

Load Research Value Calculation

Load Research by simple definition is “an activity which allows utilities to study the ways their customers use energy, either in total, by rate class or individually.” Accomplishing this requires the talents of many disciplines including engineering, statistics, computer programming and marketing. Load Research has traditionally been associated with supporting rate case cost of service studies by providing rate class demand allocations for both census and statistical class samples. Since rate cases are not an annual occurrence for most utilities, other Load Research products and services continue to add great corporate value both financially and strategically. Although Load Research can be considered budget intensive, *its’ activities produces value to the corporation far and above the cost.* The **Load Research Value Calculation** is a mechanism in which Load Research management can identify, document and present the value of their department’s products and services.

Load Research Value Calculation Overview

Traditionally, a Load Research program is considered to be budget intensive, but it can ***add a great deal of value to a corporation.***

What is a Value Calculation? It is a simple way to document and/or identify the value that an effective Load Research program adds to a corporation.

The Value Calculation has been developed to assist management in placing an estimated value (tangible or intangible) to the various activities and functions performed by a Load Research group. Many of the necessary and budget intensive functions of a Load Research program form the basis from which one can leverage and develop value adding products, services and analysis. The basic concept of the Value Calculation is to demonstrate that Load Research produces value to the corporation far and above the cost. For example, it costs a great deal to develop and install samples, but the data obtained from them provides the foundation for financial gains in excess of expenditures.

The Value Calculation consists of several simple components that can easily be arranged in a spreadsheet. See example in Appendix A. A definition of each component is provided below.

Descriptions

Category – A broad title for a load research function. Identifies the area, business unit or company function that this item impacts.

*Examples: Rate Case, Load Management, Forecasting, Marketing Support.
See Appendix B for additional examples.*

Activity – Describes the specific project or function that load research participated in.

*Example: If Load Management is listed as the category, provide the specific activity, such as managed direct load control program for central air conditioners.
See Appendix B for additional examples.*

Role/Output/Results – Provides a brief description of the role, output or result that load research had in the activity that added value.

Example: For the Load Management direct load control program for central air conditioning load research provided the forecasting of expected load, load reduced during control, and the quantification of the actual load reduced based on statistically sound load research samples.

Basis of Value – Briefly describes the value to the corporation.

Examples: Direct load control provides capacity value via the avoidance of spot market purchases –or- direct load control avoided circuit overload and/or customer outage. The avoidance of purchases can be quantified by simply multiplying the load reduction by the market price of power (or the price to bring a peaker online to cover the load).

Impacts department / corporate goals? – Identifies whether this activity has an impact on any departmental or corporate goals / measures.

Calculation

% Contribution – The portion of a measurable event that either increases corporate revenue or creates a real savings. Both are adding measurable value. The contribution value used in the model is the percentage of the value that can be reasonably attributed to Load Research.

Example: Load Research developed allocation schedules used for cost-of-service, produced 8760 class analysis, developed billing determinants, and provided an expert witness for a rate case filing. As a result, 5% of the success and final outcome of the case can be reasonably assigned to Load Research.

Fixed – The actual dollar value of the additional revenue or savings received by the corporation. This input to the calculation can take several forms and requires some definition. For instance if the category is a Rate Case the amount is the dollar value of the final order. This entry may also represent an annual value, a per kWh value, or a per unit value depending on the activity.

Examples:

Rate Case Order: Enter the final order amount.

Avoided meter costs: Enter the cost per meter

Capacity value: Enter the per MW cost

Variable – Some measurable values are based on a one-time occurrence while other may be based on a number of MWh, units, or meters. The entry here represents the variable that the savings is based upon.

Examples:

Rate Case Order: This is a one-time occurrence and does not require additional entry.

Avoided meter costs: Enter the number of meters

Capacity value: enter the MW savings (the template shows this value as per hour)

Frequency – The number of occurrences of the variable value.

Examples:

Rate Case Order: This entry is '1' as each order is only issued once.

Avoided meter costs: This entry is '1' as each avoided meter is only counted once.

Capacity value: In the template the variable of MW was shown as an hourly value, therefore the frequency should be shown as the number of hours you are taking value credit.

Value – This is simply a calculation:

$$\text{Contribution} \times \text{Fixed} \times \text{Variable} \times \text{Frequency} = \text{Added Value}$$

See Appendix A template for a variety of examples.

Getting Started

One can begin by listing all the products and services that their Load Research group has made substantial contributions to over an identifiable period of time (i.e.; annually, fiscal year, past 3 years). If the product/service adds measurable value to the corporation include it in the Value Calculation Worksheet and describe the activity, the role Load Research contributed and the basis for the value. *Not all Load Research products or services produce measurable value.* However, don't hesitate to include these items if they are required functions to support other value adding activities. For example, the collection of interval and billing data in itself does not add value; however it is the basis for several other activities and requires a significant effort by Load Research. Make note of it so your clients and management understand the significance of your performance.

Calculating Value

It is often easy to identify what products provide value to both your clients and the corporation. The difficult part is determining how much of that value can be credited to Load Research. Following three straightforward steps should prove beneficial in obtaining a reasonable value.

- 1) Based on the data available to Load Research, assign values to the contribution, fixed, variable and frequency fields in order to calculate the value. This becomes the Load Research interpretation and the basis for further discussion with clients and stakeholders.
- 2) Meet with clients and stakeholders to gain concurrence with your calculations and adjust as necessary until everyone agrees on a value. Remember, the best advertiser of value is a satisfied client who agrees with, and will support, your value assessment.
- 3) Meet with individuals who have ultimate responsibility for each activity listed on your Value Calculation worksheet. Once again, this is to gain support for the calculation and offer the opportunity for input and fine-tuning. This individual is the one most likely to push back or challenge your value if they

disagree, so spend time on this step to insure concurrence and support. This meeting also provides the opportunity to show a decision maker all the other activities listed on your worksheet and the value added. Developing a solid relationship with this individual is essential and can lead to them being an avid supporter of Load Research.

