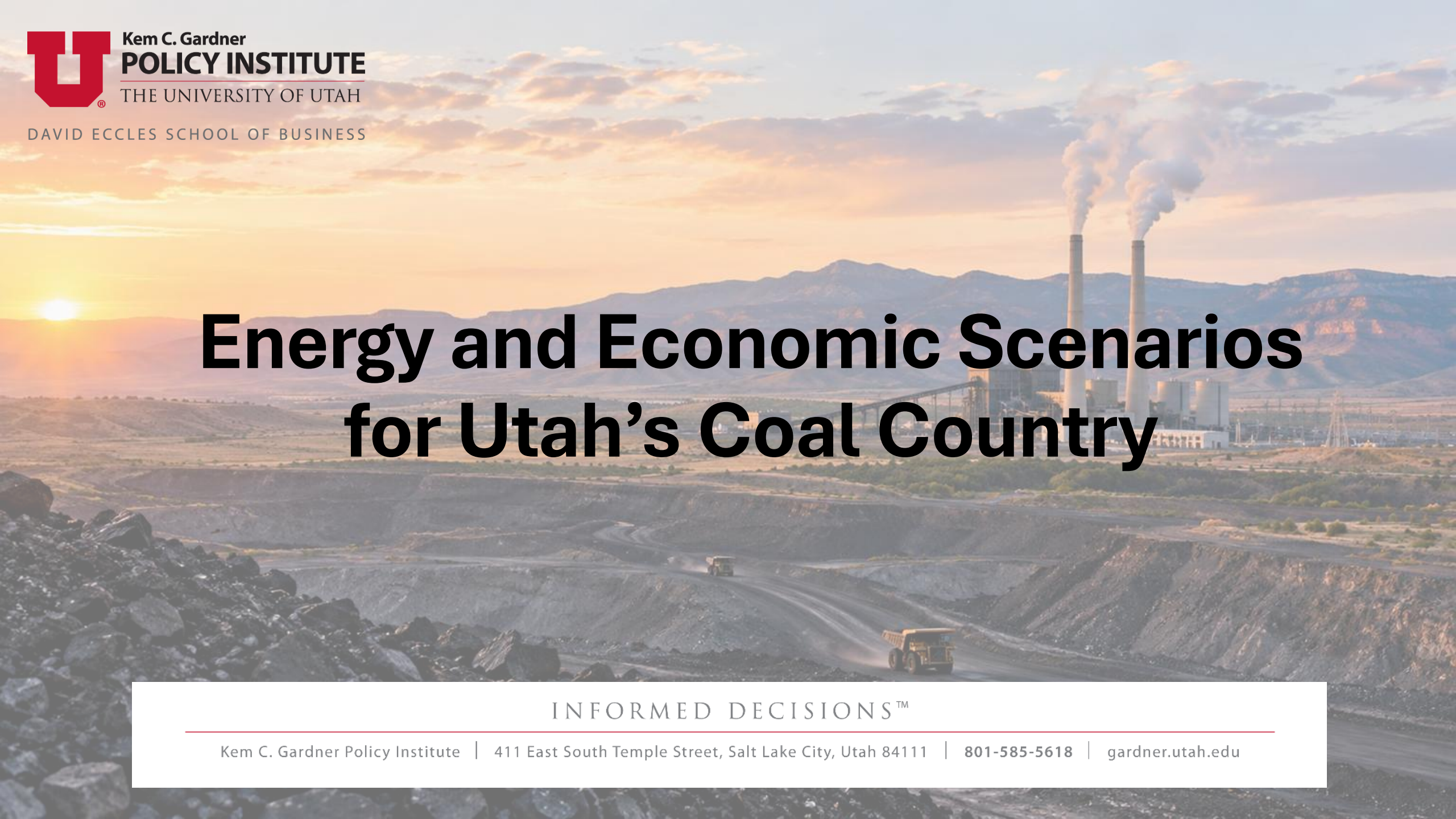




Energy and Economic Scenarios for Utah's Coal Country

INFORMED DECISIONS™

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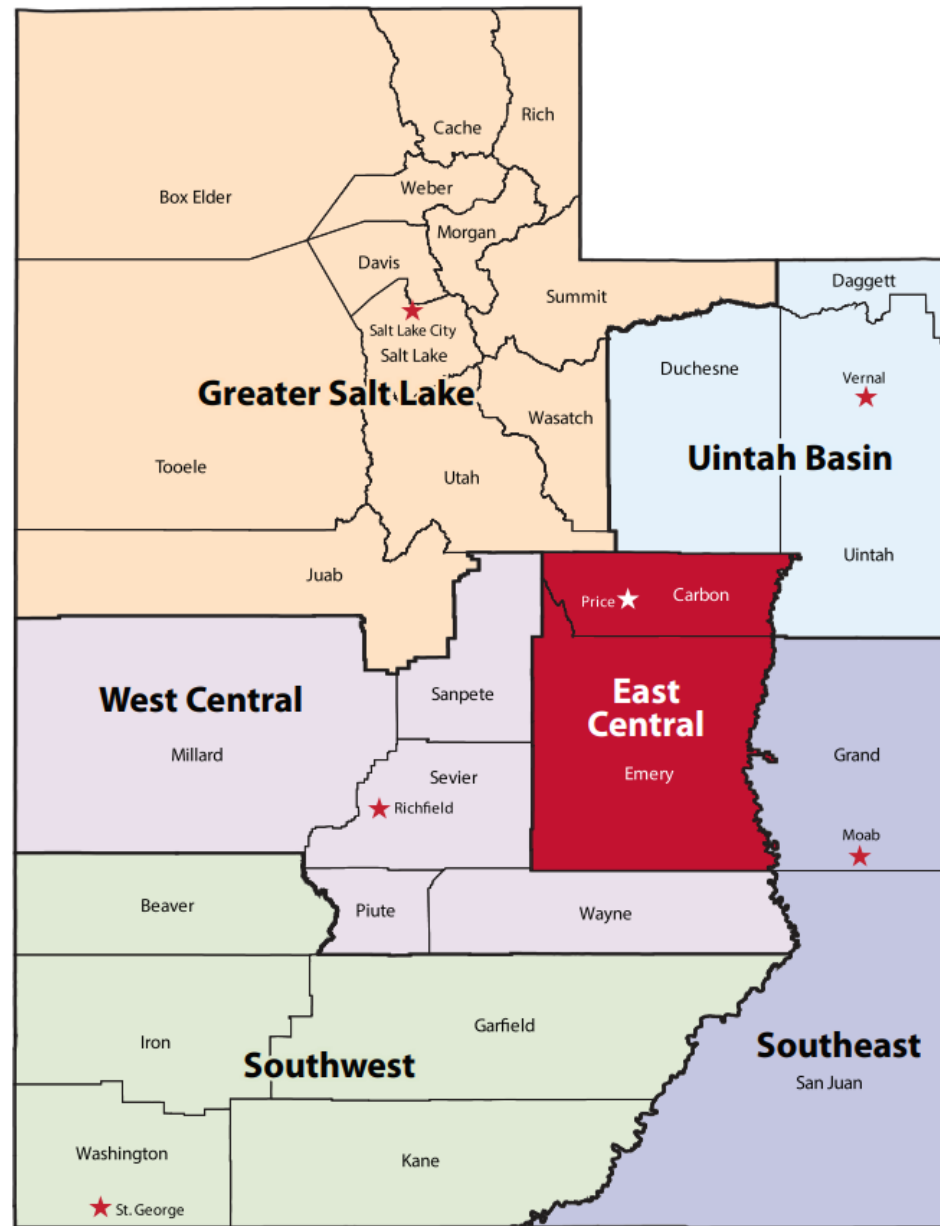
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This report serves as the final deliverable for the U.S. Department of Energy-funded project DE-FE0032468, Charting a Path Forward: Energy and Economic Transition Pathways for Utah's Coal Country.

