



eProjectBuilder

Interagency Sustainability Working Group Meeting
September 20, 2018

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy





eProject Builder (ePB)

- Secure, web-based energy project data tracking & reporting system
- Free tool developed/maintained by LBNL
- Funded by U.S. DOE: FEMP and WIP
- Enables ESCOs and their customers to securely:
 - Preserve, track & report project and M&V info in perpetuity
 - Generate range of reports on portfolio of projects
 - Develop project scenarios using standardized calculations
 - Benchmark proposed projects against historical ones
 - Enter and track ESPC, UESC, ESA and other project types
 - Be audit-ready!



Current Status

Participation

Contains **653** projects representing implementation costs of **\$5.2B** and cumulative guaranteed savings of **\$10.7B**

398 federal projects (IDIQ, ENABLE, Army Corps, UESC, GSA Area-wide)

255 state/local/educational/commercial/industrial/other

> **1000** individuals have trained on ePB: agency, ESCO, and facilitator staff

Who requires eProject Builder

DOE-FEMP IDIQ 3 contracts

DOE Qualified List of ESCOs accreditation process

MATOC

Required or used by increasing number of state ESPC programs

NAESCO – required as platform for annual accreditation process



ePB Benefits

- Standardization, relational database
- Data and document preservation in perpetuity
- Enables reliable analysis and reporting to stakeholders
- Enables agencies to be audit-ready
- M&V tracking facilitates identifying shortfalls and holding ESCOs accountable



ePB Components and Security

- Two Key System Components
 - Excel-based data template for ESCO to enter data and develop project scenarios
 - Online system where data and documents are uploaded, accessed and tracked
- Security Features
 - Encrypted protocol (https)
 - Two-step log-in similar to high-security e-commerce sites
 - Project access restricted to one ESCO and one customer account
 - Others may be granted read-only access by customer or ESCO
 - Zero risk score via 2 levels of vulnerability testing/remediation
 - National lab IT security scans
 - 3rd-party scans from government cybersecurity expert



Inputs and Outputs

- Inputs and database content
 - Collects data at project level--not at building or facility level
 - ePB is FLEXIBLE –collect the types of info important to you
 - Available data types include:
 - Key project dates
 - Financing and guarantee terms; escalation rates
 - Implementation price
 - Baseline usage; estimated and guaranteed savings
 - M&V verified savings
- Outputs - reports
 - Project financial and savings schedules
 - Portfolio-level analysis: output data, tables and graphs
 - M&V results – per year and cumulative



Typical ePB Workflow

- On ESCO selection, Customer initiates project online, providing ESCO contact e-mail (takes <1 minute)
- ESCO may use ePB data template to iterate on proposal
- ESCO inputs project proposal into template and uploads to online system
- ESCO may generate PDF schedules to drop into project proposals
- When project is at award stage, ESCO finalizes proposal info in ePB and submits for customer approval
- Customer reviews; when proposal deemed final, customer approves project and schedules are archived on ePB
- At post-installation verification, ESCO enters and submits expected savings into ePB and annual M&V results thereafter
- Customer must “unlock” project for revisions (e.g., mods); ESCO updates project data and re-submits for customer review



Planned for FY19-20

- Accommodate wide range of federal project types and project variations
- Data exchange between ePB and CTS
- More options/flexibility to the data template
- Upgraded analysis and reporting functionality
- Scoping compliance with DoD cybersecurity protocols
- Investigate and implement additional ways ePB can help agencies be audit-ready
- Dynamic benchmarking using data in ePB (current tool draws statistics from historic database)



Q&A

ePB website: eprojectbuilder.lbl.gov

Email: epb-support@lbl.gov

Phone: (510) 486-7442 (message line)

Thank you!

