



# *Energy Savings Performance Contracting*

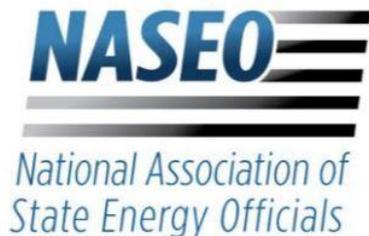
# Foundations and Fundamentals

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**Dale L. Hahs**

Energy Services Coalition  
State Liaison Team Manager

[www.energyservicescoalition.org](http://www.energyservicescoalition.org)  
[dhahs@energyservicescoalition.org](mailto:dhahs@energyservicescoalition.org)





# Our Collective Purpose

Our time together will allow us to walk through some **fundamentals** that can help make projects successful, touch on particular areas that **have created challenges** for some and offer some **proven remedies** to advance the opportunity for ESPC to become a *Business As Usual* resource.



# Energy Services Coalition

## **The Energy Services Coalition (ESC)**

is a national nonprofit organization composed of a network of experts from a wide range of organizations working together at the state and local level to increase energy efficiency and building upgrades through **G**uaranteed **E**nergy **S**avings **P**erformance **C**ontracting.

*Local chapters; public and private sector individuals coming together to provide outreach and education.*



# What is ESPC?

“The use of **guaranteed** savings from the maintenance and operations budget (utilities) as capital to make needed upgrades and modernizations to your building environmental systems, financed over a specified period of time.”

-United States Department of Energy

If you are an engineer with a law degree trained in the rules of procurement, construction management and negotiation, with a minor in finance and accounting, this will be a cinch!!



# What is ESPC?

*A debt free modernization of public facilities and system infrastructure by a single source provider built to or in excess of site specific standards, following processes and industry best practices at a reasonable price and profit with a guarantee and proof of performance.*

*- A Utopian Perspective; this author*



# What is ESPC?

Does that leave any unanswered questions about what ESPC is . . . . . or is not?

A means of finance in that it provides the way to repay the upfront financial lease/loan/funds.

Does not provide the upfront financing – that's a separate instrument.

A means of competitive procurement in that percentages of markups, overhead and profit are competitively solicited.

Is not typically a project bid – there is no defined scope to bid on.

A means of contracting; single source provider for design, implementation and performance.



# What's in a Name?

**ESPC = ENERGY SAVINGS PERFORMANCE CONTRACT**

ESA = Energy Sales Agreement

MEETS = Metered Energy Efficiency Transaction Structure

*GESA = Guaranteed Energy Savings Agreement*

ESA = Energy Services Agreement

EPC = Energy Performance Contract

**ENERGY SERVICES PERFORMANCE CONTRACT**

*MESA = Managed Energy Services Agreement*

**SAAS = Savings as a Service**

SEaaS = Sustainable Energy as a Service

SSA = Shared Savings Agreement

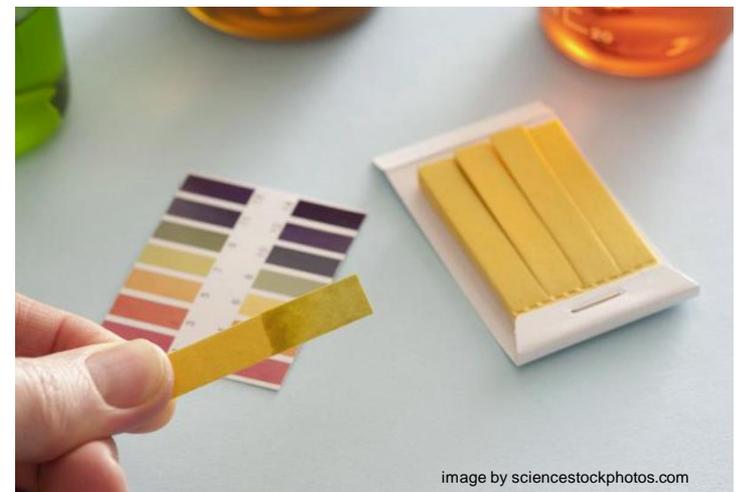
**PC = Performance Contract**

**GESPC = Guaranteed Energy Savings Performance Contract**



# Lot's of “new solutions” Some Public Sector Considerations

- What statute(s) defines the transaction?
- What means of public procurement is required?





