

Southface Advanced Commercial Buildings Initiative (ABCI)

2014 Building Technologies Office Peer Review



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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Project Summary

Timeline:

Start date: October 01, 2013

Planned end date: September 30, 2016

Key Milestones

1. Year 1: Building and Program Benchmarking
2. Year 2: Program Development and Demonstration
3. Year 3: Deployment and Success Stories

Budget:

Total DOE \$ to date: \$124,411

Total future DOE \$: \$1,795,589

Target Market/Audience:

Building Industry, Municipalities, and Financial Institutions

Key Partners:

Oak Ridge National Laboratory	Vermont Energy Investment Corp
Touchstone Utilities	Oglethorpe Power
Acuity Brands	A.O. Smith
Georgia Institute of Technology	E. Sam Jones Distributors
Georgia Power	City of Atlanta

Project Goal:

The ABCI is utilizing a comprehensive strategy to overcome market barriers with cost-effective, research-driven solution packages which achieve aggressive energy savings targets in new and existing small commercial buildings. Existing programs are being leveraged in order to develop proven, scalable successes.

Purpose and Objectives

Problem Statement: Small commercial building decision makers do not generally have the information, time, nor financing available to prioritize energy efficiency improvements. Traditional building professional services (e.g., energy modeling and building certification) are too expensive for small commercial project budgets.

Target Market and Audience: Building Owners, Developers, Building Tenants, Architects, Engineers, Contractors, Municipalities, Code Officials, Utilities, Facility Managers, and Financial Institutions.

Planned Contribution to Energy Efficiency: ACBI will leverage existing programs to target small commercial building sub-markets for achieving Architecture 2030 50% Challenge targets for new construction and 20% decrease for existing buildings via cost-effective engagement with third-party building performance experts.

- a. Recognition of program savings/value by target market (1-year)
- b. Replication of programs by peer organizations (1-3yr after project)
- c. Increased options for financing high performance (3yr+ after project)

Approach

Approach: EarthCraft Light Commercial Deep Energy

Build upon regional green building certification program to provide a prescriptive pathway for meeting the 50% energy savings target.

Key Issues: Benchmark buildings in existing program and identify key consumption drivers through circuit-level monitoring and energy modelling. Data-driven program updates must maximize stakeholder value proposition.

Distinctive Characteristics:

- Leverage Existing Programs
- New Construction
- Code Compliance
- Validate with Computer modeling
- Testing various DOE tools such as Commercial Energy Asset Rating Tool



Approach

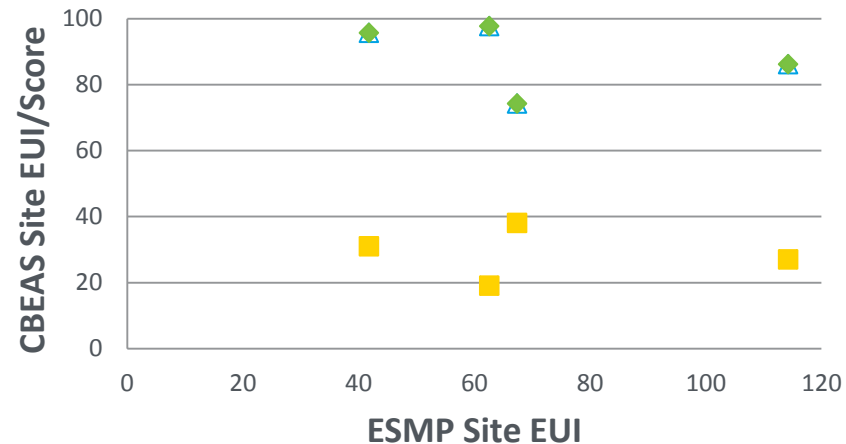
Approach: Grants to Green

Leverage non-profit assessment and improvement program to develop and validate field-tested ECM priority list. Pilot includes affordable assessment and reporting tools, assistance in navigating financing, bid selection and owner's representative services, with varying degrees of client services.

Key Issues: Access to professional services is usually financially unavailable to non-profit decision makers. Maximize bang-for-the-buck.

Distinctive Characteristics:

- Leverage Existing Programs
- Strong Foundation Network
- Commercial Energy Asset Rating Tool



Approach

Approach: Local Government Building Challenge

Partner with City of Atlanta Department of Sustainability to assess and improve Fire Stations. Develop replicable assessment, data collection, and quality assurance program for common municipal building types.

