

# Using Performance Contracts for Biosolids/Bioenergy Project Delivery

John Banks

Florida has a tool called the energy savings performance contract (ESPC) that can be used as an alternative project delivery method for many types of utility projects. An ESPC is particularly well-suited for innovative biosolids and bioenergy projects. The “energy saving” part of the name tends to throw people off in thinking that this contracting vehicle is only for a narrow range of project types; this isn’t true, however, as changes to the law now allow great flexibility in what can be counted towards the savings part of ESPC.

## What is an Energy Savings Performance Contract?

An ESPC is a contractual agreement between an owner and an energy service company (ESCO). This contract vehicle can be used by municipal utilities for infrastructure improvements and has several advantages over traditional procurement methods. The ESPC includes project scope development, design, construction, and postconstruction performance measurement of improvements to a municipal utility’s infrastructure. An ESPC is an alternative project delivery method—a turnkey service—and is similar to progressive design-build project delivery, with the additional feature of

an overall project financial performance guarantee.

In an ESPC, the ESCO, through project improvements, creates annual energy and operational cost savings, and/or provides the owner with the ability to generate new sources of revenue. These savings and revenue may be used to cover some or all of the cost of the infrastructure improvements.

As part of the ESPC, the ESCO typically provides a financial guarantee for the annual savings or new revenue created by the new infrastructure for the life of the contract; in Florida, the contract term can be up to 20 years. The financial guarantee helps to mitigate the owner’s financial risk. This financial guarantee is different from the performance guarantee that a product manufacturer provides, which ensures that its equipment meets a minimum output, result, or set of defined performance characteristics.

## Why Municipal Utilities Use Energy Savings Performance Contracts

The traditional design-bid-build model has been used successfully for many projects; however, successful projects require a very clear understanding of project definition and a very well-executed design phase. The traditional

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process has many opportunities to fall short of owner expectations.

The following are common reasons municipal utilities consider using an ESPC as an alternative to the traditional design-bid-build process:

- ◆ ESPCs create a single point of accountability for all aspects of the project.
- ◆ Poor experiences with the traditional design-bid-build process, including:
  - Lack of focus on project schedule
  - Inability to accurately determine and manage project price during design process
  - Lack of collaboration between design and construction team members
  - Legal liabilities created by owner’s design responsibilities
- ◆ ESPCs provide municipal utilities future budget and rate stability by actively managing the most price-variable aspects of the operating budget—utility, chemical, and biosolids disposals.
- ◆ ESPCs can create revenue resilience through services to new nontraditional customers, such as high-strength organic waste producers in the food processing industry.
- ◆ They minimize the procurement and management burden of numerous small projects by incorporating them into one major project (i.e., get more done quickly).
- ◆ They may utilize alternative financing methods that help minimize the impact of long-term capital debt.

## How an Energy Savings Performance Contract is Administered in Florida

In Florida, energy savings performance contracting is enabled by Florida Statute 489.145 – Guaranteed Energy, Water, and Wastewater Performance Savings Contracting.



For the Town of Niskayuna, N.Y., which was under a Department of Environmental Conservation consent order, ESG fast-tracked a three-phase project that addressed the consent order requirements, upgraded nearly every system of the treatment plant, expanded its capacity, and made it capable of achieving net zero energy. (photos: Haskell)



Originally enabled in 1994, the legislation has been updated several times to its current form.

A few key features of the legislation are:

- ◆ “Agency” means the state, a municipality, a political subdivision, a county school district, or an institution of higher education, including all state universities, colleges, and technical colleges.
- ◆ It allows for any measure that is designed to reduce utility consumption, reduce wastewater costs, enhance revenue, avoid capital costs, or achieve similar efficiency gains at an agency or other governmental unit.
- ◆ An ESCO must be selected in compliance with Florida Statute 287.055 –Consultants’ Competitive Negotiation Act (CCNA), except that if fewer than three firms are qualified to perform the required services, the requirement for agency selection of three firms, as provided in s. 287.055(4)(b), (shortlist), and the bid requirements of s. 287.057, do not apply.
- ◆ A facility alteration that includes expenditures that are required to properly implement other energy conservation measures may be included as part of a performance contract.

In summary, the ESPC rules in Florida allow for great flexibility in the types and scope of projects that can be developed. The request for qualifications (RFQ) used for selection of a firm does not have to specify the exact scope, allowing for the project to be defined during the project development phase.

### How Energy Savings Performance Contracts Compare to the Traditional Design-Bid-Build Process

When comparing the two processes, the major differences to consider are:

#### Single Point of Accountability

In design-bid-build, the owner will have multiple contracts to manage—at least one with an engineer for design and at least one with the prime contractor. Each of these will have multiple subcontracts. Each is only responsible for their own role, and when conflicts arise, each can blame the other for the error. Such conflicts are a repeated theme on many projects that require owner intervention.

With an ESPC, the ESCO is contractually responsible for both the design and construction, providing all of the services required to fully complete the project, from the initial conceptual design through construction



Town of Niskayuna, N.Y.



Aerial view of Frederick-Winchester Service Authority in Winchester, Va.

and long-term monitoring and verification of project performance. Thus, the ESCO is incentivized to resolve all conflicts within the project team. This provides the owner a single point of accountability for all issues related to the project. For example, if after start-up a piece of equipment does not perform to the level expected or needed, the ESCO will work with the original equipment manufacturer to replace or modify the equipment to the extent required. The ESCOs that develop long-standing relationships with manufacturers and suppliers are able to receive consultative serves from key providers for the ultimate benefit of the owner.

