



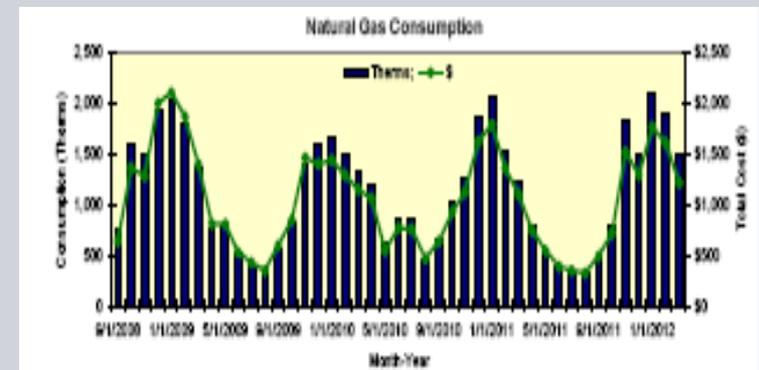
## **Beyond Audits - Turning Energy Efficiency Plans into Beneficial Investments**

Siemens Industry, Inc.  
Energy & Environmental Solutions

January 14, 2016

## Statewide Focus - Energy Benchmarking & Audits

- 1) Generated facility condition databases and lists of energy efficiency ideas
- 2) Raised awareness of energy waste and need for efficiency improvements
- 3) Prioritized improvements based on cost-benefit analysis
- 4) Audit recommendations technically sound, but actual implementation rates remain extremely low.



## Common Hurdles to Widespread EE Implementation

Facility owners understand “benefits”, but after audit they lack:

- 1) **Time & personnel expertise** - final design and project scoping, manage procurement, project costs, execution, and savings performance
- 2) **Executive support** - political/administrative will & approvals to take innovative action to project development and consider a “LOAN”
- 3) **Momentum** - project development, approval & financing take 6-12 months+; changes to staffing & other delays
- 4) **Funding** - access to money creates solutions; once other 3 barriers to financing removed, options become available

## Hurdle #1 – Time & Personnel Expertise

MORE HELP = FASTER SAVINGS



### A. Pool Resources to Self-Implement Easier Upgrades

- Limited to existing operating budgets
- Add extra duties to existing manpower

### B. Hire a Consultant to Assist in Final Project Scoping, Design & Administration

- Select key audit measures for further development
- Bid out construction work, completing as much as budget allows
- Pursue funding on own; request capital for improvements

### C. Partner with Turn-key Energy Services Company

- Limited or deferred upfront costs
- Structured timeline to complete development & construction
- Assistance justifying project and securing financing

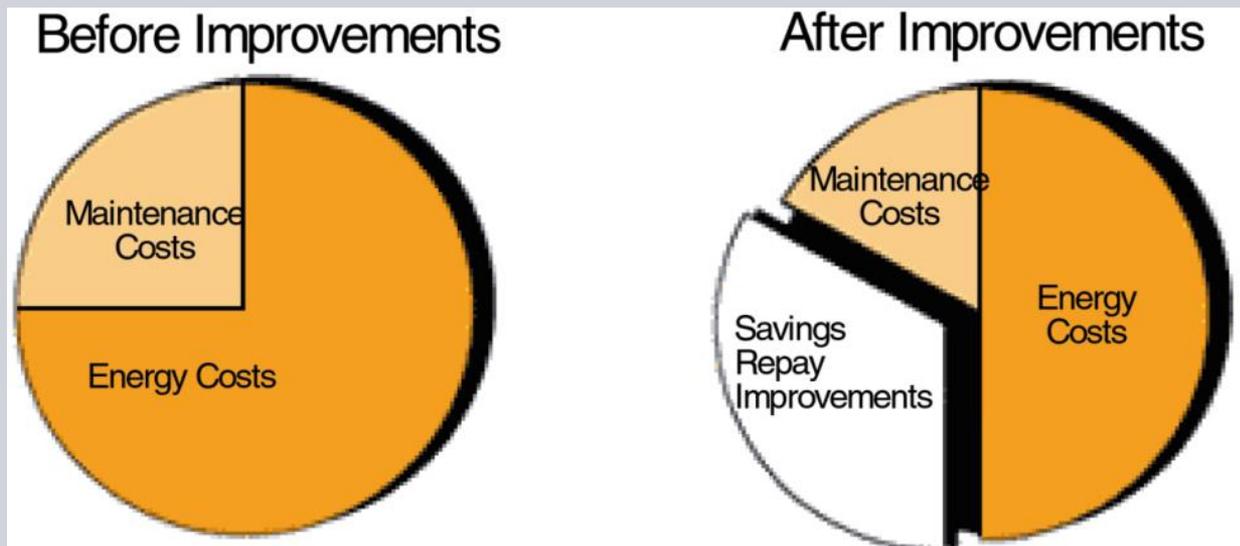
## **Option C – ESCO Path to Project Acceleration**

