition initiatives to go forward at SRP.

Management could propose a fund for approval of the board, or the board could direct management to create a proposal for a fund that it would review and approve.

Whether a proposal initiates with a board directive or from management, the utility conducts a public process that includes announcement of meetings, management reports, board review, public comment, and a board vote.

### *Stakeholder Engagement*

SRP could very well develop a proposal based on its 2035 Sustainability Goal.

The roll-out of that recent initiative began in December 2018, when the utility conducted an extensive public engagement process that lasted five months and included more than 60 community stakeholders and customers.<sup>35</sup> SRP developed proposed goals for water savings, carbon emissions, waste reduction, and so on. SRP assigned staff to manage input and to revise goals based on feedback. The result, which incorporated extensive stakeholder input, were more expansive and ambitious than those originally proposed. The board approved the “ambitious, but obtainable”<sup>36</sup> set of goals in 2019.

Unlike regulated utilities, SRP does not have shareholders, so reinvestment funding would be collected exclusively from customers.

### *Arizona Legislature*

**The Arizona legislature** has the power and authority to allocate existing funds or create new sources of money that could be allocated to reinvestment in the state’s coalfield communities.

The lawmaking process generally includes drafting and filing of a bill, consideration, and a vote by one or more committees in both houses where the bill can be approved or amended, reviewed in partisan caucus meetings, and then debated and voted on by members of the House and Senate. If the bill passes both houses, it goes to the governor for signature or rejection.

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<sup>35</sup> SRP: 2035 Sustainability Goals Delivering Today, Shaping Tomorrow.

<sup>36</sup> SRP Vice President Hoopes, video

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The legislature also has the authority to refer a measure to the ballot so that citizens can vote on whether a proposal should become law.

### Legislation as a Mandate for Utility-Company Reinvestment

The legislature can increase fees and taxes already in place or create new ones. That said, increasing fees and taxes in Arizona is a challenging proposition. In 1992, voters amended the Constitution (through passage of **Proposition 108**) to require a two-thirds vote among lawmakers to pass legislation that increases fees or taxes.<sup>37</sup> (Passage of laws that do not increase taxes or fees requires only a simple majority.)

While the legislature cannot infringe on the ACC’s rate-making authority, it could, under some circumstances, direct the ACC to collect and dedicate funds for coalfield reinvestment. Similarly, the legislature could require SRP, a municipal subdivision of the state, to collect funds for transition activities. While the legislature often imposes requirements on such entities, requiring SRP to collect reinvestment/transition funds from its customers would be a first.

For the purpose of supporting reinvestment/transition across Arizona’s coalfield economies, the legislature could also impose new fees and taxes—or higher ones—on products, services or entities outside the electricity industry. The state could increase taxes, for example, on gasoline and then dedicate that revenue to coalfield community transition.

### Ballot Measure Authority

The legislature also has the ability to refer a proposed law to the ballot for a statewide public vote.

One benefit of considering and establishing utility-company reinvestment/transition initiatives through the legislative process is that it would create a statewide standard that would apply no matter where a coal-fired plant is located, or which entities own the plant.

The legislature convenes annually, so presents a relatively frequent opportunity for action. On the other hand, lawmakers education on the imminence of coal plant retirements and the magnitude of the economic impact on the state and local communities would be necessary to build support reinvestment/transition initiatives.

### Other Pathways to Coalfield Reinvestment Funding

The **Arizona Commerce Authority**, the state’s economic development organization, could be a venue for securing and administering reinvestment/transition funding. **Central Arizona Project**, which was the primary consumer of power from Navajo Generating Station, could reinvest as well.

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<sup>37</sup> Defined as “any legislation that would provide a net increase in state revenues through certain changes in taxes, tax rates, tax deductions, fees or assessments increases fees and taxes.”  
[https://ballotpedia.org/Arizona\\_Two-thirds\\_For\\_Taxes\\_Amendment,\\_Proposition\\_108\\_\(1992\)](https://ballotpedia.org/Arizona_Two-thirds_For_Taxes_Amendment,_Proposition_108_(1992))



## Appendix 2: Regional and National Trends Away From Coal

The U.S. coal industry is disintegrating across the board<sup>38</sup> as it loses power-generation market share to cheaper gas and renewables. Analysts and investment companies see an ever-shrinking role for the industry, in decline now since at least 2010 and unlikely to regain the stature it once held,<sup>39</sup> when it supplied in excess of 60 percent of U.S. electricity demand.

**Morgan Stanley** cites in particular a “second wave of renewables” as the driving force behind its projection that coal’s share of the market will drop to 8 percent by 2030 from 27 percent in 2018.<sup>40</sup> The outlook by **Moody’s Investors Service** is only slightly less dour (11 percent by 2030),<sup>41</sup> and Moody’s in January reiterated its August 2019 “negative outlook” for U.S. coal, noting falling demand and abandonment by investors who are increasingly sensitive to environmental, social, and government (ESG) concerns.<sup>42</sup> **S&P Global/Platts** in late January of this year published an analysis concluding that U.S. coal is “struggling to find a place in an ESG world.”<sup>43</sup> **Fitch Ratings** in June said the trends driving the collapse of coal will persist: “Competition from natural gas, state-level renewable mandates and increasing interest in renewables from consumers, local governments and investors are expected to drive public power issuers toward emission reduction strategies.”<sup>44</sup>

Coal’s decline can be seen regionally in any number of examples. Recent research by IEEFA details how coal-mining activity in the **Powder River Basin of Montana and Wyoming**, for instance, is in trouble because the customer base of the basin, which for years supplied 40 percent of all U.S. thermal coal demand, is eroding.<sup>45</sup> Similarly, an IEEFA report published in December details the fragility of the coal-mining economies of southern Illinois, southern Indiana, and northwest Kentucky that are built on coal deposits in the **Illinois Basin**.<sup>46</sup>

Regionally speaking, a remarkable turnabout was announced just last month by **Tri-State Generation and Transmission Association**, which is speeding up the shutdown of all its coal mines and coal-fired plants in Colorado and New Mexico while accelerating its uptake of renewables.

