



# Financing Concepts for Municipal Energy Projects

Upper Valley Regional Energy Roundtable - May 8, 2013

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# Tonight's Agenda

- How to think about energy financing
- Energy financing options
- Cash flow
- Project examples
- Key issues and recommendations

# Definitions

Money used for energy efficiency (or renewables) is an investment, not an expense

**Spend** *to use up or pay out*

**Invest** *to commit money in order to gain a financial return; to devote for future advantage or benefit*

# Energy investments differ from traditional investments

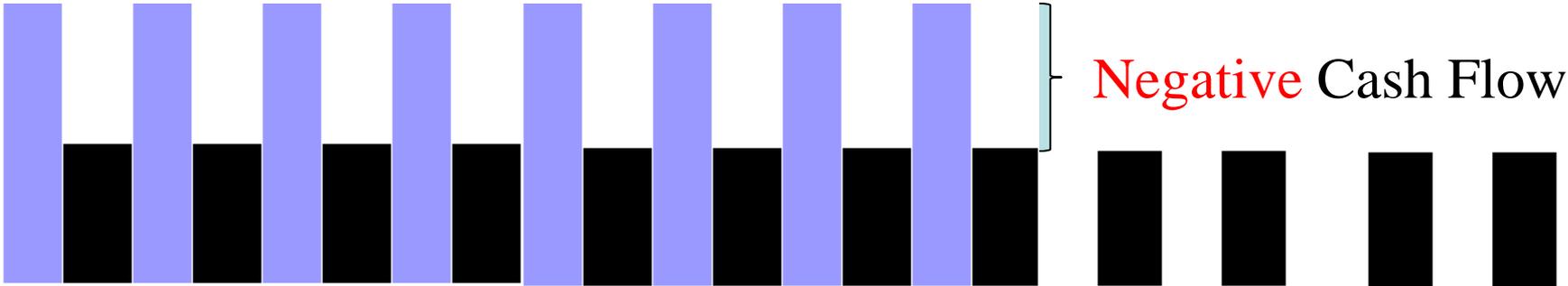
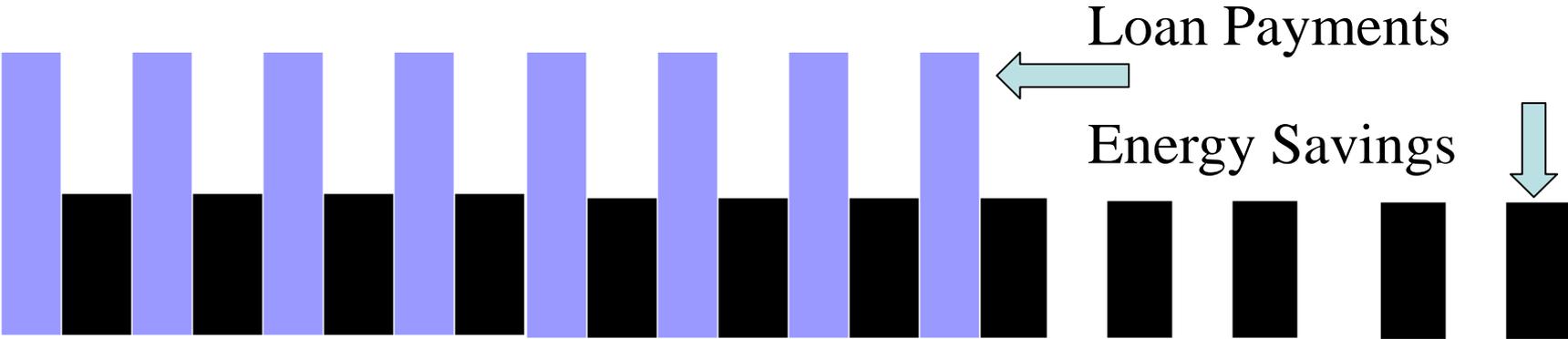
Return on investment (ROI) is money that is NOT spent on future energy bills. To determine the ROI, compare the actual energy cost with *what it would have been*; the difference is the ROI.

Frequently, the most expensive option is to do nothing. This concept of “opportunity cost” is key to assessing different financial options.

