



Statewide
Energy
Efficiency
Collaborative

SEEC Virtual Forum: Webinar #6

July 16, 2020 | 10:00 – 11:00 AM PST

Identifying, Prioritizing, Financing Projects



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11th Annual Statewide Energy
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June - November | 18 Webinars | 6 Networking Events

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8/12 – Webinar #8 Building Decarbonization Policy Tools for California Local Governments

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9/1 – Webinar #10 Building Decarbonization Full Throttle: CPUC Updates and Regional Implementation


9/9 – Webinar #11 Not Your Grandma's Regulatory Update

9/17 – Webinar #12 State-Administered, Utility-Supported Financing for Energy Efficiency Retrofits



SEEC Bingo

Connect, Network, and Win a Sustainability Prize!

<p>OWNS AN ELECTRIC VEHICLE</p> <p>NAME: _____</p>	<p>IS A CCA CUSTOMER</p> <p>NAME: _____</p>	<p>HOUSEHOLD HAS MOSTLY LED BULBS INSTALLED</p> <p>NAME: _____</p>	<p>HAS COOKED FOOD IN A SOLAR OVEN</p> <p>NAME: _____</p>	<p>WORKS IN THE SIERRA NEVADA REGION</p> <p>NAME: _____</p>
<p>HAS SOLAR PANELS ON THEIR PROPERTY</p> <p>NAME: _____</p>	<p>HAS AN EV CHARGER AT THEIR HOME OR APARTMENT COMPLEX</p> <p>NAME: _____</p>	<p>HAS AT LEAST ONE ENERGY STAR® APPLIANCE AT HOME</p> <p>NAME: _____</p>	<p>IS AN ELECTED OFFICIAL</p> <p>NAME: _____</p>	<p>WORKED IN THE ENERGY FIELD IN A STATE BESIDES CALIFORNIA</p> <p>NAME: _____</p>
<p>WORKS FOR OR HAS WORKED FOR THE CEC</p> <p>NAME: _____</p>	<p>TAKES PUBLIC TRANSIT TO THEIR WORK OFFICE</p> <p>NAME: _____</p>		<p>PLAYS A MUSICAL INSTRUMENT</p> <p>NAME: _____</p>	<p>HAS THE SAME JOB TITLE THAT YOU HAVE</p> <p>NAME: _____</p>
<p>HAS DROUGHT-RESISTANT LANDSCAPING</p> <p>NAME: _____</p>	<p>BIKES OR WALKS TO THEIR WORK OFFICE</p> <p>NAME: _____</p>	<p>IS A VEGETARIAN OR VEGAN</p> <p>NAME: _____</p>	<p>LIVES OR WORKS IN A ZERO NET ENERGY (ZNE) BUILDING</p> <p>NAME: _____</p>	<p>WORKS FOR A COMMUNITY BASED ORGANIZATION</p> <p>NAME: _____</p>
<p>WORKS IN THE SAN JOAQUIN VALLEY REGION</p> <p>NAME: _____</p>	<p>COMPLETED AN ENERGY AUDIT</p> <p>NAME: _____</p>	<p>HAS RUN FOR OFFICE</p> <p>NAME: _____</p>	<p>HAS SUCCESSFULLY CREATED SOIL FROM COMPOST</p> <p>NAME: _____</p>	<p>HAS BACKYARD CHICKENS</p> <p>NAME: _____</p>



Q&A

- Submit questions for panelists through the Q&A module at any point during the webinar.
- Upvote questions that you are interested in hearing responses to.

Audio Settings ^



Chat



Raise Hand



Q&A

Leave Meeting

Chat

- Engage in a dialogue with your peers – share resources, case studies, and best practices
- Reach out to LGC staff if you encounter technical issues or have questions about the SEEC Forum.