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<sup>38</sup> S&P Global Market Intelligence. [One-fifth of recent coal shipped to US power sector went to plants set to retire](#). February 2020.

<sup>39</sup> IEEFA. [The coal rebound that didn’t happen](#). January 2019.

<sup>40</sup> S&P Global Market Intelligence. [Morgan Stanley: 'Second wave of renewables' to drive 70 GW of coal retirements](#). December 2019.

<sup>41</sup> S&P Global Market Intelligence. [Moody's: US coal's shrinking share of power generation may fall to 11% by 2030](#). July 2019.

<sup>42</sup> S&P Global Market Intelligence. [Moody's: US coal sector remains negative on ESG, earnings concerns](#). January 2020.

<sup>43</sup> S&P Global/Platts. [US coal sector struggling to find a place in an ESG world](#). January 2020.

<sup>44</sup> S&P Global Market Intelligence. [Moody's: US coal's shrinking share of power generation may fall to 11% by 2030](#). July 2019.

<sup>45</sup> IEEFA. [Powder River Basin Coal Industry Is in Long-Term Decline](#). March 2019.

<sup>46</sup> IEEFA. [Dim Future for Illinois Basin Coal](#). December 2019.

Tri-State, a rural and small-town heavyweight with a presence in four states (including Nebraska and Wyoming) describes its shift as “the most transformative change in its 67-year history.”<sup>47</sup> <sup>48</sup> While association executives say the new strategy is in the interest of advancing clean energy and curbing emissions, the truth is that market forces are proving insurmountable alongside a membership mutiny led by **Kit Carson Electric Co-Op** in Taos, N.M.<sup>49</sup> Tri-State for years resisted modernization and clung to policies that left its 44 members vulnerable to unpredictable and rising prices, to severe restrictions on local power generation, and a to near-total lack of transparency on future rates. Kit Carson broke away in 2016, leading three Colorado member co-ops—**Delta Montrose Electric Association** in Montrose, **United Power** in Brighton and **La Plata Electric** in Durango—to question their ties to Tri-State as well.

From an Arizona perspective, Tri-State’s shift is materializing most markedly at the 253MW **Escalante Station** in New Mexico, which the association plans now to close this year. Escalante is about 60 miles from the Arizona state line. Tri-State closures across Colorado and New Mexico will affect 600 employees, including 107 at Escalante, and association executives have offered few specifics on transition investment there beyond \$5 million in “community support” and what they call “a generous severance package, the opportunity to apply for vacancies at other Tri-State facilities, assistance with education and financial planning, and supplemental funding for health benefits.” They have promised as well to “work with state and local officials to support affected employees and their communities during the transition” and to ensure the “focus is on making these changes with the care and respect our employees and their communities deserve—easing the transition whenever and wherever possible.”<sup>50</sup> Tri-State executives say also they intend to put back through local renewable energy reinvestment—in the Escalante instance, by developing the 200MW utility-scale **Escalante Solar** project, one of seven new Tri-State renewable energy projects totalling 970MW, mostly in Colorado.<sup>51</sup>

Tri-State’s actions are not occurring in isolation—the entire coalfield economy of the Southwest is either in the midst of or on the cusp of transition.

Only days after Tri-State came out with its reforms, Phoenix-based **Arizona Public Service Co.** (APS) announced plans to accelerate its closure of the remaining two units (with 1,540MW of capacity) at the **Four Corners Power Plant** in northwest New Mexico. That news, too, marked an abrupt business-strategy reversal, coming as it did less than two years after APS spent \$38 million to defeat a state ballot

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<sup>47</sup> Tri-State Generation and Transmission Authority. [Today Tri-State announced the retirement of its remaining New Mexico coal-fired power plant and its remaining Colorado coal plants and coal mine.](#) January 2020.

<sup>48</sup> Tri-State Generation and Transmission Authority. [Tri-State announces transformative Responsible Energy Plan actions to advance cooperative clean energy.](#) January 2020.

<sup>49</sup> IEEFA. [Case Study: How Kit Carson Electric Engineered a Cost-Effective Coal Exit.](#) January 2020.

<sup>50</sup> Tri-State Generation and Transmission Authority. [Today Tri-State announced the retirement of its remaining New Mexico coal-fired power plant and its remaining Colorado coal plants and coal mine.](#) January 2020.

<sup>51</sup> Tri-State Generation and Transmission Authority. [Tri-State announces transformative Responsible Energy Plan actions to advance cooperative clean energy.](#) January 2020.

initiative that would have required 50 percent of Arizona’s electricity to come from renewable sources by 2030.<sup>52</sup> The new APS strategy follows essentially the same timeline the ballot mandate would have required, and it aims to rely solely on renewables and nuclear energy by 2050.<sup>53</sup> APS currently gets about 25 percent of its power from coal, 25 percent from gas, and 50 percent from nuclear generation.

The announcements by APS and Tri-State follow the retirement in November of the 2,250MW **Navajo Generating Station** near Page, Ariz., where the main operator—**Salt River Project**—announced just weeks after the closure that it intended to reinvest locally in utility-scale solar built around existing transmission lines. That initiative, part of a larger modernization push by SRP, includes a request for proposals<sup>54</sup> published in January for 400MW of utility-scale generation, of which 200MW is to be developed by the Navajo Nation as a way “to lead the Navajo Nation in its energy transition.” Bids are due in May. The program is a good beginning—but only a beginning—toward a potential buildout that has enormous potential, considering how coalfield communities in Arizona—on tribal lands and elsewhere—are among the most solar-rich in the country and come already fitted with electricity transmission infrastructure.

SRP in the meantime has also rolled out a life-support plan for the 773MW **Coronado Generating Station** near St. Johns that may or may not keep the plant in business. And APS in January said it is joining co-owner PacifiCorp in plans to hasten the retirement of a 380MW unit of the 767MW **Cholla Generating Station**, near Joseph City between Winslow and Holbrook, where the remaining two units will close by 2025.

Only two other coal-fired plants operate in Arizona, 1,625MW **Springerville Generating Station** and the 175MW unit at the **Apache Generating Station** near Cochise—and neither, considering the markets forces working against them, are long-term prospects anymore.

