

## EBaR® Energy Cost Benchmarking

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

Energy cost benchmarking compares your total bottom line energy costs to similar buildings in your area.

### Total Energy Cost Benchmarking Results - Last 12 Months

20th %tile Cost \$81,518 ▼	W/Prog Cost \$192,576 ▼	Your Cost \$260,000 ▼
<b>Most Efficient</b>	<b>Median</b>	<b>Least Efficient</b>
\$28,697	\$146,778	\$468,829
5%	50%	95%
Lowest Percentile	Median	Highest Percentile

The median energy cost of buildings similar to yours in your area last year was \$146,778. Your total annual energy costs last year was \$260,000.

Your annual energy spend in the past twelve months would have been reduced by \$67,424 if the recommended energy system upgrades had been in place. The EBaR analysis in this report shows that implementing the suggested programs will increase your annual cash flow by \$22,323 during the financing period and by \$67,424 after the financing period.

As a next step after benchmarking, Jackson Associates can conduct EBaR financial energy-efficiency cash flow analysis. A short online form provides all the information required with results presented in a Executive Report.

**EBaR Energy Efficiency Cash-Flow Analysis and Executive Reports are the only low-cost, immediate resource available to see if it is time to upgrade your energy systems without risking operating or capital budgets, without spending thousands of dollars on engineering analysis, without investing time meeting with vendors and evaluating financing alternatives.**

EBaR applies Wall Street financial risk analysis with a database of energy upgrade options customized to your building to evaluate cash flow benefits of energy system improvements. Two financing options are presented in separate reports including on-budget (debt and capital leases) and off-budget (operating leases) financing. Increases in cash flow are ensured with risk analysis.

**Calculating Cash Flow**

- + Energy cost savings with system upgrades
- Financing & system upgrade costs
- +/- Additional operating and maintenance costs
- + Incentive payments as applicable
- +/- Depreciation/tax impacts as applicable

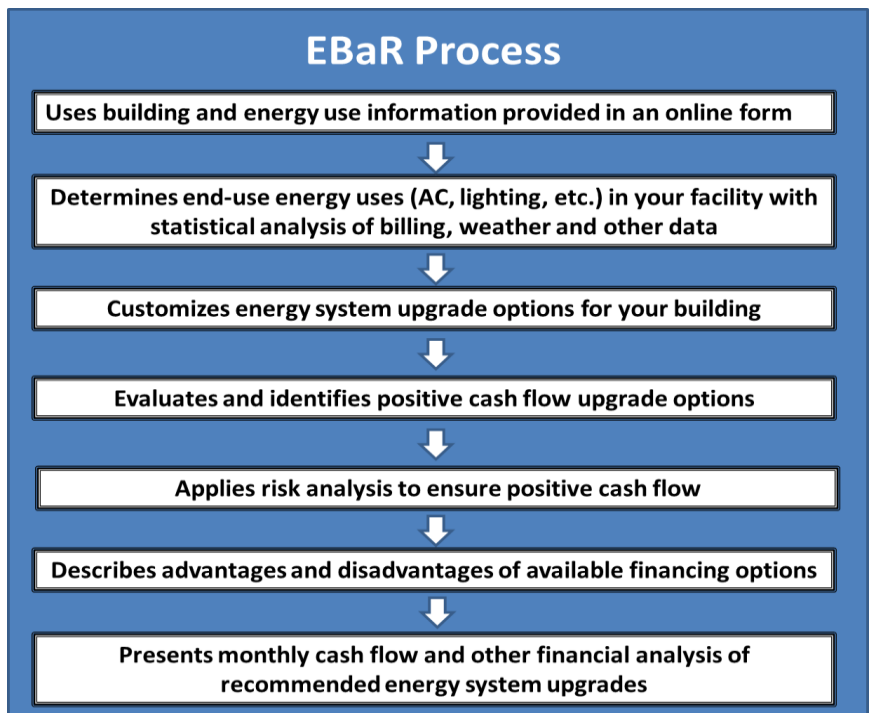
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+/- Cash Flow

**Cost Benchmarking VS Energy Use Benchmarking**

Cost benchmarking compares total bottom-line energy costs while energy use benchmarking reflects an apples-and-oranges comparison that mixes seasonal energy use, fuel type BTU content and other factors that disguise the potential for bill saving.

EBaR is the only energy analysis resource that applies **Wall Street financial risk management analysis** to a database of energy efficiency options customized for your building's energy use, ensuring results you can expect to achieve without worrying about investment risk.



## Energy Budgets at Risk (EBaR)® Summary

EBaR is the only low-cost, immediate resource available to see if it is time to upgrade your energy systems without risking operating or capital budgets, without spending thousands of dollars on engineering analysis, and without having to invest time meeting with vendors and evaluating financing alternatives. EBaR provides objective, vendor neutral, client-supportive analysis designed to save thousands of dollar and provide immediate insights on the value of potential energy systems upgrades.

If you decide if it is time to upgrade your energy systems, EBaR risk analysis ensures the options you consider will actually provide the results you need even in worst case situations that can occur with atypical weather, equipment performance, etc.

EBaR results provide a roadmap to guide interactions with engineering firms and financial organizations.

Fill in the online form and Jackson Associates will apply EBaR software, data and analysis to identify positive cash flow options with both on-budget and off-budget financing plans.

Two Executive Reports are provided, each with a different financing model.

(1) The no down payment off-budget option is a ten year operating lease with no down payment and all lease payments tax deductible as operating expenses. While deductions for depreciation are not available with the operating lease model, soft costs (engineering and other non-capital costs) are included in lease payments making them deductible for the building owner.

(2) The no down payment on-budget financing model analysis applies capital lease/debt financing where tax deductions are available to the building owner for capital expenditure depreciation, however, soft costs are not deductible. Cash flow impacts and tax implications of alternative financing options are discussed in more detail on page 13 of this report.

