



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



ESC Conference: “Energy Savings and Performance-Based Contracting Investment Initiative Update” July 29, 2014

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Agenda

- Mission
- U.S. Government Energy Goals
- Who is FEMP
- Data Centers Energy Efficiency Challenge
- Presidential Performance Contracting Challenge
- Measurement & Verification (M&V) Guideline Improvements
- eProject Builder



FEMP works with key individuals to accomplish energy change within organizations by bringing expertise from all levels of project and policy implementation to enable Federal Agencies to meet energy related goals and to provide energy leadership to the country.

U.S. Government Energy Goals

Goal/Requirement for FY 2013	FY 2013 Federal Performance
E.O. 13423/EISA: Reduce energy intensity (Btu/GSF) by 24% compared to 2003; 30% reduction required in FY 2015.	Government decreased energy intensity by 20.6% in FY 2013 relative to FY 2003 12 of 24 Scorecard agencies achieved the goal.
EPACT 2005/E.O. 13423: Use renewable electric energy equivalent to at least 7.5% of total electricity use; at least half of which must come from sources developed after January 1, 1999.	Government purchased or produced renewable energy in FY 2013 equivalent to 9.2% of total electricity use. 20 of 24 Scorecard agencies achieved the goal.
E.O. 13423/13514: Reduce water consumption intensity (Gal/GSF) by 12% relative to 2007 baseline; 16% by the end of FY 2015; 26% by FY 2020.	Government reduced water consumption intensity by 19.1% in FY 2013 relative to FY 2007. 22 of 24 Scorecard agencies achieved the goal.
E.O. 13514: Reduce Government-wide scope 1 and 2 greenhouse gas emissions from targeted sources by 28% in FY 2020 compared to FY 2008	Government reduced scope 1 and 2 GHG emissions by 17.2% in FY 2012 relative to FY 2008 21 of 25 Scorecard agencies attained their interim targets.
Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings: At least 15% of new, existing, and leased buildings >5,000 square feet meet the Guiding Principles by 2015 (FY13 interim target = 11%)	3.65% of eligible Government buildings meet Guiding Principles; 7.32% in terms of the buildings' square footage. 6 of 21 Scorecard agencies met the interim target of 11%

Technology Services

Accelerate uptake of commercialized but underutilized efficient technologies through a 3-pronged approach:

- Identifying energy technologies:
 - Have high potential energy savings
 - Needs Federal sector deployment
 - Cost-effective
- Develop and conduct deployment campaigns on energy technologies of highest priority:
 - Last year, focus was on exterior SSL
 - Currently, focus is high efficiency roof-top units
- Raise awareness and educate Federal customers:
 - Training
 - Campaigns
 - Work with stakeholder groups: FUPWG, ISWG, O&M, and Energy Exchange



Technology Services

- Implements energy-efficiency, renewable energy, and water conservation in Federal facilities
- Fosters sustainable design & high performance building practices
- Develops Center of Expertise for energy efficient data centers
- Fulfills Data Center Challenge
- Reduces petroleum consumption for fleet vehicles and buildings
- Promotes energy efficient laboratory best practices
- Promotes energy efficient product procurement
- Enhances new technology deployment



Customer Services

Three-Pronged Customer Service Approach

- Agency-Specific Concentration

- **Department of Transportation:** Two main components for initial work with DOT are fleets, and energy audits in buildings
 - Fleet Goals: Reduce petroleum use, increase alternative fuel use and optimize fleet allocation
 - Energy Audit Goals: Package audits, checklists, training and data collection to make greatest progress on EISA 432 requirements, energy goals, water goals, high performance sustainable buildings, and on-site renewable energy



- Reform Interagency Working Groups

- Firm up purpose and mandate of working groups
- Coordinate customer service across agencies
- Discontinuing working groups that are not currently active or effective



- Project Focus for All Agencies

- Track projects through to completion
- Evaluating the need for and effectiveness of working groups to determine which should remain active



