

Technology Performance Exchange

Improving confidence through data.



Home

Technology Categories

Participating Companies

About

Developers

Manufacturer

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1. REGISTER

Manufacturers and Brand Owners
add your products to the site

3rd Party Test Laboratory or Contributing Evaluators
add detailed performance data

Basic Users
view product data



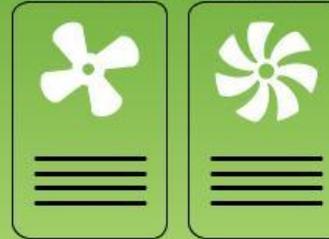
REGISTER NOW

2. SEARCH OR BROWSE TECHNOLOGIES



Search for cost-effective, energy-efficient technologies

3. COMPARE DETAILED ENERGY PERFORMANCE DATA



4. EVALUATE ENERGY AND COST SAVINGS



Use data in your calculations and energy simulations

Present the results to encourage capital investment in energy saving technologies



SEARCH PRODUCTS



BROWSE TECHNOLOGY CATEGORIES

SSL Replacement Lamps



Non-SSL Luminaires



Chillers



Non-SSL Lamps



SSL Luminaires



Boilers



Ballasts



Rooftop units



+ ADD A NEW PRODUCT

Manufacturers

Learn how to submit your products to the Technology Performance Exchange.

Partners/Developers

Learn about the Technology Performance Exchange.

Technology Performance Exchange

TDM – Jason Koman (BTO)

TDM – Dave Catarious (FEMP)

William Livingood

National Renewable Energy Laboratory
William.Livingood@nrel.gov 303-384-7490

April 2, 2013

Problem: Perceived fiscal risk associated with the installation of unfamiliar technologies impedes adoption rates for cost-effective, energy-saving products.

Impact of Project: Enable end users to quickly and confidently assess technologies and products by defining the requisite energy performance characteristics and developing the infrastructure to store those data.

Project Focus: Ensure that necessary energy performance data are easily accessible for a broad array of technologies to reduce investment risk and drive uptake of cost-effective efficiency measures.

Approach:

- Use a modular and collaborative approach to define the characteristics necessary to credibly predict energy performance
- Create the infrastructure necessary for stakeholders to find, share, and leverage submitted data

Key Issues:

- Interface with industry to facilitate data submission
- Coordinate with existing technology demonstration programs (BPA E3T, Navy Techval, etc.) to ensure scope is relevant to the market

Distinctive Characteristics:

- Necessary energy performance characteristics are identified up-front to ensure submitted data are relevant to the user
- Data provenance (provider, derivation, date, etc.) is clearly identified
- Products are NEVER rated or ranked; judgment of “goodness” and “trustworthiness” left to the end user
- Leverage and improve existing resources (ENERGY STAR, Lighting Facts, AHRI, etc.)

Accomplishments:

- TPE beta site soft-launched (currently only test data)
- Scope includes eight technologies; two pending
- Bonneville Power Administration providing \$324,000
 - Expand covered technologies
 - Integrate with the Building Component Library

Progress on Goals:

- Beta site launched on February 28, 2013
- Currently performing industry outreach activities
- Too early to measure progress against project metrics
 - Registered users
 - Unique site visits
 - Included products

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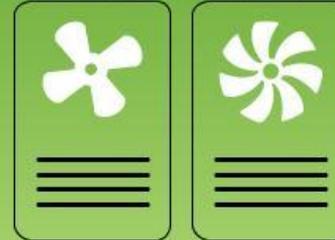
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FUTURE TECHNOLOGY CATEGORIES

New technology categories will be added to the site as standardized forms are developed for each technology.
Technologies under consideration include:

Photovoltaic Modules
Wind Turbines
Power Inverters
Pumps

Air Filters
Compressors
Envelope Insulation
Combined Heat and Power (CHP)

Fans
Evaporative Coolers
Desiccant Cooling Systems
Roofing Membranes

Contribute

Large catalog of products to upload?
Contact us for bulk upload options.

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RESULTS (10)

Narrow Your Results

Data Contributed By:

- Manufacturer/Brand Owner 10
- Contributing Evaluator 2
- 3rd Party Test Laboratory 1

Technology Category:

- Packaged Unitary Equipment 10
- Rooftop Units 10

Nominal Cooling Capacity (kW):

47 238

Energy Efficiency Ratio ((BTU/h)/Watt):

Integrated Energy Efficiency Ratio ((BTU/h)/Watt):

Refrigerant:

BRAND	PRODUCT LINE / FAMILY NAME	MODEL	Performance Data Highlights				Refrigerant	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> COMPARE UP TO 4 PRODUCTS <i>Clear All</i>	
			Nominal Cooling Capacity (kW)	Energy Efficiency Ratio ((BTU/h)/Watt)	Integrated Energy Efficiency Ratio ((BTU/h)/Watt)				
Manufacturer B	Conditional	9654-HSLTF	217	10.2	N/A	R-22	<input checked="" type="checkbox"/>		
Manufacturer A	PACU	EFEO32	72	13.4	13.3	R-410A	<input checked="" type="checkbox"/>		
Other Manufacturer	Air Saver	ESOG8502	110	14.2	Data reported by a 3rd party test laboratory		<input checked="" type="checkbox"/>		
			108	13.8				N/A	N/A
			96	N/A				N/A	N/A
Manufacturer B	Roof Sense	FHLS	47	N/A	14	N/A	<input type="checkbox"/>		
Other Manufacturer	Air Saver	HFLT9637	83	12.8	14.1	R-22	<input type="checkbox"/>		
Manufacturer A	PACU	HROD98	84	16.4	15.2	N/A	<input type="checkbox"/>		

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[Packaged Unitary Equipment](#) | [Rooftop Units](#) | Other Manufacturer ESO8502

Other Manufacturer ESO8502

Brand
Other Manufacturer

Manufacturer
Other Manufacturer

Product line / Family Name
Air Saver

Manufacturer Website
<http://www.OtherManufacturer.com.net>

Model number
ESO8502

+

▼

↓

Energy Performance Data

▼ **Nominal Cooling Capacity** 105 kW
(average of 3 reports)

Source	Posted on	Derivation	Data
Other Manufacturer	02/28/2013	Self-Measured, Laboratory	110 kW 
Testing Laboratory A	02/28/2013	Self-Measured, Laboratory	108 kW 
Contributing Evaluator B			96 kW 

"A ratio of the Cooling Capacity in Btu/h to the power input values in watts at any given set of rating conditions expressed in Btu/W • h." (AHRI 340/360 2007)

▼ **Energy Efficiency Ratio** 14.00 (BTU/h)/Watt
(average of 2 reports)

Source	Posted on	Derivation	Data
Other Manufacturer	02/28/2013	Self-Measured, Laboratory	14.20 (BTU/h)/Watt 
Testing Laboratory A	02/28/2013	Self-Measured, Laboratory	13.80 (BTU/h)/Watt 

▼ **Integrated Energy Efficiency Ratio** 13.90 (BTU/h)/Watt
(1 report)

Project Plan & Schedule

Project Start Date: January 27, 2012

Project Planned Completion Date: September 30, 2013

Schedule and Milestones: All deliverables/milestones on time and on budget

Go/No-Go Decision Points: Both passed in FY 2012

Summary												
WBS Number or Agreement Number	19987				Work completed							
Project Number	CBI_NREL-FY13-12				Active Task							
Agreement Number	19987				Milestones & Deliverables (Original Plan)				Milestones & Deliverables (Actual)			
	FY2012				FY2013				FY2014			
	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)
Task / Event												
Project Name: Technology Performance Exchange												
Q2 Deliverable: Project Work Plan		■	◆									
Q2 Go/No-Go DOE Decision Point: Passed			◆									
Q3 Deliverable: Develop Site Workflows and Design Website Layout			■	◆								
Q3 Go/No-Go DOE Decision Point: Passed				◆								
Q1 Milestone: Develop Data Entry Forms				■	◆							
Q2 Milestone: Release Technology Performance Exchange V1.0				■	◆							
Q3 Milestone: Release Technology Performance Exchange V1.1					■	◆						
Q4 Deliverable: Site Maintenance and Server Updates						■	◆					
Q4 Deliverable: Industry Outreach Activities							■	◆				
Q4 Deliverable: Update Site With New Data Entry Forms								■	◆			

Project Budget:

- FY 2012: \$223,000 BTO; \$200,000 FEMP; \$423,000 total
- FY 2013: \$201,000 BTO; \$290,000 FEMP; \$491,000 total

Variances:

- No variance

Cost to Date:

- On schedule; 60% spent in FY 2013
- 40% remaining

Additional Funding:

- Bonneville Power Administration IAG
 - \$222,870 FY 2013
 - \$100,889 FY 2014

Budget History					
FY 2010		FY 2011		FY 2012	
DOE	Cost-share	DOE	Cost-share	DOE	Cost-share
N/A	N/A	N/A	N/A	\$423,000	\$0

Partners, Subcontractors, and Collaborators:

- Partners: Bonneville Power Administration
- Subcontractors: Aten Design Group, Holliday Electrical Mechanical Engineering
- Key Collaborators: Acuity Brands, AMO, ASHRAE SPC 205, BPA, Carrier, CEE, DoD ESTCP, E Source, EPRI, ETCC, GSA GPG, Navy TechVal, Taylor Engineering, Trane, SMUD, Walmart

