W. P. Carey School of Business
Arizona State University
Seidman Research Institute

# ESTIMATING THE IMPACTS OF REDUCED OPERATIONS AT, AND THE CLOSURES OF, SPRINGERVILLE AND CORONADO GENERATING STATIONS

**FINAL REPORT**

**L William Seidman Research Institute**
**W. P. Carey School of Business**
**Arizona State University**

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- *ISM Raceway*
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- *Maricopa Integrated Health System*
- *Navajo Nation Div. Economic Development*
- *The NCAA*
- *The NFL*
- *The Pakis Foundation*
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- *The Phoenix Philanthropy Group*
- *Phoenix Sky Harbor International Airport*
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- *Protect the Flows*
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- *SuperBowl XLIX*
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- *Valley METRO Light Rail*
- *Tenet Healthcare*
- *Twisted Adventures Inc.*
- *Vote Solar Initiative*
- *Waste Management Inc.*
- *Wells Fargo*
- *Yavapai County Jail District*

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# EXECUTIVE SUMMARY

- Utility proposals to reduce operations at and ultimately close Springerville Generating Station (Springerville) and Coronado Generating Station (CGS) will have a significant impact on the Apache County and Navajo County economies.
- The purpose of this study is to inform interested parties of the potential consequences of the closures for Apache and Navajo Counties by estimating the shortfalls in economic and fiscal contributions, 2022-2040, compared to a counterfactual scenario in which both generating stations continue to operate at their 2021 level. Statewide economic impacts are also estimated.
- The Springerville individual generating unit owners have not announced closure dates, while the Salt River Project (SRP) has announced it will reduce operation of both units at CGS up until it closes no later than 2032.[1]
- Seidman's modeling in this study assumes that Springerville will cease operations at the end of 2035 and CGS will cease operations at the end of 2032. Both closure assumptions are for modeling purposes only.
- A REMI model is used to estimate economic impacts.
- No assumptions are made about the alternative uses of the generating stations or for electricity generation within Apache and Navajo Counties. Decommissioning costs are also excluded at the request of the clients, as they are currently unknown.
- Please note: Seidman does not hold any position with respect to the necessity for, or pace of, the closures.

## Estimated Shortfall in the Economic and Fiscal Impacts for Apache County

Table ES1 estimates the total losses for the Apache County economy if Springerville closes at the end of 2035 and CGS closes at the end of 2032, compared to their combined potential contribution if they

[1] For this study, a 'retired plant site', 'cease operations', 'closure', and 'decommissioning' are defined as follows:

***Retired Plant Site:*** The site of a plant that formerly produced electrical or mechanical power but is now out of service. It includes plants that have been abandoned, decommissioned, damaged by natural disaster, or dismantled.
***Cease Operations:*** To cease conducting the normal operation of a facility when it is reasonable to expect that such operation will not be resumed by the owner at the facility. The term shall not include the sale or transfer of a facility in the ordinary course of business or a permit transfer in accordance with board regulations.
***Closure:*** the act of permanently or temporarily shutting down the operation of a plant.
***Decommissioning:*** The electric-generating equipment—such as precipitators, boilers, turbines, and generators—are shut down and operating permits are terminated. Unused coal and materials associated with both the generation process and the buildings and structures are removed. The electric-generating equipment may be used at other plants or sold as scrap.

continued to operate at their 2021 levels. The total changes to the Apache County economy encompass direct, indirect, and induced impacts.

- In total over the 19-year time horizon, Apache County's State GDP[2] is estimated to lose more than $3.6 billion due to the reduced operations and ultimate closures of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 levels. That's equivalent to an average annual shortfall of $191.5 million State GDP, 2022-2040, in Apache County alone.
- Apache County is also estimated to lose 23,457 job years of total employment[3] due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at the 2021 level. That's equivalent to an average annual shortfall of 1,235 job years of total employment in Apache County, 2022-2040. Approximately 48.1% of the job year losses will be in private nonfarm sectors (that is, in non-government or non-agricultural employment).
- Apache County is also estimated to lose more than $1.2 billion Real Disposable Personal Income (RDPI)[4] due to the reduced operations and ultimate closure of Springerville and CGS, 2022-2040, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 levels. That's equivalent to an average annual shortfall of $66.0 million RDPI in Apache County.
- Government is estimated to account for approximately half of the shortfall in job years employment, 2022-2040, in Apache County. Utilities and construction are expected to account for 13.6% and 12.0% of the job years lost respectively, compared to the continuation of both generating stations at the 2021 level.
- Table ES2 summarizes the magnitude of these economic effects for the Apache County economy in percentage terms, compared to a counterfactual situation in which both power plants continue to operate at their 2021 level.
- In total, over the 19-year study time horizon, Seidman estimates that State GDP will be 5.76% lower in Apache County, compared to a counterfactual situation in which Springerville and CGS continue to operate at their 2021 level.

[2] State GDP is the monetary value of all finished goods and services produced in Apache County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector.
[3] Total employment is the number of full- and part-time jobs associated with a business activity, policy change, or facility. It includes the self-employed, all federal, state, and local government employees, the military, and contract workers.
[4] RDPI is the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving.

**Table ES1: Estimated Total Changes in Springerville and Coronado's Contributions to the Apache County Economy, 2022-2040[5]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $3.5 | $0.8 | -$4.8 | -$20.2 | -$39.6 | -$56.2 | -$71.5 | -$88.7 | -$106.8 | -$125.9 | -$145.8 |
| **Total Employment (Job Years)[6]** | 23 | 7 | -32 | -133 | -262 | -372 | -506 | -617 | -728 | -841 | -957 |
| **Total Private Nonfarm Employment (Job Years)** | 15 | 2 | -21 | -80 | -149 | -201 | -259 | -311 | -362 | -414 | -467 |
| **Real Disposable Personal Income (Millions 2020 $)** | $1.1 | $0.2 | -$1.4 | -$6.0 | -$11.8 | -$16.8 | -$23.2 | -$28.5 | -$34.9 | -$41.8 | -$48.9 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$220.6 | -$260.0 | -$291.2 | -$390.7 | -$424.9 | -$448.4 | -$466.3 | -$481.5 | -$3,638.7 | -$191.5 |
| **Total Employment (Job Years)** | -1,451 | -1,728 | -1,914 | -2,491 | -2,703 | -2,833 | -2,929 | -2,989 | -23,457 | -1,235 |
| **Total Private Nonfarm Employment (Job Years)** | -742 | -836 | -911 | -1,224 | -1,285 | -1,323 | -1,349 | -1,367 | -11,286 | -594 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$75.0 | -$87.7 | -$99.6 | -$133.3 | -$145.1 | -$157.1 | -$167.7 | -$176.8 | -$1,254.6 | -$66.0 |

*Source: Authors' Calculations*

[5] Table rows may not tally exactly due to rounding.

[6] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

**Table ES2: Summary of Average Annual Percentage Reductions Compared to the 2021 Apache County Economy**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| State GDP | 0.11% | 0.02% | -0.14% | -0.61% | -1.19% | -1.69% | -2.15% | -2.67% | -3.21% | -3.79% | -4.38% |
| Total Employment | 0.08% | 0.03% | -0.12% | -0.48% | -0.94% | -1.34% | -1.82% | -2.22% | -2.62% | -3.03% | -3.45% |
| Total Private Nonfarm Employment | 0.12% | 0.02% | -0.17% | -0.66% | -1.24% | -1.67% | -2.15% | -2.58% | -3.00% | -3.44% | -3.88% |
| Real Disposable Personal Income | 0.05% | 0.01% | -0.06% | -0.26% | -0.51% | -0.73% | -1.01% | -1.24% | -1.52% | -1.82% | -2.13% |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL (2022-2040) |
|---|---|---|---|---|---|---|---|---|---|
| State GDP | -6.63% | -7.82% | -8.76% | -11.75% | -12.78% | -13.48% | -14.02% | -14.48% | ▼ 5.76% |
| Total Employment | -5.23% | -6.23% | -6.90% | -8.98% | -9.74% | -10.21% | -10.55% | -10.77% | ▼ 4.45% |
| Total Private Nonfarm Employment | -6.16% | -6.94% | -7.56% | -10.16% | -10.67% | -10.98% | -11.20% | -11.35% | ▼ 4.93% |
| Real Disposable Personal Income | -3.27% | -3.83% | -4.35% | -5.82% | -6.33% | -6.86% | -7.32% | -7.72% | ▼ 2.88% |

*Source: Authors' Calculations*

- Seidman also estimates that total employment (in job years) in Apache County will be 4.45% lower, compared to a counterfactual situation in which Springerville and CGS continue to operate at their 2021 level.
- The total economic impacts exclude fiscal impacts. Seidman additionally estimates changes to state and local tax revenue payments in Apache County from three sources. These are:
    - The owner-operators of both generating stations, 2022-2040;
    - Apache County residents working at Springerville or CGS (direct employment); and
    - Apache County residents working for other firms, whose jobs are reliant on the operation of either generating station (indirect and induced employment).
- Table ES3 summarizes the total fiscal (tax) revenue payments shortfall in Apache County, 2022-2040, based on the closure scenarios modeled in this study.
- Seidman estimates that the owner-operators of the two generating stations (combined) will pay in total $9.4 million less in state taxes and $127.9 million less in local taxes in Apache County, 2022-2040, compared to a counterfactual situation in which both plants operate at their 2021 level.
- Seidman also estimates a total local fiscal revenue shortfall of $32.7 million in Apache County, 2022-2040, from direct, indirect, and induced employees living within the County. These employees also account for a total state tax payment shortfall of $40.5 million.
- The owner-operators and Apache County-resident direct, indirect, and induced employment changes are therefore estimated to contribute $160.5 million less in local taxes, and $49.9 million less in state tax payments, 2022-2040, based on Seidman's modeling scenario.

**Table ES3: Summary of Apache County Total Fiscal (Tax) Revenue Payments Shortfall, 2022-2040**

| PLANT | LOCAL FISCAL TAX SHORTFALL APACHE COUNTY | STATE TAX PAYMENT SHORTFALL APACHE COUNTY |
|---|---|---|
| Springerville | -$92,414,837 | -$37,207,734 |
| CGS | -$68,111,871 | -$12,693,422 |
| | | |
| **TOTAL** | **-$160,526,708** | **-$49,901,156** |

*Source: Authors' Calculations*

- Seidman's fiscal projections are conservative as they do not include estimates of the business taxes paid by Apache County (non-utility) businesses as they serve the existing needs of the workers currently employed by the plants. For example, on average businesses pay (through utilities, supplies, rentals, leases, use taxes, etc.) approximately 40% of all sales taxes collected in the State of Arizona.

- The precise impacts of this shortfall in tax revenues will depend on the timing of property tax reductions as the plant closures take place, the related timing of changes to school pupil headcount, and the willingness/legal ability of the various county jurisdictions to levy higher tax rates commensurate with the erosion of the property tax base and other state/local tax revenue sources.
- The utility companies also believe that the State of Arizona will backfill some of the fiscal revenue losses. For example, St. John's School District currently receives state equalization aid. This means, by definition, that the primary property tax rate is at or near the State's minimum QTR. As a result, any loss of property tax base will be backfilled by the State without any corresponding increase in local primary property tax rates. The extent to which the state could backfill any fiscal revenue losses is not included as part of the current modeling.
- Seidman also notes that up to 10 percent of Eager households and up to 12 percent of St Johns households in Apache County could be negatively impacted by the reduced operation and eventual closure of Springerville and CGS. This is based on a loss of direct jobs and associated wages/salaries.

## Estimated Shortfall in the Economic and Fiscal Impacts for Navajo County

- Table ES4 estimates the total economic losses for the Navajo County economy if Springerville closes at the end of 2035 and CGS closes at the end of 2032, compared to their combined potential contribution if they continued to operate at the 2021 level. The total changes to the Navajo County economy encompass direct, indirect, and induced impacts.
- In total over the 19-year time horizon, Navajo County's State GDP[7] is estimated to lose more than $1.1 billion due to the reduced operations and ultimate closures of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $59.4 million State GDP, 2022-2040, in Navajo County alone.
- Navajo County is also estimated to lose 7,300 job years of total employment[8] due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at the 2021 level. That's equivalent to an average annual shortfall of 384 job years of total employment in Navajo County, 2022-2040. Approximately

[7] State GDP is the monetary value of all finished goods and services produced in Apache County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector.
[8] Total employment is the number of full- and part-time jobs associated with a business activity, policy change, or facility. It includes the self-employed, all federal, state, and local government employees, the military, and contract workers.

70.0% of the job year losses will be in private nonfarm sectors (that is, in non-government or non-agricultural employment).

- Navajo County is also estimated to lose $389.2 million Real Disposable Personal Income (RDPI)[9] due to the reduced operations and ultimate closure of Springerville and CGS, 2022-2040, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $20.5 million RDPI in Navajo County.
- Government is estimated to account for one in three of the shortfall in job years, 2022-2040, in Navajo County. Construction and Utilities are expected to account for 12.0% and 10.6% of the job years lost respectively, compared to the continuation of both generating stations at the 2021 level.
- Table ES5 summarizes the magnitude of these economic effects for the Navajo County economy in percentage terms, compared to a counterfactual situation in which both power plants continue to operate at their 2021 level.
- In total, over the 19-year study time horizon, Seidman estimates that State GDP will be 1.49% lower in Navajo County, compared to a counterfactual situation in which Springerville and CGS continue to operate at their 2021 level.
- Seidman also estimates that total employment (in job years) in Navajo County will be 0.91% lower, compared to a counterfactual situation in which Springerville and CGS continue to operate at their 2021 level.
- The total economic impacts exclude fiscal impacts. Seidman additionally estimates changes to state and local tax revenue payments in Navajo County from three sources. These are:
    - The owner-operators of both generating stations, 2022-2040;
    - Navajo County residents working at Springerville or CGS (direct employment); and
    - Navajo County residents working for other firms, whose jobs are reliant on the operation of either generating station (indirect and induced employment).
- Table ES6 summarizes the total fiscal (tax) revenue payments shortfall in Navajo County, 2022-2040, based on the closure scenarios modeled in this study.
- Seidman estimates that the owner-operators of the two generating stations (combined) will pay $98,600 less in local taxes in Navajo County, 2022-2040, compared to a counterfactual situation in which both plants operate at their 2021 level.

[9] RDPI is the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving.

**Table ES4: Estimated Total Changes in Springerville and Coronado's Contributions to the Navajo County Economy, 2022-2040[10]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $0.9 | $0.2 | -$2.0 | -$7.1 | -$13.5 | -$17.9 | -$25.1 | -$29.5 | -$33.9 | -$38.5 | -$43.1 |
| **Total Employment (Job Years)[11]** | 6 | 2 | -13 | -47 | -89 | -119 | -176 | -204 | -230 | -256 | -282 |
| **Total Private Nonfarm Employment (Job Years)** | 5 | 1 | -10 | -35 | -65 | -84 | -129 | -146 | -163 | -179 | -195 |
| **Real Disposable Personal Income (Millions 2020 $)** | $0.3 | $0.0 | -$0.6 | -$2.1 | -$4.0 | -$5.4 | -$8.1 | -$9.5 | -$11.1 | -$12.8 | -$14.5 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$78.9 | -$87.3 | -$95.0 | -$126.2 | -$130.4 | -$132.8 | -$134.0 | -$135.4 | -$1,129.5 | -$59.4 |
| **Total Employment (Job Years)** | -515 | -581 | -626 | -809 | -833 | -842 | -844 | -843 | -7,300 | -384 |
| **Total Private Nonfarm Employment (Job Years)** | -375 | -409 | -434 | -579 | -583 | -582 | -577 | -573 | -5,111 | -269 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$26.7 | -$29.3 | -$32.4 | -$43.1 | -$44.7 | -$46.8 | -$48.4 | -$50.0 | -$389.2 | -$20.5 |

*Source: Authors' Calculations*

[10] Table rows may not tally exactly due to rounding.

