Looking Beyond The Audits

What's Next With this Kaleidoscope of Data?

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Federal Utility Partnership Working Group
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FEMP Federal Energy Management Program

SOUTHERN CALIFORNIA EDISON

Overview

I. Mandates, Executive Orders, Requirements
II. Challenges
III. Solution/Options
IV. Questions

Mandates, Proposed Rules, Executive Orders

- EPA 1992
- EO13221
- EPA2005
- EISA2007
- EO13693
- OASD's March 31, 2016 Memorandum on Installation Energy Plan

Requirements by Sustainability Goal

Building Energy Use

Energy-Efficient Product Purchasing

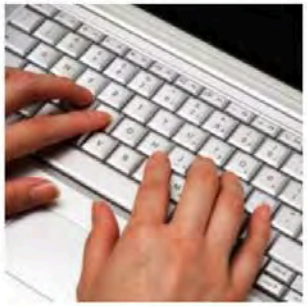
Fleet Management

Greenhouse Gas Reduction

Pollution Prevention and Solid Waste

Project Financing

Renewable Energy Use



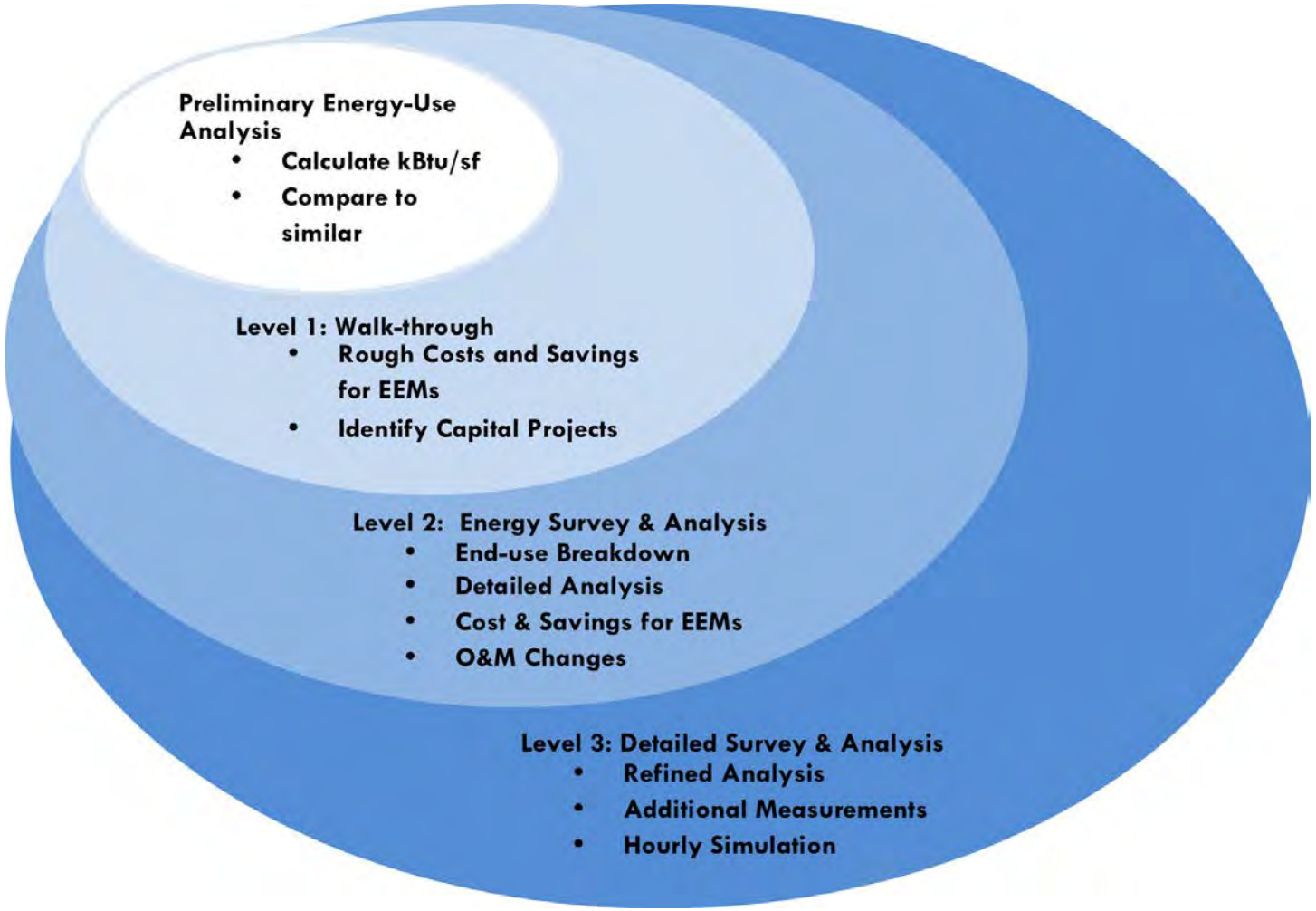
Reporting and Planning

Specialty Facilities

Water Efficiency

www4.eere.energy.gov/femp/requirements

Audit Levels



Typical Audit Deliverables

- ECM Matrix – Hopefully Prioritized
- Report of Findings
- ECM Scope Descriptions (most likely brief)
- Rough Order of Magnitude Cost Estimate

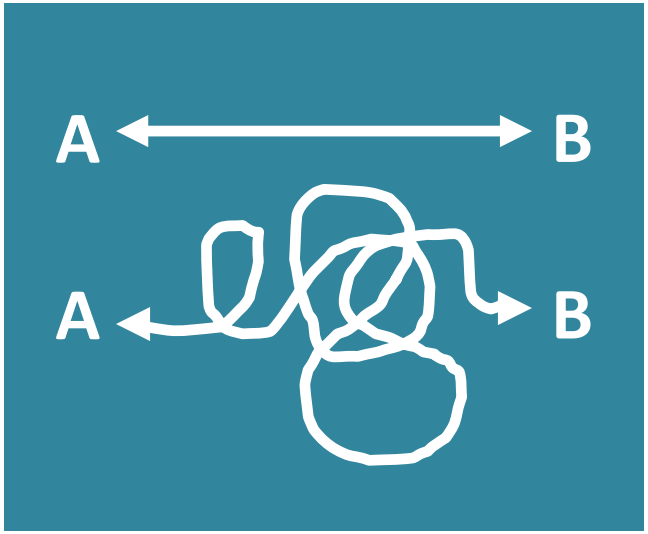
Traditional data is stored in:

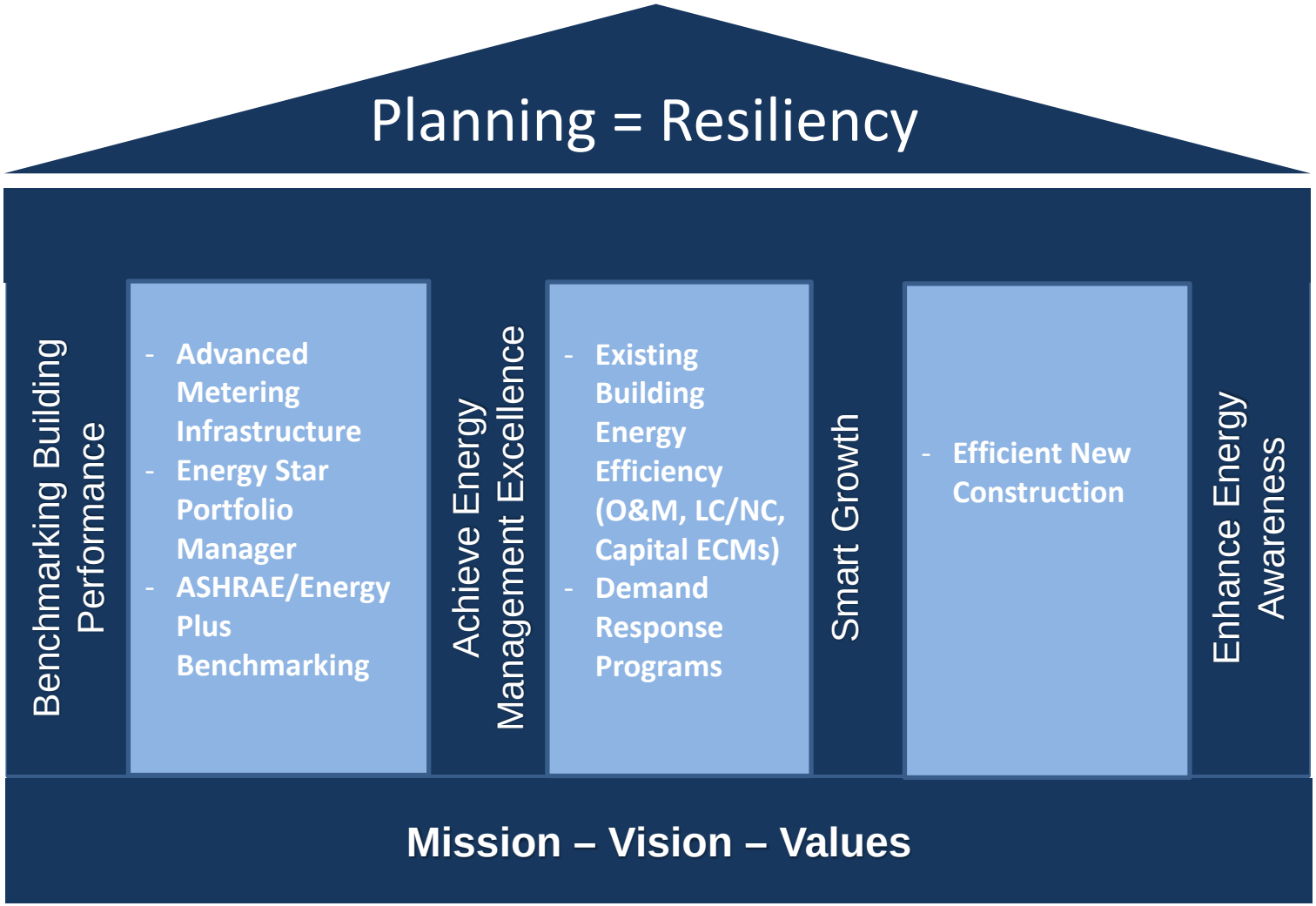
- Binders
- Spreadsheets
- Hard Copy Reports

Project Execution can take years.