John Rossi

Program Manager,
C&I Programs
TRC Companies



Rochelle Thomas

Energy Manager
*San Joaquin Valley Clean
Energy Organization*



Alelia Parenteau

Energy and Climate
Program Supervisor
City of Santa Barbara



Lindsey Hawes

Municipal Energy
Program Manager
*City of San Diego,
Sustainability Department*

Introducing Today's Panelists





“Identifying, Prioritizing and Funding Energy Projects for Your Organization”

Statewide Energy Efficiency Collaborative (SEEC)

ROCHELLE THOMAS, ENERGY MANAGER

JULY 16, 2020

WHAT'S THE POINT?

High-level
idea/concept
goes here!

Presentation Format

- ▶ Overview of SJVCEO
- ▶ Real life project
- ▶ Questions



REMEMBER THIS!

If you don't recall anything else I said on this slide, THIS is the takeaway!



WHAT'S THE POINT?

We've been working in and with these communities successfully for more than a decade.

SJVCEO Team & Our Partners



- ✓ Working with 12 counties, 64 cities and CSDs
- ✓ Saved 23,000,000 kWh in municipal infrastructure
- ✓ Maintain over 7,000 utility accounts in Energy Star Portfolio Manager (ESPM)
- ✓ \$8,000,000 in non-utility funding

REMEMBER THIS!

We have a proven track record as a trusted resource; we are zealous advocates who get results.





WHAT'S THE POINT?

We are dedicated to serving rural and disadvantaged public agencies.

How Do You Know Us?

You may remember us as:



NOW we are:



REMEMBER THIS!

Same work, different logos.



WHAT'S THE POINT?

We serve the underserved.

Geography



Nearly ALL of our partners are disadvantaged and/or hard-to-reach communities

- Cities
- Counties
- Special Districts
- School Districts



REMEMBER THIS!

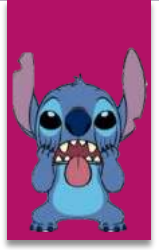
We are committed to helping our communities grow and thrive through clean energy, while maintaining rural character and being able to effectively adapt to local concerns.

WHAT'S THE POINT?

We remove barriers for agencies to complete projects.

How Do We Do It?

- ▶ **Benchmarking**: Benchmark and maintain utility accounts with Energy Star Portfolio Manager (ESPM), Green Button, Share My Data Tool
- ▶ **Infrastructure Inventory**: Maintain inventory of critical equipment and infrastructure details to proactively identify project opportunities
- ▶ **Energy Readiness Reports (ERRs)**: Roadmap (pipeline) for energy projects
- ▶ **Project Tracking/Reporting**: Tracking energy projects for agency recognition through the Teamwork platform
- ▶ **GRITS**: project management tools to run scenarios; opportunities delivered



REMEMBER THIS!

Data drives projects!





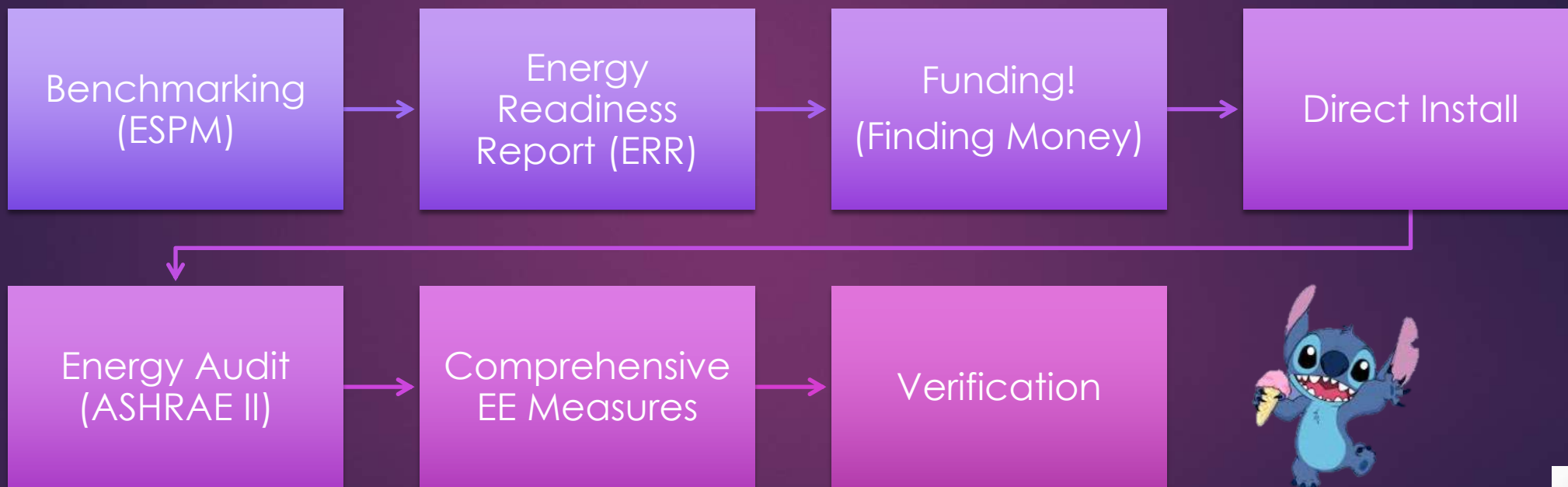
One step.

