

Energy Savings Performance Contracting (ESPC)

October 21, 2015

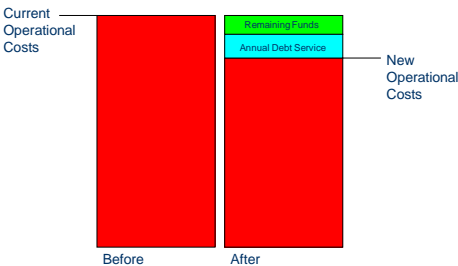


ESPC Definition

- A method of identifying, constructing and financing energy and utility conservation projects
- Uses energy and utility dollars saved to pay for the project costs
- Eliminates most of the risks associated with the design, bid, build (DBB) process



Paying for Project Costs A Budget Neutral Approach



Legislative Authority

RCW 39.35A.010

- The legislature finds that:
 3. Performance-based energy contracts are a means by which municipalities can achieve energy and water conservation without capital outlay.



Legislative Authority

RCW 39.35A.050


- The state department of enterprise services shall maintain a registry of energy service contractors and provide assistance in identifying available performance-based contracting services



ESPC Benefits

- Owner is involved with contractor and equipment selection
- Low bid acceptance is not required
- DES has over 25 years of successful performance contracting experience
- Maintenance costs are reduced
- Positive cash flow over the measure life
- Funding available through the State Treasurer





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2015-2017 Energy Efficiency & Solar Grants for Higher Education, Local Governments, State Agencies and K-12 Public Schools

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Workshop Presenters

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Key Facts

- Applications for the first round are due **MARCH 3, 2016** by 5:00 p.m.
- The maximum energy efficiency grant is \$350,000
- The maximum solar grant is \$500,000
- Total maximum amount of grant funds that an applicant can be awarded is \$850,000 (cumulative for both rounds: one in 2016 and one in 2017)
- Once again there is a 10% set aside for small cities and towns (population under 5,000)
- Program guidelines will be posted as a link to the Commerce Energy Efficiency and Solar Grant program website early November 2015 (www.commerce.wa.gov search for 'Energy Efficiency and Solar Grants')
- Applications must be submitted using the *ZoomGrants* portal on the Commerce EE-Solar Grants program website (live link late November 2015)



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2015 -2017 Energy Efficiency & Solar Grants

www.commerce.wa.gov/Programs/services/CapitalFacilities/Pages/EnergyEfficiencyGrants.aspx
www.des.wa.gov/services/facilities/Energy/ESPC/Pages/default.aspx

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ESPC Guarantees

- **Maximum project cost** – no change orders unless authorized by the owner
- **Minimum energy savings** – Measurement and Verification of savings is included in the contract
- **Equipment performance** – Measures must provide the comfort and utility expected



Qualifying Project Types

Energy, Water and Sewer saving projects such as:

- ▶ Lighting projects – lamps, ballasts & fixtures
- ▶ HVAC modifications
- ▶ Steam & condensate piping systems
- ▶ Boiler & chiller systems
- ▶ Energy management control systems
- ▶ Buildings and grounds water conservation



DES Experience


- **Working in public facilities since 1986:**
 - Completed in excess of \$500 million dollars in performance contracts
 - Satisfied clients in over 400 public facilities
 - Saved over 240 million kWh and 14 million therms
 - Clients received over \$42M in utility incentives
 - Annual cost avoidance savings of \$30M
 - Currently managing over 200 projects and \$270M in construction



Thank You

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Bremerton's Experience with Energy Saving Performance Contracting

A Successful Public – Private Partnership Case Study





Bremerton Wastewater Treatment Plant

- Bremerton's sewage system provides sewer service to approximately 37,000 people and consists of the following:
 - 188 miles of combined and sanitary sewer mains
 - 14 combined sewer overflow outfalls
 - 37 lift stations
 - 16 miles of force mains
 - 3 odor control stations
 - 6 flow monitoring stations
 - 2 composite sampling stations
- Serves City residents as well as nearby areas in unincorporated Kitsap County.
- Average annual flow of 5 MGD and a hydraulic peak capacity of 32.5 MGD.
- Peak flow of 68.5 MGD.
- Treated effluent from the wastewater treatment plant discharges into the Sinclair Inlet.