# Public Sector Considerations

- Who owns the improvements?
  - title to
  - lien on
  - security interest in
  
- Who holds the risk of performance?
  - What can the owner do that puts the guarantee in jeopardy?
  - What can the provider do that puts the guarantee in jeopardy?
  
- Is the upfront financing debt?
  - Is there an offsetting reduction in planned cost?
  
- Is a Non-appropriation clause included?
  - [\(an internet definition of non-appropriation and impact\)](#)
  
- Whose process should I follow?
  
- Whose contract(s) should I use?



# Public Sector Considerations

- When can I get out?
  - steps along the way
  - what's the penalty
  - means of termination
  
- Review a copy of the contract
  - Who can do a legal review?
  - Procurement review?
  - What public sector peer has used this method?
  
- Is the upfront financing debt?
  - Is there an offsetting reduction in planned cost?
  - Who decides?
  
- Can we *STILL* use my construction contract?
  - Becomes a schedule in the ESPC agreement.

# Switching Gears



# Why ESPC?

- No Money
- Energy Goals
- Environmental Targets
- Job Creation
- Failing Facility And System Infrastructure
- Need for Resilience
- Leveraging – maximize value



# Consider

What do you want ESPC to accomplish in your state? Or city, or county or institution?

What challenges prevent the use or expansion of the use of ESPC for projects in your state, city, county or institution?



# Standing Presumption

If you have all the money, all the time and ample expertise, simply do the work yourself!



# Earliest Principles

I need a bunch of stuff replaced or repaired and I don't have the **MONEY, time or expertise** to do it.

meets up with

I have stuff that saves energy/money but you don't have enough confidence that it will deliver the predicted results to buy it.



# Earliest Solution

- The ESCO buys the stuff, installs it, and you pay them back over time with the savings (reduced budgets/allocation) as you realize it and reconcile it to your bin(s).
- They don't get paid until the savings is achieved AND proven . . . the ultimate guarantee of performance!
- No loans, no liens, no debt, no risk!



# Later Solution

- Projects move to a solicitation for best value 3<sup>rd</sup> party financier, still charging the finance costs and fees to the project.
- Requires a separate finance agreement.
- In the Tax Exempt Lease Purchase (TELP) model, the public entity holds title. There may or may not be a security interest or lien.
- Proof of savings, the teeth of the guarantee, the proof of financial neutrality, is moved to measurement and verification (M&V).
- Beware of this concept . . . there's really no point for M&V since things always change in facilities. **NOT TRUE!!**



# A New Wrinkle

Dodd Frank – Interpreted by many as “restriction that the ESCOs cannot recommend financier or best means for project finance. Owner is required to seek a registered municipal advisor”. <https://www.municipaladvisors.org/nama-members>

Still a 3<sup>rd</sup> party financier and a continued evolution toward least costly rate.

Lowest rate is likely a securitized transaction.

*The Dodd–Frank Wall Street Reform and Consumer Protection Act is a United States federal law that was **enacted on July 21, 2010.***



# Just So You Know

Some states, with long history of successful projects in their ESPC programs and managed expectations regarding M&V and oversight, hold agreements with their credit rating agencies that ESPC projects are not debt as they have an offsetting savings and are supported by a private sector guarantee of achievement.

Some require a bond on the value of the guarantee so as to backstop the obligation.

These ESPC projects are NOT considered debt.



# Other Principles

- Projects are a partnership opportunity where the Owner and the ESCO are working together to ensure that savings are achieved and persist documenting and annually adjusting for any impacting variables.
- All work is required to meet or exceed the standards of the Owner.
- The operating conditions known as Standards of Comfort, cannot be sacrificed for efficiency.
- The savings achieved must pay for all obligations/costs each and every year. No passing of excess savings to cover a shortfall.

