NATIONAL GOVERNORS ASSOCIATION

NASEO
National Association of State Energy Officials

State Summit on Energy Resilience Planning and Funding

July 28-29 & August 3-4, 2021

Hosted by the National Governors Association (NGA) and
National Association of State Energy Officials (NASEO)

Day 4: Prioritization, Funding, and Financing

Wednesday, August 4th

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Preview of Today's Agenda

- 1:00 to 1:05 PM ET– Welcome, Introductions, and Overview of Day 4
- 1:05 to 1:45 PM ET – How to Prioritize Resilience Projects
- 1:45-2:30 PM ET – Understanding and Accessing Federal Funding Opportunities
- 2:30-3:15 PM ET – Breakout Sessions: State Case Studies on Opportunities to Leverage the U.S. State Energy Program (SEP) in Resilience Planning
- 3:15-3:30 PM ET – Break
- 3:30-4:30 PM ET – Leveraging Public-Private Partnerships (P3s) and State Funding and Financing Mechanisms for Resilience
- 4:30 PM ET – Key Takeaways and Closing Remarks

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How to Prioritize Resilience Projects

Speakers:

Sushma Masemore, Assistant Secretary for Environment and State Energy Director, North Carolina Department of Environmental Quality

Katherine Hammack, Director of Special Projects, Green Business Certification Inc, US Green Building Council

Moderator:

Amy McGuire, Deputy Director, Emerging Technology Division, Massachusetts Department of Energy Resources

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Measuring Energy Infrastructure Resilience and Reliability with PEER

Katherine Hammack

LEED


SUSTAINABLE SITE
MATERIALS AND RESOURCES
INDOOR ENVIRONMENTAL QUALITY
LOCATION AND TRANSPORT
ENERGY AND ATMOSPHERE
WATER EFFICIENCY
FACILITIES

PEER

How can I improve my power quality?

How is my power generated?

How can I reduce my power costs?

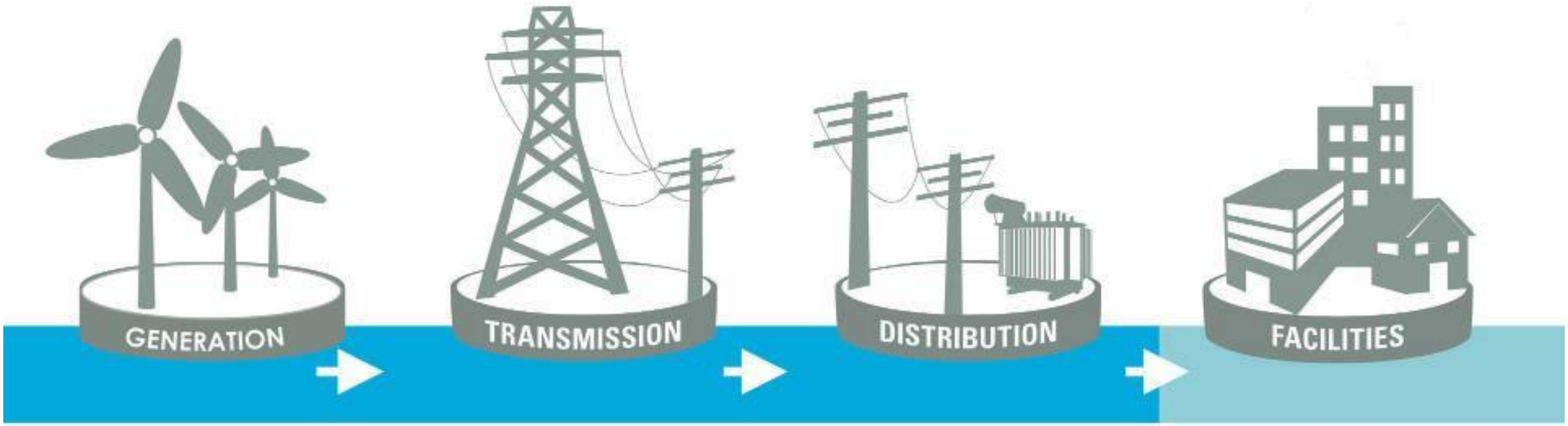
What happens if I lose power?

How reliable is my power?

What are my power supply options?

Aggregates the different approaches for grid modernization into a single, simple, holistic standard that can be utilized to assess a wide variety of projects.

Performance Excellence in Electricity Renewal™



The 6 credit categories of PEER are:

