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Highlights

- The Sevier Power Plant will be located near the town of Sigurd in Sevier County, Utah. As proposed, it will have a gross generating capacity of 270 MW, and will use 960,000 tons of Utah coal and 33,600 tons of Utah limestone annually.
- The construction of the Sevier Power Plant will take four years, and cost about $598 million. Of this, about $74 million will be spent in Sevier County. Workers commuting to the area will spend an additional $16 million.
- Construction-related expenditures will generate $22.3 million in earnings for residents of the county. These earnings will support a total of 839 jobs in the county (233 construction jobs and 606 jobs in other industries).
- When fully operational, SPP will employ 77 people and bear an average payroll (in nominal dollars) of $5.6 million.
- The estimated operating costs (including payroll) in the first year of operations are estimated to be $43 million. Of this, $33 million could be spent locally.
- In 2011, Sevier County will have 371 more jobs and 316 more people that it would have without the power plant. In nominal dollars, GRP is projected to be $31.8 million greater and personal income $16 million greater than they would have been in the baseline projection for the county.
- Over a 20-year operating period, the population in Sevier County will be about 1.6 percent larger than it would have been without the plant, employment will be almost 2.9 percent greater. GRP will increase by almost 4.8 percent and personal income by 2.6 percent.
- As currently proposed SPP is small compared to other coal-fired plants in Utah. With an expected gross output of 270 MW, SPP ranks fifth behind IPP (1,800 MW), Hunter (1,320 MW), Huntington (805 MW) and Bonanza (458 MW).

The Economic and Demographic Impacts of the Sevier Power Plant

Jan Crispin, Senior Research Economist

The Sevier Power Company is seeking approval to construct and operate a small coal-fired power plant in Sevier County. This study presents the temporary economic effects of constructing the facility and the ongoing impacts of its operations. The information presented here summarizes a report undertaken by the Bureau of Economic and Business Research in February 2007 titled "The Economic and Demographic Impacts of the Sevier Power Plant."

As currently proposed, the Sevier Power Plant (SPP) will have a net power output capacity of 250 megawatts of electricity (270 MW gross) and utilize a circulating fluidized bed (CFB) technology. Compared with other coal-fired plants in Utah, SPP will be a small facility. SPP ranks fifth behind IPP (1,800 MW), Hunter (1,320 MW), Huntington (850 MW) and Bonanza (458 MW).

The plant will be located near the town of Sigurd in Sevier County. The project site encompasses 162 acres and is approximately 6.7 miles north of the Richfield city limits on State Road 118 in the Sevier Valley. (Map, Page 4)

The CFB design to be used by the plant is relatively new compared to the more commonly used pulverized coal combustion (PCC) boiler design. The primary difference between these two technologies is the manner in which the coal is burned. PCC was developed in the early 1900s as an improvement over the previous standard of burning lump coal. With PCC, the coal is finely ground and blown into a boiler through a series of burner nozzles. The fine particle size results in rapid and nearly complete combustion at high temperatures. However, these high temperatures encourage

the formation of nitrogen oxides, which are a major component in smog formation and acid rain.

In contrast, CFB is considered a "clean technology." In fluidized bed boilers, hot air flows upward through the combustion chamber and suspends very coarse coal while it burns. Particles that exit the combustion chamber with flue gases are separated into a cyclone and returned to the chamber. Combustion in fluidized bed boilers takes place at temperatures approximately 500° to 600° lower than in PCC boilers. The lower temperatures are less favorable to nitrogen oxide formations so fewer emissions are produced with CFB technology. Further, the plant will be equipped with limestone injection, dry-lime scrubbers, selective non-catalytic reduction with ammonia injection and a bag house for control of the various emissions.

Overview of Sevier County

To put the impacts of SPP in perspective, a brief overview of current economic and demographic conditions in the county is useful. Sevier is a largely rural county located in south-central Utah. The county seat and largest city is Richfield. According to the U.S. Census Bureau, the county has a total area of 1,910 square miles and has a very low population density of 10 persons per square mile.

As of July 1, 2006, the county's population was estimated at 19,984. Since the year 2000, the population has increased approximately 5.5%, ranking the county 21 of 29 counties in population growth. Total personal income in the county in 2005 was estimated to be $399.6 million. Per capita personal income was $20,612, placing Sevier County 26 of 29 counties. About 12% of the county's population is below the poverty line.

Average nonfarm employment in 2005 was 7,554. Employment is highly concentrated in government and trade, transportation and utilities. The average annual nonfarm wage in 2005 was $24,753.

New residential construction in the county is relatively strong. In 2006, a total of 139 new dwelling units were permitted in the county for an increase of about 16%. The value of new construction was $25.3 million, an increase of 23% over the $20.5 million reported in 2005. Nonresidential construction, however, dropped from $5.1 million in 2005 to $4.5 million in 2006 for a decline of 11.8%.

Property taxes charged by all taxing units totaled $11.1 million in 2005, a decline of 8% from 2004. Gross taxable sales in the county were $289.4 million in 2005 and are estimated to be $322.6 million in 2006, representing a healthy year-over increase of 11.5%.

Sevier Power Plant: Construction Phase

The construction impacts of SPP will be temporary and concentrated during a four-year build out period. Although the construction of SPP will have economic consequences for other parts of the state, only the impacts specific to Sevier County were estimated. The impacts of construction were estimated using a regionalized model developed by the Bureau of Economic Analysis, known as RIMS II. A more detailed discussion of RIMS II is provided in the section "Measuring Economic Impacts"

The economic benefits associated with construction include the direct purchases of goods and services from vendors located in Sevier County as well as a series of additional impacts associated with the purchases made by individuals employed by these vendors and individuals working directly on the project.

Assumptions

The primary assumptions used in estimating the construction impacts include the following:

- The plant is scheduled to take four years to build out. In current dollars, the total estimated cost of constructing and furnishing the plant is $597.9 million.
- Approximately $73.7 million of the construction cost will be spent in Sevier County. A significant share of this spending ($51.2 million) will be purchases of equipment and furnishings made through wholesalers located in Sevier County.
- Only a small portion of the construction employment will be provided by residents of Sevier County. Given the

complexities of building a power plant and the limited number of specialized trades resident in Sevier County, most skilled construction laborers needed for the project will either commute daily to the job site from surrounding counties or will be "transient workers" domiciled in Sevier County for short periods of time.

- Commuters and transient workers will spend an estimated $16.4 million (current dollars) in the county during the construction phase. This amount includes spending for accommodations, food and beverages, and purchase of other goods and services.
- All concrete for the project will be purchased from suppliers based in Sevier County. Of the remaining building material costs, 15% will be spent in Sevier County.