[11] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

**Table ES5: Summary of Average Annual Percentage Reductions Compared to the 2021 Navajo County Economy**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| State GDP | 0.02% | 0.01% | -0.05% | -0.18% | -0.34% | -0.45% | -0.63% | -0.74% | -0.85% | -0.96% | -1.08% |
| Total Employment | 0.01% | 0.00% | -0.03% | -0.11% | -0.21% | -0.28% | -0.42% | -0.49% | -0.55% | -0.61% | -0.67% |
| Total Private Nonfarm Employment | 0.02% | 0.00% | -0.04% | -0.12% | -0.23% | -0.30% | -0.46% | -0.52% | -0.58% | -0.63% | -0.69% |
| Real Disposable Personal Income | 0.01% | 0.00% | -0.02% | -0.06% | -0.12% | -0.16% | -0.25% | -0.29% | -0.34% | -0.39% | -0.44% |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL (2022-2040) |
|---|---|---|---|---|---|---|---|---|---|
| State GDP | -1.97% | -2.18% | -2.38% | -3.16% | -3.26% | -3.32% | -3.35% | -3.39% | ▼ 1.49% |
| Total Employment | -1.23% | -1.38% | -1.49% | -1.93% | -1.98% | -2.00% | -2.01% | -2.01% | ▼ 0.91% |
| Total Private Nonfarm Employment | -1.33% | -1.45% | -1.53% | -2.05% | -2.06% | -2.06% | -2.04% | -2.03% | ▼ 0.95% |
| Real Disposable Personal Income | -0.82% | -0.89% | -0.99% | -1.32% | -1.36% | -1.43% | -1.48% | -1.53% | ▼ 0.63% |

*Source: Authors' Calculations*

- Seidman also estimates a total local fiscal revenue shortfall of $14.0 million in Navajo County, 2022-2040, from direct, indirect, and induced employees living within the County. These employees also account for a total state tax payment shortfall of $12.7 million.
- The owner-operators and Navajo County-resident direct, indirect, and induced employment changes are estimated to generate $14.0 million less in local taxes, and approximately $12.7 million less in state tax payments, 2022-2040, based on Seidman's modeling scenario.

**Table ES6: Summary of Navajo County Total Fiscal (Tax) Revenue Payments Shortfall, 2022-2040**

| PLANT | LOCAL FISCAL TAX SHORTFALL NAVAJO COUNTY | STATE TAX PAYMENT SHORTFALL NAVAJO COUNTY |
|---|---|---|
| Springerville | -$7,283,188 | -$6,435,448 |
| CGS | -$6,766,210 | -$6,218,009 |
| | | |
| **TOTAL** | **-$14,049,398** | **-$12,653,457** |

*Source: Authors' Calculations*

- The estimates are conservative in the sense that they do not include estimates of the business taxes paid by Navajo County (non-utility) businesses as they serve the existing needs of the workers currently employed by the plants.
- Like Apache County, the precise impacts of this shortfall in tax revenues will depend on the timing of the plant closures, the related timing of changes to school pupil headcount, and the willingness/legal ability of the various county jurisdictions to levy higher tax rates commensurate with the erosion of state/local tax revenue sources.
- The utility companies also believe that the State of Arizona could backfill some of the fiscal revenue losses, which are not accounted for in the current modeling.
- Seidman estimates that Show Low will suffer the biggest shortfall in Navajo County, with up to 1.2 percent of households negatively impacted by the reduced operation and eventual closure of Springerville and CGS. This is based on a loss of direct jobs and associated wages/salaries.

## Estimated Shortfall in the Economic Impacts for the State of Arizona

- Table ES7 estimates the total economic losses for the State of Arizona economy if Springerville closes at the end of 2035 and CGS closes at the end of 2032, compared to their combined potential contribution if they continued to operate at the 2021 level. The total changes to the State of Arizona economy encompass direct, indirect, and induced impacts.

**Table ES7: Estimated Total Changes in Springerville and Coronado's Contributions to the Arizona Economy, 2022-2040[12]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$1.7 | -$8.0 | -$18.7 | -$32.2 | -$47.2 | -$58.3 | -$82.7 | -$93.9 | -$104.3 | -$114.6 | -$125.0 |
| **Total Employment (Job Years)[13]** | -11 | -53 | -125 | -214 | -312 | -386 | -583 | -651 | -708 | -763 | -817 |
| **Total Private Nonfarm Employment (Job Years)** | -10 | -50 | -118 | -201 | -292 | -358 | -521 | -580 | -629 | -676 | -724 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$0.5 | -$2.4 | -$5.7 | -$9.7 | -$14.1 | -$17.5 | -$26.8 | -$30.2 | -$34.1 | -$38.1 | -$42.0 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$221.3 | -$251.8 | -$269.2 | -$348.7 | -$360.9 | -$369.8 | -$378.4 | -$382.3 | -$3,269.0 | -$172.1 |
| **Total Employment (Job Years)** | -1,447 | -1,676 | -1,775 | -2,235 | -2,306 | -2,345 | -2,383 | -2,379 | -21,168 | -1,114 |
| **Total Private Nonfarm Employment (Job Years)** | -1,296 | -1,455 | -1,536 | -1,963 | -2,015 | -2,042 | -2,061 | -2,053 | -18,581 | -978 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$75.0 | -$84.6 | -$91.8 | -$119.2 | -$123.8 | -$130.2 | -$136.7 | -$141.0 | -$1,123.3 | -$59.1 |

*Source: Authors' Calculations*

[12] Table rows may not tally exactly due to rounding.

[13] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

- In total over the 19-year time horizon, State GDP[14] is estimated to lose $3.3 billion due to the reduced operations and ultimate closures of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $172.1 million State GDP, 2022-2040, in Arizona.
- The State of Arizona is also estimated to lose 21,168 job years of total employment[15] due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at the 2021 level. That's equivalent to an average annual shortfall of 1,114 job years of total employment statewide, 2022-2040. Approximately 87.8% of the job year losses will be in private nonfarm sectors (that is, in non-government or non-agricultural employment).
- The State of Arizona is also estimated to lose $1.1 billion Real Disposable Personal Income (RDPI)[16] due to the reduced operations and ultimate closure of Springerville and CGS, 2022-2040, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $59.1 million RDPI statewide.
- Construction is estimated to account for one in four of the shortfall in job years employment, 2022-2040, statewide. Government and Retail and Wholesale Trade are expected to account for 12.2% and 10.4% of the job years lost respectively, compared to the continuation of Springerville and CGS' statewide contribution in 2021.

## Additional Studies

- SRP and TEP are engaged in on going coal community transition efforts to support the economic development of the local communities. These efforts recently include, but are not limited to, the commissioning of additional studies to analyze the economic impact of expanding local broadband access, increasing workforce development training, and enhancing transportation infrastructure in the coal communities.

[14] State GDP is the monetary value of all finished goods and services produced in Apache County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector.
[15] Total employment is the number of full- and part-time jobs associated with a business activity, policy change, or facility. It includes the self-employed, all federal, state, and local government employees, the military, and contract workers.
[16] RDPI is the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving.

# 1.0 INTRODUCTION

Springerville Generating Station (Springerville) is a 1,765.8-megawatt (MW) coal-fired, four-unit power station in Apache County, Arizona, generating electricity for Tucson Electric Power (TEP), Tri-State Generation & Transmission, and Salt River Project (SRP).

Units 1 and 2 are owned and operated by TEP. They were completed in 1985 and 1990, respectively. Unit 3 is owned by Tri-State Generation & Transmission. It was completed in summer 2006 and is currently operated by TEP. Unit 4 is owned by SRP. It was completed in December 2009 and is currently operated by TEP.

Springerville's coal is sourced from North Antelope Rochelle Mine (Peabody), Antelope Coal Mine (Navajo), El Segundo Mine (Peabody) and Black Thunder Mine (Arch Coal). Every mine is located out-of-state.

Tucson Electric Power's 2020 Integrated Resource Plan contains a proposal to ramp down and eventually retire Springerville Units 1 and 2 by 2027 and 2032 respectively.

Tri-State, which serves 43 electric co-op members and more than 1 million people across four Western states, plans to move away from coal in favor of utility-scale renewable generation.

SRP is also considering closure of Springerville's Unit 4.

Coronado Generating Station (CGS) is a coal-fired, two-unit 821.8 MW steam electric power station near St. Johns, Apache County. It has generated electricity for SRP since 1979.

CGS sources its coal from the Powder River Basin in Wyoming.

SRP has announced it intends to reduce operation of, and ultimately close both units at CGS, while engaging with St. Johns and Apache County stakeholders to help ensure both communities undergo a successful economic transition.[17]

The objectives of this study are:

- To estimate the multi-year economic impact of the reduced operations and eventual closure of both generating stations for the State of Arizona, and Apache and Navajo County economies.
- To additionally estimate the fiscal impacts of the reduced operations and eventual closure of both generating stations on the tax base of Apache and Navajo Counties and select towns/cities within those two counties.

The results will be used by SRP, TEP, and other stakeholders to help the towns and cities affected by the closures to prepare for the eventuality, and additionally source alternative opportunities for local residents. The study findings may also serve as a basis for grant applications that seek Federal remediation for the adverse economic and fiscal impacts that the localities will incur following the closures.

Section 2 estimates the economic and fiscal impacts for Apache County of a hypothetical closure timeline for both generating stations, compared to a counterfactual situation in which the 2021 operations are maintained.

Section 3 estimates the economic and fiscal impacts for Navajo County of the same hypothetical closure timeline, compared to a counterfactual situation in which the 2021 operations are maintained.

Section 4 estimates the economic impacts for the State of Arizona of the same hypothetical closure timeline, compared to a counterfactual situation in which the 2021 operations are maintained.[18]

The data inputs, study method, and assumptions are summarized in an Appendix to this study.

[17] Clarion Energy Content Directors, (2021). SRP begins Work to Transition Workers, Economy Away from Coal. *Power Grid International*, July 6, 2021. Available at: https://www.power-grid.com/news/srp-begins-work-to-transition-coal-workers-economy-into-new-opportunities/#gref

[18] The scope of work does not require total state fiscal impacts. It only requires reference to the state taxes paid by the plants' owners and operators, and employees residing in Apache and Navajo County. These are all included in Sections 3 and 4.

Please also note, for the purpose of this study, a 'retired plant site', 'cease operations', 'closure', and 'decommissioning' are defined as follows:

***Retired Plant Site:*** The site of a plant that formerly produced electrical or mechanical power but is now out of service. It includes plants that have been abandoned, decommissioned, damaged by natural disaster, or dismantled.

***Cease Operations:*** To cease conducting the normal operation of a facility when it is reasonable to expect that such operation will not be resumed by the owner at the facility. The term shall not include the sale or transfer of a facility in the ordinary course of business or a permit transfer in accordance with board regulations.

***Closure:*** the act of permanently or temporarily shutting down the operation of a plant.

***Decommissioning:*** The electric-generating equipment—such as precipitators, boilers, turbines, and generators—are shut down and operating permits are terminated. Unused coal and materials associated with both the generation process and the buildings and structures are removed. The electric-generating equipment may be used at other plants or sold as scrap.

# 2.0 ECONOMIC & FISCAL IMPACTS FOR APACHE COUNTY, 2022-2040

For the modeling in this study:

- Springerville is assumed to have four operational units between 2022 and 2027, three operational units between 2028 and 2032, and two operational units between 2033 and 2035. The maximum annual generating capacities are 1,600 MW, 1,200 MW and 800 MW respectively.
- Coronado Generating Station is assumed to have two operational units between 2022 and 2032. The maximum annual generating capacity is 760 MW.[19]

Each series of annual contribution estimates are compared to a counterfactual situation in which Springerville and CGS are assumed to continue to operate at its 2021 level.

## 2.1 Economic Impacts of Springerville Generating Station

Table 1 projects Springerville's employment, vendor purchases, and state/local tax payments, 2022-2040, in Apache County, based on Seidman's modeling closure assumption. Due to the dynamic nature of the modeling, the economic contribution of the generating station is estimated up to and including 2040.[20]

Seidman assumes that all direct jobs outside Apache and Navajo are initially lost as Springerville curtails operations. This is a conservative assumption that will initially reduce the economic shortfalls in both counties. [21] Thereafter the ratio between the two counties remains the same as the base year until closure.

Table 2 estimates the total annual losses for the Apache County economy if Springerville closes at the end of 2035, compared to a counterfactual situation in which Springerville is assumed to continue to operate at its 2021 level. The total changes in annual contributions to the Apache County economy encompass direct, indirect, and induced impacts. The impacts in Table 2 are for the economy as a whole and not just the energy sector.

[19] Please note: the actual retirement dates for Springerville and CGS have not been officially announced. These are purely assumptions for Seidman's modeling.
[20] Please note: the client's scenario data suggests that property taxes will continue to be paid, 2036-2040.
[21] This assumption has been made because the utility companies are unable to provide with any certainty the home zip codes of the plant employees that could be lost each year.

**Table 1: Total Direct Footprint of Springerville Generating Station in Apache County, 2022-2040**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 294 | 288 | 284 | 268 | 252 | 237 | 221 | 205 | 189 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $39.3 | $38.5 | $38.0 | $35.9 | $33.8 | $31.7 | $29.6 | $27.4 | $25.3 |
| **Direct Vendor Purchases (Millions 2020 $)** | $0.7 | $0.7 | $0.7 | $0.7 | $0.7 | $0.7 | $0.6 | $0.6 | $0.6 |
| **Direct State and Local Taxes (Millions 2020 $)** | $15.2 | $15.2 | $15.2 | $15.2 | $15.2 | $15.2 | $11.4 | $11.4 | $11.4 |

| | 2031 | 2032 | 2033 | 2034 | 2035 | 2036-40 |
|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 174 | 158 | 142 | 126 | 110 | 0 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $23.2 | $21.1 | $19.0 | $16.9 | $14.8 | $0 |
| **Direct Vendor Purchases (Millions 2020 $)** | $0.6 | $0.6 | $0.4 | $0.4 | $0.4 | $0 |
| **Direct State and Local Taxes (Millions 2020 $)** | $11.4 | $11.4 | $8.6 | $8.6 | $8.6 | $38.5 |

*Source: Clients*

**Table 2: Estimated Total Changes in Springerville's Contribution to the Apache County Economy, 2022-2040[22]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $3.5 | $0.8 | -$1.8 | -$12.2 | -$24.8 | -$39.0 | -$52.7 | -$68.7 | -$85.9 | -$104.1 | -$123.3 |
| **Total Employment (Job Years)[23]** | 23 | 7 | -11 | -79 | -163 | -256 | -381 | -486 | -594 | -703 | -817 |
| **Total Private Nonfarm Employment (Job Years)** | 15 | 2 | -8 | -48 | -93 | -140 | -195 | -246 | -296 | -348 | -400 |
| **Real Disposable Personal Income (Millions 2020 $)** | $1.1 | $0.2 | -$0.5 | -$3.6 | -$7.3 | -$11.6 | -$17.3 | -$22.1 | -$28.0 | -$34.4 | -$41.1 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$141.1 | -$161.9 | -$183.6 | -$276.6 | -$306.0 | -$325.3 | -$339.7 | -$351.4 | -$2,593.9 | -$136.5 |
| **Total Employment (Job Years)** | -952 | -1,071 | -1,192 | -1,732 | -1,920 | -2,033 | -2,116 | -2,165 | -16,640 | -876 |
| **Total Private Nonfarm Employment (Job Years)** | -458 | -512 | -568 | -870 | -924 | -958 | -980 | -995 | -8,023 | -422 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$48.6 | -$55.4 | -$63.5 | -$93.9 | -$102.8 | -$112.3 | -$120.5 | -$127.3 | -$889.0 | -$46.8 |

*Source: Authors' Calculations*

[22] Table rows may not tally exactly due to rounding.

