Disclaimer:
The State Energy Office of North Carolina would like to thank the National Energy Services Coalition for allowing the use of this resource for USI participants. A great deal of work went into compiling this information into a single location. As you go through this program and/or have additional questions, please contact Reid Conway reid.conway@ncdenr.gov.

GESPC-U Lesson #111:

Preliminary Findings

FYI: Terms and Acronyms can be found on the last page

Summary: The Next Step: The owner and ESCO sit down and start the process of reviewing the preliminary findings and determining which measures to include and which must be eliminated in an elegant decision-making exchange intended to build the final Investment Grade Audit.

In Lesson #110 we discussed the data gathering and assimilation in the investment-grade audit process – owners have assembled and shared with their ESCO partner utility data and site-specific information. The ESCOs have done the field study and gathered nameplate data and begun the artful task of reconciling the load disaggregation to the actual load inventory.

The ESCO has received a lot of information – all of which is essential to do its in-depth calculations and feel confident in accurately determining the current utility use as well as what the potential utility and utility cost savings would be, based on their recommended upgrades.

In addition to the technical information, any specific issues that may have been brought to their attention by the owner, such as comfort or ventilation issues, or some equipment that is hobbling to its end of life, to name just a few, are examined. Now is when the ESCO digs deep and

evaluates if indeed those issues do exist, and if so why -- and ultimately, develop appropriate solutions.

This is where the ESCO energy engineers begin arriving at an initial assessment of potential energy conservation measures. It is important for the owner to be driving this conversation as well. The owner will want to make sure the ESCO is evaluating ECMs that will be part of the project and not wasting time on ECMs that will never cashflow as part this project. This is a waste of time and money.

Through experience, ESCOs have learned there are several energy conservation measures, or ECMs that will usually integrate into a performance contracting project. Often, these measures are given first attention, and at this preliminary point, can be quickly ruled in or out. Measures such as lighting improvements and lighting controls, indoor and outdoor water and irrigation systems, and central building automation systems, either installing new or reprogramming the existing system, just to name a few. There's a myriad more that can be included.

To help expedite this process, it's quite common at this stage, as the field assessments are continuing, that the ESCO engage with experienced specialty contractors to help in their surveys.

When these specialty subcontractors are engaged, they are tasked with more than just an inventory responsibility -- they're looking at what exists in the field and noting its location and other salient information about the measures. As an example, for lighting -- while in the field, these specialty subcontractors are likely to be responsible for measuring and recording lighting levels, noting the time and date and the instruments used for the measuring. This would also include things like room numbers and fixture locations. They may even install some sample fixtures to illustrate what the proposed new light levels and

light color temperatures might look like. This information could include proposed run hours for different space types. We can't stress enough the importance of having the owner verify, validate and have documented approval of the proposed fixtures or retrofits or what changes they'd like made. As the owner, you might even ask for a demo to be installed of the proposed new lights to help make the right decision.

Now that the ESCOs have completed most of their information-gathering it's time to pull out the calculators and come up with initial estimates of potential utility and utility cost savings for the proposed measures. And understand that now, the whole idea is to develop some credible estimates based on recommendations, their cost to acquire and install, and their potential cost savings. Those cost-savings numbers will be derived using the previously developed baseline utility information that was gathered from all the information provided by the owner. Both parties need to realize that at this juncture everything is preliminary – and these are just good faith estimates.

It should be noted here that the ESCO Community is good at this: Reconciling the loads, engaging the appropriate subcontractors to get the right information, and then searching out the end-use measures that may be a part of the scope of work to remedy long-term concerns -- while modernizing and making facilities more efficient.

Later, as the project is further developed, some measures may fall out as financially unviable to include, but initially it is important to include them all even if some may not save a lot -- they should be proposed for the owner to consider. The complete list of observations and potential measures is an important part of how the owner -- today or 5, 10, 15 years down the road look at these projects. Some measures will make the cut, and some won't. But it will always be important to note the activity and the decision making that forms the final project.

This is the time to make sure that must do projects are getting the attention needed as well.

After the initial preliminary look and analysis of estimated costs and estimated cost savings, the ESCO begins to assemble a preliminary package of energy conservation measures and facility improvement measures to present more formally to the owner. The ESCO will also introduce a credible but preliminary, sometimes called indicative financing interest rate to develop a first glimpse of what a multi-year performance contract may look like given the preliminary nature of their investigation to date. (Note that the final amortization schedules and finance cost must be provided by financial entities/authorities or registered municipal advisors and it is likely that most, if not all the cost and financial information will be slightly different in the final analysis.)

Now it's time for the ESCO and the owner to sit down and start the process of reviewing the preliminary findings; determining which measures to include and which must be eliminated in an elegant decision-making exchange intended to build the final Investment Grade Audit.

Again, having a 3rd party engineer as part of your team during this conversation would be valuable and highly recommended.

Combining previous experience and perhaps initial estimates from one or more of the proposed sub-contractors, the estimated preliminary pricing is put together. Keep in mind, the proposed measures in this proposed project would typically and hopefully be conservative from both the cost and savings aspects, and for good reason. If the ESCO is asked to move forward and do the final analysis on these proposed measures -- they want to guard against any negative surprises down the road, such as, "oh my gosh we overstated the savings here and therefore we can't include this measure." It is essential that the ESCO

and the owner agree during this phase that these costs and savings are indeed conservative and likely will improve should they move forward to the more finalized analysis.

This is open book pricing and as the owner you can see everything that the ESCO has put together. All the costs of subcontractors, material, markup, overhead, profit, etc. It is your responsibility to make sure you are getting the best price and not assuming the ESCO is looking after your best interest. You need to know yourself.