Technology Transfer, Deployment, Market Impact:

- Ongoing interaction with 23 stakeholders
- Coordinate and leverage utility, state, and federal technology evaluation efforts
 - Working with BPA to integrate the Technology Performance Exchange into its E3T program

Communications:

- Emerging Technologies Coordinating Council Quarterly Coordination Meeting (September 2012)
- SPC 205 Meeting, 2013 ASHRAE Winter Conference
- Project factsheet: www.nrel.gov/docs/fy13osti/56457.pdf
- BTO site: www1.energy.gov/buildings/commercial/technology_performance.html
- EPRI Program Advisory Meeting
- Open invitation for peer review

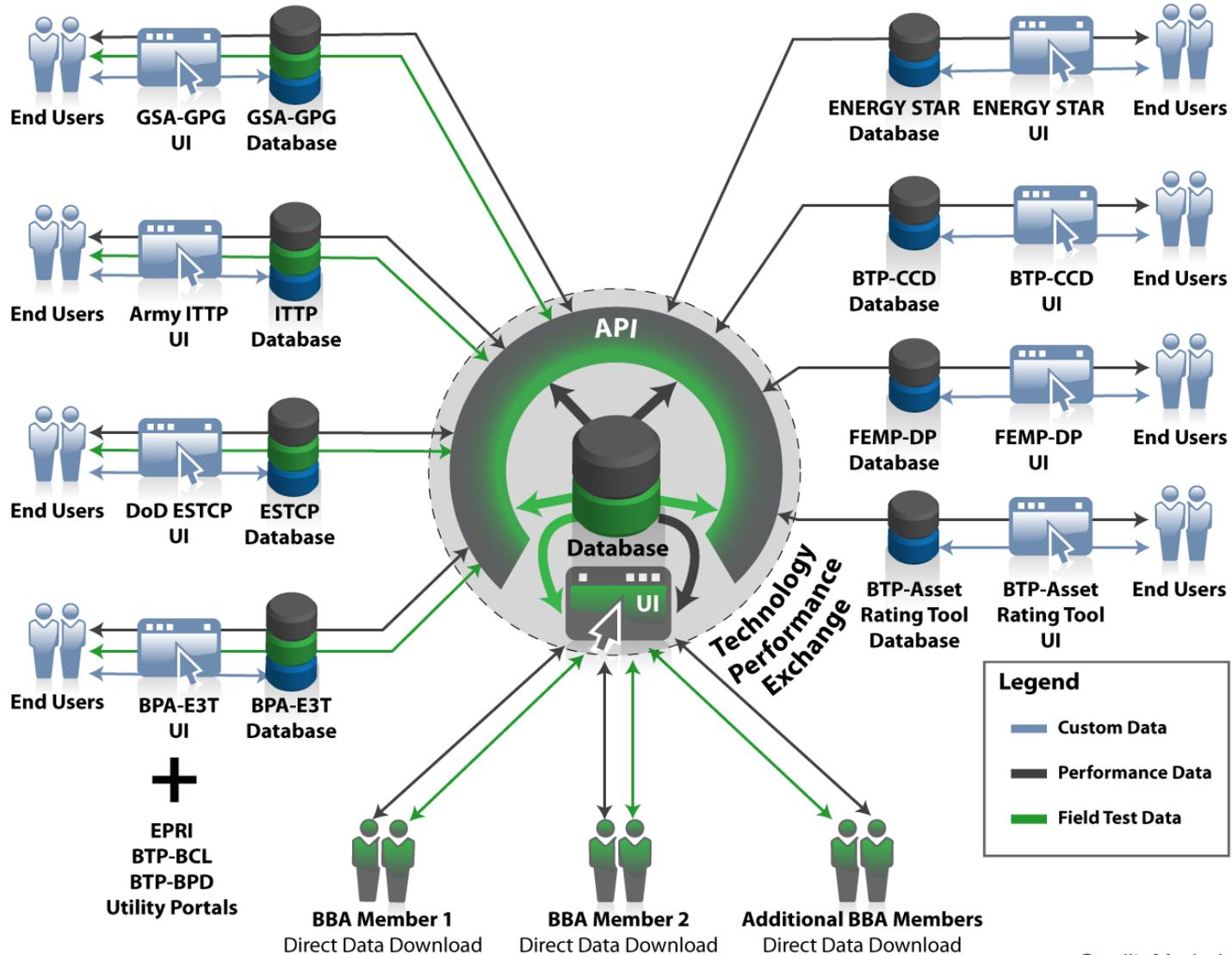
- Improve current technology evaluation processes

