



# WEST MICHIGAN

Energy Efficiency puts Money in your Pockets:  
the How's and Why's of it All

July 11, 2018



## Two Energy Opportunities

#1 - ABC Manufacturing Engineering Manager

Investment: \$285,000.00

Simple Payback: 1.15 Years

## Two Energy Opportunities

#1 - ABC Manufacturing Engineering Manager

#2 - XYZ Manufacturing Maintenance Supervisor

Investment: \$305,000.00

Simple Payback: 3.6 Years

## Two Energy Opportunities

|             | ABC Manufacturing | XYZ Manufacturing |
|-------------|-------------------|-------------------|
| Investment: | \$285,000.00      | \$305,000.00      |
| Payback:    | 1.15 Years        | 3.6 Years         |
| Status:     | <b>REJECTED</b>   | <b>ACCEPTED</b>   |

# Why do Energy Projects not Happen?

Lack of Capital

Insufficient Paybacks

No Consideration of  
Other Benefits

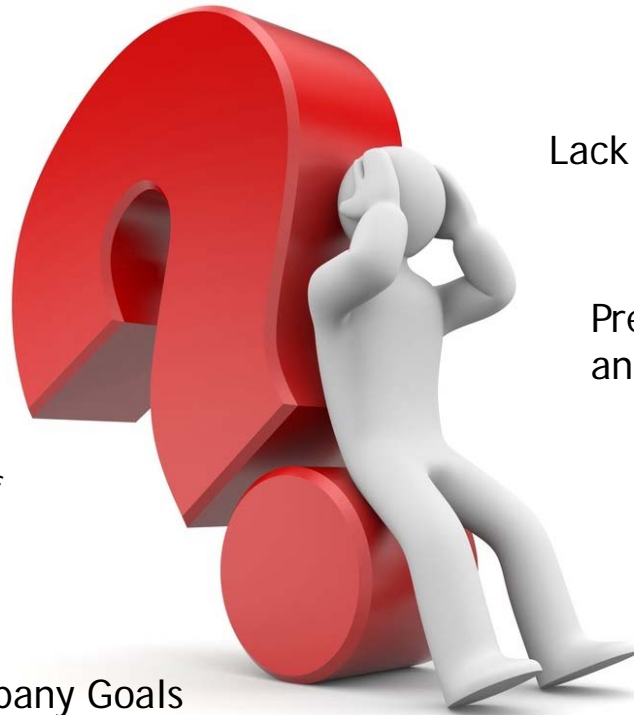
Other Company Goals

Lack of Capacity (Time)

Previous Success  
and/or Failures

Limited Knowledge

Poor Communication



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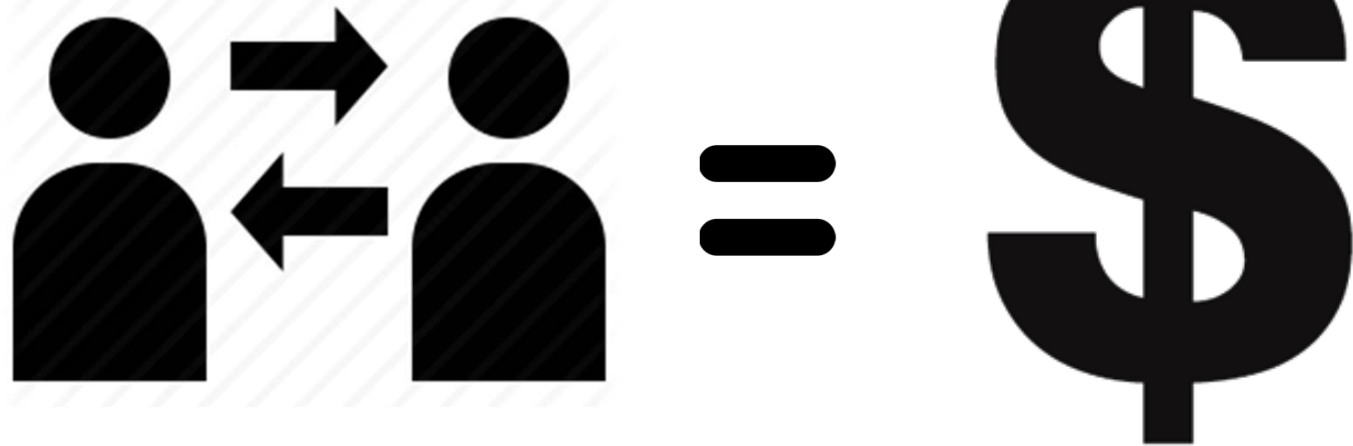
Previous Success  
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Poor Communication