Jackson Associates is available to conduct analysis and provide extended Executive Reports including other financing strategies, other energy savings options such as solar and combined heat and power and other custom analysis.

Cost of standard EBaR Energy Efficiency Cash-Flow Analysis and Executive Reports for your facility is \$495. An extended \$695 option is also available including an online presentation of results and 1 hour of consulting with Jackson Associates Staff to assist with energy system upgrade activities including analysis of vendor proposals, financing options and other topics.

### EBaR Executive Report Contents

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Customer John Smith  
 Building Name Doctors Building  
 ZIP Location 18106

## Building Characteristics and Program Documentation

### Summary of General Building Characteristics

Building Type	offices of doctors, dent	Refrigeration	Yes	% cooled	100	Typical weekday hours	12
Square Ft	100,000	Exterior Lights	Yes	% heated	100	Number of weekdays oper	5
Floors	3	Misc. Nat Gas Use	No	Heating Fuel	Natural gas	Saturday operating hours	8
Year Built	2000 - current	Misc. Fuel Oil Use	No	Wr Heat Fuel	Natural gas	Sunday operating hours	0
# occupants main shift	50			Cooking Fuel	Electric		

See the accompanying input form for additional building, energy system and operating details for this building

## EBaR Energy Cost Reduction Programs

EBaR analysis identified the following energy system upgrades and changes in energy practices that generate positive cash flows.

### Program Descriptions

HVAC recommissioning	Optimize existing HVAC System
Interior lighting retrofits	Delamp, upgrade lamp and ballast efficiencies, controls
Exterior lighting retrofits	Upgrade to more efficient lamps

### License EBaR for In-House Analysis

The same EBaR software and databases used in the analysis of your building and documented in this Executive report is available for licensing at your facility. In-house application provides users with the option of selecting and evaluating their own energy savings options with alternative financing and implementation strategies.

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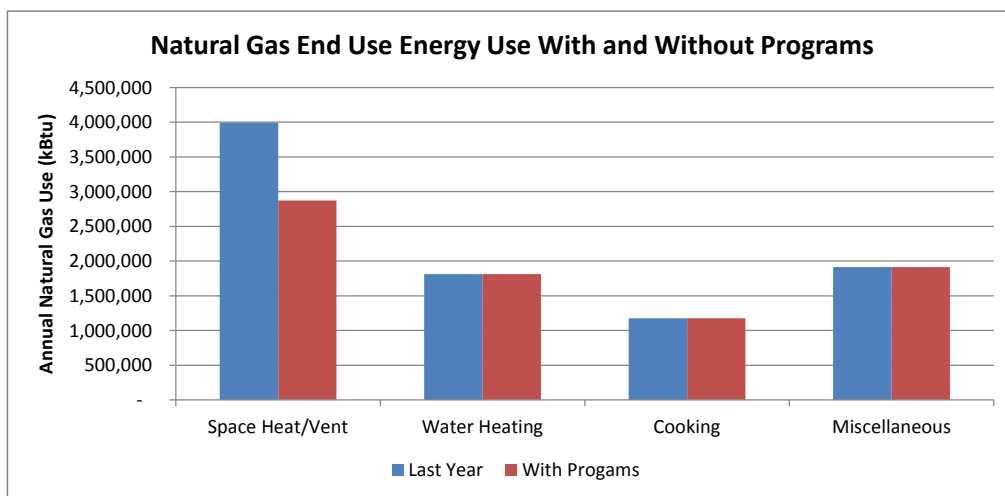
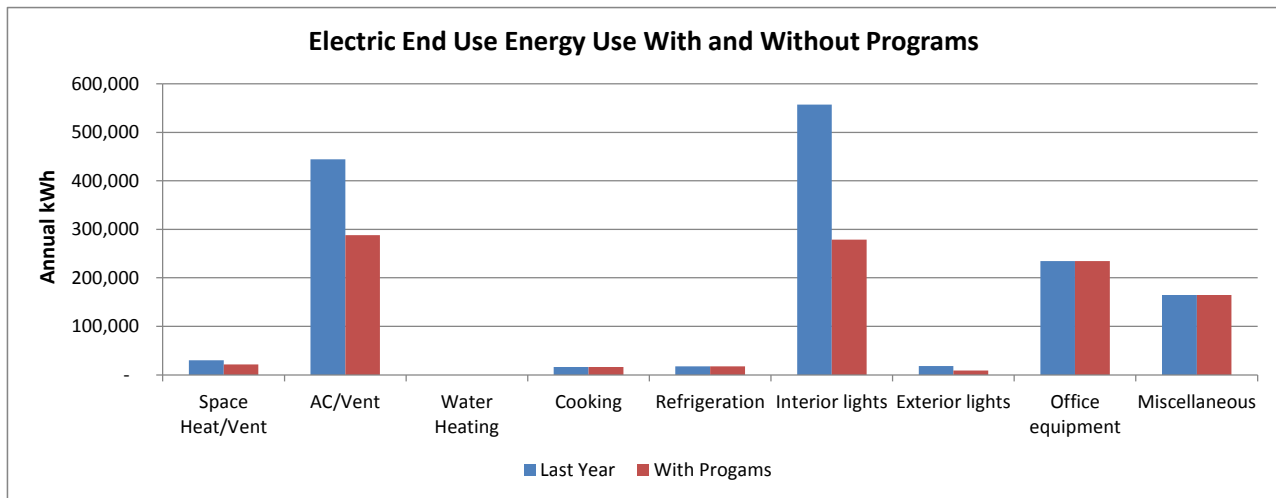
## End-Use Energy Use and Program Impacts

### End-Use Equipment Energy Use Analysis

If you provided monthly billing data, we have applied statistical analysis to your monthly energy use data and weather data to identify your weather sensitive energy use (heating, ventilation and air conditioning). We then matched the building characteristics you provided in the online input form and your non-weather sensitive energy use with similar buildings in the 7+ million MAISY utility customer database to determine your remaining (lighting, water heating, etc.) end-use energy use data.