[NASEO-ESC-NAESCO State ESPC Program and Project Principles](#)



# Important Considerations

- Refer to the enabling legislation for your state and ensure that it's followed.
- The language within the proposal, the Investment Grade Audit and the Guaranteed Energy Savings Performance Contract, all schedules and appendices cannot conflict or supersede your enabling statute(s).

# Assembling a ESPC Team

## APPROVING AUTHORITIES

You need these folk fully bought in and supportive of the rigor the team will provide to help mitigate risk and see that you get what you set out to achieve

## OVERSIGHT

This role is becoming far more common. Provide experience, insight and education along every step of the way

## CONSTRUCTION

Require that these projects meet or exceed your quality standards and BAU documentation and process. Assist with witnessing, approvals and invoice review

## MAINTENANCE

Know what's needed, where the challenges are today and what will be required of you in the future to maintain guarantee and savings



## ENERGY FOLK

Typically the ringleader or champion for the concept. Required to help assemble needed resources, tools, topical expertise

## LEGAL

Customize documents, review all ESCO provided input to ensure compliance and avoid contradictions.

## FINANCE

Know how the money moves from operating cost to note repayment and how to manage incentives or other revenues. Commit to full term budgeting

## PROCUREMENT

Ensure a competitive procurement. Generally this is two step; first for prequalified providers and later for each project



# Whose Paper Should I Use?

If you've got standardized ESPC contracts/documents in your state you're way ahead. If you don't, you'll need a source.

We hear folks ask, “whose state should we look at to copy their standardized agreements?”

Ask yourself, “which state has the same state constitution and enabling legislation as you do and then you'll know whose standardized documents to use”.



# Whose Paper Should I Use?

Since that's likely out as an option we point you to the [ESC standardized document model library](#).

## Documents

- [01 -Request For Proposals To Pre-Qualify ESCO For As-Needed Energy Savings Perform](#)
- [02 - ATTACHMENT A - ESCO Base Contract For As-Needed Energy Savings Performanc](#)
- [03 - Attachment B - Response to this Request for Proposals](#)
  - [03a - Evaluation for ESCO Pre-Qualification](#)
- [04 - ATTACHMENT C - Final ESCO Selection Process](#)
  - [04a - Secondary Evaluation Evaluator Sheet](#)
  - [04b - Secondary Evaluation Scoring Spreadsheet](#)
- [05 - ATTACHMENT D - Enabling Legislation](#)
- [06 - ATTACHMENT E - Enabling Legislation for Local](#)
- [07 - ATTACHMENT F - Investment Grade Audit Contract](#)
- [08 - ATTACHMENT G - Energy Performance Contract](#)
  - [08a - ESPC Appendix / Schedules](#)
- [09- ATTACHMENT H - Financing Solicitation](#)
- [10- ATTACHMENT I - Institution Memorandum of Understanding](#)

# Pre-project Prep

For more insights, be sure to check out Lesson 110 of GESPC-U.

- ✓ Be prepared to assemble 36 months of utility bills

All the utilities that could be affected – this allows you to see what you pay for what you consume when you consume it. The multiple years allow you ensure that oddities or excursions from what would be called normal don't impact your perspective on what you spend. Variables in those years of different uses of the facilities or systems, big construction or changes all should be noted and made available to the ESCO as part of what is typically called a Facility Profile

Electricity, Gas, Propane, Water, Sewer, Steam et al.

Before you go off to the storage facility to find the file cabinets with the old utility bills in it, you might want to contact your utility representatives and see if you can get the information that you need in report form. At least then your only looking for the sample bills



# Pre-project Preparation

- ✓ Be prepared to assemble samples of utility bills; one from each utility from each year.

If you don't understand your utility bills and how you are charged by the serving utility, now is a great time to dig in.

