

Energy Financing – Why Can't Banks Just Count The Energy Savings?

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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 efficiency 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.

Financial term sand what they mean in plain English

- Negawatt cost
- Derivative
- Hedging
- Opportunity cost
- Credit enhancement
- Time value of money

Simple Payback – not so simple

- If fuel prices, heating or cooling degree days or occupancy behavior change, so will the simple payback, so an excessive focus on this calculated number is not warranted.
- Simple payback plays to all the worst human emotions – “FIVE YEARS!?!?” If instead we say “20% return on investment”, people have a different, more positive reaction.
- Simple payback ignores net present value, the concept that a dollar today is worth more than a dollar spent or received years from now. The longer the loan term, the more distorted this number becomes.

Simple Payback – not so simple, cont'd

- Simple payback focuses solely on “getting your money back” and ignores the most important fact – after the loan is paid off, the savings keep happening! That is the big financial point here, not when they pay off their loan.
- Recent declines in fuel prices make this even more challenging, as many energy projects appear to require additional years to recoup the initial investment. However, a financial analysis of life-cycle benefits should factor in the long-term trend of rising energy prices that has been observed for decades, even when short-term price swings run against this trend.

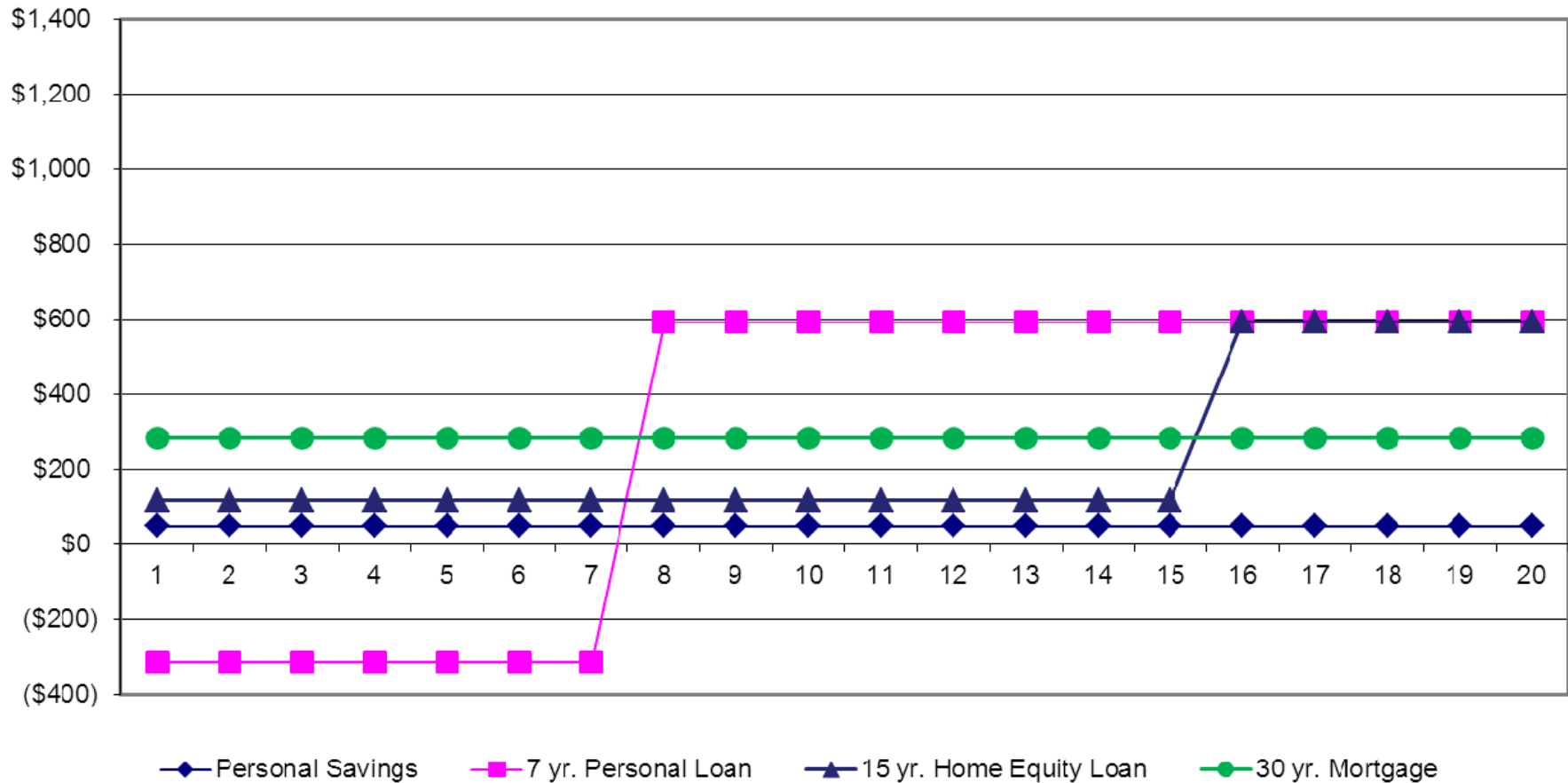
Example: Commercial project cash flow with financing