[23] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The first row of Table 2 estimates the changes in total annual State Gross Domestic Product (GDP) in Apache County associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Apache County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a $3.5 million gain in 2022[24] to a $351.4 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County's State GDP is estimated to lose approximately $2.6 billion due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $136.5 million State GDP, 2022-2040, in Apache County alone.

The second row of Table 2 estimates the changes in total employment in Apache County associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. Total employment is the number of full- and part-time jobs associated with a business activity, policy change, or facility. It includes the self-employed, all federal, state, and local government employees, the military, and contract workers. The annual contributions to total employment in Apache County range from a 23 job year gain in 2022 to a shortfall of 2,165 job years in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County is estimated to lose 16,640 job years of employment due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 876 job years of total employment in Apache County, 2022-2040.

The third row of Table 2 estimates the changes in total private nonfarm employment in Apache County associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. Similar in part to total employment, private nonfarm employment excludes all government and agricultural employment. The annual contributions to total private nonfarm employment in Apache County range from a 15-job year gain in 2022 to a shortfall of 995 job years in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache

[24] This is due to a minor increase in direct employment projected by the client.

County is estimated to lose 8,023 job years of total private nonfarm employment due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 422 job years of private nonfarm employment in Apache County, 2022-2040. Seidman estimates that approximately 48.2% of the job year losses will be in private nonfarm sectors.

The fourth row of Table 2 estimates the changes in Apache County's real disposable personal income (RDPI) associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. RDPI is the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving. The annual contributions to RDPI in Apache County range from a $1.1 million gain in 2022 to a shortfall of $127.3 million in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County is estimated to lose $889.0 million RDPI due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $46.8 million RDPI in Apache County.

**Table 3: Springerville's Total Employment Impacts by Type in Apache County, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Government** | -8,617 | 51.8% |
| **Utilities** | -2,326 | 14.0% |
| **Construction** | -1,986 | 11.9% |
| **Retail and Wholesale Trade** | -799 | 4.8% |
| **Administrative & Waste Services** | -579 | 3.5% |
| **Accommodation & Food Services** | -557 | 3.3% |
| **All Other Types** | -1,776 | 10.7% |

*Source: Authors' Calculations*

Table 3 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Apache County. Government is estimated to account for more than one half of the shortfall in job years employment, 2022-2040. Utilities and Construction are expected to account for 14.0% and 11.9% of the job years lost respectively, compared to the continuation of Springerville's Apache County contribution in 2021.

## 2.2 Economic Impacts of Coronado Generating Station

Table 4 projects CGS' employment, vendor purchases, and state/local tax payments, 2022-2040, in Apache County, based on Seidman's modeling closure assumption. Seidman assumes that all direct jobs outside Apache and Navajo at Coronado are initially lost as CGS curtails operations. Thereafter the ratio between Apache and Navajo Counties remains the same as the base year until closure.

Table 5 estimates the total annual losses for the Apache County economy if CGS closes at the end of 2032, compared to its potential contribution if it continued to operate at the 2021 level. The total changes in annual contributions to the Apache County economy encompass direct, indirect, and induced impacts.

The first row of Table 5 estimates the changes in total annual State Gross Domestic Product (GDP) in Apache County associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Apache County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from no change in 2022 or 2023 to a $130.0 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County's State GDP is estimated to lose more than $1.0 billion due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $55.0 million State GDP, 2022-2040, in Apache County alone.

The second row of Table 5 estimates the changes in total employment in Apache County associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to total employment in Apache County range from no change in 2022 or 2023 to a shortfall of 824 job years in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County is estimated to lose 6,816 job years of employment due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 359 job years of total employment in Apache County, 2022-2040.

**Table 4: Total Direct Footprint of Coronado Generating Station in Apache County, 2022-2040**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 106 | 106 | 101 | 93 | 85 | 85 | 85 | 85 | 85 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $18.2 | $18.2 | $17.3 | $16.1 | $14.6 | $14.6 | $14.6 | $14.6 | $14.6 |
| **Direct Vendor Purchases (Millions 2020 $)** | $0.8 | $0.8 | $0.8 | $0.8 | $0.8 | $0.8 | $0.8 | $0.8 | $0.8 |
| **Direct State and Local Taxes (Millions 2020 $)** | $8.5 | $8.5 | $8.5 | $8.7 | $8.8 | $8.8 | $8.8 | $8.8 | $8.8 |

| | 2031 | 2032 | 2033-40 |
|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 85 | 85 | 0 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $14.6 | $14.6 | $0 |
| **Direct Vendor Purchases (Millions 2020 $)** | $0.8 | $0.8 | $0 |
| **Direct State and Local Taxes (Millions 2020 $)** | $8.8 | $8.8 | $8.2 |

*Source: Clients*

**Table 5: Estimated Total Changes in Coronado's Contribution to the Apache County Economy, 2022-2040[25]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $0.0 | $0.0 | -$3.0 | -$8.0 | -$14.8 | -$17.2 | -$18.8 | -$20.0 | -$20.9 | -$21.7 | -$22.5 |
| **Total Employment (Job Years)[26]** | 0 | 0 | -20 | -54 | -99 | -115 | -125 | -131 | -135 | -138 | -140 |
| **Total Private Nonfarm Employment (Job Years)** | 0 | 0 | -13 | -32 | -56 | -61 | -64 | -65 | -66 | -66 | -67 |
| **Real Disposable Personal Income (Millions 2020 $)** | $0.0 | $0.0 | -$0.9 | -$2.4 | -$4.5 | -$5.3 | -$5.9 | -$6.4 | -$6.9 | -$7.4 | -$7.7 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$79.4 | -$98.1 | -$107.6 | -$114.1 | -$119.0 | -$123.0 | -$126.6 | -$130.0 | -$1,044.8 | -$55.0 |
| **Total Employment (Job Years)** | -500 | -657 | -722 | -760 | -784 | -800 | -813 | -824 | -6,816 | -359 |
| **Total Private Nonfarm Employment (Job Years)** | -284 | -324 | -343 | -354 | -361 | -365 | -369 | -372 | -3,262 | -172 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$26.4 | -$32.3 | -$36.1 | -$39.4 | -$42.3 | -$44.8 | -$47.2 | -$49.6 | -$365.5 | -$19.2 |

*Source: Authors' Calculations*

[25] Table rows may not tally exactly due to rounding.

[26] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The third row of Table 5 estimates the changes in total private nonfarm employment in Apache County associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to total private nonfarm employment in Apache County range from no change in 2022 or 2023 to a shortfall of 372 job years in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County is estimated to lose 3,262 job years of total private nonfarm employment due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 172 job years of private nonfarm employment in Apache County, 2022-2040. Seidman estimates that approximately 47.9% of the job year losses will be in private nonfarm sectors (that is, all non-government and non-agricultural workers).

The fourth row of Table 5 estimates the changes in Apache County's RDPI associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to RDPI in Apache County ranges from no change in 2022 or 2023 to a shortfall of $49.6 million in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Apache County is estimated to lose $365.5 million RDPI due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $19.2 million RDPI in Apache County.

**Table 6: CGS' Total Employment Impacts by Type in Apache County, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Government** | -3,554 | 52.1% |
| **Utilities** | -928 | 13.6% |
| **Construction** | -818 | 12.0% |
| **Retail and Wholesale Trade** | -328 | 4.8% |
| **Administrative & Waste Services** | -230 | 3.4% |
| **Accommodation & Food Services** | -226 | 3.3% |
| **All Other Types** | -732 | 10.8% |

*Source: Authors' Calculations*

Table 6 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Apache County. Government is estimated to account for more than one half of the shortfall in job years employment, 2022-2040. Utilities and Construction are expected to account for 13.6% and 12.0% of the job years lost respectively, compared to the continuation of CGS' Apache County contribution in 2021.

## 2.3 Total Economic Impacts of Springerville and Coronado Generating Stations

Table 7 estimates the total annual losses for the Apache County economy if Springerville closes at the end of 2035 and CGS closes at the end of 2032, compared to their combined potential contribution if they continued to operate at the 2021 level. The total changes in annual contributions to the Apache County economy encompass direct, indirect, and induced impacts.

The first row of Table 7 estimates the changes in total annual State Gross Domestic Product (GDP) in Apache County associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Apache County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a gain of $3.5 million in 2022 to a $481.5 million shortfall in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Apache County's State GDP is estimated to lose more than $3.6 billion due to the reduced operations and ultimate closures of Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $191.5 million State GDP, 2022-2040, in Apache County alone.

The second row of Table 7 estimates the changes in total employment in Apache County associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to total employment in Apache County range from a gain of 23 job years in 2022 to a shortfall of 2,989 job years in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Apache County is estimated to lose 23,457 job years of employment due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at the 2021 level. That's equivalent to an average annual shortfall of 1,235 job years of total employment in Apache County, 2022-2040.

**Table 7: Estimated Total Changes in Springerville and Coronado's Contributions to the Apache County Economy, 2022-2040[27]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $3.5 | $0.8 | -$4.8 | -$20.2 | -$39.6 | -$56.2 | -$71.5 | -$88.7 | -$106.8 | -$125.9 | -$145.8 |
| **Total Employment (Job Years)[28]** | 23 | 7 | -32 | -133 | -262 | -372 | -506 | -617 | -728 | -841 | -957 |
| **Total Private Nonfarm Employment (Job Years)** | 15 | 2 | -21 | -80 | -149 | -201 | -259 | -311 | -362 | -414 | -467 |
| **Real Disposable Personal Income (Millions 2020 $)** | $1.1 | $0.2 | -$1.4 | -$6.0 | -$11.8 | -$16.8 | -$23.2 | -$28.5 | -$34.9 | -$41.8 | -$48.9 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$220.6 | -$260.0 | -$291.2 | -$390.7 | -$424.9 | -$448.4 | -$466.3 | -$481.5 | -$3,638.7 | -$191.5 |
| **Total Employment (Job Years)** | -1,451 | -1,728 | -1,914 | -2,491 | -2,703 | -2,833 | -2,929 | -2,989 | -23,457 | -1,235 |
| **Total Private Nonfarm Employment (Job Years)** | -742 | -836 | -911 | -1,224 | -1,285 | -1,323 | -1,349 | -1,367 | -11,286 | -594 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$75.0 | -$87.7 | -$99.6 | -$133.3 | -$145.1 | -$157.1 | -$167.7 | -$176.8 | -$1,254.6 | -$66.0 |

*Source: Authors' Calculations*

[27] Table rows may not tally exactly due to rounding.

[28] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The third row of Table 7 estimates the changes in total private nonfarm employment in Apache County associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to total private nonfarm employment in Apache County range from a gain of 15 job years in 2022 to a shortfall of 1,367 job years in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Apache County is estimated to lose 11,286 job years of total private nonfarm employment due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of 594 job years of private nonfarm employment in Apache County, 2022-2040. Seidman estimates that approximately 48.1% of the job year losses will be in private nonfarm sectors.

The fourth row of Table 7 estimates the changes in Apache County's RDPI associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to RDPI in Apache County range from a gain of $1.1 million in 2022 to a shortfall of $176.8 million in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Apache County is estimated to lose more than $1.2 billion RDPI due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $66.0 million RDPI in Apache County.

**Table 8: Total Employment Impacts by Type for Springerville and CGS in Apache County, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Government** | -12,171 | 51.9% |
| **Utilities** | -3,254 | 13.9% |
| **Construction** | -2,804 | 12.0% |
| **Retail and Wholesale Trade** | -1,127 | 4.8% |
| **Administrative & Waste Services** | -809 | 3.4% |
| **Accommodation & Food Services** | -783 | 3.3% |
| **All Other Types** | -2,509 | 10.7% |

*Source: Authors' Calculations*

Table 8 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Apache County. Government is estimated to account for more than one half of the shortfall in job years

employment, 2022-2040. Utilities and Construction are expected to account for 13.9% and 12.0% of the job years lost respectively, compared to the continuation of Springerville and CGS' Apache County contribution in 2021.

## 2.4 Fiscal Impacts

In addition to the economic impacts outlined above, Seidman's reduced operations and eventual closure assumptions for Springerville and CGS will have significant consequences for state and local government tax revenues. These include, but are not restricted to the fiscal revenues associated with:

- The owner-operators of both generating stations, 2022-2040;
- Apache County residents working at either generating station (direct employment); and
- Apache County residents working for other firms, whose jobs are reliant on the operation of the one or both generating stations (indirect and induced employment).

These impacts will now be examined for Apache County.

### 2.4.1 Direct Fiscal (Tax) Payments by Plant Ownership

In 2021, Springerville is estimated to make $14.8 million in local tax payments and $324,574 in state tax payments. Apache County was the exclusive recipient of the local tax payments, which encompass property taxes. The State tax payments are primarily for use tax.

Also in 2021, CGS is estimated to make $8.5 million in local tax payments and $864,850 in state tax payments. Apache County is the principal recipient of the local tax payments, including $8.4 million in property taxes. The state tax payments are primarily for sales tax.

Separate analyses of the budgets of Apache County, St. Johns School district, and Round Valley School district for 2021 reveals the following:

- The total General Fund revenue plus property tax revenues reported in the Apache County Budget for FY2021 were $23.5 million. This is comparable to regular revenue flows in FY2020.

- The total revenues generated in FY2021 for the St. John's School district (excluding the prior year ending balance) was $8.2 million for the combined maintenance and operating budget and the unrestricted capital outlay fund.
- The total revenues generated in FY2021 for the Round Valley School district (excluding the prior year ending balance) was $10.7 million for the combined maintenance and operating budget and the unrestricted capital outlay fund.

Table 9 summarizes the projected annual state and local tax payments for both plants (combined) in Apache County. This highlights in particular the importance of both plants to the Apache County economy. Apache County will ultimately receive a share of some of these state tax payments, calculated on a statewide per capita basis. This suggests that the two generating stations (combined) will pay in total $9.4 million less in state taxes and $127.9 million less in local taxes in Apache County, 2022-2040, compared to a counterfactual situation in which both plants operate at their 2021 levels.

