



## Introduction to *Commitments to Better Communities*

Wednesday, July 12

Wednesday, July 19





A U.S. Department of Energy-led collaboration with local government leaders, businesses, and institutions to improve the prosperity of American communities through clean energy technologies and solutions

## COMMITMENTS FOR BETTER COMMUNITIES OVERVIEW

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**Objective:** Help match resources from public and private sector organizations to local government needs.

**Outcome:** An expansion of resources for communities that support their achievement of local energy and economic goals, while enabling participating public and private sector organizations to demonstrate innovative solutions

## COMMITMENTS FOR BETTER COMMUNITIES OVERVIEW

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- Summary:** A subset of BCA Affiliate Partners have identified in-kind resources that can be made available to BCA Local Government Partners to help them advance their energy priorities and achieve their energy and economic goals. Resources may include but are not limited to:
- EE technical assistance or educational efforts;
  - EE research or best practices guidance;
  - Data analysis support;
  - Energy-saving demonstration or pilot programs; and
  - Energy-related training programs for local government staff.

## PARTNERS

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## APPLICATION PROCESS

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**1**

Go to the *Commitments* web page and download the Resource Opportunity/Application Form

- <https://betterbuildingsolutioncenter.energy.gov/commitments-better-communities>
- Separate application form for each opportunity

**2**

Email completed forms to Monica Kanojia at DOE ([Monica.Kanojia@ee.doe.gov](mailto:Monica.Kanojia@ee.doe.gov)) by Friday, Aug. 4.

## APPLICATION PROCESS

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- Each Affiliate Partner, not DOE, will make the final determination on which Local Government Partners receive their respective resource(s)
- Local Government Partners may apply to no more than two resource opportunities
- Specific questions on each opportunity should be addressed to Partner contacts

## ROLE OF DOE

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- Assess resources identified by Affiliate Partners to ensure that they have the potential to add substantive value for Local Government Partners
- Develop an efficient and consistent application process for Local Government Partners and Affiliate Partners, including a template application which Affiliate Partners may customize
- Provide public recognition of the resources identified by Affiliate Partners for the initiative
- Collect information related to the implementation of resources to assess quality and impact
- Recognize Local Government Partners and Affiliate Partners for resulting achievements

## SCHEDULE

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<b>ACTIVITY</b>	<b>DATE</b>
<b>Application process opens for Local Government Partners</b>	July 12
<b>Application process closes</b>	Aug. 4
<b>Local Government Partner recipients announced</b>	Aug. 18
<b>Implementation period begins</b>	Aug. 21
<b>Implementation period concludes</b>	Dec. 18
<b>DOE publishes summary of outcomes and impacts</b>	Jan. 29, 2018

## ELIGIBILITY AND GENERAL TERMS

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- The *Commitments for Better Communities* initiative is open to municipal and county government (Local Government) Partners, and organizational Affiliate Partners, in DOE's Better Communities Alliance.
- Participation by Local Government Partners and Affiliate Partners in the initiative is voluntary.
- Applying for a resource identified by an Affiliate Partner does not guarantee a Local Government Partner will receive any resource.
- Affiliate Partners that have identified resources for the initiative will not construe, claim, or imply that its participation in the initiative constitutes Federal Government approval, acceptance, or endorsement of anything other than Partner's commitment to the initiative.
- All resources identified by Affiliate Partners are done so on a wholly voluntary basis and may be terminated by any party at any time, and for any reason, with no penalty.

# RESOURCE OPPORTUNITY

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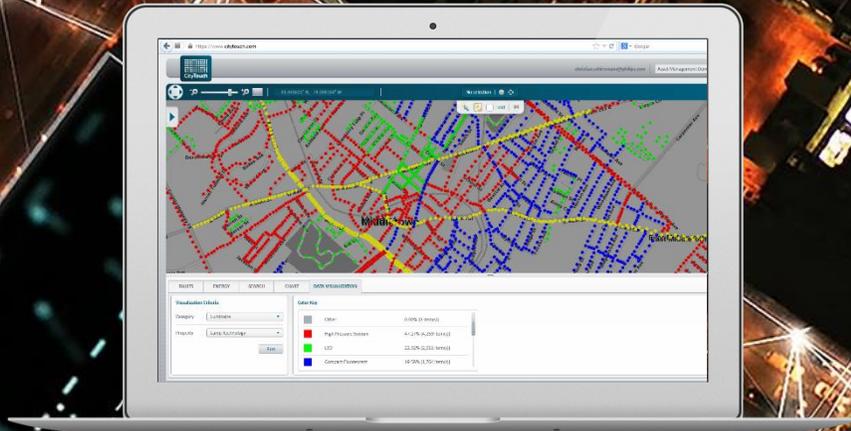
# Making Great Places to Live with Connected Lighting

innovation  you

**PHILIPS**

# CityTouch connected lighting management

CityTouch gives full control over the entire lighting infrastructure including monitoring and accurate energy metering



## 1 Performance monitoring

- Always stay informed about the **status of your lighting** infrastructure
- Get **auto-notification of faults** without the need for any scouting
- Create full transparency and **verify service level agreements**

## 2 Remote management

- Flexibly **control lighting** from remote
- **Manual override** in case of emergency

## 3 Energy measurement

- Get real accurate **metering data**
- Easily **verify energy billing**



## Connected operations

By 2025, 35% of our lighting will be connected. Our products, systems, and services will continue to bring lighting management to increasing levels of capability, responsiveness, and integration with other city services.