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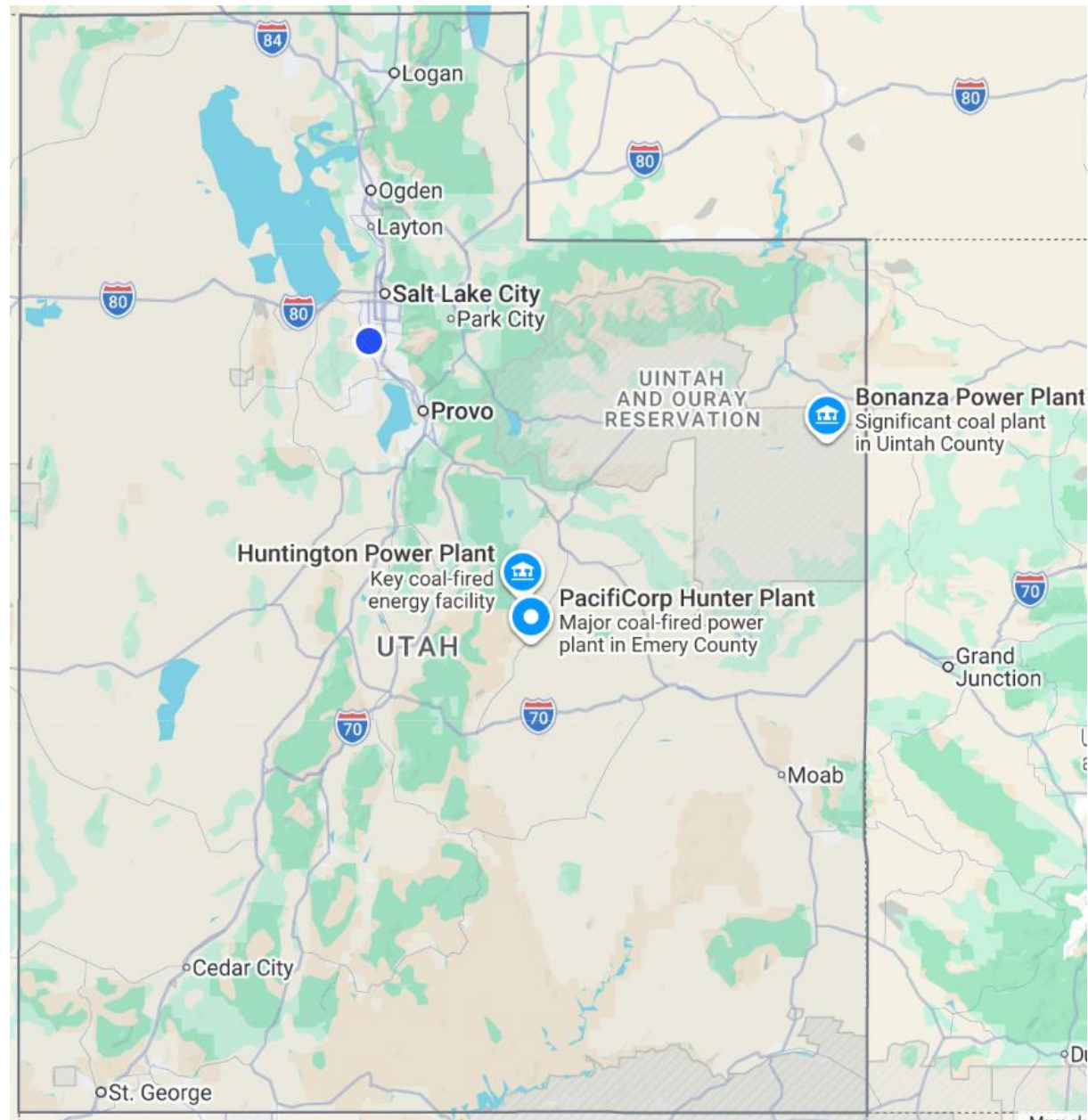
Utah's Coal Country



Source: Hogue, 2020

Hunter and Huntington Plants

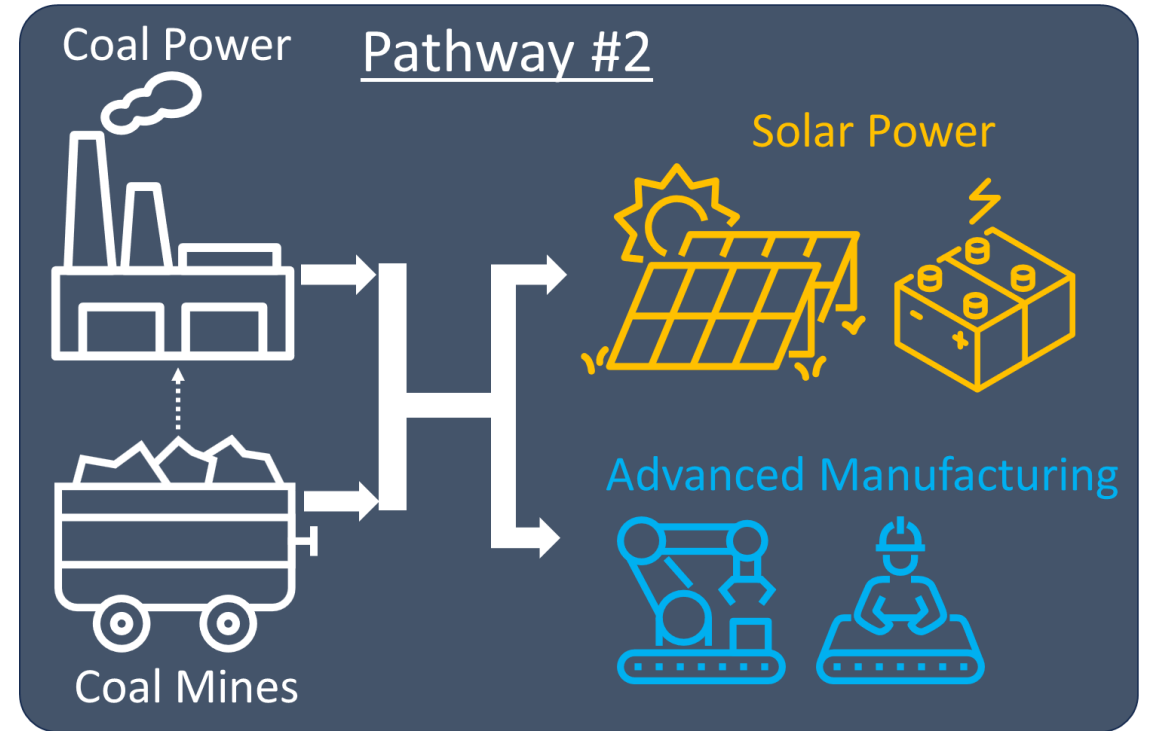
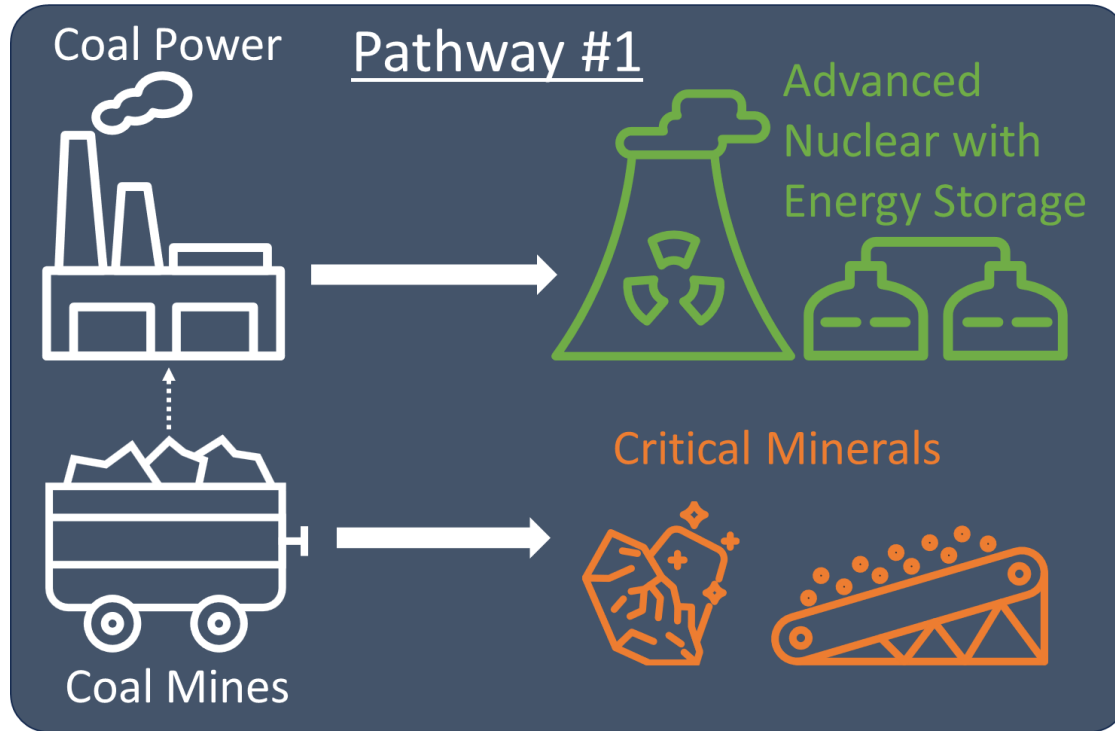
- Major coal-fired electricity generation facilities, both located in Emery County
- **Previous plan:** Huntington was targeted for closure in 2036, and Hunter was due to stop burning coal in 2042.
- **The 2023 plan:** Both plants won't be retired anytime before 2045.
- **The 2025 plan:** Retirements of both plants are off the table for the near future.