Current State	Technology Performance Exchange
Technology evaluators cannot effectively share results (raw data)	Support information sharing
Technology evaluation efforts often repeated (costs duplicated)	Remove replication and lower the cost/data burden through a stakeholder partnership
Barriers exist between energy simulation and laboratory & field testing	Powerful analytical methods can be tightly integrated with field testing

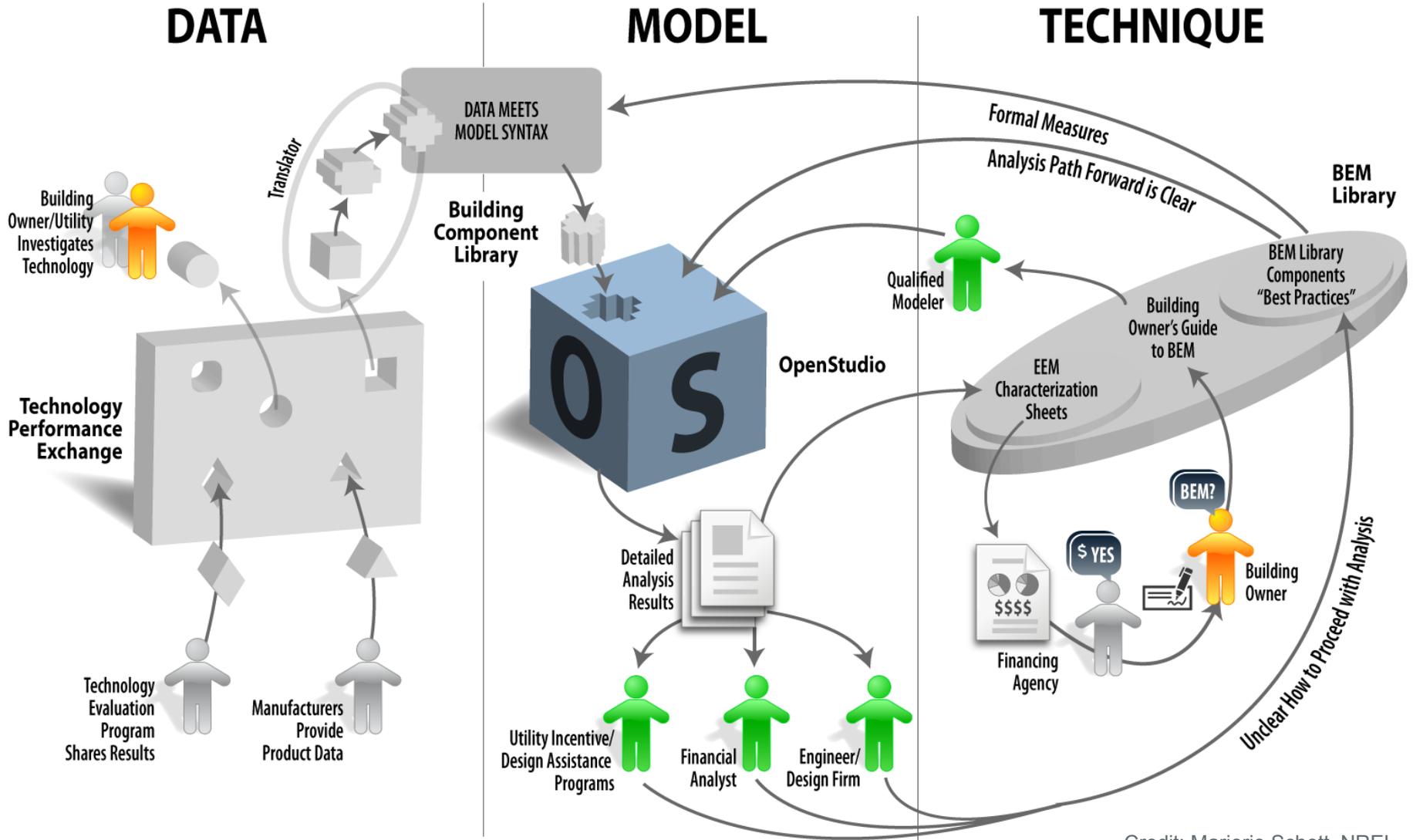
Next Steps and Future Plans:

- Outreach and engagement
 - Stream millions of performance data points via API
 - Amplify impact of utility incentive programs
- Technology Performance Exchange V1.1
 - Upgraded workflows/expanded scope
- Work with BPA to expand included technologies
 - Expanded scope
- Integrate data flows with Building Component Library
 - Seamless information flow from performance testing to whole-building analysis
- Foster 3rd party application development
 - Increase use of energy data in procurement decisions

Next Steps and Future Plans



Credit: Marjorie Schott, NREL



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