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# A River of Energy Solutions

**ENABLE – helping to implement energy and water efficiency projects at small federal sites**

Ab Ream

Federal Energy Management Program

# ENABLE

- ENABLE is not an acronym, it's a verb, meaning "to make possible or easier"
- ENABLE is a brand new approach currently under development that will provide a streamlined process for feds to get their energy and water projects implemented
- ENABLE is intended for smaller sites and relatively straightforward ECMs

# Defining The Need

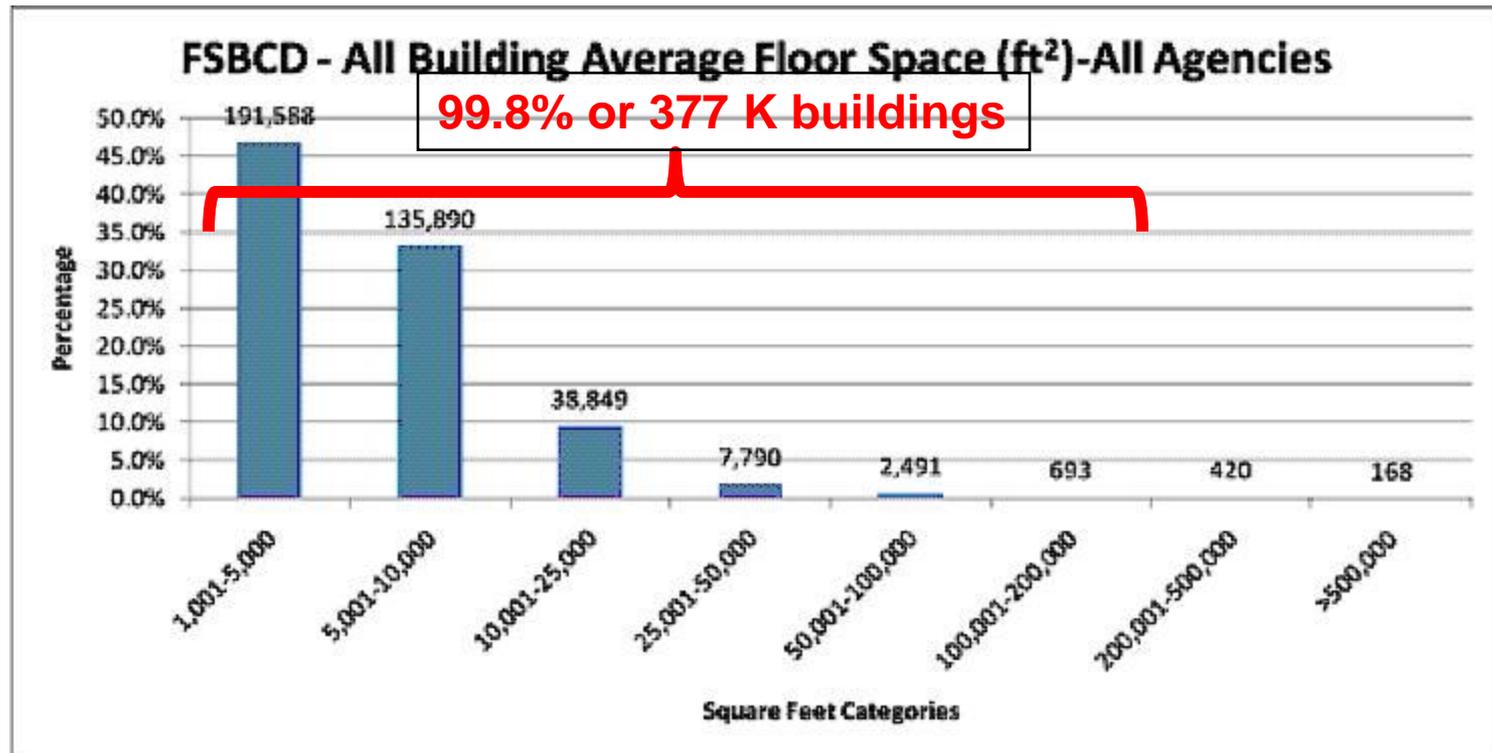
- Requirements for increased federal energy and water efficiency as well as reduced greenhouse gas emissions and sustainable federal facility operations have increased substantially over the past few years.
- Requirements are most likely to become even more challenging in the years to come.