Non-Monetary Value

Not all value adding activities can have a dollar value assigned to them, but they still add substantial value to the corporation. Activities that support legislative efforts, provide analysis to lobbyists, assist the PSC, improve customer satisfaction, reduce outages, or receive favorable media attention contribute significantly to the corporation and should be shown on the value added worksheet noting 'Intangible' for the contribution entry. This will capture the activity and highlight the role of Load Research.

Announcing Load Research Value

No one likes those that toot their own horn too loudly. Emphasize care when promoting your final value calculation and let those that you serve carry the message. Two methods are suggested:

- 1) Include your value calculation worksheet with either a year-end report on Load Research activities or an Annual Business Plan that is published with active client input. This method further highlights Load Research activities and involvements to clients and demonstrates your strategic importance.
- 2) Include the value calculation worksheet as an attachment to a memo issued to the Load Research chain of command, key clients, stakeholders, and the individuals responsible for activities identified on the worksheet.

Final Statement

Yes, it does require some time and effort to develop a good Value Calculation worksheet but the results will be well worth the effort. Each company and Load Research group is different. This document provides a basic Value Calculation and should be used to provide direction. Do not hesitate to customize your calculation and role out to fit your specific situation and corporate culture.

Load Research Value Calculation

Evaluation Period: 01/2003 to 12/2003

Item #	Category	Descriptions				Values				
		Activity	Role/Output/Results	Basis of Value	Impact Department / Corporate goals?	% Contribution	Fixed	Variable	Frequency	Value
1	Rates - Electric	Main Rate Case	Rate Development Billing Determinants Allocation Schedule Witness back-up	Testimony & exhibits		5%	\$250,000,000	1	1	\$ 12,500,000.00
2	Rates - Gas	Main Rate Case	Allocation Schedules Expert Statistical Support Witness back-up Billing Determinants Rate Design Model			5%	\$100,000,000	1	1	\$ 5,000,000.00
3	Marketing - Electric Choice Program	Load Profiling	Develop profiles & method	Avoided meter cost		50%	\$300	2100 meters	1	\$ 315,000.00
		Load Leading	Develop forecast & methods	Commission Order - revenue positive		25%	\$0.034/kwh			
		Load Rate Share	Calculate Load Ration	Charge for network services		25%	\$4,000,000	1	1	\$ 1,000,000.00
		Telemeter Equipment Collaboration	Facilitate equipment production Provide data analysis	Sales to Alternative Suppliers		100%	\$125/box	40 units	1	\$ 5,000.00
4	Load Management	A/C Interruption	Forecast quantity/amount	Capacity value		10%	\$70 / MW	220 MW/hr	32 hrs	\$ 49,280.00
		A/C used for spinning reserve	Forecast quantity/amount	Capacity value		5%	\$50 / MW	220 MW/hr	10 hrs	\$ 5,500.00
		EE Program	Develop/Admin program	Customer Satisfaction						
5	Data Warehousing	Substation Relief	Develop & manage effort	Cost of overload and lost sales						
		Interval Data Management	Developed data base criteria	Corporate Asset						\$ -
6	Forecasting	Billing Data	Current & Historical	Basis for rate cases & forecast						
		Load Data	Sample Design & Management	Basis for rate cases & forecast						
		Air Conditioning Residential & Commercial	Develop and publish	Capacity planning		50%	\$40/MW	25 MW	800 hrs	\$ 400,000.00
7	Intellectual Capital (consultation, witness, etc.)	8760 System Load	Temp normalized by class	Planning/Mgmt/Forecasting						
		Provide expert assistance	CIDM Consulting CSB Event Consult Unbilled Analysis Consult Customer Count Reconciliation			100%	\$150	500 hrs	1	\$ 75,000.00
8	Deregulation/Restructuring	Load Profiling	Develop customer profiles	Revenue		15%	\$50,000,000	1	1	\$ 7,500,000.00
Annual Value										\$ 26,849,780.00
Load Research Program Cost										\$ (1,200,000.00)
Total Annual Value										\$ 25,649,780.00

Appendix A

Appendix B

Examples of Categories and Activities

Category	Activity
System Analysis and Rates - Electric	<ul style="list-style-type: none"> • Main Rate Case • Real-time Pricing (design and implementation)
System Analysis and Rates - Gas	<ul style="list-style-type: none"> • Main Rate Case
Electric Choice / Deregulation	<ul style="list-style-type: none"> • Load Profiles • Energy Procurement for basic service • Hourly energy market price calculations
Load Management	<ul style="list-style-type: none"> • Transformer Study • Load Response Programs
Data Warehousing / Data Access	<ul style="list-style-type: none"> • Meter data management • Interval data distribution (for fee)
Forecasting	<ul style="list-style-type: none"> • Air conditioning • Residential & Commercial
New Technology	<ul style="list-style-type: none"> • New meter testing & support
Intellectual Capital	<ul style="list-style-type: none"> • Subject matter expertise • Consulting
Settlement	<ul style="list-style-type: none"> • Shadow Settlements • Estimate Peak contributions for ISO Installed Capacity markets • Estimate hourly loads for ISO energy markets
Market Research Support	<ul style="list-style-type: none"> • End use Analysis • Conditional Demand Analysis • Rate Evaluation • Sales Analysis (unbilled revenue) • Ad hoc data request
Customer Service Support	<ul style="list-style-type: none"> • Billing Determinants • Reporting and analysis of customers' interval data • Revenue protection investigations
Asset Management / Optimization / Acquisition	<ul style="list-style-type: none"> • Generation • Transmission • Distribution