**Table 9: Projected Owner Operator Annual Direct State and Local Tax Payments in Apache County**

| YEAR | STATE TAX PAYMENTS | LOCAL TAX PAYMENTS |
|---|---|---|
| **2022** | $1,189,424 | $23,704,656 |
| **2023** | $1,189,424 | $23,726,278 |
| **2024** | $1,189,424 | $23,724,217 |
| **2025** | $1,189,424 | $23,861,002 |
| **2026** | $1,189,424 | $24,007,970 |
| **2027** | $1,189,424 | $24,024,072 |
| **2028** | $1,108,280 | $20,226,723 |
| **2029** | $1,108,280 | $20,221,097 |
| **2030** | $1,108,280 | $20,207,444 |
| **2031** | $1,108,280 | $20,185,149 |
| **2032** | $1,108,280 | $20,159,493 |
| **2033** | $182,573 | $16,793,838 |
| **2034** | $182,573 | $8,555,717 |
| **2035** | $182,573 | $8,555,717 |
| **2036** | | $8,555,717 |
| **2037** | | $8,555,717 |
| **2038** | | $8,555,717 |
| **2039** | | $6,416,788 |
| **2040** | | $6,416,788 |

*Source: Clients' Projections with Authors' Calculations*

The property tax bases for Apache County and the St. Johns and Round Valley School Districts will be significantly eroded by the plant closures. While a precise tabulation of how each taxing jurisdiction in the County and in the two districts will be impacted by this property tax base erosion is beyond the scope of this report, Seidman can draw several basic conclusions, as follows:

- The non-school district taxing jurisdictions within Apache County will either see a significant reduction in revenues to support their activities, or local resident taxpayers will be presented with substantial property tax rate increases to make up for the erosion of the two plants' contribution to the existing property tax base. A detailed study of each jurisdiction will be necessary to determine the precise outcome and in each case since some jurisdictions may have statutory limits on tax rate changes.
- St. John's School District currently receives state equalization aid. This means, by definition, that the primary property tax rate is at or near the State's minimum QTR. As a result, any loss of property tax base will be backfilled by the State without any corresponding increase in local primary property tax rates. With respect to secondary property taxes, local rates will rise commensurate with the portion of the tax base that erodes because of the plant closures; and to the extent that existing property tax levies support outstanding debt, a secondary rate increase appears unavoidable. Again, establishing a precise estimate of this impending secondary rate increase is beyond the scope of this report.
- Round Valley School District does not currently receive state equalization aid; and its primary property tax rate is well below the State minimum QTR. As a result, primary property tax rates will rise to the minimum QTR before any state aid can be obtained to backfill the loss of property tax revenue as the plants close. The district's secondary tax rates will also in all probability rise to offset the loss of revenue for secondary property tax purposes.

The precise impacts on the combined taxing jurisdictions will depend on the timing of property tax reductions as the plant closures take place, the related timing of changes to school pupil headcount, and the willingness/legal ability of the various county jurisdictions to levy higher tax rates commensurate with the property tax base erosion. To establish more precision in these estimates, Seidman recommends that interested parties contact experts in this area.[29]

[29] For example: Randie Stein, Managing Director at Stifle (email: rstein@stifel.com).

### 2.4.2 Fiscal (Tax) Payments of Plant Employees

Additional forms of fiscal impact will occur with the planned reduction in operations and ultimate closure of the plants. The utilities have reported that 183 workers are directly employed at CGS and 380 workers at Springerville. Table 10 shows the primary zip code residence of each generating station's direct employees in Apache County, together with the sum of wages. For Springerville, the client supplied the wages by zip code, but only reported the number of employees by county. Seidman therefore estimates the distribution of employees by zip code based on an average wage of $70,062.39. Approximately 75.8% of Springerville's employees live in Apache County. For CGS, the client supplies employee totals and sum of wages by zip code. Approximately 57.9% of CGS employees reside in Apache County.

**Table 10: Primary Zip Code Residence of Springerville & CGS' Apache County Based Employees, FY2021**

| ZIPCODE | SPRINGERVILLE | | CORONADO | |
|---|---|---|---|---|
| | NUMBER OF EMPLOYEES | SUM OF WAGES | NUMBER OF EMPLOYEES | SUM OF WAGES |
| 85920 | 1.5 | $108,339 | | |
| 85924 | 8.1 | $566,014 | 5 | $527,902 |
| 85925 | 137.2 | $9,613,442 | 28 | $2,799,123 |
| 85927 | 1.4 | $101,483 | | |
| 85932 | 5.0 | $351,270 | | |
| 85936 | 75.5 | $5,292,519 | 60 | $6,128,813 |
| 85938 | 54.5 | $3,819,139 | 5 | $488,115 |
| 85940 | 4.6 | $324,894 | 8 | $792,163 |

*Source: Clients and Authors' Calculations*

In 2021, Seidman estimates that 288 Apache County-based employees at Springerville contribute $1.3 million in city, county, and state tax payments within the county.

Also in 2021, Seidman estimates that 106 Apache County-based employees at CGS contribute $761,265 in city, county, and state tax payments within the county.

Table 11 estimates the total shortfall in fiscal revenues generated by Springerville and CGS employee residing in Apache County, 2022-2040, if both generating stations follow Seidman's assumed closure plan, compared to their potential contribution if they continued to operate at the 2021 level.

Seidman estimates that Apache County could lose $4.9 million in direct employee local fiscal impacts if Springerville initially reduces operations and closes at the end of 2035. That's equivalent to an average annual shortfall of $260,379 in local taxes in Apache County, 2022-2040. Up to $6.5 million state tax payments from Springerville workers residing in Apache County could also be lost, equivalent to an annual average shortfall of $340,0145.

**Table 11: Estimating the Shortfall in Plant (Direct) Employee Fiscal Impacts, 2022-2040**

| TAX TYPE | SPRINGERVILLE | CORONADO |
|---|---|---|
| County Tax Shortfall | -$2,978,383 | -$2,035,353 |
| City Tax Shortfall | -$1,968,815 | -$1,081,198 |
| State Tax Shortfall | -$6,460,292 | -$3,988,340 |
| | | |
| **TOTAL** | -$11,407,490 | -$7,104,891 |

*Source: Authors' Calculations*

Seidman also estimates that Apache County could lose $3.1 million in direct employee local fiscal impacts if CGS initially reduces operations and closes at the end of 2032. That's equivalent to an average annual shortfall of $164,029 in local taxes in Apache County, 2022-2040. Approximately $4.0 million state tax payments from CGS workers residing in Apache County could also be lost, equivalent to an annual average shortfall of $209,913.

Summing together the shortfalls in direct employee fiscal contributions for both generating stations, Seidman therefore estimates that Apache County could lose on average $424,408 in local taxes each year, 2022-2040, compared to a counterfactual situation in which both plants continue to operate at their 2021 level.[30]

### 2.4.3 Fiscal (Tax) Payments of the Plants' Indirect and Induced Employment

The operation of both plants also supports employment impacts at local suppliers (indirect impact), and at other Apache County employees (induced employment). These multiplier employment impacts have a corresponding effect on income.

[30] This annual average excludes the state tax shortfall, part of which will be distributed to Apache County under the State's Revenue Share mechanism.

In 2021, Seidman estimates that Springerville's indirect and induced employment generates more than $2.1 million in city, county, and state tax payments within Apache County.

Also in 2021, Seidman estimates that CGS' indirect and induced employment generates approximately $878,734 in city, county, and state tax payments within Apache County.

Table 12 estimates the total shortfall in fiscal revenues generated by indirect and induced employment in Apache County, 2022-2040, if both generating stations follow the same closure plan as the economic impact analysis, compared to their potential contribution if they continued to operate at the 2021 level.

Seidman estimates that Apache County could lose $17.2 million in indirect and induced employment local fiscal revenues and $21.4 million in state taxes, 2022-2040, if Springerville initially reduces operations and closes at the end of 2035. That's equivalent to an average annual shortfall of more than $906,144 in local Apache County taxes and more than $1.1 million each year in state taxes, 2022-2040.

Seidman also estimates that Apache County could lose $7.4 million in indirect and induced employment local fiscal revenues and $8.7 million in state taxes, 2022-2040, if CGS initially reduces operations and closes at the end of 2032. That's equivalent to an average annual shortfall of $388,419 in local Apache County taxes and $458.162 each year in state taxes, 2022-2040.

**Table 12: Estimating the Shortfall in Indirect and Induced Employment Fiscal Impacts, 2022-2040**

| TAX TYPE | SPRINGERVILLE | CORONADO |
|---|---|---|
| County Tax Shortfall | -$10,673,349 | -$4,714,452 |
| City Tax Shortfall | -$6,542,810 | -$2,665,513 |
| State Tax Shortfall | -$21,362,670 | -$8,705,082 |
| | | |
| **TOTAL** | -$38,578,829 | -$16,085,047 |

*Source: Authors' Calculations*

Summing together the shortfalls in indirect and induced employment fiscal contributions for both generating stations, Seidman therefore estimates that Apache County could lose on average approximately $1.3 million each year in local taxes, 2022-2040, compared to a counterfactual situation in which both plants continue to operate at their 2021 level. This is in addition to an average annual shortfall of approximately $1.6 million in state tax payments.

### 2.4.4 Fiscal (Tax) Payments of the Plants' Total Apache County Employment Effects

Table 13 summarizes the total shortfall in fiscal revenues associated with the direct, indirect, and induced employment footprint of both generating stations in Apache County, 2022-2040, compared to their potential contribution if they continued to operate at the 2021 level.

Seidman estimates the reduction in operations and eventual closure of Springerville and CGS could result in a total local fiscal revenue shortfall of $32.7 million in Apache County, 2022-2040, compared to their potential contribution if they continued to operate at the 2021 level, and a total state tax payment shortfall of $40.5 million. This is equivalent to an average annual shortfall of more than $1.7 million in local Apache County taxes, and a further $2.1 million in state tax payments. These figures encompass estimates of the direct fiscal payments made by the plants' employees residing in Apache County and estimates of the fiscal revenues associated with the indirect and induced employment. These fiscal tax revenue shortfalls are in addition to the economic impact shortfalls previously estimated in this Section.

**Table 13: Estimating the Shortfall in Direct, Indirect and Induced Employment Fiscal Impacts, 2022-2040**

| PLANT | IMPACT TYPE | COUNTY | CITY | STATE |
|---|---|---|---|---|
| **SPRINGERVILLE** | Direct | -$2,978,383 | -$1,968,815 | -$6,460,292 |
| | Indirect | -$10,673,349 | -$6,542,810 | -$21,362,670 |
| | Total | -$13,651,732 | -$8,511,625 | -$27,822,962 |
| | | | | |
| **CGS** | Direct | -$2,035,353 | -$1,081,198 | -$3,988,340 |
| | Indirect | -$4,714,452 | -$2,665,513 | -$8,705,082 |
| | Total | -$6,749,805 | -$3,746,711 | -$12,693,422 |
| | | | | |
| **SPRINGERVILLE & CGS (COMBINED)** | Direct | -$5,013,736 | -$3,050,013 | -$10,448,632 |
| | Indirect | -$15,387,800 | -$9,208,323 | -$30,067,753 |
| | Total | -$20,401,536 | -$12,258,336 | -$40,516,385 |

*Source: Authors' Calculations*

### 2.4.5 Total Local Fiscal Implications

Table 14 summarizes Seidman's estimated shortfall in local fiscal revenues in Apache County arising from the reduction in operations and eventual closure assumptions of Springerville and CGS, compared to a counterfactual scenario in which both plants continue to operate at their 2021 levels. In total over the 19-year time horizon, Seidman estimates that Apache County and its constituent towns/cities could see a shortfall of $160.5 million in local tax revenues, compared to a counterfactual scenario in which

Springerville and CGS continue to operate at their 2021 levels. This is equivalent to an average annual loss of more than $8.4 million in Apache County.[31]

Seidman's estimates of a shortfall in fiscal tax revenues are due to changes in the operational status of both generating stations, the number of people that they employ, and the multiplier effects on employment and income elsewhere within Apache County.

**Table 14: Summary of Apache County Total Fiscal (Tax) Revenue Payments Shortfall, 2022-2040**

| PLANT | LOCAL FISCAL TAX SHORTFALL APACHE COUNTY | STATE TAX PAYMENT SHORTFALL APACHE COUNTY |
|---|---|---|
| Springerville | -$92,414,837 | -$37,207,734 |
| CGS | -$68,111,871 | -$12,693,422 |
| | | |
| **TOTAL** | **-$160,526,708** | **-$49,901,156** |

*Source: Authors' Calculations*

The estimates are conservative in the sense that they do not include estimates of the business taxes paid by Apache County (non-utility) businesses as they serve the existing needs of the workers currently employed by the plants. For example, on average businesses pay (through utilities, supplies, rentals, leases, use taxes, etc.) approximately 40% of all sales taxes collected in the State of Arizona.

As previously stated, the precise impacts of this shortfall in tax revenues will depend on the timing of property tax reductions as the plant closures take place, the related timing of changes to school pupil headcount, and the willingness/legal ability of the various county jurisdictions to levy higher tax rates commensurate with the erosion of the property tax base and other state/local tax revenue sources.

## 2.5 Employment & Income Impacts in Eagar, Springerville and St. Johns

The REMI model is not capable of estimating economic impacts at a town/city, school district or zip code level. However, to help the reader contextualize the economic impacts at a more granular level, the clients have additionally asked for some direct employment and income insights for Eagar, Springerville and St Johns.

[31] This excludes an additional $2.6 million shortfall in annual state tax payments, 2022-2040, a portion of which is returned to Apache County in accordance with the State's revenue sharing mechanism.

Table 15 summarizes the annual shortfall for all three Apache County locations ***following*** the closure of both generation stations. That is, from 2036 onwards, based on the closure assumptions described earlier. The table combines the employment and wages footprint of people directly employed at Springerville or CGS (collated by the clients) with Seidman's estimates of the state and local taxes paid by those workers.

Eager will suffer the biggest shortfall in Apache County, losing 165 jobs paying up to $12.4 million in wages and salaries each year. Those 165 employees conservatively account for $340,213 in local tax revenues and $453,625 in state tax revenues. In 2019, the U.S. Census Bureau estimates Eager's population at 4,890. There are approximately 1,652 households in Eagar, each made up of around 3 members.[32] This suggests that up to 10 percent of Eager households could be negatively impacted by the reduced operation and eventual closure of Springerville and CGS.

St. Johns will also suffer a significant change in Apache County, losing 136 jobs paying up to $11.4 million in wages and salaries each year. Those 136 employees conservatively account for $362,682 in local tax revenues and $415,160 in state tax revenues. In 2019, U.S. Census Bureau estimates St. Johns' population at 3,497, although other sources suggest 4,000. There are approximately 1,103 households in St. Johns, each made up of 3-4 members.[33] This suggests that up to 12 percent of St Johns households could be negatively impacted by the reduced operation and eventual closure of Springerville and CGS.

**Table 15: Direct Employment and Income Losses by Town/City, Post-Closure**

| GEOGRAPHY | ANNUAL LOSSES POST-CLOSURE OF BOTH GENERATING STATIONS (2036 onwards) | | | |
|---|---|---|---|---|
| | Loss of Jobs | Sum of Wages | Local Taxes | State Taxes |
| **Eager** | 165 | $12,412,565 | $340,213 | $452,625 |
| **Springerville** | 60 | $4,307,254 | $118,056 | $157,239 |
| **St Johns** | 136 | $11,421,332 | $362,682 | $415,160 |

*Source: Authors' Calculations*

[32] Source: https://www.point2homes.com/US/Neighborhood/AZ/Eagar-Demographics.html#:~:text=There%20are%20a%20total%20of,up%20of%20around%203%20members.
[33] Source: https://www.point2homes.com/US/Neighborhood/AZ/Apache-County/St-Johns-Demographics.html

Springerville is less impacted than the other two locations examined but will still lose 60 jobs paying up to $4.3 million in wages and salaries each year.

Workers at the two generating stations are paid average salaries that are significantly higher than the median wages in Apache County, so the loss of their wages will likely result in spending and home ownership declines which will in turn erode the tax bases in the two counties.

Location-specific estimates of the multiplier employment and income effects are beyond the scope of the current study. It is logical to presume that the multiplier impacts will accrue commensurate with the distribution of direct impacts in Apache County, but this is by no means certain.

# 3.0 ECONOMIC & FISCAL IMPACTS FOR NAVAJO COUNTY, 2022-2040

Section 2 estimated the economic and fiscal impacts for Apache County. Using Seidman's same closure timeline assumptions for Springerville (by end of 2035) and CGS (by end of 2032), the current Section estimates the economic and fiscal impacts for Navajo County.

Each series of annual contribution estimates are compared to a counterfactual situation in which Springerville and CGS are assumed to continue to operate at their 2021 levels.