Main Research Questions

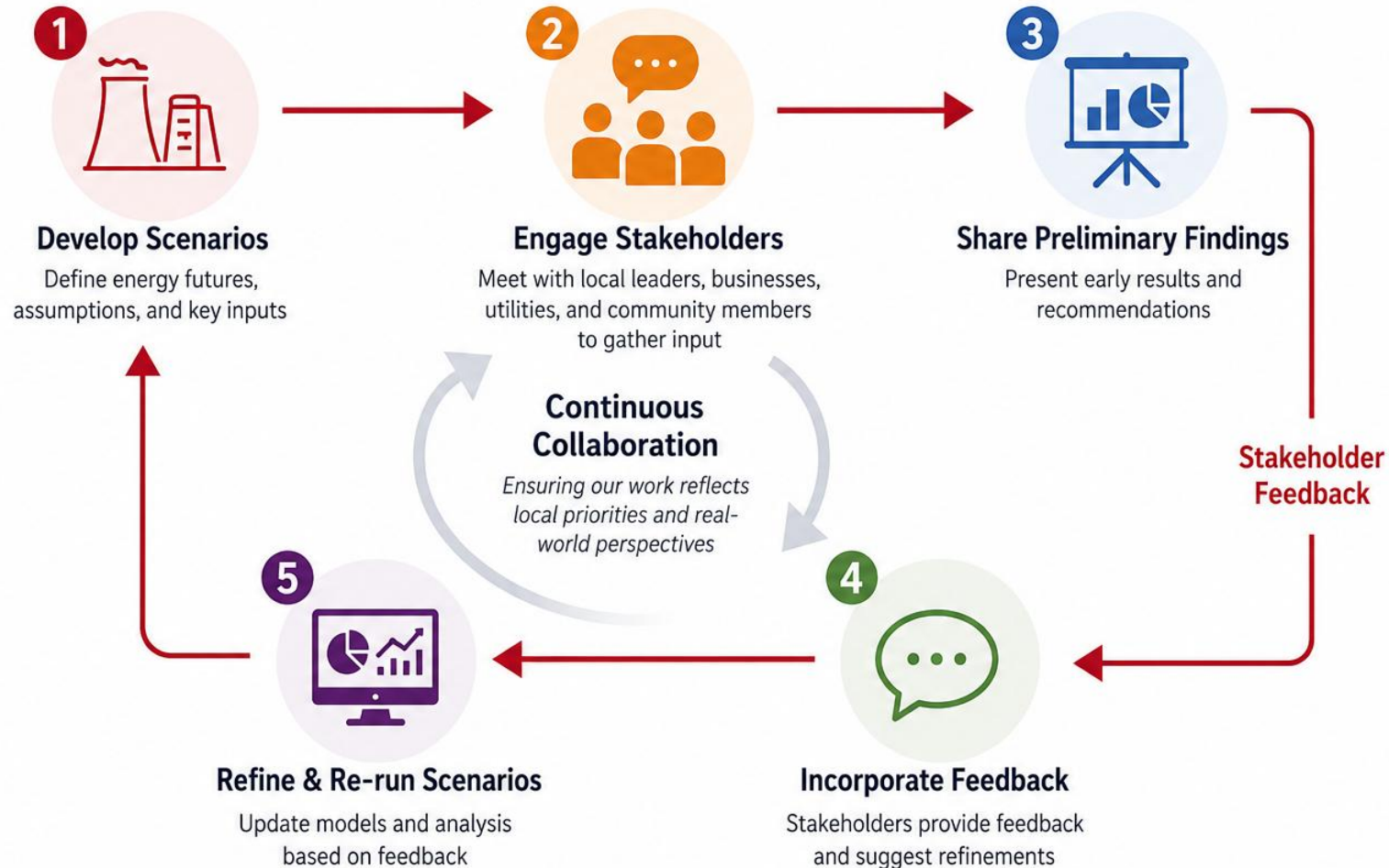
- What happens to Emery County and Utah if the Hunter and Huntington power plants close?
- Can nuclear power replace the plants while mitigating the economic impacts?
- Can solar power replace the plants while mitigating the economic impacts?