Customer Services: Training

- Working cooperatively with the General Services Administration (GSA) to offer technical training that fulfills many of the requirements of the Federal Buildings Personnel Training Act.
- Trainings are offered at two levels:**
 - International Association for Continuing Education and Training (IACET) accreditation allows FEMP to offer *certified* Continuing Education Units (CEUs)
 - Certified Trainings** receive IACET CEUs & Certificate
 - E-Learning**
 - On-Demand interactive training that leverage Learning Management Systems
 - First Thursday Seminars**
 - Live online training session that allows for live interaction between subject matter experts and audience
 - Archived to reach larger audience
 - On-Site Workshops**
 - Non-certified Trainings** receive standard FEMP Certificate of Completion



Project Services

Assists agencies in the use of performance contracting tools

- Project funding tools include:
 - Energy Savings Performance Contracts (ESPCs)
 - Utility Energy Service Contracts (UESCs)
 - Federal On-Site Renewable Power Purchase Agreements (PPAs)
 - Federal and State energy incentives programs

- Special objectives:
 - Make performance contracting business as usual
 - Develop the ENABLE program for small projects
 - Automate processes, reduce process delays
 - Consolidate project data through eProject Builder
 - Standardize documents



Operations

- Reporting and Tracking Agency Goals Progress
 - Energy Independence and Security Act (EISA) Compliance Tracking System
 - Energy, Greenhouse Gas (GHG), and Water Annual Report
- Policy/Guidance Development
- Interagency Collaboration
- Communications
- Awards and Incentives
 - Federal Energy and Water Management Awards
 - Better Building Federal Award
 - Military Academy Awards
- Strategic planning activities to develop alignment of FEMP multiyear plan, annual operating plan, budget, and statements of work to achieve goals
- FEMP policies and procedures for process improvement



Data Centers Energy Efficiency Challenge

FEMP is recruiting from the Private and Public Sectors for:

- “Soft Launch” of the effort to be held in the near future.
 - Participation goals:
 - Improve a portfolio of data centers by at least 20% within 10 years.
 - Improve a single major data center by at least 20% within 5 years.
 - Annual awards ceremony to recognize most successful participants.



Funding: Presidential Memorandum of 12/2/11

Implementation of Energy Savings Projects and Performance Based Contracting for Energy Savings

Key Stat	Description
Investment \$	Agencies identified projects (in the pipeline or awarded) with an estimated \$2.645B investment value
Projects #	Agencies identified 223 projects Majority of projects proposed are DOE ESPC, 90
Awarded Investment \$	153 projects have been awarded with an investment value of \$1.499B
Next Phase	70 projects are in the development pipeline, with expectations of a project being awarded

Data as of July 15, 2013

President Obama also announced Federal agencies will further expand their use of performance-based contracts through 2016 to upgrade the energy efficiency of Federal buildings at no cost to taxpayers.



Measurement & Verification (M&V) Guideline Improvements

Current state of M&V

- Majority of ESPC investment (67%) uses Option A M&V.
- Newer M&V reports (TOs awarded 2006 and after) are good, and provide agencies with very informative reports (though some ESCOs are better than others).
- Many older projects conform to earlier, less rigorous M&V standards, and these are targets for auditors.
- Ability/willingness to witness M&V activities and review annual M&V reports varies widely across agencies.

Highlights for M&V Improvement for Version 4 of FEMP Guidelines

- Strengthen Retrofit Isolation with Key Parameter Measurement (Option A) by requiring annual measurement of key parameters.
- Refocus Whole Facility Measurement (Option C) to stress short-term applicability.
- Provide prescriptive (but more concise) M&V templates for most Energy Conservation Measures.
- Revise and condense FEMP M&V Guidelines.
- Provide M&V report review to agencies that lack their own resources.

Project Services: ENABLE

- Focuses on Federal facilities with buildings under 200,000 square feet (traditionally, underserved market).
- Provides a standardized and streamlined process to quickly award and implement projects using GSA Schedule 84.
- Targets straight-forward Energy Conservation Measures (ECM) including lighting, water fixtures, basic HVAC controls, HVAC system replacement, and solar PV.
- Includes basic levels of measurement and verification (M&V) for each ECM.
- Offers Agencies/Energy Managers a new tool to execute energy projects.





eProjectBuilder

USHERING ESPC INTO THE ELECTRONIC AGE



What is eProject Builder?

