Utah FOUNDATION Research Report

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ECONOMIC AND FISCAL IMPACT ANALYSIS OF THE INTERMOUNTAIN POWER PROJECT

HIGHLIGHTS

- This study assesses the economic impact of the Intermountain Power Project (IPP) in Utah for the year ending June 30, 2008. In addition, financial forecasts provide the basis to estimate economic impacts out to the year 2026.
- Results from the analysis show that in the year ending June 30, 2008, IPP contributed almost $627 million in economic activity to the state, which equals six-tenths of one percent of total output generated by the Utah economy.
- The project's expenditures created approximately 3,350 jobs in the state of Utah, accounting for nearly three-tenths of one percent of Utah's total non-farm employment.
- IPP contributed just over $147 million in household earnings during this one-year period, or one-third of one percent of total Utah household earnings.
- Through the year 2026, IPP may be relied upon to continue to contribute in the magnitude of 0.60% of state GDP, 0.25% of state employment, and between 0.25% and 0.30% of Utah's total household earnings each year. This equates to an average contribution per year of $866 million in economic activity to the state, 4,600 jobs, and $222 million in household earnings.

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Utah Foundation has been asked to assess the economic impact of the Intermountain Power Project (IPP) in Utah. The most straightforward manner in which to assess this economic impact is with multiplier analysis. To be consistent with the most recent RIMS II multipliers, this study assesses the economic impact for the year ending June 30, 2008. In addition, financial forecasts provide the basis to estimate economic impacts out to the year 2026. The findings from this analysis underscore the importance of IPP as a stable and consistent contributor to the state's economy.

The analysis demonstrates that, through the year 2026, IPP may be relied on to contribute in the magnitude of 0.60% of state GDP, 0.25% of state employment, and between 0.25% and 0.30% of Utah's total household earnings each year. This equates to an average contribution per year of $866 million in economic activity to the state, 4,600 non-farm jobs, and $222 million in household earnings. While most multiplier studies examine an entire industry, this study examines one project within the larger electric generation and transmission industry. The contribution IPP is projected to make to the state's economy, both today and through 2026, makes it an important mainstay in Utah's economy.

HISTORY AND DESCRIPTION OF IPP

Intermountain Power Agency (IPA) is a separate legal entity and a political subdivision of the State of Utah. It was organized in June 1977, pursuant to The Utah Interlocal Cooperation Act and under the Intermountain Power Agency Organization Agreement. As authorized by the Utah Interlocal Cooperation Act, the membership of IPA consists of 23 Utah municipalities that own electric utilities.[1] All member entities are located within the State of Utah. IPA is governed by a seven-member Board of Directors elected by the Member Municipalities. In addition, IPA has other purchasers in California (six cities and other entities), an investor-owned purchaser (PacifiCorp), and six cooperative purchasers servicing Utah, Nevada, Wyoming, Arizona, and Colorado.[2]

IPA was organized for the purposes of undertaking and financing a facility to generate electricity, now known as the Intermountain Power Project (IPP). IPP is located in the

Great Basin region of western Utah. IPP generates an average of more than 13 million megawatt hours of energy each year from its two coal-fired units. The energy is delivered over the project's AC and DC transmission systems to 36 participants in the project that principally serve Utah and Southern California. Additional generation capacity at the IPP site is now being studied.

IPA's primary responsibilities include financing, managing, and accounting for the funds of the IPP project, and assuring, in concert with its appointed Operating Agent, compliance with the terms of all project agreements. Assets to achieve IPA's purpose include: a two-unit coal-fired electric generation station, located near Delta, Utah, with a current net capacity of 1,800 MW; an AC Switchyard; co-owned coal mines; unit trains; a railcar repair facility; a DC transmission system and converter stations that connect the project to Adelanto, California; and three AC transmission lines primarily within the State of Utah.

METHODOLOGICAL OVERVIEW: MULTIPLIER ANALYSIS

The methodology used for this study is multiplier analysis. Essentially, multiplier analysis quantifies the cumulative effect of the infusion of $1 into the state or regional economy. As a dollar enters the economy, as in this case for the purchase of electricity, the sellers of electricity have additional revenue. They, in turn, spend that dollar, or a portion of it, thus placing that dollar back into circulation. Expenditures by one entity become revenue to another and the cycle continues as the dollar, or a portion of it, is respent in the local economy. This is a multiplier effect.

There are several respected measures for quantifying this effect. Of the most well known tools for multiplier analysis are IMPLAN, REMI, and the more publicly available Regional Input-Output System or RIMS. IMPLAN and REMI rely on proprietary software and surveys, and in the case of IMPLAN, have a more sub-state regional focus. Since the 1970s, the U.S. Bureau of Economic Analysis (BEA) has produced, in RIMS, a set of multipliers based on the national income account data collected and reported on by the agency. Now updated to RIMS II, BEA's system has been demonstrated to be as equally effective as the proprietary measures in estimating the economic impact of an infusion into the state or local economy.[3] In addition, since RIMS multipliers are calculated from publicly available national income and product accounts, and since the BEA publishes its methodology, RIMS has the advantage of transparency over the proprietary systems.