Table 1 shows the estimated amount of spending in Sevier County during the construction phase. These totals include (1) purchases directly related to construction such as materials, labor, wholesale purchases of equipment, services, utilities and transportation, (2) purchases made by transient workers (workers who will reside in Sevier County for short periods), and (3) purchases by workers commuting to Sevier County on a daily basis from surrounding areas.

Table 1
Sevier Power Plant
Estimated Spending in Sevier County
Construction Phase

Industry Sector	Amount*
Utilities	$109,447
Construction	$4,720,815
Concrete	$2,400,000
Retail Trade	$2,883,600
Wholesale Trade	$51,250,000
Transportation	$778,035
Communications	$50,665
Professional, Scientific and Technical Services	$2,213,387
Entertainment	$823,100
Accommodations	$8,337,680
Food Service and Drinking Places	$6,330,720
Other Services	$21,031
Wages	$7,225,000
Owner's Profit	$3,004,155
Total	$90,147,635

*Current (nominal) dollars
Source: Total construction costs provided by Stanley Consultants.
Estimates of transient worker and commuter purchases made by BEBR.

Employment and Earnings Impacts of Construction

The construction of SPP will require 2,140 person years of work (one person working for one year). Table 2 provides an estimate of worksite employment during each year of the construction phase. The information contained in the column titled "Direct Employment Total" in Table 2 is an estimate of the number of workers who will be onsite during a given year. The employment data shown in column 3 is an estimate of workers who will be permanent residents of Sevier County. The final column is a estimate of workers who will commute to Sevier County on a daily basis *and* those who will travel to the county and stay for short periods.

The construction of SPP will provide 233 person years of labor for construction workers who are residents of Sevier County and will generate $7.2 million (current dollars) in earnings. These are the direct impacts of construction.

The infusion of $90.1 million into Sevier County during the construction of SPP will have indirect effects as well. Over the four-year construction period, BEBR estimates that a total of 606 jobs will be indirectly supported by the project. Earnings tied to these jobs will be about $15.1 million.

When combined, total earnings for Sevier County residents generated by the construction project are estimated to be $22.3 million ($7.2 million in direct earnings and $15.1 million in indirect earnings). The earnings will support a total of 839 jobs in Sevier County (233 direct construction jobs and 606 jobs in other industry sectors). Table 3 shows the direct, indirect and induced impacts on employment and earnings during each year of the construction phase.

Map

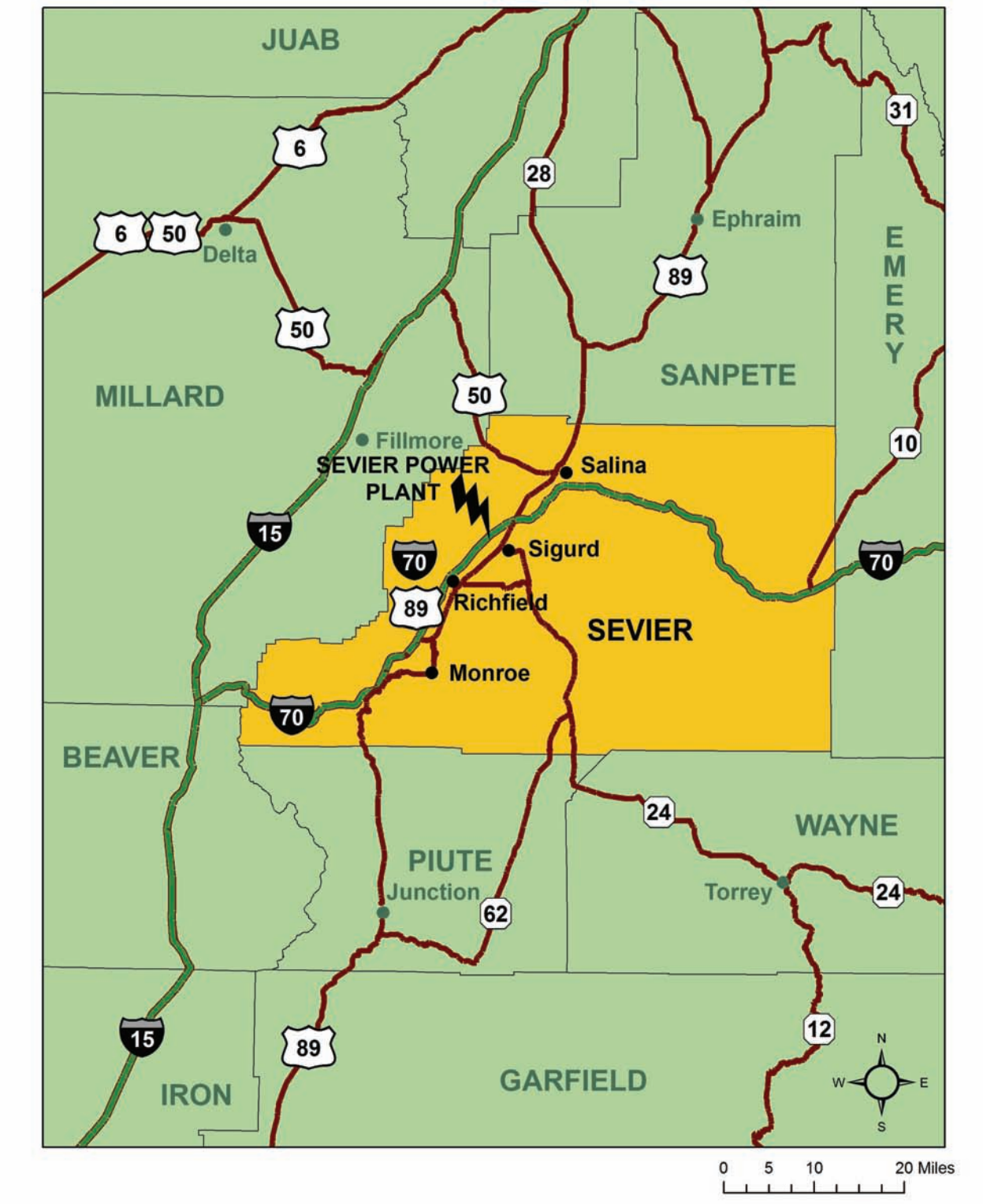
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Table 2
Sevier Power Plant
Estimated Employment
Construction Phase

Year	Direct Employment: Total	Direct Employment: Sevier County	Direct Employment: Outside the County
Year 1	370	35	335
Year 2	670	70	600
Year 3	620	72	548
Year 4	480	56	424

Source: Total estimate provided by Stanley Consultants; Estimates of direct employment in Sevier County and direct employment outside the County made by BEBR.