Some utility bills include not only the consumption of utilities in units, kWh, gallons, therms etc. but maybe demand charges – sort of a surcharge on the fact that sometimes you need a lot of power and the serving utility must have it available for you. Or you may have taxes or riders or other considerations that may not be impacted by efficiency at all. It can prove challenging when someone wants to equate your utility rate with total dollars paid divided by units if your bills include these non-impacted costs.

# Pre-project List

For more insights, be sure to check out Lesson 109 of GESPC-U.

✓ Be prepared to provide Technical Facility Profile(s)

**Collect data and background information from your Institution** concerning facility operation and energy use for the most recent three years from the effective date of this Contract as follows:

1. Building square footage.
2. Construction data of buildings and major additions including building envelope
3. Occupancy and usage information
4. Description of all energy-consuming or energy-saving equipment used on the premises, as available.
5. Description of energy management procedures utilized on the premises
6. Description of any energy-related improvements made or currently being implemented
7. Description of any changes in the structure of the facility or energy-using or water-using equipment
8. Description of future plans regarding building modifications or equipment modifications and replacements
9. Drawings, as available (may include mechanical, plumbing, electrical, building automation and temperature controls, structural, architectural, modifications and remodels)
10. Original construction submittals and factory data (specifications, pump curves, etc.), as available
11. Operating engineer logs, maintenance work orders, etc., as available
12. Records of maintenance expenditures on energy-using equipment, including service contracts
13. Prior energy audits or studies, if any



# Picking Partners

## Owner's Representative

- When do you need them?
- What can they help with?
- Where can you find them?
- What value can they provide?
- How do you find them?
- How do you pay for them?

**Coming Soon!**  
From the work of USDOE, FEMP, WIP, LBNL,  
ORNL, NASEO, NAESCO, EVO, ESC

**PCNRC Training Certificate Series**



# Picking Partners

Known 3<sup>rd</sup> Party Owners Representatives and their websites.

Beacon Integrated Solutions	<a href="https://www.beacon-llc.com/our-clients/energy-savings-and-performance-contracting-clients/">https://www.beacon-llc.com/our-clients/energy-savings-and-performance-contracting-clients/</a>
Celtic Energy, Inc	<a href="https://www.nv5.com/services/energy-efficiency-services/">https://www.nv5.com/services/energy-efficiency-services/</a>
Clean Energy Solutions	<a href="http://www.cleanenergysol.com/">http://www.cleanenergysol.com/</a>
E/S3 Consultants, Inc	<a href="https://www.es3consultants.com/">https://www.es3consultants.com/</a>
ECG Engineering	<a href="https://www.ecgengineers.com/">https://www.ecgengineers.com/</a> and <a href="https://www.nyscoss.org/img/uploads/2017_Winter_Institute/ECG%20Engineering%20Handouts.pdf">https://www.nyscoss.org/img/uploads/2017_Winter_Institute/ECG%20Engineering%20Handouts.pdf</a>
Edison Energy – not clear if they provide consulting services for ESPC – or just for regular construction or design-build/bid-to-spec (no guarantee)	<a href="https://www.edisonenergy.com/installations/">https://www.edisonenergy.com/installations/</a>
Enlightened Energy Consultants	<a href="http://www.enlightenedenergyonline.com/">http://www.enlightenedenergyonline.com/</a>
Facility Solutions Group	<a href="http://www.fsg-stl.com/owners-representation.html">http://www.fsg-stl.com/owners-representation.html</a>
Gomez Consulting Group, Inc	
KW Engineering	<a href="http://www.kw-engineering.com/">http://www.kw-engineering.com/</a>
MCFA Global	<a href="https://mcfaglobal.com/projects/gsa-espcc-construction-manager-agent/">https://mcfaglobal.com/projects/gsa-espcc-construction-manager-agent/</a>
Nexant, Inc	<a href="https://www.nexant.com/resources/third-party-energy-performance-contracting-services">https://www.nexant.com/resources/third-party-energy-performance-contracting-services</a>
Partner Engineering and Science, Inc.	<a href="https://www.partneresi.com/services/energy-and-sustainability-consulting/owners-representation-for-energy-projects">https://www.partneresi.com/services/energy-and-sustainability-consulting/owners-representation-for-energy-projects</a>
Performance Contracting Owners Representatives LLC	<a href="http://pcoownersreps.com/">http://pcoownersreps.com/</a>
SourceOne	<a href="https://www.sourceone.veolianoorthamerica.com/energy-services/projects/owner-s-representative-services">https://www.sourceone.veolianoorthamerica.com/energy-services/projects/owner-s-representative-services</a>
Synchronous Solutions	None
Trident Energy Services	<a href="http://www.tridentenergy.com/">http://www.tridentenergy.com/</a>