Many multiplier studies have been conducted on Utah economic activities. As examples, in 1995, a multiplier study evaluated the impact of wilderness recreation in the state[4] and a Utah study was cited in a large multi-state multiplier analysis of Medicaid by the Kaiser Family Foundation.[5] Multiplier analysis is a respected method for assessing the economic impact of a new installation, on-going economic activity, and also the negative impact of the loss of a local business installation. In this case, Utah Foundation is assessing the on-going and projected future impact of the economic activity generated by one project in the electricity generation industry, IPP.

Selecting the Appropriate Multipliers and Analytic Approach

RIMS II supplies multiple series of multipliers. The selection of the appropriate multipliers and analytic approach from within the RIMS II dataset is dependent on available data, design of the project, and specific characteristics of the industry under evaluation. This section summarizes those considerations for IPP and ultimately selects the Final Demand Type II multipliers for the Electric Power Generation, Transmission, and Distribution industry within the state of Utah.

Final Demand vs. Direct Effect Multipliers

The selection of final demand or direct effect multipliers is made according to the type of data available for the analysis. IPA has provided cost reports and financial data which represent total spending or change in final demand for the project. With this data it was determined that final demand multipliers are the appropriate multipliers and will be used in this analysis.

Type I vs. Type II Multipliers

Type I multipliers account for only direct and indirect economic effects. These are the effects from the direct spending of both the industry under study and the direct suppliers to that industry. Type II multipliers add to direct and indirect effects the induced economic effects. These are the economic effects that result from the labor in the affected industries spending their earnings. Since IPP is in an industry that creates primary jobs, it is important to use Type II multipliers that account for the induced spending of earnings by households employed in the affected industry. For this study, the more comprehensive Type II multipliers will be used.

Appropriate Industry

Multipliers are generated for both aggregate and detailed industries. They are based off of the North American Industry Classification System (NAICS) categories. It is methodologically necessary to select the multiplier(s) that most closely correspond to the industrial classification of the entity under study. For this study, the closest multiplier is from the detailed industry Electric Power Generation, Transmission, and Distribution.[6]

Affected Region

By project definition, the affected region for this study is the state of Utah. It is important to note that the use of state-level multipliers in lieu of regional multipliers may overstate the true economic benefit. According to the Bureau of Economic Analysis, the reason for the overstatement is that the state-level multipliers "reflect economic activity in industries that are unaffected by the program under study." In addition, with region and state-level multiplier effects, there are potential substitution effects. For example, if a new shopping mall increases economic activity in one county by siphoning off shoppers from an adjacent county, the negative effect must be captured as an offsetting multiplier effect in order for the analysis to be accurate. However, in the case of a large infrastructure project such as a power plant, substitution effects should be less of a concern because facility planning accounts for oversaturation issues better than other sectors, such as retail. With a recognition that there may be a slight high bias in the findings for the reasons enumerated above, but to be consistent with the research design, this study will use state-level multipliers for Utah.

Analytic Approach – Identifying the Affected Industries

There are two ways to approach the question of industries affected by the multiplier effect. The first is to assess the multiplier effect on all of the specific industry-level spending undertaken by the project. This is referred to as the bill of goods approach and is generally used in instances when there are multiple and varying business models within the specific industry. In this instance, the bill of goods approach is

considered more accurate because it captures the particular nuances of the spending patterns of the organizations or projects under study. However, the bill of goods approach is also more data and computationally intensive. In the case of IPP, a separate multiplier would be applied to each category of spending (fuel purchases, insurance, maintenance, etc.) and then each separate multiplier effect would be combined into a total effect.

For industries with relatively consistent business models across organizations, there is a simpler approach that leads to equally accurate estimations of economic impact. Electricity generation is considered such an industry. In this case, there are industry-level final demand multipliers that are applied to a project specific measure of the change in final demand. In the case of IPP, the project's cost and financial reports provide an estimate of the change in final demand. Applying the appropriate multipliers to the project's change in final demand is an appropriate analytic approach for measuring economic impact and is the approach that is applied in this study.

Multipliers are available for three economic areas: output, employment, and earnings. For the Electric Power Generation, Transmission, and Distribution industry, the Type II final demand multipliers for the state of Utah are displayed in Figure 1. These multipliers are recently updated (as of June 2010) and are now based on the 2002 benchmark input-output table for the nation and 2007 regional data. The interpretation of these multipliers follows the table.

Figure 1: RIMS Multipliers for Electric Power Generation, Transmission and Distribution Industry

	Output (Dollars) /1	Employment (Jobs) /2	Earnings (Dollars) /3
RIMS II, Type II, Final Demand Multipliers	1.8965	10.1238	0.4864

Source: US Bureau of Economic Analysis.

Interpretation

The following is the interpretation of the multipliers. The specific definitions are provided by the Bureau of Economic Analysis.