Sevier Power Plant: Operations Phase

The impacts generated from operating SPP will be long-term and ongoing. Although the operation of the plant may have economic consequences for other areas of the state, only the impacts on Sevier County have been estimated.

The operational impacts were derived using REMI Policy Insight, a dynamic, structural model customized for Sevier County. REMI simulates the growth path, structure and characteristics of Sevier County's economy and population into the future. This is the baseline projection, or control forecast for the region, and it presents the future that is most likely to occur given our current understanding of economic and demographic trends within the county. Modeling the activities of the proposed power plant with REMI provides a new growth path, or simulation forecast, for the region. The difference between the control forecast and the simulation forecast is the impact. A detailed discussion of REMI Policy Insight is provided in "Measuring Economic Impacts."

The impacts of operating the power plant derive from (1) direct purchases by SPP of goods and services necessary to operate the facility, (2) indirect purchases by vendors that supply goods and services to SPP and purchases of their suppliers, (3) purchases by employees of all supplying vendors and workers employed by SPP.

Estimates of the employment, wages and certain other operational inputs were supplied by the project engineer. All inputs not provided by the project engineer were estimated by BEBR based on previous impact studies on power plant operations.

Table 3
Sevier Power Plant
Direct, Indirect and Induced Employment and Earnings Impacts
Construction Phase

	Year 1	Year 2	Year 3	Year 4	Total
Earnings Impacts					
Direct	$1,083,750	$2,167,500	$2,245,718	$1,728,032	$7,225,000
Indirect and Induced	$2,439,798	$5,253,618	$4,774,626	$2,614,124	$15,082,248
Total Earnings	$3,523,548	$7,421,118	$7,020,344	$4,342,579	$22,307,166
Employment Impacts					
Direct	35	70	72	56	233
Indirect and Induced	97	202	190	117	606
Total Employment	132	272	262	173	839

Note: Employment impacts are a combination of full-time workers, part-time workers, and proprietors.
Current (nominal) dollars
Source: Impacts were generated using RIMS II. Analysis by the Bureau of Economic and Business Research, University of Utah (2007).

Assumptions

The primary assumptions to estimate the operational impacts of SPP follow:

- The plant will commence operations in 2011. The analysis assumes the facility is fully operational in that year.
- Estimates of the employment, wages and the amount of coal and limestone needed to operate the plant were provided by Stanley Consultants, the engineering firm for the project. All other inputs were estimated by BEBR based on information used for a previous power plant impact study.
- In nominal dollars, the estimated annual operating cost of the plant in 2011 will be approximately $43.3 million. Of this, as much as $32.9 million could be spent in Sevier County.
- When fully operational, the plant will employ a total of 77 people and will bear a payroll of $5.6 million (nominal dollars). All employees of the plant will reside in Sevier County.
- The plant will require approximately 960,000 tons of coal and 33,600 tons of limestone annually. All coal and limestone will be purchased from suppliers located in Sevier County.
- All electricity produced at the plant will be sold outside Sevier County.
- Although the life of the plant could be considerably longer than 20 years, this impact analysis covers only the period 2011 through 2030.
- Estimates of the employment, wages and certain other operational inputs were supplied by Stanley Consultants.

Demographic and Economic Impacts of Operations

Based on the assumptions presented above, in 2011 Sevier County will have 371 more jobs and 316 more people living in the county than it would have without the plant. In nominal dollars, gross regional product (GRP) and personal income will be $31.8 million and $16 million greater, respectively, than the baseline case.

In 2030, the impacts on Sevier County are estimated to be 368 jobs, an additional 439 people, and increased GRP and personal income of $60.4 million and $33.9 million, respectively.

When averaged over the study period, population in Sevier County will be about 1.6% greater and employment about 2.9% greater than would be the case without the plant. The GRP of the county will be about 4.8% greater and personal income almost 2.6% greater than projected in the baseline case.

Summary results from the REMI simulation are shown in Tables 4 and 5. These tables show the absolute and percentage changes in employment, population, GRP and personal income in Sevier that are projected for each year the plant operates. Table 6 shows both the baseline and simulation forecasts for employment, population, GRP, personal income and per capita personal income in nominal dollars for selected years. Table 7 presents these results in constant 2006 dollars.

As shown in these tables, the demographic and economic impacts of the power plant on Sevier County are modest, but positive. The construction and operation of SPP will likely strengthen, but not significantly alter the economic and demographic base of Sevier County.

A discussion of SPP's impacts on various economic and demographic measures follows.

Gross Regional Product Impacts

Gross regional product as a value-added concept is analogous to the national concept of gross domestic product. It is equal to output (excluding the intermediate inputs) and represents compensation and profits. Value added is a measure of the contribution of each private industry and of government to a region's gross regional product. It is defined as an industry's gross output (which consists of sales or receipts and other operating income, commodity taxes, and inventory change) minus its intermediate inputs (which consist of energy, raw materials, semi-finished goods, and services that are purchased from domestic industries or from foreign sources).

The GRP estimates presented in this study are based on the value-added concept.

In 2011, the operations of SPP will generate an additional $31.8 million (nominal dollars) for Sevier County. This

Table 4
Sevier Power Plant
Summary Impacts: 2011-2030
Operations Phase

Projected Changes from Baseline

Year	Emp.	Pop.	Regional Product (nominal $)	Gross Regional Product (constant 2006 $)	Personal Income (nominal $)	Personal Income (constant 2006 $)
2011	371	316	$31,773,316	$28,049,602	$16,000,000	$14,124,860
2012	365	333	$33,190,969	$28,534,165	$16,680,000	$14,339,740
2013	361	349	$34,067,764	$28,534,165	$17,280,000	$14,473,224
2014	357	366	$35,034,569	$28,600,242	$17,890,000	$14,604,385
2015	355	379	$35,951,384	$28,611,254	$18,520,000	$14,738,805
2016	353	391	$36,954,926	$28,677,331	$19,170,000	$14,876,080
2017	349	403	$37,993,444	$28,754,421	$19,840,000	$15,015,425
2018	350	405	$39,056,633	$28,831,510	$20,560,000	$15,177,341
2019	346	415	$40,156,792	$28,919,613	$21,290,000	$15,332,364
2020	345	419	$41,273,855	$28,996,702	$22,060,000	$15,498,122
2021	342	423	$42,439,021	$29,084,805	$22,870,000	$15,673,535
2022	342	426	$43,635,653	$29,172,907	$23,700,000	$15,844,793
2023	340	428	$44,866,899	$29,261,010	$24,560,000	$16,017,385
2024	340	429	$46,132,216	$29,349,112	$25,440,000	$16,184,816
2025	337	431	$47,511,396	$29,481,266	$26,370,000	$16,362,832
2026	363	435	$53,440,184	$32,344,594	$28,760,000	$17,406,948
2027	366	436	$55,203,400	$32,586,875	$30,040,000	$17,732,780
2028	367	436	$56,868,139	$32,741,054	$31,300,000	$18,020,548
2029	368	438	$58,584,628	$32,895,234	$32,570,000	$18,288,035
2030	368	439	$60,351,911	$33,049,413	$33,850,000	$18,536,656