# Picking Partners

## Energy Services Company

– How do you select one

- From paper
- From interviews
- From references
- Understanding markups
- Diversity / Safety Factors
- “The comfort factor”



# Picking Partners

## Financier

- How do you select one?
  - From paper?
  - From interviews?
  - From references?
- When do you bring them on board?

GESPC-U hosts six lessons  
on the topic of IGAs.  
Check out Lessons 107-  
112!

# Investment Grade Audits

- Procurement considerations
- Study vs. Proposal?
- Technical Support vs. Readability?
- What's the real value of a pre-project description?
- Who needs a load study anyway?
- Baseline of what?
- Standards of comfort?
- Assessing roles and risk?
  - Rates
  - Maintenance and operations
  - Material changes in use/hours/occupancy



# Investment Grade Audits

- Defining the scope of a measure
- Startup, Commissioning and M&V
- Projected savings, guaranteed savings, diversity/safety factors
  - Operation and maintenance savings
  - Future capital cost avoidance
  - If you can't prove it, you can't claim it!
- M&V Plan



# Investment Grade Audits

- Accepting a study
- Finally a proposal!
  - Measures included
  - Commissioning Plan
  - M&V Plan
    - Options
    - Term
    - Pricing
    - Who holds risk



# Investment Grade Audits

(Included in the proposal)

- **Guaranteed Savings**
  - Diversity or Safety Factors
- **Pricing**
  - Guaranteed maximum price
  - Open book pricing/transparency
  - Bids
  - Assessing reasonability
- **Cash Flow Proforma**



## Generally:

- Incorporates the IGA
- Provides terms and conditions, administration and events of default, insurance and force majeure
- Provides for an order of precedence
- Defines the purchase of services
- Incorporates a finance agreement
- Defines billing & payment procedures



## Generally:

- Non-appropriations clause
- Construction guidance
  - May incorporate a construction contract, its forms and processes
  - Permits
  - Hazardous waste
- Post construction services
- Responsibilities of the parties

## Provides for all schedules and exhibits

- **Schedules**

- **Savings Guarantee**

- Schedule A Savings Guarantee
- Schedule B Baseline Energy Consumption; Methodology to Adjust Baseline
- Schedule C Savings Measurement and Verification Plan; Post-Retrofit M&V Plan; Annual M&V Reporting Requirements
- Schedule D-G Left blank for optional schedules



- **Schedules**
- **Payments and Schedule**
  - Schedule H Final Project Cost & Project Cash Flow Analysis
  - Schedule I Financing Agreement and Payment Schedule
  - Schedule J Compensation to ESCO for Annual Services
  - Schedule K Rebates, Incentives and Grants
  - Schedule L-P Left blank for optional schedules



- **Schedules**
- **Design and Construction Phase**
  - Schedule Q Description of Project Site(s)
  - Schedule R Equipment to be Installed by ESCO
  - Schedule S Construction and Installation Schedule
  - Schedule T Systems Start-Up and Commissioning; Operating Parameters of Installed Equipment
  - Schedule U Standards of Comfort
  - Schedule V ESCO's Training Responsibilities
  - Schedule W-AA       Left blank for optional schedules