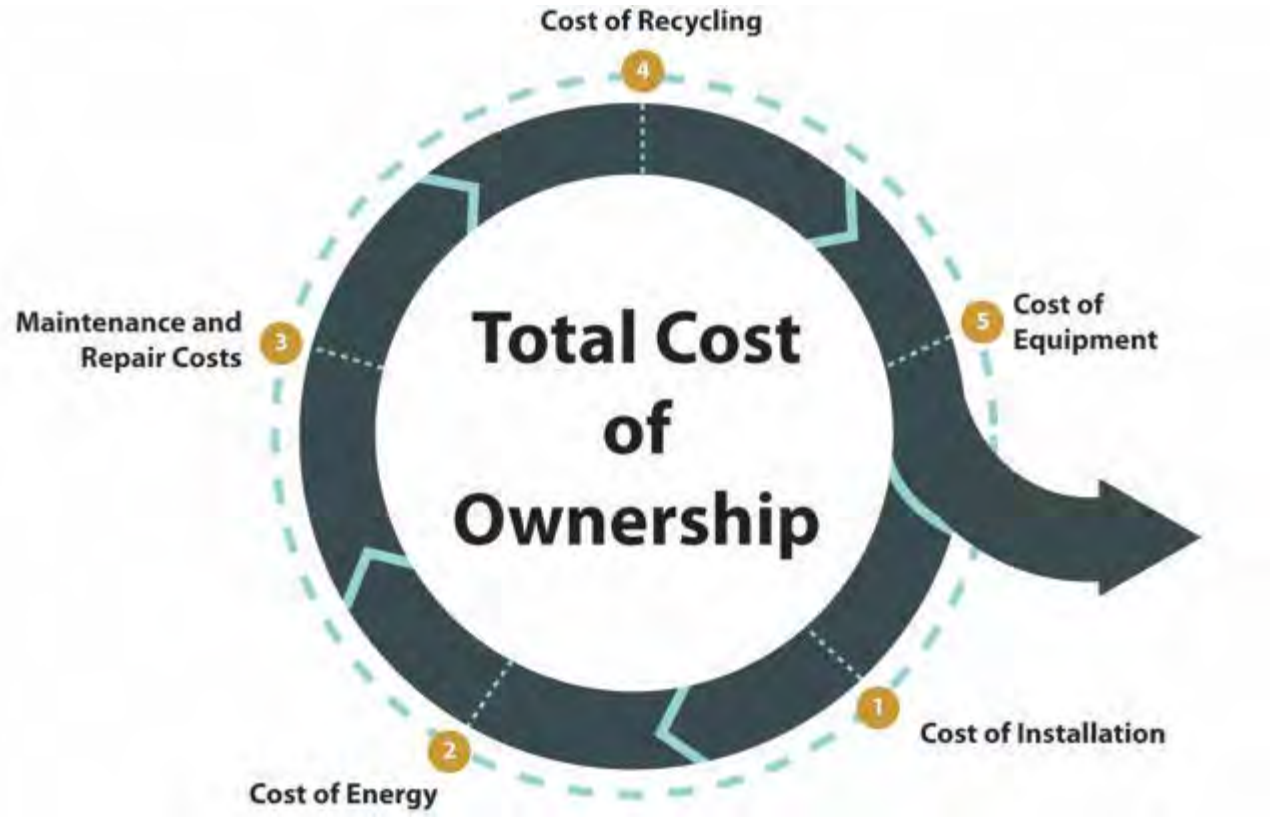
Challenges: Implementation

- No Roadmap to get from Point A to Point B
- Metering/Cybersecurity Challenges
- Funding Competition
- Budget Constraints
- Lack of Team Continuity
- Other ongoing non-energy projects
- Burdens on project programming and execution
- Delayed results