Source: Impacts generated by REMI Policy Insight. Analysis by the Bureau of Economic and Business Research, University of Utah (2007).

represents an increase of 5.4% on a control baseline of $588.8 million. The impact on GRP reaches $60.4 million (nominal dollars) by 2030–an increase of 4.6% on a control baseline of $1.3 billion.

Over the 20-year study period, the average increase in GRP in Sevier County will be about 4.8%; that is, GRP will be approximately 4.8% greater than the baseline case without the power plant. (Exhibit 1)

Employment Impacts

Employment includes estimates of the number of jobs (full-time plus part-time) by place of work. Full-time and part-time jobs are counted at equal weight; i.e., the employment numbers presented here are not full-time equivalents. Employees, sole proprietors and active partners are also included in the employment estimates, but unpaid family workers and volunteers are not.

Table 5
Sevier Power Plant
Summary Impacts: 2011-2030
Operations Phase
Projected Percentage Changes from Baseline

Year	Employment	Population	Gross Regional Product	Personal Income
2011	3.37%	1.47%	5.39%	2.82%
2012	3.27%	1.52%	5.31%	2.80%
2013	3.18%	1.56%	5.21%	2.77%
2014	3.10%	1.61%	5.12%	2.74%
2015	3.04%	1.64%	5.03%	2.71%
2016	2.98%	1.66%	4.96%	2.69%
2017	2.91%	1.69%	4.89%	2.66%
2018	2.89%	1.68%	4.84%	2.64%
2019	2.83%	1.69%	4.78%	2.62%
2020	2.79%	1.69%	4.75%	2.60%
2021	2.74%	1.68%	4.67%	2.59%
2022	2.71%	1.68%	4.61%	2.57%
2023	2.67%	1.67%	4.56%	2.55%
2024	2.65%	1.66%	4.50%	2.53%
2025	2.60%	1.65%	4.46%	2.51%
2026	2.77%	1.66%	4.81%	2.62%
2027	2.77%	1.65%	4.78%	2.62%
2028	2.75%	1.64%	4.72%	2.62%
2029	2.73%	1.64%	4.67%	2.62%
2030	2.70%	1.63%	4.62%	2.62%

Calculated by the Bureau of Economic and Business Research, University of Utah (2007).

In 2011, the county will have 371 more jobs than projected in the baseline scenario. This is an increase of slightly less than 3.4% on a baseline of 11,001 jobs.

As shown in Table 4, the employment impacts vary slightly from year to year, but over the study period the employment impact is an average of 354 jobs annually. This means that, if the power plant is in full operation during the study period, there will be, on average, 354 more jobs in Sevier County each year than would be the case without the plant.

As a percentage of the projected baseline employment, the impacts diminish slightly over time; however, based on the simulation results, operations of the Sevier Power Plant will permanently increase employment in Sevier County by almost 3%. (Exhibit 2)

Apart from the utility sector (which includes the employees of SPP), those industries most affected will be construction, mining and retail trade. Together, these four sectors account for almost three-quarters of all new jobs generated each year by SPP operations in Sevier County. Employment increases by industry sector are presented in Table 8. Those industry sectors that will be most impacted are highlighted.

Population Impacts

Population is a person count of residents in a given area, in this case, Sevier County. It is a mid-year estimate (July 1).

Population is affected by changes in total migration, special populations (prison populations, college populations, etc.), birth rates, and survival rates. For example, an increase in population can result from an increase in one or more of the variables noted above.

The impact of power plant operations on the population base of Sevier County will be small. In 2011, there will be just 316 more people living in the county than projected in the baseline case-an increase of 1.5% over the baseline estimate of

Exhibit 1
Sevier Power Plant Operations
Gross Regional Product Impacts: 2011-2030

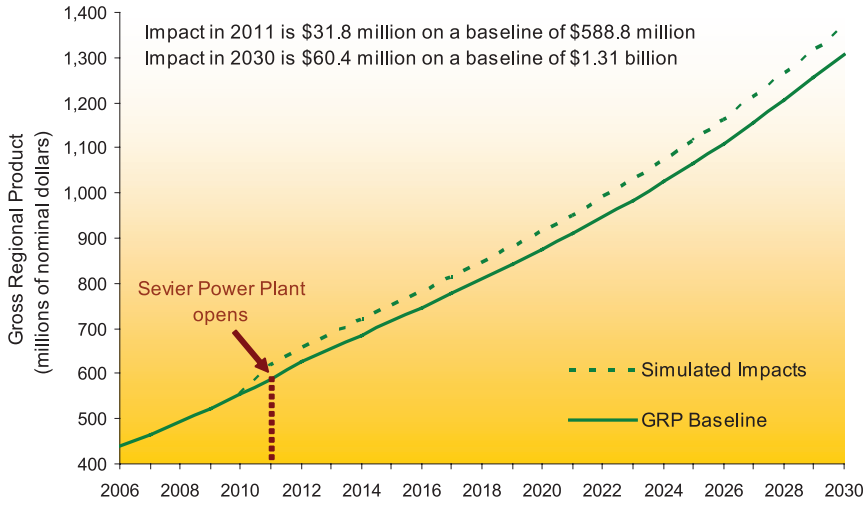


Table 6
Sevier Power Plant
Baseline and Impacts: Selected Years
Nominal Dollars
Operations Phase