# Paying for it

- Grants
- Efficiency Incentives
- Budget/Capital Reserves
- Performance Contracting
- Bonding
- Loans
- Tax-Exempt Lease Purchase

# The effect of loan term on cash flow



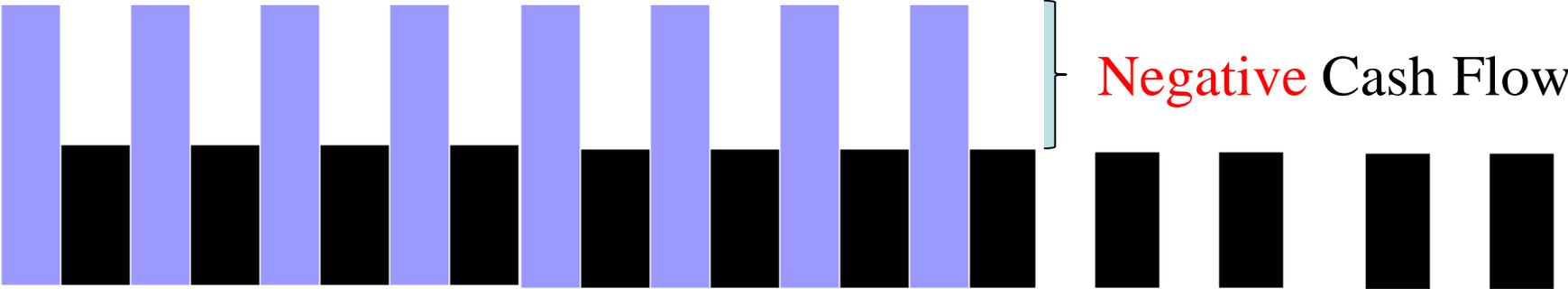
# Align the period of payment with the period of the savings



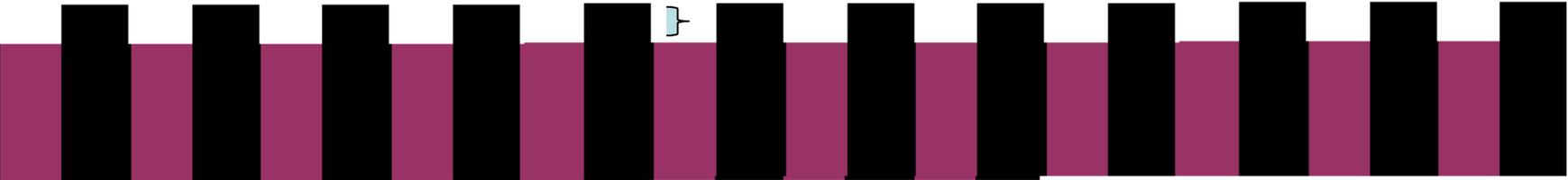
## Positive Cash Flow



# Let the energy savings make your loan payments for you



## Positive Cash Flow



# Example: project cashflow with financing



Project Cashflow			
<u>Project Costs</u>		<u>Investment Performance</u>	
Project Cost:	\$ 365,355	<u>Internal Rate of Return:</u>	42.6%
<u>Amount Financed:</u>	<u>\$ (224,355)</u>	<u>Payback Period (Years):</u>	3.4
<b>Initial Customer Investment:</b>	<b>\$ 56,000</b>		
<u>Financing Terms</u>		<u>Annual Electricity Savings</u>	
Loan Rate:	5.25%	Energy (kWh):	1,068,002
Loan Term (Months):	60		

# Example: project cashflow with financing



Year	Net Operation & Maintenance Savings (Costs)	Annual Electric Savings (Costs)	Annual Fuel Savings (Costs)	Annual Payments (Principal & Interest)	Net Annual Cashflow	Net Cumulative Cashflow
0				\$ (56,000)	\$ (56,000)	\$ (56,000)
1	\$ -	\$ 88,310	\$ (20,703)	\$ (51,115)	\$ 16,492	\$ (39,508)
2	\$ 195	\$ 88,310	\$ (20,703)	\$ (51,115)	\$ 16,687	\$ (22,822)
3	\$ (180)	\$ 88,310	\$ (20,703)	\$ (51,115)	\$ 16,312	\$ (6,510)
4	\$ 490	\$ 88,310	\$ (20,703)	\$ (51,115)	\$ 16,982	\$ 10,472
5	\$ 2,596	\$ 88,310	\$ (20,703)	\$ (51,115)	\$ 19,088	\$ 29,561
6	\$ (7,278)	\$ 88,310	\$ (20,703)	\$ -	\$ 60,329	\$ 89,889
7	\$ (358)	\$ 88,310	\$ (20,703)	\$ -	\$ 67,249	\$ 157,138
8	\$ 6,413	\$ 88,310	\$ (20,703)	\$ -	\$ 74,020	\$ 231,158
9	\$ (4,852)	\$ 88,310	\$ (20,703)	\$ -	\$ 62,755	\$ 293,913
10	\$ 20,181	\$ 88,310	\$ (20,703)	\$ -	\$ 87,788	\$ 381,702