One punch.

One round at a time.

-Rocky Balboa

What Does it Look Like?



What Did We Find?



WHAT'S THE POINT?

Simple measures made a BIG difference for this disadvantaged community

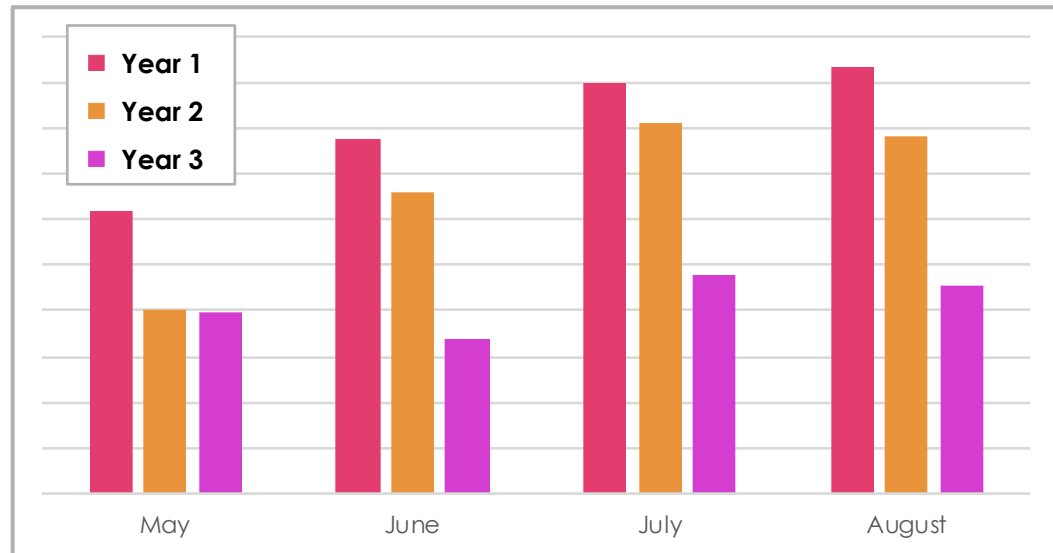
Results

Measures Installed:

- Lighting
- Ceiling Insulation
- Radiant Heat Barrier



- ▶ \$2,665.11 in annual savings as a result of the lighting upgrade to LED fixtures
- ▶ 30%+ reduction in heating and cooling costs



REMEMBER THIS!

Money saved on energy costs can be redirected into essential services



WHAT'S THE POINT?

From home or office, we meet you where you are!



BLOG EE



**FAST
CHATS**



**POD EE
PODCAST**

How Can You Connect With Us?

- ▶ 1:1 ENERGY COACHING
- ▶ BLOG EE
- ▶ FUND-IT FAST CHATS
- ▶ POD EE
- ▶ “WFH” BUNDLES



REMEMBER THIS!

If you're looking for us, start at www.sjvceo.org



Thank you!



