ENERGY STAR®
Calculating the Cost of Delay

An Introduction to the

Cash Flow Opportunity (CFO) Calculator

Presentation Overview

- About ENERGY STAR
- The challenge of energy waste
- CFO Calculator
  - Concepts
  - Operations and results
  - Building energy performance rating (benchmarking)

What is ENERGY STAR ?

A voluntary partnership between organizations, businesses, consumers, and government, united in the pursuit of a common goal —

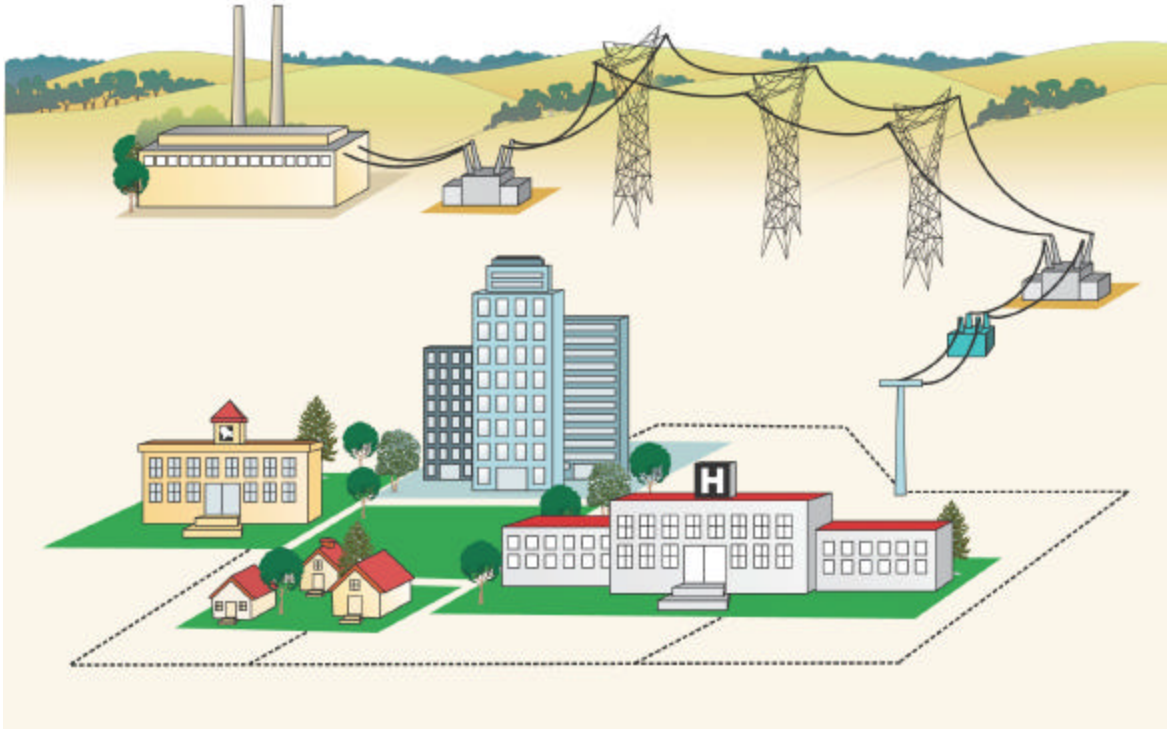
What is ENERGY STAR ?

A voluntary partnership between organizations, businesses, consumers, and government, united in the pursuit of a common goal —
to protect our environment for future generations by changing to energy-efficient products and practices today.

The Need for Energy Efficiency

Energy waste at home and at work will cost U.S. organizations and consumers billions of dollars in the next 10 years.

Wasted energy contributes to smog, acid rain, and greenhouse gases.

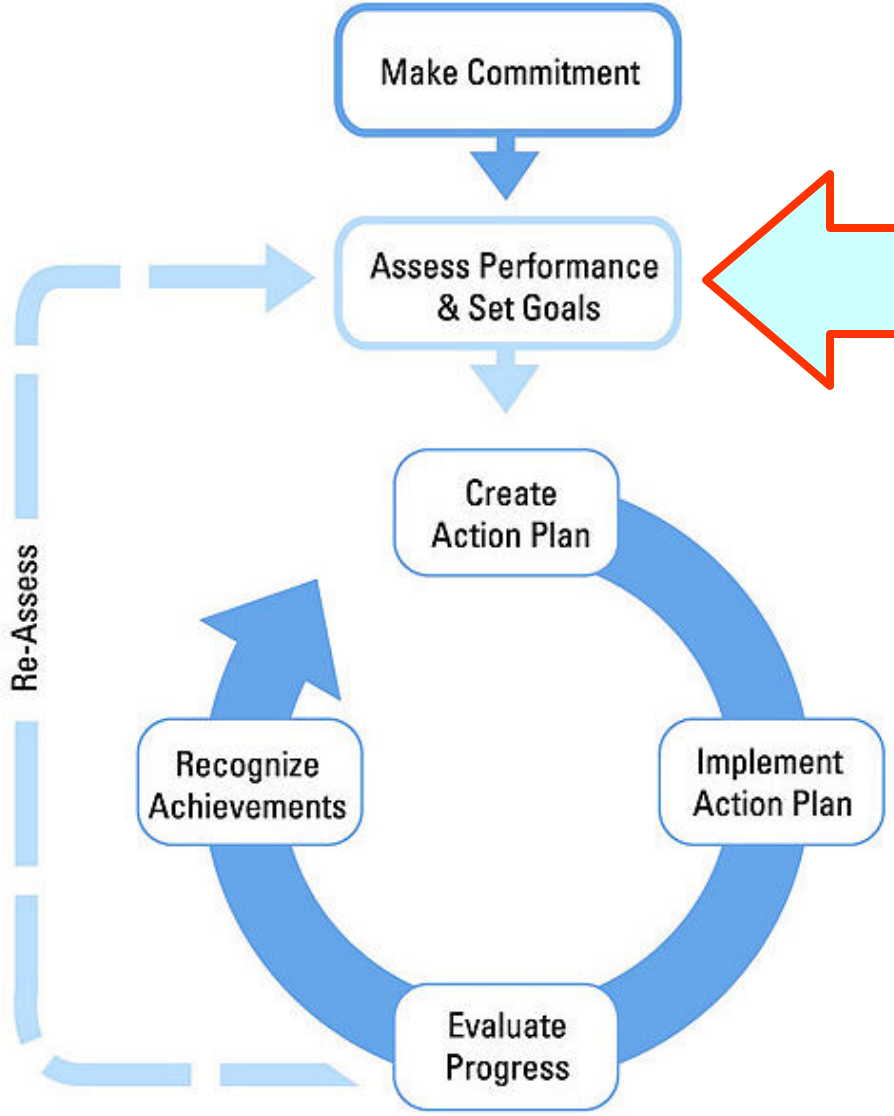


The Power of ENERGY STAR

In 2002 alone, Americans, with the help of ENERGY STAR, saved enough energy to power 15 million homes and reduce the greenhouse gas emissions equivalent to those of 14 million cars -- all while saving $7 billion.

ENERGY STAR

Energy Management Strategy




ENERGY STAR® CASH FLOW OPPORTUNITY Calculator
from the US Environmental Protection Agency.

This spreadsheet is designed to work with Microsoft Excel 97 or later versions. It may not work properly with earlier versions. It is best viewed with 1024x768 pixels resolution.

ENERGY STAR®
CASH FLOW
OPPORTUNITY

February 3, 2003

Please report any inconsistencies or problems to

Disclaimer

The Opportunity

How much new equipment

could you buy from

the dollars saved

by installing energy

efficiency equipment now?

