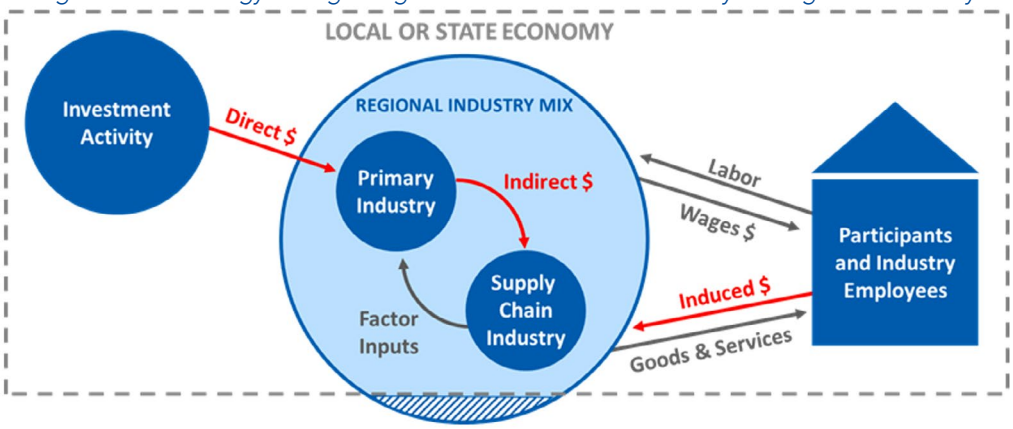
Economic Impact Analysis

Taking Program Performance Analysis to the Next Level

This information sheet outlines the key elements needed for an economic impact analysis. Statistics on the economic impact of energy savings projects help tell the story of an effective energy savings performance contracting (ESPC) program or compare the anticipated benefits of a program to those of other investment options.

In addition to energy, resource, and cost savings, programs likely generate **positive net economic impacts**. Program investments and resulting savings affect the flow of money through the economy (Figure 1) and can potentially lead to new jobs, increased income, and higher sales, therefore adding real net value to the local and state economy. An economic impact analysis can quantify those positive impacts for sharing success.

Figure 1. How Energy Savings Programs Affect the Flow of Money Through the Economy



An economic impact analysis quantifies "total net economic impacts," which are comprised of three types of effects:

- **Direct economic effects** represent impacts on industries directly involved with the program, such as firms that manufacture energy technologies or provide project services.
- **Indirect economic effects** account for impacts on supply chain industries, such as firms that provide raw manufacturing inputs to the directly affected industries.
- **Induced economic effects** lead to additional impacts on other industries as program participants and employees of directly and indirectly affected industries spend money in the local economy.

A thorough economic impact analysis that accounts for all program-related activity can help accurately calculate and report a program's economic benefits to key stakeholders, including:

- Organization leaders
- State Energy Office
- Other state agencies
- Governor's office
- State legislature
- ESCO partners
- Local governments and elected officials

Conducting a Comprehensive Economic Impact Analysis

Conducting a comprehensive assessment of a program's economic impacts starts with collecting various data, including:

- Expenditures on program administration, delivery, and other services
- Expenditures on project labor and installed equipment
- Annual and lifecycle energy and demand savings
- Historical and forecasted energy retail rates
- Historical and forecasted energy production costs (fixed and variable)
- Discount rate
- State-specific emission factors

The next step is to identify reporting goals, available data, budget, and level of expertise with economic impact analysis tools. If staff with economic impact expertise are not available in-house, external firms can provide the expertise needed. Different **economic impact analysis tools** offer different benefits and have different limitations. As shown in Table 1, the three primary options are: regional input-output (I-O) multipliers, static impact models, and dynamic impact models.

Table 1. Economic Impact Analysis Options

	Regional I-O Multipliers	Static Impact Models	Dynamic Impact Models
Benefits	▶ Ease of use ▶ Lower cost	▶ Ease of use ▶ Accuracy ▶ Granularity ▶ Multi-region modeling	▶ Accuracy ▶ Granularity ▶ Multi-region modeling ▶ Baseline included ▶ Fluid assumptions ▶ Forecasting capability
Limitations	▶ Accuracy ▶ Granularity ▶ Single region modeling ▶ No baseline ▶ Fixed assumptions ▶ No forecasting capability	▶ Moderate cost ▶ No baseline ▶ Fixed assumptions ▶ No forecasting capability	▶ Complexity ▶ Higher cost
Cost Considerations	$	$$	$$$

Regional I-O multipliers, such as those incorporated in the U.S. Bureau of Economic Analysis **Regional Input-Output Modeling System (RIMS II)** tool, are low cost and simple to use. However, they offer less accuracy, granularity, and flexibility than other options. Static impact models, such as the **IMpact analysis for PLANning (IMPLAN)** tool, deliver improved accuracy, granularity, and analysis flexibility. They are available for a slightly higher cost and require a moderate level of expertise. Regional I-O multipliers and static impact models both estimate total gross economic effects using fixed assumptions. They are best used for analyzing just the impacts of current year activities and savings. Neither tool forecasts the annual impacts of ongoing energy/demand savings and neither tool incorporates a "business as usual" baseline scenario (i.e., users must manually develop a baseline scenario to determine net impacts).

Dynamic impact models such as the **Regional Economic Models, Inc. Policy Insight+ (REMI PI^{+})** model are more complex and thus require additional expertise. They typically are the most expensive option but provide maximum accuracy, granularity, and analysis flexibility. Dynamic models are based on fluid assumptions and compare program impacts to a "business as usual" baseline scenario. They therefore can accurately forecast the annual impacts of ongoing energy/demand savings, and they automatically calculate net impacts.

Once the analysis is run, the final step is to share results. Consider adding net economic impacts as another key metric in the traditional venues for sharing energy, resource, and cost savings successes.