## 3.1 Economic Impact of Springerville Generating Station

Table 16 projects Springerville's employment, vendor purchases, and state/local tax payments, 2022-2040, in Navajo County, based on Seidman's modeling closure assumption. Due to the dynamic nature of the modeling, the economic contribution of the generating station is estimated up to and including 2040.[34]

Seidman assumes that all direct jobs outside Apache and Navajo are initially lost as Springerville curtails operations. This is a conservative assumption that will initially reduce the economic shortfalls in both counties. [35] Thereafter the ratio between the two counties remains the same as the base year until closure.

Table 17 estimates the total annual losses for the Navajo County economy if Springerville closes at the end of 2035, compared to a counterfactual situation in which Springerville is assumed to continue to operate at its 2021 level. The total changes in annual contributions to the Navajo County economy encompass direct, indirect, and induced impacts. The impacts in Table 17 are for the economy as a whole and not just the energy sector.

[34] Please note: the client's scenario data suggests that property taxes will continue to be paid, 2036-2040.
[35] This assumption has been made because the utility companies are unable to provide with any certainty the home zip codes of the plant employees that could be lost each year.

**Table 16: Total Direct Footprint of Springerville Generating Station in Navajo County, 2022-2040**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 79 | 77 | 76 | 72 | 68 | 63 | 59 | 55 | 51 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $10.5 | $10.3 | $10.2 | $9.6 | $9.0 | $8.5 | $7.9 | $7.3 | $6.8 |
| **Direct Vendor Purchases (Millions 2020 $)** | $12.1 | $12.1 | $12.1 | $12.1 | $12.1 | $12.1 | $9.1 | $9.1 | $9.1 |
| **Direct State and Local Taxes (Millions 2020 $)** | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

| | 2031 | 2032 | 2033 | 2034 | 2035 | 2036-40 |
|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 46 | 42 | 38 | 34 | 30 | 0 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $6.2 | $5.6 | $5.1 | $4.5 | $4.0 | $0 |
| **Direct Vendor Purchases (Millions 2020 $)** | $9.1 | $9.1 | $6.0 | $6.0 | $6.0 | $0 |
| **Direct State and Local Taxes (Millions 2020 $)** | $0 | $0 | $0 | $0 | $0 | $0 |

*Source: Clients*

**Table 17: Estimated Total Changes in Springerville's Contribution to the Navajo County Economy, 2022-2040[36]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $0.9 | $0.2 | -$0.5 | -$3.1 | -$6.3 | -$9.7 | -$16.2 | -$20.2 | -$24.3 | -$28.6 | -$33.0 |
| **Total Employment (Job Years)[37]** | 6 | 2 | -3 | -20 | -41 | -64 | -117 | -143 | -168 | -193 | -219 |
| **Total Private Nonfarm Employment (Job Years)** | 5 | 1 | -3 | -16 | -30 | -46 | -90 | -106 | -122 | -138 | -154 |
| **Real Disposable Personal Income (Millions 2020 $)** | $0.3 | $0.0 | -$0.1 | -$0.9 | -$1.8 | -$2.9 | -$5.3 | -$6.5 | -$7.9 | -$9.5 | -$11.0 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$40.5 | -$45.3 | -$49.8 | -$79.8 | -$83.3 | -$85.4 | -$86.1 | -$87.1 | -$698.1 | -$36.7 |
| **Total Employment (Job Years)** | -273 | -299 | -324 | -500 | -523 | -533 | -536 | -537 | -4,485 | -236 |
| **Total Private Nonfarm Employment (Job Years)** | -197 | -213 | -229 | -372 | -378 | -379 | -377 | -374 | -3,216 | -169 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$13.9 | -$15.5 | -$17.2 | -$27.1 | -$28.0 | -$29.5 | -$30.5 | -$31.5 | -$239.0 | -$12.6 |

*Source: Authors' Calculations*

[36] Table rows may not tally exactly due to rounding.

[37] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The first row of Table 17 estimates the changes in total annual State Gross Domestic Product (GDP) in Navajo County associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Navajo County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a $0.9 million gain in 2022[38] to an $87.1 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County's State GDP is estimated to lose $698.1 million due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $36.7 million State GDP, 2022-2040, in Navajo County alone.

The second row of Table 17 estimates the changes in total employment in Navajo County associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to total employment in Navajo County range from a 6 job year gain in 2022 to a shortfall of 537 job years in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County is estimated to lose 4,485 job years of total employment due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 236 job years of total employment in Navajo County, 2022-2040.

The third row of Table 17 estimates the changes in total private nonfarm employment in Navajo County associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to total private nonfarm employment in Navajo County range from a 5 job year gain in 2022 down to a shortfall of 379 job years in 2038, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County is estimated to lose 3,216 job years of total private nonfarm employment due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 169 job years of private

[38] This is due to a minor increase in direct employment projected by the client.

nonfarm employment in Navajo County, 2022-2040. Seidman estimates that approximately 71.7% of the job year losses will be in private nonfarm sectors (that is, non-government and non-agricultural workers).

The fourth row of Table 17 estimates the changes in Navajo County's RDPI associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to RDPI in Navajo County range from a $0.3 million gain in 2022 down to a shortfall of $31.5 million in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County is estimated to lose $239.0 million RDPI due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $12.6 million RDPI in Navajo County.

Table 18 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Navajo County. Construction and Government (combined) are estimated to account for approximately six out of every 10 job years lost between 2022 and 2040, compared to a counterfactual situation in which Springerville's Navajo County contribution in 2021 continues throughout the study time horizon. Utilities is estimated to account for approximately one in ten of every job year lost, 2022-2040, compared to the continuation of Springerville's Navajo County contribution in 2021

**Table 18: Springerville's Total Employment Impacts by Type in Navajo County, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Construction** | -1,402 | 31.3% |
| **Government** | -1,269 | 28.3% |
| **Utilities** | -440 | 9.8% |
| **Retail and Wholesale Trade** | -285 | 6.4% |
| **Administrative & Waste Services** | -235 | 5.2% |
| **Accommodation & Food Services** | -207 | 4.6% |
| **All Other Types** | -647 | 14.4% |

*Source: Authors' Calculations*

## 3.2 Economic Impact of Coronado Generating Station

Table 19 projects CGS' employment, vendor purchases, and state/local tax payments, 2022-2040, in Apache County, based on Seidman's modeling closure assumption. Seidman assumes that all direct jobs

outside Apache and Navajo at Coronado are initially lost as CGS curtails operations. Thereafter the ratio between Apache and Navajo Counties remains the same as the base year until closure.

Table 20 estimates the total annual losses for the Navajo County economy if CGS closes at the end of 2032, compared to its potential contribution if it continued to operate at the 2021 level. The total changes in annual contributions to the Navajo County economy encompass direct, indirect, and induced impacts.

The first row of Table 20 estimates the changes in total annual State Gross Domestic Product (GDP) in Navajo County associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Navajo County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP ranges from no change in 2022 or 2023 to a $48.3 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County's State GDP is estimated to lose approximately $431.3 million due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $22.7 million State GDP, 2022-2040, in Navajo County alone.

The second row of Table 20 estimates the changes in total employment in Navajo County associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to total employment in Navajo County range from no change in 2022 or 2023 to a shortfall of 310 job years in 2037, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County is estimated to lose 2,815 job years of employment due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 148 job years of total employment in Navajo County, 2022-2040.

**Table 19: Total Direct Footprint of Coronado Generating Station in Navajo County, 2022-2040**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 54 | 54 | 51 | 48 | 43 | 43 | 43 | 43 | 43 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $9.9 | $9.9 | $9.4 | $8.7 | $7.9 | $7.9 | $7.9 | $7.9 | $7.9 |
| **Direct Vendor Purchases (Millions 2020 $)** | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 | $1.3 |
| **Direct State and Local Taxes (Millions 2020 $)** | $0.01 | $0.01 | $0.01 | $0.01 | $0.01 | $0.01 | $0.01 | $0.01 | $0.01 |

| | 2031 | 2032 | 2033-40 |
|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 43 | 43 | 0 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $7.9 | $7.9 | $0 |
| **Direct Vendor Purchases (Millions 2020 $)** | $1.3 | $1.3 | $0 |
| **Direct State and Local Taxes (Millions 2020 $)** | $0.01 | $0.01 | $0 |

*Source: Clients*

**Table 20: Estimated Total Changes in Coronado's Contribution to the Navajo County Economy, 2022-2040[39]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $0.0 | $0.0 | -$1.5 | -$3.9 | -$7.2 | -$8.2 | -$8.9 | -$9.3 | -$9.6 | -$9.9 | -$10.1 |
| **Total Employment (Job Years)[40]** | 0 | 0 | -10 | -27 | -48 | -55 | -59 | -61 | -62 | -62 | -63 |
| **Total Private Nonfarm Employment (Job Years)** | 0 | 0 | -8 | -20 | -35 | -38 | -40 | -41 | -41 | -41 | -41 |
| **Real Disposable Personal Income (Millions 2020 $)** | $0.0 | $0.0 | -$0.4 | -$1.2 | -$2.2 | -$2.5 | -$2.8 | -$3.0 | -$3.2 | -$3.3 | -$3.5 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$38.5 | -$42.0 | -$45.2 | -$46.4 | -$47.0 | -$47.4 | -$47.8 | -$48.3 | -$431.3 | -$22.7 |
| **Total Employment (Job Years)** | -242 | -282 | -303 | -309 | -310 | -309 | -307 | -306 | -2,815 | -148 |
| **Total Private Nonfarm Employment (Job Years)** | -178 | -196 | -205 | -207 | -205 | -202 | -200 | -198 | -1,895 | -100 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$12.8 | -$13.8 | -$15.1 | -$16.0 | -$16.7 | -$17.3 | -$17.9 | -$18.4 | -$150.2 | -$7.9 |

*Source: Authors' Calculations*

[39] Table rows may not tally exactly due to rounding.

[40] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The third row of Table 20 estimates the changes in total private nonfarm employment in Navajo County associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to total private nonfarm employment in Navajo County range from no change in 2022 or 2023 to a shortfall of 207 job years in 2036, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County is estimated to lose 1,895 job years of total private nonfarm employment due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 100 job years of private nonfarm employment in Navajo County, 2022-2040. Seidman estimates that approximately 67.3% of the job year losses will be in private nonfarm sector.

The fourth row of Table 20 estimates the changes in Navajo County's RDPI associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. The annual contributions to RDPI in Navajo County range from no change in 2022 or 2023 to a shortfall of $18.4 million in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Navajo County is estimated to lose $150.2 million RDPI due to the reduced operations and ultimate closure of CGS compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $7.9 million RDPI in Navajo County.

Table 21 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Navajo County. Government and Construction (combined) are estimated to account for more than half of the job years employment lost between 2022 and 2040, compared to a counterfactual situation in which CGS' Navajo County contribution in 2021 continues throughout the study time horizon. Utilities is estimated to account for approximately one in nine of every job years lost, 2022-2040, compared to the continuation of CGS' Navajo County contribution in 2021.

**Table 21: CGS' Total Employment Impacts by Type in Navajo County, 2022-2040[41]**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Government** | -920 | 32.7% |
| **Construction** | -602 | 21.4% |
| **Utilities** | -333 | 11.8% |
| **Retail and Wholesale Trade** | -199 | 7.1% |
| **Administrative & Waste Services** | -175 | 6.2% |
| **Accommodation & Food Services** | -142 | 5.1% |
| **All Other Types** | -444 | 15.8% |

*Source: Authors' Calculations*

## 3.3 Total Economic Impacts of Springerville and Coronado Generating Stations

Table 22 estimates the total annual losses for the Navajo County economy if Springerville closes at the end of 2035 and CGS closes at the end of 2032, compared to their combined potential contribution if they continued to operate at the 2021 level. The total changes in annual contributions to the Navajo County economy encompass direct, indirect, and induced impacts.

The first row of Table 22 estimates the changes in total annual State Gross Domestic Product (GDP) in Navajo County associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Navajo County for the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a $0.9 million gain in 2022 to a $135.4 million shortfall in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Navajo County's State GDP is estimated to lose more than $1.1 billion due to the reduced operations and ultimate closures of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $59.4 million State GDP, 2022-2040, in Navajo County alone.

[41] Percent contribution column may not tally exactly to 100% due to rounding.

**Table 22: Estimated Total Changes in Springerville and Coronado's Contributions to the Navajo County Economy, 2022-2040[42]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $0.9 | $0.2 | -$2.0 | -$7.1 | -$13.5 | -$17.9 | -$25.1 | -$29.5 | -$33.9 | -$38.5 | -$43.1 |
| **Total Employment (Job Years)[43]** | 6 | 2 | -13 | -47 | -89 | -119 | -176 | -204 | -230 | -256 | -282 |
| **Total Private Nonfarm Employment (Job Years)** | 5 | 1 | -10 | -35 | -65 | -84 | -129 | -146 | -163 | -179 | -195 |
| **Real Disposable Personal Income (Millions 2020 $)** | $0.3 | $0.0 | -$0.6 | -$2.1 | -$4.0 | -$5.4 | -$8.1 | -$9.5 | -$11.1 | -$12.8 | -$14.5 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$78.9 | -$87.3 | -$95.0 | -$126.2 | -$130.4 | -$132.8 | -$134.0 | -$135.4 | -$1,129.5 | -$59.4 |
| **Total Employment (Job Years)** | -515 | -581 | -626 | -809 | -833 | -842 | -844 | -843 | -7,300 | -384 |
| **Total Private Nonfarm Employment (Job Years)** | -375 | -409 | -434 | -579 | -583 | -582 | -577 | -573 | -5,111 | -269 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$26.7 | -$29.3 | -$32.4 | -$43.1 | -$44.7 | -$46.8 | -$48.4 | -$50.0 | -$389.2 | -$20.5 |

*Source: Authors' Calculations*

[42] Table rows may not tally exactly due to rounding.

[43] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The second row of Table 22 estimates the changes in total employment in Navajo County associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to total employment in Navajo County range from a gain of 6 job years in 2022 to a shortfall of 844 job years in 2039, compared to the level of their annual contributions in 2021. In total over the 19-year study, Navajo County is estimated to lose 7,300 job years of employment due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at the 2021 level. That's equivalent to an average annual shortfall of 384 job years of total employment in Navajo County, 2022-2040.

The third row of Table 22 estimates the changes in total private nonfarm employment in Navajo County associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to total private nonfarm employment in Navajo County range from a gain of 5 job years in 2022 to a shortfall of 583 job years in 2037, compared to the level of their annual contributions in 2021. In total over the 19-year study, Navajo County is estimated to lose 5,111 job years of total private nonfarm employment due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of 269 job years of private nonfarm employment in Navajo County, 2022-2040. Seidman estimates that approximately 70.0% of the job year losses will be in private nonfarm sectors (that is, non-government and non-agricultural workers).

The fourth row of Table 22 estimates the changes in Navajo County's RDPI associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to RDPI in Navajo County range from a $0.3 million gain in 2022 to a shortfall of $50.0 million in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Navajo County is estimated to lose more than $389.2 million RDPI due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $20.5 million RDPI in Navajo County.

**Table 23: Total Employment Impacts by Type for Springerville and CGS in Navajo County, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Government** | -2,189 | 30.0% |
| **Construction** | -2,004 | 12.0% |
| **Utilities** | -773 | 10.6% |
| **Retail and Wholesale Trade** | -484 | 6.6% |
| **Administrative & Waste Services** | -410 | 5.6% |
| **Accommodation & Food Services** | -349 | 4.8% |
| **All Other Types** | -1,091 | 14.9% |

*Source: Authors' Calculations*

Table 23 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Navajo County. Government is estimated to account for three out of every ten of the shortfall in job years employment, 2022-2040. Construction and Utilities are expected to account for 12.0% and 10.6% of the job years lost respectively, compared to the continuation of Springerville and CGS' Navajo County contribution in 2021.