# The Impact of EISA Audits

- The requirement to perform energy audits on “covered” federal facilities will result in about 20-25 thousand federal building audits per year for the foreseeable future
  - This effort will result in tens of thousands of additional ECMs every year for feds to implement.
- The requirement to commission existing buildings wherever deemed to be practicable will be significant.
- FEMP estimates that feds need to invest about \$1 billion per year, every year, just to meet existing energy reduction goals.
  - The vast majority of these ECMs will NOT be funded by appropriations.

# Potential Market for ENABLE

About 99.8 % of federal buildings are under 200,000 sq.ft.



Source: Federal Site Building Characteristics Database of 377,889 buildings

# Potential Market (cont'd)

- About 3 billion sq.ft. of federal building space is spread over 15,000 sites and nearly 380,000 buildings
- There are 244 federal campuses over 3 million sq.ft. with ~250,000 buildings and 1.7 Billion sq.ft.
  - These larger sites may be better candidates for ESPCs to some extent, but certainly not 100%
- A percentage of the larger sites plus all remaining facilities would be good candidates for ENABLE

# Potential Market (cont'd)

- So, we're left with about 130,000 buildings totaling about 1.5 billion sq.ft. that would be the most likely target market for ENABLE, plus perhaps 50% of the large facilities, or .85 billion sq.ft. for a total of about 2 billion sq.ft.
- At an average annual energy expense of \$1.50 to \$2.00 per sq.ft., these buildings account for \$3 – \$4 Billion annually in energy expenses.
- If ENABLE's goal is to capture 10% to 20% savings on average with projects in the 5-10 year simple payback range, then we need to facilitate a total of
  - **Up to \$8 Billion in projects, tune-ups and retro-Cx**

# Potential Market (cont'd)

- The previous analysis, of course, assumes that ESPC/UESC will provide 50% of the needs of all federal facilities over 3 million sq.ft.
- In reality, based on the history of and future prospects for ESPC/UESC, even 50% of the needs of even the larger facilities may not be met through those funding methods.

# But - Where's the Money?

- Under the foreseeable political/budget climate, appropriations for all federal facilities operations and maintenance and capital investment will actually be going DOWN.
- Without appropriations federal agencies are facing a huge dilemma: how to comply with all of these mandates when the Congress provides no resources with which to accomplish anything?

# Existing Options

- The **Energy Savings Performance Contract (ESPC)** has made significant inroads, but:
  - The process of developing ESPCs is long, cumbersome, and expensive
  - Energy Services Companies (ESCOs) who do ESPCs, understandably, do not want to take on small projects because of the time and expense involved.
    - However, they would welcome the opportunity under a streamlined approach
  - Further, agencies with limited staff and contracting expertise are not well positioned to enter into ESPCs.
  - Small ESPCs are not necessarily any easier, faster or less expensive to develop than large ones for so-called Super ESCOs, and so they tend to pursue projects over \$4-5 million at the larger federal facilities or groups of facilities where such projects exist.

# Existing Options (cont'd)

- **Utility Energy Services Contracts**, while a viable option, are available to feds on a somewhat limited basis, with only a relatively small number of utilities offering them to federal facilities.
  - When and where available, UESCs are generally seen as more attractive than ESPCs due to the less complicated development process.
- **Power Purchase Agreements** are becoming more popular, but are used primarily for renewables projects.
  - Not necessarily easy or straightforward process.
- **Enhanced Use Leases** are highly specialized deals and not seen as a wide-scale funding method
- There are a number of other means of acquiring financing for federal projects, including some state programs and utility rebate/incentive programs, but again, these are limited in nature and don't even begin to fill the federal need on a mass scale.