Closures are being driven by slippage across the industry’s customer base, even in places—like the southeast U.S.<sup>55</sup>—that have deep ties culturally and historically to coal-fired power and that are not always associated with electricity-generation modernization. The shift is intensifying, according to the Energy Information Administration,<sup>56 57</sup> and since Jan. 1 alone, accelerated closure dates—in addition to Escalante and Four Corners—were announced for coal-fired plants in Louisiana (642.1MW **Dolet Hills Power Station**),<sup>58</sup> Montana (two units (614MW) **Colstrip**

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<sup>52</sup> Washington Post. [Arizona’s biggest utility says it will get all its electricity from carbon-free sources by 2050](#). January 2020.

<sup>53</sup> APS. [APS sets course for 100 percent clean energy future](#). January 2020.

<sup>54</sup> Salt River Project. [2020 Request for Proposals for Solar Energy Projects](#). January 2020.

<sup>55</sup> IEEFA. [Coal-Fired Power Generation in Freefall Across Southeast U.S.](#) December 2019.

<sup>56</sup> IEEFA. [Data shows U.S. shift away from coal-fired generation is intensifying](#). November 2019.

<sup>57</sup> IEEFA. [IEEFA U.S.: EIA puts its stamp on the electricity-generation transition](#). January 2020.

<sup>58</sup> Power Magazine. [Deal Announced to Close Louisiana Coal Unit](#). January 2019.

**Power Plant**),<sup>59</sup> Texas (1,067MW **Tolk Generating Station**),<sup>60</sup> and Wisconsin (318MW **Genoa Generating Station**).<sup>61</sup> Also in January, long-standing plans to build a new coal-fired plant in Kansas were dropped. That project would have resulted in the first coal plant built in the U.S. since 2015, and its cancellation highlights the absence of any market for new coal-fired generation.<sup>62</sup> In February, the 37-year-old, 69MW **J.B. Sims plant** was retired.<sup>63</sup> More closures across the country are certain.<sup>64</sup>

**PacifiCorp.**, a regional utility based in Oregon and owned by **Berkshire Hathaway Energy**, is building 4,600MW of wind-generation capacity (and 6,300MW of solar) across five states, according to its latest IRP.<sup>65</sup> The company announced this past October that it will accelerate closures of most of its coal-fired plants in the West, including units in Colorado (**Craig Station**), Montana (**Colstrip**) and Wyoming (**Jim Bridger** and **Naughton**). Minnesota-based **Xcel Energy**, which is bigger than PacifiCorp., is closing its two units of its coal-fired 1,410MW **Comanche Power Station** in southeast Colorado and replacing and expanding the capacity with 2,075MW of renewables, about equally divided between wind and solar, an indication that “the renewable energy industry is literally growing in the boneyard of Pueblo's fossil fuel economy.”<sup>66</sup>

Meanwhile, the banking and insurance sectors continue to distance themselves from coal. **Goldman Sachs**, for one, has tightened its rules on energy financing and pledged to invest \$750 billion over the next decade in economy-modernization initiatives that include clean energy.<sup>67</sup> **The Hartford** is one of many insurance titans curtailing its support for thermal coal producers<sup>68</sup> (others include **Chubb**, **Allianz**, **AXA**, **Generali**, **QBE**, **Zurich**, **SCOR** and **Swiss Re**). **BlackRock**, the single-biggest money manager in the world, in January announced plans to divest from coal. BlackRock's CEO in an accompanying statement said investment firms have a fiduciary duty to reconsider coal holdings, likening those who do otherwise to “a pharmaceutical company that hikes prices ruthlessly, a mining company that shortchanges safety, a bank that fails to respect its client.”<sup>69</sup> The coal-mining

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<sup>59</sup> Billings Gazette. [Shutdown of Colstrip Units 1 and 2 is under way](#). January 2019.

<sup>60</sup> Utility Dive. [Water scarcity accelerates plans to close Xcel's Tolk coal plant by a decade](#). January 2019.

<sup>61</sup> La Cross Tribune. [Dairyland to close coal-fired Genoa plant; 80 workers to lose jobs](#). January 2019.

<sup>62</sup> Wichita Eagle. [Kansas energy company abandons plans for \\$2.2 billion coal power plant](#). January 2020.

<sup>63</sup> Michigan Live. [Grand Haven's coal-burning Sims power plant shutting for good](#). January 2020.

<sup>64</sup> S&P Global Market Intelligence. [US power generators set for another big year in coal plant closures in 2020](#). January 2020.

<sup>65</sup> PacificCorp. [Integrated Resource Plan](#). October 2020.

<sup>66</sup> Contact 7 ABC Denver. [Xcel Energy plans to close 2 of its coal fired plants in Pueblo to make way for a greener future](#). October 2019.

<sup>67</sup> Goldman Sachs. [Sustainable Finance: Where the World is Going](#). Accessed December 2019.

<sup>68</sup> Insurance Journal. [The Hartford Joins Insurers Limiting Fossil Fuel Investments, Underwriting](#). December 2019

<sup>69</sup> BlackRock. [A Fundamental Reshaping of Finance](#). January 2020.

industry, for its part, has been slow to accept the growing tide of investor pressure,<sup>70</sup> but has begun at least to acknowledge it.<sup>71,72</sup>

Meantime, renewables continue to take market share from coal, a trend that is gaining momentum.<sup>73</sup> Utility-scale wind and solar together now account for about 10 percent of all U.S. electricity generation (up from next to nothing in terms of utility-scale solar a decade ago and from about 3 percent for wind in 2010).<sup>74</sup> Because they are so competitive price-wise and have no fuel costs, solar and wind stand to continue to accumulate market share.