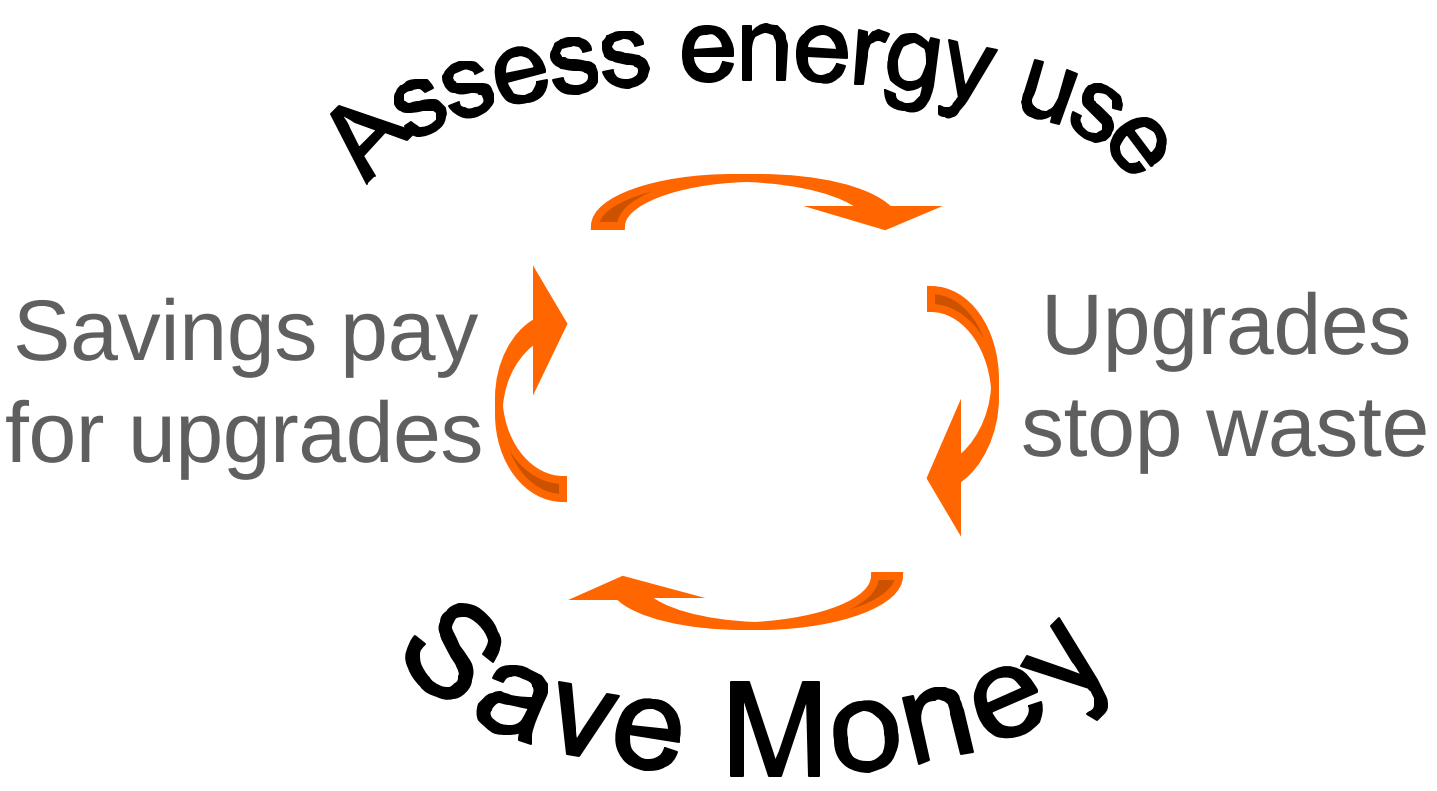
“We are paying for energy efficiency projects *whether or not* we do the projects!”

The "Business" of Energy Efficiency

Energy efficiency projects are unlike other capital projects:

- Properly structured, they pay for themselves.
- They do not have to compete with other capital projects for funding.

The "Business" of Energy Efficiency



What is the CFO Calculator ?

An energy efficiency financial decision-making tool, built on Microsoft Excel™

- Instructions
- Four analysis spread sheets
- A summary report

Helps quantifies the costs of delay.

What Does it Do?

Addresses three critical questions about installing energy efficiency projects:

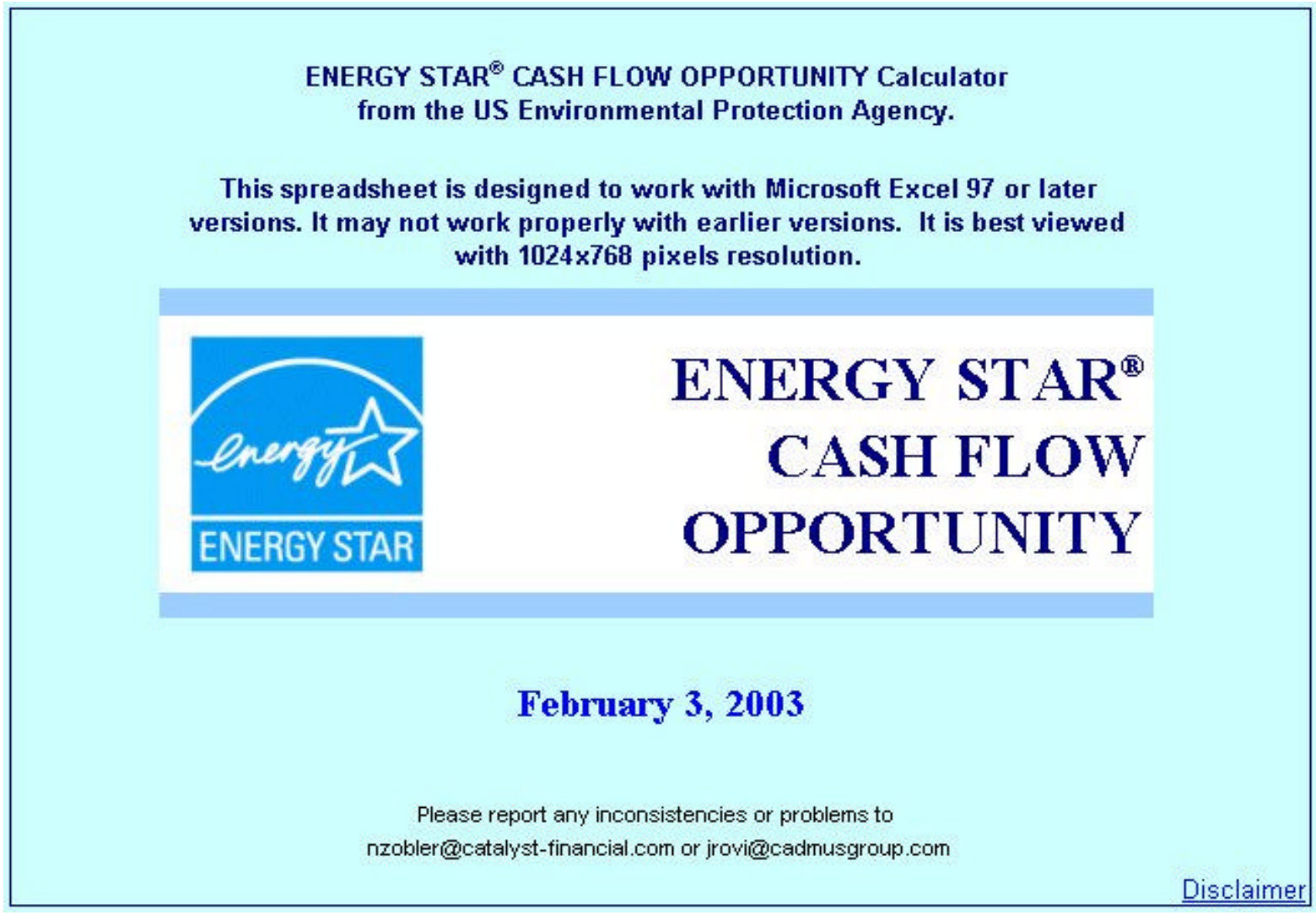
1. How much new energy efficiency equipment can be purchased from the anticipated savings?
2. Should this equipment purchase be financed now or is it better to wait and use cash from a future budget? (avoid paying interest)
3. Is money being lost by waiting for a lower interest rate?

When Should it be Used ?

- When decision making has been deferred or is controversial
- When opportunity losses are real and calculable

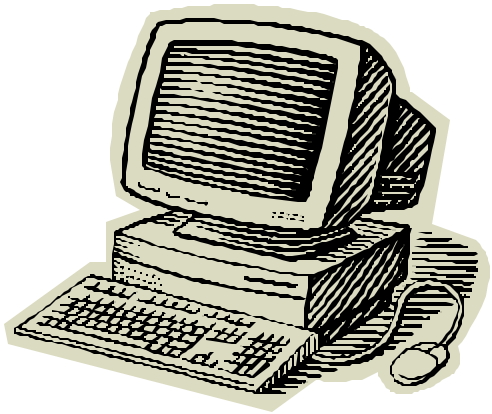
The CFO Calculator helps quantify the urgency of acting NOW!