/1 Output Multipliers
The total dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the examined industry. In this study, output will be measured by State Gross Domestic Product (GDP). Each dollar of final demand spending undertaken by IPP results in a $1.90 increase in Utah's GDP.

/2 Employment Multipliers
The total change in the number of jobs that occurs in all industries for each additional one million dollars of output delivered to final demand by the industry. Every million dollars of final demand spending undertaken by IPP creates 10.12 jobs in Utah's economy.

/3 Earnings Multipliers
The total dollar change in earnings of households employed by all industries for each additional dollar output delivered to final demand by the industry. Every dollar of final demand spending undertaken by IPP results in a $0.49 increase in household earnings in the state.

Static vs. Dynamic Effects

RIMS II multipliers are derived from a static equilibrium model. Static equilibrium models imply no time dimension. However, because the multipliers are derived from annual national income data, most studies assume that the multiplier effects are fully realized within a one-year period. This study will therefore assume that all multiplier effects from IPP's spending are fully realized within a one-year period. In practicality, it may take longer than one year for the impacts to be fully felt in the Utah economy. If that is the case, the annual multiplier analysis will slightly overstate the true economic impact.

THE DATA

Now that the multipliers are selected, it is important that they are applied to appropriate measures of the change in final demand. IPP financial reports provide the basis for these measures. Since the most current RIMS multipliers are the 2007 series, the IPP financial data for the year ending June 30, 2008 will serve as the base year data for this analysis.[7]

Multiplier effects only occur when infusions, or revenue earned from outside the regional economy (in this case the state of Utah) are recirculated within that economy. As such, the IPP expenditure data must be adjusted first for expenditures that leak out of the state economy and then for expenditures that are supported by revenues generated from within Utah. The next sections will present and describe the adjustments to the data used in the analysis.

IPP'S 2007-2008 EXPENDITURES ADJUSTED FOR PLACE OF EXPENDITURE

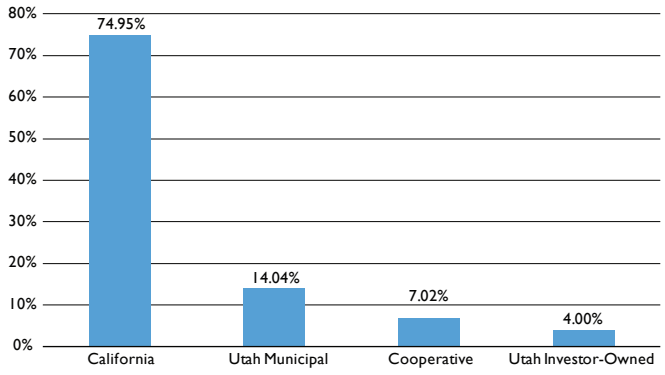
Broadly, IPP annual expenditures may be classified into four categories: Debt Service,[8] expenditures on the Intermountain Generating Station and Switchyard, expenditures on the Southern Transmission System, and expenditures on the Northern Transmission System. Again, only those expenditures that are made within the state of Utah create multiplier effects. It is conservative to assume that IPP's bondholders are national rather than local.[9] Thus, debt service is not included as an expenditure contributing to multiplier effects within the state. According to IPA staff, of the three cost centers, only the expenditures for the Intermountain Generating Station and Switchyard and the Northern Transmission System remain generally within the state of Utah.[10] The expenditure profile used in this study (for the year ending June 30, 2008) is outlined in the Figure 2.

Figure 2: IPP Expenditures for the Year Ending June 30, 2008. Amounts in $000s.

Expenditure Category	Amount
Debt Service	$362,895
Operating – Intermountain Generating Station and Switchyard	349,140
Operating – Southern Transmission System	15,370
Operating – Northern Transmission System	2,461
Total	**$729,866**
Less: Expenditures that do not Contribute to Multiplier Effect	
Debt Service	$362,895
Southern Transmission System	15,370
Net Expenditures that Potentially Contribute to Multiplier Effect	**$351,601**

Source: R.W. Beck, Inc. IPA Power Project Projected Power Costs.
Report based on 88% capacity factor case. Data provided by IPA staff.

Figure 3: Distribution of IPP's Contracts for Power Sales, 1985 to Present



Source: IPA Annual Reports.

IPP'S 2007-2008 EXPENDITURES ADJUSTED FOR THE SOURCE OF THE REVENUES THAT SUPPORT THE EXPENDITURES

IPP's revenue is generated largely from power sales. Since 1985, the first year for which data was available, the distribution of IPP's contracts for power sales has remained constant. That distribution is displayed in Figure 3.

However, depending on demand, not all power for which contracts exist is sold to the party of the contract. In the case of excess supply, power originally contracted to one party may be sold elsewhere. According to IPA staff, this has been the case historically with IPP power. A majority of the power contracted to Utah investor-owned utilities is sold to Los Angeles. In addition, some excess power, not under contract to California, has historically been sold to California. As a result, historically and in the year ending June 30, 2008, approximately 94% of IPP's revenue has been generated from power sales to parties outside the state of Utah. This is important for this study because only injections from outside the regional economy create a multiplier effect. To be conservative, it is assumed that power sold by IPP within the state of Utah does not create a multiplier effect as the presumption is that Utah consumers would find another Utah supplier.[11] Of the $351,601,000 of change in final demand contributed to the Utah economy through IPP's annual expenditures in 2007-2008 (see Figure 2), 94% of that, or $330,505,000 serves as the base for the change in final demand subject to the multiplier effect.