The Situation

- Old Primary Effluent Pumps (heart of the entire system) operating since 1985
- Pump controls at risk of imminent failure
- Capital Improvement Plan (CIP) piecemealed several projects for eventual total PE pump system replacement including motors, suction and discharge knife-gate valves, check valves, flow meter, and main header valves
 - Project had been delayed because of difficulty

Concept

- Bring forward and re-program several capital projects, already in the CIP, into one
- Tap into private sector know-how through DES's Energy Saving Performance Contracting (ESPC) process
- Attract funding through this process and also from PSE's utility incentive program
- Get project done all at once, instead of phases over several years

Energy Saving Performance Contract Program

- WA State Department of Enterprise Services Energy Saving Performance Contracting (ESPC) was used to procure services for the design, acquisition, and installation of the entire Primary Effluent (PE) Pump System.
 - Bremerton's DES Project Officer: Doug Kilpatrick
 - Doug held my hand through this entire process
 - This process guarantees results
- Bremerton Sewer Plant staff chose Trane Energy Services as our Energy Saving Performance Contractor
 - Trane handled all engineering design, staff interaction and support, management of subcontracts, schedule, etc. etc. etc.
 - Plus, we are very needy

What We Did

Replaced the entire Primary Effluent (PE) pumping system, including:

- New 125 HP high efficiency inverter-rated motors
- New Variable Frequency Drives (VFD's)
- New High efficiency Flygt dry pit pumps, piping and isolation valves on all five systems
- Full up permanent bypass system for future use
- New pre-fab Blazer building to house VFD's

The Partnership - \$3.1 mil project

- **Department of Enterprise Services:** Project Manager
- **Trane:** Design Build Energy Services Contractor
- **Commerce:** Energy saving grant \$500,000
- **PSE:** Energy rebate \$314,956
- **City of Bremerton:** owner; maintained complete control over the project



Timeline





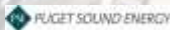
- August 2012 Introduction to ESPC Program
- September 2012 Preliminary Audit
- November 2012 IGA – Investment Grade Audit
- January 2013 Final proposal
- March 2013 Implementation/construction-Kick off
- Oct 2013 Project Completion
- One Year Measurement & Verification period

Keys to Success

- A cooperative, partnership approach
- Close coordination
- Constant, open communication
- Rehearsals of critical evolutions

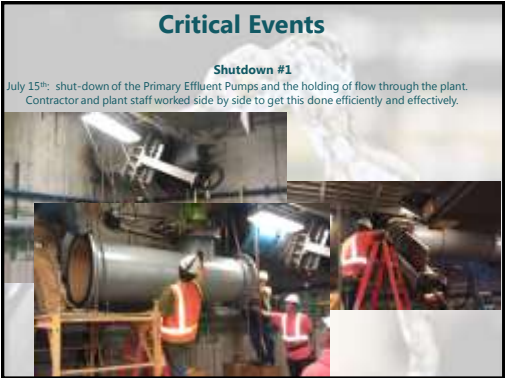
Results

- \$3.1 million project; \$500k Commerce grant; \$317k PSE rebate; \$2.3 million City of Bremerton
- Bremerton got:
 - The design we wanted – including new valving and redundancy
 - The backup systems we needed during the work
 - The equipment we wanted
 - The subcontractors we wanted
 - AND: no staff time needed from our Engineering folks
 - AND: concept to completion in 14 months
- Energy Savings promised: 1,391,847 kWh -- \$109,956/year
- **Energy Saving actual: 1,451,554 kWh -- \$114,673/year**









Pedestal Framing for Pour



New PE Pump & VFD Startup

Startup began on and September 4th
Testing of new pumps and VFDs occurred over the next week allowing for each pump to be in the lead position and to ensure proper operation of PLC.



Happy Customer



Questions?

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