# Connected Lighting

A close-up photograph showing a person's hands, wearing blue and grey work gloves, connecting a white smart light bulb into a black smart socket. The socket is mounted on a white surface. In the background, another person wearing an orange safety vest is partially visible. The text 'Connected Lighting' is overlaid in the top left corner.

Connected lighting today-simple,  
impactful



Field technicians can  
access information  
**anytime, anywhere**

Connected lighting  
and asset management



Open to implement  
new software applications

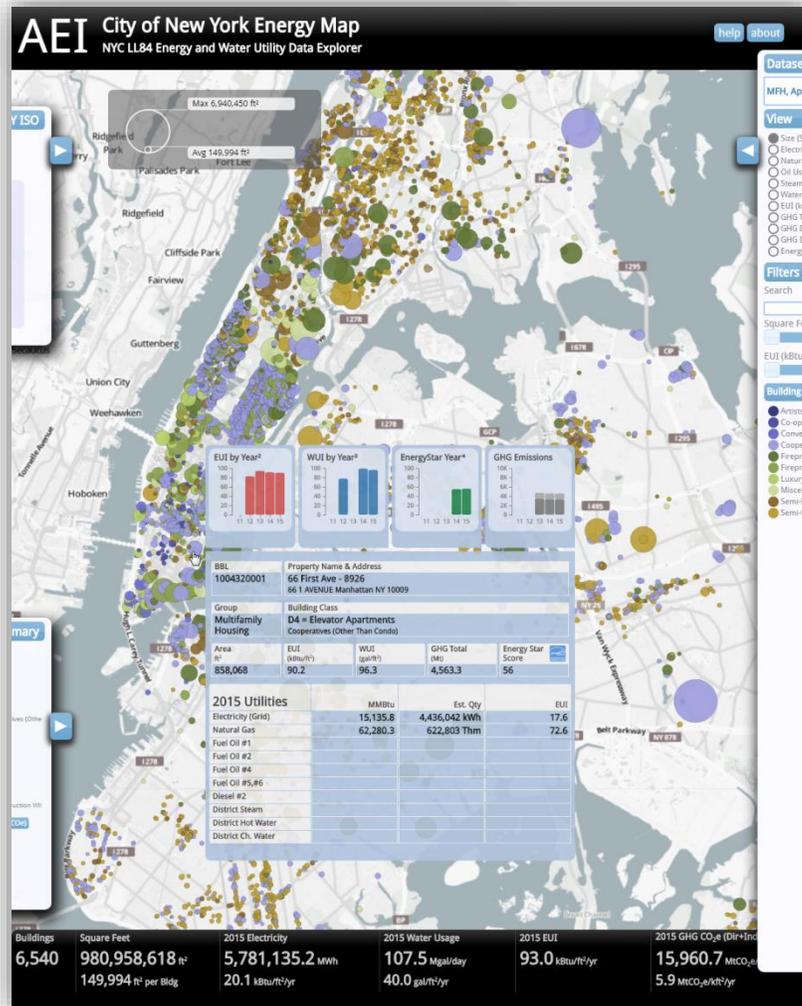


## RESOURCE OPPORTUNITY

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# Whole-City Energy Maps

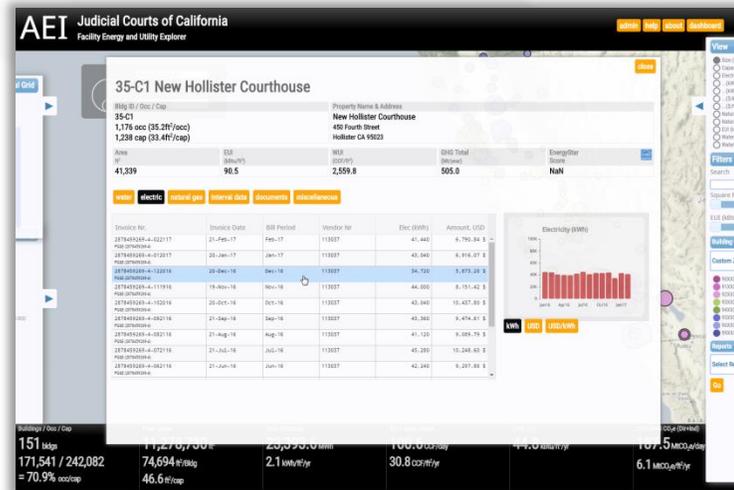


A comprehensive, visual and intuitive explorer for energy and water data across your entire portfolio.

AEI is a Boston-based small business with 50 years of experience in energy efficiency.