# Utility Benefits

- In 2008, utilities offered more than \$3.1 billion in rebates and incentives for energy efficiency and approximately \$500 million for demand response programs. Incentives vary but may include:
  - Free energy audits
  - Rebates for efficient lighting or heating, ventilation, and air conditioning (HVAC) control systems
  - Reduced costs for any number of efficient or renewable technologies
  - Water conservation incentives

# The Desired State

- DOE/FEMP is interested in developing a method of financing that would:
  - Be targeted to buildings under 200,000 s.f. and/or projects under \$5 M capital investment (not including finance costs)
    - Excluding projects within larger campuses over 3-5 million s.f. that would be better candidates for ESPCs or UESCs.
  - Provide a streamlined and highly automated process that leads to project construction starts within three to six months of initiation
  - Be used to finance a select category of pre-defined and straightforward projects, including retrofits, repairs and replacements and existing building commissioning and O&M opportunities, with simple paybacks under 10 years
  - Be attractive to financiers on a wide scale
  - Include basic levels of M&V for all ECMs to demonstrate energy and water savings and to comply with EISA reporting requirements.
  - Promote ESCO and Utility participation at all levels

# Many Benefits

- Energy and Water Savings
- Dollar Savings
- Greenhouse Gas Reduction
- Small Business Jobs
- More Utility involvement
- Broader ESCO participation
  - Large and small business opportunities

# Possible Short List of ECMs

- ECMs covered under ENABLE would be those that:
  - Require minimal engineering/design
  - Don't require extensive M&V beyond project acceptance, such as:
    - Lighting
    - Water retrofits
    - Controls
      - Programmable T-stats
      - Motion/occupancy sensors
      - Daylighting sensors
    - Pump/motor replacements
    - Retrofit packaged units
    - Vending machine economizers
    - Storm windows
  - O&M, tune-up or Cx efforts with low cost and very short paybacks.

# Meeting the Need

- How to meet our need for energy/water/sustainability project financing?
  - Provide a fast track process for feds to get projects reviewed, approved and in the ground as quickly as possible while maintaining technical, legal, contractual, and financial integrity. This would include:
    - Procedures to go directly from EISA energy audits to funding methods.
    - Ensuring that EISA audit recommendations are implemented as soon as possible
    - A ready source of financing for qualified ESCOs
    - A maximum six month cycle time from initiation of request by an agency to a signed contract with an ESCO.

# Meeting the Need

- Special consideration for O&M and retro-commissioning opportunities with simple paybacks of less than one year.
- Standard contract terms and procedures for common ECMs – automated electronic submittals.
- Simplified and standardize M&V/acceptance procedures
- Rely on existing statutory authority for third party financing
- Use existing contracting vehicles such as DOE or Huntsville ESPC, GSA schedule, BOAs and area wide contracts
- Make the maximum use of small business ESCOs