Energy and Economic Pathways for Utah's Coal Country

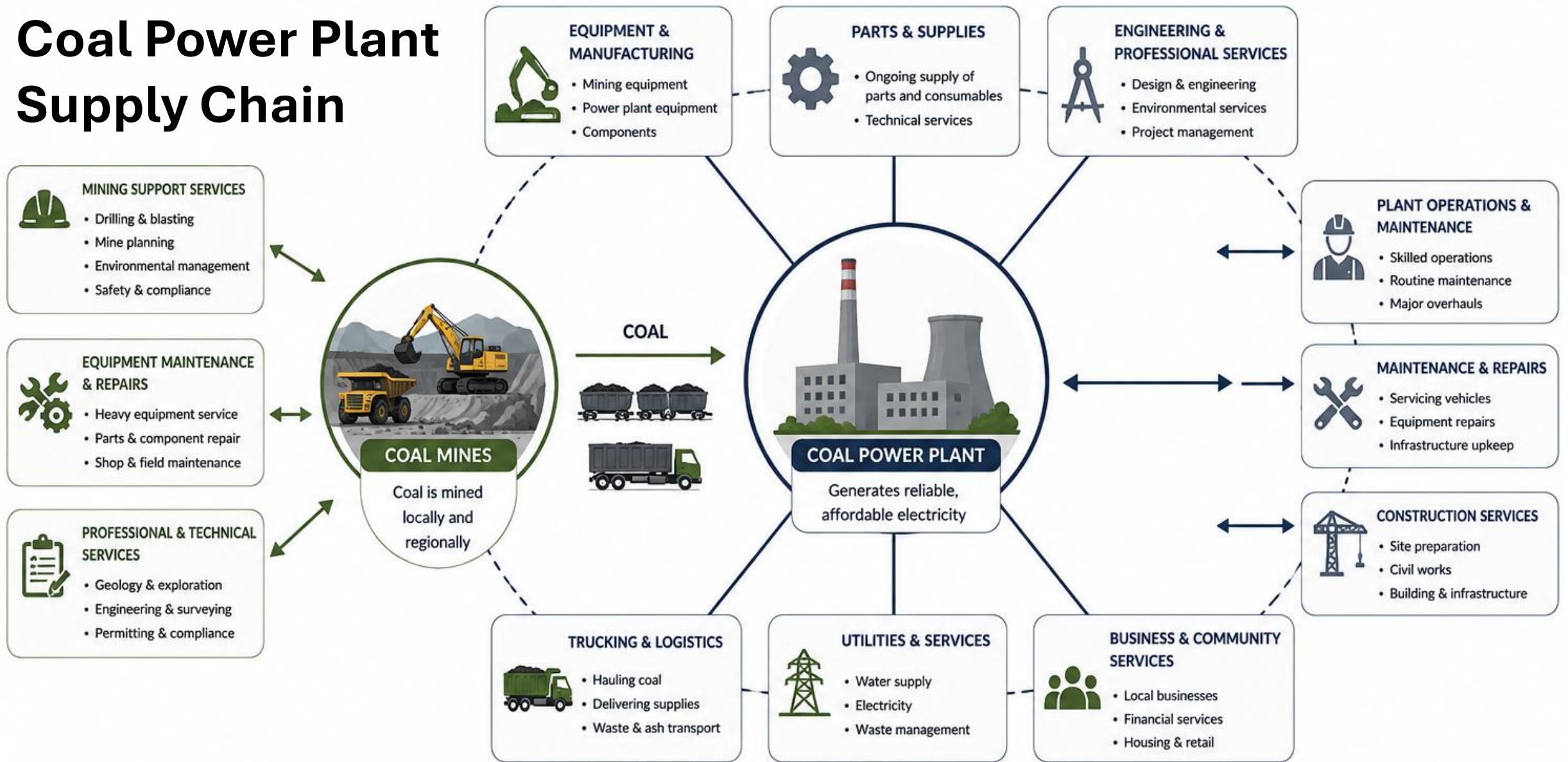


Collaborative, Community-Engaged Process

Working with Emery & Carbon Counties Throughout the Study

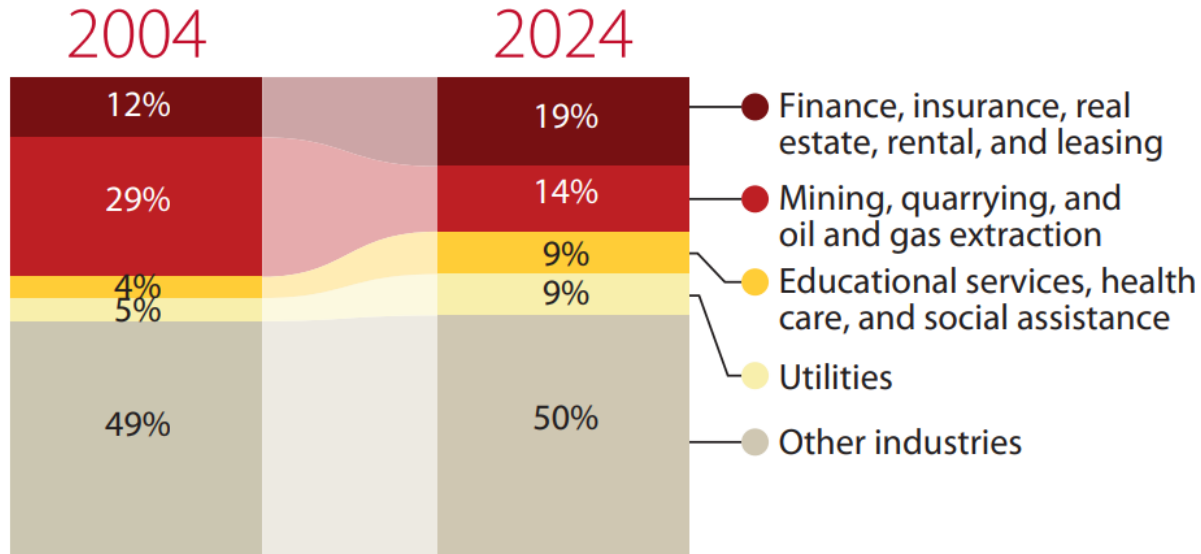


Coal Power Plant Supply Chain



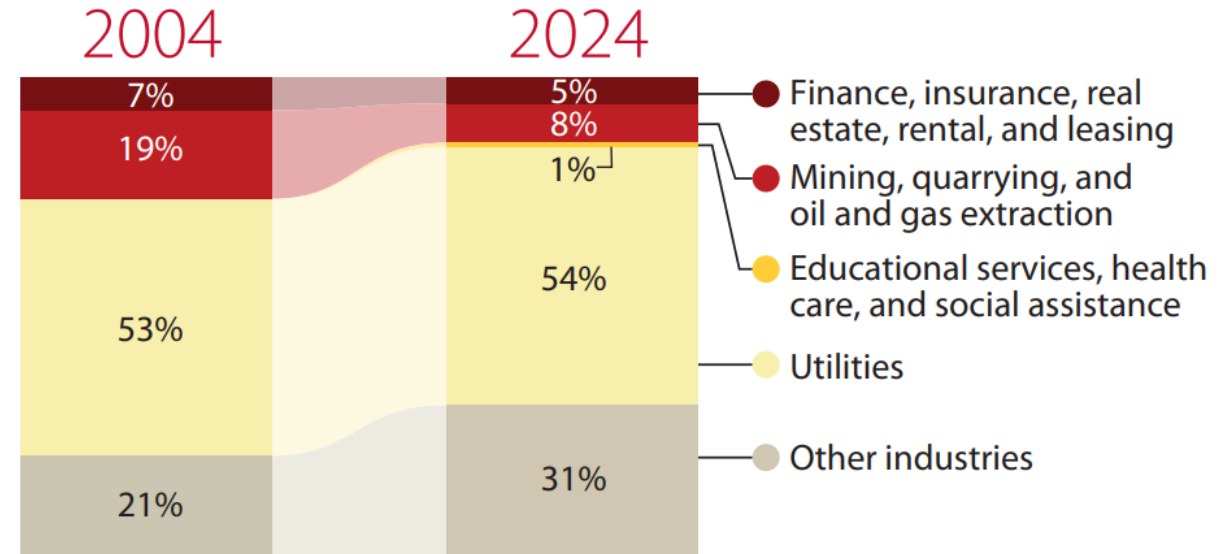
Coal Country's Economic Structural Change

Figure 6: Carbon County Share of 2004 and 2024 GDP by Industry



Source: Kem C. Gardner Policy Institute analysis of BEA data (2026)