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Extra Slides



M&V Reports

- Output single year and cumulative project reports

Test IDIQ project - M&V Year 0

ANNUAL PERFORMANCE PERIOD M&V FOR YEAR 0
ANNUAL EXPECTED SAVINGS BY ENERGY CONSERVATION MEASURE

ECM			Details of Expected Energy and Cost Savings																			
ECM Number	Short Description	First Year M&V Option	b1n	b2n	c1n	c2n	d1n	d2n	e1an	e2an	e1bn	e2bn	In = 0.003413*b1n+d1n+e1an+e1bn		gn = b2n+c2n+d2n+e2an+e2bn		hn	in	jn	kn	In = gn+in+jn+kn	
			Electric energy savings (kWh/yr)	Electric energy savings (\$/yr)	Electric demand savings (kW/mo)	Electric demand savings (\$/yr)	Natural gas savings (MMBtu/yr)	Natural gas savings (\$/yr)	Other Savings Type 1: Other (MMBtu/yr)	Other Savings Type 1: Other (\$/yr)	Other Savings Type 2: (MMBtu/yr)											
1	Bldgs 20, 30, 40 - ballasts and lamps	Option A		\$140,000		\$25,000																
2	Bldgs 3, 4 - Chillers	Option C		\$128,000		\$12,000																
3	Bldgs 20, 30, 40 - roof and wall insulation	Option C		\$90,000																		
4	Site PV array	Option B		\$100,000		\$20,000																
TOTALS:				\$458,000		\$57,000																

IMPORTANT INFORMATION:

- Energy conversion factors for MMBtu:MMBtu=106 Btu; Electricity 0.003413 MMBtu/kWh; Natural Gas 0.1 MMBtu/therm; #2 Heating Propane 0.091333 MMBtu/gal
- Demand savings (kW/mo) represent an average kW reduction figure. Demand savings can (and usually do) vary by season and in t
- For post installation report, please enter expected year one savings values. For annual report, please enter verified annual savings v

ANNUAL PERFORMANCE PERIOD M&V
GUARANTEED AND VERIFIED COST SAVINGS

Implementation Period (Year 0)	(a)	(b)	(c)	(d)=(b)-(c)	Status
	Estimated Cost Savings	Guaranteed Cost Savings	Verified Cost Savings	Variance in Implementation Period Cost Savings	
	\$32,495	\$41,196	\$32,335	\$8,861	Approved
Performance Period (Year)	(e)	(f)	(g)	(h)=(f)-(g)	
	Estimated Annual Cost Savings	Guaranteed Annual Cost Savings	Verified Annual Cost Savings	Variance in Annual Cost Savings	
1	\$381,567	\$375,615	\$262,110	\$113,505	Approved
2	\$308,556	\$303,743	\$308,595	\$-4,852	Pending
3	\$314,273	\$309,370	\$314,124	\$-4,754	Approved
4	\$319,904	\$314,914			
5	\$325,579	\$320,500			
6	\$331,368	\$326,198			
7	\$337,272	\$332,010			
8	\$343,240	\$337,886			
9	\$349,320	\$343,870			
10	\$355,512	\$349,966			
11	\$361,819	\$356,175			
12	\$368,243	\$362,499			
Total Performance Period	\$4,096,653	\$4,032,746	\$884,829	\$103,898	
Total Implementation & Performance Period	Total Estimated Cost Savings	Total Guaranteed Cost Savings	Total Verified Cost Savings	Total Variance in Cost Savings	
	\$4,096,653	\$4,032,746	\$884,829	\$103,898	

IMPORTANT INFORMATION:

- The guaranteed annual cost savings are based on the Schedule 1 presented along with the final proposal
- Negative Variance in Annual Cost Savings (d&h) indicate that the Verified Annual Cost Savings are less than the Guaranteed Cost Savings



Analysis & Reporting Tool

- Choose fields to include in analysis, similar to pivot tables
- Display and download tables and graphs
- Start with library canned queries or create your own
- Save your favorite queries

The screenshot displays the 'Analysis & Reporting' interface. It includes a navigation menu with options like 'Home', 'Projects Summary', 'Analysis & Reporting', 'Benchmarking', 'Applications', and 'Help/Documentation'. The main area is divided into 'Drag and Drop Fields' and 'Configure' sections. The 'Configure' section shows a table with 'ECM Technology Category' and 'First Year M&V Methodology' as row and column labels, respectively. The table data is as follows:

ECM Technology Category	First Year M&V Methodology				Totals
	Option A	Option B	Option C	Option D	
Boiler Plant Improvements		1			1
Building Envelope Modifications			1	2	3
Chilled Water, Hot Water, and Steam Distribution					
Chiller Plant Improvements					
Lighting Improvements					
Renewable Energy Systems					

Below the table, a bar chart displays the 'Sum of Total Project Implementation Cost' for four categories: Option A (blue), Option B (orange), Option C (green), and Option D (red). The y-axis ranges from 0 to 650,000. The bars show approximate values of 450,000, 600,000, 600,000, and 550,000 respectively.



