Energy Project Data at Your Fingertips
eProject Builder (ePB) Overview

- 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 and report project information (including M&V) 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, bid-to-spec and others
  - Be audit-ready!
The Power of Data Management

• Institutionalizes ability to report program & project impacts; enables you to be *audit-ready*

• Demonstrates the *value* of projects and programs

• Enables fulfilment of reporting requirements

• Identifies where work has been completed and where remaining potential exists

• Tracks M&V to hold ESCOs accountable for guarantees

• Identifies persistence of achieved savings year over year

• Illustrates that benefits are being achieved in similar projects (by folks just like you)
A Brief History of ePB

2011-12:
- 2011-12: DOE shows strong interest in centralized, standardized project development and tracking system; funds ePB prototype, “E-PARS,” for fed. market
- 2012: DOE-FEMP provides support to build full system, intended to serve all markets

2013-14:
- 2013-14: Development team collects stakeholder data requirements; designs and implements system
- 2014 (summer): ePB Version 1.0 released
- 2014: Team shares Version 1 with ESPC Accelerators, collects state/local feedback

2015-18:
- 2015-16: Changes implemented to make ePB more flexible for state/local market
- 2016-18: Key features added - 1) Analysis/Reporting feature; 2) M&V module, 3) NAESCO accreditation; 4) DOE Qualified List application platform; 5) key template upgrades based on user requests (e.g., FEMP IDIQ 3)
Overview (continued)

• **Who is using it?**
  – Federal: FEMP ESPC IDIQ & ENABLE; UESC; Army Corps MATOC
  – States: state energy offices / general svc. depts. (DGS)
  – ESCOs: flexible data archive, easy access for proposals
  – NAESCO: upload projects for accreditation applications

• **Why ePB?**
  – The long game: grease the skids for ESPC and others
  – Standardization, transparency, and data preservation
  – Enables reliable reporting to stakeholders, ability to tout project success stories; holds ESCOs accountable
  – Overcome skepticism (“smoke & mirrors”) for projects
Overview (continued)

• Inputs and database content
  – Collects data at project level – not building or facility level
  – ePB is FLEXIBLE – collect the info that’s 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
### Participation

Contains **522** projects representing implementation costs of **$4.7B** and cumulative guaranteed savings of **$10.4B**

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

**129** state/local/educational/commercial/industrial/other

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

### Partners, Requirements, and Endorsements

Required for DOE-FEMP IDIQ 3 contracts

Used for DOE Qualified List of ESCOs accreditation process

Required or being used by increasing number of state ESPC programs

Endorsed by Energy Services Coalition; ESC is a key training/outreach partner

Endorsed by NAESCO – ePB required as platform for annual accreditation process
ePB Value Proposition

- **Standardizes energy project data** collection and reporting – across markets, ESCOs and regions
- **Preserves customers’ critical project data** through the contract term and beyond – free IT infrastructure
- **Enables robust analysis and reporting** of own project/program performance and trends – across ESCOs and customer organizations
- **Flexible!** Collect/use the types of data you need
- **Empowers customers** by providing them access to their project data in perpetuity
- **Builds robust nationwide database** that all users can tap for project benchmarking
Discussion

• What needs does your organization have around project data management?
• What would your organization like to get from using ePB?
• If you had a portfolio of project data in ePB – what kinds of reports/info would you like to output?
• What questions do you have about ePB at this point in the session?
ePB Technical Demonstration

• The next portion of the session will dive into details about how ePB works
**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
ePB Roles

Customer
“Project Initiator”

• Registers (individually, not by organization)
• Initiates project (takes less than 1 minute)
• Reviews project data
• Approves submitted project
• Unlocks project for revision, if necessary
• Invites Project Viewer(s)

ESCO
“Project Builder”

• Registers (individually, or by company)
• Enters project data
• Reviews project data with customer
• Submits project for approval
• Revises project data, if necessary
• Invites Project Viewer(s)

Other Stakeholder
“Project Viewer”

• Registers
• Views project information, only when invited
Log In

eProjectBuilder

ePB enables energy service companies (ESCOs) and their customers to securely:

1. Upload, track and access ESPC project-level information for the life of the performance contract
2. Quickly generate data for project and portfolio reports
3. Develop project scenarios using standardized amortization calculations
4. Benchmark new ESPC projects against historical project data

Learn more
# Projects Summary Page

![Image of Projects Summary Page](image.png)