Meet the CFO Calculator



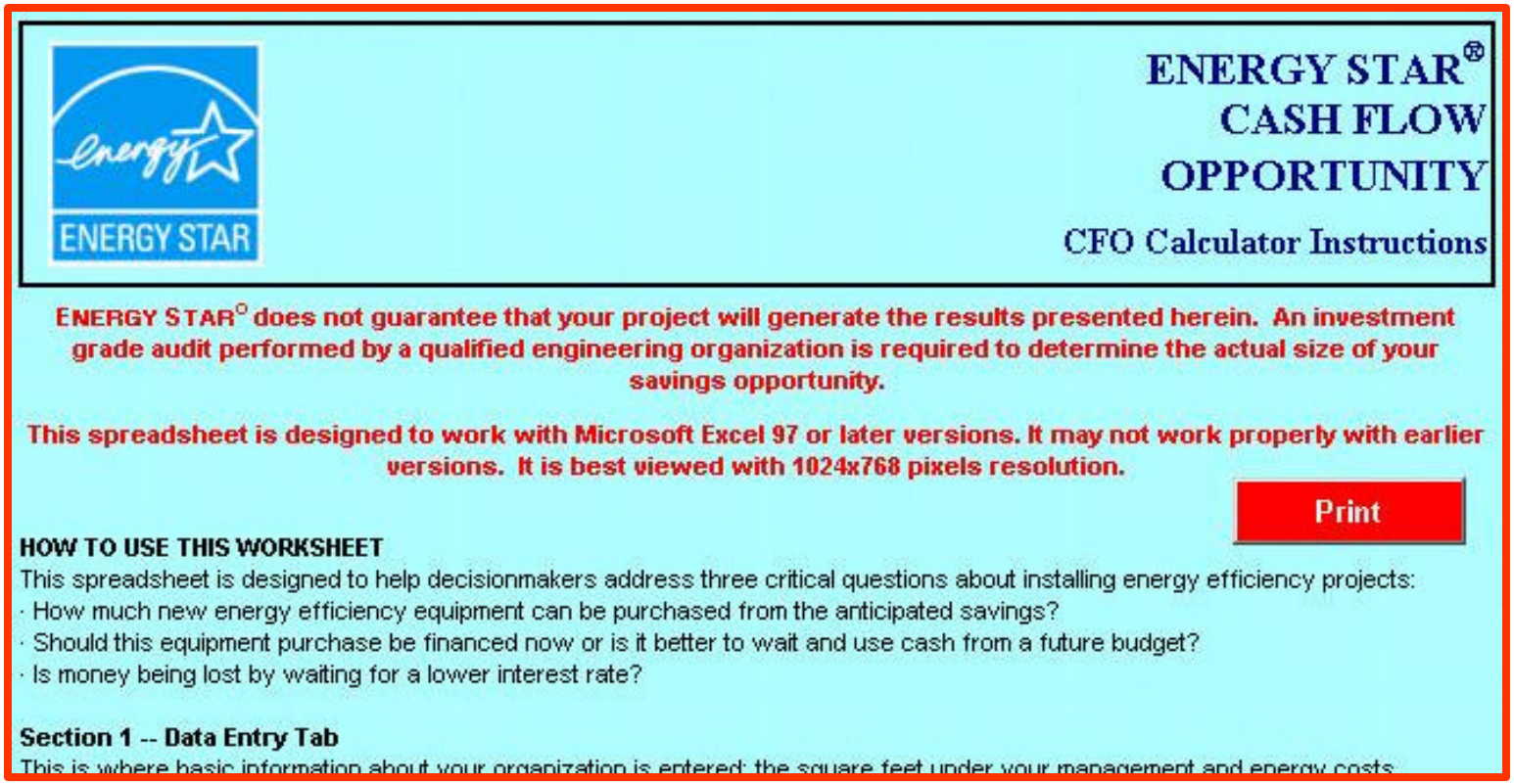
The CFO Calculator's 7 Tabs

Intro | Instructions | Data Entry | Investment Values | Cash Flow | Cost of Delay | Summary



Instructions Page

The instructions provide useful information and step-by-step how-to-use guidelines



ENERGY STAR® CASH FLOW OPPORTUNITY

CFO Calculator Instructions

ENERGY STAR® does not guarantee that your project will generate the results presented herein. An investment grade audit performed by a qualified engineering organization is required to determine the actual size of your savings opportunity.

This spreadsheet is designed to work with Microsoft Excel 97 or later versions. It may not work properly with earlier versions. It is best viewed with 1024x768 pixels resolution.

Print

HOW TO USE THIS WORKSHEET

This spreadsheet is designed to help decisionmakers address three critical questions about installing energy efficiency projects:

- How much new energy efficiency equipment can be purchased from the anticipated savings?
- Should this equipment purchase be financed now or is it better to wait and use cash from a future budget?
- Is money being lost by waiting for a lower interest rate?

Section 1 -- Data Entry Tab

This is where basic information about your organization is entered: the square feet under your management and energy costs

Intro | **Instructions** | Data Entry | Investment Values | Cash Flow | Cost of Delay | Summary

A simplified general approach

FIRST APPROXIMATION DATA ENTRY TABLE

Name	**Example organization with multiple facilities adding up to 1 million SF**
Select Scenario	First Approximation
Sample Values	Sample Values

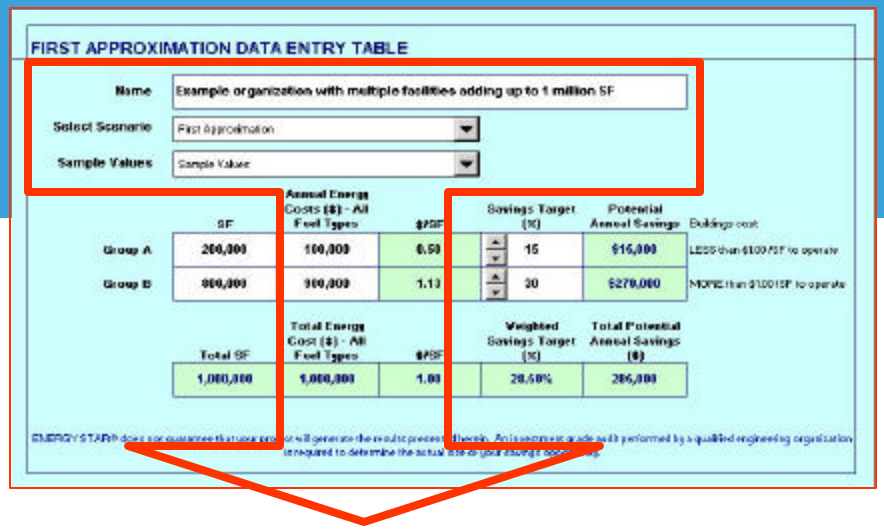
	SF	Annual Energy Costs ($) - All Fuel Types	$/SF	Savings Target (%)	Potential Annual Savings	Buildings cost
Group A	**200,000**	**100,000**	**0.50**	**15**	**$15,000**	LESS than $1.00 /SF to operate
Group B	**800,000**	**900,000**	**1.13**	**30**	**$270,000**	MORE than $1.00 /SF to operate

Total SF	Total Energy Cost ($) - All Fuel Types	$/SF	Weighted Savings Target (%)	Total Potential Annual Savings ($)
1,000,000	**1,000,000**	**1.00**	**28.50%**	**285,000**

ENERGY STAR® does not guarantee that your project will generate the results presented herein. An investment grade audit performed by a qualified engineering organization is required to determine the actual size of your savings opportunity.