# Whole-City Energy Maps

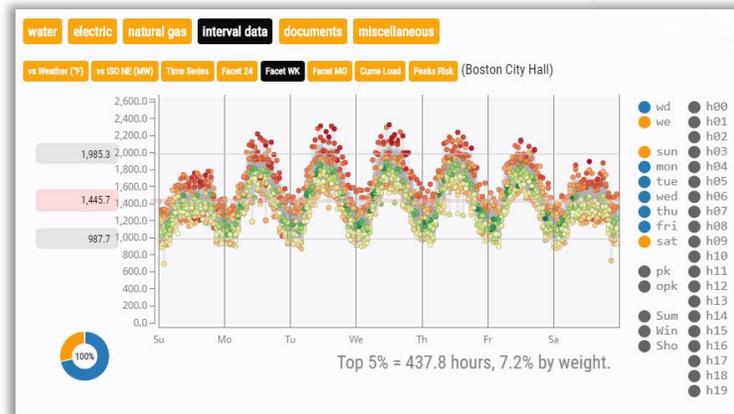


## Utility Bills

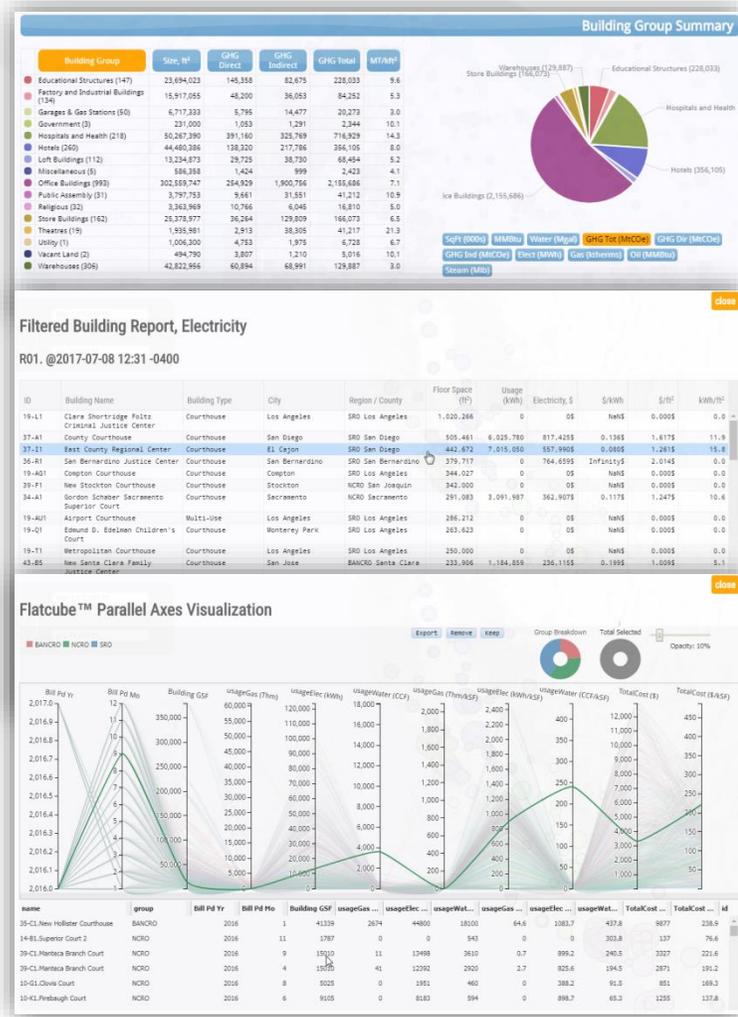
- Reconciliation
- Analytics, Monthly Trends
- EUI by month, season, fuel
- Compare usage and cost per ft<sup>2</sup>, occupancy, etc.
- CBECs Benchmarks, are you at 80 EUI?

## Interval Data

- Building Profiles by day, week, season, occupancy
- Versus Weather, Grid
- Energy Conservation Discovery Process



# Whole-City Energy Maps



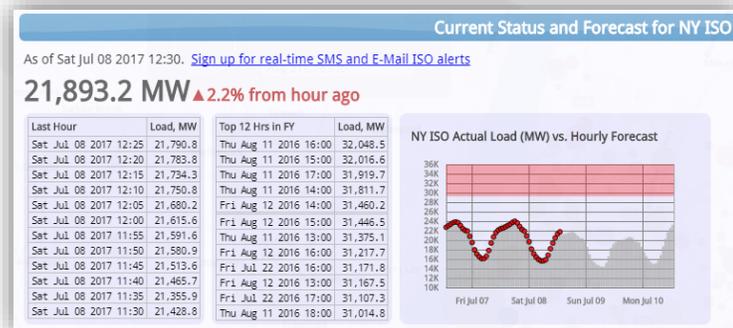
## Aggregation

- User-defined, data-defined groups
- Compare by any metric or time period
- Include/Exclude combinations

## Reporting

- Stock and custom reports
- Monthly reconciliation
- Trends and Ranks
- Powerful Flatcube™ Analytics

# Whole-City Energy Maps

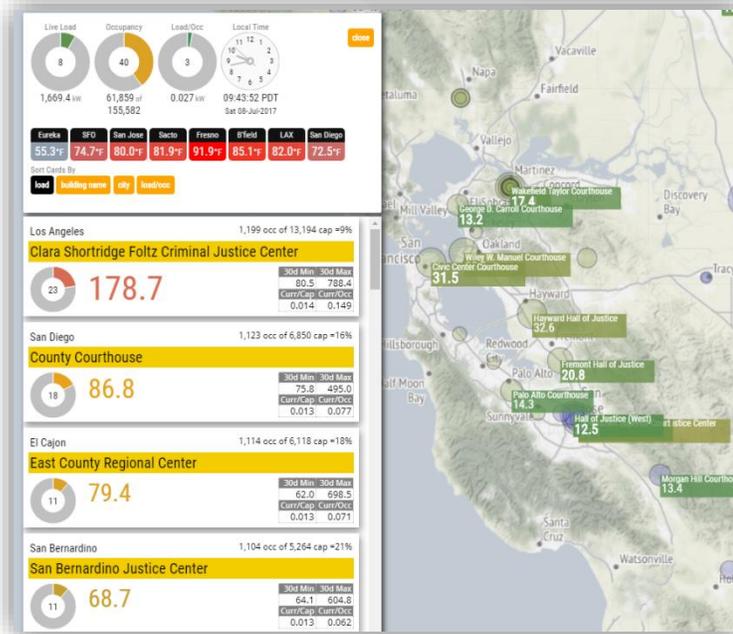


## Real-Time Grid

- Standard for your RTO
- Peak demand SMS and E-Mail alerts
- Updates every 5-minutes