Variables	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030
Baseline												
Total Employment	11,001	11,171	11,363	11,533	11,696	11,849	11,985	12,114	12,240	12,385	12,971	13,615
Total Population	21,473	21,912	22,343	22,757	23,151	23,524	23,882	24,227	24,550	24,855	26,072	26,892
Gross Regional Product (000)	$588,811	$625,132	$654,795	$683,963	$715,430	$745,059	$777,039	$808,583	$841,060	$874,699	$1,066,655	$1,307,189
Personal Income (000)	$568,000	$597,000	$624,000	$653,000	$683,000	$714,000	$746,000	$778,000	$812,000	$848,000	$1,049,000	$1,293,000
Personal Income per Capita	$26,452	$27,245	$27,928	$28,694	$29,502	$30,352	$31,237	$32,113	$33,075	$34,118	$40,235	$48,081
Projected Changes from Baseline												
Total Employment	371	365	361	357	355	353	349	350	346	345	337	368
Total Population	316	333	349	366	379	391	403	405	415	419	431	439
Gross Regional Product (000)	$31,773	$33,191	$34,068	$35,035	$35,951	$36,955	$37,993	$39,057	$40,157	$41,274	$47,511	$60,352
Personal Income (000)	$16,000	$16,680	$17,280	$17,890	$18,520	$19,170	$19,840	$20,560	$21,290	$22,060	$26,370	$33,850
Personal Income per Capita	$351	$342	$332	$320	$312	$305	$299	$307	$303	$307	$341	$466
Projected Percentage Changes from Baseline												
Total Employment	3.37%	3.27%	3.18%	3.10%	3.04%	2.98%	2.91%	2.89%	2.83%	2.79%	2.60%	2.70%
Total Population	1.47%	1.52%	1.56%	1.61%	1.64%	1.66%	1.69%	1.68%	1.69%	1.69%	1.65%	1.63%
Gross Regional Product	5.39%	5.31%	5.21%	5.12%	5.03%	4.96%	4.89%	4.84%	4.78%	4.72%	4.46%	4.62%
Personal Income	2.82%	2.80%	2.77%	2.74%	2.71%	2.69%	2.66%	2.64%	2.62%	2.59%	2.51%	2.62%
Personal Income per Capita	1.33%	1.26%	1.19%	1.11%	1.06%	1.00%	0.96%	0.96%	0.92%	0.90%	0.85%	0.97%
New Baseline												
Total Employment	11,372	11,536	11,724	11,890	12,051	12,202	12,334	12,464	12,586	12,703	13,308	13,983
Total Population	21,789	22,245	22,692	23,123	23,530	23,915	24,285	24,632	24,965	25,274	26,503	27,331
Gross Regional Product (000)	$620,584	$658,324	$688,863	$718,998	$751,381	$782,014	$815,033	$847,639	$881,217	$915,972	$1,114,166	$1,367,541
Personal Income (000)	$584,000	$613,680	$641,280	$670,890	$701,520	$433,170	$765,840	$798,560	$833,290	$870,060	$1,075,370	$1,326,850
Personal Income per Capita	$27,197	$28,007	$28,702	$29,481	$30,302	$31,167	$32,068	$32,962	$33,943	$32,005	$41,246	$49,340

Sources: Gross Regional Product, Personal Income baselines-REMI Policy Insight; Population and Employment baselines, Governor's Office of Planning and Budget, Demographic and Economic Analysis Division. Per Capita Income baseline calculated by the Bureau of Economic and Business Research, University of Utah.

21,473. The population impact increases gradually over time, reaching 439 people by 2030, for an increase of 1.6% on a baseline of 26,892.

Overall, the operations of the power plant will expand the population base in Sevier County by about 1.6% over the baseline estimate. (Exhibit 3) The population impacts by five-year age cohort are presented in Table 9.

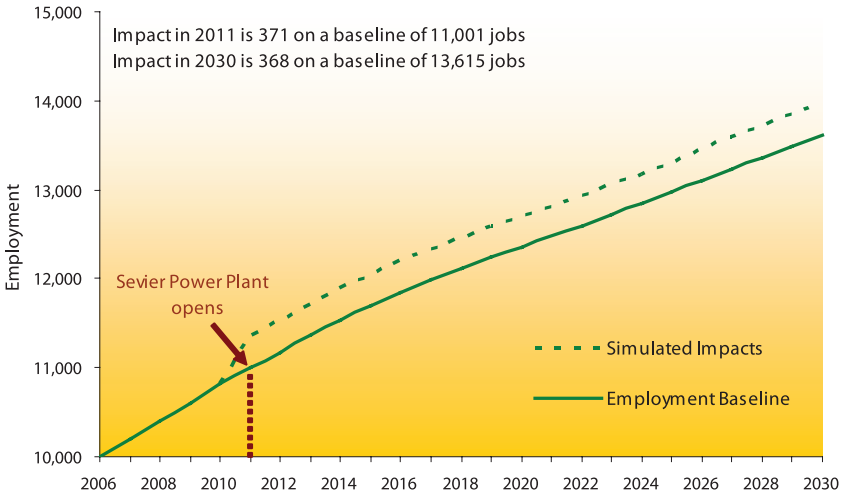
As shown in Table 9, the impact on the school-age population begins immediately, but is relatively small. In 2011, there will be about 68 more school-aged children living in Sevier County than projected in the baseline scenario. These children are distributed across kindergarten through high school (ages 5 through 19). The number of additional school-aged children living in Sevier County gradually increases each year, reaching 130 by 2022. The impacts are sustained at roughly this number until 2027, when the added school-age population begins to decrease. The age groups most impacted each year are highlighted.

Personal Income Impacts

Personal income is the income received by all persons from all sources. It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustments, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance. Personal income is affected by changes in any of the components listed above.

The personal income of an area is the income that is received by, or on behalf of, all the individuals who live in the area;

Exhibit 2
Sevier Power Plant Operations
Employment Impacts: 2011-2030



therefore, the estimates of personal income are presented by the place of residence of the income recipients. For example, if an individual works in Morgan County but resides in Sevier County the employment and earned income of the individual are reported in Morgan County but the personal income of the individual is counted in Sevier County.