RELIABILITY AND RESILIENCY

ENERGY EFFICIENCY AND ENVIRONMENT

OPERATIONS, MANAGEMENT & SAFETY

GRID SERVICES

REGIONAL PRIORITY

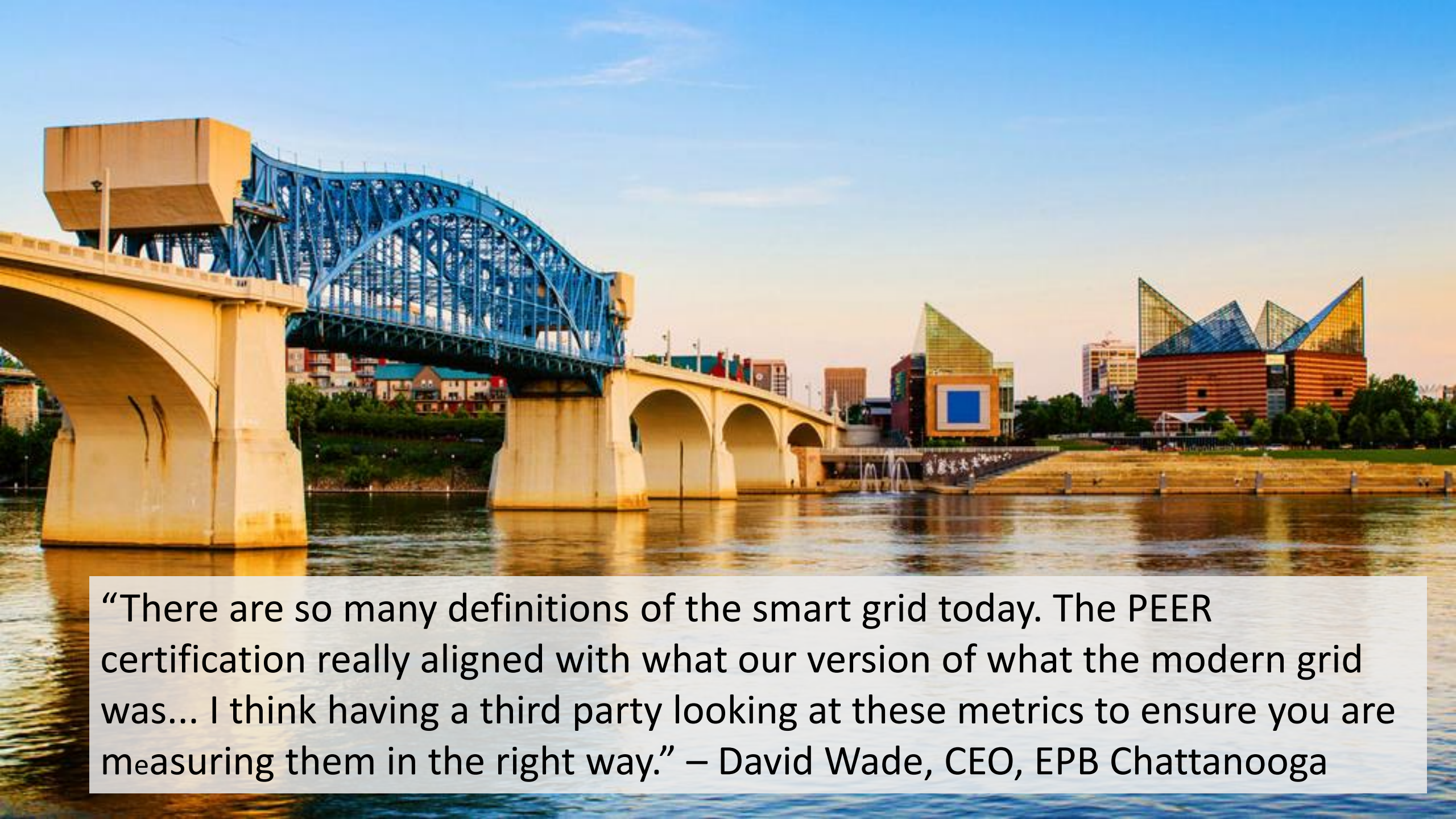
INNOVATION & EXEMPLARY PERFORMANCE

Benefits of PEER to Projects

Highlights on-going commitment to excellence especially in sustainability

Additional LEED points at the building level

Risk assessment done for critical system and failure modes are identified



“There are so many definitions of the smart grid today. The PEER certification really aligned with what our version of what the modern grid was... I think having a third party looking at these metrics to ensure you are measuring them in the right way.” – David Wade, CEO, EPB Chattanooga

Implementation Applications of PEER

- Utilize PEER to select awardees of State-led grant or demonstration programs
  (e.g., State of Kentucky and Pennsylvania SEP programs)
- Create a rider to fund microgrid projects or other utility-led projects
- PEER allows regulators to consistently evaluate projects across a common set of metrics and verify the outcomes with PEER

U.S. DEPARTMENT OF ENERGY

Office of
ENERGY EFFICIENCY & RENEWABLE ENERGY

Kentucky UNBRIDLED SPIRIT

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

How to get started

Education & Training

Registration & Certification

Earn the PEER Pro Badge

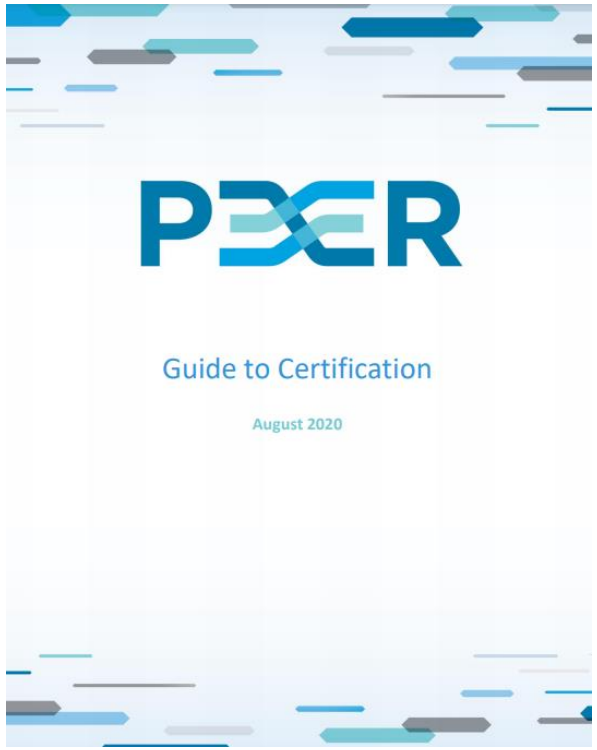
On-line classes

USGBC.org/education

Resources and Case Histories

PEER.GBCI.org

Project Certification



PEER@GBCI.org

Understanding and Accessing Federal Funding Opportunities

Speakers:

Patrick Forbes, Executive Director, Louisiana Office of Community Development

Suzanne Groneman, Sustainability Program Manager, City of Reno

Moderator:

Virginia Castro, Energy Project Specialist, U.S. Department of Energy

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Patrick W. Forbes, P.E.
Executive Director

LOUISIANA
Office of
COMMUNITY
DEVELOPMENT

NASEO NGA State Summit

August 4, 2021

LA SAFE – lasafe.la gov

Isle de Jean Charles – isledejeancharles.la.gov

City of Reno
Resilience Planning & Funding Opportunities

July 22, 2021

Sustainability & Resiliency, City of Reno

The goal of the Sustainability Program is to establish well-focused initiatives that promise to strengthen Reno's reputation as one of the world's leading cities while also improving the day-to-day quality of life for all of the City's residents.

Sustainability Plan, 2019
LEED for Cities
ReEnergize Reno
Sustainable Building Coalition
Solar Energy Innovation Network, Phase 2

What Happened First?

Solar Energy Innovation Network, Phase 2

Dilemma

- How Does Resiliency “Pay For Itself”?
- Upfront Cost of Resilient Infrastructure
- Unpredictable Events That Could Affect Critical Facilities
- Expand S+S and/or Microgrid Solutions at the Local Government Level

Concept

Quantifying the Value of Solar + Storage and bridging the gap between the value and implementation of a project, with a focus on Energy Performance Contracting.