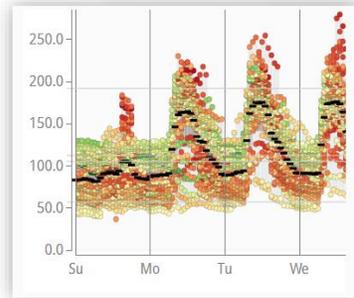
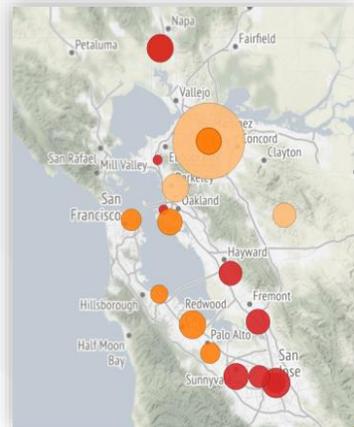
## Real-Time Buildings

- OPTIONAL – NOT included in DOE BCA Offer
- SMS and E-Mail Alerts for building peaks in billing period
- Real-Time DR on your terms
- Feed your apps and kiosks



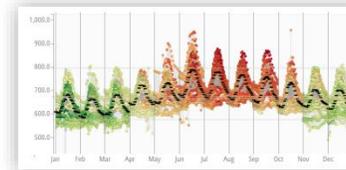
# Benefits

- **Energy Map**  
Quickly locate outliers on any metric for any time period.
- **Profiling**  
Time-of-Use informs specific modes and savings opportunities.
- **Rank** buildings by applying pattern metrics across the portfolio to target candidates.
- **Disclosure** compliance support, **IPMVP** Option C.



75kW volatility during unoccupied hours is an annual \$54k opportunity.

- **Real-Time Savings**  
Historic profiles plus real-time metering lets us know when we're getting close to a new peak.
- **SMS Alerts** give the operator advanced notice of grid or building peak conditions, or mid-day goals.
- **Engage DR and Social** to reduce demand charges on the monthly bill and reduce TNUoS charges.



This building has a 95<sup>th</sup> percentile load of 800kW. Holding the load to 800kW would save over \$10,000/year in demand charges alone. One hour in October cost \$3,500.

# Considerations

## Architecture

- No installed hardware or software, accessible by browser
- Hosted by AEI or on your web site (with year 2 commitment)
- Integrated, single URL, data feed API to your apps, kiosks

## Requirements

- Consistent, reliable and uniform format for utility billing data
- Access to web, EPO or other utility interval data services
- An engaged team resource

Thank You



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[www.aeintelligence.com](http://www.aeintelligence.com) • [info@aeintelligence.com](mailto:info@aeintelligence.com)

MORE INFO:

<http://www.aeintelligence.com/doe-bca>

LIVE DEMO: <http://www.aeintelligence.com/apps/06203/>

RESOURCE OPPORTUNITY

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The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

[aceee.org](http://aceee.org) @ACEEEdc

**ACEEE**  
American Council for an Energy-Efficient Economy

# City Scorecard goals



1. Compare large US cities exclusively on efficiency – creating friendly competition among cities to become more efficient
2. Focus on policies to highlight important actions cities can take – offering a roadmap for cities



**5**

**POLICY AREAS FOR  
CITY ENERGY EFFICIENCY**

#cityscorecard  
ACEEE



**1**



**LOCAL GOVERNMENT OPERATIONS**

focuses on activities cities can take to make their own operations more energy efficient.

#cityscorecard  
ACEEE



**2**



**COMMUNITY-WIDE INITIATIVES**

focuses on actions municipalities commonly take to encourage energy efficiency, establishing citywide goals and initiatives that cross multiple sectors.

#cityscorecard  
ACEEE



**3**



**BUILDINGS POLICIES**

focuses on energy efficiency policies for private buildings that local governments can directly establish or influence.

#cityscorecard  
ACEEE



**4**



**ENERGY AND WATER UTILITIES**

focuses on the actions of each city or its primary electric and natural gas utility, as well as efficiency efforts of drinking-water and wastewater utilities.

#cityscorecard  
ACEEE



**5**



**TRANSPORTATION POLICIES**

focuses on actions addressing vehicle fuel efficiency and transportation system efficiency.

#cityscorecard  
ACEEE



# Local Energy Efficiency Self-Scoring Tool

- User-oriented, spreadsheet tool for scoring any local gov't on *City Scorecard* metrics
- Users may be included in ACEEE *Local Policy Database*



## Local Energy Efficiency Self-Scoring Tool, Version 2.0 Beta

Last Update: 12/22/15

The 2015 *City Scorecard* rated 51 of the largest cities in the United States on the basis of efficiency. The *Scorecard* has more than 50 metrics evaluating city efforts across local government operations and water utilities, and transportation policies. The *City Scorecard* applied these metrics to large cities, but medium-size communities trying to reduce energy waste.