## 3.4 Fiscal Impacts

In addition to the economic impacts outlined above, the reduced operations and eventual closure assumptions for Springerville and CGS will have significant consequences for state and local government tax revenues. These include, but are not restricted to the fiscal revenues associated with:

- The owner-operators of both generating stations, 2022-2040;
- Navajo County residents working at either generating station (direct employment); and
- Navajo County residents working for other firms, whose jobs are reliant on the operation of the one or both generating stations (indirect and induced employment).

These impacts will now be examined for Navajo County.

### 3.4.1 Direct Fiscal (Tax) Payments by Plant Ownership

In 2021, Springerville is estimated to make $14.8 million in local tax payments and $324,574 in state tax payments. Navajo County does not receive any of Springerville's local tax payments, which encompass property taxes. The State tax payments are primarily for use tax.

Also in 2021, CGS is estimated to make $8.5 million in local tax payments and $864,850 in state tax payments. Navajo County received $12,325 of the local tax payments (sales tax).

Table 24 summarizes the projected annual local tax payments for both plants (combined) in Navajo County. This suggests that the two generating stations (combined) will pay in total $98,600 less in local taxes in Navajo County, 2022-2040, compared to a counterfactual situation in which both plants operate at their 2021 levels.

**Table 24: Projected Owner Operator Annual Direct Local Tax Payments in Navajo County**

| YEAR | LOCAL TAX PAYMENTS |
|---|---|
| **2022** | $12,325 |
| **2023** | $12,325 |
| **2024** | $12,325 |
| **2025** | $12,325 |
| **2026** | $12,325 |
| **2027** | $12,325 |
| **2028** | $12,325 |
| **2029** | $12,325 |
| **2030** | $12,325 |
| **2031** | $12,325 |
| **2032** | $12,325 |

*Source: Clients' Projections with Authors' Calculations*

### 3.4.2 Fiscal (Tax) Payments of Plant Employees

Additional forms of fiscal impact will occur with the planned reduction in operations and ultimate closure of the plants. The utilities have reported that 183 workers are directly employed at CGS and 380 workers at Springerville. Table 25 shows the primary zip code residence of each generating station's direct employees in Navajo County, together with the sum of wages. For Springerville, the client supplied the wages by zip code, but only reported the number of employees by county. Seidman therefore estimates the distribution of employees by zip code based on an average wage of $70,062.39. Approximately 20.3% of Springerville's employees live in Navajo County. For CGS, the client supplies employee totals and sum of wages by zip code. Approximately 29.5% of CGS employees reside in Navajo County.

In 2021, Seidman estimates that 77 Navajo County-based employees at Springerville contribute approximately $407,473 in city, county, and state tax payments within the county.

Also in 2021, Seidman estimates that 54 Navajo County-based employees at CGS contribute $435,383 in city, county, and state tax payments within the county.

**Table 25: Primary Zip Code Residence of Springerville & CGS' Navajo County Based Employees, FY2021**

| ZIPCODE | SPRINGERVILLE | | CORONADO | |
|---|---|---|---|---|
| | NUMBER OF EMPLOYEES | SUM OF WAGES | NUMBER OF EMPLOYEES | SUM OF WAGES |
| 85901 | 29.8 | $2,087,778 | 20 | $2,048,978 |
| 85902 | 3.3 | $233,348 | | |
| 85929 | 9.8 | $685,338 | 5 | $600,311 |
| 85935 | 9.1 | $638,429 | | |
| 85937 | 9.0 | $631,570 | 20 | $2,266,712 |
| 85939 | 16.0 | $1,119,208 | 9 | $924,475 |

*Source: Clients and Authors' Calculation*

Table 26 estimates the total shortfall in fiscal revenues generated by Springerville and CGS employee residing in Navajo County, 2022-2040, if both generating stations follow the same closure plan as the economic impact analysis, compared to their potential contribution if they continued to operate at the 2021 level.

Seidman estimates that Navajo County could lose $1.8 million in direct employee local fiscal impacts if Springerville initially reduces operations and closes at the end of 2035. That's equivalent to an average annual shortfall of $96,728 in local taxes in Navajo County, 2022-2040. A total of $1.3 million state tax payments from Springerville workers residing in Navajo County could also be lost, equivalent to an annual average shortfall of $70,384.

**Table 26: Estimating the Shortfall in Plant (Direct) Employee Fiscal Impacts, 2022-2040**

| TAX TYPE | SPRINGERVILLE | CORONADO |
|---|---|---|
| County Tax Shortfall | -$1,414,243 | -$1,676,302 |
| City Tax Shortfall | -$423,589 | -$470,065 |
| State Tax Shortfall | -$1,337,299 | -$2,019,704 |
| | | |
| **TOTAL** | -$3,175,132 | -$4,166,071 |

*Source: Authors' Calculations*

Seidman estimates that Navajo County could lose more than $2.1 million in direct employee local fiscal impacts if CGS initially reduces operations and closes at the end of 2032 That's equivalent to an average annual shortfall of $112,967 in local taxes in Navajo County, 2022-2040. A total of $2.0 million state tax payments from CGS workers residing in Navajo County could also be lost, equivalent to an annual average shortfall of $106,300.

Summing together the shortfalls in direct employee fiscal contributions for both generating stations, Seidman therefore estimates that Navajo County could lose on average $209,695 in local taxes each year, 2022-2040, compared to a counterfactual situation in which both plants continue to operate at their 2021 level. [44]

### 3.4.3 Fiscal (Tax) Payments of the Plants' Indirect and Induced Employment

The operation of both plants also supports employment impacts at local suppliers (indirect impact), and at other Navajo County employers (induced employment). These multiplier employment impacts have a corresponding effect on income.

In 2021, Seidman estimates that Springerville's indirect and induced employment generates approximately $765,769 in city, county, and state tax payments within Navajo County.

Also in 2021, Seidman estimates that CGS' indirect and induced employment generates approximately $392,327 in city, county, and state tax payments within Navajo County.

Table 27 estimates the total shortfall in fiscal revenues generated by indirect and induced employment in Navajo County, 2022-2040, if both generating stations follow the same closure plan as the economic impact analysis, compared to their potential contribution if they continued to operate at the 2021 level.

Seidman estimates that Navajo County could lose $5.4 million in indirect and induced employment local fiscal revenues and $5.1 million in state taxes, 2022-2040, if Springerville initially reduces operations and closes at the end of 2035. That's equivalent to an average annual shortfall of more than $286,598 in local Navajo County taxes and more than $268,324 each year in state taxes, 2022-2040.

[44] This annual average excludes the state tax shortfall, part of which will be shared with Navajo County under the State's Revenue Share mechanism.

Seidman also estimates that Navajo County could lose $4.5 million in indirect and induced employment local fiscal revenues and $4.2 million in state taxes, 2022-2040, if CGS initially reduces operations and closes at the end of 2032. That's equivalent to an average annual shortfall of $237,960 in local Navajo County taxes and $220,963 each year in state taxes, 2022-2040.

Summing together the shortfalls in indirect and induced employment fiscal contributions for both generating stations, Seidman therefore estimates that Navajo County could lose on average $524,558 million each year in local taxes, 2022-2040, compared to a counterfactual situation in which both plants continue to operate at their 2021 level. This is in addition to an average annual shortfall of approximately $489,287 in state tax payments.

**Table 27: Estimating the Shortfall in Indirect and Induced Employment Fiscal Impacts, 2022-2040**

| TAX TYPE | SPRINGERVILLE | CORONADO |
|---|---|---|
| County Tax Shortfall | -$4,190,577 | -$3,479,408 |
| City Tax Shortfall | -$1,254,778 | -$1,041,834 |
| State Tax Shortfall | -$5,098,149 | -$4,198,305 |
| | | |
| **TOTAL** | -$10,543,504 | -$8,719,547 |

*Source: Authors' Calculations*

### 3.4.4 Fiscal (Tax) Payments of the Plants' Total Navajo County Employment Effects

Table 28 summarizes the total shortfall in fiscal revenues associated with the direct, indirect, and induced employment footprint of both generating stations in Navajo County, 2022-2040, compared to their potential contribution if they continued to operate at the 2021 level.

Seidman estimates the reduction in operations and eventual closure of Springerville and CGS could result in a total local fiscal revenue shortfall of $14.0 million in Navajo County, 2022-2040, compared to their potential contribution if they continued to operate at the 2021 level, and a total state tax payment shortfall of $12.7 million. This is equivalent to an average annual shortfall of $734,253 in local Navajo County taxes, and a further $665,971 in state tax payments. These figures encompass estimates of the direct fiscal payments made by the plants' employees residing in Navajo County and estimates of the fiscal revenues associated with the indirect and induced employment. These fiscal tax revenue shortfalls are in addition to the economic impact shortfalls previously estimated in this Section.

**Table 28: Estimating the Shortfall in Direct, Indirect and Induced Employment Fiscal Impacts, 2022-2040**

| PLANT | IMPACT TYPE | COUNTY | CITY | STATE |
|---|---|---|---|---|
| **SPRINGERVILLE** | Direct | -$1,414,243 | -$423,589 | -$1,337,299 |
| | Indirect | -$4,190,577 | -$1,254,778 | -$5,098,149 |
| | Total | -$5,604,821 | -$1,678,367 | -$6,435,448 |
| | | | | |
| **CGS** | Direct | -$1,676,302 | -$470,065 | -$2,019,704 |
| | Indirect | -$3,479,408 | -$1,041,834 | -$4,198,305 |
| | Total | -$5,155,711 | -$1,511,899 | -$6,218,009 |
| | | | | |
| **SPRINGERVILLE & CGS (COMBINED)** | Direct | -$3,090,546 | -$893,655 | -$3,357,003 |
| | Indirect | -$7,669,986 | -$2,296,612 | -$9,296,454 |
| | Total | -$10,760,531 | -$3,190,266 | -$12,653,457 |

*Source: Authors' Calculations*

### 3.4.5 Total Local Fiscal Implications

Table 29 summarizes Seidman's estimated shortfall in local fiscal revenues in Navajo County arising from the reduction in operations and eventual closure assumptions of Springerville and CGS, compared to a counterfactual scenario in which both plants continue to operate at their 2021 levels. In total over the 19-year time horizon, Seidman estimates that Navajo County and its constituent towns/cities could see a shortfall of $14.0 million in local tax revenues, compared to a counterfactual scenario in which Springerville and CGS continue to operate at their 2021 levels. This is equivalent to an average annual loss of $739,442 in Navajo County. [45]

**Table 29: Summary of Navajo County Total Fiscal (Tax) Revenue Payments Shortfall, 2022-2040**

| PLANT | LOCAL FISCAL TAX SHORTFALL NAVAJO COUNTY | STATE TAX PAYMENT SHORTFALL NAVAJO COUNTY |
|---|---|---|
| Springerville | -$7,283,188 | -$6,435,448 |
| CGS | -$6,667,610 | -$6,218,009 |
| | | |
| **TOTAL** | **-$14,049,398** | **-$12,653,457** |

*Source: Authors' Calculations*

[45] This excludes an additional $665,971 shortfall in annual state tax payments, 2022-2040, a portion of which is returned to Navajo County in accordance with the State's revenue sharing mechanism.

Seidman's estimates of a shortfall in fiscal tax revenues are due to changes in the operational status of both generating stations, the number of people that they employ, and the multiplier effects on employment and income elsewhere within Navajo County.

The estimates are conservative in the sense that they do not include estimates of the business taxes paid by Navajo County (non-utility) businesses as they serve the existing needs of the workers currently employed by the plants. For example, on average businesses pay (through utilities, supplies, rentals, leases, use taxes, etc.) approximately 40% of all sales taxes collected in the State of Arizona.

As previously stated, the precise impacts of this shortfall in tax revenues will depend on the timing of the plant closures, the related timing of changes to school pupil headcount, and the willingness/legal ability of the various county jurisdictions to levy higher tax rates commensurate with the erosion of state/local tax revenue sources.

## 3.5 Employment & Income Impacts in Holbrook, Pinetop, Show Low, Snowflake and Taylor

The REMI model is not capable of estimating economic impacts at a town/city, school district or zip code level. However, to help the reader contextualize the economic impacts at a more granular level, the client has additionally asked for some direct employment and income insights for Holbrook, Pinetop, Show Low, Snowflake and Taylor.

Table 30 summarizes the annual shortfall for all five Navajo County locations ***following*** the closure of both generation stations. That is, from 2036 onwards, based on the closure assumptions described earlier. The table combines the employment and wages footprint of people directly employed at Springerville or CGS (collated by the client) with Seidman's estimates of the state and local taxes paid by those workers.

Show Low will suffer the biggest shortfall in Navajo County, losing 53 jobs paying up to $4.4 million in wages and salaries each year. Those 53 employees conservatively account for $166,042 in local tax revenues and $158,953 in state tax revenues. In 2019, U.S. Census Bureau estimates Show Low's population at 11,130. U.S. Census Bureau also estimates that Show Low has 4,377 households, each made up of around 2.52 members. This suggests that up to 1.2 percent of Show Low households could be negatively impacted by the reduced operation and eventual closure of Springerville and CGS.

**Table 30: Direct Employment and Income Losses by Town/City, Post-Closure**

| GEOGRAPHY | ANNUAL LOSSES POST-CLOSURE OF BOTH GENERATING STATIONS (2036 onwards) | | | |
|---|---|---|---|---|
| | Loss of Jobs | Sum of Wages | Local Taxes | State Taxes |
| **Holbrook** | 0 | 0 | 0 | 0 |
| **Pinetop** | 24 | $1,924,078 | $80,802 | $70,024 |
| **Show Low** | 53 | $4,370,105 | $166,042 | $158,953 |
| **Snowflake** | 29 | $2,898,282 | $110,120 | $104,921 |
| **Taylor** | 25 | $2,043,683 | $77,650 | $74,345 |

*Source: Authors' Calculations*

Note that no employees currently report living in Holbrook.

Workers at the two generating stations are paid average salaries that are significantly higher than the median wages in Navajo County, so the loss of their wages will likely result in spending and home ownership declines which will in turn erode the tax bases in the two counties.

Location-specific estimates of the multiplier employment and income effects are beyond the scope of the current study. It is logical to presume that the multiplier impacts will accrue commensurate with the distribution of direct impacts in Navajo County, but this is by no means certain.

# 4.0 ECONOMIC IMPACTS FOR ARIZONA, 2022-2040

The prior two Sections estimated the economic and fiscal impacts for Apache County and Navajo County. Using Seidman's closure timeline assumptions for Springerville (by end of 2035) and CGS (by end of 2032), the current Section estimates the economic impacts for the State of Arizona as a whole.[46]

Each series of annual contribution estimates are compared to a counterfactual situation in which Springerville and CGS are assumed to continue to operate at their 2021 levels.

## 4.1 Economic Impact of Springerville Generating Station

Table 31 projects Springerville's employment, vendor purchases, and state/local tax payments, 2022-2040, in the State of Arizona, based on Seidman's modeling closure assumption. Due to the dynamic nature of the modeling, the economic contribution of the generating station is estimated up to and including 2040.[47]

Seidman assumes that all direct jobs outside Apache and Navajo are initially lost as Springerville curtails operations. This is a conservative assumption that will initially reduce the economic shortfalls in both counties. [48] Thereafter the ratio between the two counties remains the same as the base year until closure.

Table 32 estimates the total annual losses for the State of Arizona economy if Springerville closes at the end of 2035, compared to its potential contribution if it continued to operate at the 2021 level. The total changes in annual contributions to the Arizona economy encompass direct, indirect, and induced impacts. The table summarizes the impact of changes in the operation of Springerville for the economy as a whole and not just the energy sector.