Key Issues: Define project savings to investment ratio, simple payback and other financial metrics. Procurement process and need for additional capital improvements are potential hurdles.

Distinctive Characteristics:

- Strong Partnership with City of Atlanta
- Commercial Building Benchmarking
- Commercial Energy Asset Rating Tool



Approach

Approach: Better Buildings Small Commercial Challenge

Develop program to specifically target small commercial building owners within the Atlanta Better Buildings Challenge.

Key Issues: Work with partners to develop tools to address the specific market barriers of education, feedback and financing.

Distinctive Characteristics:

- Strong Partnership ABBC Stakeholders
- Avenue for City of Atlanta benchmarking
- Utility partner Georgia Power launched small commercial program

Approach

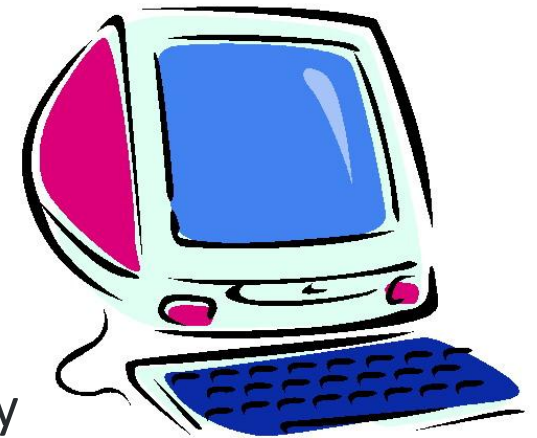
Approach: Uncertainty Analysis

Test hypothesis that third-party oversight during design, construction, or retrofit process reduces uncertainty in actual energy consumption. Using EnergyPlus-based workbench, determine causative factors for determining variability between predicted and actual energy usage.

Key Issues: Risk reduction is key to greater adoption of energy savings guarantees used in financing models.

Distinctive Characteristics:

- Existing computational workbench
- Partnership with universities and National Labs
- Key to establishing value proposition of third-party



Approach

Approach: Innovative Financing Models

Explore and test innovative financing models, including a business plan for a Public Purpose ESCO (PPESCO) and PACE financing.

Key Issues: Low-interest, ESCO or other innovative financing options are not generally available to small commercial building owners, or they are viewed as too cumbersome to pursue.

Distinctive Characteristics:

- Financing partners
- Large building owner stakeholder group



Progress and Accomplishments

Discoveries: Small Commercial very unique building types not fitting into CBECS categories; Many municipals buildings may take significant capital upgrades to realize energy savings; Building age is not an indicator of energy savings.

Accomplishments: Partnerships with building owners such as City of Atlanta, Boys and Girls Club and EarthCraft Light Commercial; Establishing protocols; piloting DOE tools and protocols.

Project Contribution to Energy Efficiency : Target market will address most underserved and largest commercial building contributors to energy consumption in the Southeast. Plan to directly influence over 200 buildings during this project period alone.

Awards/Recognition: The ABBC has over 200 participants, with over 70 million sf logged into the program; GreenPrints Green Building Conference and Tradeshow; Emory Point mixed-use project received the 2013 Atlanta ULI Award of Excellence

Project Integration and Collaboration

Project Integration: Key Regional and National Stakeholders

- *Community Foundation:* Replication Package will enable peer organizations to develop local Grants to Green programs.
- *Georgia Power:* Deployment of new Small Commercial Incentive Program
- *City of Atlanta:* Development of Commercial Benchmarking ordinance to include small commercial
- *DOE:* Incorporation of Energy Asset Score and other tools

Partners, Subcontractors, and Collaborators:

Georgia Institute of Technology; Oak Ridge National Laboratory; City of Atlanta; Vermont Energy Investment Corporation; Georgia Power, Oglethorpe Power, and Touchstone Energy; Acuity Brands, A.O. Smith, and E. Sam Jones Distributors and others

Communications: GreenPrints; EarthCraft Light Commercial strategies training; Atlanta BBC and ESPM trainings.