# The Simple Answer





# Two Energy Opportunities

## #1 - ABC Manufacturing Engineering Manager

|                                | ABC Manufacturing |
|--------------------------------|-------------------|
| Total Capital Investment Cost: | \$285,000.00      |
| Utility Rebate:                | \$104,275.00      |
| Annual Energy Savings:         | \$157,155.00      |
| Simple Payback:                | 1.15 Years        |
| Annual Energy Savings:         | 1,496,710 kWh     |

# Two Energy Opportunities

## #2 - XYZ Manufacturing Maintenance Supervisor

|   | XYZ Manufacturing |
|---|-------------------|
| Total Capital Investment Cost:          | \$305,000.00      |
| Utility Rebate:                         | \$42,840.00       |
| Annual Energy Savings:                  | \$35,250.00       |
| Annual O&M Savings:                     | \$28,400.00       |
| Simple Payback:                         | 3.6 Years         |
| 10 Year Net Present Value:              | \$288,243.00      |
| 10 Year Savings to Investment Ratio:    | 2.3               |
| Modified Internal Rate of Return (MIRR) | 15.2%             |

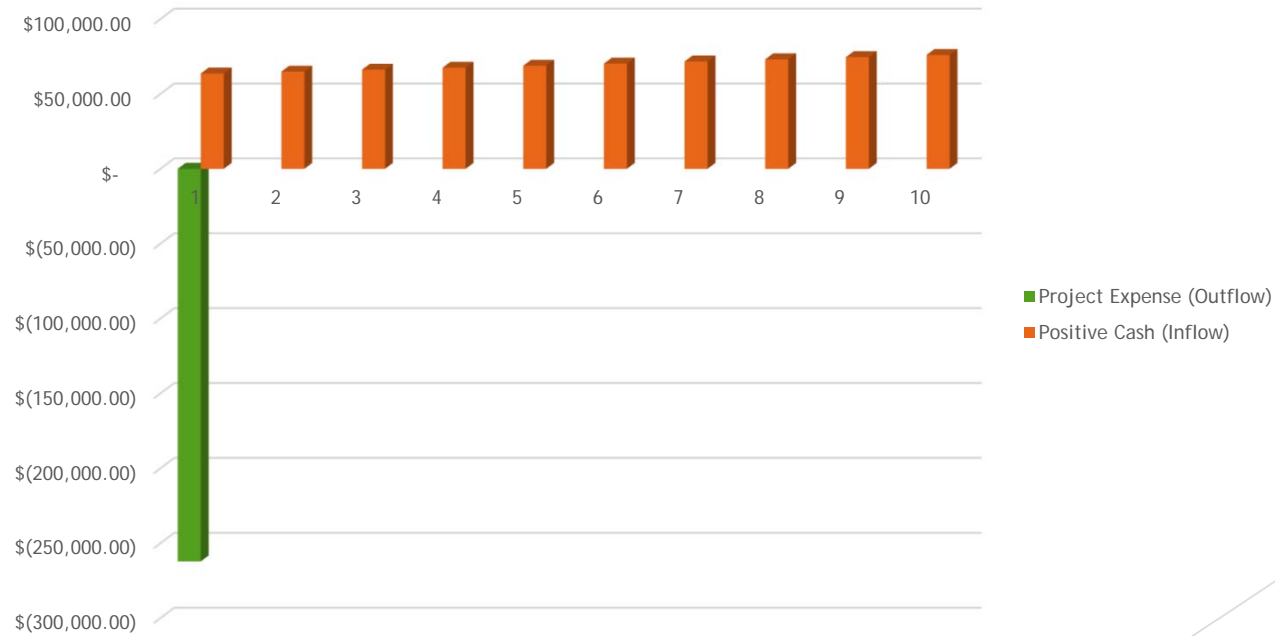
# Communicating the Whole Story

## Net Present Value:

- ▶ “The difference between the **present value** of cash inflows and the **present value** of cash outflows. **NPV** is used in capital budgeting to analyze the profitability of a projected investment or project.” (Investopedia.com)