In nominal dollars, personal income in Sevier County is projected to be $16 million greater in 2011 than it would have been in the baseline scenario. By 2030, the impact increases to about $33.9 million. Based on the REMI simulation, residents of Sevier County will report a total of $468.8

Table 7
Sevier Power Plant
Baseline and Impacts: Selected Years
Constant 2006 Dollars
Operations Phase

Variables	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030
Baseline												
Total Employment	11,001	11,171	11,363	11,533	11,696	11,849	11,985	12,114	12,240	12,385	12,971	13,615
Total Population	21,473	21,912	22,343	22,757	23,151	23,524	23,882	24,227	24,550	24,855	26,072	26,892
Gross Regional Product (000)	$519,804	$537,425	$548,437	$558,349	$569,362	$578,172	$588,084	$596,89	$605,714	$614,541	$664,869	$715,832
Personal Income (000)	$501,433	$513,239	$522,644	$533,072	$543,553	$554.070.	$564,592	$574,31	$584,776	$595,757	$650,914	$708,062
Personal Income Per Capita	$23,352	$23,423	$23,392	$23,425	$23,479	$23,553	$23,641	$23,706	$23,820	$23,969	$24,966	$26,330
Projected Changes from Baseline												
Total Employment	371	365	361	357	355	353	349	350	346	345	337	368
Total Population	316	333	349	366	379	391	403	405	415	419	431	439
Gross Regional Product (000)	$28,050	$28,534	$28,534	$28,600	$28,611	$28,677	$28,754	$28,832	$28,920	$28,997	$29,841	$33,049
Personal Income (000)	$14,125	$14,340	$14,473	$14,604	$14,739	$14,876	$15,015	$15,177	$15,332	$15,498	$16,363	$18,537
Personal Income Per Capita	$310	$294	$278	$261	$248	$237	$226	$224	$218	$216	$211	$255
Projected Percentage Changes From Baseline												
Total Employment	3.37%	3.27%	3.18%	3.10%	3.04%	2.98%	2.91%	2.89%	2.83%	2.79%	2.60%	2.70%
Total Population	1.47%	1.52%	1.56%	1.61%	1.64%	1.66%	1.69%	1.68%	1.69%	1.69%	1.65%	1.63%
Gross Regional Product	5.39%	5.31%	5.21%	5.12%	5.03%	4.96%	4.89%	4.84%	4.78%	4.72%	4.46%	4.62%
Personal Income	2.82%	2.80%	2.77%	2.74%	2.71%	2.69%	2.66%	2.64%	2.62%	2.59%	2.51%	2.62%
Personal Income Per Capita	1.33%	1.26%	1.19%	1.11%	1.06%	1.00%	0.96%	0.96%	0.92%	0.90%	0.85%	0.97%
New Baseline												
Total Employment	11,372	11,536	11,724	11,890	12,051	12,202	12,334	12,464	12,586	12,703	13,308	13,983
Total Population	21,789	22,245	22,692	23,123	23,530	23,915	24,285	24,632	24,965	25,274	26,503	27,331
Gross Regional Product (000)	$547,854	$565,959	$576,972	$586,949	$597,973	$606,849	$616,838	$625,72	$634,624	$643,511	$691,351	$748,881
Personal Income (000)	$515,557	$527,579	$537,117	$547,677	$558,292	$568,946	$579,608	$589,49	$600,108	$611,256	$667,277	$726,599
Personal Income Per Capita	$21,040	$24,077	$24,040	$24,066	$24,115	$24,186	$24,270	$24,332	$24,444	$24,593	$25,594	$27,019

Sources: Gross Regional Product, Personal Income baselines-REMI Policy Insight; Population and Employment baselines, Governor's Office of Planning and Budget, Demographic and Economic Analysis Division. Per Capita Income baseline and conversions to constant 2006 dollars calculated by the Bureau of Economic and Business Research, University of Utah.

Definitions of Terms Used in This Report

Employment Employment comprises estimates of the number of jobs, full-time plus part-time, by place of work. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included.

Personal Income Personal income is the income received by all persons from all sources. It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustments, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance. Personal income can be measured in current dollars or constant dollars (inflation adjusted).

The personal income of an area is the income that is received by, or on behalf of, all the individuals who live in the area; therefore, the estimates of personal income are presented by the place of residence of the income recipients. For example, if an individual works in Morgan County but resides in Sevier County the employment and earned income of the individual are reported in Morgan County but the personal income of the individual is counted in Sevier County.

Wage and Salary Disbursements Wage and salary disbursements are the monetary remuneration of employees, including the compensation of corporate officers; commissions, tips, and bonuses; voluntary employee contributions to certain deferred compensation plans, such as 401(k) plans; and receipts in kind that represent income. Wage and salary disbursements are a component of personal income and are reported on a place-of-work basis.

Proprietors' Income This component of personal income is the current-production income (including income in kind) of sole proprietorships and partnerships and of tax-exempt cooperatives. Corporate directors' fees are included in proprietors' income, but the imputed net rental income of owner-occupants of all dwellings is included in rental income of persons. Proprietors' income excludes dividends and monetary interest received by non-financial businesses and rental incomes received by persons not primarily engaged in the real estate business; these incomes are included in dividends, net interest, and rental income of persons, respectively.

Other Labor Income This component of personal income consists of employer contributions for employee pension and insurance funds and of employer contributions for government social insurance.

Net Residence Adjustment Net residence adjustment is the net inflow of the net labor earnings of interarea commuters. Personal income in a region is based on the residence of the income recipients. However, the source data for most of the components of wage and salary disbursements, supplements to wages and salaries, and contributions for government social insurance are on a place-of-work basis. Consequently, a residence adjustment is made to convert these source data to a place-of-residence basis.

A negative net residence adjustment indicates that more income is taken out of the area by non-residents who commute inward than is brought into the area by residents who commute outward.

Population Population is a person count of residents in a given area. It is a mid-year estimate (July 1).

Direct Effects-RIMS II These are the initial, immediate effects cause by a specific activity such as construction, or direct purchases of labor, goods and services made by a business located within a certain region.

Indirect Effects-RIMS II The impacts that result from intermediate rounds of production in the supply of goods and services to industry sectors specified in the direct impact phase.

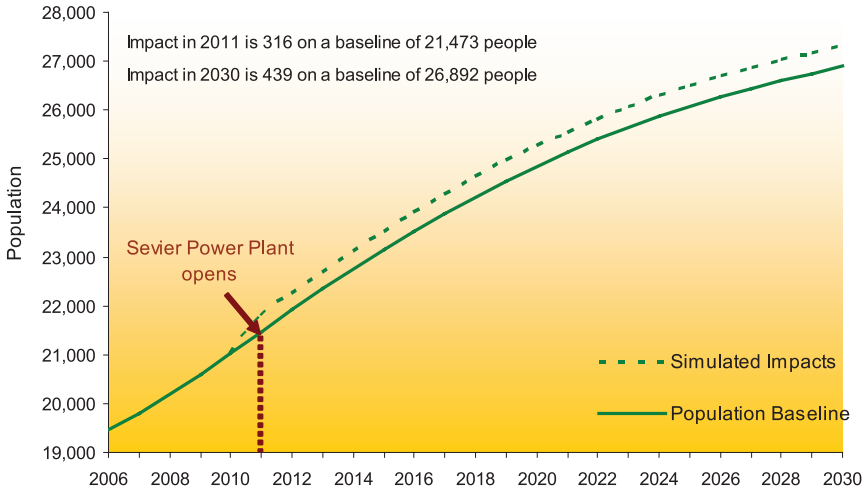
Induced Effects-RIMS II The impacts that result from the spending of employees who are either (1) directly employed by the business or activity defined in the direct impact phase or (2) employed by businesses that provide goods and services to satisfy the requirements of direct purchases.