If you provided annual or several months of energy use, we have matched your building characteristics and energy use with similar buildings in the MAISY utility customer database to determine your end-use energy use data.

Your end-use energy use in the last year is presented below with energy use that would have occurred if the efficiency options included in this report had been in place.



## EBaR Annual Cash Flow Increase Summary

**Customer**            John Smith  
**Building Name**     Doctors Building  
**ZIP Location**        18106

### NO DOWNPAYMENT, OFF-BUDGET OPERATING LEASE FINANCING

Increase in cash flow = energy cost savings - lease payments - increase (if any) in operating and maintenance costs + incentives - tax on cash flow increases. Cash flow increases substantially after the end of the financing term when lease costs go to zero. Increases in energy prices also contribute to greater cash flow over time.

#### EBaR Risk Analysis and "Worst Case" Outcome Assessment

Uncertainty in equipment performance, variations in operating hours and weather, and other factors generate uncertainty in determining the savings actually achieved with energy efficiency measures. EBaR applies Wall Street financial risk management analysis (called Value-at-Risk and Expected Shortfall Analysis) to a database of energy efficiency options customized for your building's energy use to determine "worst-case" outcomes.

EBaR determines cash flow increases that you can expect to achieve without worrying about investment risk.

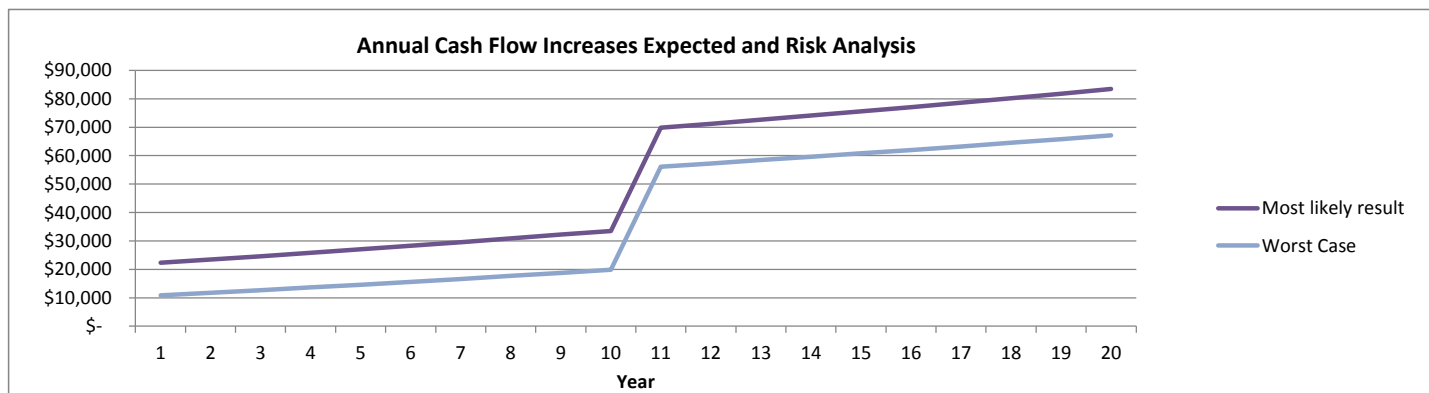
Energy upgrade outcomes worse than the "Worst Case" results presented in the tables and charts are likely to occur with a probability of only 2.5%.

#### Average Annual Cash Flow Increases and Risk Analysis For Alternative Time Periods

##### Annual Average Cash Flow Analysis

Period	Expected	Worst Case
1st Year	\$22,323	\$10,815
Years 2 - 5	\$25,266	\$13,154
Years 6 - 10	\$30,907	\$17,725
Years 11 - 20	\$76,467	\$61,500
Net Present Value	\$515,803	\$361,286

#### Average Annual Cash Flow Increases by Year



## Investment Analysis Metrics

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

Positive cash flow/minimal risk investments are the most attractive options for most business, institutions and government facilities because operating and capital budgets are not impacted and cash flow benefits are ensured. However, with positive cash flow throughout, traditional internal rate of return cannot be calculated and the payback or breakeven period is immediate. The table below shows traditional investment analysis results assuming that the investments are paid for on implementation. These results are the same that a financing agency will consider in financing your investment so it is useful to present those results.

### Traditional Investment Metrics

	Expected	Worst Case
IRR	29%	21%
NPV	\$ 537,546	\$368,863
Breakeven Period (Payback)	4.1	5.4
Discounted Breakeven Period (Discounted)	4.6	6.4
Annual average net income increase	\$52,130	\$38,353
Total cash flow increase	\$1,042,595	\$767,058
	Before Programs	After Programs
Percentile Energy Cost Score	68%	55%

### Cost Summary

Soft Costs Not Financed	\$0
Soft Costs Financed	\$0
Capital Costs Financed	\$452,500
Capital Costs + Financed Soft Costs	\$452,500
Incentive Payments	(\$170,000)
Total Costs to be Financed	\$282,500
Monthly Financing Costs	\$1,073
Total Financing Costs	\$128,801
Marginal Tax Rate	15%