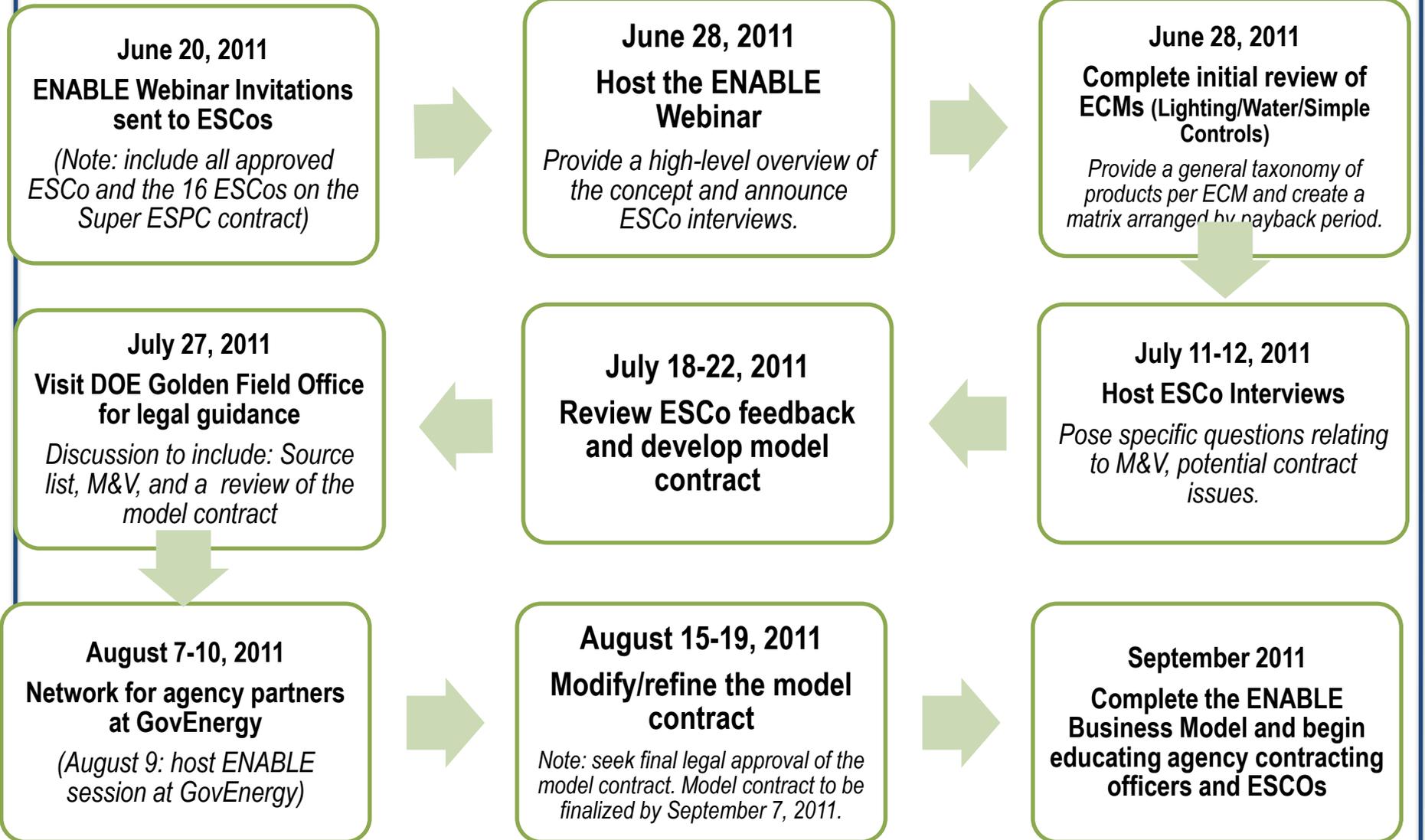
# Proposed Outcomes

- Pre-qualified lists of ESCOs (large and small) ready and able to assist federal facilities with:
  - Energy and water audits
  - Renewables assessments
  - Completion of ECMs, including
    - Retrofits, repairs and replacements
    - Building tune-ups
    - Testing and balancing
    - Existing building commissioning
    - Ongoing commissioning
    - ESPC retro-commissioning M&V services