Bridging The Gap

Solar Energy Innovation Network, Phase 2

Value of Resilience =

Emergency Management Funds

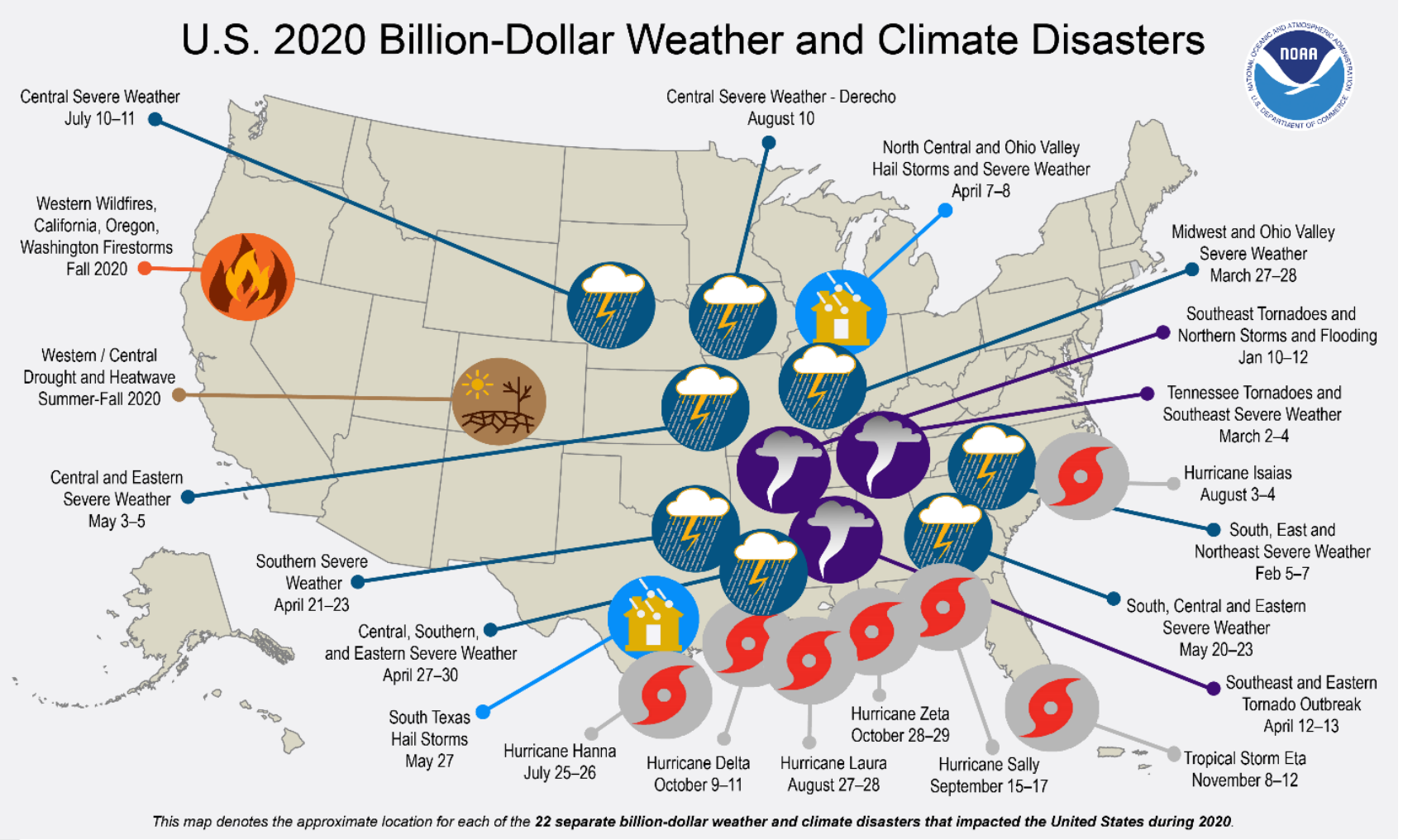
Value of Resilience =

Utility Benefit

Value of Resilience =

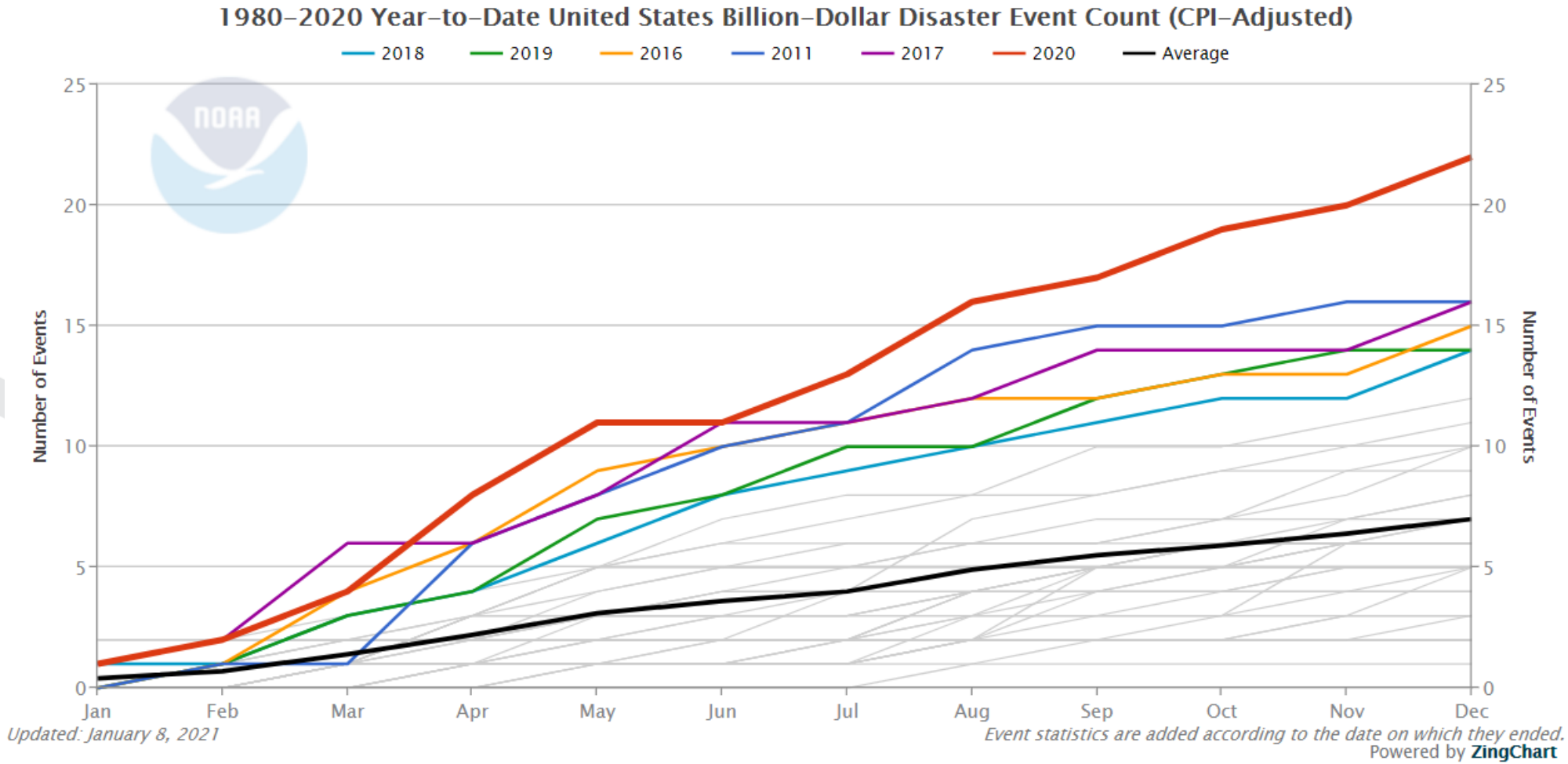
General Use Case

Making The Case



https://www.ncdc.noaa.gov/billions/

Making The Case (cont.)