# Combining Non-Energy and Energy Measures

## **Mold Remediation**

Total Amount Borrowed	\$500,000
Rate and Term	2.0%, 15 yrs.
Total Cost	\$579,158

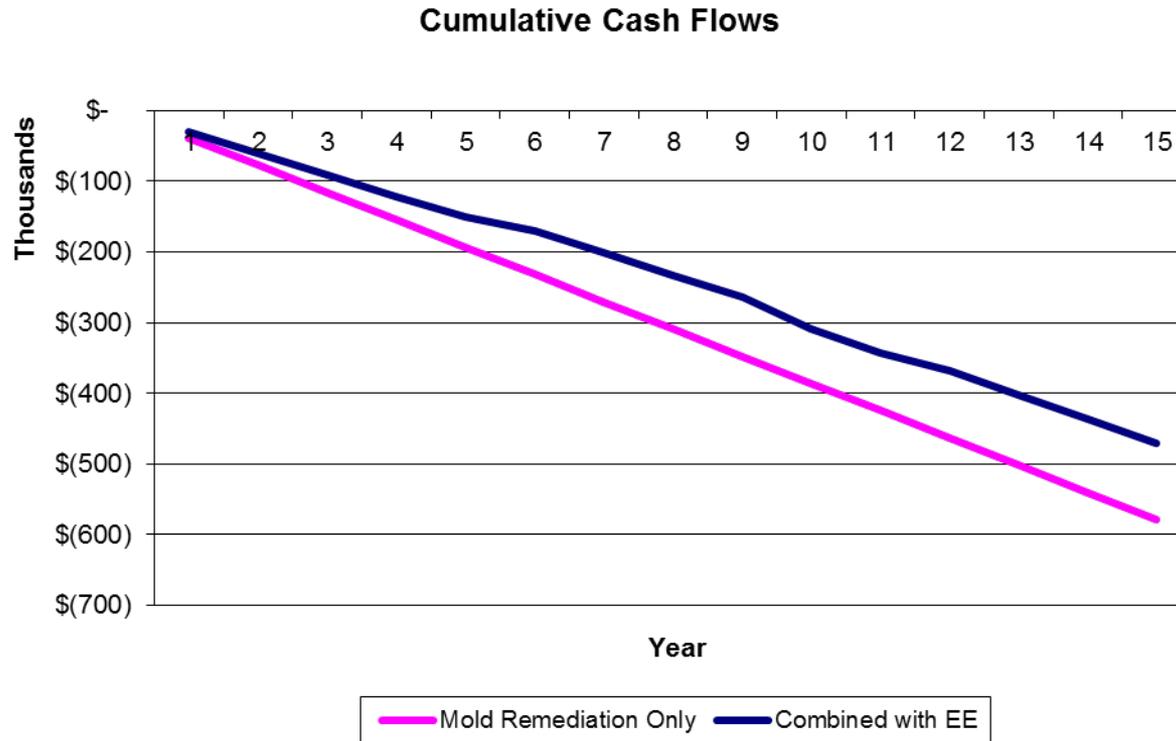
## **Energy Efficiency Project - Lighting**

Total Amount Borrowed	\$45,451
Total Cost	\$52,647
Total Energy Savings (15 yrs.)	\$152,765

## **Combined**

Total Amount Borrowed	\$545,451
Total Net Cost	\$479,040

# Combining Non-Energy and Energy Measures



# Key issues:

## Energy efficiency financing

- financing is the last piece of the puzzle.
- longer-term financing -
  - better aligns the period of payment with the period of the savings (life of measures).
  - could allow most or all of the required investment to be paid for out of savings.

# Recommendations for thinking about energy efficiency financing

- It's an investment, not an expense.
- Understand the opportunity cost. Doing nothing might be the most expensive option!
- Show exactly where the savings are coming from, using conservative estimates. Efficiency Vermont can help you with this.
- Total cost is frequently less important than positive cash flow.

# Available Resources

## Efficiency Vermont Customer Service

Phone: 802-860-4095

Toll Free: 888-921-5990

[www.encyvermont.com](http://www.encyvermont.com)

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