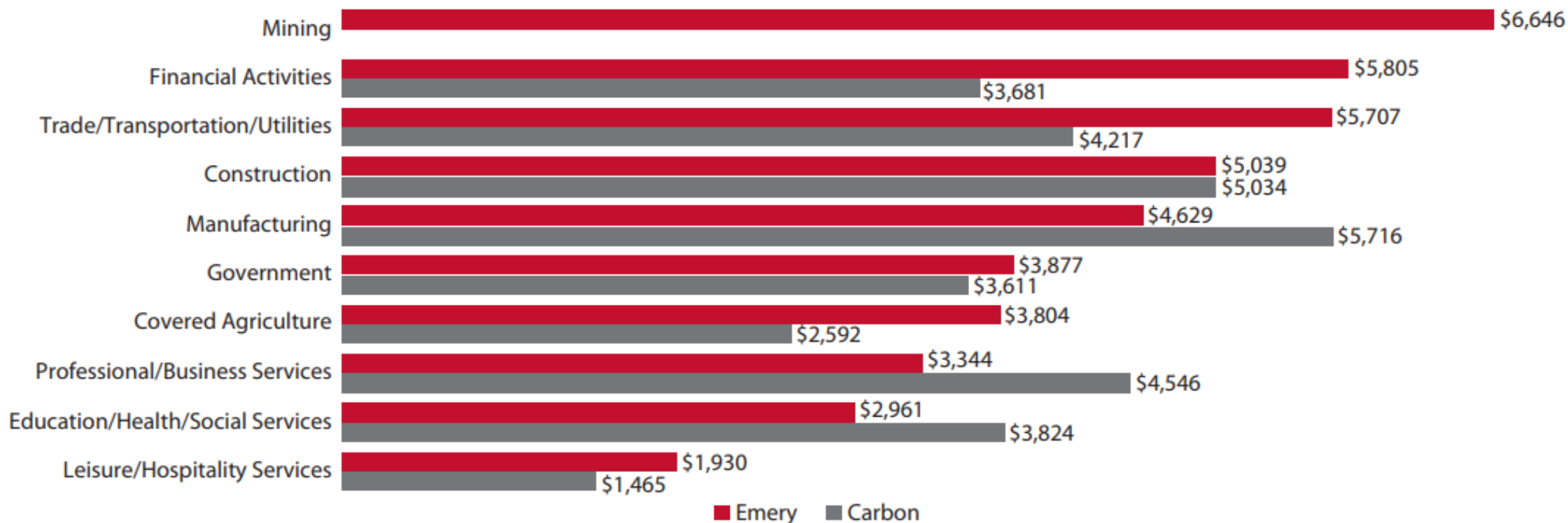
Figure 7: Emery County Share of 2004 and 2024 GDP by Industry



Note: Data for Educational services, health care, and social assistance are not available in 2004.

Source: Kem C. Gardner Policy Institute analysis of BEA data (2026)

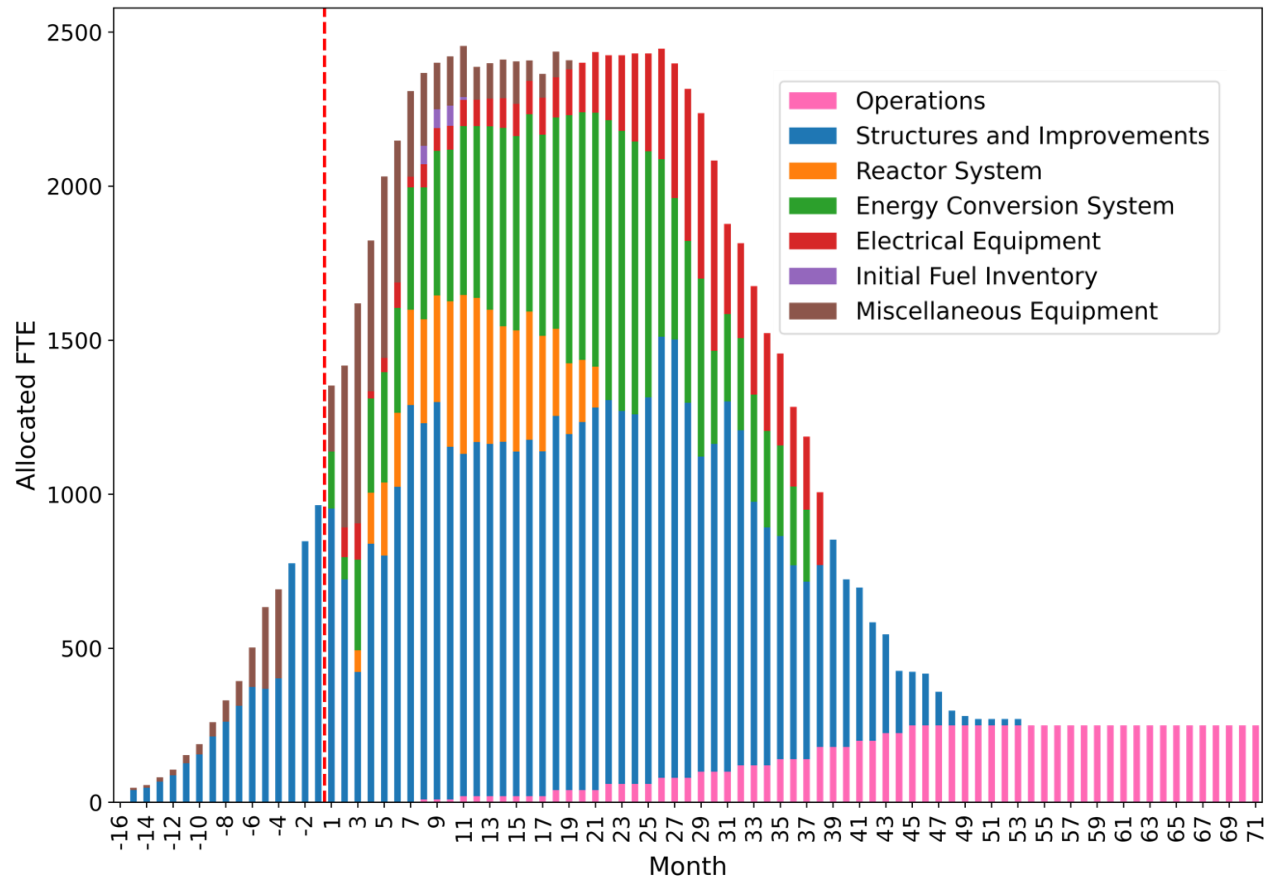
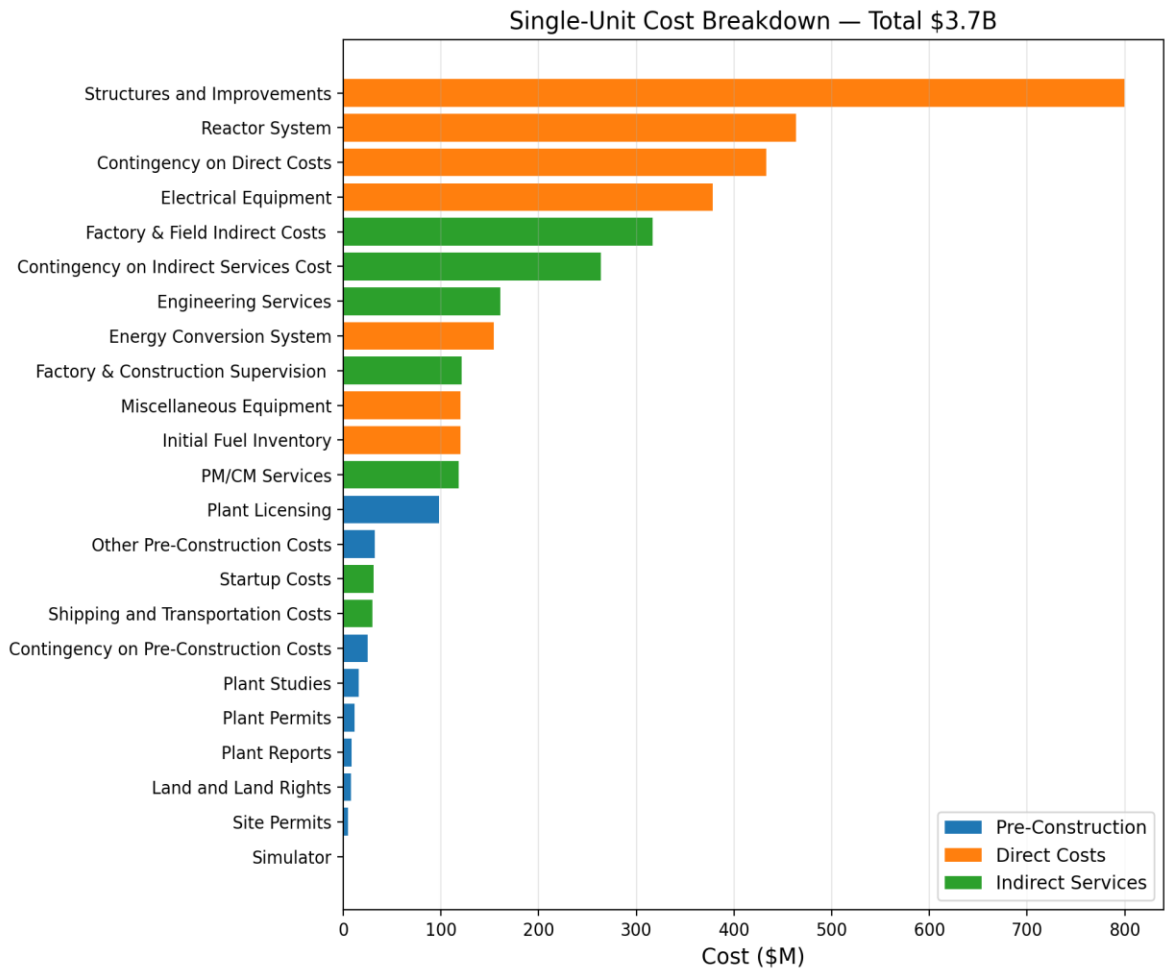
Utah Coal Country's 2024 Average Monthly Wage