## Monthly Cash Flow Increases For Selected Years

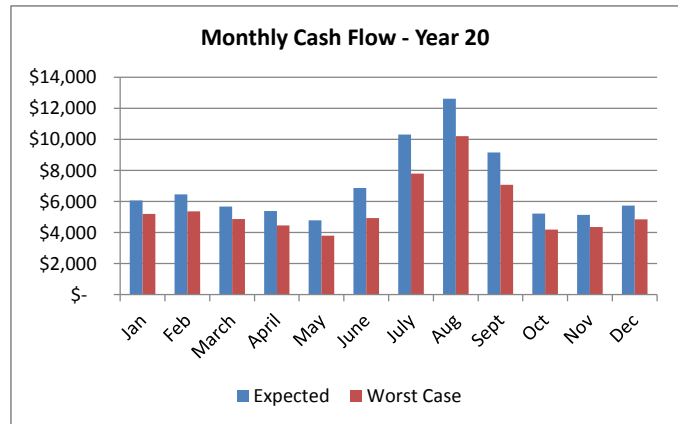
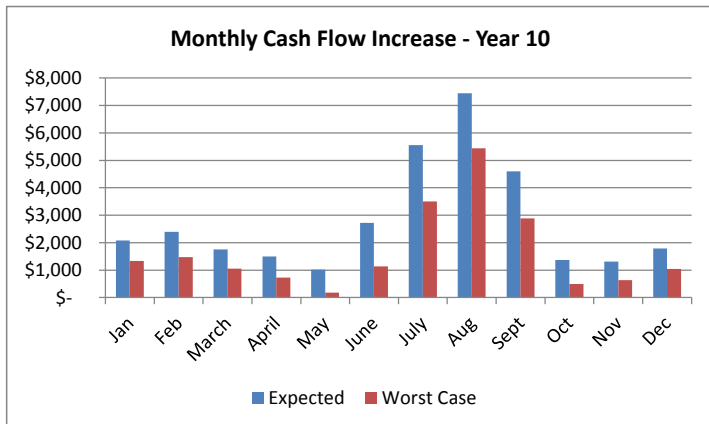
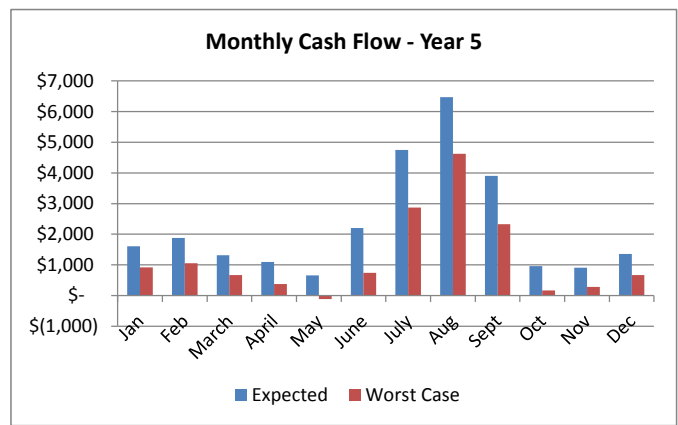
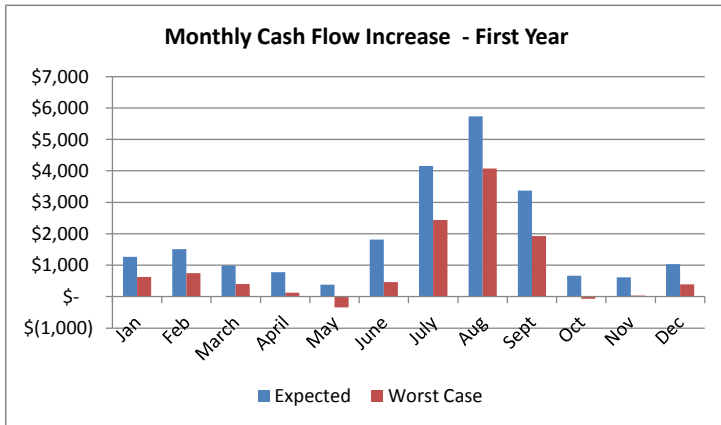
**Customer** John Smith  
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### NO DOWNPAYMENT, OFF-BUDGET OPERATING LEASE FINANCING

Increased cash flow varies by month reflecting monthly variations in energy cost savings of weather-sensitive end uses like air conditioning, space heating and ventilation as well other energy cost variations reflected in monthly historical energy use provided for your facility. These tables and charts show these variations.

#### Monthly Cash Flow Increases in Individual Years

	First Year		Year 5		Year 10		Year 20	
	Expected	Worst Case	Expected	Worst Case	Expected	Worst Case	Expected	Worst Case
Jan	\$1,266	\$628	\$1,611	\$921	\$2,083	\$1,331	\$6,075	\$5,206
Feb	\$1,515	\$751	\$1,879	\$1,051	\$2,391	\$1,478	\$6,459	\$5,375
March	\$989	\$398	\$1,312	\$671	\$1,754	\$1,057	\$5,681	\$4,868
April	\$783	\$126	\$1,092	\$380	\$1,501	\$723	\$5,388	\$4,462
May	\$382	-\$337	\$657	-\$118	\$1,019	\$182	\$4,797	\$3,805
June	\$1,815	\$460	\$2,207	\$744	\$2,721	\$1,131	\$6,879	\$4,932
July	\$4,160	\$2,438	\$4,749	\$2,876	\$5,553	\$3,505	\$10,311	\$7,806
Aug	\$5,737	\$4,071	\$6,475	\$4,629	\$7,439	\$5,435	\$12,617	\$10,199
Sept	\$3,371	\$1,929	\$3,902	\$2,332	\$4,601	\$2,879	\$9,160	\$7,078
Oct	\$662	-\$69	\$962	\$169	\$1,369	\$497	\$5,215	\$4,186
Nov	\$615	\$33	\$904	\$281	\$1,311	\$629	\$5,146	\$4,348
Dec	\$1,029	\$388	\$1,355	\$670	\$1,787	\$1,040	\$5,732	\$4,859
<b>Total</b>	<b>\$22,323</b>	<b>\$10,815</b>	<b>\$27,105</b>	<b>\$14,604</b>	<b>\$33,528</b>	<b>\$19,887</b>	<b>\$83,458</b>	<b>\$67,124</b>

