Discussion Overview

- How Institutional Procurement can Accelerate Market Transformation
- New Energy Commission Procurement Program
- Demo of Product Search Tool
- Review Survey Results & Discuss Opportunities
How can Institutional Procurement Accelerate Market Transformation?
Produce high-quality information and data that demonstrates cost-effectiveness, feasibility, and implementation pathways for strategically selected technologies, systems, or practices.

<table>
<thead>
<tr>
<th>Demonstrate Cost-Effectiveness</th>
<th>Demonstrate Feasibility</th>
<th>Demonstrate Compliance Pathways</th>
</tr>
</thead>
</table>
| • Installation, operational & maintenance costs  
  • Performance data  
  • Lifecycle savings | • Customer acceptance  
  • Performance  
  o Installation, operation and maintenance  
  • Overcome market barriers  
  o Information gaps  
  o Historical stocking practices  
  o For tires, no existing ratings | • Benchmarks & performance testing  
  • Procurement processes & training  
  • Verification |
**Example: Replacement Tires**

*Fuel efficient passenger vehicle replacement tires...*

- are far less efficient than tires sold with new vehicles
- can achieve 20% of the incremental transportation-specific GHG reductions listed in ARB's 2017 Climate Change Scoping Plan Update
- can reduce GHGs more than the top ten combined appliance energy efficiency standards
- are cost-effective
- disproportionately benefit low-income drivers and disadvantaged communities
- have a well-established test method (ISO28580), but no US ratings program
- have no negative impact on driver safety

*Sources: Energy Solutions*
California Can Lead the Nation Forward!

**Near-term**
- Adopt rolling resistance procurement specifications
- Provide data that demonstrates cost-effectiveness, feasibility & compliance pathway
- Begin process to adopt state-wide standards

**Unique role for CA Public Agencies!**

**Mid-term**
- Expand procurement process & availability of tire ratings to purchasers
- Leverage existing standards, research, cost-effectiveness data, etc.
- Design & administer incentive programs
- Engage & educate manufacturers, wholesalers & retailers

**Long-term**
- Adopt tiered ratings specifications

CO$_2$(e) savings equal to taking 300,000 cars off the road!
New Energy Commission Procurement Program

Increasing Adoption of Emerging Clean Energy Technologies through Procurement

GFO 17-301
The purpose of this solicitation is to **develop and scale-up new tools and resources to increase customer procurement of distributed energy resources (DER)**, including energy efficiency, renewable distributed generation, and distributed storage.
## Overview

<table>
<thead>
<tr>
<th>Group Number</th>
<th>Name</th>
<th>Focus</th>
<th>Prime Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>California Energy Product Evaluation Hub (Cal-EPE)</td>
<td>Product Evaluation</td>
<td>UC Davis</td>
</tr>
<tr>
<td>3</td>
<td>California Opportunities for Procurement to Accelerate Clean Energy (Cal-OP ACE)</td>
<td>Procurement Assistance</td>
<td>Prospect Silicon Valley</td>
</tr>
<tr>
<td>4</td>
<td>Product and Service Procurement Platform (TradePro Connect®)</td>
<td>Procurement Platform</td>
<td>Energy Solutions</td>
</tr>
</tbody>
</table>
Procurement Solutions

“Initiatives”

- Sector(s)
- Technology / Service
- Intervention

Example Interventions
- Product & Bid Specifications
- Procurement System Enhancements
- Group Purchasing
- Behavior Challenges

“Tools”

- Buyer User
  - Find a Product
  - Find a Service
  - Product Search
    - Compare environmental attributes of compliant products
  - Service Network
    - Solicit bids from vetted service providers
  - Materials Procurement
    - Purchase products from approved supplier eCommerce sites
  - Reporting
    - Automate reporting and compliance validation
Progress to Date

Understand Users
- Existing practices
- Needs
- Priorities
- Opportunities

Determine Market Size
- Energy savings
- GHG mitigation
- Feasibility
- Resilience

Prioritize Activities
- Products to evaluate
- Procurement Initiatives

Design & Launch Initiatives
- Enroll buyers & sellers
- Support procurement

Project is here
Demo of Product Search Tool
Review Survey Results & Discuss Opportunities
Introduction

Purpose of Survey:

• Identify **what** DER technologies California organizations are buying

• Understand **how** organizations buy DER technologies

• Identify buyer priorities, needs, challenges and opportunities

Some Key Questions:

• Who are the major influencers of DER procurement?

• What are the common practices and procedures guiding DER technology adoption and procurement decisions?

• What type of tools and resources are used?

• What are the bottleneck, barriers and prevention factors?