[46] The scope of work did not request fiscal impacts at a State level on a par comparable to those provided for Apache and Navajo Counties. Seidman was only asked to estimate fiscal impacts for Apache and Navajo Counties.
[47] Please note: the client's scenario data suggests that property taxes will continue to be paid, 2036-2040.
[48] This assumption has been made because the utility companies are unable to provide with any certainty the home zip codes of the plant employees that could be lost each year.

**Table 31: Total Direct Statewide Footprint of Springerville Generating Station, 2022-2040**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Employment[49] (Salaried and Hourly)** | 385 | 377 | 357 | 338 | 318 | 298 | 278 | 258 | 238 |
| **Direct Wages, Salaries and Benefits[50] (Millions 2020 $)** | $51.5 | $50.4 | $47.8 | $45.2 | $42.5 | $39.8 | $37.2 | $34.5 | $31.8 |
| **Direct Vendor Purchases (Millions 2020 $)** | $24.6 | $24.6 | $24.6 | $24.6 | $24.6 | $24.6 | $18.5 | $18.5 | $18.5 |
| **Direct State and Local Taxes (Millions 2020 $)** | $15.5 | $15.5 | $15.5 | $15.5 | $15.5 | $15.5 | $11.7 | $11.7 | $11.7 |

| | 2031 | 2032 | 2033 | 2034 | 2035 | 2036-40 |
|---|---|---|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 218 | 199 | 179 | 159 | 139 | 0 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $29.2 | $26.6 | $23.9 | $21.3 | $18.6 | $0 |
| **Direct Vendor Purchases (Millions 2020 $)** | $18.5 | $18.5 | $12.3 | $12.3 | $12.3 | $0 |
| **Direct State and Local Taxes (Millions 2020 $)** | $11.7 | $11.7 | $8.7 | $8.7 | $8.7 | $39.3 |

*Source: Clients*

[49] This only includes employees residing in Arizona.
[50] This is only for employees residing in Arizona.

**Table 32: Estimated Total Changes in Springerville's Contribution to the Arizona Economy, 2022-2040[51]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | $2.9 | $0.6 | -$5.8 | -$14.3 | -$23.6 | -$33.3 | -$56.9 | -$67.6 | -$77.9 | -$88.2 | -$98.5 |
| **Total Employment (Job Years)[52]** | 19 | 6 | -36 | -93 | -155 | -219 | -412 | -478 | -539 | -596 | -652 |
| **Total Private Nonfarm Employment (Job Years)** | 18 | 5 | -35 | -88 | -145 | -203 | -364 | -422 | -475 | -525 | -575 |
| **Real Disposable Personal Income (Millions 2020 $)** | $0.9 | $0.1 | -$1.7 | -$4.2 | -$7.0 | -$9.9 | -$18.7 | -$21.7 | -$25.4 | -$29.2 | -$32.9 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$121.2 | -$131.9 | -$143.1 | -$219.0 | -$229.4 | -$237.3 | -$245.1 | -$248.4 | -$2,037.9 | -$107.3 |
| **Total Employment (Job Years)** | -817 | -872 | -929 | -1,371 | -1,439 | -1,482 | -1,527 | -1,530 | -13,123 | -691 |
| **Total Private Nonfarm Employment (Job Years)** | -713 | -760 | -810 | -1,225 | -1,278 | -1,311 | -1,337 | -1,336 | -11,576 | -609 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$41.7 | -$45.1 | -$49.5 | -$74.4 | -$77.1 | -$81.9 | -$87.0 | -$89.9 | -$696.2 | -$36.6 |

*Source: Authors' Calculations*

[51] Table rows may not tally exactly due to rounding.

[52] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The first row of Table 32 estimates the changes in total annual State Gross Domestic Product (GDP) in Arizona associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Arizona on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a $2.9 million gain in 2022[53] to a $248.4 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, State GDP is estimated to lose more than $2.0 billion due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $107.3 million State GDP, 2022-2040, in Arizona.

The second row of Table 32 estimates the changes in total employment in Arizona associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. Total employment refers to the number of full- and part-time jobs associated with Springerville Generating Station. It includes the self-employed, all federal, state, and local government employment, military employment, and contract workers, but excludes unpaid family workers and volunteers. Total employment is measured in job years. A job year refers to the employment of an individual for 12 consecutive months. The annual contributions to total employment in Arizona range from a 19 job year gain in 2022 to a shortfall of 1,530 job years in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Arizona is estimated to lose 13,123 job years of employment due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 691 job years of employment within the state, 2022-2040.

The third row of Table 32 estimates the changes in total private nonfarm employment in Arizona associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. Total private nonfarm employment is similar in nature to total employment but excludes all full-time and part-time government and agricultural employment. Total private nonfarm employment is also measured in job years. A job year again refers to the employment of an individual for 12 consecutive months. The annual contributions to total private nonfarm employment

[53] This is due to a minor increase in direct employment projected by the client.

in Arizona range from an 18 job year gain in 2022 to a shortfall of 1,337 job years in 2039, compared to the level of its annual contribution in 2021. In total over the 19-year study, Arizona is estimated to lose 11,576 job years of total private nonfarm employment due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 609 job years of employment within the state, 2022-2040. Seidman estimates that approximately 88.2% of the job year losses will be in private nonfarm sectors (that is, non-government and non-agricultural jobs).

The fourth row of Table 32 estimates the changes in Arizona's real disposable personal income (RDPI) associated with Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. RDPI refers to the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving. The annual contributions to RDPI in Arizona range from a $0.9 million gain in 2022 to a shortfall of $89.9 million in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Arizona is estimated to lose $696.2 million RDPI due to the reduced operations and ultimate closure of Springerville, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $36.6 million RDPI within the state.

Table 33 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in the State of Arizona. Construction is estimated to account for approximately one fourth of the shortfall in job years employment, 2022-2040. Government and Retail and Wholesale Trade are expected to account for more than one in ten of the job years lost respectively, compared to the continuation of Springerville's statewide contribution in 2021. Professional, Scientific, and Technical Services is also estimated to account for a shortfall of more than 1,000 job years employment, compared to a continuation of the generating station's statewide total employment footprint in 2021.

**Table 33: Springerville's Total Employment Impacts by Type in Arizona, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Construction** | -3,239 | 24.7% |
| **Government** | -1,547 | 11.8% |
| **Retail and Wholesale Trade** | -1,340 | 10.2% |
| **Professional, Scientific, and Technical** | -1,088 | 8.3% |
| **Finance, Insurance & Real Estate** | -894 | 6.8% |
| **Administrative & Waste Services** | -873 | 6.7% |
| **Utilities** | -848 | 6.5% |
| **Healthcare & Social Assistance** | -819 | 6.2% |
| **Accommodation & Food Services** | -647 | 4.9% |
| **All Other Types** | -1,828 | 13.9% |

*Source: Authors' Calculations*

## 4.2 Economic Impacts of Coronado Generating Station

Table 34 projects Coronado's employment, vendor purchases, and state/local tax payments, 2022-2040, in the State of Arizona, based on Seidman's modeling closure assumption. Due to the dynamic nature of the modeling, the economic contribution of the generating station is estimated up to and including 2040.

Seidman assumes that all direct jobs outside Apache and Navajo are initially lost as Coronado curtails operations. This is a conservative assumption that will initially reduce the economic shortfalls in both counties. [54] Thereafter the ratio between the two counties remains the same as the base year until closure.

Table 35 projects the total annual losses for the State of Arizona economy if CGS closes at the end of 2032, compared to its potential contribution if it continued to operate at the 2021 level. The total changes in annual contributions to the Arizona economy encompass direct, indirect, and induced impacts.

[54] This assumption has been made because the utility companies are unable to provide with any certainty the home zip codes of the plant employees that could be lost each year.

**Table 34: Total Direct Statewide Footprint of Coronado Generating Station, 2022-2040**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Employment[55] (Salaried and Hourly)** | 170 | 161 | 152 | 141 | 128 | 128 | 128 | 128 | 128 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $29.9 | $28.3 | $26.7 | $24.8 | $22.5 | $22.5 | $22.5 | $22.5 | $22.5 |
| **Direct Vendor Purchases (Millions 2020 $)** | $16.8 | $16.8 | $16.8 | $16.8 | $16.8 | $16.8 | $16.8 | $16.8 | $16.8 |
| **Direct State and Local Taxes (Millions 2020 $)** | $9.3 | $9.3 | $9.3 | $9.5 | $9.6 | $9.6 | $9.6 | $9.6 | $9.6 |

| | 2031 | 2032 | 2033-40 |
|---|---|---|---|
| **Direct Employment (Salaried and Hourly)** | 128 | 128 | 0 |
| **Direct Wages, Salaries and Benefits (Millions 2020 $)** | $22.5 | $22.5 | $0 |
| **Direct Vendor Purchases (Millions 2020 $)** | $16.8 | $16.8 | $0 |
| **Direct State and Local Taxes (Millions 2020 $)** | $9.6 | $9.6 | $8.2 |

*Source: Clients*

[55] The client's data inputs indicate that Coronado's employees are all Arizona residents.

**Table 35: Estimated Total Changes in Coronado's Contribution to the Arizona Economy, 2022-2040[56]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$4.6 | -$8.6 | -$12.9 | -$17.9 | -$23.6 | -$25.0 | -$25.7 | -$26.3 | -$26.3 | -$26.4 | -$26.5 |
| **Total Employment (Job Years)[57]** | -30 | -58 | -89 | -121 | -158 | -168 | -171 | -173 | -169 | -167 | -165 |
| **Total Private Nonfarm Employment (Job Years)** | -29 | -55 | -83 | -113 | -147 | -155 | -157 | -158 | -154 | -151 | -149 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$1.4 | -$2.5 | -$3.9 | -$5.4 | -$7.2 | -$7.6 | -$8.1 | -$8.5 | -$8.7 | -$8.9 | -$9.1 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$100.1 | -$120.0 | -$126.1 | -$129.7 | -$131.5 | -$132.5 | -$133.2 | -$134.0 | -$1,231.1 | -$64.8 |
| **Total Employment (Job Years)** | -629 | -804 | -846 | -864 | -867 | -862 | -856 | -849 | -8,045 | -423 |
| **Total Private Nonfarm Employment (Job Years)** | -583 | -695 | -726 | -738 | -738 | -731 | -724 | -717 | -7,005 | -369 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$33.3 | -$39.5 | -$42.3 | -$44.8 | -$46.7 | -$48.3 | -$49.7 | -$51.1 | -$427.1 | -$22.5 |

*Source: Authors' Calculations*

[56] Table rows may not tally exactly due to rounding.

[57] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The first row of Table 35 estimates the changes in total annual State Gross Domestic Product (GDP) in Arizona associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in Arizona on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a $4.6 million shortfall in 2022 to a $134.0 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, State GDP is estimated to lose more than $1.2 billion due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $64.8 million State GDP, 2022-2040, in Arizona.

The second row of Table 35 estimates the changes in total employment in Arizona associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. Total employment refers to the number of full- and part-time jobs associated with CGS. It includes the self-employed, all federal, state, and local government employment, military employment, and contract workers, but excludes unpaid family workers and volunteers. Total employment is measured in job years. A job year refers to the employment of an individual for 12 consecutive months. The annual contributions to total employment in Arizona range from a 30-job year shortfall in 2022 to an 867-job year shortfall in 2037, compared to the level of its annual contribution in 2021. In total over the 19-year study, Arizona is estimated to lose 8,045 job years of employment due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 423 job years of employment within the state, 2022-2040.

The third row of Table 35 estimates the changes in total private nonfarm employment in Arizona associated with CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. Total private nonfarm employment is similar in nature to total employment but excludes all full-time and part-time government and agricultural employment. Total private nonfarm employment is also measured in job years. A job year again refers to the employment of an individual for 12 consecutive months. The annual contributions to total private nonfarm employment in Arizona range from a 29-job year shortfall in 2022 to a 738-job year shortfall in 2036 or 2037, compared to the level of its annual contribution in 2021. In total over the 19-year study, Arizona is estimated to lose 7,005 job

years of total private nonfarm employment due to the reduced operations and ultimate closure of CGS compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of 369 job years of employment within the state, 2022-2040. Seidman estimates that approximately 87.1% of the job year losses will be in private nonfarm sectors (that is, non-government and non-agricultural workers).

The fourth row of Table 35 estimates the changes in Arizona's real disposable personal income (RDPI) associated with CGS compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. RDPI refers to the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving. The annual contributions to RDPI in Arizona range from a $1.4 million shortfall in 2022 to a $51.1 million shortfall in 2040, compared to the level of its annual contribution in 2021. In total over the 19-year study, Arizona is estimated to lose $427.1 million RDPI due to the reduced operations and ultimate closure of CGS, compared to a counterfactual situation in which the generating station continues to operate at the 2021 level. That's equivalent to an average annual shortfall of $22.5 million RDPI within the state.

**Table 36: CGS' Total Employment Impacts by Type in Arizona, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Construction** | -1,885 | 23.4% |
| **Government** | -1,040 | 12.9% |
| **Retail and Wholesale Trade** | -854 | 10.6% |
| **Professional, Scientific, and Technical** | -656 | 8.2% |
| **Finance, Insurance & Real Estate** | -536 | 6.7% |
| **Administrative & Waste Services** | -517 | 6.4% |
| **Healthcare & Social Assistance** | -504 | 6.3% |
| **Utilities** | -490 | 6.1% |
| **Accommodation & Food Services** | -398 | 4.9% |
| **All Other Types** | -1,165 | 14.5% |

*Source: Authors' Calculations*

Table 36 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in the State of Arizona. Construction is estimated to account for approximately one fourth of the shortfall in job years employment, 2022-2040. Government and Retail and Wholesale Trade are both expected to

account for approximately one in eight and one in ten of the job years lost respectively, compared to a continuation of the generating station's statewide total employment footprint in 2021.

## 4.3 Total Economic Impacts of Springerville & Coronado Generating Stations

Table 37 estimates the total annual losses for the Arizona economy if Springerville closes at the end of 2035 and CGS closes at the end of 2032, compared to their combined potential contribution if they continued to operate at the 2021 level. The total changes in annual contributions to the Arizona economy encompass direct, indirect, and induced impacts.

The first row of Table 37 estimates the changes in total annual State Gross Domestic Product (GDP) in Arizona associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. State GDP is the monetary value of all finished goods and services produced in the Arizona economy on an annual basis. It is a measure of the health of the economy as a whole and is therefore not restricted to the energy sector. The annual contributions to State GDP range from a $1.7 shortfall million in 2022 to a $382.3 million shortfall in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Arizona's State GDP is estimated to lose approximately $3.3 billion due to the reduced operations and ultimate closures of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $172.1 million State GDP, 2022-2040, in Arizona.

The second row of Table 37 estimates the changes in total employment in Arizona associated with Springerville and CGS, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to total employment in Arizona range from a shortfall of 11 job years in 2022 to a shortfall of 2,383 job years in 2039, compared to the level of their annual contributions in 2021. In total over the 19-year study, Arizona is estimated to lose 21,168 job years of employment due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at the 2021 level. That's equivalent to an average annual shortfall of 1,114 job years of total employment in Arizona, 2022-2040.