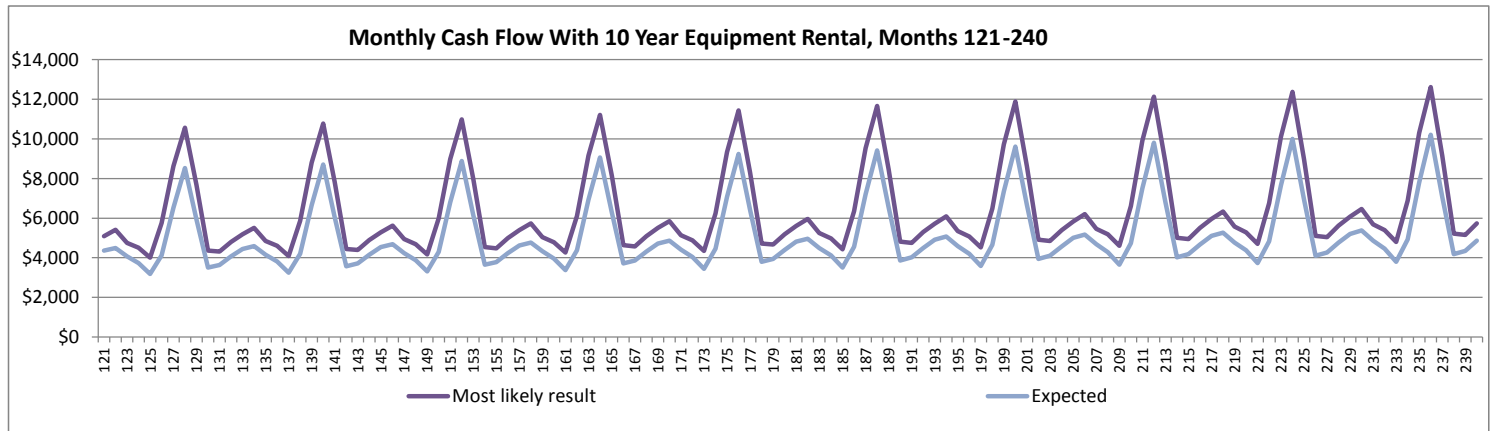
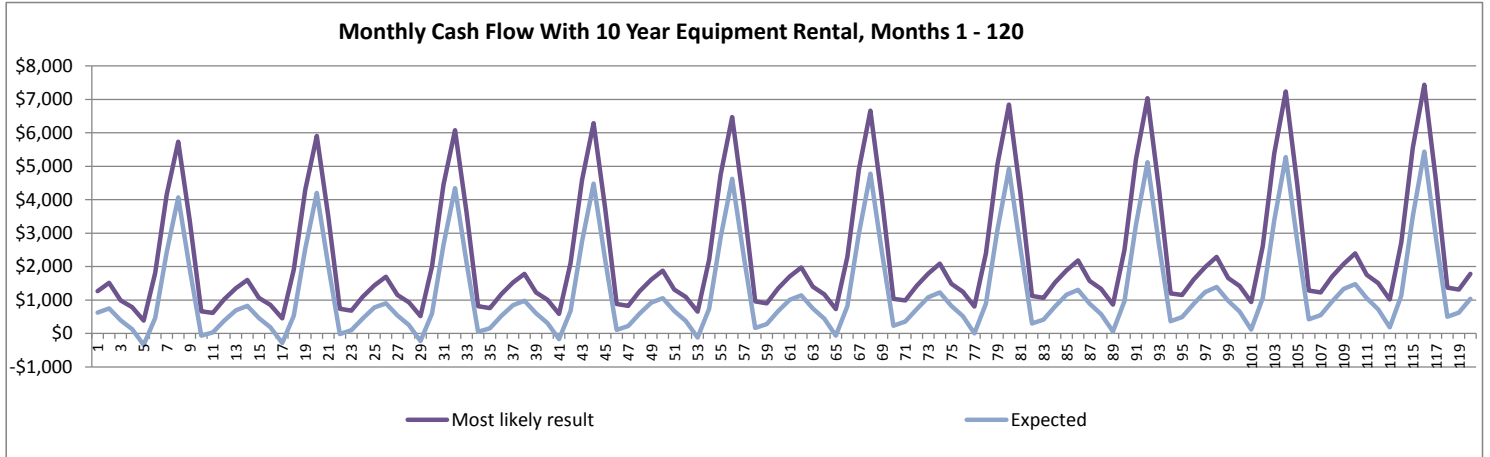


# Monthly Cash Flow Increases for All Months

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

## NO DOWNPAYMENT, OFF-BUDGET OPERATING LEASE FINANCING

Charts show monthly cash flow increases for each month for the next 20 years

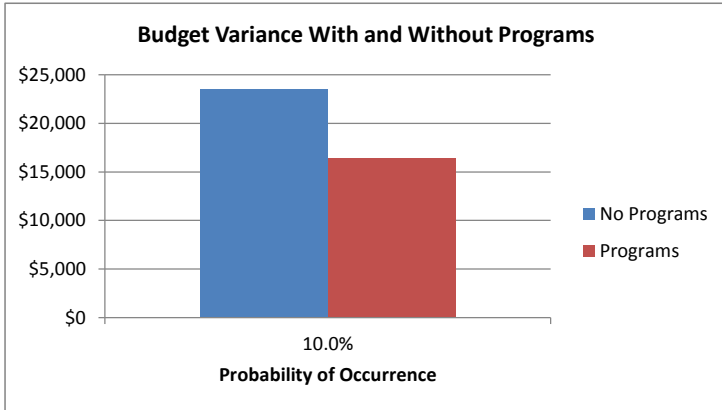




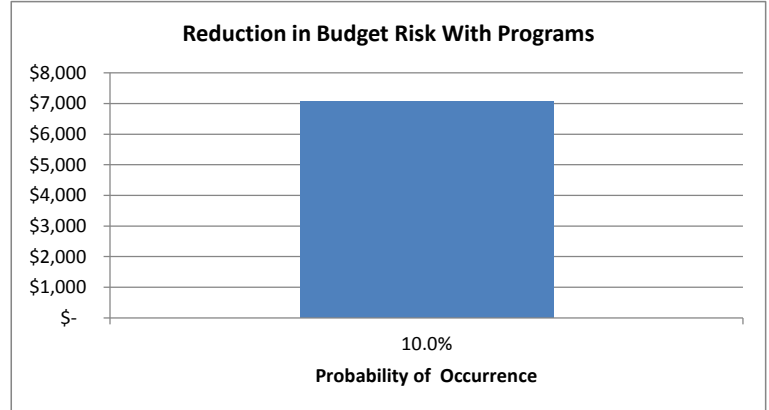
## Energy System Upgrades Reduce Your Budget Variance Risk

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

In an average year, budget variance (actual energy costs-budgeted energy costs) is zero. However weather variations and other variables in individual years create budget variances. The charts below show the reductions in unexpected budget variances that can be expected to occur once in ten years. Smaller variances will occur with greater frequency. These charts the value of energy system upgrades in reducing the risk of budget variances.