A little over a year ago,<sup>75</sup> **Lazard**, the financial advisory and asset-management company, put the cost of coal-fired generation nationally at \$60-\$143/megawatt-hour (MWh) and gas-fired generation at \$41-\$74/MWh. The company pegged the unsubsidized cost for wind-powered generation at from \$29-\$56/MWh and the unsubsidized price of utility-scale solar from \$36-\$44/MWh. Those cost differences—between coal and its competition—have only grown over the past year: In a November 2019 update, Lazard had coal-fired power costing from \$66-\$152/MWh, an increase over 2018 that was driven significantly by the expense of maintaining coal-fired plants that aren't used as much as they once were—and that will never be used as much as they once were. The Lazard update puts the cost of utility-scale solar at \$32-\$45/MWh, by comparison, and wind-generation at \$28.54/MWh.<sup>76</sup>

“Utilities seem pretty keen to retire coal... sooner rather than later,” one analyst concluded in a January comment that had a summary ring of consensus to it.<sup>77</sup>

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<sup>70</sup> S&P Global Market Intelligence. [Investment banks push into new frontier of sustainability](#). February 2020.

<sup>71</sup> S&P Global Market Intelligence. [Coal exec: ESG trend 'caught fire,' is pressuring sector across the board](#). February 2020.

<sup>72</sup> S&P Global Market Intelligence.

<sup>73</sup> IEEFA. [Wind farms are forever](#). January 2020.

<sup>74</sup> IEEFA. [Seven disruptions driving the modernization of electricity generation and transmission](#). October 2018.

<sup>75</sup> Lazard. [Levelized Cost of Energy and Levelized Cost of Storage 2018](#). November 2018.

<sup>76</sup> Lazard. [Levelized Cost of Energy and Levelized Cost of Storage 2019](#). November 2019.

<sup>77</sup> S&P Global Market Intelligence. [U.S. power generators set for another big year in coal plant closures in 2020](#). January 2020.

## Appendix 3: Where U.S. Utility-Company Coalfield Community Reinvestment Is in Motion (Washington, Colorado, New Mexico, Montana, Illinois)

### *2011: Centralia, Washington (\$55 Million)*

A deal between the state of Washington and **TransAlta Centralia Generation**, owner of the 1,340MW **Centralia Coal Plant** about 90 miles south of Seattle, will close the plant by 2025, and perhaps sooner, under terms that require \$55 million in various forms of local reinvestment by TransAlta.

TransAlta’s evolution is not unlike that of many power-generation companies. From its founding in the 1900s as **Calgary Power** until the middle part of the century, TransAlta was a pure hydroelectricity play, operating solely out of Alberta. As electricity demand grew regionally and nationally, the company opened four coal-fired plants in Alberta between the late 1950s and the early 1980s. Seeking to establish an international presence, TransAlta invested in hydroelectric production in Australia and New Zealand in the 1990s and in 1999 bought the Centralia plant.<sup>78</sup>

Within a decade of the Centralia purchase, however, the Centralia plant, which was commissioned in 2002, was a prime candidate for closure, owing to market and policy forces that made it increasingly anachronistic and uneconomic. In 2011, TransAlta endorsed passage of a state law that would close the plant by 2025, the result of “significant collaboration among policymakers, environmentalist, labor leaders and TransAlta around the common goal of reducing emissions from energy production without unduly disrupting the local economy.”<sup>79</sup>

The law, enacted in May 2011, requires TransAlta “to contribute \$30 million in a community investment fund to help with economic development and energy efficiency projects, as well as \$25 million in an energy technology transition fund, to be spent on supporting innovative energy technologies and companies in Washington state.”<sup>80</sup>

The plant employs about 300 workers who—like workers at most such plants in the U.S.—make average hourly base pay of about \$80,000 annually.<sup>81</sup> Most of the plant’s coal comes from mines in the **Powder River Basin** over 1,000 miles away (before 2008, the plant burned coal mainly from the nearby **Centralia Coal Mine**, closed in 2006, costing the area about 300 jobs).

A 2017 memo of understanding between TransAlta and the state elaborates on terms of the Centralia closure. It includes assurances that TransAlta can continue to

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<sup>78</sup> TransAlta. [Our History](#). Accessed December 2019.

<sup>79</sup> TransAlta. [Washington Governor Gregoire Signs TransAlta Energy Transition Bill](#). May 2017.

<sup>80</sup> ENS-Newswire. [Washington Governor Signs Law to End Coal-Fired Power in the State](#). May 2011.

<sup>81</sup> Energy Transition/The Global Energiewende. [Washington State leaves coal behind, but not its workers](#). January 2018.

do business in Washington so long as it adheres to the state emission standards and produces power at reasonable cost. The company’s Centralia transition “from coal to energy sources” must “also be structured to protect the residents near Centralia by minimizing the adverse impacts to the local economy and tax base.”<sup>82</sup>

This is where the \$55 million in reinvestment commitments come into play by way of a **Centralia Coal Transition Grants** initiative run by TransAlta out of its Centralia office. The program began making grants in 2016 and is dedicating \$10 million to grants awarded by a locally appointed **Weatherization Board**; \$20 million through an **Economic and Community Development Board**; and \$25 million through an **Energy Technology Board**.<sup>83</sup>

The framework established by the Centralia deal is noteworthy for the time it allows for transition. Talks between the company and the state that began a decade ago yielded transition projects that began to unfold in 2016 and that will continue to roll out into the mid-2020s.

The program is of note also for its transparency. Its website includes detailed requirements for grant applicants,<sup>84</sup> an FAQ section and a downloadable application.

The program’s first grant, made in March 2016, was for \$727,333 to the non-profit **Community Action Council of Lewis, Mason & Thurston Counties** to improve home energy efficiency, specifically in a way that “improves and preserves the affordable housing stock in our communities.” Subsequent grants included one for installation of a modern furnace (\$383,844) at the **Historic Fox Theatre** in Centralia; a 40 kilowatt (Kw) electric bus-charging station (\$37,410) for the transit system that serves Centralia and Chehalis; upgrades to warehouse space (\$84,113) for the **Reliable Services** career-training non-profit program in Lewis County; expansion of **Lewis County Public Utility District** energy efficiency programs (\$842,250); installation of a 56kW solar power system (\$189,000) at Centralia College’s library; new lighting (\$181,491) at **Tenino School District Stadium**; an 86kW solar project (\$175,000) for **Tenino High School**; new furnace boilers at **Toledo Elementary School** (\$231,400); a new **Centralia School District** curriculum plan (\$2 million) to prepare students for college and/or vocational studies; classroom-lighting improvements (\$281,843) at **Centralia College**; implementation of a regional worker-transition plan (\$8 million), “including a one-time lump sum payment and funding for educational opportunities”; expansion (\$23,500) of the aquaculture program in the **Onalaska School District**; weatherization upgrades (\$95,284) for a student-housing building at Centralia College; replacement radios (\$116,837) for **Lewis County Sheriff’s Office** deputies; construction (\$650,000) of “an affordable, flexible space suitable for small businesses and startups in the industrial, manufacturing, and technology industries” on an industrial-park tract of land owned by the **Port of Chehalis**; expansion of a

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<sup>82</sup> Washington Utilities and Transportation Commission. Exhibit PMR 11. August 2017.