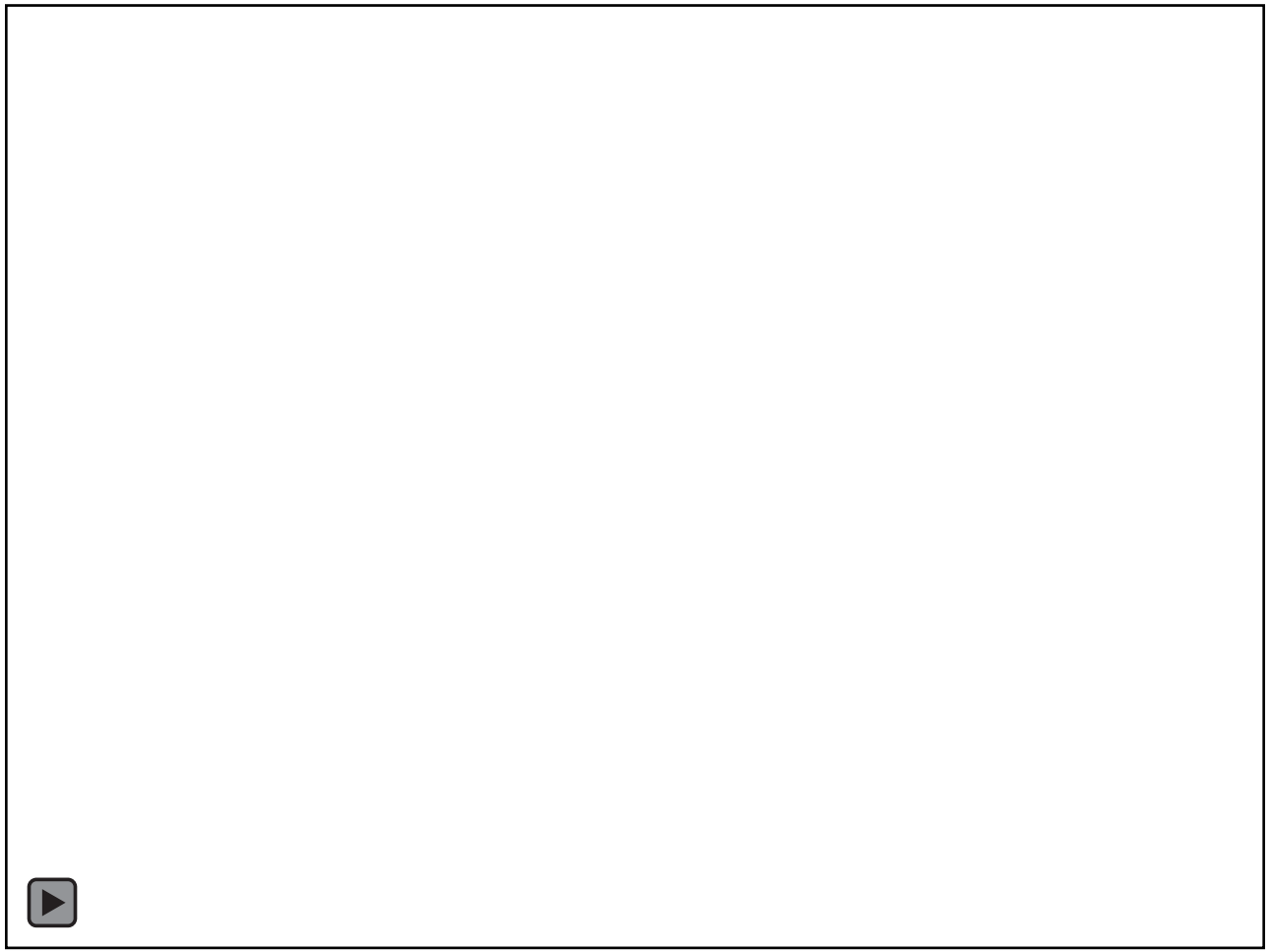



Planning = Resiliency
Benchmarking Building Performance
- Advanced Metering Infrastructure
- Energy Star Portfolio Manager
- ASHRAE/Energy Plus Benchmarking
Achieve Energy Management Excellence
- Existing Building Energy Efficiency (O&M, LC/NC, Capital ECMs)
- Demand Response Programs
Smart Growth
- Efficient New Construction
Enhance Energy Awareness
Mission – Vision – Values