Note: Mining's average wage data in Carbon County are not available. Covered agriculture refers to agricultural businesses that meet the criteria for paying unemployment insurance tax.

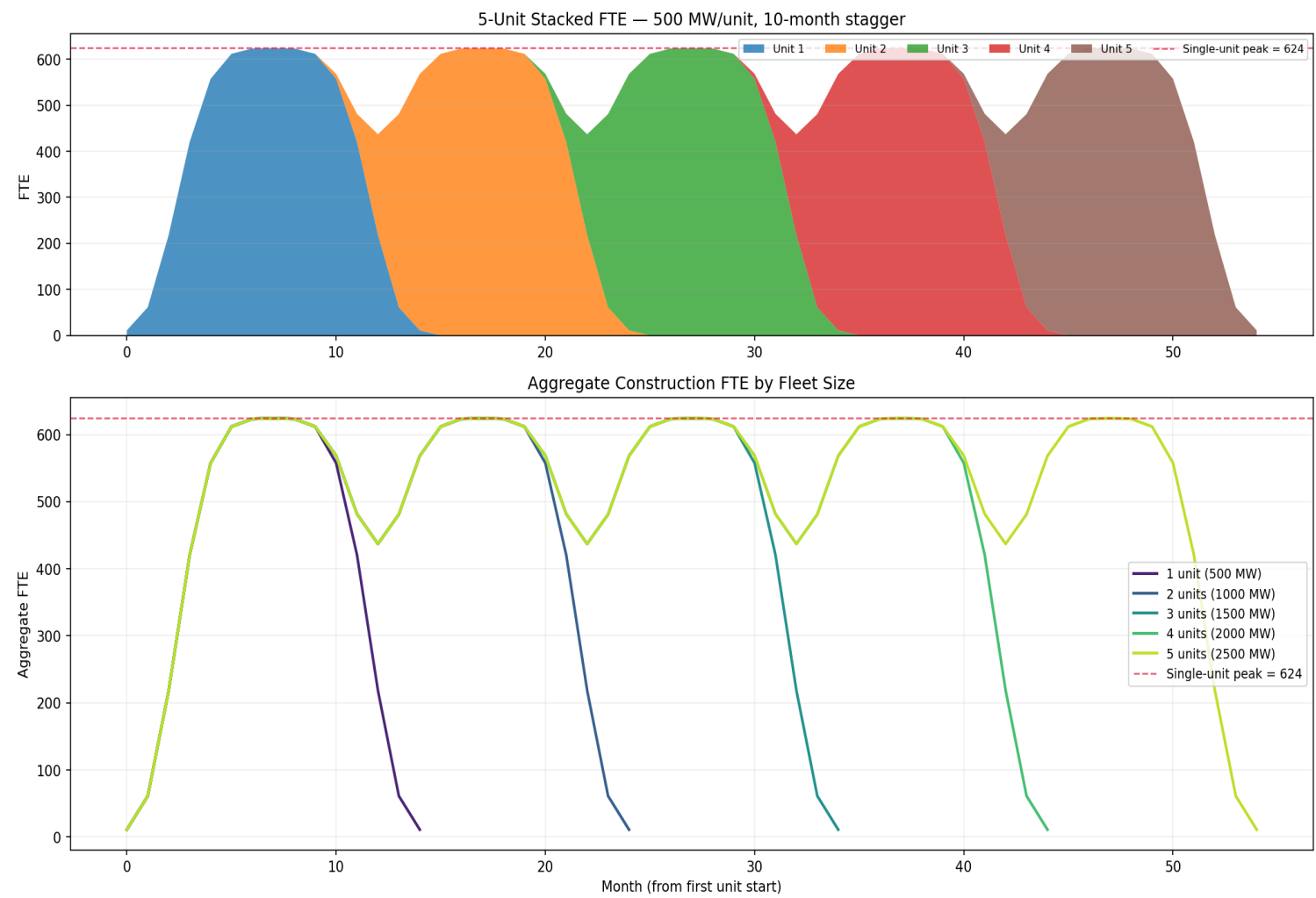
Source: Utah Department of Workforce Services, 2026

Techno-Economic Analysis: Nuclear Power Plant Assumptions



Techno-Economic Analysis: Utility-Scale Solar Assumptions

Multi-Unit Solar Employment: 500 MW/unit, 71.4% duration stagger (10 mo)



The estimation model uses data on peak and mean construction full-time equivalent (FTE), construction duration, and operation and maintenance FTE from 50 utility-scale solar projects from the U.S. Bureau of Land Management, the Department of Energy’s Loan Programs Office, and developers.

Main REMI Input, REMI PI+ 3.3.0, County-Level, 23 Sectors

	Input	Data Sources
1. New Standard Regional Control	County-Level Employment Forecast by Industry	Kem C. Gardner Policy Institute, Economic Research
2. Power Plants Closures	Employment losses, wage losses, expenditures on demolition, and residence adjustment	Company, BLS Staffing Patterns, QCEW Utah Average Wage by Occupation, and community feedback
3. Coal Mine Closures	Employment losses, wage losses, expenditures on sealing and remediation, and residence adjustment	Companies, BLS Staffing Patterns, and QCEW Utah Average Wage by Occupation
4. Nuclear Power Plant	Employment (construction & operation), wage adjustment, capital expenditure, and operating expenditures	Workforce estimation from the number of reactors using existing projects in the U.S.
5. Utility-Scale Solar Facility	Employment (construction & operation), wage adjustment, capital expenditure, and operating expenditures	Workforce estimation from the number of reactors using existing projects in the U.S.