• What are the additional support organizations want?

• Do different sectors face different institutional barriers regarding DER adoption and procurement?
Please ask yourself...

• Does my experience align with the findings presented?
• What are some of the barriers I face that’s not addressed here?
• Are there other important factors not mentioned here?
• How can I leverage this program to help CSU reach its goals?
Information Needs and buying Priorities

User Priorities

- Low risk
- Maximum profit
- Innovativeness of technology

User Information/Evaluation Needs

- Unit cost and cost effectiveness
- Operation and maintenance
- Integration capabilities
- Installation
- Remote access and reporting capabilities
- Per-unit resource consumption
- Grid service capabilities
- Non-energy benefits

Source: UC Davis, 2019
Who took the survey?

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-12 schools</td>
<td>19</td>
</tr>
<tr>
<td>Higher education</td>
<td>17</td>
</tr>
<tr>
<td>Local government</td>
<td>14</td>
</tr>
<tr>
<td>Agriculture</td>
<td>10</td>
</tr>
<tr>
<td>State government</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>8</td>
</tr>
<tr>
<td>A&amp;E firms</td>
<td>7</td>
</tr>
<tr>
<td>Federal government</td>
<td>5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>5</td>
</tr>
<tr>
<td>Technology</td>
<td>5</td>
</tr>
<tr>
<td>Commercial real estate</td>
<td>4</td>
</tr>
<tr>
<td>Healthcare</td>
<td>3</td>
</tr>
<tr>
<td>Retail</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: LBNL, 2019
Roles: What are respondent’s functions?

- Managing / developing projects
- Reviewing proposals
- Specifying the attributes of item being purchased
- Developing contract documents
- Approving expenditures

Many respondents have cross-functional roles - The average respondent selected more than 2 roles

Source: LBNL, 2019
Roles: What are they responsible for buying?

Source: LBNL, 2019
Roles: Who are the major Influencers?

<table>
<thead>
<tr>
<th>Type of Influencers</th>
<th>Percentage of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilities Manager</td>
<td>50%</td>
</tr>
<tr>
<td>IT Managers</td>
<td>21%</td>
</tr>
<tr>
<td>Energy Manager</td>
<td>46%</td>
</tr>
<tr>
<td>Chief Financial Officer</td>
<td>51%</td>
</tr>
<tr>
<td>Fleet Manager</td>
<td>16%</td>
</tr>
<tr>
<td>Contract Officer</td>
<td>21%</td>
</tr>
<tr>
<td>Sustainability Manager</td>
<td>23%</td>
</tr>
<tr>
<td>Legal Counsel</td>
<td>8%</td>
</tr>
<tr>
<td>External Influencers</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: LBNL, 2019
Rules: How often does organizations use preferred vendors?

- Never: 8%
- Sometimes: 41%
- Often: 38%
- Always: 13%

This suggests flexibility in how organizations choose vendors during their procurement process.

Source: LBNL, 2019
Rules: What does your organization care about?

- **Lowest lifecycle cost**: 58%
- **Lowest first cost**: 70%
- **Preferable environmental attributes**: 27%
- **Provided by small / veteran-owned business**: 14%
- **Provided by local business**: 21%
- **Made in America**: 13%
- **Provided by woman / minority-owned business**: 11%

*Source: LBNL, 2019*
Rules: What prevents organizations from purchasing DER products?

- **High cost / long-return on investment**: 66%
- **Interoperability with existing equipment**: 31%
- **Operational reliability**: 31%
- **Lack of top management support**: 34%
- **Need to retrain staff**: 23%
- **Lack of financing options**: 44%
- **Lack of staff buy-in**: 25%
- **Availability of repair parts**: 14%
- **Security**: 18%
- **Maintenance of the product**: 25%

**Source:** LBNL, 2019
Tools: What tools are organizations using?

- Standardized contract templates: 75%
- Purchase order requisition forms: 66%
- Standardized specification templates: 44%
- E-procurement systems: 37%
- Software tools for contract development: 28%

Source: LBNL, 2019
Tools: How easy is it for organizations to purchase new DER products with existing tools?

- Very easy: 8%
- Somewhat easy: 33%
- Somewhat difficult: 44%
- Very difficult: 15%

How easy or difficult is it for you?

Source: LBNL, 2019
Tools: When does organizations face bottleneck?