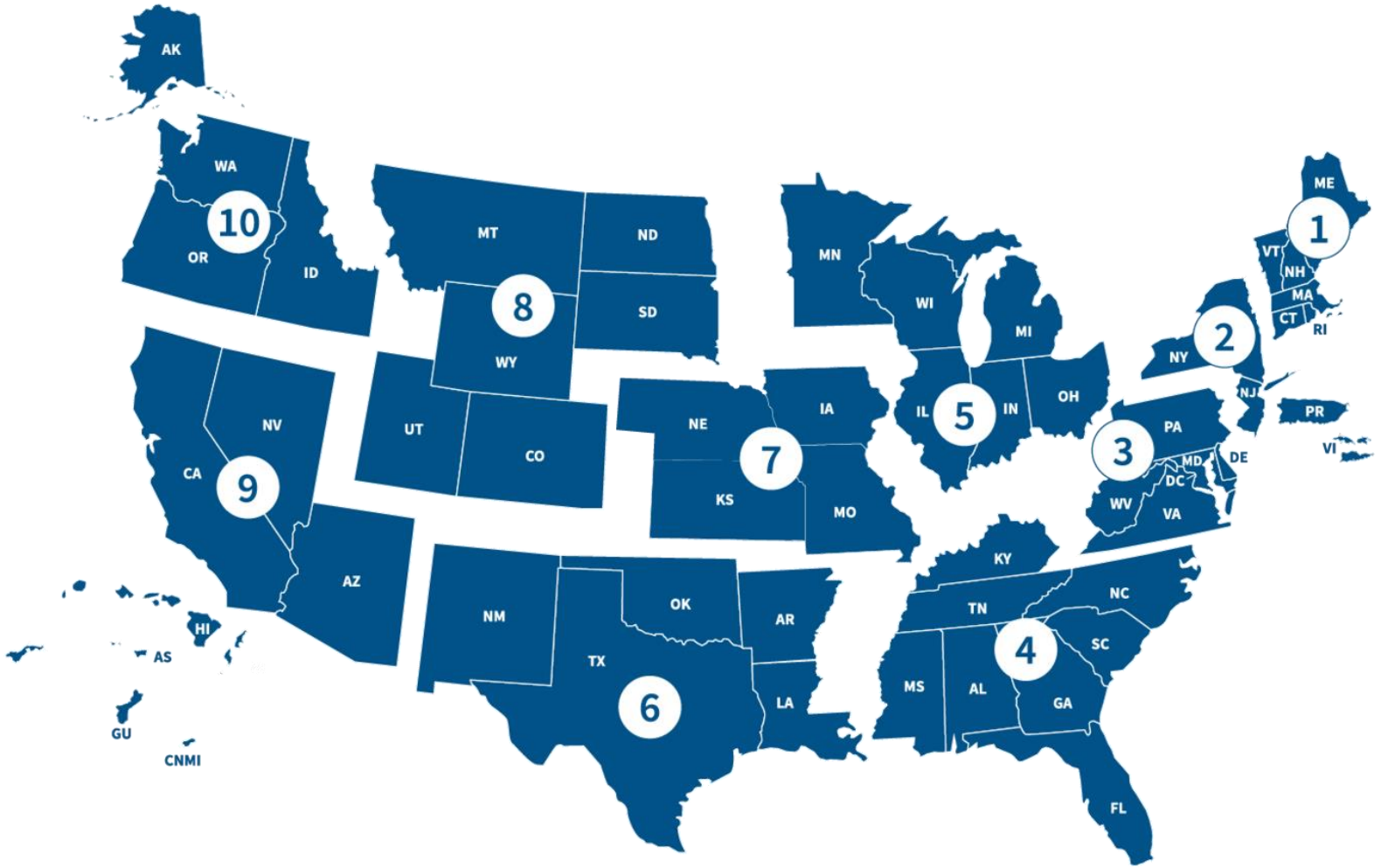


https://www.ncdc.noaa.gov/billions/

FEMA BRIC Opportunity

Aligned Project Replicability With FEMA Regions

- Broadens funding opportunities
- Allows for regional collaboration
- Creates consistency in methodology



Accessing Federal Funds

- **Continuous partnerships**: *state, universities, non-profits*
- **Hire a Consultant**: *For high $ projects, it's worth the investment*
- **Talk a lot**: *share what you have going on or where you would like to go with internal and external potential partners*
- **History of success**: *small projects are an "investment" in larger opportunities*
- **Plan**: *but be able to act fast when the opportunity arises*
- **Recycle**: *previous grant applications and refine or improve a previous concept*
- **Pilfer help, ask for volunteers, seek interns:** *do you have the bandwidth, or will you need help in order to be successful?*
- **Be willing to barter**: *your time, that is. We are all busy, but helping others helps you*
- **Keep your ideas growing**: *your time will come*

State & City Partnership Opportunities

- Talk to your cities - they are on the front lines
- How can you help each other?
- Create cohesiveness between city & state efforts

State of Nevada & City of Reno Partnerships

State Climate Strategy, Greenhouse Gas Emissions Working Group

↓

Real Time Operational Emissions Tracking

Solar Energy Innovation Network, Phase 2

↓

FEMA BRIC Grant

Resiliency Grants History (past 4 years)

City Energy Project: One of 20 cities nationwide. Launch C-PACE, Adopt recent energy codes, pass policy, retrofit buildings.

Retro-commissioning Grant: Retro-commissioning of larger fire stations, community centers, and pools.

NREL Solar Energy Innovation Network: Applying the value of resilience of S + S to project implementation.

FEMA BRIC – *Further Review; State Allocation:* Microgrid planning grant in facilities with solar and/or critical facilities.

Contact Info

City of Reno

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@RenoResilience

https://aroundthearch.com/blog/category/renogreen/

Breakout Sessions: State Case Studies on Opportunities to Leverage the U.S. State Energy Program (SEP) in Resilience Planning

Session 1: Kentucky

Speaker: ***Amanda LeMaster***, Energy Assurance and Resiliency Coordinator Kentucky Office of Energy Policy

Session 2: Maryland

Speaker: ***Brandon Bowser***, Energy Resilience Program Manager, Maryland Energy Administration

Session 3: Wisconsin

Speaker: ***Megan Levy***, Local Energy Programs Manager and Energy Assurance Coordinator, Wisconsin Office of Energy Innovation

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Break

3:15-3:30 PM ET

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Leveraging Public-Private Partnerships (P3s) and State Funding & Financing Mechanisms for Resilience

Speakers:

Ali Cooley, Chief Investment Officer, Greenworks Lending
Jeff Morris, Senior Director of State Government Relations, Schneider Electric
Dr. Tim Unruh, Executive Director, National Association of Energy Service Companies (NAESCO)
Dylan Klomhaus, Technical Specialist, Colorado Energy Office

Moderator:

Dub Taylor, Chief Operating Officer, Texas PACE Authority

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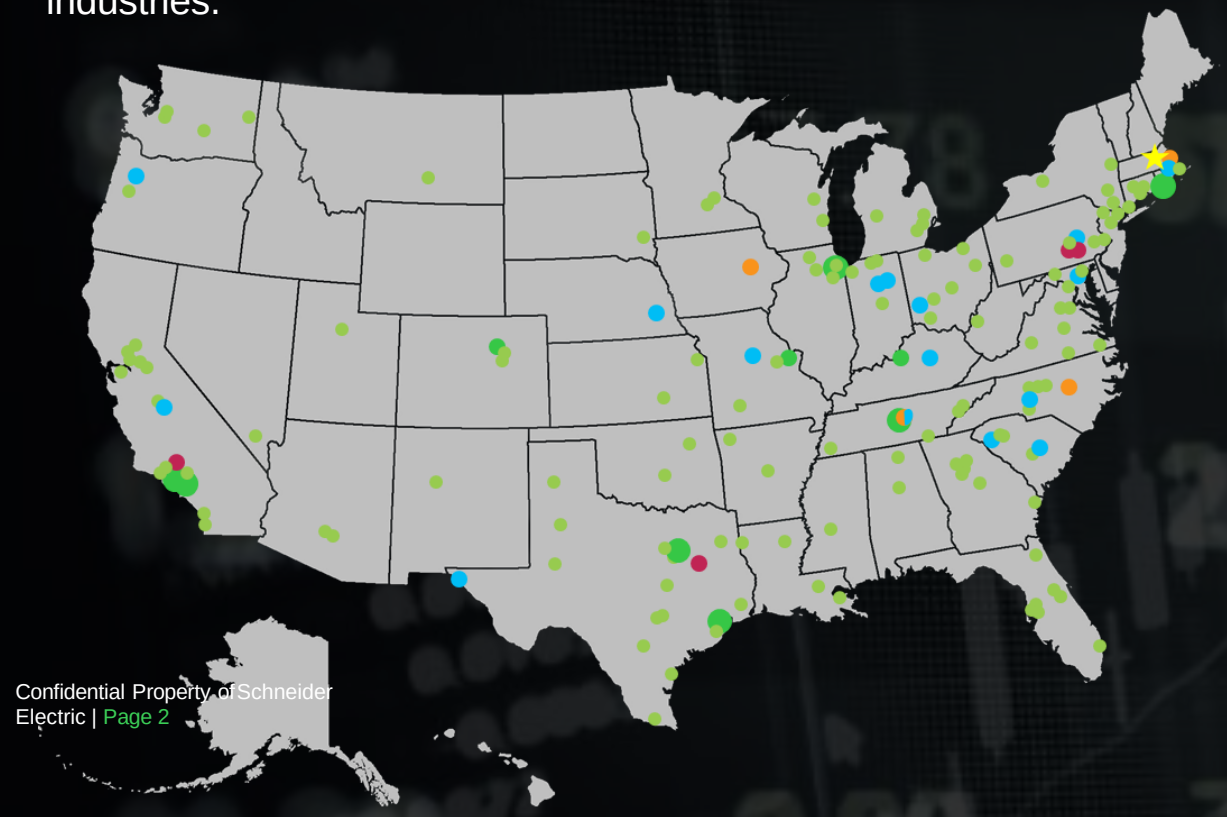
New Energy Landscape

Technology + Business Model Transforms Energy

#Microgrid #EcoStruxure

Schneider Electric in the US

Leading the digital transformation of energy management and automation in homes, buildings, data centers, infrastructure, and industries.



Schneider Electric USAHeadquarters
800 Federal St, Boston ONE Campus
Andover, MA 01810 se.com/us

$7.7B in revenues, 2020 ~18,000 employees

Major U.S. sites

Dallas, TX, El Paso, TX Boston, MA; Nashville, TN; West Kingston, RI; Lake Forest, CA;

300+ microgrids in the U.S.

Net Zero Carbon by 2025

#1 of Global 500 Most Sustainable Corporations-Global Knights 2020

Acknowledged in CDP's "Global Climate 500 Performance Leadership Index" and "Dow Jones Sustainability Index"

Organizations of all sizes are under growing pressure.

Cost

Transmission and distribution costs in the U.S. have increased 50% over the past decade.

U.S. Energy Information Administration

Sustainability

Businesses are making their own commitments and state governments are setting mandates for 100% clean electricity, covering nearly one-third of the U.S.

McKinsey

Reliability and Resilience

Commercial and industrial companies are forecasted to see over $100 billion in annual losses from power outages through the end of the decade.

American Society of Civil Engineers

CapEx constraints

Reality has been reset. COVID-19 disruption to the global economy has been sweeping and uneven, with many businesses devastated and a few newly advantaged.

Deloitte

Risk management

To emerge stronger from COVID-19, organizations must identify their most valuable, mission-critical assets and devote more resources to protecting them.

PwC

The technology solution: Microgrid

A local energy system with sources of generation, storage, and advanced automation and control …… usually connected to the central grid but able to function independently.

The business model solution: Energy as a Service

- Customers face accelerating energy challenges and often lack the resources to address these needs
- Energy as a Service delivers the energy outcomes customers need with no capital upfront or operational risks
- Accomplished through the design, build, ownership, operation, maintenance and financing of onsite microgrids

Montgomery County - Energy as a Service Case Study

Situation

After a series of wide-spread grid outages, Montgomery County set out to find partners to help mitigate the impact of future disasters to its over 1M residents.

The community is committed to decreasing carbon footprint

The electrical infrastructure at the public safety headquarters was old and needed to be replaced before failure.

The County has tight budget controls and access to capital is difficult

Approach

- Delivered via innovative, public-private Energy-as-a-Service model eliminating up-front costs
- Infrastructure upgrades (low- and medium-voltage gear)
- Integration of existing generation assets.
- New Solar and Gas CHP generation
- Advanced controls and monitoring
- Advanced cybersecurity

Outcomes

- Improved resiliency of county operations by upgrading existing aging electrical distribution infrastructure
- Provide the ability to island operations for >7 days without grid support
- Mitigated risk of escalating energy price over 15 years.
- Upgrade infrastructure including new electric vehicle charging without capex
- Reduce greenhouse gas and other emissions

March 9, 2021

Take Control of Your Energy

California University

GreenStruxure™

PREPARED FOR	YOUR ENERGY PARTNER
California University	Marty Hanna GreenStruxure Martin.hanna@greenstruxure.com 847-345-6232 linkedin.com/in/martinmhanna

What We've Learned About You

California University

ESTIMATED ANNUAL ELECTRICITY COST

$1,200,000

Total Annual Spend	$1,200,000
Annual Energy Spend	$780,000
Annual Peak Demand Spend	$450,000
Cost of Peak as %	38%

All of the information provided in this presentation is an estimate based on public data and will be validated following a detailed site analysis.

ESTIMATED OUTAGES/YEAR

5 Outages

GHG EMISSIONS FROM POWER GENERATION

2,700 Tons

How We Impact Your Business

California University

NEW GREENSTRUXURE ENERGY SPEND

RESI
LIEN
CY

$120,000 Saving

10% COST SAVINGS YEAR ONE

We Make The Complex Simple

ESA

GreenStruxure
SPV

- Schneider Electric Technology & Services
- Engineering, Procurement & Construction
- Solar, Storage, Gen Sets
- Utility & Energy Service Providers
- Financial Partnership
- Long-Term Operations & Maintenance

Customer Site(s)

We Are the Developer & Operator

Fleet Electrification Infrastructure Solution for Montgomery County

First-of-its-kind EaaS fleet electrification infrastructure project integrating solar PV, on-site generation, battery energy storage, microgrid controls, and electric bus chargers.

1 Advances the County's sustainability commitments

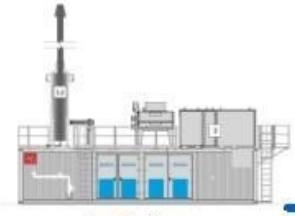
- 62% carbon reduction from buses eliminating lifetime ~155,000 tons of GHG
- Enables e-bus deployment on longest routes for greatest impact
- Maximizes onsite renewable energy generation with solar and BESS

2 Resilient system to enable full e-bus operations

- 99.999% resilience & reliability of operations and sized to handle peak-demand
- Seamless transition, digitized automation and control philosophy
- On-site generation with storage enables ongoing autonomous operation

3 Turnkey *Energy as a Service* solution

- Comprehensive risk mitigation and transfer throughout project lifecycle
- AlphaStruxure financial approach eliminates upfront cost for the County
- High-touch, collaborative design approach, project execution and service
- Future-proofed digital architecture and monitored 24/7 by AlphaStruxure Network Operating Center



Gas Engines
with zero-emission fuel strategy

Storage

Solar Canopy

E-bus Chargers

AlphaStruxure

Thank you!