Impacts-REMI Policy Impact The effects produced by simulating a change in a region's economy as compared to the baseline or control forecast of that economy without the change.

Current or Nominal Dollars Dollars that have not been adjusted to compensate for inflation.

Constant Dollars Dollars that have been adjusted for inflation based on the buying power in a certain base year.

Exhibit 3
Sevier Power Plant Operations
Population Impacts: 2011-2030



million more in personal income over 20 years if the power plant is built than they would in its absence. Over the study period, personal income in the county expands by about 2.5%. (Exhibit 4)

On a per capita basis, the nominal increase in personal income translates to an additional $351 per person in 2011. By 2030, per capita income increases by an additional $466 for each person living in the county.

In constant 2006 dollars, the impact on personal income will be an increase of about $14.1 million in 2011. By 2030, the impact increases to $18.5 million. This represents a total increase in personal

Table 8
Sevier Povier Power Plant
Detailed Employment Impacts: 2011-2030
Operations Phase

Industry Sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2030
Natural Resources, Mining	66	65	64	64	63	63	62	62	61	61	60	60	59	59	58	57
Forestry, Fishing, Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mining	66	65	64	64	63	63	62	62	61	61	60	60	59	59	58	57
Utilities	81	80	80	80	80	80	80	80	80	80	80	80	80	80	80	95
Construction	100	96	93	91	88	86	84	83	81	80	79	77	76	75	74	79
Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Trade	37	37	36	36	36	36	35	35	35	35	34	34	34	34	33	35
Wholesale trade	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Retail Trade	35	35	34	34	34	34	33	33	33	33	32	32	32	32	31	33
Transportation and Warehousing	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Information	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finance Accounting	7	7	7	5	5	5	5	5	5	5	5	5	5	5	5	5
Finance, Insurance	4	4	4	3	3	3		3	3	3	3	3	3	3	3	2
Real Estate, Rental, Leasing	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	3
Services	54	52	53	52	53	52	52	52	53	52	52	54	54	55	56	63
Professional, Technical Services	13	13	13	13	14	14	14	14	14	14	14	15	15	15	15	17
Management of Companies	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
Administrative/Waste Services	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4
Educational Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Care and Social Assistance	9	9	10	10	11	11	12	12	13	13	14	15	15	16	17	21
Arts, Entertainment and Recreation	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
Accommodation and Food Services	13	12	12	12	11	11	11	11	11	10	10	10	10	10	10	10
Other Services (Excl. Government)	10	9	9	9	9	9	9	9	9	9	8	8	8	8	8	9
Public Administration	23	25	26	27	28	28	29	29	29	30	30	30	30	30	29	29
State and local Government	23	25	26	27	28	28	29	29	29	30	30	30	30	30	29	29
Federal Civilian	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Employment Impact	371	365	361	357	355	353	349	350	346	345	342	342	340	340	337	368

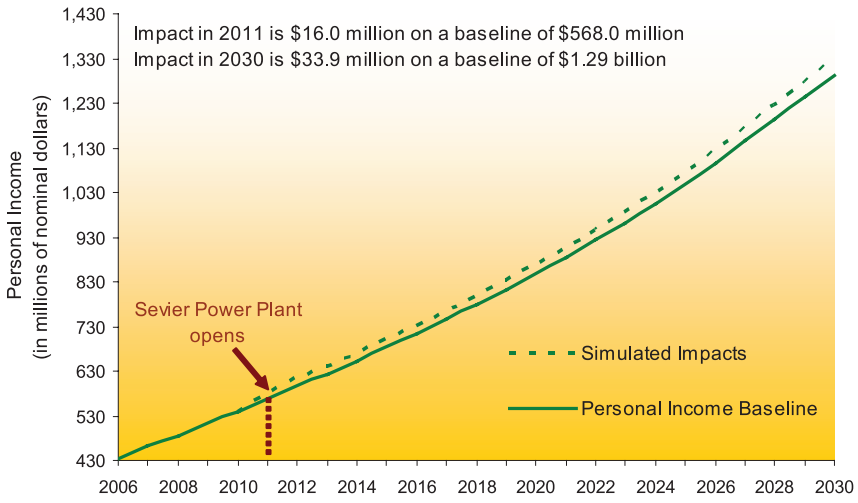
Source: Impacts generated using REMI Policy Insight. Analysis by the Bureau of Economic and Business Research, University of Utah (2007).

Table 9
Sevier Power Plant
Population Impact Detail: 2011-2030
5-Year Age Cohorts

5-Year Age	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Ages 0-4	45	47	48	49	49	49	48	46	45	43	41	39	38	36	34	34	33	33	33	33
Ages 5-9	30	34	39	42	45	47	49	49	50	49	48	47	45	43	41	40	38	36	34	33
Ages 10-14	21	22	24	26	29	32	36	40	43	45	47	48	49	48	48	47	46	44	42	40
Ages 15-19	17	18	19	20	21	23	24	24	26	29	31	35	39	41	44	45	47	47	47	47
Ages 20-24	22	21	21	20	20	20	20	20	21	21	22	22	22	24	26	29	32	36	39	41
Ages 25-29	40	39	37	34	30	27	25	22	21	20	19	19	18	18	18	19	19	19	21	23
Ages 30-34	38	41	43	45	45	44	42	38	34	30	27	24	21	19	18	17	16	16	16	16
Ages 35-39	28	31	33	36	38	41	43	44	45	45	43	41	37	33	29	25	22	19	17	16
Ages 40-44	21	23	25	26	28	30	32	34	36	38	40	42	43	44	43	42	39	35	31	27
Ages 45-49	18	19	20	21	22	23	24	25	27	28	30	31	33	35	37	39	40	42	42	42
Ages 50-54	13	14	16	17	18	19	20	20	21	22	23	23	24	26	27	28	30	32	34	35
Ages 55-59	10	10	11	12	13	14	15	16	17	18	18	19	20	20	21	22	22	23	25	26
Ages 60-64	7	8	8	9	10	10	11	11	12	13	13	14	15	16	17	17	18	18	19	20
Ages 65-69	5	5	6	6	7	7	8	8	9	9	10	10	11	11	12	13	13	14	15	16
Ages 70-74	1	1	2	3	4	4	5	6	6	6	7	7	7	8	8	9	9	10	10	11
Ages 75-79	0	0	0	0	0	1	1	2	2	3	4	4	5	5	5	6	6	6	7	7
Ages 80-84	0	0	0	0	0	0	0	0	0	0	0	1	1	2	3	3	4	4	4	4
Ages 85 and Over	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2
Total Population	**316**	**333**	**349**	**366**	**379**	**391**	**403**	**405**	**415**	**419**	**423**	**426**	**428**	**429**	**431**	**435**	**436**	**436**	**438**	**439**

Source: Impacts generated using REMI Policy Insight. Analysis by the Bureau of Economic and Business Research, University of Utah (2007).