THE ECONOMIC EFFECT OF IPP ON THE UTAH ECONOMY FOR THE YEAR ENDING JUNE 30, 2008

With the calculation of the appropriate change in final demand and the identification of the appropriate multipliers, it is possible to calculate the economic multiplier effect of IPP on the economy in the state of Utah. Multipliers are available for state output, employment, and household earnings. The following sections will calculate the multiplier effects on those three areas of the economy and compare them to macroeconomic data for the state.

Output

Output is measured by using state GDP. State GDP is reported on a calendar year basis at the state level, but an approximation of Utah's state GDP for the period July 1, 2007 to June 30, 2008 may

Figure 4: Portion of State GDP Attributable to Economic Activity Generated by IPP

IPP: Change in Final Demand (in $000s)	Output Multiplier	State GDP Created by IPP Demand (in $000s)	Utah 2007-2008 State GDP (in $000s)	Share of State GDP Contributed by IPP Activity*
$330,505	1.8965	$626,803	$107,676,000	0.58%

*As outlined in the assumptions for this study, this calculation assumes that all the economic effects circulate through the economy and are fully realized in a one-year period. If the multiplier effect were to take more than one year to complete, this analysis would slightly overstate the economic effect.

be estimated by averaging the calendar years of 2007 and 2008. According to the Bureau of Economic Analysis, state GDP for the state of Utah for that period was just under $107.7 billion. Figure 4 demonstrates the portion of state GDP attributable to the economic activity generated by IPP.

In the year ending June 30, 2008, IPP accounted for just under six tenths of one percent of total output generated by the Utah economy. The expenditures made by the utility contributed just under $627 million in economic activity to the state during this one-year period.

Employment

According to the Bureau of Labor Statistics Current Employment Statistics series data, the state of Utah had just over 1.25 million non-farm jobs for the year ending June 30, 2008. The annual number was calculated by averaging the non-seasonally adjusted annual numbers for 2007 and 2008. Employment multipliers permit for an approximation of the number of those jobs that result from the economic activity generated by IPP. The calculations in Figure 5 demonstrate this impact.

Figure 5: Approximate Number of Jobs Resulting from Economic Activity Generated by IPP

IPP: Change in Final Demand (in $000s)	Employment Multiplier (per million dollars of expenditures)	Employment Created by IPP Demand	Utah 2007-2008 Employment	Share of State Employment Contributed by IPP Activity*
$330,505	10.1238	3,346	1,252,900	0.27%

*As outlined in the assumptions for this study, this calculation assumes that all the economic effects circulate through the economy and are fully realized in a one-year period. If the multiplier effect were to take more than one year to complete, this analysis would slightly overstate the economic effect.

In the year ending June 30, 2008, IPP accounted for just under three tenths of one percent of total employment generated by the Utah economy. The expenditures made by the utility created approximately 3,350 non-farm jobs in the state of Utah during this one-year period.

Household Earnings

According to the American Community Survey one-year estimates, full-time, year-round workers in Utah earned an average of just over $41 billion for the calendar years 2007 and 2008. Earnings multipliers allow for an approximation of the share of earnings attributable to IPP. The calculations in Figure 6 approximate those household earnings.

In the year ending June 30, 2008, changes in final demand from IPP expenditures accounted for just over $147 million in household

Figure 6: Portion of State Earnings Attributable to Economic Activity Generated by IPP

IPP: Change in Final Demand (in $000s)	Earnings Multiplier	Earnings Created by IPP Demand (in $000s)	Utah 2007-2008 Earnings (in $000s)*	Share of State Earnings Contributed by IPP Activity**
$330,505	0.4864	$147,625	$41,113,056	0.36%

*This earnings measure is the average earnings for calendar years 2007 and 2008 for full-time, year-round workers as reported in the 2007 and 2008 American Community Survey one-year estimates for the state of Utah. This number probably understates true household earnings because it excludes part-time workers. Thus the share of earnings attributable to IPP is slightly overstated.

**As outlined in the assumptions for this study, this calculation assumes that all the economic effects circulate through the economy and are fully realized in a one-year period. If the multiplier effect were to take more than one year to complete, this analysis would slightly overstate the economic effect.

earnings in the state during this one-year period. Comparing this with the American Community Survey's measure of state earnings indicates economic activity generated by IPP accounts for approximately one third of one percent of Utah household earnings.

FORECASTS

Utilities are generally stable industrial mainstays in a local or state economy. All projections suggest that IPP is no exception, at least through 2026.[12] Currently, the project has forward contracts for power purchases through the year 2026 and those forecasts can serve as the basis of an assessment of the on-going economic impact of IPP on the Utah economy. The following forecast of future multiplier effects underscores the importance of stable industries within a state or regional economy. As the analysis shows, through the forecast horizon of 2026, IPP is projected to continue to provide economic benefits to the state of Utah commensurate with its 2007-2008 economic impact.