For more Information:

Jeff Morris
Senior Director
State Government Relations
Schneider Electric North America.
Jeff.morris@se.com

Life Is On | Schneider Electric

Next Steps

1 YEAR

9 MONTHS

3 MONTHS

1 MONTH

Preliminary Analytics, Term Sheet

You agree this proposal helps you get the energy outcomes you need to run your business. You sign our term sheet to enable us to investigate and discuss further.

Technical & Economic Assumptions

We validate all information with your teams and through a site assessment.

Approval: Proposal & ESA

We submit a more detailed proposal and sign an Energy Services Agreement outlining all details.

Development & Construction

We work with your teams, your utility, state/local government, regulators and others to develop and construct your onsite microgrid.

Commissioning & Operation

We finalize, test, commission and begin operations.

You participate in the new energy transition and make a difference for your business, your people and our planet!

Montgomery County Microgrid

Business Model Evolution

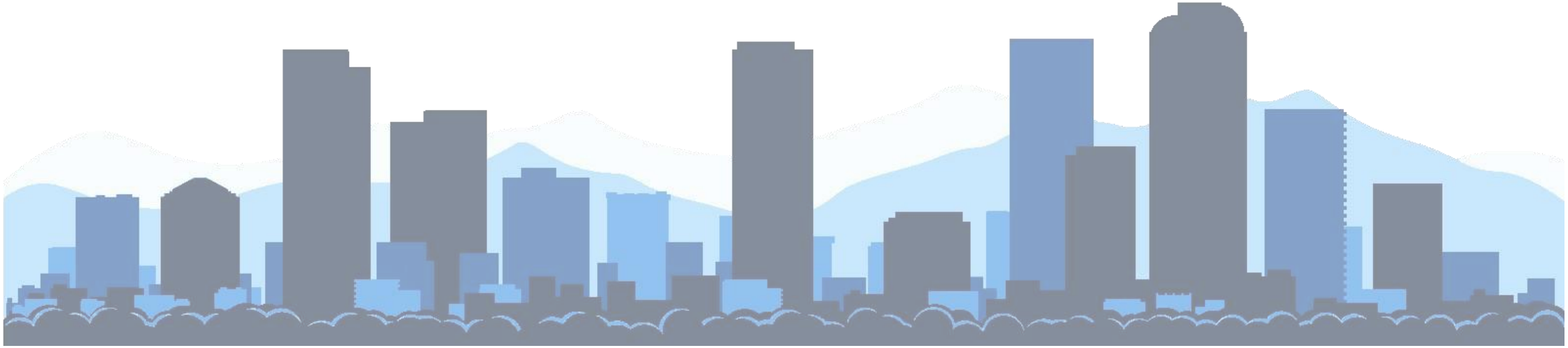
BUILDING EFFICIENCY

COLORADO ENERGY PERFORMANCE CONTRACTING PROGRAM

Energy Performance Contracting 101

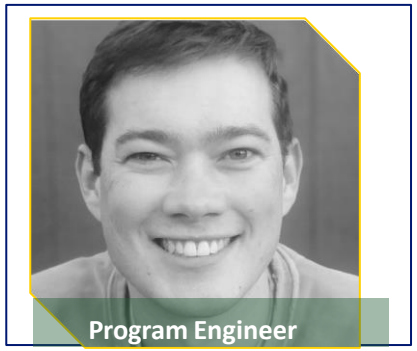
Leveraging P3s & State Funding for Resilience (8/4/2021)

Presented By: *Colorado Energy Office* - Dylan Klomhaus, Program Engineer



Colorado Energy Office - Energy Performance Contracting

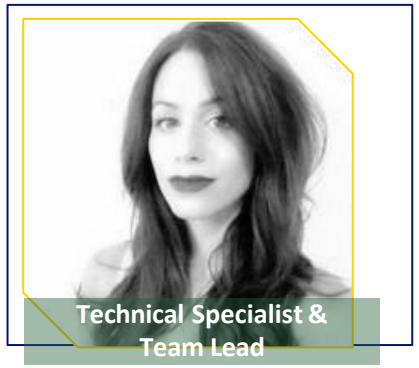
Our Team



Program Engineer

Dylan Klomhaus

dylan.klomhaus@state.co.us



Technical Specialist & Team Lead

DeLynne Southern

delynne.southern@state.co.us

Associate Engineer

Jock Tuttle

Jock.Tuttle@state.co.us

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Colorado Statutes

Energy Performance Contracting *in Colorado is a statutorily enabled method for public jurisdictions to leverage utility co financing costs associated with facility upgrades.*

Local Government Statute

C.R.S. 29-12.5-101(2017)

TITLE 29 GOVERNMENT - LOCAL : *ENERGY CONSERVATION: ARTICLE 12.5. Energy Conservation Measures*

State & Higher Ed Statute

C.R.S. 24-30-2001 (2016)

TITLE 24 GOVERNMENT - STATE : *PRINCIPAL DEPARTMENTS : ARTICLE 30 DEPARTMENT OF PERSONNEL - STATE ADMINISTRATIVE SUPPORT SERVICES: Part 20 Utility Cost Savings Measures*