<sup>83</sup> TransAlta/Centralia Coal Transition Grants. [Overview of the Centralia Coal Transition Funding Boards](#). Accessed December 2019.

<sup>84</sup> TransAlta/Centralia Coal Transition Grants. [Governance and Grant Procedures](#). Accessed December 2019.

post-secondary classroom program (\$200,000) to encourage high school students to continue their educations, either academically or vocationally; a second grant (\$700,000) to the Community Action Council of Lewis, Mason & Thurston Counties home energy-efficiency program; construction of 18 solar-energy projects ranging in size from 16kW to 100kW for local hospitals, schools, and municipalities (\$3.2 million); purchase of the state’s first electric school bus, for **Franklin Pierce School** (\$330,155); installation of a 20-kW solar array (\$65,858) at **Keithley Middle School**; an additional energy-efficiency grant Lewis County Public Utility District (\$1.08 million); construction of a 12,000-square-foot building (\$1.3 million) at Centralia College to house modern career-training equipment that will include an “overhead crane, six heavy equipment simulators, a commercial truck simulator, computer lab, robotics/automation equipment, compressed air system, forklift and miscellaneous program driven equipment and tools”; lighting upgrades (\$50,000) at the **Penny Playground** in Chehalis; energy-efficiency upgrades (\$300,000) for the **Riverside Fire Authority**; roof replacement and solar-array (\$238,046) installation at **Providence Centralia Hospital**; solar-array installation (\$290,000) at the **Town of Fairfield Waste Water Treatment Plant**; solar-array installation for a water-pumping station (\$165,000) in Granger; and a solar-business learning center and panel installation at **Peter G. Schmidt Elementary School** in Turnwater.<sup>85</sup>

While the sheer variety of the initiatives detailed above speaks to the economic disruption created by the closure of a coal plant, it speaks as well to the many ways to reinvest in a community that might otherwise be left in the lurch, undermining the state’s larger economy. It’s important to note here that Centralia is less remote than many coalfield communities, situated as it on a major highway between Seattle and Portland, Ore.

The legislation and memo of understanding on the deal allowed for two important aspects for community transition planning: time and certainty. One of the biggest challenges for transition planning at the local level is often the question of the “will they, won’t they close, when will they close?” The Centralia model allows for flexibility and provides proactive support for workers, as compared to dislocated worker programs available through the federal government that only allow access to transition assistance once closure has been announced officially, or two years from layoffs, or after actual layoffs have occurred.

Ultimately, however, this model does not directly address the challenge of replacing the tax base.

### *2018: Pueblo, Colorado (\$2.5 Billion)*

A different and potentially more self-perpetuating reinvestment model has emerged in Colorado, where a mainly market-driven transition from coal-fired electricity is proceeding apace and where the state last year openly acknowledged what is happening by establishing the **Colorado Just Transition Office**.<sup>86</sup>

<sup>85</sup> TransAlta/Centralia Coal Transition Grants. [Grants](#). Accessed December 2019.

<sup>86</sup> IEEFA. [Seeds of a just coal transition policy in Colorado](#). May 2019.



The office is tasked with establishing an early-warning system for communities that might otherwise be caught off guard by the closures of coal mines and coal-fired power plants and for building a post-coal economic development framework for such communities. While the move is mostly symbolic (the office remains largely unfunded) the utility industry itself in Colorado has moved forward aggressively toward transition, as can be seen in the case of plans by **Xcel Energy** to turn the historically coal-powered energy industry in and around **Pueblo**, 115 mile south of Denver, into a multi-billion dollar reinvestment template.

In August 2018, the **Colorado Public Utilities Commission** approved a proposal by Xcel to close two units of the 450MW **Comanche Generating Station**, in 2022 and 2025, and to replace its power with utility-scale wind and solar plants and new transmission infrastructure in the area.<sup>87</sup>

The plant, commissioned in the mid-1970s, employs about 80 workers. Its coal comes from three Wyoming mines—**Black Thunder**, **Belle Ayr**, and **North Antelope Rochelle**, mines owned, respectively, by **Arch Coal**, **Blackjewel**, and **Peabody Energy**, all companies that—not incidentally have gone bankrupt within the past three years (Arch and Peabody have re-emerged through debt restructuring; Blackjewel has not).

Xcel’s plan will replace the plant’s power with 1,800MW of wind and solar power, gaining “increased operational flexibility and reliability by pairing increased renewable generation with dispatchable battery storage and flexible gas generation.”<sup>88</sup> The PUC accepted the proposal after Xcel pitched its benefits on several points, including ratepayer savings totalling \$200 million and a total of \$2.5 billion in power-generation modernization investments across eight Colorado counties.

The utility company also notes the comparatively environmental friendliness of the plan, which will lower its emissions footprint, and touts how it presents a “beneficial path forward for **Pueblo County**, the host community for the Comanche plant.” The plan presumes tax base benefits,<sup>89</sup> and individual career gains as well, as noted in the following excerpt.

“While there is no guarantee that job losses caused by the retirement of the Comanche units will be remedied with new jobs associated with the selected resources proposed to be built in the Pueblo area, the \$670 million of investment associated with 525MW of new PV solar and 225MW of storage is considerable.”

Part of the initiative centers on creating electricity generation at a low enough cost to keep a long-time steel mill in town. That mill, **EVRAZ Rocky Mountain Steel**, supplies regional rail, energy and infrastructure projects. It traces its origins to 1881, when it was founded as the **Colorado Fuel and Iron Company** and promotes

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<sup>87</sup> Colorado Public Utilities Commission. [Decision No. C18-0761](#). September 2018.