Intro / Instructions / **Data Entry** / Investment Values / Cash Flow / Cost of Delay / Summary

Data Entry



Name Example organization with multiple facilities adding up to 1 million SF **(1)**

Select Scenario First Approximation **(2)**

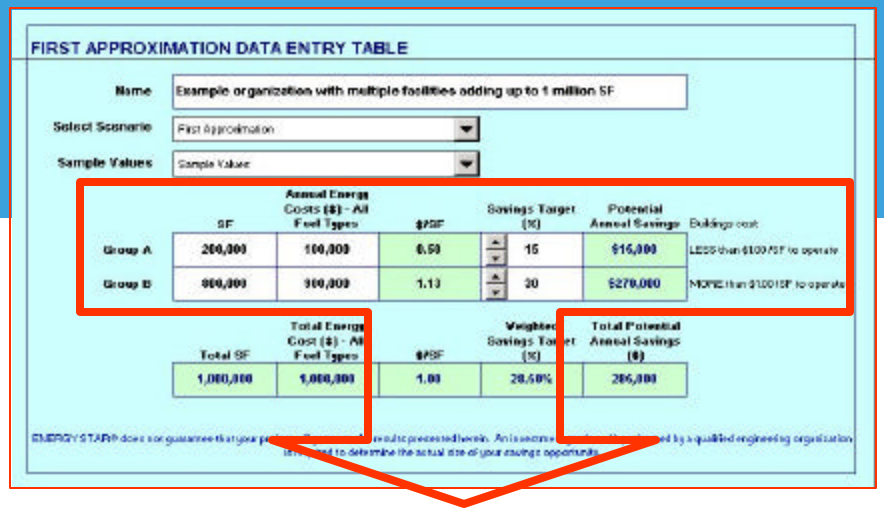
Sample Values Sample Values **(3)**

(1) Enter name of organization

(2) Select approximation

(3) View a sample

Data Entry



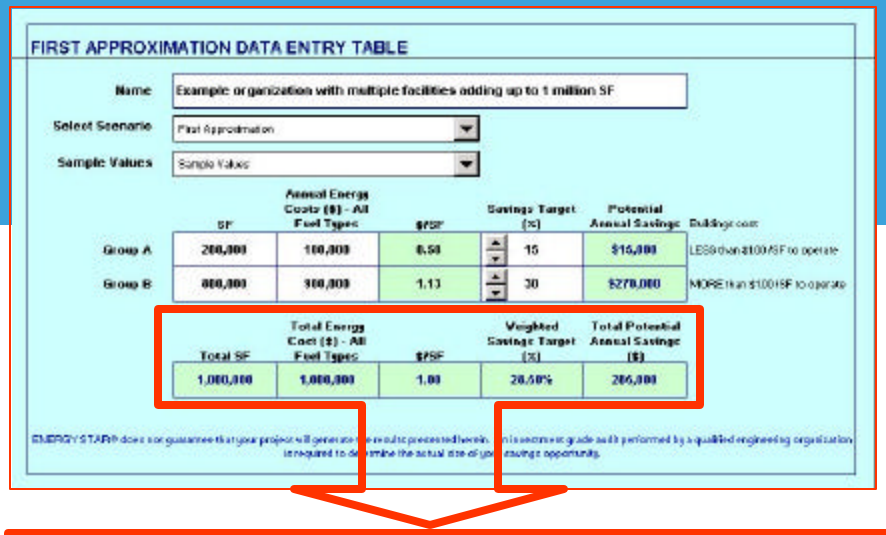
	SF	Annual Energy Costs ($) - All Fuel Types	$/SF	Savings Target (%)	Potential Annual Savings	Buildings cost
Group A	(4) 200,000	(5) 100,000	0.50	15 (6)	$15,000	LESS than $1.00 /SF to operate
Group B	800,000	900,000	1.13	30	$270,000	MORE than $1.00 /SF to operate

(4) Total square footage for each group

(5) Annual energy costs for each group

(6) Your best estimate of percent savings

Data Entry



Total SF	Total Energy Cost ($) - All Fuel Types	$/SF	Weighted Savings Target (%)	Total Potential Annual Savings ($)
1,000,000	1,000,000	1.00	(7) 28.50%	(8) 285,000

(7) Weighted Savings Target is the overall savings based on total square footage and dollars

(8) Based on your estimated savings target, this is the excess amount paid to the utility companies

Value of Your Investment

FIRST APPROXIMATION INVESTMENT OPPORTUNITY

	Group A	Group B	Total Utility Bill
Annual Utility Bills	$100,000	$900,000	$1,000,000
Annual Potential Savings	$15,000	$270,000	$285,000

Potential Annual Savings = Cash Flow Opportunity

Use Sample Values

Calculate

What Can This Annual Cash Flow Buy?

Assuming an interest rate of	5.00	%
Assuming a term of	7	Year(s)
Savings used to pay energy investments	90	%

You may change these values anytime. If you would like to see the sample values, please click on the Use Sample Values button.

Taken from operating funds, these savings could finance energy projects equal to: _____ **without increasing today's capital and operating budgets.**

Contribution that your operating budget can make towards energy improvements		/SF
Simple Payback		Year(s)
		Month(s)

Median project investment ranges between $1 - 3/ft^2.*

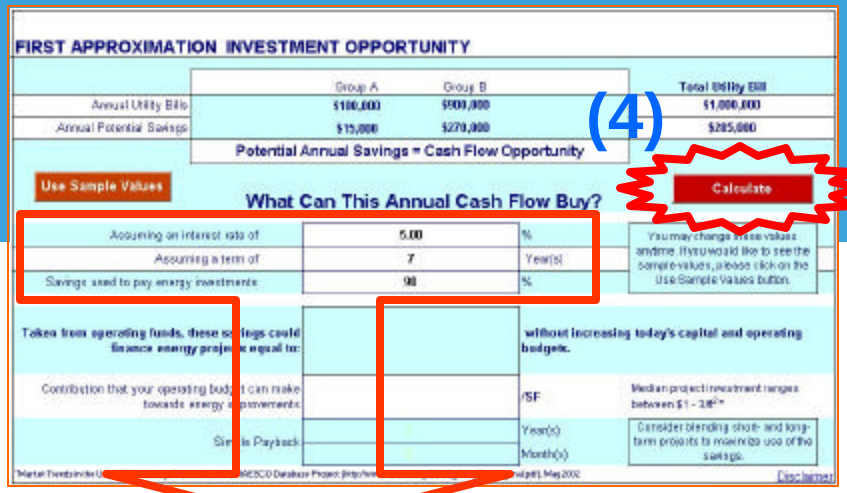
Consider blending short- and long-term projects to maximize use of the savings.

*Market Trends in the U.S. ESCO Industry: Results from the NAESCO Database Project (http://www.naesco.org/ESCO_Mkt_Trends_final.pdf), May 2002

Disclaimer

Intro / Instructions / Data Entry / **Investment Values** / Cash Flow / Cost of Delay / Summary

Investment Values



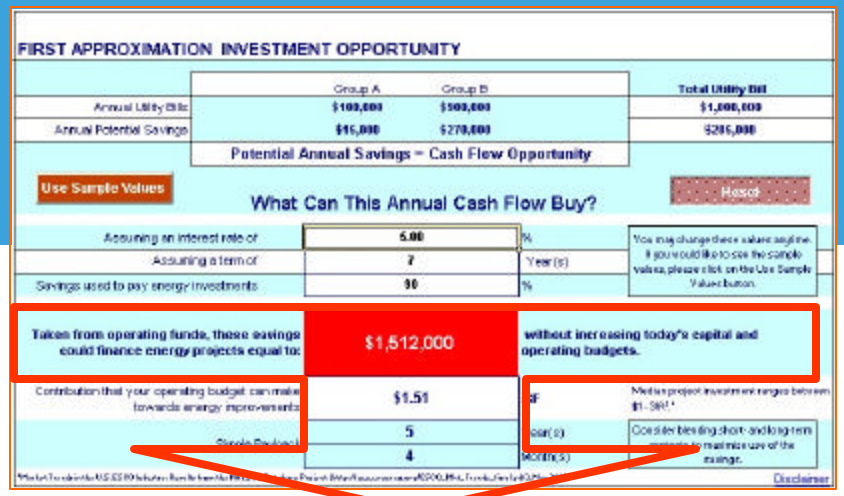
Assuming an interest rate of	(1)	5.00	%
Assuming a term of	(2)	7	Year(s)
Savings used to pay energy investments	(3)	90	%