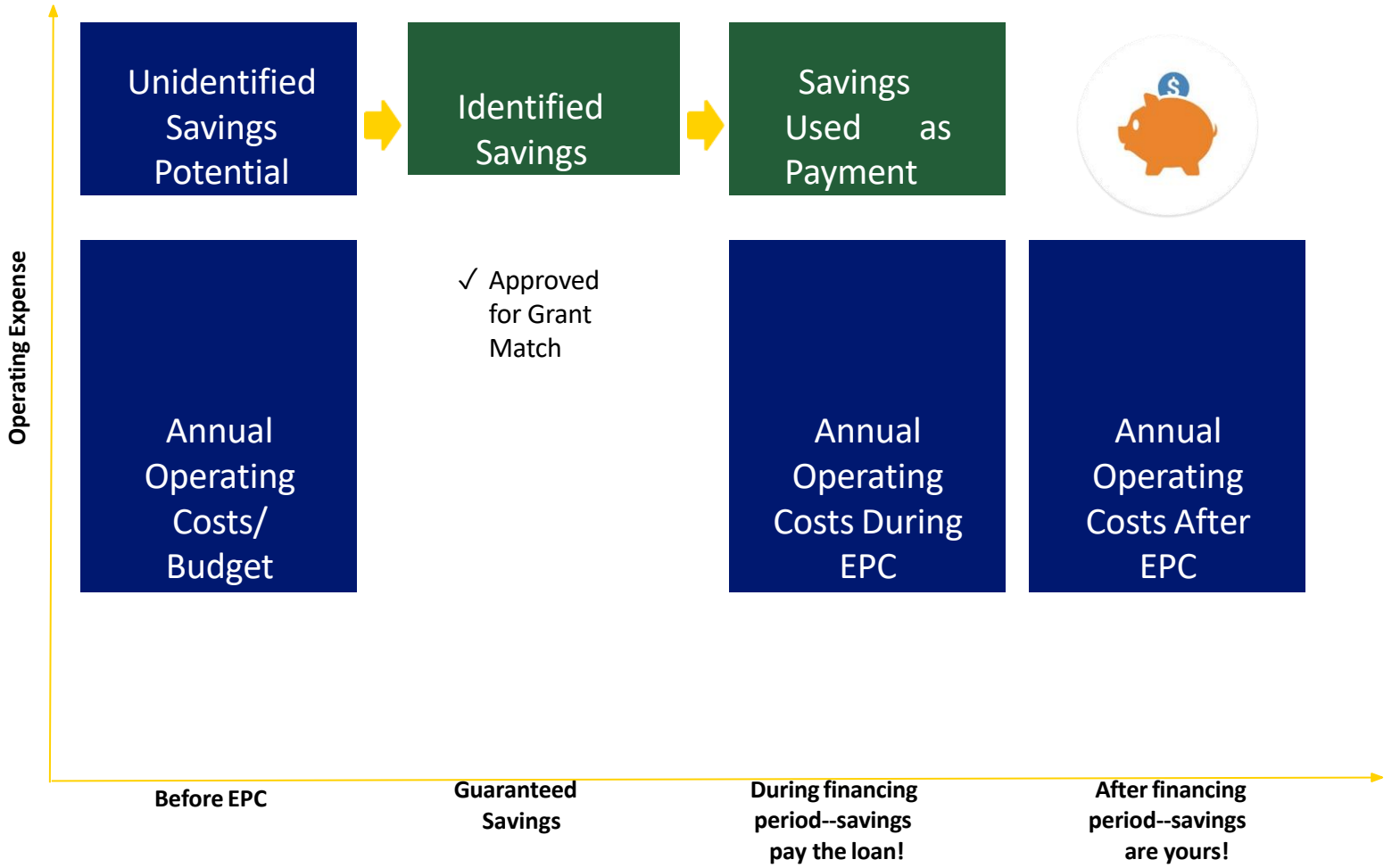
Colorado Statute: Things to Remember

Colorado Statute establishes EPC guidelines including:

- ✔ Guaranteed Utility Cost Savings
- ✔ Cost weighted average life of equipment
- ✔ Three years of M&V
- ✔ Cash flow positive

A Financing and Contracting Mechanism available to public jurisdictions

How It Works - Energy Savings Financing Approach



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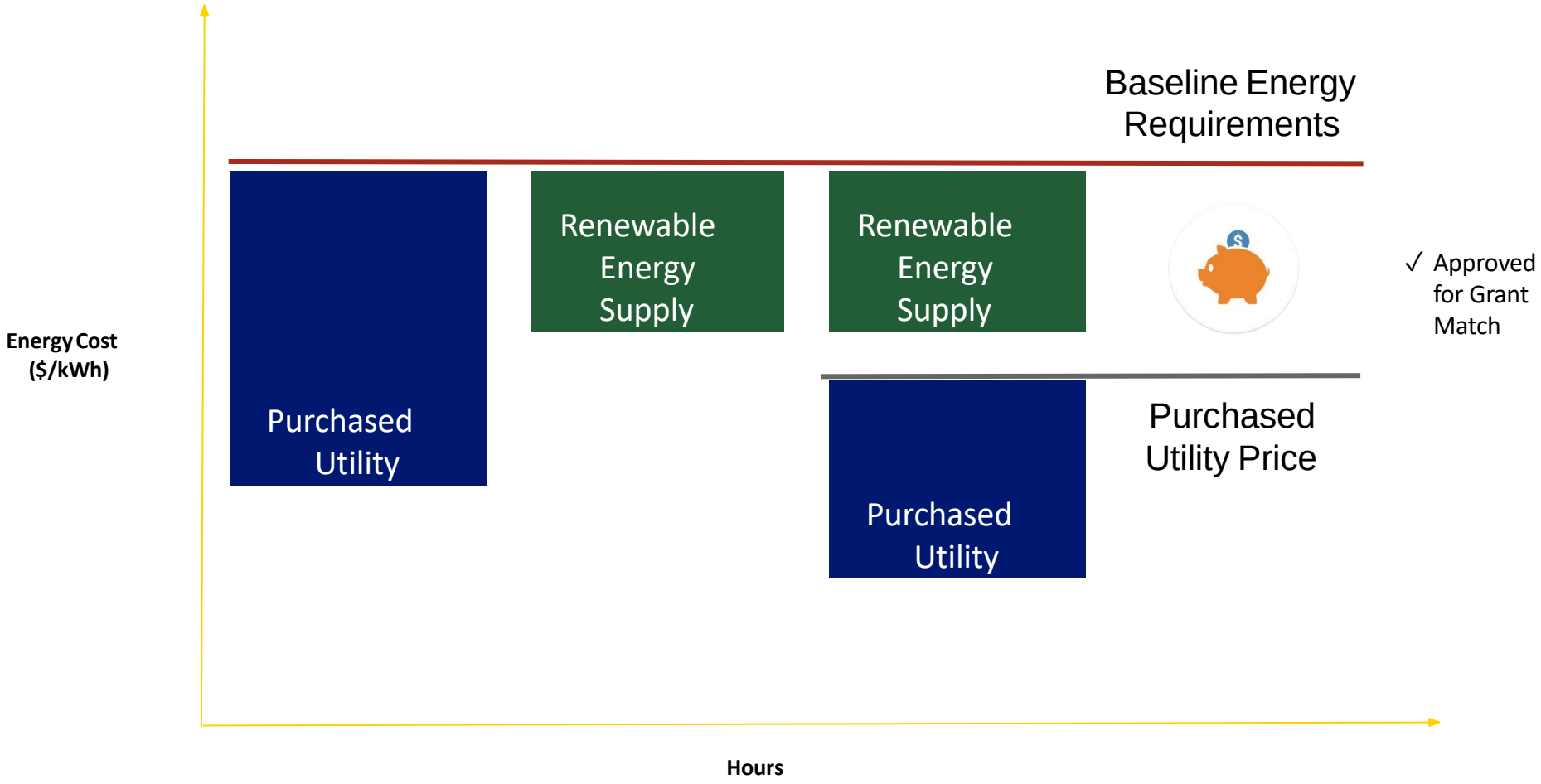
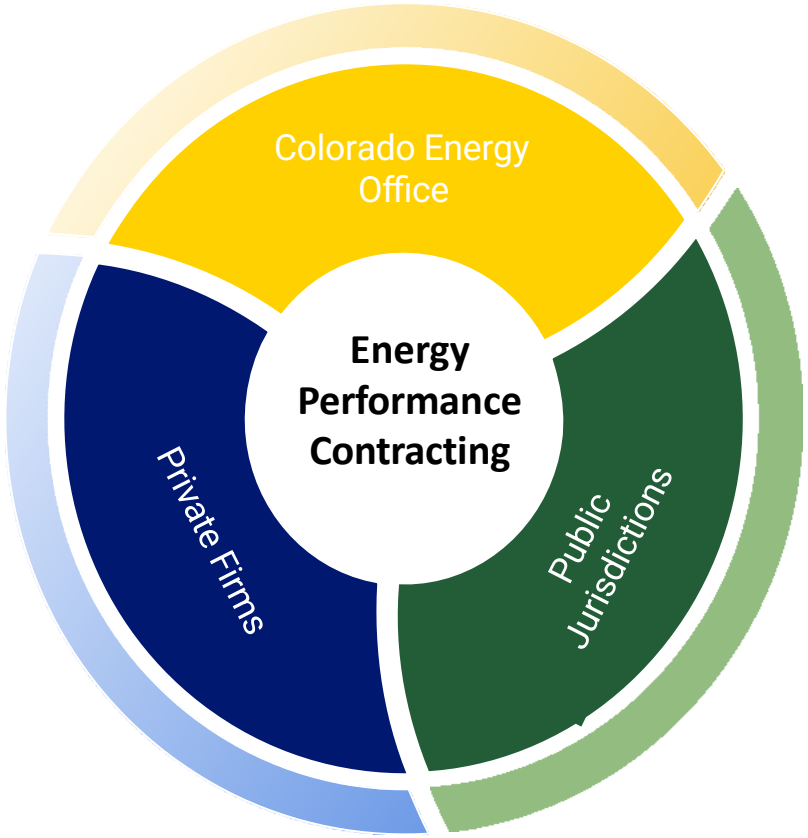
Savings Model: Renewable Energy