# Communicating the Whole Story

## Net Present Value:



## Communicating the Whole Story

Savings to Investment Ratio (SIR):

- ▶ “The ratio is the present value of net savings attributable to the cost of the conservation measure.” (Investopedia.com)

$$SIR = \frac{\textit{Savings over Life of Measure}}{\textit{Initial Cost}}$$

*Savings to Investment Ratio > 1*

# Communicating the Whole Story

## Net Cash Flow Analysis

|   | Y0                  | 1                 | 2                 | 3                 | 4                 | 5                 | 6                         | 7                 | 8                 | 9                 | 10                | Totals              |
|---|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| <b>Net Capital Costs</b>                |                     |                   |                   |                   |                   |                   |                           |                   |                   |                   |                   |                     |
| Energy Efficiency Project               | \$ (485,000)        | \$ -              | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                      | \$ -              | \$ -              | \$ -              | \$ -              | \$ (485,000)        |
| Utility Rebate                          | \$ 62,000           | \$ -              | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                      | \$ -              | \$ -              | \$ -              | \$ -              | \$ 62,000           |
| <b>Total Capital</b>                    | <b>\$ (423,000)</b> | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>               | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ (423,000)</b> |
| <b>Operating and Maintenance Costs</b>  |                     |                   |                   |                   |                   |                   |                           |                   |                   |                   |                   |                     |
| Estimated Savings                       | \$ -                | \$ 16,200         | \$ 16,200         | \$ 16,200         | \$ 16,200         | \$ 16,200         | \$ 16,200                 | \$ 16,200         | \$ 16,200         | \$ 16,200         | \$ 16,200         | \$ 162,000          |
| Escalation of Costs                     | \$ -                | \$ 162            | \$ 326            | \$ 491            | \$ 658            | \$ 826            | \$ 997                    | \$ 1,169          | \$ 1,342          | \$ 1,518          | \$ 1,695          | \$ 9,183            |
| <b>Total Costs</b>                      | <b>\$ -</b>         | <b>\$ 16,362</b>  | <b>\$ 16,526</b>  | <b>\$ 16,691</b>  | <b>\$ 16,858</b>  | <b>\$ 17,026</b>  | <b>\$ 17,197</b>          | <b>\$ 17,369</b>  | <b>\$ 17,542</b>  | <b>\$ 17,718</b>  | <b>\$ 17,895</b>  | <b>\$ 171,183</b>   |
| <b>Revenue and Operating Benefits</b>   |                     |                   |                   |                   |                   |                   |                           |                   |                   |                   |                   |                     |
| Annual Energy Savings                   | \$ -                | \$ 117,500        | \$ 117,500        | \$ 117,500        | \$ 117,500        | \$ 117,500        | \$ 117,500                | \$ 117,500        | \$ 117,500        | \$ 117,500        | \$ 117,500        | \$ 1,175,000        |
| Productivity Improvements               | \$ -                | \$ 18,200         | \$ 18,200         | \$ 18,200         | \$ 18,200         | \$ 18,200         | \$ 18,200                 | \$ 18,200         | \$ 18,200         | \$ 18,200         | \$ 18,200         | \$ 182,000          |
| Escalation of Benefits                  | \$ -                | \$ 1,357          | \$ 2,728          | \$ 4,112          | \$ 5,510          | \$ 6,922          | \$ 8,348                  | \$ 9,789          | \$ 11,244         | \$ 12,713         | \$ 14,197         | \$ 76,919           |
| <b>Total Benefits and Revenue</b>       | <b>\$ -</b>         | <b>\$ 137,057</b> | <b>\$ 138,428</b> | <b>\$ 139,812</b> | <b>\$ 141,210</b> | <b>\$ 142,622</b> | <b>\$ 144,048</b>         | <b>\$ 145,489</b> | <b>\$ 146,944</b> | <b>\$ 148,413</b> | <b>\$ 149,897</b> | <b>\$ 1,433,919</b> |
| <b>Cash Flow Before Taxes</b>           | <b>\$ (423,000)</b> | <b>\$ 153,419</b> | <b>\$ 154,953</b> | <b>\$ 156,503</b> | <b>\$ 158,068</b> | <b>\$ 159,648</b> | <b>\$ 161,245</b>         | <b>\$ 162,857</b> | <b>\$ 164,486</b> | <b>\$ 166,131</b> | <b>\$ 167,792</b> | <b>\$ 1,182,102</b> |
| <b>Income Tax Calculation</b>           |                     |                   |                   |                   |                   |                   |                           |                   |                   |                   |                   |                     |
| Depreciation Expense                    | \$ -                | \$ -              | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                      | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                |
| Operating Cost                          | \$ -                | \$ -              | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                      | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                |
| Operating Benefits                      | \$ -                | \$ -              | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                      | \$ -              | \$ -              | \$ -              | \$ -              | \$ -                |
| <b>Net Income Taxes</b>                 | <b>\$ -</b>         | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>               | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>       | <b>\$ -</b>         |
| <b>Cash Flow After Taxes</b>            | <b>\$ (423,000)</b> | <b>\$ 153,419</b> | <b>\$ 154,953</b> | <b>\$ 156,503</b> | <b>\$ 158,068</b> | <b>\$ 159,648</b> | <b>\$ 161,245</b>         | <b>\$ 162,857</b> | <b>\$ 164,486</b> | <b>\$ 166,131</b> | <b>\$ 167,792</b> | <b>\$ 1,182,102</b> |
| <b>Discounted Cash Flow (After Tax)</b> | <b>\$ (423,000)</b> | <b>\$ 146,113</b> | <b>\$ 140,547</b> | <b>\$ 135,193</b> | <b>\$ 130,043</b> | <b>\$ 125,089</b> | <b>\$ 120,323</b>         | <b>\$ 115,740</b> | <b>\$ 111,331</b> | <b>\$ 107,089</b> | <b>\$ 103,010</b> | <b>\$ 811,478</b>   |
| <b>Business Case Results:</b>           |                     |                   |                   |                   |                   |                   |                           |                   |                   |                   |                   |                     |
| NPV of Cash Flow                        | \$ 811,478          |                   |                   |                   |                   |                   | <b>Assumptions:</b>       |                   |                   |                   |                   |                     |
| IRR                                     | 35.3%               |                   |                   |                   |                   |                   | Cost Escalation Factor    | 1.00%             |                   |                   |                   |                     |
| Savings to Investment Ratio             | 2.92                |                   |                   |                   |                   |                   | Benefit Escalation Factor | 1.00%             |                   |                   |                   |                     |
| Simple Payback                          | 2 Years 9 Months    |                   |                   |                   |                   |                   | Income Tax Rate           | 30.00%            |                   |                   |                   |                     |
| Discounted Payback                      | 3 Years 0 Months    |                   |                   |                   |                   |                   | Discount Rate             | 5.00%             |                   |                   |                   |                     |