- 1) Efficiently Develops Meaningful Improvements Based on Best Paybacks using Actual Costs and Savings**
- 2) Maximizes Effectiveness of Staff by Leveraging In-House Capabilities**
- 3) ESCO is Single Point of Accountability for Project: Design, Cost Control, Schedule, Execution & Performance**
- 4) Collaboration & Feedback at Key Development Milestones Keeps Facility Owner in Complete Control of Final Project Scope; Materials, Contractors, and Designers**
- 5) Reduces Risk - Dedicated Team through Entire Process Ensures Project Quality**

## Hurdle #2 – Executive Support

### Typical Reasons for Investing Energy Efficiency (EE) Projects:

- 1) Counter Rising Energy Costs by Reducing Energy Consumption
- 2) Decrease Escalating Operating & Maintenance Costs
- 3) Upgrade & Modernize Facilities



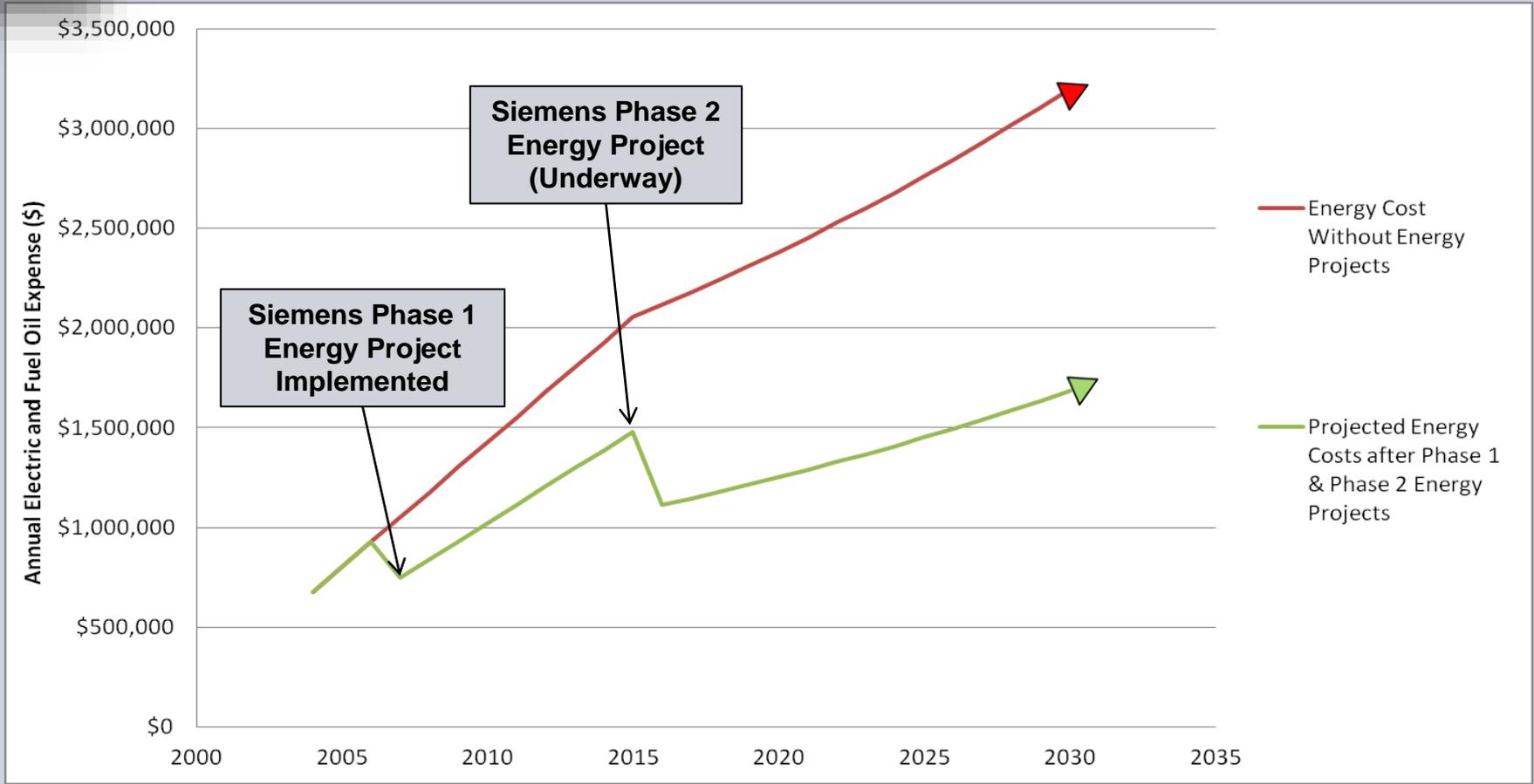
## EE Investment Benefits for Financial Executives

- 1) **Capture wasted energy & maintenance dollars to pay for improvements overtime using financing to reduce future capital expenditures**
- 2) **Acquire energy improvements, using existing budgets without having to raise fees or taxes**
- 3) **Cumulative project energy & operational savings generate clear payback metrics; ROI / IRR**
- 4) **Effectively “lock-in” energy costs; for portion saved, energy rates will not increase for term of the loan**
- 5) **Improved profitability - there is a cost of “doing nothing”**