Main REMI Input

Table 1: Power Plants and Coal Mine Closure Employment Assumptions

Closure Assumptions	Time Period	Total Employment Loss (Jobs)	Average Wage Used
Hunter and Huntington Power Plants	2042–2046	322	\$82,939
Six coal mines in Emery, Carbon, and Sevier counties	2045	1,115	\$63,740

Table 2: Power Plants and Coal Mine Closure Capital Expenditure Assumptions

Closure Assumptions	Time Period	Total Capital Expenditure (Millions of Current Dollars)
Capital expenditures to close both power plants	2046–2047	\$160.3
Capital expenditures to close six coal mines	2046–2056	\$111.7

Table 3: Nuclear and Solar Employment Assumptions

Investment Assumptions	Time Period	Annual Employment Gains (Jobs)	Average Wage Used
500 MW – 2,500 MW Nuclear Power Plant	Beginning in 2044	236–588 (Operating Employment)*	\$86,091
500 MW – 2,500 MW Solar Facility	Construction: 2044–2048 Operation: Beginning in 2045	459–591 (Construction) 20–99 (Operation)	\$65,956 (Construction) \$72,730 (Operation)

Table 4: Nuclear and Solar Capital Expenditure Assumptions

Investment Assumptions	Time Period	Total Amount
500 MW – 2,500 MW Nuclear Plant Capital Expenditures*	2038–2050	\$4 – \$16 billion
500 MW – 2,500 MW Solar Facility Capital Expenditures	2044–2048	\$30 – \$156 million†

Note: *Assumes less than 15% reuse of existing coal plant infrastructure, primarily water rights and grid interconnections.

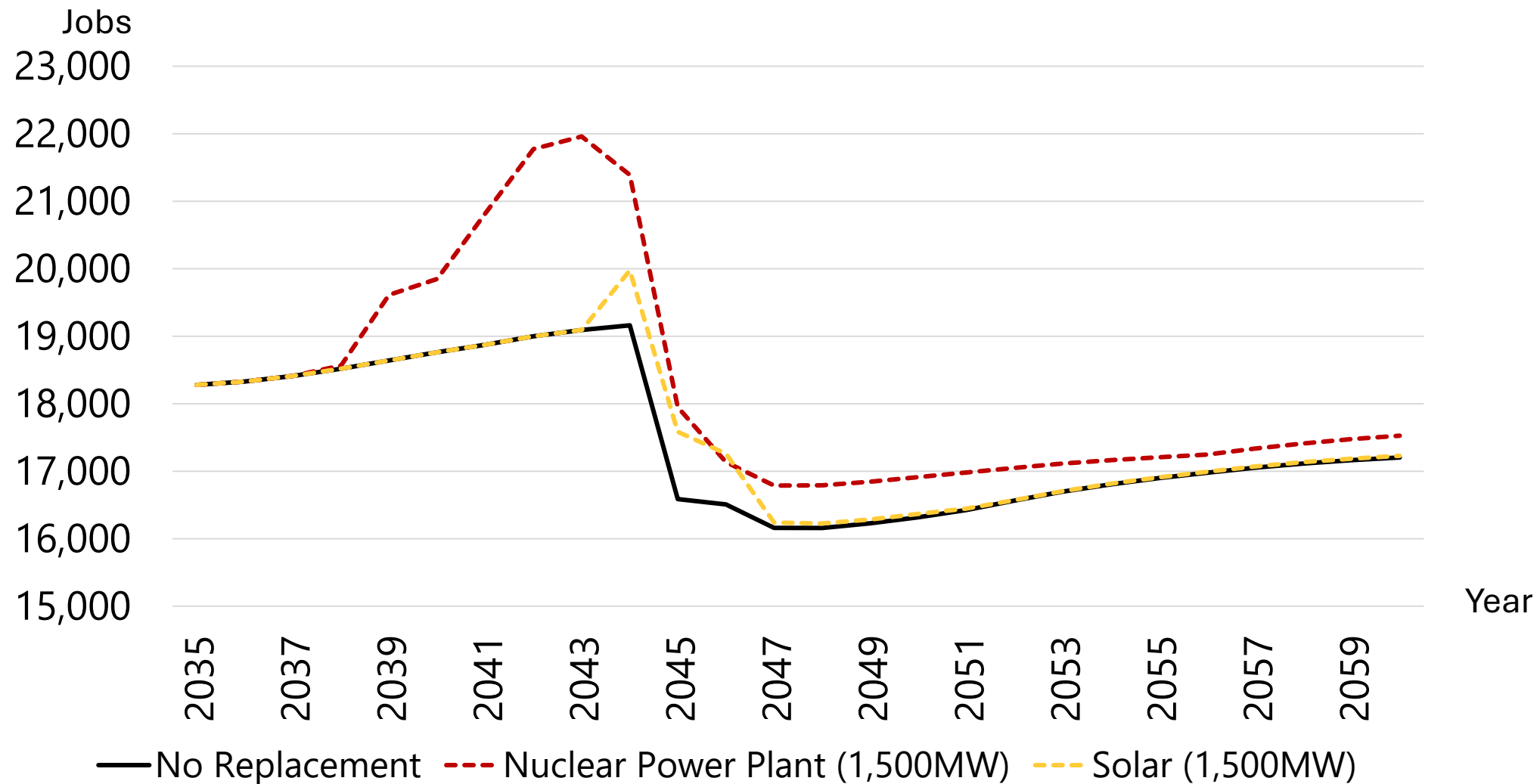
† This amount represents spending on structural balance-of-system (BOS) components; most other materials originate from imports and therefore do not contribute to Utah's economic impacts.

Energy and Economic Scenarios

Scenario	Detail	Timeline	Key Variables
Baseline	No closure	N/A	N/A
Scenario 1	Closing power plants and coal mines	2042–2046, and 2045	· Employment losses · Wage losses · Capital expenditures for demolition and closures · Employee residence adjustment
Scenario 2.1	Closing power plants and coal mines, replaced by a 500MW nuclear power plant	2038–2045	· Employment losses/gains · Wage losses/gains · Capital expenditures for demolition and closures · Capital expenditure for building a nuclear power plant with different numbers of reactor
Scenario 2.2	Closing power plants and coal mines, replaced by a 1,000MW nuclear power plant	2038–2047	
Scenario 2.3	Closing power plants and coal mines, replaced by a 1,500MW nuclear power plant	2038–2048	
Scenario 2.4	Closing power plants and coal mines, replaced by a 2,000MW nuclear power plant	2038–2049	
Scenario 2.5	Closing power plants and coal mines, replaced by a 2,500MW nuclear power plant	2038–2050	
Scenario 3.1	Closing power plants and coal mines, replaced by a 500MW solar facility	2044	· Employment losses/gains · Wage losses/gains · Capital expenditures for demolition and closures · Capital expenditure for building a utility-scale solar facility
Scenario 3.2	Closing power plants and coal mines, replaced by a 1,000MW solar facility	2044–2045	
Scenario 3.3	Closing power plants and coal mines, replaced by a 1,500MW solar facility	2044–2046	
Scenario 3.4	Closing power plants and coal mines, replaced by a 2,000MW solar facility	2044–2047	
Scenario 3.5	Closing power plants and coal mines, replaced by a 2,500MW solar facility	2044–2048	