(1) The rate your organization can obtain financing

(2) Financing term acceptable to your organization and the lender

(3) Percentage of savings to commit to pay for energy efficiency improvements

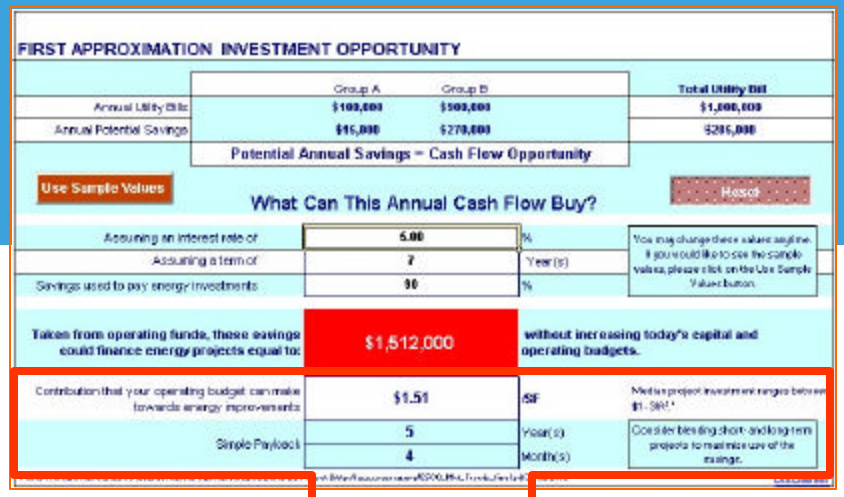
Dollars are buried in your utility bill!



(5) Estimated value of equipment that could be acquired without increasing existing Operating or Capital Budgets

Pay for energy efficiency improvements TODAY using the money saved from FUTURE bills!

Investment Values



Contribution that your operating budget can make towards energy improvements	(6) $1.51	/SF	Median project investment ranges between $1 - 3/ft².*
Simple Payback	(7) 5	Year(s)	Consider blending short- and long-term projects to maximize use of the savings.
	4	Month(s)	

(6) Contribution your operating budget can make toward energy improvements

(7) Simple payback

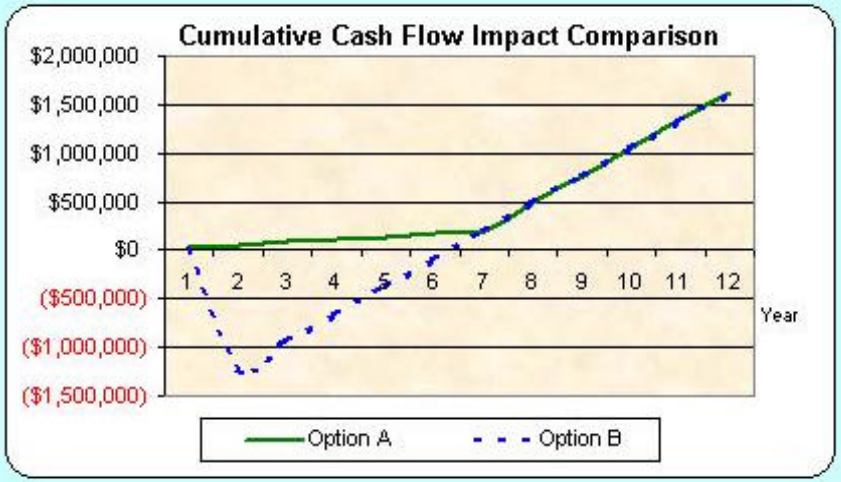
Cash Flow

FIRST APPROXIMATION CASH FLOW OPPORTUNITY

Click this button if you would like to transfer values from Investment Values page. Year(s) postponed is given as 2 years.

Use Investment Values

Project cost	1,512,000	$
Simple payback	5	years
	4	month(s)
Interest rate	5.00	%
Financing term	7	years
Year(s) postponed	1	



	Option A (Fast Track Financing)				Option B (Waiting for Cash)			
Year	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow
0	$285,000	($256,446)	$28,554	$28,554	$0	$0	$0	$0
1	$285,000	($256,446)	$28,554	$57,109	$285,000	($1,512,000)	($1,227,000)	($1,227,000)
2	$285,000	($256,446)	$28,554	$85,663	$285,000	$0	$285,000	($942,000)
3	$285,000	($256,446)	$28,554	$114,217	$285,000	$0	$285,000	($657,000)
4	$285,000	($256,446)	$28,554	$142,772	$285,000	$0	$285,000	($372,000)
5	$285,000	($256,446)	$28,554	$171,326	$285,000	$0	$285,000	($87,000)
6	$285,000	($256,446)	$28,554	$199,880	$285,000	$0	$285,000	$198,000
7	$285,000	$0	$285,000	$484,880	$285,000	$0	$285,000	$483,000
8	$285,000	$0	$285,000	$769,880	$285,000	$0	$285,000	$768,000
9	$285,000	$0	$285,000	$1,054,880	$285,000	$0	$285,000	$1,053,000
10	$285,000	$0	$285,000	$1,339,880	$285,000	$0	$285,000	$1,338,000
11	$285,000	$0	$285,000	$1,624,880	$285,000	$0	$285,000	$1,623,000

Net Present Value of Option A	$1,042,136	Net Present Value of Option B	$883,170

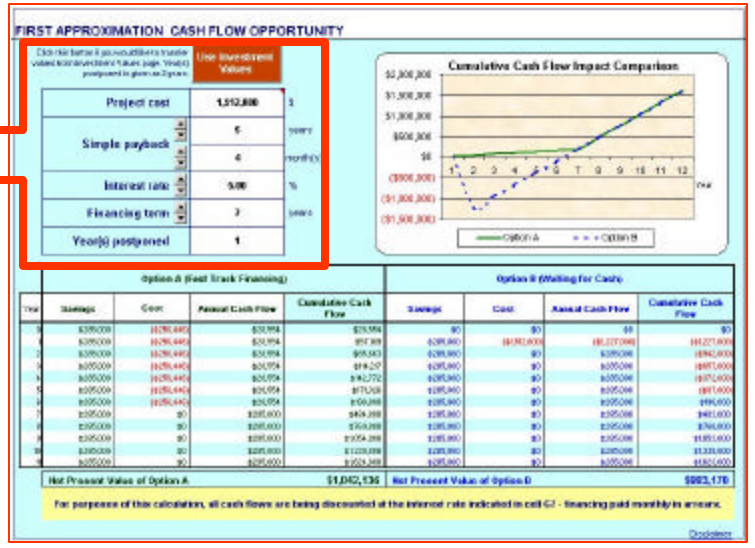
Intro / Instructions / Data Entry / Investment Values / **Cash Flow** / Cost of Delay / Summary /

Cash Flow

Click this button if you would like to transfer values from Investment Values page. Year(s) postponed is given as 1 year.

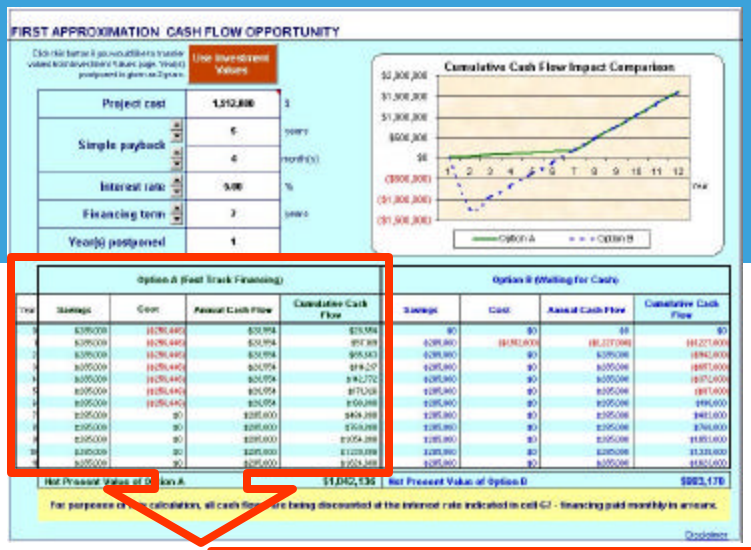
Use Investment Values

Project cost	1,512,000	$
Simple payback	5	years
	4	month(s)
Interest rate	5.00	%
Financing term	7	years
Year(s) postponed	1 (1)	



(1) Starting from Year 0 (now), this cell will contain the time period in which you delayed your energy efficiency improvements.