The chart above shows the budget variance likely to occur once in ten years currently and after efficiency programs have been implemented



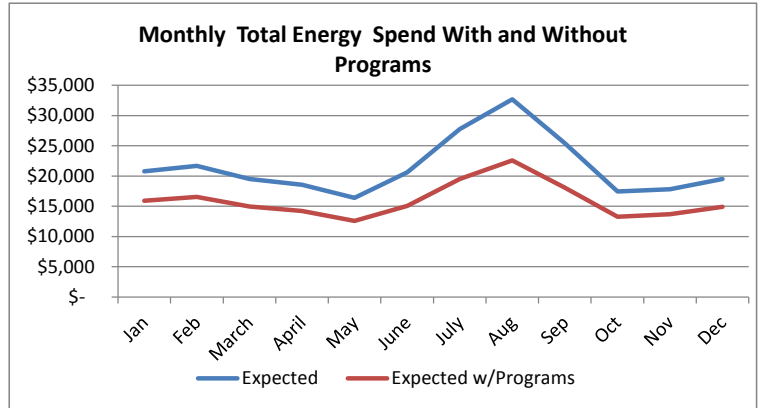
The chart above shows the reduction in budget variance risk associated with a once-in-ten year event.

## Total Energy Spend, Savings and Risk Analysis

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

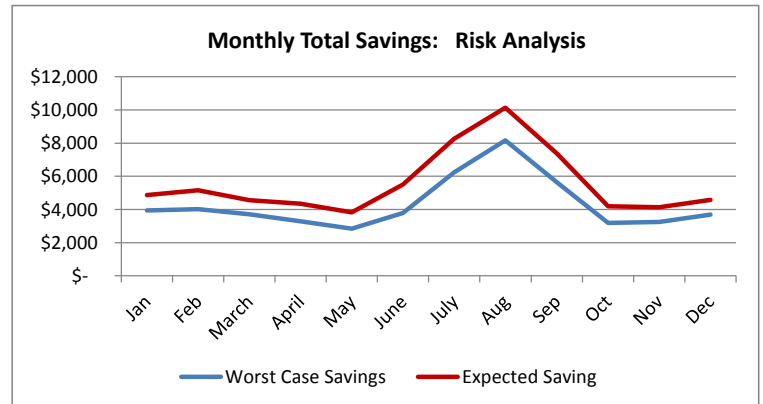
### Expected Energy Spend and Energy Savings Risk Analysis

Expected monthly total energy spend with and without energy savings programs



### Monthly Energy Savings Risk Analysis

Monthly total energy savings risk analysis showing expected and worst case total energy savings



### Monthly Energy Spend and Savings Risk Analysis Data - Weather Normalized

Monthly data values for expected total energy savings with and without energy saving programs and monthly total energy savings risk analysis showing expected and worst case total energy savings.

These series are calculated with current energy prices. Energy spend and savings will be greater in future years as energy prices increase.

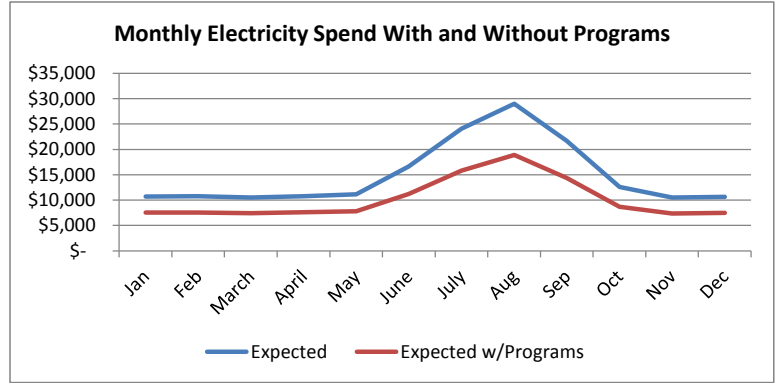
	Expected Energy Spend		Risk Analysis	
	No Programs	Programs	Expected Savings	Worst Case Savings
January	\$20,765	\$15,903	\$4,862	\$3,936
February	\$21,706	\$16,543	\$5,163	\$4,014
March	\$19,536	\$14,974	\$4,562	\$3,704
April	\$18,566	\$14,223	\$4,343	\$3,291
May	\$16,404	\$12,578	\$3,826	\$2,843
June	\$20,608	\$15,092	\$5,516	\$3,791
July	\$27,766	\$19,493	\$8,273	\$6,250
August	\$32,699	\$22,570	\$10,129	\$8,171
September	\$25,468	\$18,096	\$7,372	\$5,648
October	\$17,443	\$13,252	\$4,191	\$3,201
November	\$17,836	\$13,694	\$4,142	\$3,258
December	\$19,518	\$14,938	\$4,580	\$3,688
Annual	\$260,000	\$192,576	\$67,424	\$56,959