<table>
<thead>
<tr>
<th>Procurement Bottleneck Phase</th>
<th>Always/often</th>
<th>Sometimes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaining approvals</td>
<td>52%</td>
<td>34%</td>
</tr>
<tr>
<td>Developing contract documents</td>
<td>40%</td>
<td>44%</td>
</tr>
<tr>
<td>Legal review process</td>
<td>33%</td>
<td>44%</td>
</tr>
<tr>
<td>Specifying and selecting products</td>
<td>30%</td>
<td>59%</td>
</tr>
<tr>
<td>Ordering process</td>
<td>21%</td>
<td>56%</td>
</tr>
<tr>
<td>Shipping</td>
<td>9%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Percentage of Responses

Source: LBNL, 2019
Products: How much does organizations spend per product category?

By Number of responses

- MR&O
- Energy retrofit
- New construction & renovation
- IT products & services
- Non-IT appliance
- Transportation / fleet
- Laboratory / medical

By Dollar Value

- Energy retrofit: 11.1%
- New construction & renovation: 32.2%
- MR&O: 20.3%
- Other: 25.0%
- IT products & services: 11.4%
- Non-IT appliance: 10.6%
- Transportation / fleet: 9.7%
- Laboratory / medical: 4.7%

Source: LBNL, 2019
### Products: What products are organizations planning to buy in the next 5 years?

<table>
<thead>
<tr>
<th>Product Categories</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting &amp; lighting controls</td>
<td>91%</td>
</tr>
<tr>
<td>HVAC equipment</td>
<td>93%</td>
</tr>
<tr>
<td>Distributed generation</td>
<td>83%</td>
</tr>
<tr>
<td>EV's</td>
<td>75%</td>
</tr>
<tr>
<td>EV charging technologies</td>
<td>78%</td>
</tr>
<tr>
<td>Distributed storage technologies</td>
<td>83%</td>
</tr>
<tr>
<td>Building envelopes</td>
<td>86%</td>
</tr>
<tr>
<td>Water heating appliances</td>
<td>82%</td>
</tr>
<tr>
<td>C&amp;I refrigeration</td>
<td>60%</td>
</tr>
<tr>
<td>Appliances</td>
<td>72%</td>
</tr>
</tbody>
</table>

Source: LBNL, 2019

[Graph showing the percentage of respondents for each product category]
Products: What are the high priority products?

- Lighting & lighting…: 34%
- HVAC equipment: 45%
- Distributed generation: 37%
- EV's: 25%
- EV charging: 30%
- Distributed storage: 28%
- Building envelopes: 13%
- Water heating appliances: 11%
- C&I refrigeration: 11%
- Appliances: 7%

Source: LBNL, 2019
Products: Which products does organizations need the most additional support on?

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Percentage of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC equipment</td>
<td>43%</td>
</tr>
<tr>
<td>EV charging</td>
<td>37%</td>
</tr>
<tr>
<td>EV</td>
<td>39%</td>
</tr>
<tr>
<td>Distributed storage</td>
<td>48%</td>
</tr>
<tr>
<td>Distributed generation</td>
<td>43%</td>
</tr>
<tr>
<td>Lighting and lighting controls</td>
<td>37%</td>
</tr>
<tr>
<td>Building controls</td>
<td>44%</td>
</tr>
<tr>
<td>Water heating appliances</td>
<td>23%</td>
</tr>
<tr>
<td>C&amp;I refrigeration</td>
<td>17%</td>
</tr>
<tr>
<td>Building envelopes</td>
<td>23%</td>
</tr>
<tr>
<td>Appliances</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: LBNL, 2019
Additional Support: What are the most useful service offerings to organizations?

<table>
<thead>
<tr>
<th>Type of Service Offerings</th>
<th>Most Useful</th>
<th>Somewhat Useful</th>
<th>Least Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical specifications for DER products</td>
<td>48%</td>
<td>32%</td>
<td>8%</td>
</tr>
<tr>
<td>Facilitation of group purchasing opportunities</td>
<td>43%</td>
<td>23%</td>
<td>23%</td>
</tr>
<tr>
<td>Networking and training events</td>
<td>40%</td>
<td>24%</td>
<td>27%</td>
</tr>
<tr>
<td>Online database of DER products</td>
<td>39%</td>
<td>39%</td>
<td>10%</td>
</tr>
<tr>
<td>&quot;Cut and Paste&quot; language for contracting documents</td>
<td>34%</td>
<td>36%</td>
<td>15%</td>
</tr>
<tr>
<td>Online portal for connecting with DER vendors</td>
<td>32%</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>On-call DER technical expertise</td>
<td>27%</td>
<td>45%</td>
<td>14%</td>
</tr>
<tr>
<td>Integration of DER options into your existing E-procurement platforms</td>
<td>21%</td>
<td>30%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: LBNL, 2019
Thank You

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