**Table 37: Estimated Total Changes in Springerville and Coronado's Contributions to the Arizona Economy, 2022-2040[58]**

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$1.7 | -$8.0 | -$18.7 | -$32.2 | -$47.2 | -$58.3 | -$82.7 | -$93.9 | -$104.3 | -$114.6 | -$125.0 |
| **Total Employment (Job Years)[59]** | -11 | -53 | -125 | -214 | -312 | -386 | -583 | -651 | -708 | -763 | -817 |
| **Total Private Nonfarm Employment (Job Years)** | -10 | -50 | -118 | -201 | -292 | -358 | -521 | -580 | -629 | -676 | -724 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$0.5 | -$2.4 | -$5.7 | -$9.7 | -$14.1 | -$17.5 | -$26.8 | -$30.2 | -$34.1 | -$38.1 | -$42.0 |

| | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | TOTAL 2022-2040 | AVERAGE ANNUAL LOSS |
|---|---|---|---|---|---|---|---|---|---|---|
| **State Gross Domestic Product (Millions 2020 $)** | -$221.3 | -$251.8 | -$269.2 | -$348.7 | -$360.9 | -$369.8 | -$378.4 | -$382.3 | -$3,269.0 | -$172.1 |
| **Total Employment (Job Years)** | -1,447 | -1,676 | -1,775 | -2,235 | -2,306 | -2,345 | -2,383 | -2,379 | -21,168 | -1,114 |
| **Total Private Nonfarm Employment (Job Years)** | -1,296 | -1,455 | -1,536 | -1,963 | -2,015 | -2,042 | -2,061 | -2,053 | -18,581 | -978 |
| **Real Disposable Personal Income (Millions 2020 $)** | -$75.0 | -$84.6 | -$91.8 | -$119.2 | -$123.8 | -$130.2 | -$136.7 | -$141.0 | -$1,123.3 | -$59.1 |

*Source: Authors' Calculations*

[58] Table rows may not tally exactly due to rounding.

[59] Please note: a job year is not synonymous with a job. One person employed by the same firm for six years accounts for six job years employment but only one job.

The third row of Table 37 estimates the changes in total private nonfarm employment in Arizona, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to total private nonfarm employment in Arizona range from a shortfall of 10 job years in 2022 to a shortfall of 2,061 job years in 2039, compared to the level of their annual contributions in 2021. In total over the 19-year study, Arizona is estimated to lose 18,581 job years of total private nonfarm employment due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of 978 job years of private nonfarm employment in Arizona, 2022-2040. Seidman estimates that approximately 87.8% of the job year losses will be in private nonfarm sectors (that is, non-government and non-agricultural workers).

The fourth row of Table 37 estimates the changes in Arizona's RDPI, compared to a counterfactual situation in which both generating stations continue to operate at the 2021 level. The annual contributions to RDPI in Arizona range from a shortfall of $0.5 million in 2022 to a shortfall of $141.0 million in 2040, compared to the level of their annual contributions in 2021. In total over the 19-year study, Arizona is estimated to lose more than $1.1 billion RDPI due to the reduced operations and ultimate closure of Springerville and CGS, compared to a counterfactual situation in which the generating stations continue to operate at their 2021 level. That's equivalent to an average annual shortfall of $59.1 million RDPI in Arizona.

**Table 38: Total Statewide Employment Impacts by Type for Springerville and CGS, 2022-2040**

| EMPLOYMENT TYPE | TOTAL NUMBER OF JOB YEARS | PERCENT CONTRIBUTION |
|---|---|---|
| **Construction** | -5,124 | 24.2% |
| **Government** | -2,587 | 12.2% |
| **Retail and Wholesale Trade** | -2,194 | 10.4% |
| **Professional, Scientific, and Technical** | -1,744 | 8.2% |
| **Finance, Insurance & Real Estate** | -1,430 | 6.8% |
| **Administrative & Waste Services** | -1,390 | 6.6% |
| **Utilities** | -1,338 | 6.3% |
| **Healthcare & Social Assistance** | -1,323 | 6.3% |
| **Accommodation & Food Services** | -1,045 | 4.9% |
| **All Other Types** | -2,993 | 14.1% |

*Source: Authors' Calculations*

Table 38 summarizes the estimated shortfall in total employment by type during the 19-year time horizon in Arizona. Construction is estimated to account for almost one fourth of the shortfall in job years employment, 2022-2040. Government and Retail and Wholesale Trade are expected to account for 12.2% and 10.4% of the job years lost respectively, compared to the continuation of Springerville and CGS' statewide contribution in 2021.

SRP and TEP are engaged in on going coal community transition efforts to support the economic development of the affected communities. These efforts include, but are not limited to, the commissioning of additional studies to analyze the economic impact of expanding local broadband access, increasing workforce development training, and enhancing transportation infrastructure in the coal communities.

# APPENDIX

# DATA, STUDY METHOD, AND ASSUMPTIONS

## A1 Modeling Assumptions

As part of this study, Seidman has assumed that Springerville Generating Station will will cease operations at the end of 2035 and CGS will cease operations at the end of 2032. Both closure assumptions are for modeling purposes only. The closure date for Springerville is an assumption for modeling purposes only, since TEP has not announced a closure date. SRP has announced it will reduce operation of both units at CGS up until it closes in 2032. The Springerville individual generating unit owners have not announced closure dates, while the Salt River Project (SRP) has announced it will reduce operation of both units at CGS up until it closes no later than 2032.[60]

Springerville is assumed to have four operational units between 2022 and 2027, three operational units between 2028 and 2032, and two operational units between 2033 and 2035. The maximum annual generating capacities are 1,600 MW, 1,200 MW and 800 MW respectively. Seidman ***assumes*** for modeling purposes that it ceases operations after 2035.

CGS is assumed to have two operational units between 2022 and 2032, and a maximum annual generating capacity of 760 MW. Seidman ***assumes*** for modeling purposes that it ceases operations after 2032.

The BAU (counterfactual) scenario for the modeling is the annual operation of Springerville and Coronado Generating Stations in 2021.

The REMI inputs consist of the projected change in direct jobs and vendor purchases each year, 2022 through 2040, at each generating station, compared to the 2021 BAU year of operations. Each input is

[60] For this study, a 'retired plant site', 'cease operations', 'closure', and 'decommissioning' are defined as follows:

***Retired Plant Site:*** The site of a plant that formerly produced electrical or mechanical power but is now out of service. It includes plants that have been abandoned, decommissioned, damaged by natural disaster, or dismantled.
***Cease Operations:*** To cease conducting the normal operation of a facility when it is reasonable to expect that such operation will not be resumed by the owner at the facility. The term shall not include the sale or transfer of a facility in the ordinary course of business or a permit transfer in accordance with board regulations.
***Closure:*** the act of permanently or temporarily shutting down the operation of a plant.
***Decommissioning:*** The electric-generating equipment—such as precipitators, boilers, turbines, and generators—are shut down and operating permits are terminated. Unused coal and materials associated with both the generation process and the buildings and structures are removed. The electric-generating equipment may be used at other plants or sold as scrap.

shown as an annual loss, to estimate how much of a total loss to the economy the closure of each generating station will be compared to 2021.

Vendor data is assumed to decline proportionately in line with the closure of each generating station's operating units. Unless otherwise provided by the client, the state and local government tax payments are also assumed to decline proportionately consistent with the closure of each unit.

For the county-specific analyses, Seidman conservatively assumes that all jobs outside Apache and Navajo are initially lost as each generating station curtails operations.[61] This assumption will initially reduce the economic shortfalls in both counties. Thereafter the ratio between Apache and Navajo Counties remains the same as the base year until closure.

Payments to Navajo County-based vendors and governments are only included in the Navajo County analysis, along with the appropriate employment data.

Payments to Apache County-based vendors and governments are only included in the Apache County analysis, along with the appropriate employment data.

No assumptions are made about the number of current employees who decide to retire because of their generating station closing.

No assumptions are made about the alternative uses of the generating stations, or for replacement electricity generation post-closure, within Apache and Navajo Counties or the State of Arizona.

Decommissioning costs are also excluded at the request of the utilities, as they are currently unknown.

## A2 Client Data

At project commencement, SRP and TEP supplied the following annual data by generating station for the study:

[61] This assumption has been made because the utility companies are unable to provide with any certainty the home zip codes of the plant employees that could be lost each year.

- Total annual number of direct employees, 2021 to 2040.
- Total annual wages and salaries, 2021 to 2040.
- Total annual employee benefits (e.g., health, retirement, etc.), 2021 to 2040.
- Total annual operational costs by NAICS purchase category or type from suppliers located in Apache County, Navajo County, and all other parts of Arizona, 2016 to 2021.
- Future estimates of annual business taxes and or fees paid by each generating station, 2022 to 2040.
- Historical annual taxes paid directly to local jurisdictions, 2016 to 2021.
- Historical annual state and local sales taxes paid directly by both utilities during the operation of either generation station, 2016 to 2021.
- Average wage and number of employees by zip code, 2021.
- Demographics of employees by zip code, 2021.
- Survey results about future employment intentions of employees, 2021.
- Hypothetical timeline of reduced operations and closure, 2021 to 2040.

The cost of decommissioning each generating station and the number of workers needed to do so are not provided by the utility companies, and therefore excluded from this study's modeling.

## A3 Economic Impact Modeling

Seidman uses a REMI model to estimate the reduced annual contribution of Springerville and Coronado Generating Stations to the State and Apache and Navajo County economies over a multi-year time horizon.

REMI is a dynamic forecasting and analysis tool, developed by Regional Economic Models Inc. Widely recognized by the business and academic communities as the leading economic modeling tool available in the U.S., Seidman is the only known consultancy in the State of Arizona offering this type of economic modeling. Through its dynamic multi-year functionality, REMI takes account of variations in the economic impact of a business or facility through time. That is, a change to the labor supply within a specific geography will have an impact on population, demographics, and wages within that region, and will itself be affected by changes in each of those variables. These adjustments happen gradually, thereby ensuring that the economy does not statically jump from one equilibrium to another.

The study employs the latest version of REMI customized for the State and local counties, which uses 2020 base data.

Seidman's method for estimating the economic contribution of each generating station involves four fundamental steps:

1. **Prepare a baseline forecast for the state economy:** This Business as Usual (BAU) case forecasts the future path of the state and county economies based on the assumption that both generating stations continue to operate at their 2021 levels.
2. **Develop a program or policy scenario:** This scenario describes the *direct* impacts that the reduced operations and ultimate closure of both generating stations could have at a state and county level over the 19-year time horizon (2022-2040).
3. **Compare the baseline and policy scenario forecasts.**
4. **Produce the "delta" results**: Differences between the future values of each variable in the forecast results estimate the magnitude of the generating stations' reduced operations and ultimate closures relative to the baseline.[62]

Four specific measures of the ways in which each generating station contribute to the three economies of interest are offered. These are:

- ***State GDP:*** Economists often describe the health of the U.S. economy in terms of gross domestic product or GDP. This is the monetary value of all finished goods and services produced in the U.S. on an annual or quarterly basis. It includes all public and private sector purchases, government expenditures, investments, and the difference between exports and imports. State GDP is the state equivalent.
- ***Total Employment:*** This is the number of full- and part-time jobs associated with a business activity, policy change, or facility. It includes the self-employed, all federal, state, and local government employees, the military, and contract workers.

[62] The delta results presented in the current study will assume that at least some current Springerville and Coronado employees will find alternative work elsewhere in the region over time. However, they do not consider the impact of alternative forms of electricity generation in Apache and Navajo counties or the state. This addition could be modeled in the future, subject to the availability of appropriate scenario inputs from the utilities.

- ***Private Nonfarm Employment:*** Similar in part to total employment, this excludes all government and agricultural employment.
- ***Real Disposable Personal Income (RDPI):*** This is the total after-tax income received by any person residing in the state, deflated by the Personal Consumption Expenditure-Price Index, available for spending or saving.

The study separately estimates the annual shortfall in the total economic contribution of each generating station, 2022-2040, compared to a counterfactual situation in which each generating station continues to operate at its 2021 level.

The reduction in total (direct, indirect, and induced) contributions are provided for the Apache County, Navajo County, and the State of Arizona economies.

The REMI model is not capable of estimating economic impacts at a town/city, school district or zip code level. However, to help the reader contextualize the loss in economic impacts at a more granular level, Seidman additionally estimates the ***direct*** employment and labor income losses for the following locations:

- ***Apache County*****:** Eagar, Springerville, St Johns.
- ***Navajo County*****:** Holbrook, Pinetop, Show Low, Snowflake, Taylor.

It is logical to presume that the downstream impacts will accrue commensurate with the distribution of direct impacts on these geographies, but this is by no means certain.

No assumptions are made about the alternative uses of the generating stations or for electricity generation within Apache and Navajo Counties. Decommissioning costs are also excluded at the request of the client, as they are currently unknown.

## A4 Estimating Fiscal Impacts

In addition to the economic impacts, the reduced operations and eventual closure assumptions for Springerville and CGS will have significant consequences for state and local government tax revenues.

Seidman's fiscal analysis is comprised of the state and local tax payments made by:

- The owner-operators of both generating stations, 2022-2040;
- Apache and Navajo County residents working at either generating station (direct employment); and
- Apache and Navajo County residents working for other firms, whose jobs are reliant on the operation of the one or both generating stations (indirect and induced employment).

The direct tax payments paid by owner operators of the facilities are supplied by the clients. In Arizona, power plants are assessed centrally for property tax purposes and owners pay local rates. It is not unusual for plants like Springerville and CGS to apprise significant shares of the property tax base of the locality. Seidman has verified the direct taxes reported by the owner operators via a review of the annual budget statements produced by Apache County and the St. John's and Round Valley School Districts.

Workers at the two generating stations are paid average salaries that are significantly higher than the median wages in Apache and Navajo Counties, so the loss of these wages will likely result in spending and home ownership declines which will in turn erode the tax bases in the two counties. To quantify the total fiscal impact of people working at both generating stations, Seidman first tabulates estimates of the amount of state and local taxes paid directly by these workers in 2021 based on average salaries, local/county sales and property tax rates, and state sales and income tax rates. Seidman then applies the same rates per person to the declining annual workforce, 2022 through 2040, to calculate the total shortfall in fiscal tax revenues for the 19-year time horizon.

Seidman also estimates the state and local taxes that are paid by the workers that are indirectly supported by the economic activity of the two facilities. That is, the operation of both plants supports employment impacts at local suppliers (indirect impact), and at other Apache County and Navajo County based firms (induced employment); and these multiplier employment impacts have a corresponding effect on income. Seidman estimates changes to the total fiscal contribution of indirect and induced employees in both counties based on REMI's estimates of employment and wages and salaries impacts via two steps. First, Seidman tabulates estimates of the amount of state and local taxes paid by these workers in 2021 based on local/county sales and property tax rates, and state sales and income tax rates. Then, Seidman applies the same rates per person to the declining indirect and induced employment footprint, 2022 through

2040, to calculate the total shortfall in fiscal tax revenue contributions made by these people throughout the 19-year study time horizon.

## A5 Estimating Direct Impacts in Select Towns & Cities

The REMI model is not capable of estimating economic impacts at a town/city, school district or zip code level. However, to help the reader contextualize the economic impacts at a more granular level, the client has additionally asked for some direct employment and income insights for the following locations:

**Apache County:** Eagar, Springerville, St Johns.
**Navajo County:** Holbrook, Pinetop, Show Low, Snowflake, Taylor.

Seidman estimates the annual shortfall for the eight towns and cities of interest ***following*** the closure of both generation stations. That is, from 2036 onwards, based on the modeling closure assumptions. To provide location-specific insights, Seidman combines the employment and wages footprint of people directly employed at Springerville or CGS (collated by the clients) with its own estimates of the state and local taxes paid by those workers.

Location-specific estimates of the multiplier employment and income effects are beyond the scope of the current study. It is logical to presume that the multiplier impacts will accrue commensurate with the distribution of direct impacts on these geographies, but this is by no means certain.

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