Challenges: Total Cost of Ownership



Challenges: With Data



Solutions

- **Everyone wants to be a Hero**

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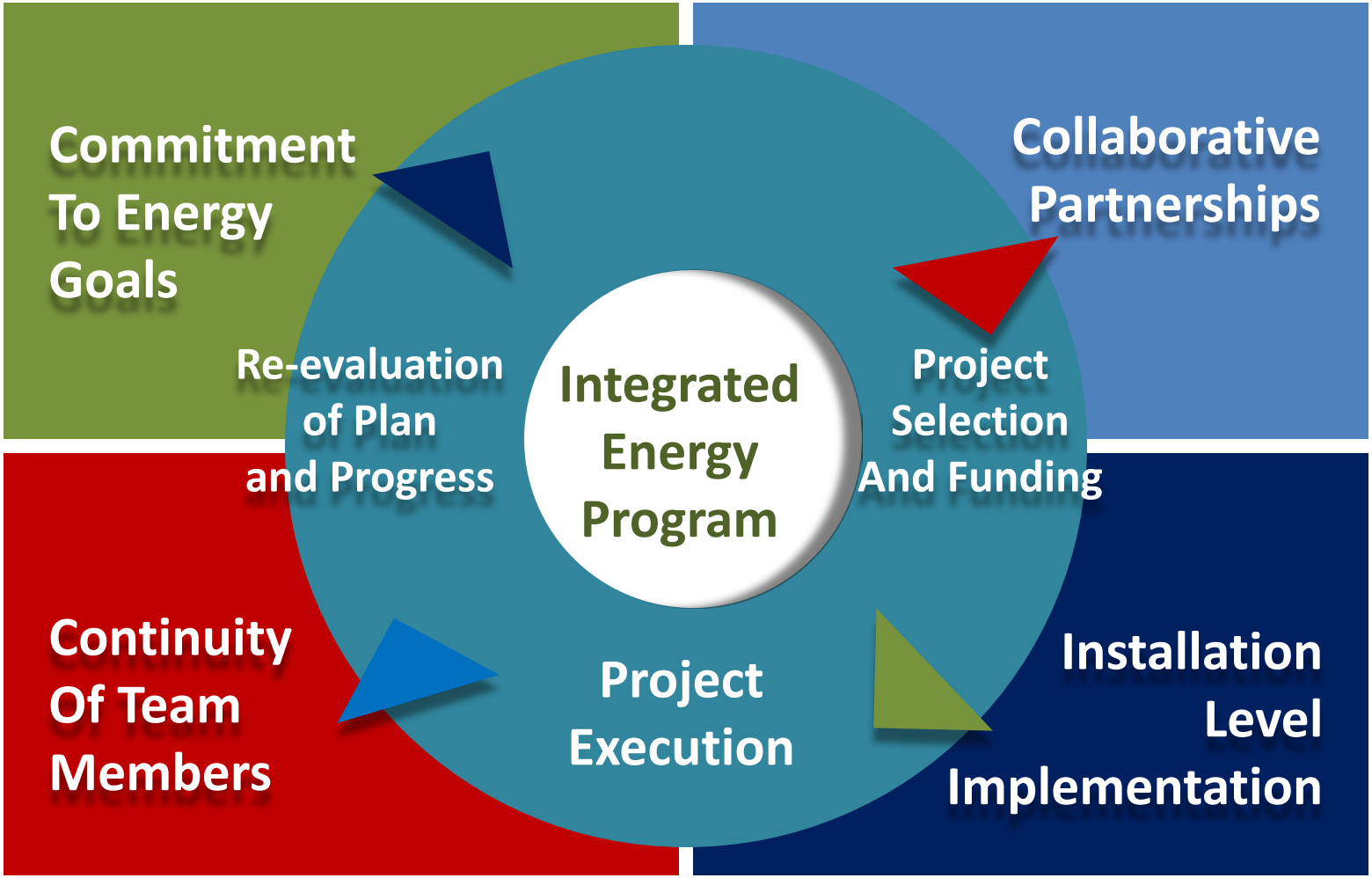
Solutions: Integrated Approach



Shelton State Community College

- Investigative audit of approximately 30% of the Heating, Ventilation and Air Conditioning (HVAC)
- Aggregate savings to date are $663,144.00 which is 10,810,384 kWh.