Next Steps and Future Plans

Next Steps and Future Plans: Continue Research, Demonstration and Deployment

1. Complete existing program and tool evaluation and benchmarking.
2. Update programs to achieve ACBI efficiency goals and pilot.
 - a. Procurement/construction start delays mitigated by strong network and value proposition.
 - b. Stay abreast of DOE and other technical and policy updates.
3. BTO can contribute to significant market outcomes by supporting
 - a. Code enforcement and compliance tools; continued coordination of building data tools such as ESPM, CBEAS, BPD, etc.
 - b. Build on established and new partnerships.

REFERENCE SLIDES

Project Budget

Project Budget: Total DOE budget \$1,920,000. Total Cost-share \$1,920,000.

Variiances: Expect increased collaboration and costs with sub-contractors during subsequent budget periods.

Cost to Date: DOE costs to date are 6% of project budget.

Additional Funding: Project efforts are supported by both in-kind and cash cost-share from project partners. Two significant contributions are from the Kendeda Fund for Grants to Green and from the JPB Foundation to support work with the Boys and Girls Club.

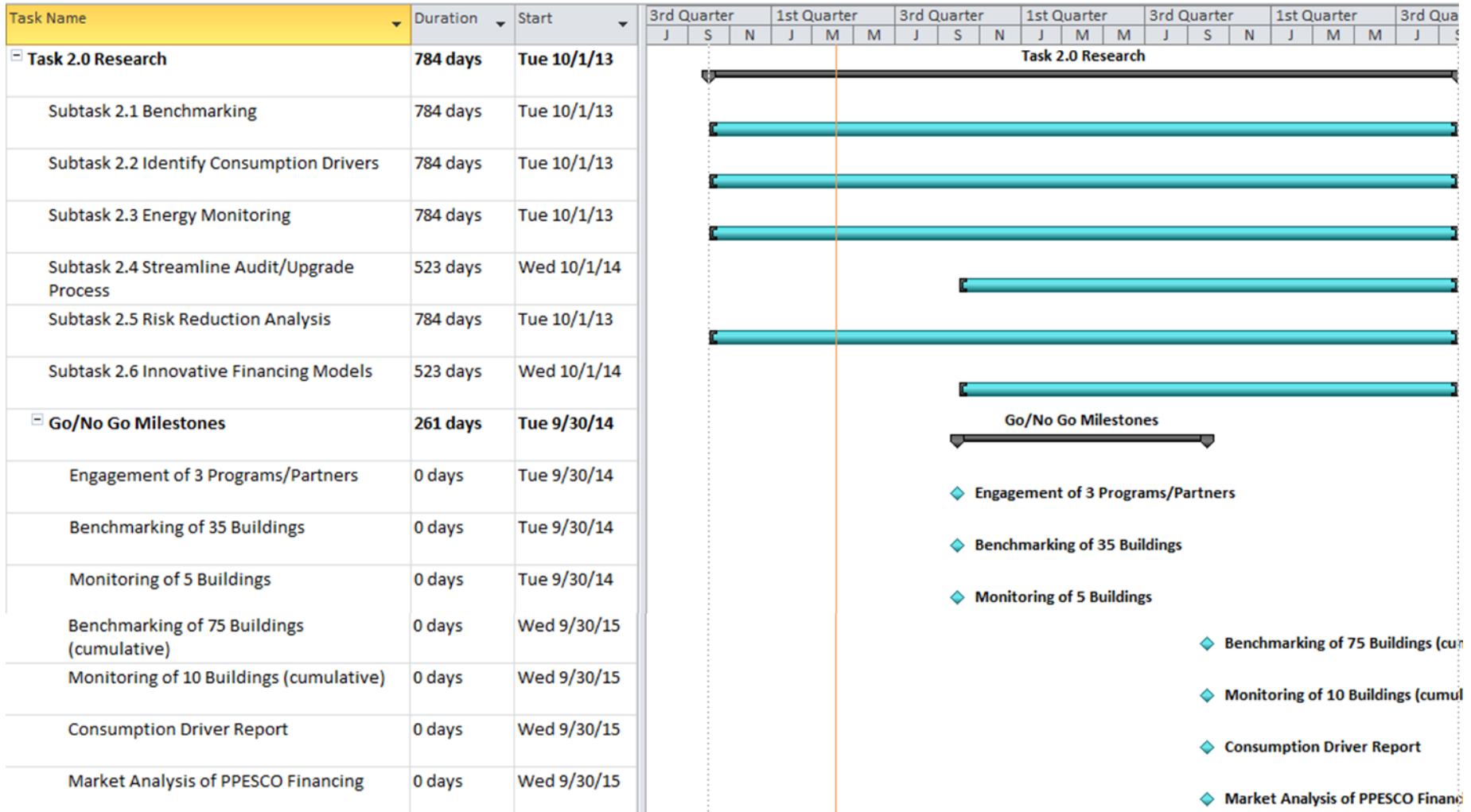
Budget History

Q3FY2013 – FY2013 (past)		FY2014 (current)		FY2015 – Q3FY2016 (planned)	
DOE	Cost-share	DOE	Cost-share	DOE	Cost-share
\$71,638	\$93,079	\$745,911	\$684,225	\$1,102,451	\$1,142,696

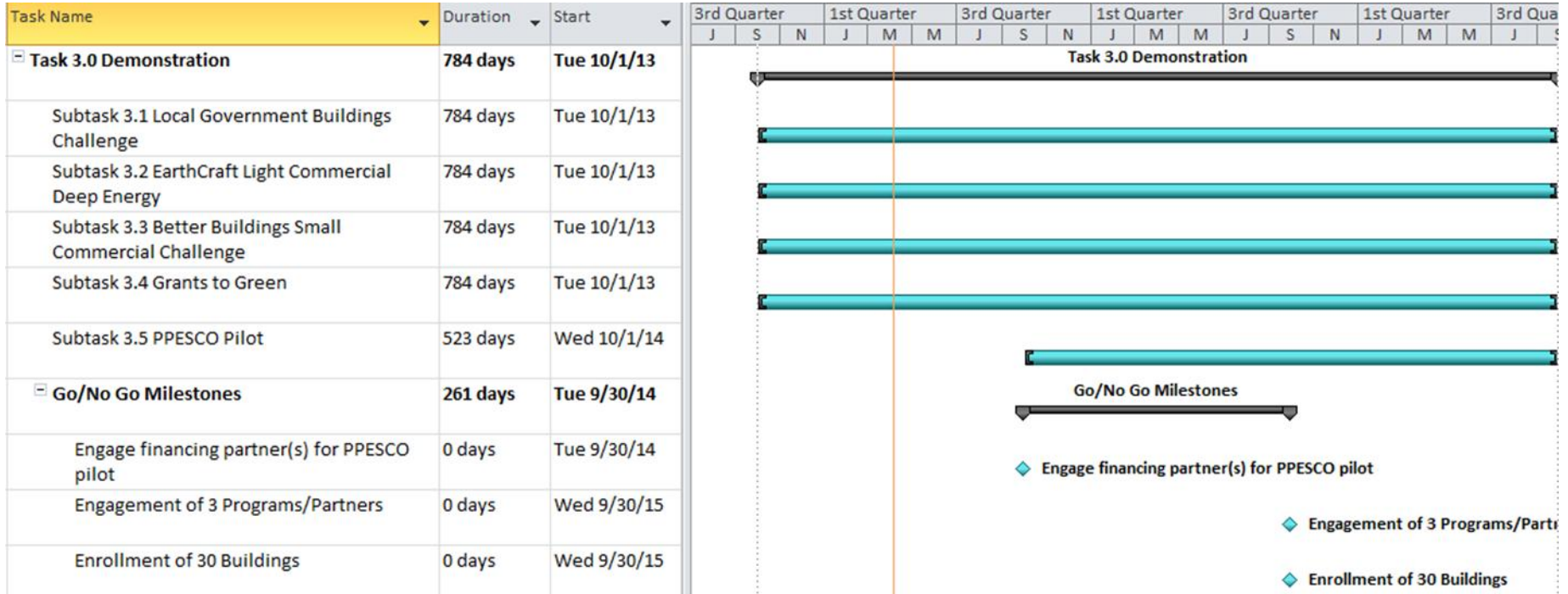
Project Plan and Schedule

Task Name	Duration	Start	3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quarter					
			J	S	N	J	M	M	J	S	N	J	M	M	J	S	N	J	M	M	J	S	N			
Task 1.0 Project Management Plan	784 days	Tue 10/1/13	Task 1.0 Project Management Plan																							
PMP Development	23 days	Tue 10/1/13																								
PMP Maintenance	761 days	Fri 11/1/13																								

Project Plan and Schedule



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