With these ideas in mind, we translated the metrics of the 2015 *City Scorecard* into the Excel-based Local Energy Efficiency Self-Scoring Tool. You can use the tool to see how your community is performing in various policy areas. This lets you not only evaluate its efforts but also reevaluate its efforts by reusing the tool when the community implements new policies.

The tool can inform the energy policy decisions of smaller local governments, which by nature may be prioritizing future investments. The Self-Scoring Tool also compares a community's score with the efficient communities. These "peer community" comparisons put your community's scores into better perspective.

Community name	Oz	State population
Community population	Number of community households	
654,321	12,345	29,876,543
<a href="#">US census</a>	<a href="#">US census</a>	<a href="#">US census</a>

**Note:** Please complete the community information on the left before moving on to the next tab. A link to the US census is provided to help you find the number of community households and your community's score as well as your state's population.

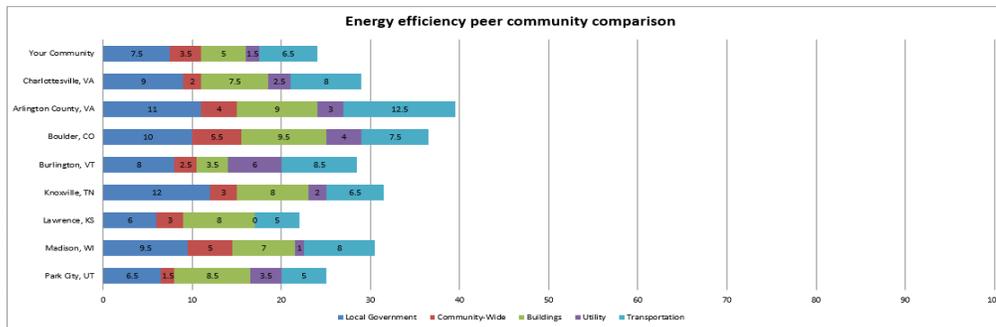
**Instructions:** Before using the *Self-Scoring Tool*, you should reference the *Local Energy Efficiency Self-Scoring Tool* scorecard.

The following instructions are a guide to help you use the *Self-Scoring Tool*.

Community-wide initiatives	
Community-wide initiatives total	4.5 of 10 points
Energy efficiency targets	2 of 4
Performance management strategies	1 of 2
Efficient distributed energy systems	1.5 of 2.5
Mitigation of urban heat islands	0 of 1.5

Metric	Question	Answer (Document programs and policies)	Scoring criteria (Select best option from drop-down)	Score	Comments
Community-wide energy efficiency targets	Has your local government formally adopted a long-term, community-wide energy efficiency goal/target, or a related target? If not, has a community-wide goal/target been identified in a draft energy or climate plan? Or has a stakeholder group been created to formulate such a goal/target?	Yes, the city adopted a goal to reduce its energy footprint by 20% by 2030	Yes, target formally adopted and mainstreamed across community activities	2	Comm.
			not projected to achieve savings as not have quantitative savings	0	Comm.

### Analysis



Scoring criteria	Score	Comments
Employee is dedicated to energy efficiency strategies	0.5	Comm.
Energy efficiency detailing progress on	0	Comm.
Energy efficiency strategies not exist for energy	0	Comm.

ACEEE scorecard detailed results										
	Max scores	Arlington County, VA	Boulder, CO	Burlington, VT	Charlottesville, VA	Knoxville, TN	Lawrence, KS	Madison, WI	Park City, UT	
Grand totals	100	39.5	36.5	28.5	29	31.5	22	30.5	25	
Local government operations	15	11	10	8	9	12	6	10	7	
Energy efficiency goals	4	4	4	2	3	4	3	2	0	
Local government energy efficiency targets	2	2	2	2	2	2	2	2	0	
Progress toward efficiency targets	2	2	2	0	1	2	1	0	0	
Performance management strategies	2.5	2	2.5	2	1.5	2	1	1.5	1.5	
Dedicated staff	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Annual public reporting	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	
Third-party ENERGY STAR	0.5	0.5	0.5	0	0.5	0	0	0	0	
Dedicated funding	0.5	0.5	0.5	0.5	0.5	0	0	0.5	0.5	



RESOURCE OPPORTUNITY



**DNV·GL**



ENERGY

# DNV GL

Helping cities leading the way towards a clean energy future

# About DNV GL

DNV GL Team Offices



**DNV GL**

<b>Arizona</b> Phoenix Tucson	<b>Maine</b> Portland	<b>New Mexico</b> Albuquerque	<b>Tennessee</b> Nashville
<b>California</b> Anaheim Berkeley Davis Oakland San Diego Santa Monica	<b>Massachusetts</b> Burlington	<b>North Carolina</b> Raleigh	<b>Texas</b> Austin Dallas Houston, U.S. Headquarters
<b>Connecticut</b> Middletown	<b>Michigan</b> Clark Lake Detroit Okemos	<b>Ohio</b> Columbus	<b>Virginia</b> Arlington
<b>Illinois</b> Oak Brook	<b>Montana</b> Helena	<b>Oregon</b> Corvallis Portland	<b>Washington</b> Seattle
	<b>Nevada</b> Las Vegas	<b>Pennsylvania</b> Chalfont	<b>Wisconsin</b> Madison

- Est. 1864
- Headquartered in Norway
- 2,500 energy experts worldwide

Leading company in:

- Energy efficiency
- Renewable energy
- Policy and market studies

# Sustainable Buildings & Communities

Delivering strategic support for owners, local governments, architects, developers, and businesses