<sup>88</sup> Xcel Energy. [Electric Resource Plan](#). June 2018.

<sup>89</sup> *Ibid*, [Table 5](#).

itself today as a company that “helped to build the American West.”<sup>90</sup> It is a subsidiary of Russian company that has operations in Russia, the U.S., Canada, the Czech Republic and Kazakhstan, and the Xcel plan includes supplying the mill with affordable utility-scale solar as a way “to help keep this anchor of the Pueblo business community in Colorado.”<sup>91</sup>

Preposterous as such a notion may have seemed as recently as five years ago, industrial endeavors—steelmaking included, notably in Iowa and Missouri<sup>92 93</sup>—are now embracing power-supply models based entirely on renewables.

### *2019: Farmington, New Mexico (\$40 Million)*

**Public Service Company of New Mexico** (PNM), the lead owner of the **San Juan Generating Station** near Farmington, N.M., and the biggest utility in the state, is pushing for **Public Regulation Commission of New Mexico** approval to close the 857MW plant by mid-2022. As in the Centralia example, momentum for closure is being driven by market forces and timely public policy, and New Mexico is seen as a prime example of potential responsible transition.<sup>94</sup>

The closure plan for the San Juan plant, which is in the Four Corners area of northwestern New Mexico, is notable in part for being the result of lengthy negotiation and collaboration among a diverse set of groups that include labor unions, conservationists, religious leaders and a bipartisan slate of elected officials.<sup>95</sup>

The plant and its sole supplier, the nearby San Juan Mine (owned by **Westmoreland Holdings**, a Colorado company recently restructured through bankruptcy) account for about 450 jobs, and both are significant tax-base supporters.

While “the politics are tangled and the particulars unique,”<sup>96</sup> the terms of San Juan’s closure are spelled out clearly in the **New Mexico Energy Transition Act (ETA)**,<sup>97</sup> a law enacted in March 2019 that is one of the most progressive in the country and puts New Mexico on a path that will mandate 40 percent of its electricity generation come from renewables by 2030, 50 percent by 2030, and that aims to make the state’s electricity grid 100 percent carbon-free by 2045.<sup>98</sup>

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<sup>90</sup> EVRAZ. [EVRAZ Rocky Mountain Steel](#). Accessed December 2019.

<sup>91</sup> Xcel Energy. [Electric Resource Plan](#). June 2018.

<sup>92</sup> Des Moines Register. [SSAB says it can make fossil-fuel-free steel in Iowa by 2026](#). December 2019.

<sup>93</sup> CNBC. [First US steel plants powered by wind, solar energy are coming for industry with big carbon footprint](#). December 2019.

<sup>94</sup> E&E News. [5 energy fights to watch in 2020](#). January 2020.

<sup>95</sup> State of New Mexico Emergency Verified Petition for of Writ of Mandamus. Affidavit of Jonathan Nez, Page 1. December 2019.

<sup>96</sup> IEEFA: [New Mexico emerges as a proxy for the U.S. electricity sector transition](#). December 2019.

<sup>97</sup> State of New Mexico. [Energy Transition Act](#). March 2019.

<sup>98</sup> *Ibid*, Page 56.

Central to the success of the ETA is the timely closure of **San Juan Generating Station**. The law lays out how the plant’s retirement is to occur—in part through PNM bonding that will help the utility company recoup up to \$375 million in sunk costs and \$30 million in reclamation costs<sup>99</sup> through ratepayer support that will avoid “unreasonable impact to customer electricity bills, taking into consideration the economic and environmental costs and benefits of renewable energy resources and zero carbon resources.”<sup>100</sup> It also assures some \$40 million in PNM reinvestment in career-training and economic development reinvestment in the **Farmington** area. The ETA earmarks \$20 million in bond proceeds specifically for worker retraining and includes a formula by which PNM’s San Juan cost-recovery bonding for San Juan’s retirement will include additional community reinvestment, with 0.5 percent of proceeds going to a **Navajo tribal reinvestment fund**; 1.65 percent earmarked for “energy transition economic transition development”; and 3.35 percent dedicated to a “displaced worker assistance fund.”<sup>101</sup> Use of these funds is to be decided by commissions made up of local leaders in affected communities, defined by the ETA as those within 100 miles San Juan.

The law “directs up to 450 megawatts of replacement power to be built in coal-impacted regions, an investment of hundreds of millions of dollars that will help restore lost property-taxes after coal plant retirements.”<sup>102</sup>

While the New Mexico case—like the others noted here—offers an example Arizonans could follow, it serves as a lesson too in how even the best-laid proposals can be thwarted by outside interests or competing agendas that do not necessarily serve the greater economic good.

In the San Juan instance, **Enchant Energy**, a hastily formed company that was created by outsiders and is sustaining false hope around the notion that the San Juan plant can somehow remain open through untried carbon-capture technology.<sup>103 104</sup> The situation was needlessly tangled by politics. Members of the PRC have taken umbrage at what they assert is the ETA’s incursion into their territory and have moved by administrative action to impede enactment of the law. That response has resulted in an appeal by the governor, legislators and the president of the Navajo Nation to the **New Mexico Supreme Court** to let the transition as envisioned in the ETA go forth.<sup>105</sup> The appeal pulled no punches in asserting that the PRC’s behavior caused “substantial and irreversible harm to the economics of New Mexico and the Navajo Nation” and that damage “is exacerbated each day that our state is

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<sup>99</sup> Ibid, Page 4.

<sup>100</sup> Ibid, Page 66.

<sup>101</sup> Ibid. Page 45.

<sup>102</sup> Western Resource Advocates. [The Energy Transition Act Makes New Mexico a National Leader in Clean Energy](#). March 2019.

<sup>103</sup> IEEFA. [High-Risk Carbon-Capture Deal Is Not in New Mexico City’s Best Interest](#). August 2019.

<sup>104</sup> IEEFA. [D. Schlissel Testimony Before the Public Service Commission of New Mexico](#). December 2019.