Benchmarking Page

- Benchmarking statistics for different combinations of metrics, market segments, and years
- Users query aggregated data from the LBNL/NAESCO database of ~ 6,000 ESCO projects (*not* projects in ePB)

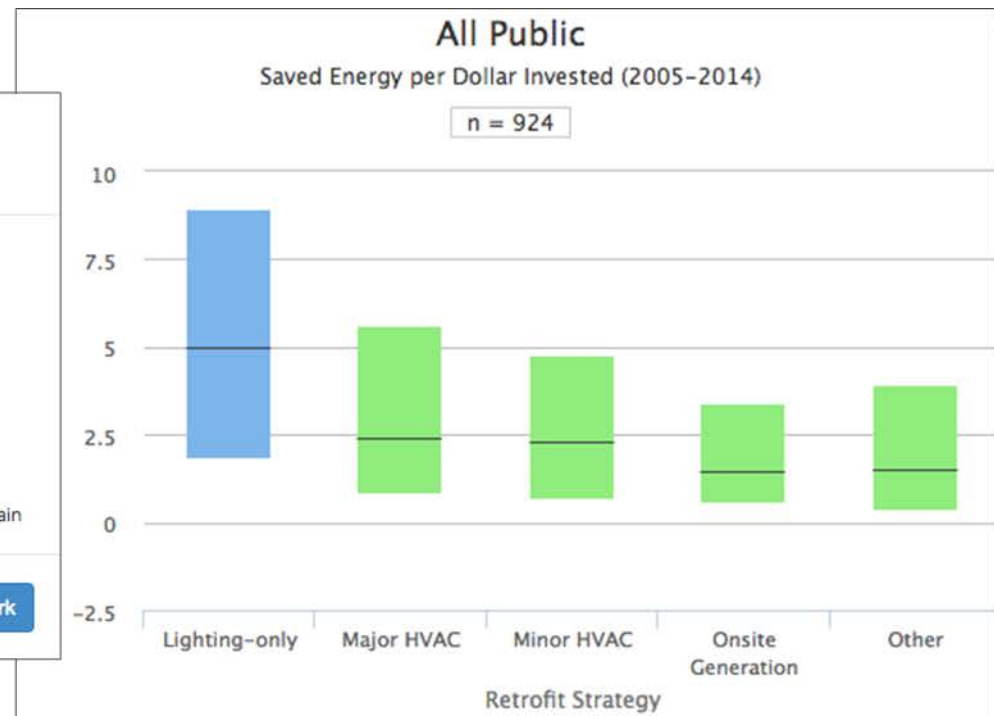
Benchmark selection

* Market Segment

* Metric Name

* Date Range

* Benchmarking results displayed on screen will not be retained once you leave this page. To retain the information, click download icon (📄) to download the results.





How do I access ePB?

The screenshot shows the eProjectBuilder website interface. At the top, there is a dark teal navigation bar with links for 'Benchmarking', 'Help/Documentation', and 'About'. Below this, the eProjectBuilder logo is displayed, followed by a description of the platform's purpose for ESCOs and their customers. A list of four key features is provided. On the right side, a sign-in form is visible, titled 'Step 1: Please sign in'. It includes fields for 'Email' and 'Password', a 'Forgot password?' link, and a 'Sign In' button. Below the form, there is a link for 'New to ePB? Request an Account', which is highlighted by a blue arrow.

- Go to eprojectbuilder.lbl.gov and request an account for:
 - **Main ePB site** (eprojectbuilder.lbl.gov) to enter actual projects; and/or
 - **Training site** (epb-test.lbl.gov) to enter test data and explore tool from both ESCO and customer perspectives