



## Making Energy Projects Happen

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## Top Reasons for Facility Managers to Undertake Energy Efficiency Projects

- Reduce ongoing operating costs (utility expense)
- Upgrade old worn-out energy using equipment (approaching \$1.1 billion for state buildings alone over the next 10 years)
- Improve the working environment
- Reduce maintenance time and effort
- Create more energy independence
- Reduce pollution - do the environmentally correct thing
- Be a good corporate/community citizen
- Marketability

## Top 10 Energy Measures

- Variable frequency drives
- State-of-the-art lighting (T-8 and T-5 technology)
- Control upgrades (setback, mixed air, & demand)
- Recommissioning
- New chillers
- Properly sized and efficient motors
- Steam trap maintenance
- Pipe & tank insulation
- New rooftop HVAC units
- Renewable energy projects

WHERE IS THE \$\$\$?

• Typical **\$\$\$** sources for energy and renewable projects:

- Internal Financing
- Bonding/Loans
- Legislative Appropriations (for state buildings)
- Utility-funded Programs
- Leases
- Energy Service Companies (ESCOs)
- State and Federal Grants

We can use our time wisely and strategically with performance contracting!

- 17 years of ICP grants = \$13.3 million in federal funds + \$11 million in match
- 4-6 hours a week x 5 months = \$44 million in retrofits from a performance contract with an ESCO

Successful Energy Service Company Partnerships in Utah

- <1999 - 56 building (\$4,346,098 financed)
- University of Utah – 81 bldgs. (\$44 million) with \$10,812,500 in savings achieved to date
- State Prison – Phase I - 112 buildings (\$6,554,873) with \$234,618/yr. in est. savings
- State Prison – Phase II (\$5,026,112) with \$275,002/yr. in est. savings
- Utah Valley Community College - 12 buildings (\$9,493,424) with \$556,888/yr. in est. savings
- Ogden Regional Center- one building (\$578,667) with \$33,489/yr. in est. savings

NOTE: In addition to energy savings, the Prison projects provide \$179,182 in water savings.

Common Excuses for Not Undertaking Performance Contracts

- “Hey, they got burned doing that!”
- “We can fund it cheaper ourselves - the financing is too expensive”
- “We don’t have the expertise to manage this kind of project. This whole process is very new to us.”
- “Our boss/board doesn’t want any debt!”
- “What if we don’t get the energy savings that they promise?”
- “But, we already have contractors that we know and love”
- “Can’t this wait? I’m about ready to retire!”

*"Hey, they got burned doing that!"*

- Procure competitively using standard procurement documents
- Retain independent technical expertise.
- Partner with an ESCO having a proven track record for success – check the references

*"We can fund it cheaper ourselves - the financing is too expensive"*

- Over the past 5 years, Utah institutions have secured financing at 4.6 to 4.8% with performance contracting
- According to the EPA, a one year wait for funding (on a \$500k project) equals \$100,000 in lost opportunity savings
- Check out the EPA "Cash Flow Opportunity Calculator" at [www.energystar.gov](http://www.energystar.gov)

*"We don't have the expertise to manage this kind of project. This whole process is very new to us."*

1. Check out the Energy Services Coalition ([escperform.org](http://escperform.org)) website to get started
2. Select and contract with an independent 3<sup>rd</sup> party engineer/consultant
3. Develop a Request for Proposal (RFP) using the [escperform.org](http://escperform.org) website
4. Openly solicit responses to the RFP from energy service companies
5. Review proposals and qualifications from submitting ESCOs
6. Check references
7. Negotiate an investment grade energy audit agreement



*Continued:*

8. Have the independent engineer review/approve the energy audit
9. Negotiate and finalize the performance contract with the ESCO
10. Work with the ESCO to secure a best financial partner
11. Hold weekly project meetings
12. Conduct interim site inspections and commission work completed
13. Measure and verify energy savings achieved

*“Our boss/board doesn’t want any debt!”*

*“Financing can be structured as a lease arrangement - this will not affect an institutions debt since the title and ownership of the equipment resides with the provider until the end of the lease period”*

*Financial Advisor to then Governor Mike Leavitt*

*“What if we don’t get the energy savings that they promise?”*

*You can negotiate a performance guarantee (much like a performance bond) where the ESCO makes up savings shortfalls!*

### *EXAMPLES OF PERFORMANCE CONTRACTING FOR STATE OF UTAH BUILDINGS*



### **University of Utah Measures Implemented**

- ✓ State-of-the-art lighting technologies
- ✓ Higher efficiency/CFC compliant chillers
- ✓ Variable frequency drives
- ✓ New energy management controls (for setback, mixed air, lighting & demand)
- ✓ Variable speed chilled water pumping
- ✓ Properly sized and efficient motors and pumps
- ✓ Build a central plant for upper campus
- ✓ New cooling towers
- ✓ Convert air handlers to VAV



*University of Utah Performance Contract  
Greenhouse Gas Reductions Per Year:*

**CO2:** 121,166,620 lbs.  
**VOC:** 3,159 lbs.  
**NOX:** 216,369 lbs.  
**CO:** 17,523 lbs.  
**SO2:** 54,771 lbs.  
**PM10:** 6,831 lbs.  
**Hg:** 123,749 mg.

Source: Cleaner Greener Emissions Calculator

## **Utah State Prison Measures Implemented**

- ✓ *Electrical distribution upgrades*
- ✓ *Geothermal hot water heat (185 degree F)*
- ✓ *Upgrade motors and pumps*
- ✓ *Lighting including T-5 highbay*
- ✓ *VFD installation*
- ✓ *Wind generation*
- ✓ *New rooftop units*



- ✓ *Insulation – steam lines and building envelopes*
- ✓ *Recommissioning mechanical and control systems*
- ✓ *Stack economizers*
- ✓ *Night setback and demand limiting*
- ✓ *Low flow water using fixtures*

## **Helpful tips for completing a successful performance contract-based project:**

1. *Regularly and clearly communicate wants, needs, & concerns to the ESCO (weekly project meetings)*
2. *Involve representatives from various offices & levels within the agency*
3. *Get early buy-in from agency administration*
4. *Inform ESCO early regarding special agency standards*
5. *Approve all submittals and specs in advance*

6. Require "Open book" pricing throughout the project
7. Stage the overall project in phases
8. Utilize a collaborative group for procurement and procure competitively
9. Opt for advance approval of subcontractors & suppliers
10. Retain 3<sup>rd</sup> party expertise such as a professional engineer for the owner's "side of the table"
11. Carefully research each ESCO's references, technical qualifications, and financial background

**"Energy conservation is a matter of leadership"**  
**"BE AN ENERGY CHAMPION"**



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Check out [escperform.org](http://escperform.org)

*The end!*