- eProject Builder ("ePB") is a web-based system managed on behalf of the Department of Energy by LBNL. ePB enables Energy Services Companies (ESCOs) and their customers to securely:
 - Upload and track project-level information;
 - Generate project reporting materials mandated by local, state, and/or federal agencies; and
 - Benchmark new projects against historical project performance data.



What are the benefits of ePB?

- **Standardizes** data collection across local, state, and federal government agencies
- **Reduces** ESPC transaction costs
- **Promotes** customer (agency) confidence through transparency
- **Access** information for performance tracking and analysis
- ESCO has ability to **market** successes to prospective customers



What are the ePB roles?

Agency

“Project Initiator”



- Registers and initiates project
- Invites ESCO (Project Builder)
- Invites Project Viewer(s)
- Reviews project data with ESCO
- Approves project for database submission
- Unlocks project for revision, if necessary

“Project Viewer”



- Registers
- Views project information, when invited

ESCO

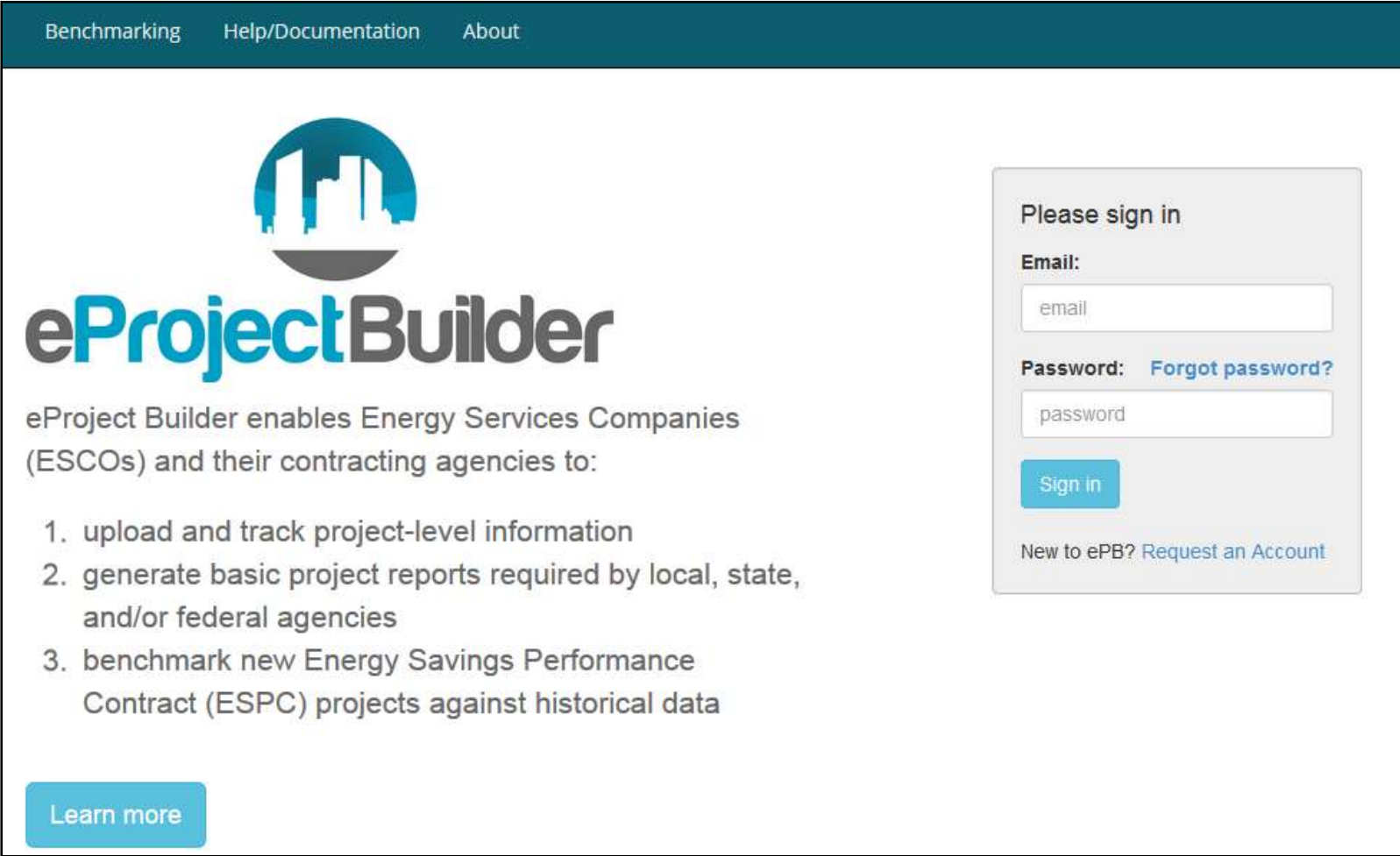
“Project Builder”