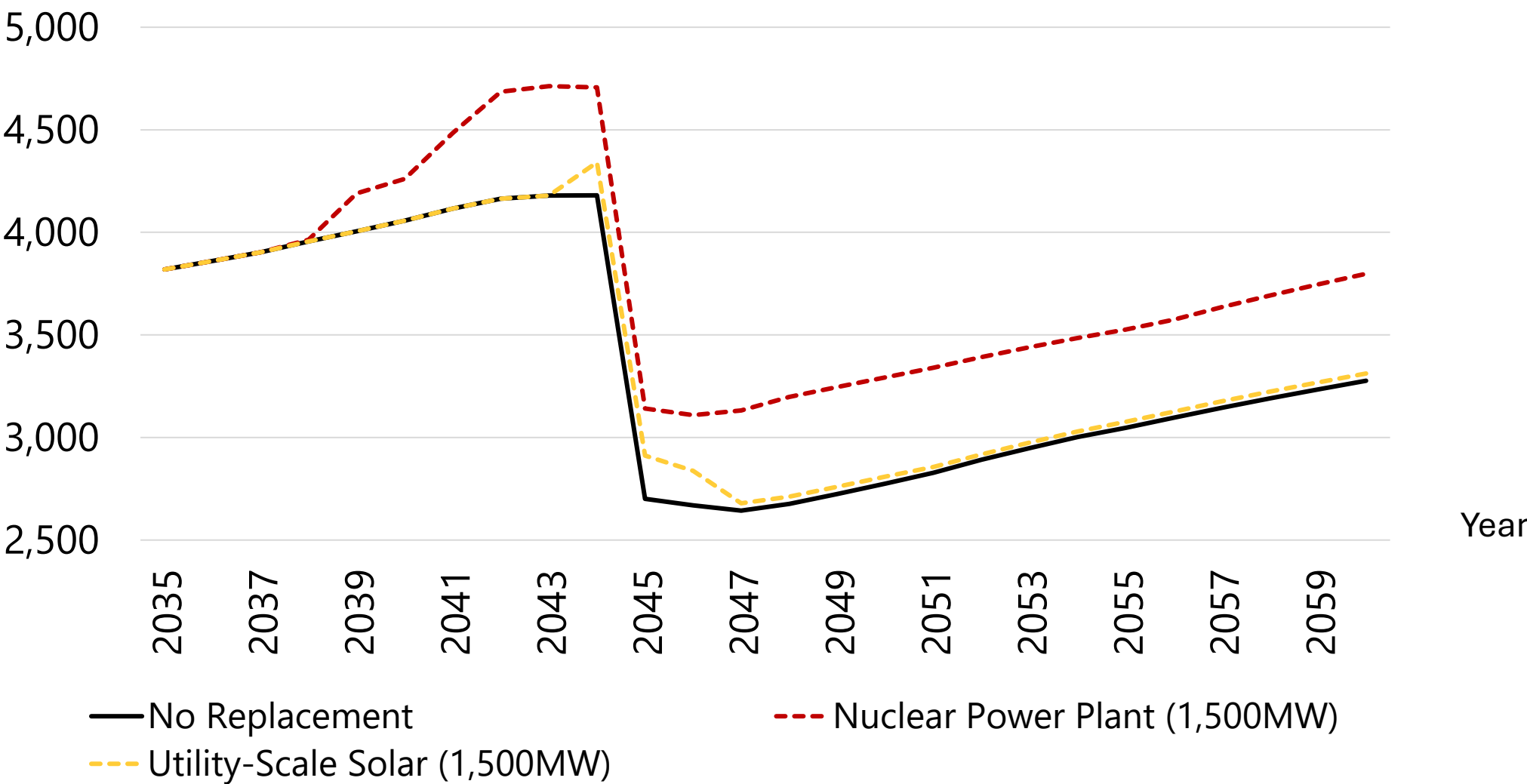
Jobs in Carbon and Emery County by Year

If Coal Power Plants Close and are Replaced with Solar vs. Nuclear



GDP Impacts in Carbon and Emery County

Millions of 2025 Dollars

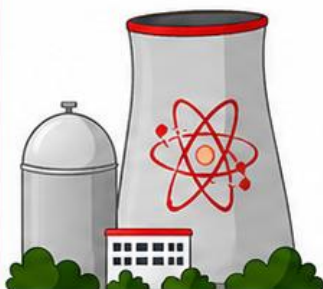




Scenario 1

No Replacement

Coal power plants retire with no replacement capacity added.



Scenario 2.3

Nuclear Power Plant (1500 MW)

Retiring coal capacity is replaced with a 1,500 MW nuclear power plant.



Scenario 3.3

Utility-Scale Solar (1500 MW)

Retiring coal capacity is replaced with a 1,500 MW utility-scale solar plant.

Impact Measure	Scenario 1 (No Replacement)		Scenario 2.3 (Nuclear Power Plant, 1500 MW)		Scenario 3.3 (Utility-Scale Solar, 1500 MW)	
	Statewide	Emery and Carbon Counties	Statewide	Emery and Carbon Counties	Statewide	Emery and Carbon Counties
 Employment (number of jobs)	-7,500	-3,251	-5,713	-2,412	-7,206	-3,078
 GDP (millions of 2025 dollars)	-\$2,963	-\$1,731	-\$2,278	-\$1,232	-\$2,858	-\$1,652
 Personal Income (millions of 2025 dollars)	-\$847	-\$379	-\$620	-\$266	-\$812	-\$358
 Population (number of people)	-9,594	-4,866	-4,882	-2,757	-9,060	-4,489

State Fiscal Impacts

- Using REMI results in employment, personal income, and population on GPI’s fiscal model
- All scenarios reduce both state and local revenues, with the largest declines under no replacement and the smallest under nuclear.

Table 7: Statewide Average Annual Fiscal Impacts by 1,500 MW Scenarios, 2042–2051

(Millions of Constant 2025 Dollars)

Average Annual Impact	No Replacement	Replaced by Nuclear	Replaced by Solar
Individual Income Tax Revenues ¹	-\$13.2	-\$5.6	-\$11.9
Corporate Income Tax Revenues ²	-\$3.2	-\$2.0	-\$3.0
State Sales Tax Revenues ³	-\$10.7	-\$4.5	-\$9.7
Estimated State Tax Revenue Changes	-\$27.1	-\$12.1	-\$24.7
State Non-Education Expenditures	-\$12.1	-\$0.9	-\$10.5
State Public Education Expenditures	-\$6.2	\$0.3	-\$5.3
State Higher Education Expenditures	-\$3.7	-\$1.2	-\$3.2
Estimated State Expenditure Changes⁴	-\$22.0	-\$1.8	-\$19.0
Estimated Net State Revenues⁶	-\$5.1	-\$10.3	-\$5.6
Total Local Revenues ⁵	-\$23.6	-\$12.1	-\$21.8
Local Operating & Capital Expenditures	-\$35.8	-\$2.6	-\$31.0

Notes: 1. State income taxes are calculated based on the ratio of the county’s state income tax liability (per State Tax Commission) to personal income resulting from the REMI PI+ estimation. 2. Corporate income taxes are estimated based on the ratio of corporate tax revenues (by industry) to GDP by industry. 3. Sales and gross receipts taxes. 4. Negative amounts in expenditure represent the decline in public expenditures from the population impacts. 5. Local sales tax revenues consist of total general sales and use taxes and the tourism restaurant tax. 6. Estimated Net State Revenues are the gap between the decline in revenue and the decline in expenditure.

Source: Kem C. Gardner Policy Institute analysis using the Gardner Institute fiscal model

Research Limitations

Environmental impacts

- Does not quantify emissions, water use, land impacts, or other environmental externalities.
- Environmental costs and benefits are outside the scope of the economic impact analysis.

Cost, benefit, and efficiency

- Does not conduct a full cost-benefit analysis.
- Results show economic impacts, not the overall economic efficiency or cost-effectiveness of each option.

Conclusion

- 1. Economic losses from power plants and coal mine closures** – Utah could experience cumulative employment losses averaging about 7,500 jobs over 2042-2060, with decreases in GDP of \$2.9 billion.
- 2. Replacing megawatts is not enough** – Replacing the plant with approximately 1,500 MW of nuclear capacity offers the strongest economic offset. However, the generation alone does not replace the broader coal ecosystem.
- 3. Need for complementary investment** – Energy replacement alone will not sustain regional economic performance. Investing in advanced manufacturing, critical minerals, energy supply chains, and service sectors could diversify the economic structure.

Policy Implications

1. Diversification beyond energy production
2. Development of energy-adjacent industries
3. Expansion of service-based sector
4. Workforce transition and retention
5. Coordinated regional investment strategy

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Available for download at: <https://gardner.utah.edu/public-policy/agriculture-energy-and-natural-resources/>

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