@SJVCEO



www.sjvceo.org



@SJVCEO



@SJVCEO



info@sjvcleanenergy.org



@SJVCEO

Rochelle Thomas
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Identifying, Prioritizing and Funding Energy Projects for Your Organization:

Developing a Zero Net Energy Roadmap

Statewide Energy Efficiency Collaborative (SEEC) Webinar

ALELIA PARENTEAU, ENERGY & CLIMATE MANAGER

JULY 16, 2020



City of Santa Barbara
**SUSTAINABILITY
& RESILIENCE**



Mid-sized City - Full-sized Goals

▶ Energy & Climate Division

- ▶ 100% Renewable Energy Goal
- ▶ Strategic Energy Plan
- ▶ Energy Utilities Management
- ▶ City-only CCE
- ▶ Climate Action Plan

REMEMBER THIS!

No matter what size City you are – there are opportunities for savings to be found

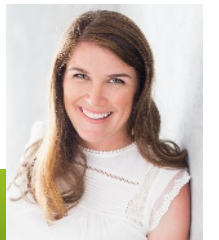
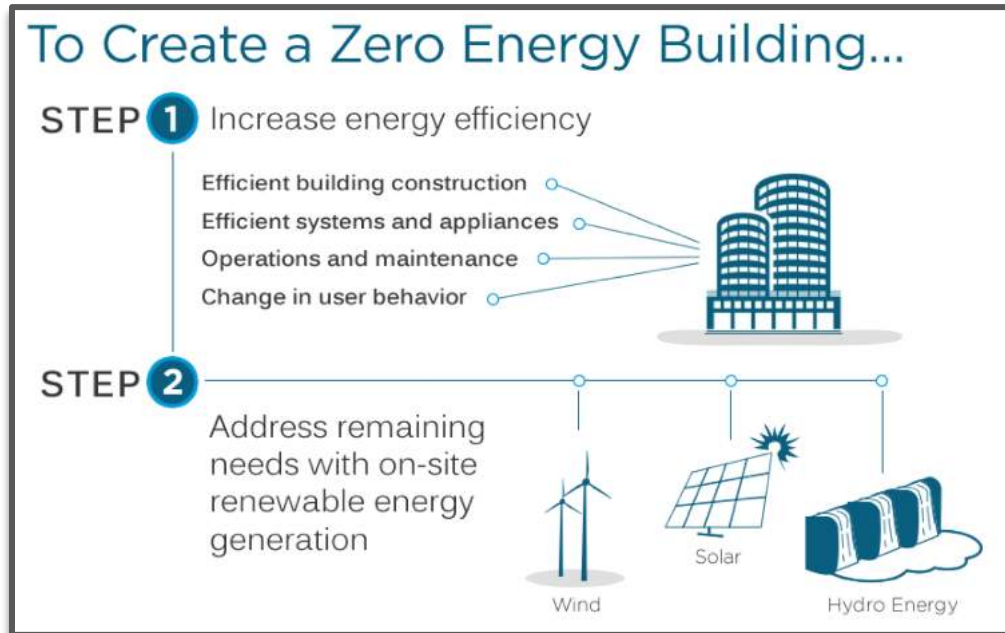


WHAT'S THE POINT?

Net Zero Energy buildings are the next frontier.

Why Net Zero Energy?

- ✓ Considering 100% Renewable Goal
- ✓ High Efficiency Buildings
- ✓ Meet Climate Goals
- ✓ Lead by Example



REMEMBER THIS!

Net Zero Energy buildings achieve multiple energy and climate goals.

WHAT'S THE POINT?

When dollars are available you need to put them to use before they are taken away!

From Reflex to Roadmap



- ✓ Low hanging fruit = handled
- ✓ Project pipeline looked different in the past
- ✓ Utility incentives and funding no longer as available



REMEMBER THIS!

Getting project financing is just step one. Need to have a plan in place and projects identified.

WHAT'S THE POINT?