Forecasts must be interpreted in the context of the assumptions that underlie them. The following assumptions serve as the basis for this forecast analysis:

Statewide spending patterns will remain the same through 2026, making the 2007 multipliers appropriate for assessing effects into the future. If spending patterns deviate in the future, forecasts of economic impact may be off by an order of magnitude. In addition, the direction of the error is indeterminate. That is, if spending patterns change, economic impacts could be larger or smaller, again depending on the composition of the change in spending patterns within Utah.

Change in IPP final demand was based on revenue and expenditure forecasts provided by IPA staff from the projections compiled by R. W. Beck, Inc. As with the 2007-2008 analysis above, only the forecast expenditures for Intermountain Generating Station and Switchyard and Northern Transmission System were included. Debt service and expenditures for Southern Transmission System were excluded. Expenditure forecasts were then adjusted for the share of expenditures generated from the injection from out of state revenues.

Out of state sales to California will remain at current levels of 94% through 2015. From 2016 through to end of the forecast horizon in 2026, California sales will fall to 78% of total revenues. This assumption was furnished by IPA staff; however, it is important to note that it is a conservative estimate. It is likely that California sales will remain higher than 78%, perhaps closer to 82%. If this is true, the actual multiplier effects or contributions to economic activity produced by IPP may be slightly higher than what is reported in these tables.

The macroeconomic forecasts for output (GDP), employment, and earnings were generated from REMI and Woods & Poole Economics, Inc. Employment and output forecasts are the average of REMI's and Woods and Poole's forecasts. The earnings forecast is solely from Woods & Poole as REMI did not provide an earnings forecast. Forecasts were further adjusted in the following ways:

The forecasts were stated in constant 2007-2008 dollars to match the available multipliers and to adjust out inflation as required for employment multipliers. The forecasts were adjusted to constant 2007-2008 dollars using Economy.com's baseline July 2010 national seasonally adjusted CPI-U all items forecast (1982-84 = 100).

The average of two calendar years was taken to match the IPP financial, which is reported in the forecast data as of the 30th of June for each year.

As with the annual multiplier effects assessed for 2007-2008, the full effects for the forecast years are assumed to be realized within a one-year period. The following calculations reflect this assumption. If, in fact, the effects take more than one year to realize, the multiplier estimates will slightly overstate the true effects. In all cases, however, the calculated multipliers will be correct in their direction. That is, economic activity will still increase as a result of the economic activity produced by IPP.

Forecast Effects on Utah's GDP

Based on IPP's forecast expenditures, IPP is projected to continue to contribute in a very stable manner to the state's economic activity. Figure 7 shows these effects through the forecast horizon of 2026. Note that all dollars are stated in constant 2007-2008 dollars.

Figure 7: Forecast Multiplier Impacts on State GDP: 2011-2026

Year	Change in Final Demand (in thousands of 2007-2008 dollars)	2007 Output Multiplier	Forecast GDP Created by IPP Demand (in thousands of 2007-2008 dollars)	Utah GDP Forecast (in millions of 2007-2008 dollars)	Share of State GDP Forecast to be Contributed by IPP Activity
2011	$395,999	1.8965	$751,012	$112,337	0.67%
2012	454,692	1.8965	862,324	115,316	0.75%
2013	497,872	1.8965	944,214	119,232	0.79%
2014	494,694	1.8965	938,187	123,085	0.76%
2015	517,043	1.8965	980,573	126,687	0.77%
2016	439,026	1.8965	832,614	130,332	0.64%
2017	448,031	1.8965	849,690	134,024	0.63%
2018	443,341	1.8965	840,795	137,759	0.61%
2019	447,055	1.8965	847,841	141,641	0.60%
2020	449,412	1.8965	852,310	145,557	0.59%
2021	451,716	1.8965	856,680	149,504	0.57%
2022	452,993	1.8965	859,102	153,545	0.56%
2023	454,875	1.8965	862,670	157,697	0.55%
2024	456,604	1.8965	865,950	162,001	0.53%
2025	454,044	1.8965	861,095	166,426	0.52%
2026	451,583	1.8965	856,426	170,981	0.50%

Note: In the year 2016, the share of revenue from out of state power sales to California is projected to fall from 94% to 78%. In its place, sales within Utah are projected to increase from 4% to 22%. The decline in the change in final demand that occurs in 2016 reflects this shift in the revenue profile for IPP. Expenditures generated from revenues from within the state of Utah are not assumed to create a multiplier effect within the state.