## Electricity Spend, Savings and Risk Analysis

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

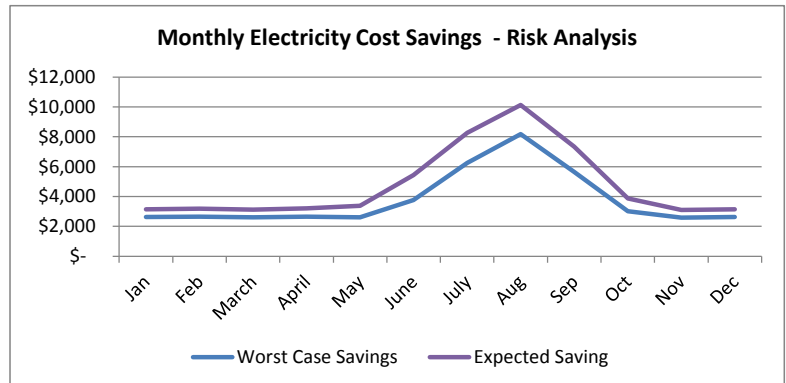
### Expected Electricity Spend and Energy Savings Risk Analysis

Expected monthly electricity spend with and without energy savings programs



### Monthly Electricity Savings Risk Analysis

Monthly electricity savings risk analysis showing expected and worst case total energy savings



### Monthly Energy Spend and Savings Risk Analysis Data

Monthly data values for expected electricity savings with and without energy saving programs and monthly electricity savings risk analysis showing expected and worst case total energy savings

These series are calculated with current energy prices. Energy spend and savings will be greater in future years as energy prices increase.

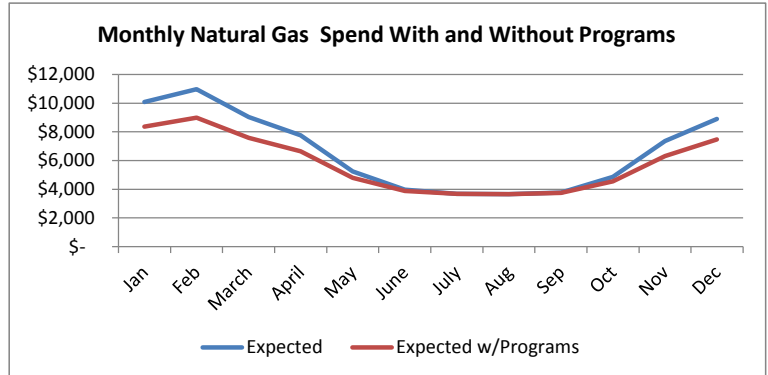
	Expected Energy Spend		Risk Analysis	
	No Programs	Programs	Expected Savings	Worst Case Savings
January	\$10,677	\$7,532	\$3,145	\$2,626
February	\$10,737	\$7,556	\$3,181	\$2,655
March	\$10,512	\$7,399	\$3,113	\$2,596
April	\$10,793	\$7,579	\$3,214	\$2,647
May	\$11,160	\$7,789	\$3,371	\$2,600
June	\$16,636	\$11,206	\$5,430	\$3,760
July	\$24,093	\$15,820	\$8,273	\$6,250
August	\$29,030	\$18,901	\$10,129	\$8,171
September	\$21,701	\$14,357	\$7,344	\$5,645
October	\$12,573	\$8,712	\$3,861	\$3,019
November	\$10,485	\$7,385	\$3,100	\$2,580
December	\$10,609	\$7,458	\$3,151	\$2,625
Annual	\$180,000	\$122,357	\$57,643	\$48,923

# Natural Gas Spend, Savings and Risk Analysis

**Customer** John Smith  
**Building Name** Doctors Building  
**ZIP Location** 18106

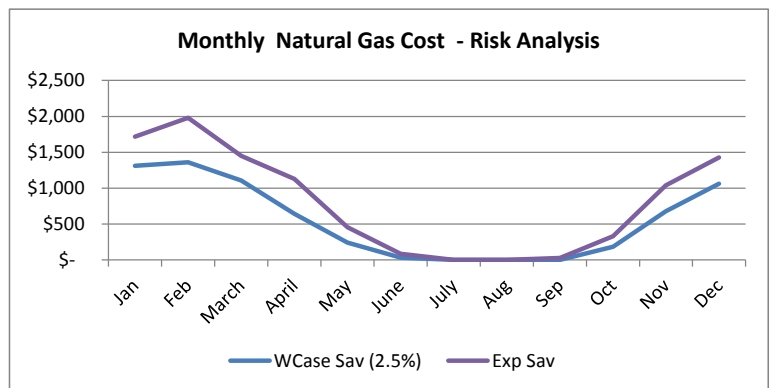
## Expected Natural Spend and Energy Savings Risk Analysis

Expected monthly natural gas spend with and without energy savings programs



## Monthly Electricity Savings Risk Analysis

Monthly natural gas savings risk analysis showing expected and worst case total energy savings



## Monthly Energy Spend and Savings Risk Analysis Data

Monthly data values for expected natural gas savings with and without energy saving programs and monthly natural gas savings risk analysis showing expected and worst case total energy savings

These series are calculated with current energy prices. Energy spend and savings will be greater in future years as energy prices increase.

	Expected Energy Spend		Risk Analysis	
	No Programs	Programs	Expected Savings	Worst Case Savings
January	\$10,088	\$10,088	\$1,717	\$1,310
February	\$10,969	\$10,969	\$1,982	\$1,359
March	\$9,024	\$9,024	\$1,449	\$1,108
April	\$7,773	\$7,773	\$1,129	\$644
May	\$5,244	\$5,244	\$455	\$243
June	\$3,972	\$3,972	\$86	\$31
July	\$3,673	\$3,673	\$0	\$0
August	\$3,669	\$3,669	\$0	\$0
September	\$3,767	\$3,767	\$28	\$3
October	\$4,870	\$4,870	\$330	\$182
November	\$7,351	\$7,351	\$1,042	\$678
December	\$8,909	\$8,909	\$1,429	\$1,063
Annual	\$80,000	\$80,000	\$9,781	\$8,036

