



# Using ESPC to Implement Energy Master Plans for Resilient Public Communities

October 16, 2020 | Bill Taylor – ESG



# 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?**