Phase 4: Implementation
Design – Construction – Acceptance

National Renewable Energy Laboratory
## Milestones in the ESPC Process

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Phase 4: Implementation

Project Implementation – Design, Construction, Project Acceptance

1 – 2 years or longer

Post-Award Conference

Project Design and Review
- Final Project Design
- Design Submittals
- Agency review and approval
- ESCO provides insurance and bonds

Notice to Proceed with Construction

Construction, inspections, documentation, training*

Commissioning and Post-Installation M&V*

Acceptance of installed project

Phase 5: Post-Acceptance Performance

Up to 25 years including construction

Key
- Agency Action
- ESCO Action
- With Agency Participation/Oversight
Post-Award Conference

• Participants
  – Agency —
    CO, COTRs, inspectors, others on acquisition team
  – ESCO —
    Project manager, design, construction, commissioning, M&V, and performance-period services personnel

• Purpose
  – Review roles, responsibilities, expectations, timelines, and communication protocols
  – Review schedules for design, construction
  – Establish protocols for site access and submittal review
Submittals
(per IDIQ § C.5 and TO RFP)

• Design and construction submittals
  – Designs, drawings, installation plans
  – Manufacturer’s cut sheets for actual equipment to be installed
  – Construction schedule

• See Sample Deliverables for Task Orders, Attachment J-4 of IDIQ
Design Review

• Agency reviews and verifies:
  – Compliance with requirements in TO
  – Design clearly addresses ECM interfaces with existing equipment
  – Drawing particulars are in compliance with TO

• FEMP ESPC team reviews for advanced technologies
ESCO’s submittals constitute requirements of the contract after acceptance by agency

• Acceptance of submittals does not relieve ESCO of responsibility to meet facility standards of service and deliver guaranteed cost savings (IDIQ C.5.1.A).

• ESCO may not deviate from approved submittals.
  – If deviation is required, the deviation must be approved by the Contracting Officer prior to installation.
Notice to Proceed with Installation

• CO issues notice AFTER:
  – ESCO provides
    • Acceptable performance and payment bonds (as required)
    • Insurance certificates
  – Agency approves
    • ESCO’s designs and construction plans
    • Related submittals
Phase 4: Implementation

- Project Implementation – Design, Construction, Project Acceptance
  - 1 – 2 years or longer
  - Post-Award Conference

- Phase 5: Post-Acceptance Performance
  - Up to 25 years including construction

Key
- ★ Agency Action
- ☐ ESCO Action
- *With Agency Participation/Oversight

Project Design and Review
- ☐ Final Project Design
- ☐ Design Submittals
- ★ Agency review and approval
- ★ Notice to Proceed with Construction

☑ Construction, inspections, documentation, training*
- Commissioning and Post-Installation M&V*
- ★ Acceptance of installed project
ECM Installation Activities

- Agency verifies proper ECM installation per TO requirements and approved submittals
- Agency monitors ECM installation activity
- Agency witnesses ECM commissioning and M&V activities
- FEMP ESPC team is available for support on advanced technologies
Agency Post-Installation Inspections and Verifications

• Agency verifies receipt and reviews:
  – As-built drawings in format specified in TO
  – O&M manuals & related O&M procedures
  – Spare parts lists and provided spare parts
  – Manufacturer warranties
  – ECM training materials & proposed schedule
  – Commissioning report
  – Post-installation M&V report
COR Post-Installation Activities

- Verifies completion of construction punch list items
- Verifies resolution of any ECM performance deficiencies
  - FEMP can help with resolution of performance issues
- Verifies that any revised post-installation submittals are acceptable
- Coordinates agency staff training with ESCO
- Coordinates inspections of rebate-related ECMs with ESCO and utility
Commissioning Report (IDIQ § C.5.4)

• Agency review of report should verify:
  – ESCO compliance with Commissioning Plan
  – Commissioning results meet or exceed design intent and facility performance requirements
  – Any seasonal testing to be required at later date
    • Example: Chiller performance test if ECM installation is completed before summer peak loads
Agency Reviews Post-Installation M&V Report

- Agency verifies ESCO compliance with M&V Plan, and that:
  - Energy and O&M baseline data is consistent with agreed-upon baseline conditions
  - Energy rates for first year of performance period are as specified in TO
  - Installed ECMs have the potential to meet or exceed the guaranteed annual cost savings

- FEMP ESPC Team also reviews Post-Installation Report
Phase 4: Implementation

**Phase 4:**
Project Implementation – Design, Construction, Project Acceptance

- 1 – 2 years or longer
- Up to 25 years including construction

★ Post-Award Conference

**Project Design and Review**
- Final Project Design
- Design Submittals
  - ★ Agency review and approval
  - ★ ESCO provides insurance and bonds

★ Notice to Proceed with Construction

- **Construction**, inspections, documentation, training *
  - Commissioning and Post-Installation M&V *

★ Acceptance of installed project

Key
- ★ Agency Action
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Federal Energy Management Program
femp.energy.gov
Acceptance of Project Implementation – After All Post-Installation Submittals Are Approved (IDIQ § E.3)

• CO provides written notice of acceptance to ESCO
  – Confirms project complies with all TO requirements
  – Advises that ESCO may submit first invoice
  – Begins the performance period

• Early acceptance of individual ECMs saves on interest costs (IDIQ § E.3)
  – ECMs completed early in implementation period
Handling Changes During Implementation Phase

• Variances between design and as-built installation
  – ESCO and agency should track changes
  – Changes and energy impacts should be documented in Post-Installation Report

• Preferred: Handle changes so that no revision of TO schedules or financing structure are required

• Timely negotiations preserve the project schedule
Prepare for Contract Administration

• Follow your Contract Management Plan – This is the plan that ensures continuity of contract administration as individuals come and go
  – Prepare Plan at TO award
  – Follow the plan or modify during design/construction and after project acceptance

• Maintain all ESPC project documents — especially M&V and commissioning data and O&M manuals and training materials
  – Audits, turnover, …
Q1: How is the ESPC construction process different from conventional design-building construction?
A: Commissioning and post-installation M&V are required by contract.

Q2: Do the ESCO’s submittals (designs, drawings, etc.) constitute requirements of the contract?
A: Yes.

Q3: What is the main M&V-related activity during the construction period?
A: Post-installation M&V activities and report.
Q4: Name two post-installation ESCO submittals related to O&M.

A: O&M manuals & related O&M procedures
   Spare parts lists and provided spare parts
   Manufacturer warranties
   ECM training materials & proposed schedule