



Using ESPC to Implement Energy Master Plans for Resilient Public Communities

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How is an Energy Master Plan Implemented?

- Once an Energy Master Plan (EMP) is developed – how is it implemented?
 - EMP can be implemented in steps over several years
 - Appropriated Funds – budgeted each year
 - Fixed Payments to a utility or as a property tax addition until each project is paid for
 - EMP is implemented in a single step or a few steps
 - Energy Savings Performance Contract (ESPC)
 - EMP is paid for by guaranteed energy savings
 - The Energy Services Company (ESCO) and the customer share the risks
 - Utility Energy Savings Contract
 - Similar to an ESPC – contract is with a utility who implements the EMP
 - Most often an ESCO performs this work on behalf of the utility
 - Energy savings may be guaranteed
 - EMP can be implemented with a combination of ESPC or UESC with single or multiple capital payments in addition to the energy savings (aka Blended Funding)
- The focus here will be on using ESPC to fund and implement projects

ESPC's bring Private Funding to EMP Implementation

- ESPC's implement EMP's (in whole or part) by developing and implementing Energy Conservation Measures (ECM's)
 - These ECM's develop a savings stream for the life of the project (<= 25 years)
 - These savings are used to implement the EMP
 - Some ECM's generate more savings than others – requiring “bundling” of ECM's to implement an EMP
- The ESCO manages the design and construction of the ECM's
 - The ESCO manages the day-to-day project with guidance from the customer
 - The ESCO guarantees that the energy savings will be available each year
 - Should there be a short fall in savings, the ESCO will make-up the difference in cash
 - The customer and ESCO review the savings each year of the contract
 - The ESCO will help to arrange financing for the ECM's
- Because the financed amount is paid for via energy savings guaranteed by the ESCO, an ESPC is considered to be budget neutral
- Where do the savings come from?

ESPC Energy Savings come from a variety of sources

- Avoided capital expenditures
- Avoided Operations and Maintenance costs
- Incentives and rebates from a utility or a state/municipal government
- Avoided losses by enhancing resiliency
- Utility or Independent System Operator (ISO) programs
 - Demand response programs – reducing campus power demands when called on to do so
 - Demand curtailment – like demand response but for longer durations
 - Frequency regulation – inject or absorb power over very short durations – on the order of seconds or at most a few minutes
 - Wholesale energy market – use generation assets to provide power to the utility grid
- Energy savings produced by new equipment or energy control computer programs
 - Energy savings – reducing kWh
 - Power savings – reducing kW when there is a demand charge
 - Natural gas/fossil fuel savings
- Water savings

How is an EMP Accomplished using an ESPC?

- The EMP is the Requirements Document for the ESPC
 - The EMP is the roadmap for where customer wants to be from an energy usage standpoint
 - The customer and the ESCO work collaboratively to achieve this vision
- The customer and the ESCO develop the project together
 - The ESCO evaluates the campus – this is the “as is” state
 - Establishes an energy baseline – how much energy is used where
 - Evaluates each system and potential energy savings associated with upgrades/replacement of equipment or processes
 - The ESCO presents the “as is” state to the customer
 - Jointly develop a project that can be financed from energy savings
 - ESCO develops 30% design
 - Customer/ESCO develop the financing approach
- ESCO constructs and commissions all ECM's
- Savings are verified annually via the Measurement and Verification process

ESPC's are an Excellent way to Implement an EMP

- ESPC's are budget neutral project(s) that are paid for via guaranteed savings
- ESPC's can have multiple phases
- ESCO's manage the projects – customer's staff oversees these efforts
- Guaranteed savings come from a large variety of sources
 - Not all projects will be able to utilize all savings streams
 - Each project is unique
- Creativity by the customer and the ESCO is necessary to fully implement an EMP
 - Savings stream
 - Financing method(s)
 - ECM's
- Consider the Entire Project – not just ECM's.
- The Customer and the ESCO need to ask – **does the project meet the EMP vision?**