Intro / Instructions / Data Entry / Investment Values / **Cash Flow** / Cost of Delay / Summary

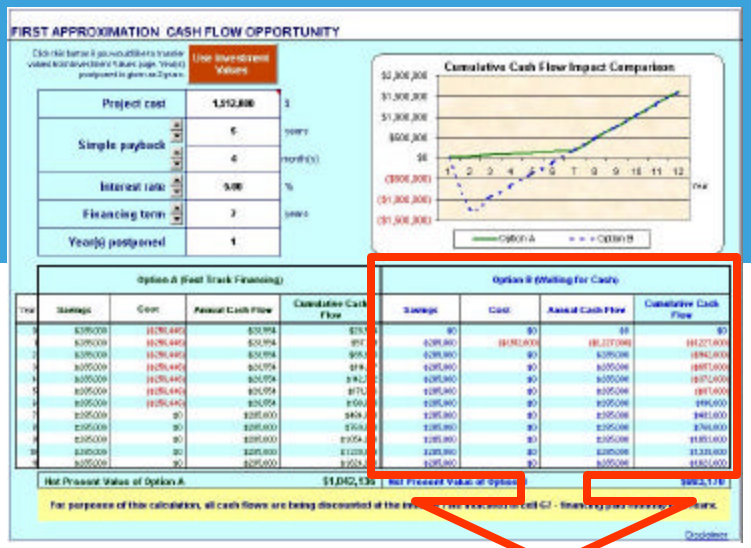


Should we do it now?

Pay as we use?

Option A (Fast Track Financing)				
Year	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow
0	$285,000	($256,446)	$28,554	$28,554
1	$285,000	($256,446)	$28,554	$57,109
2	$285,000	($256,446)	$28,554	$85,663
3	$285,000	($256,446)	$28,554	$114,217
4	$285,000	($256,446)	$28,554	$142,772
5	$285,000	($256,446)	$28,554	$171,326
6	$285,000	($256,446)	$28,554	$199,880
7	$285,000	$0	$285,000	$484,880
8	$285,000	$0	$285,000	$769,880
9	$285,000	$0	$285,000	$1,054,880
10	$285,000	$0	$285,000	$1,339,880
11	$285,000	$0	$285,000	$1,624,880

Should we wait until funds are available?

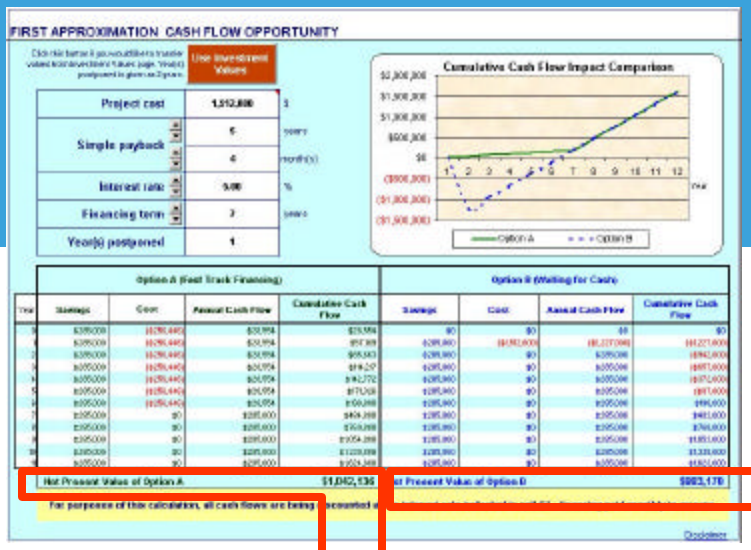


Pay as we go?

Option B (Waiting for Cash)

Savings	Cost	Annual Cash Flow	Cumulative Cash Flow
$0	$0	$0	$0
$285,000	($1,512,000)	($1,227,000)	($1,227,000)
$285,000	$0	$285,000	($942,000)
$285,000	$0	$285,000	($657,000)
$285,000	$0	$285,000	($372,000)
$285,000	$0	$285,000	($87,000)
$285,000	$0	$285,000	$198,000
$285,000	$0	$285,000	$483,000
$285,000	$0	$285,000	$768,000
$285,000	$0	$285,000	$1,053,000
$285,000	$0	$285,000	$1,338,000
$285,000	$0	$285,000	$1,623,000

Net Present Values



Net Present Value of Option A	$1,042,136

Net Present Value of Option B	$883,170

Whichever option generates the most present value dollars is the better financial decision.

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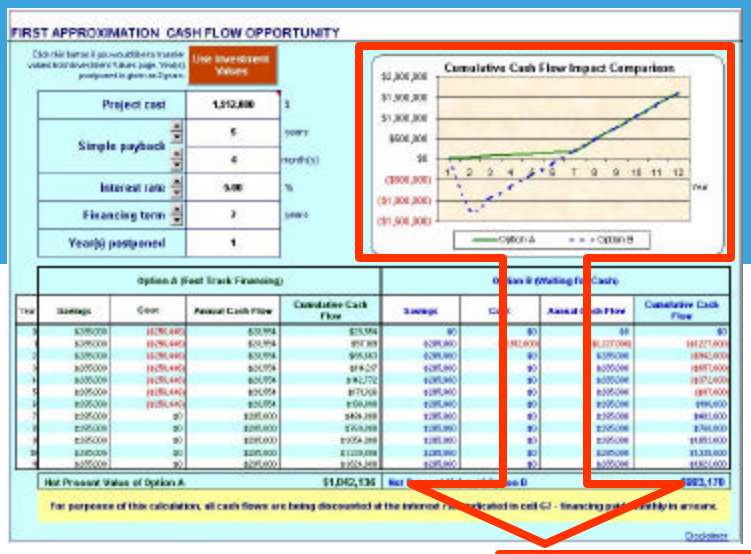
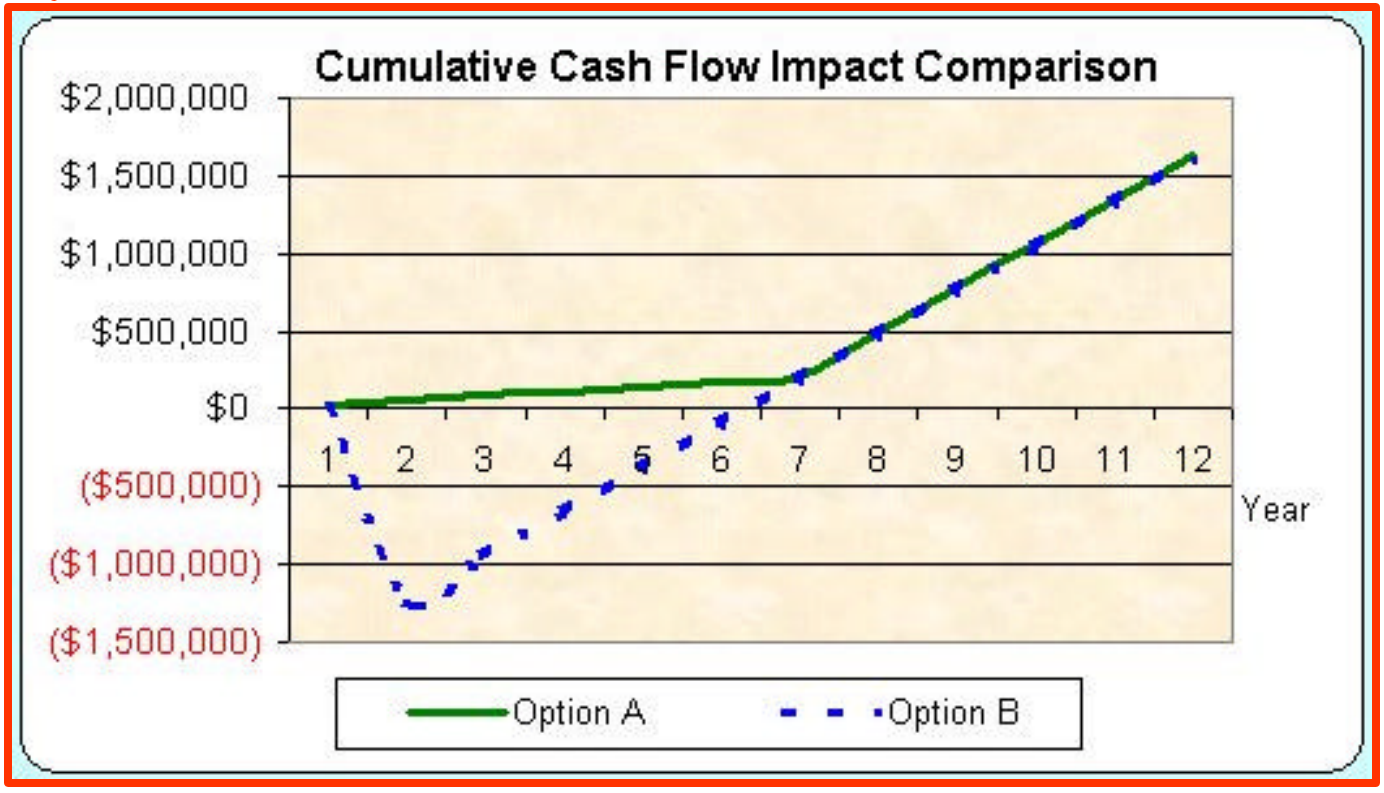
Manage Your Cash