<sup>105</sup> Office of the Governor, New Mexico. [Gov. Lujan Grisham, legislative leaders petition Supreme Court for emergency review of energy law](#). December 2019.

perceived—as a result of the PRC’s inaction—as a risky and uncertain place to do business.”<sup>106</sup>

The appeal included expert testimony stating that while it is difficult to calculate “the financial costs of these market uncertainties,” the effect “is not trivial.”<sup>107</sup> Additional testimony from the state’s secretary of economic development stated that New Mexico “because of the risky and uncertainty caused by the PRC” had lost out on private-sector investment “comprising hundreds of millions of dollars of new capital, where companies stalled or ceased negotiations to come to New Mexico because of the risky and uncertain business atmosphere caused by the PRC.” The posturing by the PRC contributed to the loss of “thousands of jobs and many millions in gross receipts tax revenues.”<sup>108</sup>

The appeal included testimony as well from the president of the **Navajo Nation**, which is absorbing an especially harsh blow with the decline of the coal industry, a mainstay of the economy across tribal lands in northeastern New Mexico since the 1970s. The testimony praises New Mexico for having “stepped forward to provide critical assistance through the ETA for tribal members impacted by coal closures,” and argues that further delay in implementation “will have severe economic consequences for the Navajo Nation, and specifically those tribal members whose livelihoods have depended on San Juan Generating Station and the associated coal mine, and now look to ETA implementation as providing a fair and passionate path to move away from that coal-fired power.”<sup>109</sup>

In January, the court ruled against the PRC and in favor of the ETA.

### *2019: Colstrip, Montana (\$13 Million)*

Pennsylvania-based **Talen Energy**, operator of the **Colstrip Generating Station**, once one of the biggest coal-fired generators in the West (2,272MW), closed two of its four units in January, two years earlier than planned.

The utility-company consortium that owns the plant is existing by 2025. The retirement of Colstrip, built in the mid-1970s mainly as a power source for customers in the Pacific Northwest, has long been anticipated, although some interests had the plant operating in full until 2022.<sup>110</sup> Colstrip Power Plant employs about 320 people, about a third of whom are connected to Units 1 and 2, which are the ones that closed in January. The **Rosebud mine complex** that supplies the plant employs about 400 (it is owned by **Westmoreland Holdings**, which emerged from bankruptcy restructuring in 2019). The coal operations are the main pillars of the economy of the **town of Colstrip**, where most households are supported by plant or mine pay checks.<sup>111</sup> The plant and the mine are the backbone of the local tax base,

<sup>106</sup> State of New Mexico Emergency Verified Petition for of Mandamus, Page 4. December 2019.

<sup>107</sup> Ibid. Affidavit of David Paul, Page 2. December 2019.

<sup>108</sup> Ibid. Affidavit of Alicia Keyes, Page 3. December 2019.

<sup>109</sup> Ibid. Affidavit of Joseph Nez, Pages 1 and 2. December 2019.

<sup>110</sup> Billings Gazette. [Shutdown of Colstrip Units 1 and 2 is under way](#). January 2019.

<sup>111</sup> Billings Gazette. [Hundreds of Colstrip mining jobs at stake as power plant owner seeks new coal supplier](#). May 2019.

accounting for more tax revenues proportionally than the plants or mines described here in Washington, Colorado, New Mexico, or Illinois—although in those instances local tax bases are impaired too.

The town of Colstrip was founded as a railroad refuelling station in the late 1800s and today has a population of about 2,300. It is one of the most isolated coalfield communities in the U.S., situated about 120 miles from Billings to the west, almost 350 miles from Bismarck, N.D., the closest city of any size to the east, 250 miles from Casper, Wyo., to the south, 350 miles from the Canadian border and near the Northern Cheyenne Indian Reservation.

Six utility companies have an ownership stake in the plant, and two of them—**Puget Sound Energy** of Bellevue, Wash., and **Avista Corp.** of Spokane—have agreed in separate settlements to pay \$10 million and \$3 million, respectively, into a community reinvestment fund to be administered by the **Colstrip Impacts Foundation**. (The diversity of owners introduces results in a multitude of governance processes occurring in different venues and timelines. For example, some owners, such as Portland General Electric, are legally obligated to stop using Colstrip power by 2035. PSE and Avista have agreed to be financially ready to close the power plant by the end of 2027. Yet, NorthWestern, which has a 30 percent share in Unit 4, says the power plant will operate until 2042.)

Local resistance to closure of the plant contributed to delays in planning for the inevitable, but in March 2018 the state convened a commission, the **Colstrip Community Impact Advisory Group**,<sup>112</sup> to decide how to allocate transition money.

The commission conducted a series of public hearings in 2018 inviting input. Reinvestments suggestions varied. Some called for putting transition money into trying to preserve the local coal industry; more encouragingly, many citizens indicated a preference for investment in economic diversification, notably in travel and tourism and in underdeveloped businesses in general.<sup>113</sup>

More broadly, the fund’s board adopted two reinvestment mechanisms tied to the \$10 million it received from Puget Sound Energy (Avista’s \$3 million came later but went into the same pot).

**A Nonpermanent Fund** of \$7.5 million that would be available for “immediate granting and possibly short-term loans,” all deployed with “a short-range investment horizon.”

**A Permanent Endowment** of \$2.5 million set aside “for the perpetual benefit of the impacted Colstrip workers and community,” an arrangement that allows for tax-

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<sup>112</sup> Colstrip Community Impact Advisory Group. [Approved Final CGIAG Report and Plan](#). December 2018.

<sup>113</sup> Colstrip Community Impact Advisory Group. [Approved Final CGIAG Report and Plan, Appendix C, Summary Reports from Community Meetings](#). December 2018.

credit contributions from other sources.

One takeaway from the Colstrip reinvestment-initiative example is that it has taken time to orchestrate the effort. Laying the groundwork and gathering public input required the better part of a year. And the plan hasn’t been implemented yet, owing to built-in requirements for signoffs by Puget Sound Energy (which is splitting the \$10 million expense evenly between shareholders and ratepayers), the **Colstrip City Council**, the **Rosebud County Commission**, and the **Washington Utilities and Transportation Commission**.