## Search:

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Name</th>
<th>Market</th>
<th>Agency</th>
<th>Award Date</th>
<th>Last Modified</th>
<th>Customer</th>
<th>ESCO</th>
<th>Total Implementation Cost</th>
<th>Total Guaranteed Savings</th>
<th>Proposal Status</th>
<th>M&amp;V Status</th>
<th>Data % Complete</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>52204</td>
<td>Nov 19 demo project</td>
<td>Federal Government</td>
<td>State</td>
<td>2015-11-19 19:46:46</td>
<td>test</td>
<td>Customer Organization</td>
<td>ESCO Company name</td>
<td>$7,062,480</td>
<td>$8,689,789</td>
<td>Pending</td>
<td></td>
<td>100%</td>
<td><img src="link" alt="Link" /></td>
</tr>
<tr>
<td>52205</td>
<td>LBNL test project 3</td>
<td>Federal Government</td>
<td>Office of Science</td>
<td>2015-11-25 16:36:59</td>
<td>Berkeley Lab</td>
<td>Demo ESCO</td>
<td>ESCO of the West</td>
<td>$3,562,480</td>
<td>$5,006,332</td>
<td>Pre-Approval</td>
<td></td>
<td>100%</td>
<td><img src="link" alt="Link" /></td>
</tr>
<tr>
<td>52203</td>
<td>Demo project November</td>
<td>Federal Government</td>
<td>State</td>
<td>2015-11-30 20:36:11</td>
<td>Demo Customer</td>
<td>Demo ESCO</td>
<td>Demo ESCO</td>
<td>$5,882,480</td>
<td>$7,378,885</td>
<td>Approved</td>
<td>Pending</td>
<td>100%</td>
<td><img src="link" alt="Link" /></td>
</tr>
<tr>
<td>52213</td>
<td>December Test Project II</td>
<td>K-12 Schools</td>
<td>Office of Science</td>
<td>2015-11-30 20:14:19</td>
<td>LBNL</td>
<td>Demo ESCO</td>
<td>Demo ESCO</td>
<td>$7,682,480</td>
<td>$10,088,917</td>
<td>Approved</td>
<td>Pending</td>
<td>100%</td>
<td><img src="link" alt="Link" /></td>
</tr>
<tr>
<td>52212</td>
<td>Dec 1 demo</td>
<td>K-12 Schools</td>
<td></td>
<td>2015-11-30 19:07:23</td>
<td></td>
<td></td>
<td></td>
<td>$0</td>
<td>$0</td>
<td>Pending</td>
<td></td>
<td>0%</td>
<td><img src="link" alt="Link" /></td>
</tr>
</tbody>
</table>

Showing 1 to 5 of 5 entries

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

Demo project November

Location: Berkeley, CA
Customer: Demo Customer
ESCO: Demo ESCO
Award Date:
Implementation Cost: $5,882,480
Your Role: Project Initiator

Project Status
Your approved project has one or more M&V years in pending status available for the ESCO to submit.

Project Financial Schedules Archive
- Nov 25, 2015 04:50:04 pm PST
- Nov 25, 2015 04:39:49 pm PST

Documents
- File Name: ePB Project Contact List.docx
  - Date Uploaded: 11/30/2015 6:15:34 pm PST
  - File Size: 11.10 KB
- File Name: ePB Test Upload Document.docx
  - Date Uploaded: 11/30/2015 6:17:04 pm PST
  - File Size: 11.10 KB

Total Disk Usage: 22.20 KB

If you have questions, issues or feedback on eProject Builder please email: epb-support@lbl.gov
Excel-based Data Template

### SUMMARY SCHEDULE
**BASIC PROJECT INFORMATION**

<table>
<thead>
<tr>
<th>Category</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name</td>
<td>[Details]</td>
</tr>
<tr>
<td>Description</td>
<td>[Details]</td>
</tr>
<tr>
<td>Duration</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Status</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Number</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Location</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Description</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Contact Person</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Contact Email</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Contact Phone</td>
<td>[Details]</td>
</tr>
</tbody>
</table>

### Project Identification & Characteristics

<table>
<thead>
<tr>
<th>Identification &amp; Characteristics</th>
<th>[Details]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Identification</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Status</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Location</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Description</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Contact Person</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Contact Email</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Contact Phone</td>
<td>[Details]</td>
</tr>
</tbody>
</table>

### Cost & Financials

<table>
<thead>
<tr>
<th>Cost &amp; Financials</th>
<th>[Details]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable Percentage Change</td>
<td>[Details]</td>
</tr>
<tr>
<td>Contract Type</td>
<td>[Details]</td>
</tr>
<tr>
<td>Contract Period</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Cost</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Levy</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Finance</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Revenue</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Tax</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Payment</td>
<td>[Details]</td>
</tr>
<tr>
<td>Project Interest</td>
<td>[Details]</td>
</tr>
</tbody>
</table>

### Other Information

<table>
<thead>
<tr>
<th>Other Information</th>
<th>[Details]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed Savings</td>
<td>[Details]</td>
</tr>
<tr>
<td>Savings Escrowed</td>
<td>[Details]</td>
</tr>
<tr>
<td>Savings Realized</td>
<td>[Details]</td>
</tr>
<tr>
<td>Savings Realized</td>
<td>[Details]</td>
</tr>
<tr>
<td>Savings Realized</td>
<td>[Details]</td>
</tr>
</tbody>
</table>