- Climate action planning
- Energy master planning
- GHG Inventories
- High-performance / ZNE buildings

## Certification Support:

- LEED®
- Living Building Challenge®
- WELL®
- ICC 700 NGBS™

# Better Communities Alliance Service Offering

## Energy Transitions Workshop

- Purpose: Accelerate next-generation energy strategies
- What it is: 4-8 hour workshop designed to engage stakeholders on clean and renewable energy transitions
- DNV GL will:
  - Work with the city to interpret energy baseline data and explore opportunities
  - Review existing policies and programs to identify gaps and opportunities
  - Identify and share case studies and lessons learned from other cities pursuing similar initiatives

## Smart City Planning Workshop

- Purpose: Develop a smart city vision for building stock and energy use
- What it is: 4-8 hour workshop to engage stakeholders on the topic of smart buildings and communities
- DNV GL will:
  - Work with city staff and stakeholders to define project goals
  - Identify potential solutions including financing
  - Identify near term actions for a stakeholder driven process

# Anticipate Outcomes

Help city staff to:

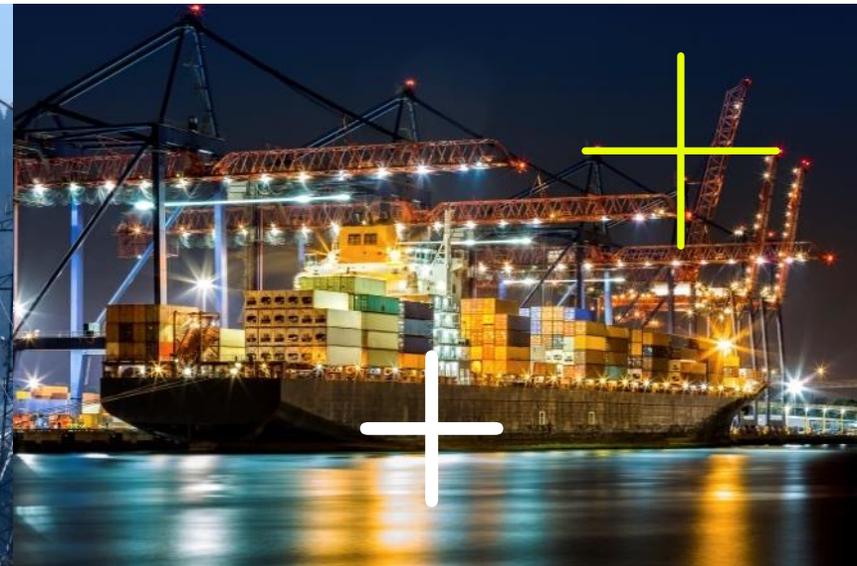
- Learn about industry-leading best practices, innovative clean energy case studies and projects
- Have peer-to-peer knowledge sharing of cross-departmental opportunities
- Identify potential funding opportunities
- Develop shared vision and initial priorities for moving forward on energy and buildings related initiatives

## RESOURCE OPPORTUNITY

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# HATCH

+ Collaboration + Precision + Positive  
Impact



Department of Energy

July 2017

HATCH

# A professional services firm combining engineering & technical acumen

- Employee-owned; partners who think like owners
- In business for 6 decades; corporate roots extending over 100 years
- Projects in more than 150 countries
- More than 9,000 professionals worldwide
- More than US\$50 billion of projects and assignments under management