- Registers
- Invites Project Viewer(s)
- Enters project data
- Reviews project data with customer
- Submits project for approval
- Revises project data, if necessary


Home page (Role=All)

<https://eprojectbuilder.lbl.gov>



The screenshot shows the home page of the eProject Builder website. At the top, there is a dark teal navigation bar with links for "Benchmarking", "Help/Documentation", and "About". Below the navigation bar is the eProject Builder logo, which consists of a stylized city skyline icon above the text "eProject Builder". To the right of the logo is a sign-in form with fields for "Email" and "Password", a "Sign in" button, and a link for "Forgot password?". Below the sign-in form is a link for "Request an Account".

Benchmarking Help/Documentation About



eProject Builder

eProject Builder enables Energy Services Companies (ESCOs) and their contracting agencies to:

1. upload and track project-level information
2. generate basic project reports required by local, state, and/or federal agencies
3. benchmark new Energy Savings Performance Contract (ESPC) projects against historical data

[Learn more](#)

Please sign in

Email:

Password: [Forgot password?](#)

[Sign in](#)

New to ePB? [Request an Account](#)



Landing page (Role=ESCO)

ePB Home View/Edit Projects Benchmarking Help/Documentation About Peter Larsen ▾

Manage Your Projects

Add Data to a Project

Upload data to a new project in the ePB system (or replace data for an existing draft project) using the project template.
[Download an empty project template to get started.](#)

Enter a New Project

Use the online form to enter a new project into the ePB system.

View and Edit Your Projects

Search, view and edit all your existing projects in the database. From here you can also generate project TO schedules and export project data to a .csv file.

Status of My Projects

Active Projects

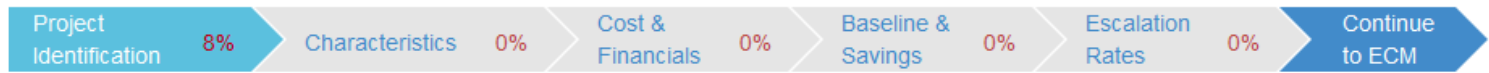
- Corvallis Forestry Lab
- Defense Manpower Data Ctr
- Def Lang/Presidio and Annex
- Ft. Lewis/Yakima Firing Range
- Pt. Mugu

[view all active projects](#)



Entering a new project (Role=ESCO)


Project-Level Information



* All fields required unless otherwise noted. You will not be able to submit the project for approval until all required fields are entered.

* Project Initiator (Customer)	<input type="text" value="Office of Energy Efficiency & Renewable Energy (EE)"/>
* Cabinet Agency	<input type="text"/>
* Primary Electric Utility	<input type="text"/>
* Primary Natural Gas Utility	<input type="text"/>
* Primary Water Utility	<input type="text"/>
* Avg Annual Energy Consumption of Affected Buildings	<input type="text" value="0"/> MMBtu/year
* Floor area	<input type="text" value="0"/> sq. ft.

Entering a new project (Role=ESCO) (cont.)

Home **View/Edit Projects** Benchmarking Help/Documentation About Peter Larsen ▾

Test 1 Project Data 1% **2 ECM 0%** 3 Submit Project save and close project ✕

ECM-Level Information

ECM List

1.1 Boiler control, includin... Add ECM

1 Measures Entered

- ✕ 1.1 Boiler control, including new controls and retrofits of existing controls... 0%

ECM Data - 1.1 Boiler control, including new controls and retrofits of existing controls...

Characteristics 0% → Cost & Financials 0% → Baseline & Savings 0%

* All fields required unless otherwise noted. You will not be able to submit the project for approval until all required fields are entered.