Diego Garcia

- Challenges:
  - Location
  - Logistics
  - Faulty Equipment
- Audit led to Recommissioning
- Ability to integrate with BOS contractor
- Avoided major equipment replacement and expenditures
- Optimized Systems

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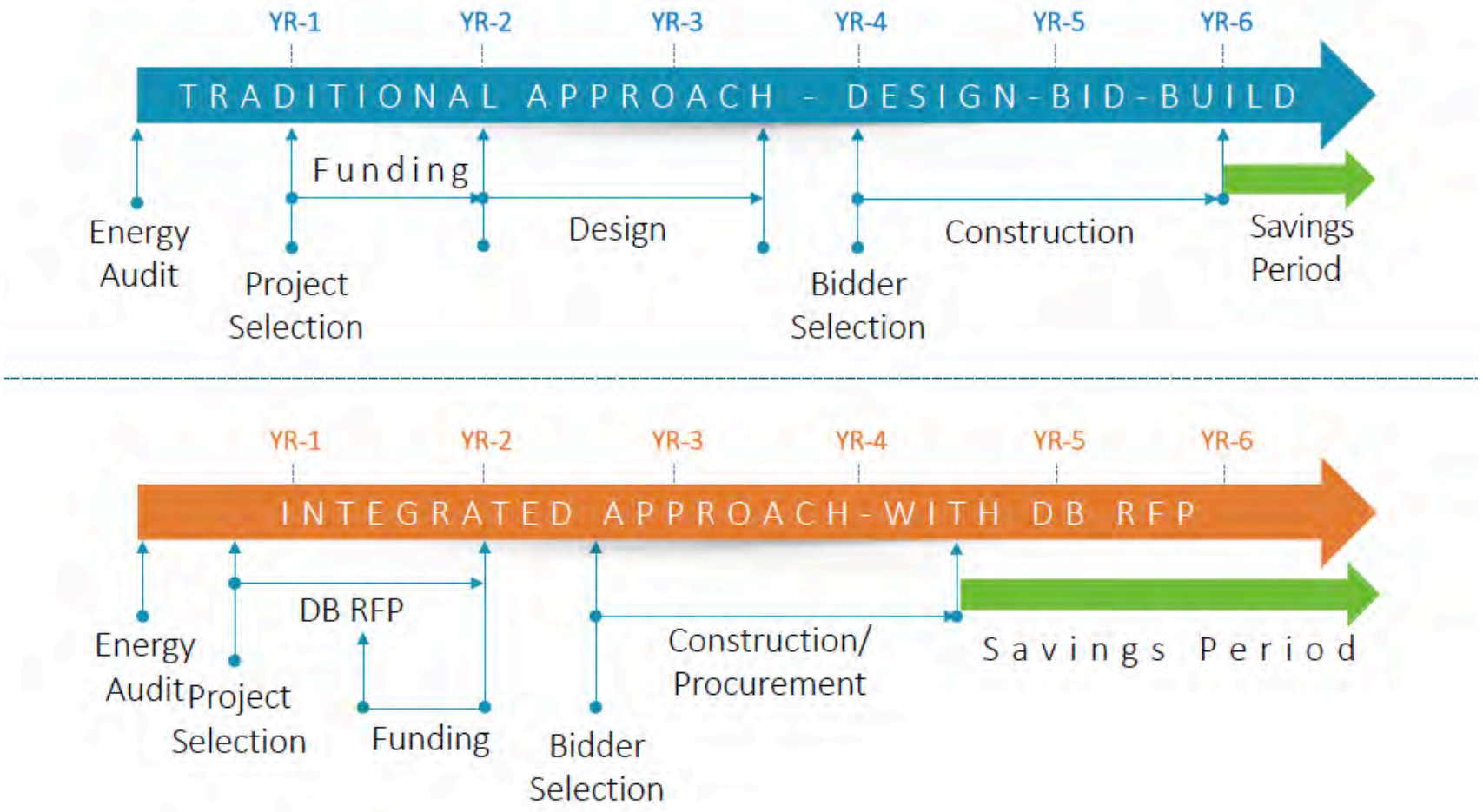
Solutions: Design Build RFP Development



Solutions: Design Build RFP

- **Quantico, VA**
- Year 1
  - 3 Phase Audit Process
- Year 2
  - REM Provided Onsite Owner Representation
  - Base-wide Energy Management Control System Upgrade