- **Schedules**
- **Post-Construction**
  - Schedule BB ESCO’s Maintenance Responsibilities
  - Schedule CC Institution’s Maintenance Responsibilities
  - Schedule DD Facility Maintenance Checklist
  - Schedules EE – II           Left blank for optional schedules
- **Administration**
  - Schedule JJ Alternative Dispute Resolution Procedures
  - Schedule KK – OO           Left blank for optional schedules
- **Optional Schedules**
  - Pre-Existing Service Contracts
  - Energy Savings Projections
  - Facility Changes Checklist
  - Current and Known Capital Projects at Facility



- **Exhibits**

- Exhibit I Performance Bond
- Exhibit II Labor and Material Payment Bond *if required*
- Exhibit III (i) Certificate of Acceptance—Investment Grade Audit Report
- Exhibit III (ii) Certificate of Acceptance—Installed Equipment
- Exhibit IV Equipment Warranties

- **Optional Exhibits**

- Manifest of Ownership
- Minority and Woman-Owned Business Certification
- Certification that Financing Term is no Longer than the Aggregated Equipment Lifetime
- Notice of Substantial Completion
- Notice to Proceed with Construction Phase
- Record of Reviews by Institution



# Construction and Implementation

## Process considerations

### – Whose process is it?

- Submittals
- Notice to Proceed
- Construction planning and sequencing
- Gantt charts
- Construction meetings and minutes
- Title and ownership of materials
- Start ups
- Commissioning
- Parking
- Safety and security
- Title and ownership of materials
- Training



# Construction and Implementation

- **Process considerations**
  - **Whose process is it?**
    - Invoicing
    - % Complete or work completed
    - Documentation
    - Substantial completion (by measure)
      - punch lists
      - warranty start
      - shelf stock
    - Final completion
    - Close out documentation
      - operation and maintenance manuals and checklists
      - Adjustments from Proposal to As-built



# Post Construction Services

- Operations and maintenance
  - Validating performance
- Reporting material changes
- Warranty support
- Post construction M&V
- Annual M&V reports
  - Routine baseline adjustments
  - Non-routine baseline adjustments
  - Reconciling to utility bills



# States are Sovereign

## — Observer

- Work to acquire data “keep score”

## — ESPC Resource

- Avail/promote tools, education, resources
- Participate in an ESC Chapter
- Work to acquire data “keep score”
- Performance Contracting National Resource Center ([PCNRC](#))

## — ESPC Advocate

- Initiate a statewide program
- Create standardized resources and processes for state agencies
- Avail/promote tools, education, resources
- Participate in an ESC Chapter
- Work to acquire data “keep score”

# States are Sovereign



## — ESC Champion

- Initiate a statewide ESC program following best practice examples
- Create standardized resources and processes for state agencies and extend for use by local units of government
- Provide or guide the use of project technical assistance resources – 3<sup>rd</sup> Party Support
- Avail/promote tools, education, resources
- Participate in an ESC Chapter
- Work to acquire data; “keep score”

Colorado, Delaware, Georgia, Hawaii, Kentucky, Massachusetts, New Mexico, North Carolina, Ohio, Pennsylvania, Virginia, and Washington.

*ESC Champion states were recognized for a combination of their political leadership, programmatic design, and the amount of private sector investment in Performance Contracting in their state.*



# Recap the Steps

- Prepare
  - Knowledge
  - Data
  - Process and Paper
  - Consensus
- Investment Grade Audit
- ESC Contract
  - Rules, Rights and Responsibilities
- Implementation
  - Construction
  - Commissioning
  - Post construction M&V
  - Warranty
- Post Construction Services
  - Routine & Non-routine baseline adjustments
  - Reconciling to utility bills
  - Apply science
- Collect and maintain data



# Record, Report and Archive

## What to Save?

- All of it!
  - RFP and Response
  - Contracts; Base, IGA, ESPC
    - Spreadsheets, witness reports, meeting minutes, checklists, commissioning reports, communication – all decisions
- Where do you put it?





# Record, Report and Archive

Wait till you see eProject eXpress (ePX)!

THE state and local project entry and reporting resource.

Planned deployment, summer 2021.