#### Improved Collaboration of Project Team

The design-bid-build process is inherently linear, can be slow, and is not structured for collaboration. For example, the engineer will independently create the project solution with

no input on constructability from the general contractor. Design decisions are typically made early in the process as part of the basis-of-design creation and, typically, are not revisited. Since the general contractor will not see the engineered drawings until they are 100 percent complete during the public bid process, any design flaws or hard-to-construct components of the project will result in a higher construction price for the owner.

The ESPC is an adaptive and responsive process removing the linearity of design-bid-build. In an ESPC, the owner has flexibility to adjust the scope of work throughout the design process until a final scope and price are developed and agreed upon. In addition, the ESCOs are early participants in the development process, improving a project's constructability, and therefore, reducing costs.

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This collaboration allows the owner to consider numerous project scenarios to determine which will best meet the overall project technical goals and financial constraints.

For example, a project can be developed in multiple phases, allowing for the most-critical issues, such as regulatory compliance, to be addressed in the initial phase, while features providing for savings and new revenue are addressed in a later phase.

### **Selection of Equipment and Contractors**

In the design-bid-build process, if the owner wants a particular brand of equipment, they usually need to write a very tight specification that only that brand can meet, attempt to sole-source it (often at a price premium), or hope it's the lowest price provider.

In an ESPC, the owner meets the procurement obligation through the competitive selection of the ESCO. After the selection, the owner can provide direction to the ESCO on preferred equipment brands and contractors who have done quality work for them on previous projects.

The ESCO ensures competitive pricing in order to get the equipment it wants. The ESCO can require that multiple equipment providers and contractors compete for the ESCO's subcontracted work if required by the owner.

### **Transfer of Design Risk to Create Construction Price Certainty**

In the design-bid-build process, the owner hires an engineer to create a 100 percent complete set of engineered drawings and technical specifications for a project. Then, through the public bidding process, the owner provides these drawings and specifications to interested contractors to obtain price bids, with the lowest responsible bidder being selected. In this process, the owner is deemed by law to

impliedly warrant that the plans and specifications are both accurate and suitable for their intended use.

Typically, design problems are identified after the low-bid contractors have been selected. Since the owner is responsible for any problems with the design as they relate to the construction contract, these result in costly change orders for the contractor. This is how cost overruns occur in traditional construction.

In an ESPC, the engineer is a subcontractor to the ESCO and is not under contract directly to the owner; therefore, the owner's risk of costly change orders due to design problems is now eliminated because the implied warranty of the design's accuracy and suitability is transferred from the owner to the ESCO and its subcontractors. The owner can now negotiate a construction scope and price with the ESCO, knowing that the agreed-upon price will not increase unless the owner makes a substantial change to the work scope (like requesting that additional equipment be installed).

### **Warranty and Performance Guarantee**

At the end of a design-bid-build process, the contractor will have short-term start-up responsibilities for equipment and will typically provide a one-year construction warranty. Specific manufactured items may have a longer warranty.

In an ESPC, the ESCO provides these warranties as well; however, ESCOs also provide a long-term financial performance guarantee: the savings produced by the project will be sufficient to cover the cost of project financing for the life of the project. This provides a powerful incentive for the ESCO to ensure all components of the project perform as intended. Providing this financial guarantee is one of the biggest differences between a typical general contractor and an ESCO.

### **Services Beyond Engineering and Construction**

The design-bid-build process is strictly focused on the engineering and construction of a project. In an ESPC, the ESCO may offer a variety of additional services than those required to design and construct. Communication strategies regarding the needs and benefits of a project, via materials such as project-focused websites and fact sheets, may be offered. Equipment maintenance, staff training, and other ongoing support services may also be included in an ESPC. The ESCO, via the ESPC, has the ability to offer a variety of services that can help the municipal utility achieve its goals.

## **Summary**

When considering the utilities of the future, where new services and new ways of doing business need to be considered, the ESPC project delivery model translates very well to providing public utilities with the flexibility to execute new concepts and approaches. Florida has a rule that allows great flexibility and financial backstops that utilities need for developing new and innovative programs, which further advances financing and alternative revenue flexibility beyond traditional solicitation types, where ratepayers carry the full burden. High-strength organics waste, biosolids management, renewable energy, energy resiliency, and operation services and alternative financing options, like a public-private partnership, all come into play.

This is being done in other parts of the United States. Codigestion projects, for example, have been developed for public utilities using ESPCs. These projects have successfully provided for financial stability in organizations previously facing difficult outlooks without this option. Furthermore, since the ESPC is essentially a progressive design-build contract, most funding organizations will recognize the selection of an ESCO as a "shovel-ready" project, ready to proceed without any additional solicitation actions by the owner.

The ESPC, as an alternative project delivery approach, is in itself a catalyst providing utility managers options to select business partners that advance and balance the mission-critical requirements of the evolving public utility. These partners are able to look at the changing markets around the utility to evaluate revenue and savings opportunities across preconceived or traditional municipal boundaries. It can go much further, however, as business partners can offer competitive analysis of the market and will provide competitive alternatives that ensure an achievable return on investment. The more-advanced partners will manage the risk and have a stake in the game by guaranteeing the expected result. ◇



Frederick-Winchester Service Authority.