Exhibit 4
Sevier Power Plant Operations
Personal Income Impacts: 2011-2030



income of $318.2 million for residents of Sevier County over the 20-year study period. Adjusting for inflation, the increase in personal income translates to an additional $310 in constant 2006 dollars per person in 2011. By 2030, the per capita income increase is about $255 per person.

Summary

As shown in this analysis, the construction and operation of the Sevier Power Plant will impact the county's economy. The construction of SPP will take four years at a cost of almost $600 million current dollars.

Approximately $74 million will be spent in Sevier County. An additional $16 million will be spent by construction workers commuting to the county to work at the plant.

During the construction phase, expenditures in Sevier County attributable to SPP will generate a total of $22.3 million in earnings for residents of Sevier County. These earnings will support a total of 839 jobs in the county, or an average of 210 jobs annually. The peak impact of construction will occur in years two and three with additional employment of 272 and 262, respectively. The associated earnings during these peak years will be $7.4 million and $7.0 million (current dollars).

When the facility is operating at full capacity in 2011, it will employ 77 people with an annual payroll, in nominal dollars, of $5.6 million. The estimated operating costs will be approximately $43 million, of which almost $33 million could be spent locally. In 2011, Sevier County will have 371 more jobs and 316 more people than it would have without the power plant. GRP is projected to be $31.8 million greater and personal income $16 million (nominal dollars) greater than the baseline scenario for the county.

By 2030, the impacts are projected to be an additional 368 jobs on a baseline of 13,615, and 439 people on a baseline of 26,892. In current dollars (unadjusted for inflation), GRP is projected to be $60 million greater (on a baseline of $1.31 billion) and personal income almost $34 million greater (on a baseline of $1.29 billion).

These impacts sound significant, but averaging them over the study period provides perspective. Over the period, the population in Sevier County will be about 1.6% larger than it would have been without the plant. Employment will be about 2.8% greater. Gross regional product will increase by about 4.6% and personal income by about 2.8%.

In summary, the construction and operation of the Sevier Power Plant will strengthen the economic base of Sevier County by adding new jobs, income and earnings for county residents; however, neither constructing nor operating the plant will significantly alter the county's existing economic or demographic growth path. Tables 10 and 11 summarize the construction and operations impacts.

Table 10
Construction Impacts
(millions of nominal dollars)

	Year 1	Year 2	Year 3	Year 4
Earnings	$3.52	$7.42	$7.02	$4.34
Employment	132	272	262	173

Table 11
Operations Impacts
(millions of nominal dollars)

	2011	2016	2021	2026	2030	Average Percentage Difference
Employment	371	353	342	363	368	1.6%
Population	316	391	423	435	439	2.8%
GRP	$31.8	$37.0	$42.4	$53.4	$60.4	4.6%
Personal Income	$16.0	$19.2	$22.9	$28.8	$33.9	2.6%

Note: Average percentage difference is the annual difference between the simulation and the baseline averaged over the study period.

Measuring Economic Impacts

Economic impacts are the result of changes in the size and structure of a region's economy when goods and services are purchased from vendors within the region using money generated from outside the region. In the strictest interpretation, economic impacts occur only when "new" money is injected into the regional economy and spent locally. This inflow of external dollars has the potential to expand the size and strength of the region's economy. Money that is spent outside of the region represents leakage from the economy and does not create jobs or income for the region's residents.

Various models can be used to measure economic impacts. The two used in this study are described below.

RIMS II

RIMS II is the updated version of the Regional Input-Output Modeling System developed by the Bureau of Economic Analysis (BEA) in 1970. RIMS II is based on an accounting framework called an Input-Output (I-O) table. For each industry, an I-O table shows the industrial distribution of inputs purchased and outputs sold. A typical I-O table in RIMS II is derived from two data sources: BEA's national I-O table, which shows the input and output structure of approximately 500 industries in the U.S., and the BEA's regional economic accounts, which are used to adjust the national I-O table to show a region's industrial structure and trading patterns. I-O models capture both business-to-business purchases within a region as well as induced spending generated when households supported by these businesses purchase goods and services within the region. I-O models are static models; they measure impacts only in the year the economic event occurs.

Using RIMS II for impact analysis has several advantages. RIMS II multipliers can be estimated for any region in the U.S. that is composed of one or more counties, and for any industry or group of industries in the national I-O table. Second, the accessibility of the main data sources for RIMS II keeps the cost of estimating regional multipliers relatively low. Finally, empirical tests show that estimates based on expensive surveys and RIMS II-based estimates are similar in magnitude.

There are two primary drawbacks of using RIMS II. First, RIMS II is a simple static I-O model that shows the impacts of changes or economic "shocks" in a region in a single year. It has no capability to show the effects of changes going forward. Second, RIMS II provides multipliers for specific regions, industries and variables. The multipliers fall into three categories: final demand, earnings and employment. These multipliers fail to take into account the demographic effects (shortages of labor, increases in population or in/out migration) that result from economic shocks that occur within a region.

Despite these drawbacks, RIMS II is an effective model for estimating employment, earnings and output impacts for short-term economic events such as construction.

REMI Policy Insight®

The REMI model is a structural model that incorporates key aspects of three types of economic models: Input-Output models, General Equilibrium models, and econometric models. REMI is a dynamic model in that it forecasts how changes in the economy and adjustments to those changes will occur on a year-by-year basis. The dynamic aspect of REMI provides insights into the long-term impact considerations of a policy change or economic shock to an economic region.

Data for the REMI model are obtained from the Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Energy, the Census Bureau and other public sources. Based on these data, a control or baseline forecast is generated for a specific region. This forecast simulates the long-term economic growth of the region based on past and current trends and conditions. An alternative forecast is then developed based on the economic event under study. These alternative forecasts are created by altering the value of policy variables included in REMI from their value in the control forecast. The deviation of the alternative forecast from the control, or baseline forecast, is the effect or impact of the economic event on the regional economy.

A detailed discussion of REMI Policy Insight® can be accessed at: www.REMI.com

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