



Performance Contracting Lessons Learned

**Cindy Browning, PE, Assistant Director – State Construction Office
Fred Patrick, AIA, PE, LEED AP – UNC Greensboro**

March 24, 2009



Performance Contracting– What is it?

Definition of Terms

Statutes and Legislation

Resources

Overview of Process

Improving the Process

Who to Get Involved

Developing the ECMs

Construction

Maintenance

M&V for 12 years

Questions – 15 minutes



Performance Contracting – What is it?

- **Guaranteed Energy Savings Contract**
- **Consists of Energy Conservation Measures for existing Building or Utility System**
- **Alternative Construction Delivery Method**
- **Long Term Contract**



Definition of Terms

- **PC** – **P**erformance **C**ontract
- **ESCO** – **E**nergy **S**ervice **C**ompany
- **RFP** – **R**equest for **P**roposal
- **IGA** – **I**nterim **G**rade **A**udit
- **M&V** – **M**onitoring and **V**erification
- **ESA** – **E**nergy **S**ervices **A**greement
- **ECM** – **E**nergy **C**onservation **M**easure

Statutes and Legislation

- **142-60 through 142-70: Addresses financing of Performance Contracts**
- **143-64.17A through L: Addresses requirements of Performance Contracts**
- **NC Administrative Code Subchapter 41B**

Links to these documents are contained on the Energy Office website:

<http://www.energync.net/programs/usi.html#pc>



Current Legislative Bills

- **H349 (S304) proposes to modify 142-63 to remove the existing cap of \$100M for performance contracts**
- **Legislation is very timely since SEO has accepted the existing limit of performance contracts**



Resources – Overall Process

State Energy Office website provides templates for:

- **Request for Proposal (RFP)**
- **Investment Grade Audit (IGA) Agreement**
- **Energy Services Agreement**
- **Measurement & Verification (M&V) Guidelines**

<http://www.energync.net/programs/usi.html>

Len Hoey, SEO Staff, 733-1891

leonard.hoey@ncmail.net



Resources – Financing

Dept of State Treasurer for assistance w/ financing

Tim Romocki, Director of Debt Mgmt, 807-2360
tim.romocki@nctreasurer.com



Overview of Process

- RFP (similar to SD Submittal)
- IGA (similar to DD Submittal)
- Financing
- Energy Services Agreement (similar to Construction Contract)
- Design (similar to CD Submittal)
- Construction
- M & V
- Length of Contract

RFP

- **Assemble stakeholders**
- **Evaluate responses technically**
- **Evaluate capabilities of team**
- **Interview short list**
- **Check references**
- **SEO will provide assistance to the team**

IGA

- **SEO highly recommends hiring third party M&V engineering firm to review IGA prior to becoming contract. This firm is required under the rules to validate the annual ESCO reconciliation report.**
- **Review IGA carefully and evaluate scope of work.**
- **Review the Standards of Comfort, including hours of operation (setbacks), temperature ranges in occupied and unoccupied rooms.**



Financing

- **Obtain financing or agree upon financing terms**
- **For agencies and universities receive Council of State approval through SEO**
- **No contingency**



Energy Services Agreement

- **Review scope to understand if all items from IGA will be included in the contract documents.**
- **Include payment requirements: retainage, format, required attached forms (sales tax, MBE)**
- **Reference to no change orders**
- **Need for adequate software licenses, stations, servers, etc**
- **Project schedule**



Design

- **Try to emulate normal SCO process as much as possible**
- **Discuss project with SCO/DOI at IGA stage**
- **Submit drawings and specifications for review**
- **Note: This will be done after contract has been signed**
- **This process is similar to a design-build contract**
- **Engineering must be licensed in North Carolina**



Construction

- **Read the contract**
- **Reserve 5% contingency – outside contract**
- **Full-time project manager from staff**
- **In-house project manager to coordinate work**
- **Follow what is in contract**
- **Owner to keep notes also**
- **Involve maintenance and operations early & after**
- **Work may be done at night**
- **Read the contract – lighting may be bulb & ballast and not new fixture**