Figure 8: Forecast Multiplier Impacts on Employment: 2011-2026

Year	Change in Final Demand (in thousands of 2007-2008 dollars)	2007 Employment Multiplier (per million dollars of expenditures)	Forecast Employment Created by IPP Demand	Utah Employment Forecast	Share of State Employment Forecast to be Contributed by IPP Activity
2011	$395,999	10.1238	4,009	1,642,000	0.24%
2012	454,692	10.1238	4,603	1,663,000	0.28%
2013	497,872	10.1238	5,040	1,686,000	0.30%
2014	494,694	10.1238	5,008	1,709,000	0.29%
2015	517,043	10.1238	5,234	1,732,000	0.30%
2016	439,026	10.1238	4,445	1,756,000	0.25%
2017	448,031	10.1238	4,536	1,779,000	0.26%
2018	443,341	10.1238	4,488	1,801,000	0.25%
2019	447,055	10.1238	4,526	1,825,000	0.25%
2020	449,412	10.1238	4,550	1,847,000	0.25%
2021	451,716	10.1238	4,573	1,868,000	0.24%
2022	452,993	10.1238	4,586	1,890,000	0.24%
2023	454,875	10.1238	4,605	1,911,000	0.24%
2024	456,604	10.1238	4,623	1,934,000	0.24%
2025	454,044	10.1238	4,597	1,957,000	0.23%
2026	451,583	10.1238	4,572	1,981,000	0.23%

Note: In the year 2016, the share of revenue from out of state power sales to California is projected to fall from 94% to 78%. In its place, sales within Utah are projected to increase from 4% to 22%. The decline in the change in final demand that occurs in 2016 reflects this shift in the revenue profile for IPP. Expenditures generated from revenues from within the state of Utah are not

Over the forecast horizon, IPP is projected to make a positive real contribution to final demand in the state economy. When also adjusting for real increases in state GDP, IPP is forecast to contribute between one half and almost eight tenths of one percent of economic activity in the state. On average, IPP is projected to be responsible for 0.63% of total state GDP each year. This equates to an average contribution per year of $866 million in economic activity to the state over the forecast period, with an estimated contribution of over $850 million in 2007-2008 dollars in the year 2026.

Forecast Effects on Utah's Employment

IPP is projected to contribute to total state employment over the forecast period as well. From an initial employment effect of approximately 4,000 jobs statewide, IPP's impact is forecast to grow to just over 4,500 by the year 2026. This multiplier effect accounts for direct employment by IPP, indirect employment by IPP's major suppliers, and induced employment that is generated as Utah's households spend salaries generated by IPP's activities. Figure 8 summarizes the employment effects.

On average, IPP is projected to continue to contribute an economic impact on employment equal to just over one quarter of one percent of total state employment. This is equivalent to an average contribution of 4,600 non-farm jobs per year, meaning approximately one out of every 400 non-farm jobs in the state each year may be attributable to economic activity generated by IPP. This remains relatively constant over the forecast period, making IPP a stable mainstay of the state's economy through 2026.

Forecast Effects on Utah's Earnings

The final set of multipliers allows for the assessment of IPP's contribution to household earnings in the state. Again, IPP is forecast to remain a constant and stable contributor. Figure 9 shows these effects through the forecast horizon of 2026. Note that all dollars are stated in constant 2007-2008 dollars.

While projected to have a slightly declining effect on the share of state earnings, IPP is nonetheless projected to contribute, on average, approximately one quarter of one percent of state earnings through the year 2026. This equates to an average contribution of $222 million in household earnings per year. In inflation adjusted 2007-2008 dollars, household earnings generated by IPP activities are projected to grow from just over $192 million in 2011 to just under $220 million in the year 2026.

CONCLUSION

Stable mainstay industries such as utilities are important contributors to state and local economies. This study investigated not an entire industry, but rather one particular project, the Intermountain Power Project (IPP). Results of the multiplier analysis confirm that IPP is an important and constant contributor to economic activity within the state of Utah, at least through 2026, with contract commitments from major purchasers through that year. After 2026, uncertainty arises, because energy regulations related to climate concerns are making it more difficult to continue producing electricity from coal-fired power plants. This is especially true in regard to purchasers in California, where strict environmental regulations are in place.

According to the Bureau of Economic Analysis' RIMS II multipliers, projects such as IPP in the Electric Power Generation, Transmission, and Distribution industry contribute to the local economy in the following ways:

Figure 9: Forecast Multiplier Effects on Earnings: 2011-2026

Year	Change in Final Demand (in thousands of 2007-2008 dollars)	2007 Earnings Multiplier	Forecast Earnings Created by IPP Demand (in thousands of 2007-2008 dollars)	Utah Earnings Forecast (in millions of 2007-2008 dollars)*	Share of State Earnings Forecast to be Contributed by IPP Activity
2011	$395,999	0.4864	$192,614	$74,404	0.26%
2012	454,692	0.4864	221,162	76,434	0.29%
2013	497,872	0.4864	242,165	79,141	0.31%
2014	494,694	0.4864	240,619	81,813	0.29%
2015	517,043	0.4864	251,490	84,326	0.30%
2016	439,026	0.4864	213,542	86,879	0.25%
2017	448,031	0.4864	217,922	89,535	0.24%
2018	443,341	0.4864	215,641	92,289	0.23%
2019	447,055	0.4864	217,448	95,145	0.23%
2020	449,412	0.4864	218,594	98,094	0.22%
2021	451,716	0.4864	219,715	101,134	0.22%
2022	452,993	0.4864	220,336	104,273	0.21%
2023	454,875	0.4864	221,251	107,520	0.21%
2024	456,604	0.4864	222,092	110,871	0.20%
2025	454,044	0.4864	220,847	114,322	0.19%
2026	451,583	0.4864	219,650	117,875	0.19%