Solutions: Design Build RFP

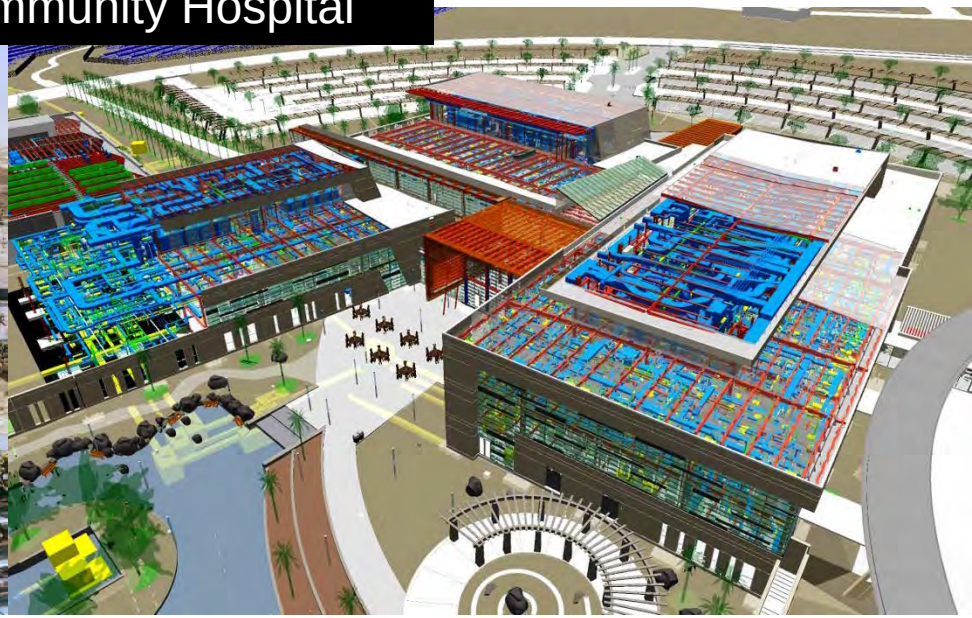
- **Quantico, VA**
- Year 3
  - Implemented $6M Design Build EMCS Solution
    - Resulted in $1.2M Annual Savings
  - 9 Energy Projects Totaling $18M Funded for Implementation
    - Estimate of $2.4M Annual Savings
- Base achieved Grade of “Platinum” by Secretary of Navy

Solutions: Design Build RFP

- **Yuma Proving Ground**
- Funding Year 1
  - Level I+ Audit
  - Measures calculated for Level II Deliverables
- Funding Year 2
  - Onsite Validation of Proposed ECMs
  - Developed Design Build RFP
    - Single Line Diagrams
    - Project Specifications
    - Construction Cost Estimates

Solutions: Resiliency Planning

Weed Army Community Hospital



Weed Army Community Hospital is a LEED Platinum, carbon-neutral hospital that will generate all of its energy needs from solar power and renewable energy systems.

Solutions: Resiliency Planning

Dugway Proving Ground

The array's 2-megawatt solar photovoltaic cells will generate about 3,990 megawatt-hours of power annually, enough to power more than 500 homes, according to the Corps of Engineers.

Conclusion: What's In It For Me?

- Energy Security / Resiliency
- Potential Energy, Water, and Waste Savings
  - 15% - 30%
- Extended Equipment Life
- Enhanced O&M Solutions
- Positive Productivity
- Increased Quality of Life

Conclusion

Energy Data is a Kaleidoscope of Opportunity resulting in:

- Meeting mandates
- Bridging the gap from Audits to Savings
- Jump-starting your integrated planning process
- And optimizing your assets

Thank You

- Brenda Phillips, AIA, LEED AP

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Services provided:

- Energy Auditing
- Building Commissioning
- Identification and recommendation of Energy Conservation Measures (ECMs)
- Strategy
- Master Planning (Resiliency/Sustainability)

Primary clients: Department of Defense/Federal, Education, Transportation, Industrial and Commercial entities