M & V

- **Monitoring and Verification**
- **Yearly by ESCO**
- **Third party commissioning M&V, too**
- **Continues for term of contract (12 years)**



Length of Contract

- **12 years at UNCG**
- **Assign someone to monitor – continuity**
- **Adjustments for Variables Affecting Savings**
 - **Building utilization - # of occupants**
 - **Building occupancy hours**
 - **Weather**
 - **Building changes – remodeling**
 - **Changes in codes; i.e. increased ventilation rate**



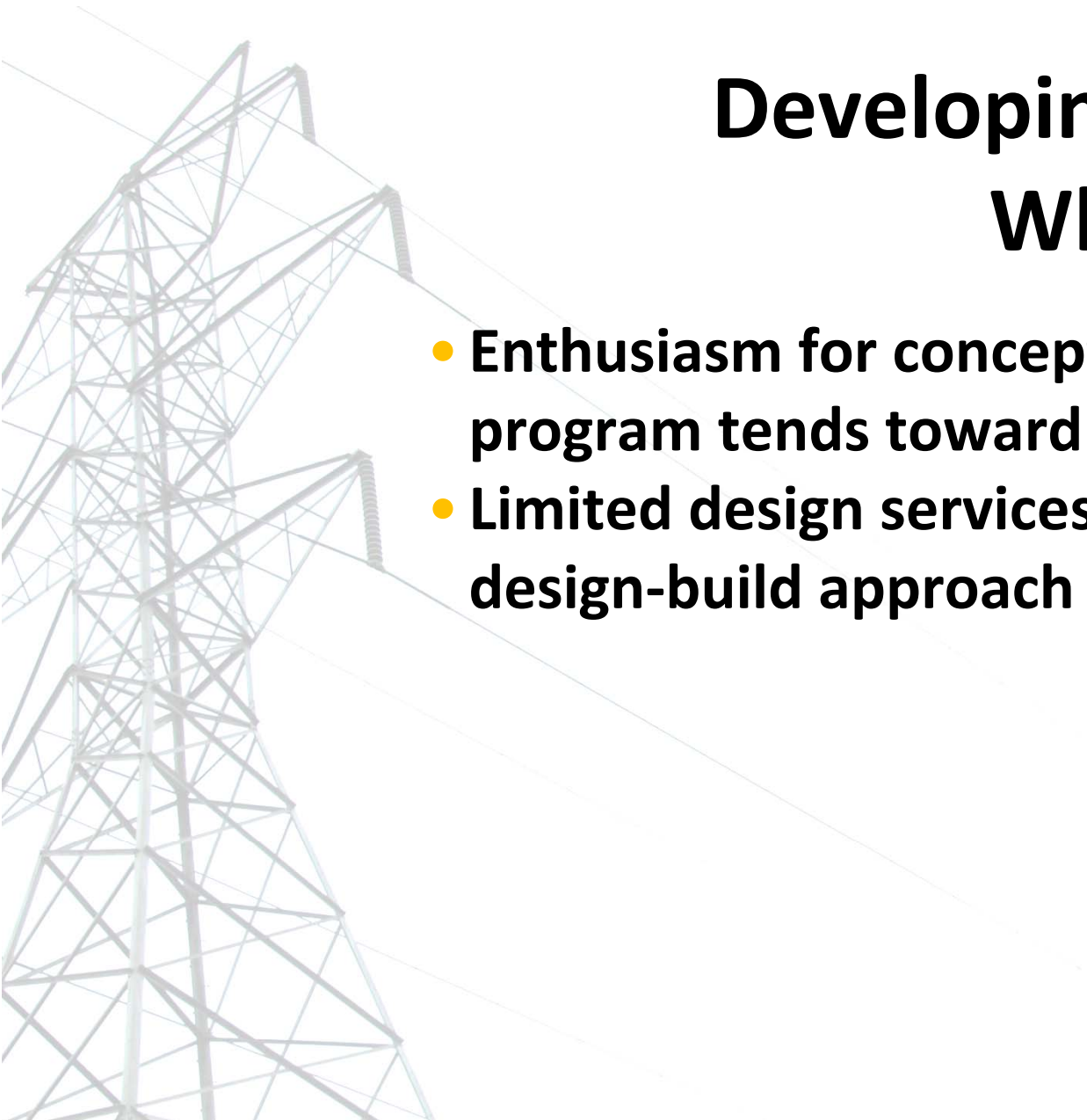
Improving the Process

- **Who To Get Involved**
- **What to Expect**
- **How to Make It Better**



Who to get Involved – All Stakeholders

- **Engineering**
- **Finance**
- **Maintenance and Operations**
- **Capital Project Coordinators**
- **Purchasing and Legal**
- **Administration**
- **Building Occupants (optional)**



Developing the ECMs - What to expect

- **Enthusiasm for concepts and overall program tends toward scope creep**
- **Limited design services with emphasis on design-build approach**



Developing the ECMs - How to make it better

- **Understand program outlined by ESCO**
 - **Energy savings from energy reduction vs energy rate charge changes**
 - **Impact of HVAC and lighting setbacks**
 - **Impact to savings if use of building changes**
 - **Will ESMs improve comfort of the building occupants**



Developing the ECMs - How to make it better

- **Carefully review energy audit, particularly:**
 - **Integration of new and old controls, including life safety systems such as smoke evacuation**
 - **Are there work items that will need to be performed by Owner outside of the ESCO's contract**
 - **Will new systems require more sophisticated maintenance technicians**



Developing the ECMs - How to make it better

- **Carefully review energy audit (cont):**
 - **Have clear understanding of “commissioning”**
 - **Discuss points of failure**
 - **Has scope grown and what is impact on initial program**



Design- How to make it better

- **Require submittal of design calculations, such as:**
 - **Air balancing**
 - **Water balancing**
 - **VFD settings**
 - **Lighting levels**
 - **Structural support**
 - **Fail safe analysis of new systems**
- **Require sealed plans and specifications for review by SCO/DOI**