Option A: Fast track financing

Option B: Waiting for cash/budget approval etc.

Which option is easier to manage?



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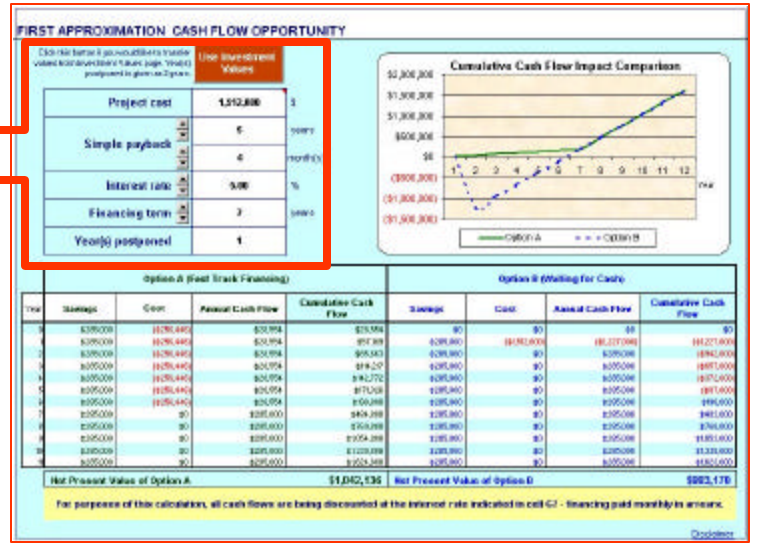
Play with Sensitivities



Click this button if you would like to transfer values from Investment Values page. Year(s) postponed is given as 1 year.

Use Investment Values

Project cost	1,512,000	$
Simple payback	5	years
	4	month(s)
Interest rate	5.00	%
Financing term	7	years
Year(s) postponed	1	

By playing with these numbers, you can structure your project to maximize the benefits of the energy dollars saved.

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Recap

1) Energy waste is substantial; these dollars should be used to pay for new equipment.

2) Financing the equipment today, rather than postponing the installation until funds are available in future budgets, is a better financial decision.

3) If we can access lower cost financing, why should we consider a higher rate offering?

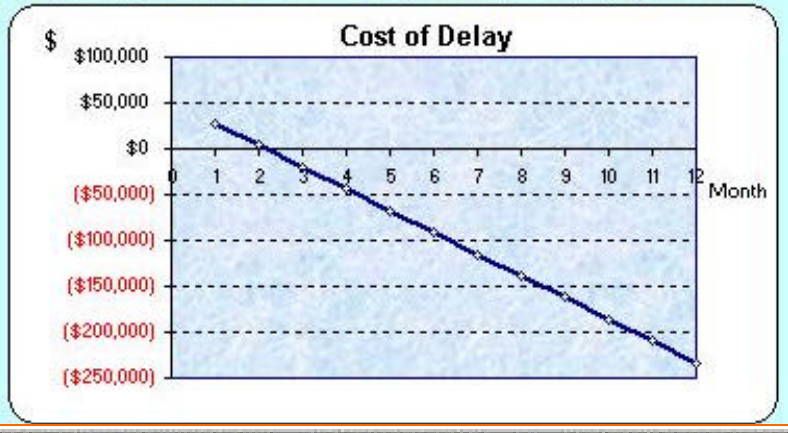
Cost of Delay

FIRST APPROXIMATION COST OF DELAY

Use Cash Flow Values

Comparative Interest Rate Analysis		
Interest rate of immediate financing	5.00	%
Interest rate of a lower financing	4.00	%
Cost of the equipment	$1,512,000	
Simple payback	5	year(s)
	4	month(s)
Potential annual savings	$285,000	
Term of financing	7	year(s)
Lower interest rate savings	$51,400	
Amount lost in utility bills	$23,800	/ month
Break-Even Point	2.2	month(s)
Opportunity cost if delayed 12 months*	15.4%	

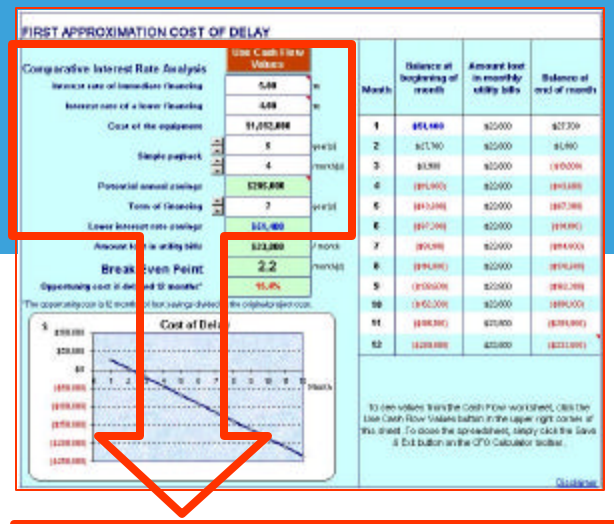
*The opportunity cost is 12 months of lost savings divided by the original project cost.



Month	Balance at beginning of month	Amount lost in monthly utility bills	Balance at end of month
1	$51,400	$23,800	$27,700
2	$27,700	$23,800	$3,900
3	$3,900	$23,800	($19,800)
4	($19,800)	$23,800	($43,600)
5	($43,600)	$23,800	($67,300)
6	($67,300)	$23,800	($91,100)
7	($91,100)	$23,800	($114,800)
8	($114,800)	$23,800	($138,600)
9	($138,600)	$23,800	($162,300)
10	($162,300)	$23,800	($186,100)
11	($186,100)	$23,800	($209,800)
12	($209,800)	$23,800	($233,600)

To see values from the Cash Flow worksheet, click the Use Cash Flow Values button in the upper right corner of this sheet. To close the spreadsheet, simply click the Save & Exit button on the CFO Calculator toolbar.

Cost of Delay



Comparative Interest Rate Analysis

	Use Cash Flow Values	
Interest rate of immediate financing	5.00	%
Interest rate of a lower financing	(1) 4.00	%
Cost of the equipment	$1,512,000	
Simple payback	5	year(s)
	4	month(s)
Potential annual savings	$285,000	
Term of financing	7	year(s)
Lower interest rate savings	(2) $51,400	

(1) Lower interest rate

(2) Benefit of one financing versus another

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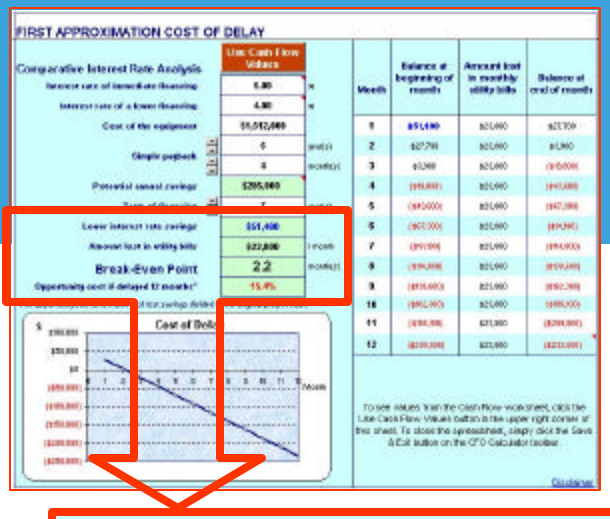
Cost of Delay