Of course, we hope that by now that the three years of utility data has provided a very accurate look at what utility rates are that can be impacted by this work, but when you start thinking about estimated pricing you really must think about what's included in the entire scope of the replacement of a device or systems. As an example, if you're looking at a chiller replacement, is it going to be the chiller, the pumps, and the cooling tower -- or just the chiller? Envisioning the entire scope of each measure, where the work starts and where it stops, is a big part of the estimating effort. This means that prices aren't totally accurate -- they just need to be reasonably close. The ESCOs experience along with that of their subcontractors are really shooting at a good rule of thumb estimate that they can apply for the costs of the work, to be considered along with a reasonable rule of thumb or better effort to estimate the savings.

It's also a critical time for the ESCO to gather input from the owner regarding subcontractors they may or may not want to consider for the project. The input and experience of the owner is paramount; who's provided high quality, good value work with good long-term support should be chief among those considered to fulfill this work.

Additionally, when these measures begin to get assembled it's an important reminder that no measure should be suggested to be a part of the project unless there's a preliminary concept on how to prove the

savings from that measure. This affords the ESCO the opportunity to include monitoring or measuring costs that go into the cash flow proforma and specifically requires a methodology for how to illustrate scientifically the measures achieve the avoided costs proposed. This should include not only the measurements to be taken and with which calibrated instruments and when, but the number of fixtures or devices that should be measured to illustrate with confidence the achievement of the guaranteed goal.

This brings us to an incredibly important topic: future escalation rates and how those will impact the future costs and utility cost savings for this project. This rate needs to be discussed here and agreed on before moving forward to the final level of analysis. We'll devote additional focus to the concept of rate escalations and their impact in another lesson.

Other issues such as preliminary commissioning plans, training, and warranty management should also be discussed now. It should also be clearly understood that once a project moves forward there will be no change orders to the contract. The scope of the work is bound by the calculated guaranteed cost savings avoidance; said another way, the utility and operational costs avoided and/or generated by the project -- that will pay for the entire scope of work. This is the very foundation of Energy savings performance Contracting.

But we should add that while all this information is preliminary as so stated, this is also a fundamental reason why --whatever is proposed by Energy Services Company should look like a fully defined project proposed as a guaranteed maximum price to fulfill. For state and local users, a guaranteed maximum price really is incredibly important so that if the labor costs or the material costs come in less than those projected, the reduction in costs must be passed along to the owner.

Conversely, if costs turn out to be greater, the owner is protected from and price increase.

And while projects paid for by savings (or costs guaranteed to be avoided) is a fundamental of energy savings performance contracting, you might be thinking about using some amount of capital contribution to the project. This is not allowed in NC.

When this important meeting is over, each party should walk away with a clear understanding of what additional study, analysis, information-gathering is required to move toward a fully developed project for consideration to proceed.

These meetings really are so very important. If they are under-emphasized or not held at all - the parties are likely not to be on the same page about which project measures to include and next steps. In these rare instances, this generally leads to an extension of the time, effort, and investment to come to a final project or in worst case, frustration or even termination of the IGA agreement. That's why following a guide like the ESC model documents is so critical for the success of all.

This wraps up the discussion detailing the early stages of IGA development. Future lessons will go a little deeper still in terms of the depth of analysis required to develop a final set of measures that fit all the owner's criteria both Technical and Financial.

Once you feel comfortable with the information above, please scroll down and complete the quiz below. Email your answers to Reid Conway at reid.conway@ncdenr.gov. If you have additional questions, feel free to include them as well.

Lesson 11 Quiz

1. Name some of the energy conservation measures that are traditionally considered for projects that can be easily integrated into a project.

2. Specialty subcontractors are likely tasked with more than just an inventory of existing devices. Name some of the things that they may also be tasked with.

3. True or False; there is no need for Owner's to sign off on decisions, choices or witnessed tests and sample approvals. Why or why not?

4. Name some considerations that go into the initial estimates for cost savings for a potential measure to be included in the project.

5. True or False; for state and local users of performance contracting, they can and readily do rely upon the financial interest rates provided by the ESCO to determine the cash flow and payback of the project?

6. Preliminary audit estimates should be quite conservative to eliminate surprises as the project continues to develop. Name some of the variables that the ESCOs will be estimating for the owner's consideration?

7. Name a great source for a list of subcontractors to consider for the project.

8. What is the value of a guaranteed maximum price to public sector owners?

9. The result of a preliminary findings meeting review should ultimately be?

Terms and Acronyms

3rd Party	3rd Party Engineer
COS	Council of State
DOA	NC Department of Administration
DPI	NC Department of Public Instruction
ECM	Energy Conservation Measure
ESA	Energy Services Agreement
ESC	Energy Services Coalition
ESCO	Energy Service Company could be interchangeable with QP
ESPC	Energy Saving Performance Contracting
GEPC	Guaranteed Energy Performance Contracting
GESPC	Guaranteed Energy Saving Performance Contracting
GS	General Statute
GU	Governmental Unit
IGA	Investment Grade Audit
IPMVP	International Performance Measurement and Verification Protocol
LGC	Local Government Commission (Housed in the Treasurer's Office)
LGU	Local Governmental Unit
M and V	Measurement and Verification
OR	Owner's Representative
OSBM	NC Office of State Budget and Management
PC	Performance Contracting
Pre-Bid	Meeting held prior to the bid opening
QP	Qualified Provider could be interchangeable with ESCO
QR	Qualified Reviewer
RFP	Request for Proposal
SEO	State Energy Office
UNC	Refers to the UNC System
USI	Utility Savings Initiative