# Global operations



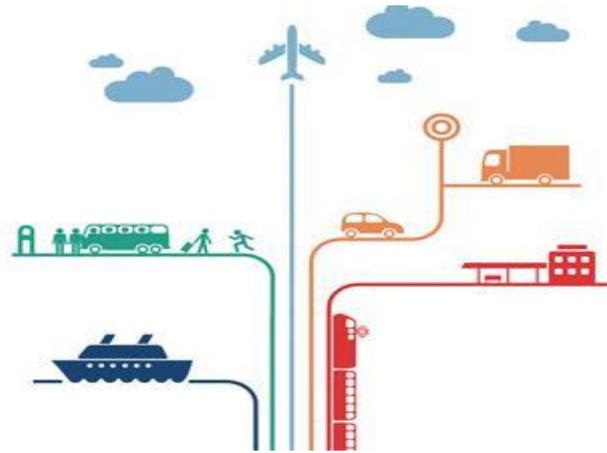
+ Global Delivery Centers

150 countries

9,000 staff

\$50+ billion in projects

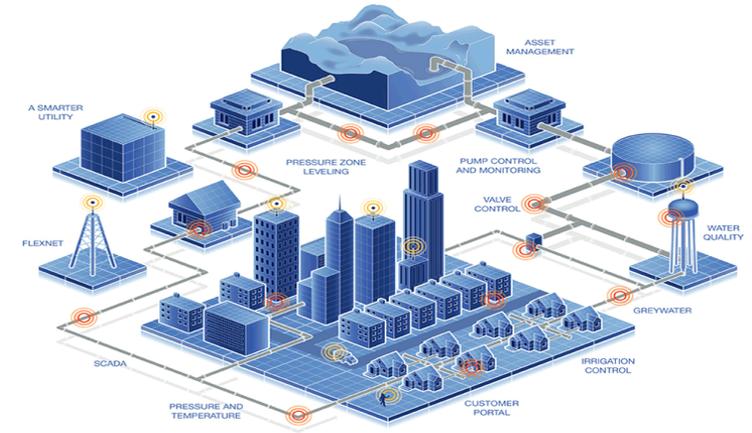
# Our vision for Infrastructure



Transport & Logistics



Urban Solutions



Energy & Water

Multi-stakeholder environment

Public

Industrial

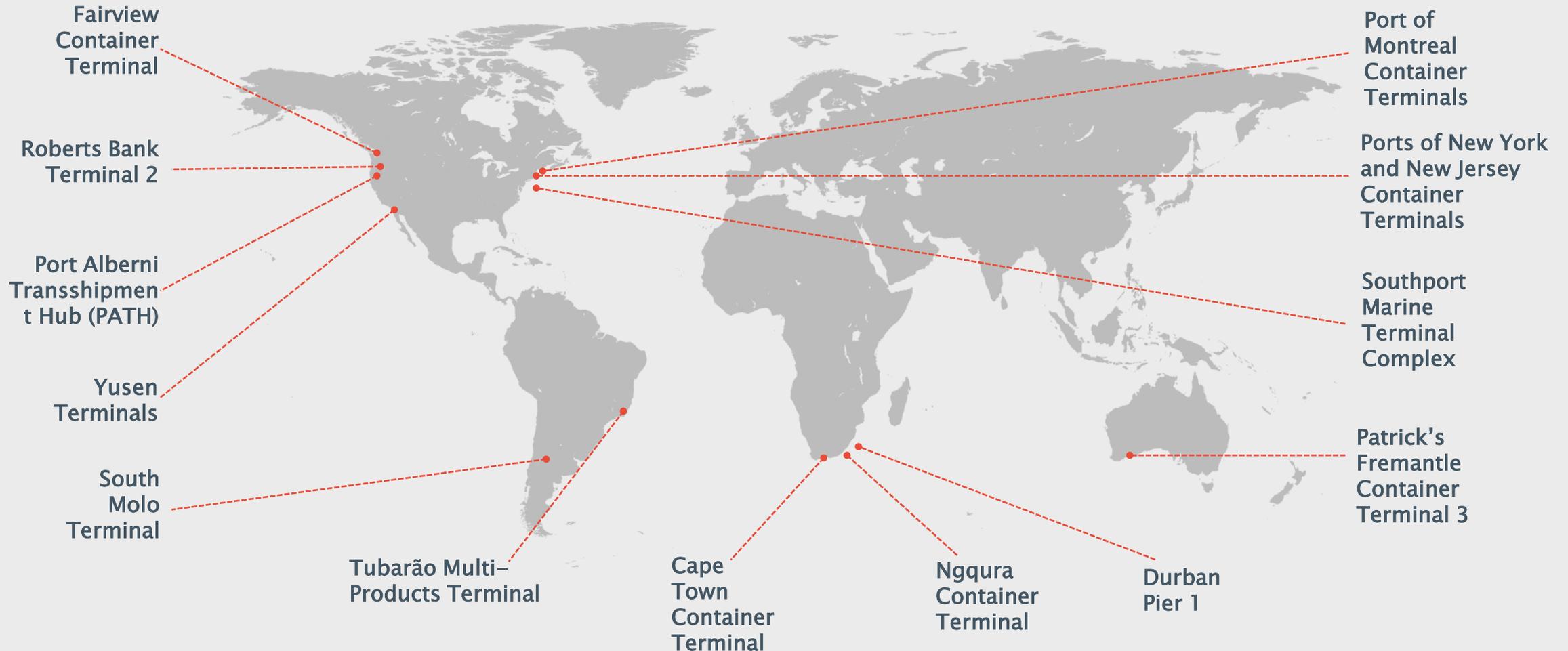
Contractors  
Constructors

Investors  
Concessionaires

Governments



# Hatch Global Port Projects



# Energy Management Consulting

Powering the world with fresh ideas

- Energy audits and efficiency studies
- Analysis of energy saving opportunities
- Benefits/costs analysis for system upgrades
- Energy management plans with set KPIs
- Power supply options analysis and resource mapping
- Assistance with Green Certificates and other available state-funded incentives



# Port Elizabeth, New Jersey Power System Study for Terminal Operator

- Evaluate current power load profile & grid capacity
- Review site layouts, major equipment loads
- Assess back-up emergency generation options
- Develop energy cost-saving plan
- Prepare recommendations for hybrid power generation and micro-grid
- Assist with micro-grid grant application



# Container Port of Nassau, Bahamas Power System & Operations Study

- Evaluate current power loads profile & grid capacity
- Inspect portside operations to and berth equipment usage to reduce energy waste
- Develop energy management plan & train client's personnel
- Review solar PV and storage battery options



# Hatch for Better Communities Alliance

- Hatch will conduct a high-level scoping assessment of the port's use of energy and identify potential opportunities for you to reduce your energy costs.
- Understand the interfaces between the port and terminal operator(s) responsibilities for energy supply, use and cost
- Identify the main uses of energy (such as cranes, mobile equipment, lighting, refrigerated containers, ship power), energy types, sources, costs and electricity tariffs



# Hatch for Better Communities Alliance

- Identify opportunities to improve efficiency of energy use based on existing equipment and operations
- Review of potential for hybrid power generation opportunities including installation of solar PV equipment and effective use of battery storage
- Identify grants and state/county available financing for renewable power, micro-grid technology and energy efficiency improvements



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Thank you.