A Public Private Partnership (P3)



Colorado Energy Office

Program Administrators, Engineers, Contract Support, Guidance Tools, Standardized Documents

Public Jurisdictions

Cities, Counties, School Districts, State Agencies, Higher Education Institutes, Special Districts

Private Sector Firms

Energy Service Companies (ESCOs), Financial Institutions

State Grants: Dept. of Local Affairs

Dept. of Local Affairs

The Division of Local Government provides strategic expertise, advocacy, and funding for Colorado communities. DOLA promotes local problem solving, informs decision making and invests in communities.

*DOLA grants for Renewable Energy and Energy Efficiency require a ***25%*** match from the city or county (General grants require a 50% match)

HB21-1253 appropriated additional $5m Renewable And Clean Energy Project Grants

Program Benefits

EIAF

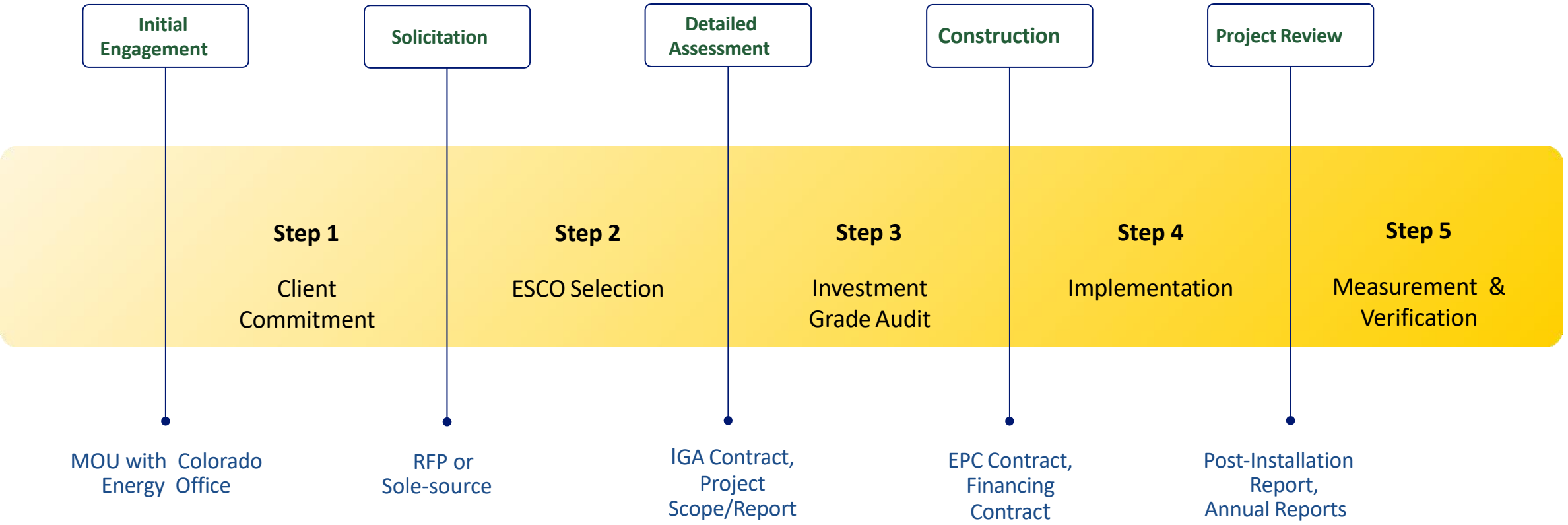
- Tier I: Up to $200K grant
- Tier II: Between $200K - $600K grant

Water

- State Revolving Loan Funds
- Community Development Block Grants
- Colorado Water Conservation Board

COLORADO
Department of Local Affairs

EPC: 5-Step Process



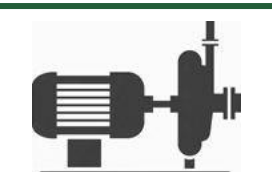
Benefits of Energy Performance Contracting

- **Single Procurement Contract** for design/engineering, installation, startup, and M&V
- Generates **Positive** Cash Flow
- **Guaranteed** energy and maintenance cost **savings**
- Promotes **local workforce** and **economic development**
- No-cost support from the Colorado Energy Office
  - Standardized, state-approved documents
  - Pre-qualified ESCOs
  - Colorado Energy Office engineering & contract support throughout lifecycle of the project

Energy Efficiency Measures

Lighting Upgrades

Boiler Replacements Pump &



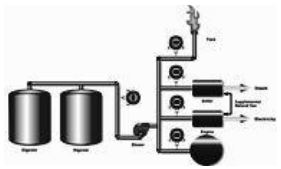
Motor Upgrades

Building Automation System

Electrification & Generation Measures

Community Solar Gardens, Solar Arrays, Wind, Hydroelectric Generation

Electric Charging Stations/ Zero-emission Vehicles



Building Energy Systems: Geothermal, VRF

Renewable Utility Rates

Targets and Goals as of May 2021

FY20-21 Client Reach

Higher Ed: 30 (73%)

State Agency: 22 (44%)

County: 31 (38%)

Municipality: 56 (14%)

School District: 81 (34%)

Special DIstrict: 15

$40M

Savings for Colorado Jurisdictions

134M

Square-footage Improved

239M kWh

Savings in Electricity Use

$707M

Invested in Facility Improvements

COLORADO
Energy Office

Thank you! Contact: ceo_epc@state.co.us.

CASE STUDY: San Miguel County

SUMMARY

Utilizing the EPC Program, SMC implemented Energy Efficiency, Renewable Energy, Battery Storage, Beneficial Electrification & Resiliency measures. Press Release

Work with your utility first

Project Goals

- Carbon Neutrality
- Save taxpayer $
- Increase resiliency for mission critical services

PROJECT DATA

Outcomes

- Eliminate fossil fuels at 3 county facilities
- 264 kW of Solar PV at 5 facilities
- 190 kw, 580 kWh battery storage with microgrid
- 368,000 kWh - 3,900 Therms - 500 gal propane
- 50% to building carbon neutrality
- Reduced price volatility
- Improved occupant comfort

Funding Sources

- $2.2M in state grants (DOLA RENW)
- $660k TELP
- $200k Capital Contributions

Key Takeaways and Closing Remarks

4:30 PM ET

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End of Day 4 and the State Summit

Thank you!

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