### SCHEDULE #1
**COST SAVINGS AND PAYMENTS**

<table>
<thead>
<tr>
<th>Implementation Period</th>
<th>Estimated Cost Savings</th>
<th>Guaranteed Cost Savings</th>
<th>Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Period</td>
<td>(d)</td>
<td>(b)</td>
<td>(c)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Period (Year)</th>
<th>Estimated Annual Cost Savings</th>
<th>Guaranteed Annual Cost Savings</th>
<th>Annual Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Performance Period: [Details]

Total Implementation & Performance Period: [Details]
## M&V Summary

### Demo project November

<table>
<thead>
<tr>
<th>Performance Year</th>
<th>M&amp;V Report Due Date</th>
<th>M&amp;V Report Submitted Date</th>
<th>M&amp;V Report Approved Date</th>
<th>Status</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (Post-installation verification)</td>
<td></td>
<td>2015-11-23</td>
<td></td>
<td>Approved</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>2015-11-30</td>
<td></td>
<td>Pre-Approval</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>Pending</td>
<td></td>
</tr>
</tbody>
</table>
M&V Reports

• Output single year and cumulative project reports

Table: ANNUAL PERFORMANCE PERIOD M&V FOR YEAR 0

<table>
<thead>
<tr>
<th>ECM Number</th>
<th>Short Description</th>
<th>First Year M&amp;V Option</th>
<th>Electric Energy Savings (KWh/yr)</th>
<th>Other Savings Type 1</th>
<th>Other Savings Type 2</th>
<th>Other Savings Type 3</th>
<th>Other Savings Type 4</th>
<th>Other Savings Type 5</th>
<th>Other Savings Type 6</th>
<th>Other Savings Type 7</th>
<th>Other Savings Type 8</th>
<th>Total Energy Costs (KWh/yr)</th>
<th>Total Other Costs (KWh/yr)</th>
<th>Total Energy Cost Savings (KWh/yr)</th>
<th>Total Other Cost Savings (KWh/yr)</th>
<th>Total Energy Cost Savings (KWh/yr)</th>
<th>Total Other Cost Savings (KWh/yr)</th>
<th>Total Energy Cost Savings (KWh/yr)</th>
<th>Total Other Cost Savings (KWh/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Blinds, curtains</td>
<td>Option A</td>
<td>$140,000</td>
<td>$25,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>2</td>
<td>Ballasts and lamps</td>
<td>Option C</td>
<td>$128,000</td>
<td>$12,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>3</td>
<td>Blinds, curtains</td>
<td>Option C</td>
<td>$90,000</td>
<td>$90,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$90,000</td>
</tr>
<tr>
<td>4</td>
<td>Solar PV array</td>
<td>Option B</td>
<td>$100,000</td>
<td>$20,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
</tbody>
</table>

TOTALS: $450,000 $57,000

**IMPORTANT INFORMATION:**

1. Energy conversion factors for MMBtu/MMMBtu = 105 Btu; Electricity 0.003413 MMBtu/kWh; Natural Gas 1.0 MMBtu/MMMBtu; H2 Heating Prepared by: IMB/SIMM MMBtu/kWh
2. Estimated savings (KWh) represent an average KWh reduction figura. Demand savings can (and usually do) vary by season and size.
3. For post installation report, please enter expected year one savings values. For annual report, please enter verified annual 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
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)
Typical ePB Workflow

• Customer and ESCO register for ePB accounts upon ESCO selection
• Customer initiates project online, providing ESCO contact e-mail
• System automatically notifies ESCO that new project is available
• ESCO downloads data template from ePB site
• ESCO inputs project data into template and uploads completed version to online system
• ESCO may generate PDF schedules for project proposals
• When project is at award stage, ESCO submits for customer approval
• Customer reviews project data via output schedule; if deemed final, customer approves project and schedules are archived in ePB
• M&V module becomes available
• ESCO enters and submits annual M&V data; customer approves
• Customer has the ability to “unlock” project for revisions (e.g., mods)
ePB Software Requirements

• **Minimum browser requirements**
  – Mozilla Firefox 10.0.7
  – Google Chrome 30
  – Safari 9
  – Internet Explorer 11

• **Spreadsheet for data template**
  – Microsoft Excel 14.0 (2010 Windows, 2011 Mac) or higher
How do I access ePB?

- **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
Online Demonstration
Q&A

ePB website:  eprojectbuilder.lbl.gov
Email:  epb-support@lbl.gov
Phone:  (510) 486-7442 (message line)

Thank you!

Elizabeth Stuart:  estuart@lbl.gov
Phil Coleman:  pecoleman@lbl.gov