**<https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/find-financing/calculate-returns-energy-efficiency> (or new AHFC tool)**



# Alaska DOC Spring Creek Correctional Center Total Savings Generated by Phase 1 & 2 Energy Projects



- ❖ **Combined Energy Costs Avoided Over the Next 10 Years = \$15,500,000**
- ❖ **Equivalent to the Cost of Doing Nothing**
- ❖ **Increases Each Year of Delay as Implementation Costs & Interest Rates Rise**

## **EE Investment Benefits for Commercial Executives**

- 1) Attract better tenants / clients – improve image & lease quality**
- 2) Improve indoor environment to increase worker productivity & satisfaction**
- 3) Upgraded building infrastructure increases real estate asset value**
- 4) Prevent of untimely, end-of-life equipment failure**
- 5) Federal energy investment tax credits (ITC) of 30% for properties that install solar energy, small wind, and qualified fuel cells are extended to January 1, 2017. New 10% ITC is available for combined heat and power systems and geothermal heat pumps.**

## **EE Investment Benefits for the Community Leaders**

- 1) Stimulate local economic development with green jobs in numerous trades**
- 2) Foster a sustainable economy based on reinvestment in existing infrastructure**
- 3) Promote responsible environmental stewardship by reducing the organization's net CO<sub>2</sub> emissions and demands on natural resources**
- 4) Recognition for effective and efficient leadership among peers & constituency**



**Siemens Environmental Impact Calculator:**

**<https://itunes.apple.com/us/app/environmental-impact-calculator/id546039981?mt=8>**

## **Hurdle #3 – Momentum**

- 1) Energy Audit Shelf Life = 1-2 years**
- 2) Energy Project Development = 4 - 8 months (+ financing)**
- 3) Shovel-Ready Project Shelf Life = 6-12 months**
- 4) Appoint Internal Project Champion – Self-Motivated, Engaged, Tenured & Resilient**
- 5) Engage Stakeholders at All Levels, from Maintenance up to the Boardroom; Protects Against Staff Turnover**
- 6) Schedule Regular Meetings to Update Stakeholders throughout Pre-Construction Development & Financial Negotiations; Pro-actively Addresses Questions**
- 7) Maintain Focus on Ultimate EE Project Objectives when Project Delays or Setbacks Encountered**

## Hurdle #4 - Funding Sources

- \* State & Federal grants, appropriations, and reimbursements
- \* Existing capital / operations & maintenance budgets

### Leveraged Investment using Financing Solutions:

- 1) **AK municipal bond bank**
- 2) **Tax-exempt municipal leases**
- 3) **Commercial lenders** – banks & credit unions (ex: Bank of America has 10-year, \$50B environmental business goal)
- 4) **AHFC Energy Efficiency Revolving Loan Fund (AEERLP)** for Public Facilities (and soon tribal and non-profits)
- 5) **AIDEA's Sustainable Energy Transmission and Supply Development Fund (SETS)** direct loans & guarantees
- 6) **USDA's Rural Development Community Direct Loans**

## **Overcome Hurdles to EE Project Implementation:**

### **1) Time & personnel expertise -**

- ✓ **Pledge to not let workload prevent energy efficiency**
- ✓ **Explore of support options for project development and implementation**
- ✓ **Consider a consultation with an ESCO about turn-key, energy saving performance contracting**

### **2) Executive support -**

- ✓ **Use financial and political advantages to demonstrate investments in energy efficiency is smart business**
- ✓ **Increase awareness of cost of doing nothing that can far outweigh cost of financing**

## Overcome Hurdles to EE Project Implementation

### 3) **Momentum** –

- ✓ **Be realistic about expiration dates of energy project deliverables**
- ✓ **Commission an owner's champion to ensure project success**
- ✓ **Engage stakeholders at all levels regularly during development**

### 4) **Funding** –

- ✓ **Once executive aversion to debit is eliminated, array of options available**
- ✓ **Utilize state & federal financing programs and external resources such as ESCOs to identify the best interest rates & terms for individual projects**

**Bottom Line – Leveraging financing for energy efficiency upgrades improves facilities and balance sheets. Innovative will, leadership and vision are required to transition more viable energy project plans to construction.**

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# Examples of Siemens' Project Results in Alaska

Energy Project Details by Customer:	City of Homer	City of Soldotna	Mt. Edgecumbe High School PH1 & 2 PH1 & 2 (Sitka)
Facilities (#)	16	6	10
Total Area (SQF)	109,000	92,000	226,000
Initial Annual Energy Expenses	\$760,000	\$446,000	\$636,000
Energy Project Implementation Cost	\$718,000	\$1,225,000	\$4,531,000
Total Annual Savings	\$106,000	\$92,000	\$365,000
Simple Payback (Years)	6.8	13.3	12.4
Overall Energy Reduction	14%	19%	41%