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## Other Benefits

### Jobs and Tax Act 2017

- ▶ Passed in December 2017
- ▶ Dollar for Dollar Tax Deduction up to \$1M
- ▶ New 21% Corporate Tax Rates
- ▶ Not just for energy

### Maintenance or Operational

- ▶ Often more challenging to quantify

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| Annual Energy Savings:         | \$35,250.00       |
| Annual O&M Savings:            | \$28,400.00       |
| Federal Tax Incentive:         | \$64,050.00       |
|                                |                   |
| Simple Payback:                | 3.1 Years         |

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# Lack of Capital

## Utility Rebates

- ▶ Retrofit Incentives
- ▶ New Construction Incentives

## Lack of Capital

### ▶ MI Saves

- ▶ Low Interest Financing
- ▶ Available: \$5,000 - \$1M+
- ▶ Up to 7 year terms

### ▶ PACE

- ▶ Financing on property taxes with equity of building
- ▶ Up to 25 year terms
- ▶ 80% of equity of building

## Communicating the Whole Story

Every Company is different, but a few key points:

- ▶ Communicate in Dollars (\$)
- ▶ Minimize Technical Data
- ▶ Highlight Additional Benefits (O&M Savings, Risk)
- ▶ Share Previous Success
- ▶ Evaluate Additional Financial Data

# Question & Answer



## Contact Info



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