* ECM Size

* ECM Coverage %

* M&V Methodology

View and edit projects (Role=ESCO, Agency, Viewers)

[+ Enter New Project](#)
[Download New Project Template](#)

Search:

Project ID	Project Name	Market	Agency	Award Date	Last Modified	Contractor	Customer	Total Implementation Cost	Guaranteed Annual Savings	Stage	Status	Data % Complete	Actions
9	Test project June 18	Federal Government	Department of Energy	2014	2014-07-14 14:22:25	My ESCO	US DOE	\$4,662,243	\$7,384,972	Proposal	Pending	79%	
2	Test Project 2 Berkeley	State/Local Government		2014	2014-06-24 18:22:26					Proposal	Pending	39%	
14	June 24 test	Federal Government		2014	2014-06-25 16:39:43			\$0	\$0	Proposal	Pending	0%	
11	June 19 project 1	Federal Government	Department of Energy	2014	2014-07-08 01:43:39	Test ESCO Organization	US DOE	\$4,397,609	\$6,763,792	Proposal	Approved	76%	
15	July 8 Test Project	Federal Government	Department of Energy	2014	2014-07-08 01:52:09	My ESCO	DOE	\$4,662,243	\$7,384,972	Proposal	Pending	81%	

Showing 1 to 5 of 5 entries

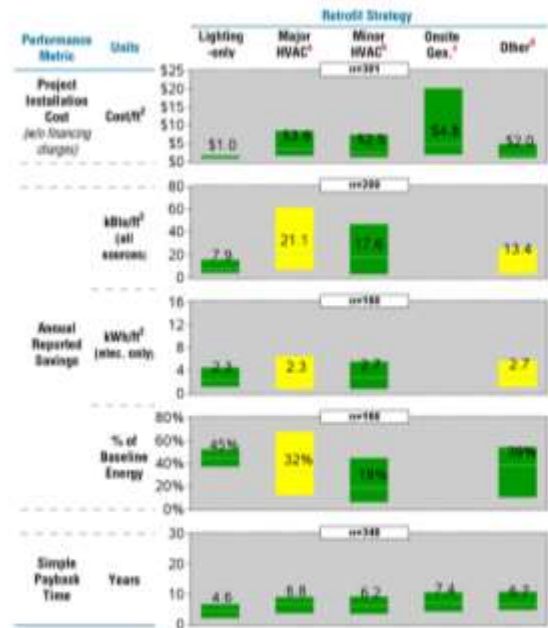
[← Previous](#)
1
[Next →](#)



Performance benchmarking (Role=All)

Benchmarking

Federal Government Project Performance Benchmarks: 1990-2014



^a Technologies installed include major HVAC equipment replacements – e.g., boilers, chillers, cooling towers – HVAC dist. improvements, and other control, lighting, and motors measures.

^b Technologies installed include less-capital intensive HVAC measures and HVAC controls plus lighting and other measures.

^c Technologies include installation of onsite generation equipment with other energy efficiency measures (e.g., lighting).

^d Technologies include domestic hot water, water conservation, other energy-efficient equipment and strategies such as vending machines, lighting, laundry/office equipment, refrigeration, industrial process improvements, staff training, and utility tariff negotiations.



Market	Strategy	Date Range	Metric	Units	Count	Percentile 20th	Median	Percentile 80th
Federal Government	Lighting-only	1990 - 2014	Project Installation Cost	Cost/ft ²	31	0.7	1.05	1.71
Federal Government	Major HVAC	1990 - 2014	Project Installation Cost	Cost/ft ²	158	1.59	3.55	8.62

If you have questions, issues or feedback on eProject Builder please email: epb-support@fbl.gov



Help and documentation (Role=All)

Help, Documentation and Training

System Requirements

ePB 1.0 currently supports Mozilla Firefox version 10.0.7 or higher and Google Chrome version 30 or higher. Security and stability issues prevent ePB from supporting Internet Explorer. However, future versions of ePB will support Internet Explorer. Users must also have installed Microsoft Excel 14.0 (2010/2011) or higher to be able to use the upload template functionality.