*This earnings forecast, generated by Woods and Poole, was modeled off of Department of Commerce data. In the earlier analysis for 2007-2008 effects, data for the year-round, full-time earnings for the state of Utah were obtained from the U.S. Census Bureau, American Community Survey. A forecast based on Census data was not available. The different sources for state earnings data are contributing slightly to the discontinuity in the calculated shares of earnings that result from IPP's activity.

Note: In the year 2016, the share of revenue from out of state power sales to California is projected to fall from 94% to 78%. In its place, sales within Utah are projected to increase from 4% to 22%. The decline in the change in final demand that occurs in 2016 reflects this shift in the revenue profile for IPP. Expenditures generated from revenues from within the state of Utah are not assumed to create a multiplier effect within the state.

- Every dollar of expenditure results in $1.90 in additional state GDP.
- Every million dollars of expenditure results in 10.12 additional jobs in all industrial sectors in the state.
- Every dollar of expenditure results in a $0.49 increase in household earnings.

For the year ending June 30, 2008, those multipliers translated into the following economic impact from IPP:

- IPP expenditures contributed just over $626 million in state GDP. This amount accounts to 0.58% of total state GDP in 2007-2008.
- IPP expenditures resulted in 3,346 jobs in the state. These jobs represent 0.27% of total non-farm employment in the state. Approximately one out of every 400 jobs in the state is generated as a result of the economic activity produced by IPP.
- IPP expenditures contributed just over $147 million in household earnings. This is estimated to be approximately 0.36% of total full-time, year-round earnings in the 2007-2008 year.

Under certain simplifying assumptions, it is possible to forecast economic impacts into the future. Because of IPP's forward contracting activity for electricity purchases, relatively reliable financial forecasts are available for IPP through the year 2026. Those forecasts were used as the basis for forward estimates of the economic impact of IPP on the future economy in Utah. Over the period 2011 to 2026, IPP is forecast to continue to contribute to the state's economy in the following ways:

- IPP expenditures are projected to contribute, on average, 0.63% of state GDP; or an average contribution of $866 million in economic activity per year.
- IPP expenditures are projected to result in, on average, 0.26% of total state employment; or an average contribution of 4,600 non-farm jobs per year.
- IPP expenditures are projected to contribute, on average, 0.24% of household earnings; or an average contribution of $222 million in household earnings per year.

ENDNOTES

1 IPA's member entities are as follows: Beaver City, City of Bountiful, City of Enterprise, City of Ephraim, City of Fairview, Fillmore City, Heber City, Town of Holden, City of Hurricane, Hyrum City, Kanosh, Kaysville City, Lehi City, Logan City, Town of Meadow, Monroe City, Morgan City, Mount Pleasant, Murray City, Town of Oak City, Parowan City, Price, and Spring City.

2 Intermountain Power Agency. "About Intermountain Power Agency." Accessed on October 28, 2010 at http://ipautah.com./about/.

3 Tim Lynch, "Analyzing the economic impact of transportation programs using RIMS II, IMPLAN and REMI," Office of Research and Social Programs, U.S. Department of Transportation (2000); Dan S. Rickman and R. Keith Schwer, "A comparison of the multipliers IMPLAN, REMI, and RIMS II: Benchmarking ready-made models for comparison," The Annals of Regional Science 29 (1995): 363-374.

4 John Keith and Christopher Fawson. "Economic Development in Rural Utah: is wilderness recreation the answer?" September, 1995. The Annals of Regional Science. 303- 313. Accessed on July 6, 2010 at http://www.springerlink.com/content/jp53647126215858/.

5 Jan Crispin-Little. "Economic Impact of Medicaid and CHIP on the Utah Economy." January 2003. Accessed on July 6, 2010 at http://www.business.utah.edu/bebr/onlinepublications/MedicaidChipEconImp.pdfJan Crispin-Little.

6 IPP focuses primarily on electric power transmission and generation. However, it was not possible to exclude distribution impacts from the RIMS II multipliers provided by BEA. Because this set of multipliers most closely corresponds to the project under study, it provides the most accurate estimate of IPP's economic impact.

7 These data for the year ending June 30, 2008, as well as the data used later in this study to forecast economic effects through the year 2026, were provided by R. W. Beck, Inc. on behalf of IPA. All data are from the IPA Power Project Projected Power Costs report based on a 88% capacity factor case. Report furnished by IPA staff.

8 In actuality, debt service is also allocated to the three cost centers. However, since debt service expenditures will not be included in the analysis, aggregate debt service is presented here for simplicity.