# For a little more insight . . .



<http://forums.energyservicescoalition.org/gespc-u>



Forum Blog Podcasts **GESPC-U** Guidelines

## GESPC University

Welcome to GESPC-U: The University of All Things Guaranteed Energy Savings Performance Contracting. Available to Online Community members only this program of study is geared solely toward increasing proficiency and expertise in all phases of energy savings performance contracting.

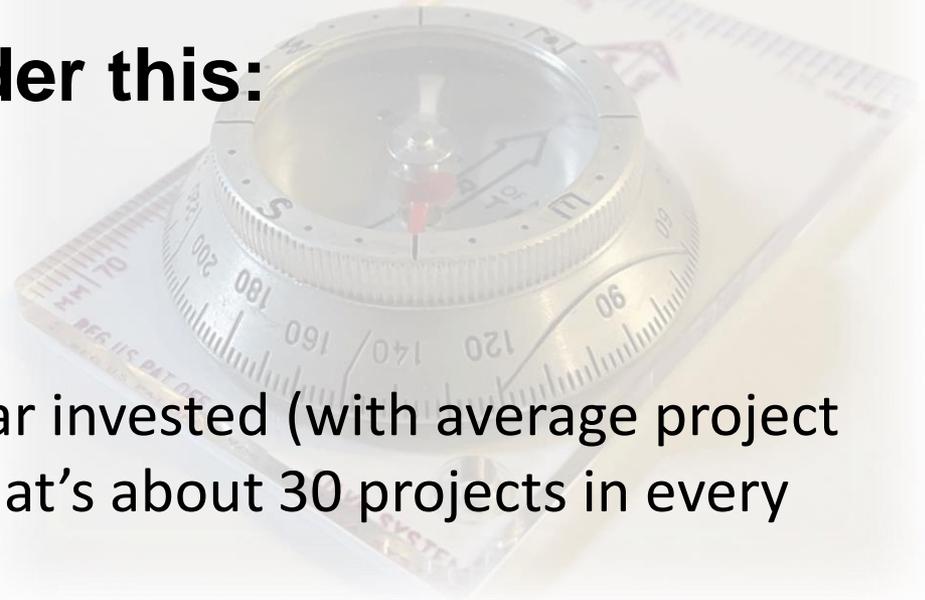
The program consists of 25 lessons and that take between 15 and 30 minutes to complete. The entire course should take less than eight hours of time to complete. Participants can work at their own speed as time allows. A certificate of completion will be awarded by the ESC once someone satisfactorily completes and submits the quizzes for all the lessons. Lessons include a short Podcast/Lecture, an accompanying class handout and a quiz focused on one specific phase in a project's development. There is also a Discussion Board/Thread for each lesson that serves as a virtual study group. To get started simply go to Lesson #101 below, download the quiz, read the instructions, listen to the Podcast or read the handout, complete the quiz and submit it for review and feedback. Don't forget to share with your peers -- ask questions or add comments to the lesson's thread in the GESPC-U forum arranged by lesson number. Good luck!!!



It just all sounds too hard. . .

**But consider this:**

- Tried and true process
  - \$7,000,000,000.00 per year invested (with average project size of roughly \$4.5 m – that’s about 30 projects in every state, every year)
- Nearly 50 years of history
- National model instruments, program design and resources
- A veritable army of knowledgeable, capable expert providers
- A burgeoning industry of 3<sup>rd</sup> Party Owner’s Rep





Energy Saved

Resiliency  
Achieved

*Success*

Jobs  
Created

Deferred  
Maintenance  
Reduced

Environmental  
Stewardship

Goals Reached

Healthier Learning and  
Working Environments



# *ESPC Foundations and Fundamentals*

## *Questions?*

How best can we help?

[dhahs@energyservicescoalition.org](mailto:dhahs@energyservicescoalition.org)



# *ESPC Foundations and Fundamentals*

*Thank you!*



**Dale L. Hahs**

Energy Services Coalition

State Liaison Team Manager

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