Training Documentation

- [eProject Builder Overview](#)
- [Glossary of Terms](#)
- [FAQ](#)
- [Data Upload Template Guide](#)
- [Disclaimer](#)

Key Features and Benefits of ePB

- [Brochure: Federal Customers](#)
- [Brochure: Federal ESCOs](#)
- [Brochure: Non-Federal Customers](#)
- [Brochure: Non-Federal ESCOs](#)

Training Videos

Introductory Chapters (All Users)

1. [Overview](#)
2. [Registration and log-in](#)
3. [Benchmarking feature](#)
4. [Searching and viewing project summary - general](#)
5. [Outputting project schedules](#)
6. [Changing your password and logging out](#)

Customers (Project Initiators)

7. [Initiating a new project](#)
8. [Searching for your projects and viewing project summary table](#)
9. [Viewing project data online](#)
10. [Outputting project schedules](#)
11. [Approving a project completed by the ESCO](#)
12. [Unlocking a project for ESCO revision](#)
13. [Downloading and reviewing the data template](#)
14. [Adding Viewers](#)

ESCOs (Project Builders)

15. [Searching for your projects and viewing project summary table](#)
16. [Downloading the data template](#)
17. [Completing the data template](#)
18. [Uploading project data from the data template](#)

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ePB 1.0 → ePB 2.0

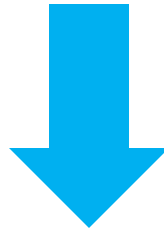
- Stakeholder-requested upgrades:
 - Dynamic benchmarking capability
 - Performance period EM&V module
 - Enhanced project data reporting and download
 - Exportability to other government database systems
 - Ability to collect building-level information



How do I access ePB?

Training and Demonstration Site:

<https://epb-test.lbl.gov>

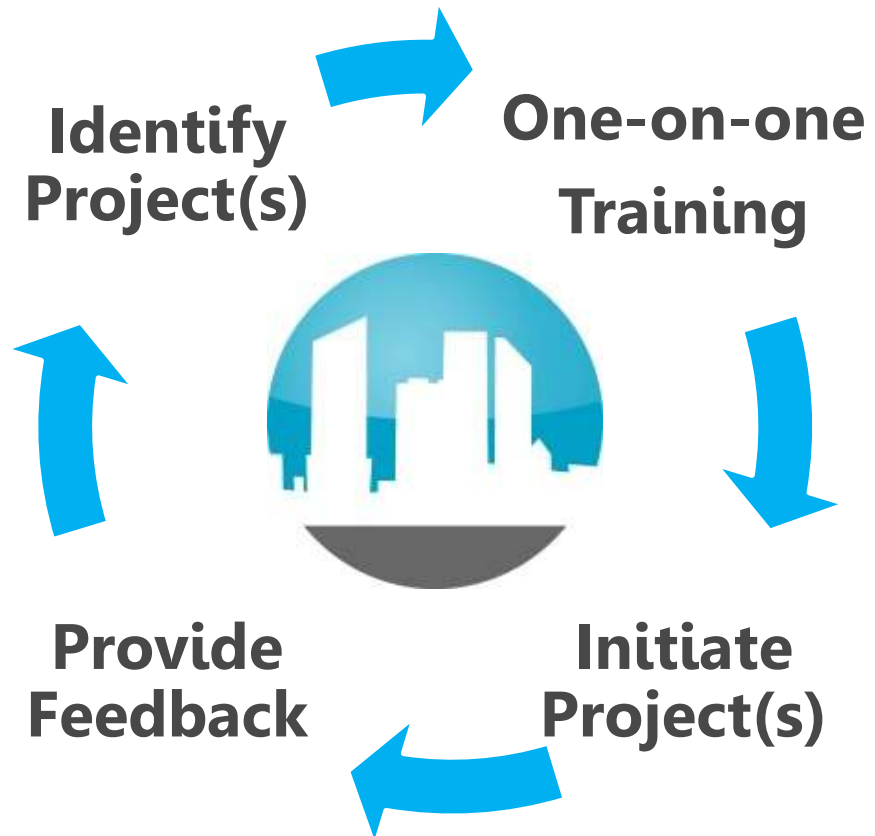


eProject Builder:

<https://eprojectbuilder.lbl.gov>



Interested?



CONTACT US:

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Questions?

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