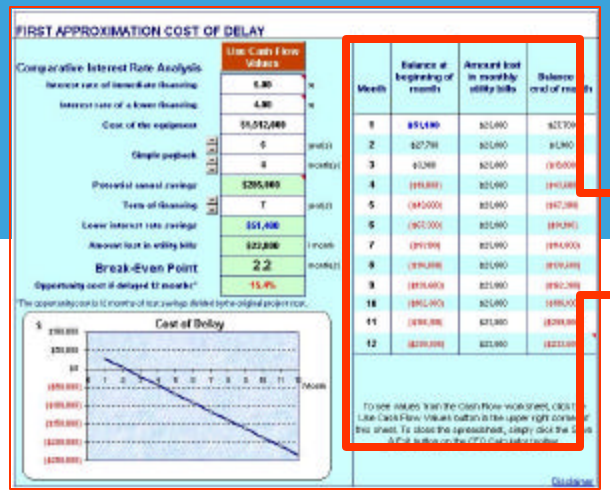
Lower interest rate savings	**$51,400**		
Amount lost in utility bills	**$23,800**		/ month
Break-Even Point	**2.2**	**(3)**	month(s)
Opportunity cost if delayed 12 months*	**15.4%**	**(4)**	

*The opportunity cost is 12 months of lost savings divided by the original project cost.

(3) How long you can wait until the lower interest rate becomes the more expensive decision

(4) Percentage of the project cost lost by waiting 12 months

A ‘better deal’?



Month	Balance at beginning of month	Amount lost in monthly utility bills	Balance at end of month
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2	$27,700	$23,800	$3,900
3	$3,900	$23,800	($19,800)
4	($19,800)	$23,800	($43,600)
5	($43,600)	$23,800	($67,300)
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9	($138,600)	$23,800	($162,300)
10	($162,300)	$23,800	($186,100)
11	($186,100)	$23,800	($209,800)
12	($209,800)	$23,800	($233,600)

Break-Even Point:

After this point, the lost energy savings will consume the total savings realized from the lower interest rate financing.

Summary Report

ENERGY STAR

ENERGY STAR® CASH FLOW OPPORTUNITY

CFO Calculator

FIRST APPROXIMATION SUMMARY of FINANCIAL CALCULATIONS

Print

Name: Example organization with multiple facilities adding up to 1 million SF

Select Scenario: FIRST APPROXIMATION

This information has been generated by a spreadsheet developed by ENERGY STAR. It helps address three critical questions about installing energy efficiency projects:

-How much new energy efficiency equipment can be purchased from the anticipated savings?

-Should this equipment purchase be financed now or is it better to wait and use cash from a future budget?

-Is money being lost by waiting for a lower interest rate?

1. How much energy efficiency equipment can be purchased?

This section reflects the cost per square foot by building category, as follows:

	SF	Annual Energy Costs ($) - All Fuel Types	$/SF	Savings Target (%)	Potential Annual Savings	Buildings cost
Top Quartile	**200,000**	**$100,000**	**$0.50**	**15**	**$15,000**	LESS than $1.00 /SF to operate
2nd Quartile	**800,000**	**$900,000**	**$1.13**	**30**	**$270,000**	MORE than $1.00 /SF to operate

Using the ENERGY STAR Benchmarking Results

QUARTILE-BASED DATA ENTRY TABLE

Name	Example organization with multiple facilities adding up to 1 million SF
Select Scenario	Using Benchmark Results from ENERGY STAR
Sample Values	Sample Values

	SF	Annual Energy Costs ($) - All Fuel Types	$/SF	Savings Target (%)	Potential Annual Savings	Buildings with benchmarking scores of
Top Quartile	200,000	100,000	0.50	10	$10,000	75 or better
2nd Quartile	350,000	350,000	1.00	20	$70,000	between 50 and 74
3rd Quartile	300,000	350,000	1.17	30	$105,000	between 25 and 49
4th Quartile	150,000	200,000	1.33	40	$80,000	below 25

Total SF	Total Energy Cost ($) - All Fuel Types	$/SF	Weighted Savings Target (%)	Total Potential Annual Savings ($)
1,000,000	1,000,000	1.00	26.50%	265,000

Intro / Instructions \ **Data Entry** / Investment Values / Cash Flow / Cost of Delay / Summary /

Reminder

An investment grade audit performed by a qualified engineering company will be required to determine the actual size of your savings opportunity.

Please help us…

How might
you use the
CFO Calculator?

CFO Calculator Users

- Cities: Fort Worth, Orange County (FL), Miami-Dade County, Las Vegas, Los Angeles, San Diego
- States: CA, CT, GA, PA, TX, VA
- School Districts: Fairfax County, Clark County, Philadelphia, Houston, Dallas

Internet Presentations

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- ENERGY STAR -Overview for Public Sector Organizations
- Higher Education ENERGY STAR Overview
- ENERGY STAR Overview for Service & Product Providers
- Benchmarking with ES Portfolio Manager
- Money for Your Energy Upgrades
- Introduction to The CFO Calculator
- Purchasing and Procurement
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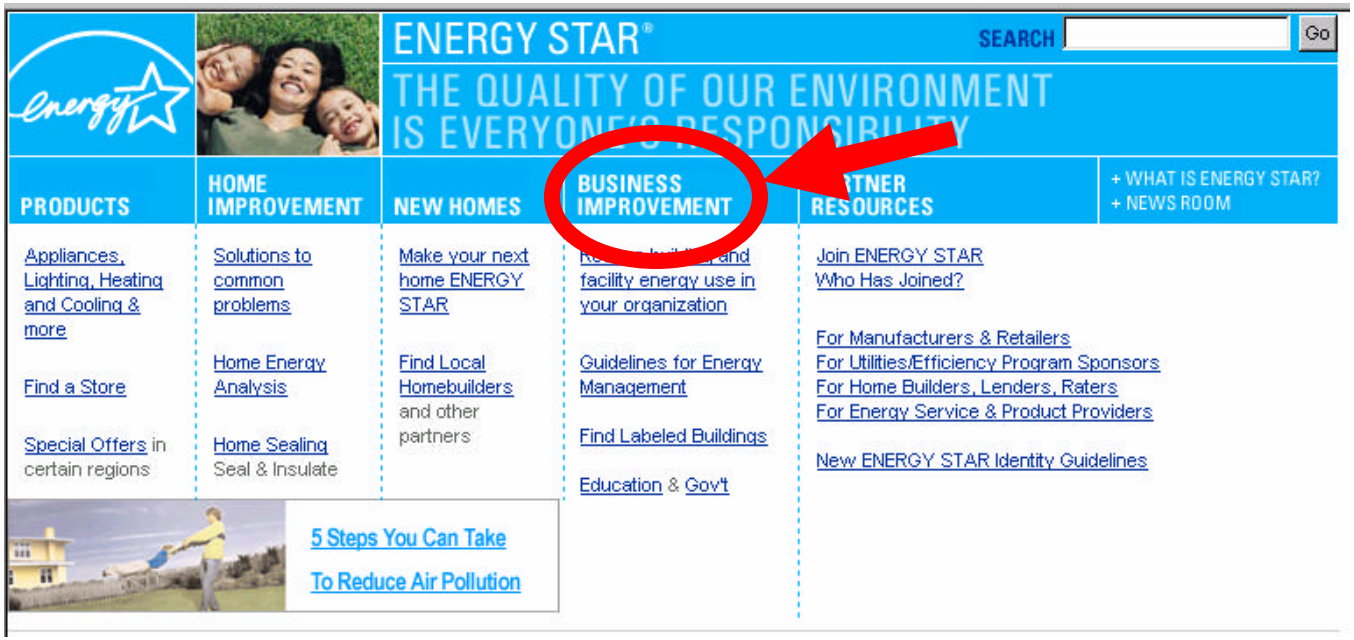
For More Information



For a copy of the CFO Calculator:

1. Go to **www.energystar.gov**
2. Select “Business Improvement”
3. Choose “Assess Financial Value.”
4. Scroll down to “The CFO Calculator”.

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