For more information please visit us at:  
[www.hatch.com](http://www.hatch.com)

Contact:

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[alisa.kreynes@hatch.com](mailto:alisa.kreynes@hatch.com)

# RESOURCE OPPORTUNITY

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**LEED**

**WELL**

**PEER**

**GRESB**

**SITES**

**EDGE**

**PARKSMART**

**ZERO WASTE**

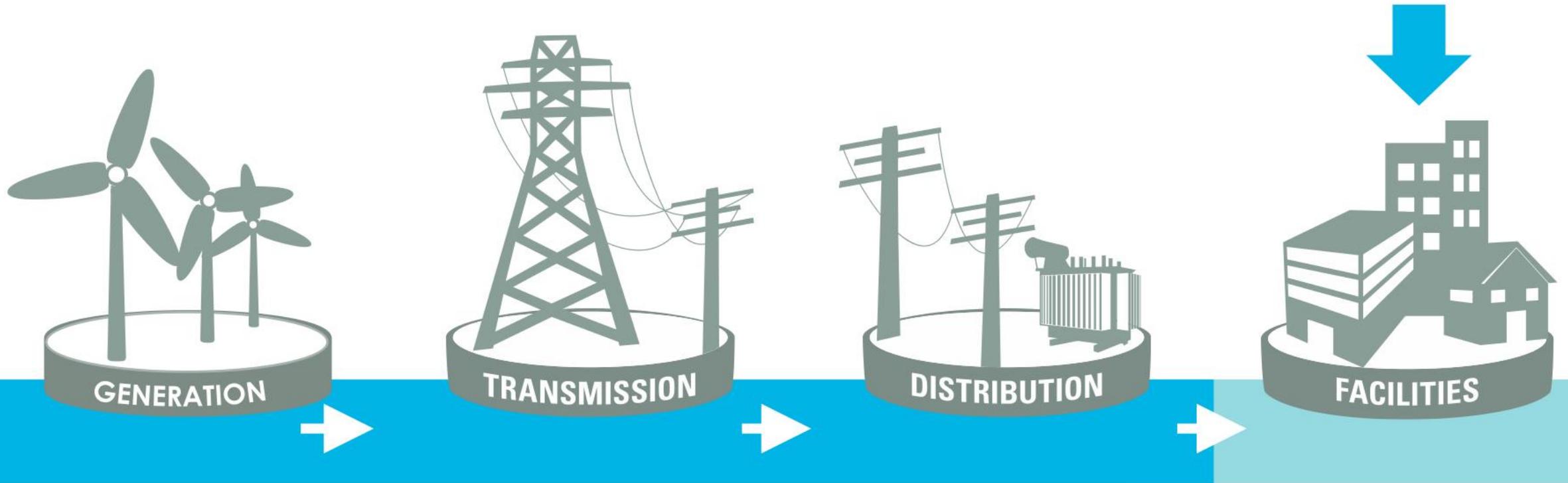
**ICP**



**P&ER**<sup>TM</sup>

PERFORMANCE  
EXCELLENCE IN  
ELECTRICITY  
RENEWAL

# Performance Excellence in Electricity Renewal™



**RELIABILITY &  
RESILIENCY**

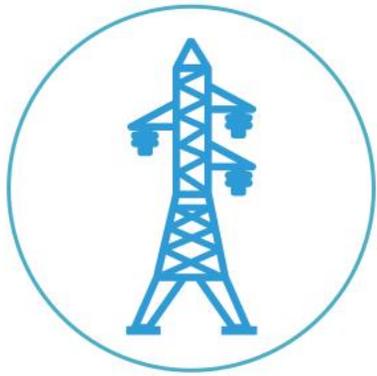


**ENERGY EFFICIENCY  
& ENVIRONMENT**

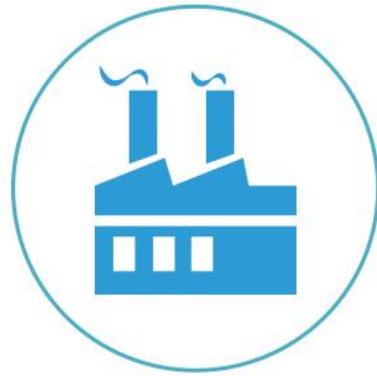
**OPERATIONAL  
EFFECTIVENESS**

**CUSTOMER  
CONTRIBUTION**

# DIVERSE STAKEHOLDERS WITH DIVERSE NEEDS



service providers



utilities



cities



businesses



regulators

# University of Texas - Austin

## A PEER certified campus

- The UT Austin microgrid produces an estimated annual value of almost \$15.4 million per year
- UT Austin's power reliability was 80% higher than Austin Energy
- Enabled by the ability to automatically switch to an external power supplier and easily transfer from the grid to islanding; the campus has the ability to automatically disconnect and re-connect back to the grid.
- The campus has an extremely high system energy efficiency of 87 percent



# Chattanooga

## A PEER certified municipal utility

- EPB Chattanooga measures the power quality of 100% customers at their individual meters
- Carbon Dioxide intensity of the EPB system 21.5% lower than the state of Tennessee, the Sulphur dioxide intensity is 30.7% lower than the state of Tennessee
- 99% of the customers in Chattanooga have access to real time data
- 100% of the distribution circuits in EPB Chattanooga have the capability to operate on an alternative power source



## Better Communities Alliance Offer

- Webinar 1: Introduction to PEER: Rating System for Power Grids
- Webinar 2: Training for PEER Assessment





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