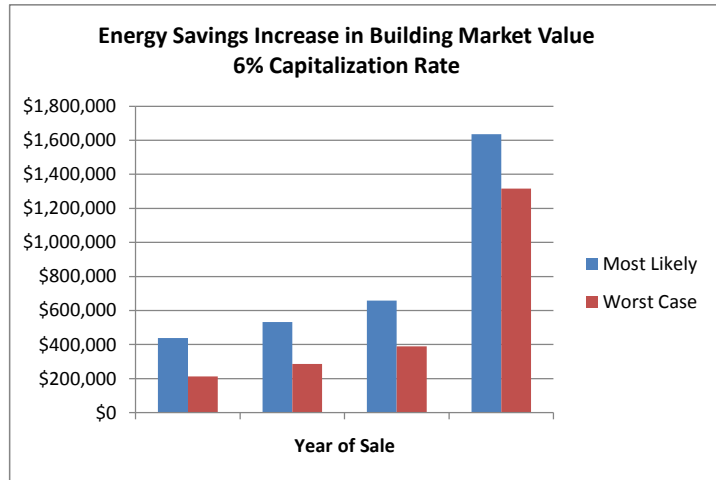
## Increase in Facility Capital Value

**Customer**      John Smith  
**Building Name**    Doctors Building  
**ZIP Location**      18106

Reducing energy costs increases the net operating income of buildings. Net operating income determines the value of buildings depending on the capitalization rate in the area. This process makes sense if one considers the cost of the building as the investment cost and the net operating income as the annual return on the investment. Greater net operating incomes will generate greater price bids for the capital investment (the building). The two charts below show the increase in capital value of this facility based on the energy savings options included in the EBaR analysis.

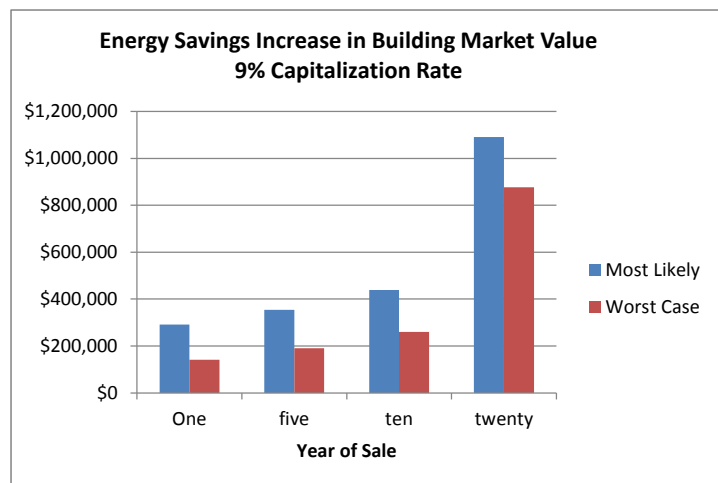
A 6% capitalization rate is appropriate for most geographic areas for buildings with low vacancy rates.

Year	Most Likely	Worst Case
One	\$291,800	\$141,378
five	\$354,311	\$190,900
ten	\$438,278	\$259,967
twenty	\$1,090,956	\$877,433



9% capitalization rate is appropriate for most geographic areas for buildings with higher vacancy rates.

Year	Most Likely	Worst Case
One	\$437,700	\$212,067
five	\$531,467	\$286,350
ten	\$657,417	\$389,950
twenty	\$1,636,433	\$1,316,150



## Financing Options and Contact Information

EBaR Reports provide in-depth discussions of financing options and alternatives that generate positive cash flow including no down payment options.

Financing options discussions are provided only as part of paid EBaR analysis.

## EBaR, Cash Flow and Risk Management Analysis

### Notable Features

- 1 5-10 minute online entry of building, equipment, operating, and energy data
  - 2 Energy cost benchmarking using the MAISY Utility Customer Database
  - 3 Analysis of alternative efficiency investments based on results of thousands of program results
  - 4 Identification of positive cash flow energy savings options (avoids funding with capital expenditure and operating budgets)
  - 5 Incorporation of Wall Street based risk analysis to ensure results are consistent with expectations
  - 6 Presentation of results in an 15 page report
  - 7 Saves thousands of dollars and management time required to determine if an energy system upgrade makes sense
  - 8 Objective, independent financial evaluations
- 9 Availability of Jackson Associates staff to discuss results and provide support dealing with vendors, financing organizations, etc.

### The EBaR Process

EBaR analysis includes the following steps

- 1 Users provide building, equipment, and occupancy information in an online form at [www.energybudgetsatrisk.com](http://www.energybudgetsatrisk.com)
- 2 Users provide energy use information in an online form at [www.energybudgetsatrisk.com](http://www.energybudgetsatrisk.com). Three options are available: (1) Annual and several month's energy bills, (2) energy bills for the last 12 months, or (3) users can send (email or regular mail) a copy of their bills to us.
- 3 Energy use is compared to similar buildings in the same geographic area in an energy cost benchmarking process
- 4 Statistical analysis of user monthly energy use is applied to identify weather sensitive energy uses (heating, air conditioning , ventilation)
- 5 Other end-use energy uses are estimated based on information provided in the online form along with data from the MAISY utility customer database
- 6 Alternative energy savings options are evaluated to identify investment that more than pay for themselves over the financing period
- 7 Cash flow and traditional financial analysis are presented for programs that provide positive cash flow. Risk analysis results are presented to provide users with estimates of worst-case outcomes, ensuring program results that meet decision-maker requirements.

### EBaR Risk Analysis

A major obstacle to moving forward with energy system upgrade is fear that projected returns will not actually be achieved. EBaR Risk analysis addresses this concern by applying Wall Street risk management analysis to quantify impacts of weather, performance, energy price and other sources of uncertainty. EBaR results provide "worst case" outcomes that ensure minimum acceptable cash flow and energy savings results. These "lower-bound" results are based on Value-at-Risk and Expected Loss analysis to quantitatively identify worst-case investment, replacing traditional arbitrary payback thresholds that often overlook attractive energy efficiency opportunities.

## END OF REPORT