Design- How to make it better

- **Require typical design services, such as:**
 - **Review and approval of shop drawings prior to submitting to owner**
 - **Weekly site observations and inspections throughout construction process**
 - **Project close-out, final inspection, punch list items, sealed project completion and compliance forms, and sealed record drawings**



Construction- What to expect

- **Impact of large project compressed in short time schedule**
- **Staging area and contractor parking – maybe multiple contractors working in multiple buildings**
- **Building access control and contractor ID**
- **Coordination with other projects underway in same building**



Construction- How to make better

- **Partner with IT group to address remote monitoring of controls and requirements for firewalls, VPN set-up, network connections, etc.**
- **Clearly define actions for abandoned and removed equipment and materials**



Construction - What to expect

- **Owner or “Issuer” responsible for Hazardous Materials (asbestos & PCB ballasts)**
- **“That’s not in our contract” – Exclusions:**
 - **painting, tile work**
 - **water isolation valves not working**
 - **controls not being touched**
 - **temporary air-conditioning**
 - **all pre-existing equipment assumed to be in good working order**
 - **correction of any pre-existing code deficiency is responsibility of issuer**



Construction - How to make it better

- **Expect to pay for things “outside contract”**
 - by ESCO
 - by third party contractor
 - within house forces
- **Have a full time project manager dedicated to project (work at night?)**
- **Read the contract**
- **Be reasonable**
- **Think “energy savings only” not renovation**


Maintenance

- **Who Performs**
 - **ESCO**
 - **Contract**
 - **In-House**



M & V for 12 years

- Designate a person to manage
- Ongoing relationship with ESCO for 12 years
- Training
 - Initial
 - HVAC refresher
- Guarantor – guarantees payments for ESCO when there are shortfalls of guaranteed energy savings
- Enjoy the energy savings – If escalation rates exceed the contract amount – you win even more



Questions – 15 minutes

March 24, 2009

Performance Contracting – Lessons Learned