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
Initial Customer Investment:	\$	56,000	
<u>Financing Terms</u>			<u>Annual Electricity Savings</u>
	Loan Rate:	5.25%	Energy (kWh): 1,068,002
	Loan Term (Months):	60	

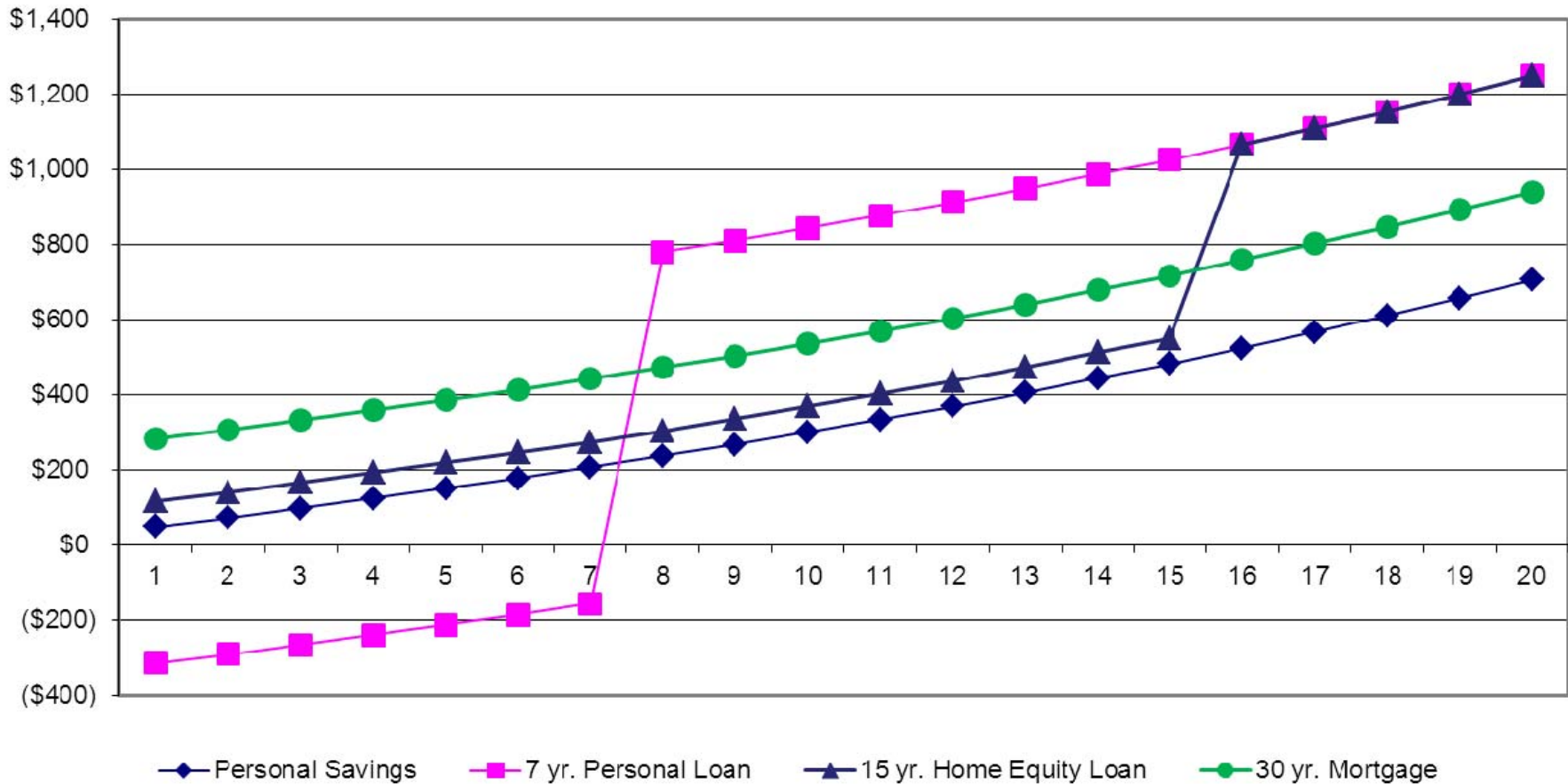
Example: Commercial project cash flow with financing

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

Cash flow with no annual energy cost increases



Cash flow with 4% annual energy cost increases



Key issues:

Energy efficiency financing

- financing is the last piece of the puzzle.
- longer-term financing -
 1. better aligns the period of payment with the period of the savings (life of measures).
 2. 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.
- Total cost is frequently less important than positive cash flow.

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