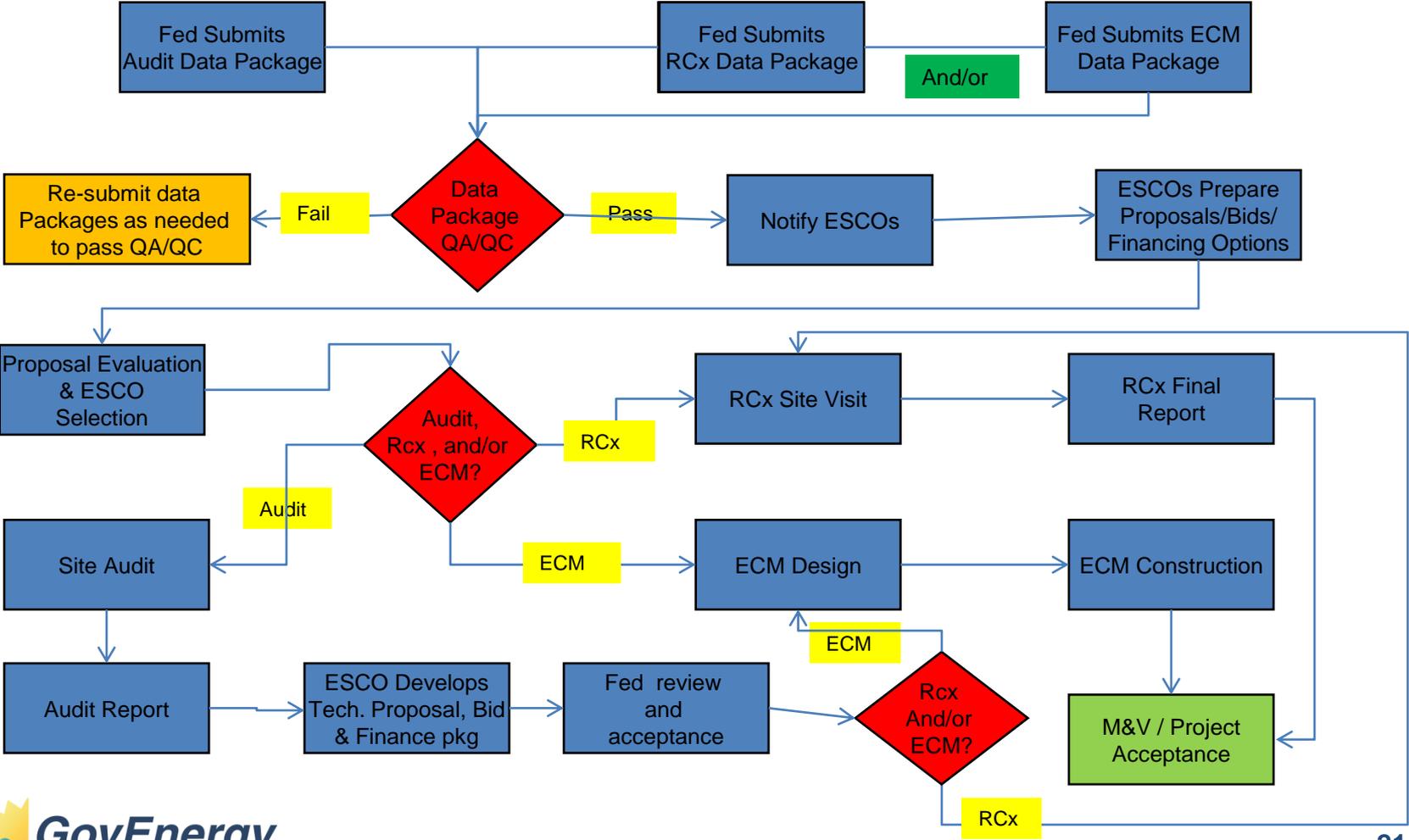
# Proposed Outcomes (cont'd)

- A well-defined, highly automated and simplified process (less than 6 months) for federal agencies to use to accelerate the process from audits/assessments to project completion.
- A simplified M&V strategy that will assure compliance with EISA performance tracking requirements.
- A ready source of small business financing for projects up to \$5 million
- An on-line application process that manages the critical path and tracks each project from cradle to grave in accordance w/EISA

# ENABLE Timeline



# ENABLE Process Flow Chart



# Next Steps

- Short Term – by September 30, 2011
  - Develop business model and prototype based on three ECMs:
    - Lighting
    - Water
    - Controls
- FY 2012
  - Expand to other ECMs as appropriate
  - Roll out to federal agencies

# Thank You!

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