Special Session 2: UESC Technical Project Focus

Hosted by:

FEMP
Federal Energy Management Program

SDGE
A Sempra Energy utility
Performance Focused Project Development

Deb Vasquez

National Renewable Energy Laboratory
Agenda

• Introductions

• Performance-focused project development
  – Performance planning for UESC
  – UESC Project Development Report Template
  – Discussion part I

• eProject Builder for UESC
  – Discussion part II
Performance-Focused Project Development

- Gap analysis
  - Infrastructure
  - O&M staffing, knowledge, and skills

Initial project scope

- Energy conservation measure (ECM) designs
  - Baseline
  - Engineering
  - Operating strategy
  - Performance metrics

Design

- ECM subplans
  - Design
  - Training
  - Commissioning (Cx)
  - Operations
  - Maintenance
  - Recommissioning (rCx)

Performance plan
Develop a Performance Plan

Agency develops performance requirements
- Identify performance gaps
- Task Order (T.O.) language specific to performance
- Ensure final performance plan meets T.O. requirements

Utility develops an actionable performance plan addressing:
- Energy conservation measures (ECM) designs
- Comprehensive performance training
- Commissioning (Cx)
- Operations
- Maintenance
- Recommissioning (rCx)
Develop a Performance Plan, Continued

Subplans

1. Design – sufficient detail, accurate baseline, operating strategy, performance metrics
2. Training – comprehensive, long-term performance focused
3. Commissioning (Cx)*
4. Operations as specified in design
5. Maintenance – essential to sustaining performance
6. Recommissioning (rCx)*

* Actionable procedures, schedules, and worksheets for measuring, verifying, adjusting, and documenting actual performance.
FEMP Resource: Performance Assurance Planning

Agency and Utility teams use this resource to

• Discuss performance needs e.g. gaps in knowledge, experience, staffing
• Discuss plan expectations, establish requirements, and agree on deliverables

Task Order Language

Develop task order (T.O.) language to

• Effectively describe performance plan requirements and deliverables

• Ensure plan is actionable, achievable, and inclusive of all requirements

• Ensure ECM designs include operating strategy, performance metrics, and accurate baseline
Task Order Language, Continued

• Require the performance of each ECM be “measured, verified, tuned, and documented” through commissioning

• Require comprehensive and performance-driven training
  – Require ECM-specific training to be comprehensive and detailed based on the complexity of the ECM
  – Require O&M manuals, Cx and rCx protocol, worksheets, report template, with ECM-details
Task Order Language, Continued

Performance plan implementation in two parts:

• Part 1: Project development
  – Preliminary assessment through project acceptance
  – Agency responsibilities
  – Utility responsibilities

• Part 2: Assuring performance
  – Project acceptance through the performance period
  – Agency responsibilities
  – Utility responsibilities
Performance-Focused Task Order (T.O.)

- **Performance plan**
  - Plan Lead
  - Project- and ECM-specific
  - Subplans
  - Implementation responsibilities

- **Preliminary assessment (PA)**

- **ECM designs**
  - Level of completeness
  - Must include operating strategy and performance metrics

- **Investment grade audit (IGA)**

- **ECM subplans**
  - Design
  - Training
  - Commissioning
  - Operations
  - Maintenance
  - Recommissioning

Federal Utility Partnership Working Group
May 2-3, 2019  San Diego, CA
Implement the Performance Plan – Part 1

**Agency**

- Ensure installation, comprehensive training, and Cx meet T.O. requirements

**Utility**

- Install each ECM
- Provide comprehensive performance-driven training
- Prove performance of each ECM through Cx
- Document results in Cx report and ePB
Implement the Performance Plan – Part 2

**Agency**

- Agencies are responsible for operating, maintaining, and assuring ECM performance

**Utility**

- As agreed to and stated in the T.O., provide the following during performance period:
  - Warranties
  - Performance services
Implement the Performance Plan – Options

Agency options for implementing performance services:

• Agency – self-implement: the Agency implements performance period services

• Utility – include in the UESC T.O.: ECM-specific services as written in the T.O. for installation

• Services contractor – issue a separate services contract: select the ECMs, the services, and the duration of the contract
Assuring Performance

- **Installation**
  - Install ECM
  - Functional test
  - Performance training
  - Commissioning (Cx)

- **Acceptance**
  - Cx report
    - Actual performance meets or exceeds design performance

- **Performance period**
  - ECM performance
    - Operations
    - Maintenance
    - Recommissioning (rCx)
Invest in Performance

Cost of implementing the performance plan, conceptual
FEMP Resource: UESC Project Development Report Template

Agency and Utility teams use this resource to discuss, establish, and document the following:

• Project objectives, requirements, and deliverables
• Establish report format to improve comprehension and decision-process
• Reduce project development time

https://www.energy.gov/sites/prod/files/2019/02/f60/uesc_proj_dev_draft.docx
Preliminary assessment (PA)

• Discuss and clarify project scope
  – Sites, buildings, systems, equipment
  – Agree upon design completeness (15% - 25% is standard for PA)
  – Cost estimate

• Edit summary tables
  – Use notes to assist understanding (e.g., “will be provided in IGA”)
  – Agency to determine ECM priority ratings
  – ECM equipment life to inform decisions (e.g., obtain funding to meet top priority, long payback measures)
Report Template Application – IGA

Investment grade audit (IGA)

• Agency to select PA ECMs to be included in IGA
• Agree on design completeness (35%-85% is common for IGA)
• Pricing is based on competitive bids from ECM subcontractors
• Financing terms from 3 or more financiers
• Summary tables supported with detailed and open book information
Discussion: Performance Planning

What might we add or change to improve performance planning?

The performance planning subplan categories:

1. Design with baseline, operational strategy, performance metrics
2. Comprehensive performance-driven training
3. Commissioning (Cx)
4. Operations
5. Maintenance
6. Recommissioning (rCx)
7. Performance Period services as negotiated and stated in the T.O.
Discussion: Report Template

What might we add or change to improve decision support?

• Report format
• Technical scope
• Financially fair and reasonable
Thank You

Deb Vasquez
FEMP UESC Team, SME
National Renewable Energy Laboratory

deb.vasquez@nrel.gov