Determining how the funds are to be spent isn’t likely to be an overnight process. The recommended make-up requirements<sup>114</sup> for the seven-member Colstrip Impact Foundation board gets at the variety of competing interests:

- A Colstrip city government representative
- A Rosebud County representative  
A representative from a certified regional development corporation
- A coal plant union representative
- A mine union representative
- Two at-large representatives, with preference given to “tribal members, senior citizens, small business owners, or agricultural producers.”

That said, the Colstrip initiative—coming as late as it is,<sup>115</sup> and as small as it is relative to the size of the local economy—is notable so far for its transparency.

### *2019: Peoria, Illinois (\$8.6 Million)*

Under legal pressure from the Natural Resources Defense Council, the Respiratory Health Association, and the Sierra Club, the Texas-based **Vistra Energy Corp.**—through its subsidiary Luminant-owned Illinois Power Resources Generating—agreed this past November to close the 585MW, 60-year-old **E.D. Edwards Power Station** by the end of 2022 while simultaneously dedicating \$8.6 million to various community development projects in and around Peoria, which is midway between Chicago and St Louis (the power plant is in Bartonville just outside Peoria, the seat of a county that has a population of about 180,000).

The plant employs about 70 people. It gets its coal from two mines in Wyoming: **Black Thunder** and **North Antelope Rochelle**. Those mines are owned, respectively, by **Arch Coal** and **Peabody Energy**, both of which have went through bankruptcy restructuring in 2016 and in 2019, respectively, agreed to consolidate their operations in the western U.S.

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<sup>114</sup> Colstrip Community Impact Advisory Group. [Approved Final CGIAG Report and Plan, Page 4](#). December 2018.

<sup>115</sup> IEEFA. [Powder River Basin Is in Long-Term Decline](#). March 2018.

Vistra, which has origins that can be traced to 1882, when it began business as **Dallas Electric Lighting Co.**,<sup>116</sup> saw the agreement as a rationale alternative to risking “an uncertain outcome at trial.”<sup>117</sup> The company knows the power-generation industry well. It has a presence in 20 states through regional utility brands that include **TXU Energy, Homefield Energy, Dynegy, Ambit Energy, and Luminant**; its stock trades publicly; its market capitalization exceeds \$11 billion; and its executives appear to realize that coal-fired electricity is on the way out and that the future of the industry will revolve around other forms of power generation.<sup>118 119</sup>

Vistra ownership of the Illinois plant goes only as far back as 2018, when it acquired Dynegy, another Texas company (which had acquired the plant in 2013 from **Ameren**, a St. Louis company created in 1997 by the merger of **Union Electric Power** and **Illinois Public Service Company**). After six years of litigation in the Illinois case—bridging the time in which ownership changed hands from Dynegy to Vistra—a consent decree approved by a federal judge put Vistra on a deadline to fully fund the settlement within 60 days.<sup>120</sup> The agreement sets aside money for two initiatives meant to support workers who will lose their jobs with the closure of the plant and to support communities that have been hurt by its emissions over the years:

Creation of a \$1.72 million **Economic Transition Fund** “to pay for projects that provide funding for job training and/or re-training programs at Peoria-area colleges, schools, community centers, and/or other organizations, that encompass a range of industries and that may be made accessible to Edwards employees.”<sup>121</sup>

Creation of a \$6.88 million **Beneficial Projects Fund** “to pay for public health or environmental projects” across four categories, including money (up to 50 percent of total funds) to develop a local electric-bus fleet; money for residential energy-efficiency retrofits (up to 50 percent); money for solar power installation in public buildings, schools and low-income housing (up to 25 percent); and educational and medial program to alleviate lung disease (up to 25 percent).

This settlement is far smaller in both absolute and per-capita metrics than the initiatives in Colorado, Montana, New Mexico, or Washington, and, for those reasons, one could ask reasonably whether it is truly a reinvestment initiative—and whether it will make much difference. Further, Vistra has stressed that it is a one-off deal not meant as a template for any other closures across its shrinking and increasingly uncompetitive coal-fired power fleet, even if it has been portrayed by

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<sup>116</sup> VistaEnergy. [History](#). Accessed January 2020.

<sup>117</sup> Utility Dive. [Judge OKs \\$8.6M Vistra coal plant closure settlement seen by NGOs as model for helping impacted communities](#). November 2019.

<sup>118</sup> Vistra Energy. [Vistra Energy Announces Long-Term CO2 Emissions Reduction Targets and Support for Market-Based Carbon Reduction Regime](#). October 2019.

<sup>119</sup> Power Magazine. [Vistra Will Close Another Illinois Coal Plant](#). September 2019.

<sup>120</sup> U.S. District Court for the Central District of Illinois. [Consent Decree, Case No. 13-cv-1181](#).

<sup>121</sup> *Ibid.*

some as a community-transition model.<sup>122</sup>

The Vistra plant-closure agreement in Illinois is notable, regardless, on two points. One, for the range of programs it supports, most of which get at crucial themes of responsible reinvestment, including workforce education and market-informed initiatives on how energy is generated and consumed. And two, for its speed of implementation. Within a week or two after the settlement was reached, plaintiffs and their community-organization allies had published an online request for proposals<sup>123</sup> accompanied by a companion FAQ.<sup>124</sup>

Applicants were given only until Jan. 13—a little less than two months after the call for RFPs went out—to submit funding proposals.

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<sup>122</sup> Utility Dive. [Judge OKs \\$8.6M Vistra coal plant closure settlement seen by NGOs as model for helping impacted communities](#). November 2019.

<sup>123</sup> NRDC. [Edwards Coal-Fired Plant Settlement: Request for Project Proposals](#). Accessed January 2019.

<sup>124</sup> NRDC. [Edwards Settlement Fund Distribution Request for Proposals Frequently Asked Questions](#). Accessed January 2019.



## About IEEFA

The Institute for Energy Economics and Financial Analysis conducts research and analyses on financial and economic issues related to energy and the environment. The Institute’s mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. [www.ieefa.org](http://www.ieefa.org)

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