9 This assumption was confirmed with IPA staff.

10 It is recognized that some portion of the expenditures on the Intermountain Generating Station and Switchyard and Northern Transmission System do flow outside of the state. For example, not all coal purchases are made within the state of Utah. However, aggregate multipliers such as the ones generated by RIMS account for some level of leakage. So, for this analysis, all of the operating expenditures for the Intermountain Generating Station and Switchyard and Northern Transmission System will be considered expenditures contributing to the multiplier effect. It is also recognized that some of the expenditures on the Southern Transmission System remain in the state of Utah; however, this is a small part of the overall impact and therefore not included in the analysis.

11 It is conceivable that Utah municipal consumers might purchase power from outside the state were IPP power not available. In that case, a negative multiplier effect would be created as economic activity leaked out of the state. However, without any firm counterfactual for the potential alternative suppliers to Utah municipalities, the conservative approach is to assume that power sold by IPP to Utah municipalities has no multiplicative economic effect.

12 It is difficult to analyze the effect IPP will have on Utah's economy after its forward contracts end in 2026. Because IPP utilizes a coal-fired power plant, the future of the project is uncertain as energy needs and regulations will change. Currently, there is a strong regulatory push for reduced carbon emissions in energy production and a trend away from coal-fired power plants. The fact that most of IPP's sales are to California adds to this uncertainty, as California has moved toward strict regulation of greenhouse gas emissions, limiting the amount of energy it receives from coal-fired power plants. These regulations in California have an impact on municipal power purchasers, even if their power is generated out of the state.

13 2010 amounts are partial. The largest unpaid amounts for 2010 are ad valorem taxes which are not paid until November of the calendar year.

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APPENDIX: HISTORICAL ACCOUNTING OF TAXES AND PAYMENTS IN LIEU OF TAXES PAID BY IPP

HISTORICAL ACCOUNTING OF TAX PAYMENTS

Although tax payments are included in the data used in the body of this report to evaluate IPP's impact on the Utah economy, it is illustrative to consider separately the extent to which IPP's economic activity has directly supported Utah's state and local governments.

These two tables, with data provided by the accounting staff at IPA, provide an historical accounting of all tax payments, payments in lieu of taxes, and impact alleviation payments that IPP has made since its inception.[13]

IPP's Tax Payments and Payments Made in Lieu of Taxes, 1982-2010

Fiscal Year	Sales & Use	Gross Receipts	Fees in Lieu of Ad Valorem	Total
1982	$0	$0	$0	$0
1983	56	0	0	56
1984	2,247,477	0	2,151,864	4,399,342
1985	9,461,809	0	4,063,220	13,525,029
1986	2,453,747	0	8,990,373	11,444,120
1987	1,181,079	1,941,877	11,943,095	15,066,051
1988	624,019	2,914,755	21,511,391	25,050,164
1989	1,170,251	2,779,045	23,604,867	27,554,163
1990	227,226	4,126,113	23,512,165	27,865,505
1991	537,596	3,281,802	22,674,270	26,493,667
1992	976,077	3,989,933	23,508,174	28,474,184
1993	608,649	4,408,441	23,830,712	28,847,802
1994	201,910	4,443,532	19,292,311	23,937,752
1995	353,892	4,674,163	17,927,244	22,955,299
1996	192,119	7,269,378	16,384,244	23,845,740
1997	525,426	5,842,179	15,772,599	22,140,204
1998	147,711	5,661,656	15,022,283	20,831,650
1999	158,535	5,453,513	14,232,495	19,844,542
2000	165,890	5,121,972	14,091,876	19,379,738
2001	179,354	6,010,630	14,890,343	21,080,327
2002	200,991	5,036,286	14,205,186	19,442,463
2003	219,080	5,016,200	13,654,399	18,889,679
2004	305,165	4,721,463	13,231,639	18,258,267
2005	561,420	5,798,230	12,628,350	18,988,000
2006	399,605	5,902,352	11,693,297	17,995,254
2007	318,146	4,317,776	11,314,371	15,950,294
2008	456,243	4,517,074	10,681,054	15,654,372
2009	347,313	4,124,361	10,650,093	15,121,768
2010	292,110	4,276,166	9,845,437	14,413,713
Total	**$24,512,895**	**$111,628,898**	**$401,307,352**	**$537,449,144**

Total Impact Alleviation Payments Made by IPP Between 1982 and 1986

Agency	Payments
Millard County School District	$8,198,290
Millard County	5,163,663
Delta City	5,715,065
West Millard Mosquito Abatement District	103,674
West Millard Recreation District	97,794
Hinkley	376,610
Nephi	100,000
Juab School District	395,430
Oak City	185,537
Leamington	35,687
Lynndyl	53,925
Central Utah Water Conservancy District	5,000
Fillmore	13,763
Millard Community Council	44,965
Millard Inter-Governmental Cooperative Alliance	39,995
Total	**$20,529,399**

Note: These impact alleviation payments were made in addition to payments of taxes and fees shown in the table at left.

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