We had a need for a quick list of projects that were ready to go

Too Much Money (sort of)



- ✓ Established Revolving Fund
- ✓ Use it or lose it
- ✓ Sustainable fund growth
- ✓ Grant funding to build out roadmap became available

REMEMBER THIS!

Having a prioritized list of projects helps us in the budget process and when justifying to decision makers



Steps to Success



**Benchmark/
Audit**



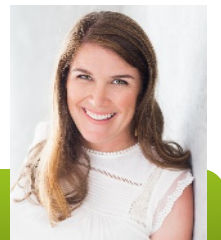
Prioritize



**Track
Progress**

REMEMBER THIS!

Don't skip a step – they're all important!



WHAT'S THE POINT?

Audits are time intensive but a critical part of this process

Step by Step:

- **Audit**
- Prioritize
- Track Progress

▶ **Step 1: Audit**

- ▶ Benchmarked all of the buildings to establish baseline
- ▶ Level 2 ASHRAE audit of all “occupied” buildings
- ▶ Established list of EE measures
- ▶ Evaluated solar and BESS potential
- ▶ Developed robust Audit report

REMEMBER THIS!

Spend some time getting to know your buildings – this helps identify opportunities AND scope projects for later!



WHAT'S THE POINT?

Need to put a dollar amount to each project in order to know the order they should be implemented

Step by Step:

- Audit
- **Prioritize**
- Track Progress

▶ Step 2: Prioritize

- ▶ Assigned cost and payback for all EE and Renewable measures
- ▶ Prioritize based on up front capital and simple payback
- ▶ Didn't add in maintenance costs, but usually mentioned as part of our justification

REMEMBER THIS!

In order to grow our available funds, needed to prioritize biggest savings first!



WHAT'S THE POINT?

Think about how you would use the data that you'll receive in multiple ways.

Step by Step:

- Audit
- Prioritize
- **Track Progress**

▶ **Step 3: Track Progress**

- ▶ Roadmap lays out projects by measure OR by building
 - ▶ Facilitates easy scoping
 - ▶ Helps assess project bids
 - ▶ Can be used to put together larger projects (facilities renewals, ESCO projects)
- ▶ Built a project tracking tool
 - ▶ Makes life much easier down the road

REMEMBER THIS!

Build in some tools to make your life easier, like a project tracking tool.



Tracking Tool

7MW Array **** This values came from 'Solar PV' Tab in original spreadsheet**

Dep/Div	Site Address	PV Capacity [MWdc]	Energy Savings [GWh/yr]	Implem. Cost [\$]	\$/W	\$/kWh
Grassland City Owned	13 Acre Parcel of Land	7.0	110	\$ 12.3M	\$ 1.75	\$ 1.11

Major Assumption - Assume this array is build at year 2025

**Assume
Year 7MW Array
is Built**

**** year 2020 on all plots include the EE implemented for that year on the "Grid Purchased Row"**

Budget	Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	
		Combined Non-Audited And Audited + 13 acre 7MW Array	\$ 4,411,189										
Grid Purchased		32,111,975	31,821,480	29,738,929	28,446,071	26,217,548	12,104,055	11,016,916	8,608,178	4,556,701	608,473	-46,322	
EE		653,654	701,671	950,659	1,267,330	3,253,849	6,220,099	6,455,611	8,075,014	11,519,751	12,250,167	12,531,558	
Renewably Sourced		618,997	861,475	2,695,038	3,671,226	3,913,228	15,060,472	15,912,099	16,701,434	17,308,174	20,525,986	20,899,390	
Grid Purchased		98.1%	97.3%	90.9%	87.1%	85.1%	-24.4%	-44.4%	-94.0%	-279.8%	-3273.4%	45217.3%	
Renewable Generation		1.9%	2.7%	9.1%	12.9%	14.9%	124.4%	144.4%	194.0%	379.8%	3373.4%	-45117.3%	
Yearly Spent		\$ 1.9M	534K	\$ 2.7M	\$ 1.5M	\$ 3.9M	\$ 17.3M	\$ 2.1M	\$ 3.5M	\$ 7.8M	\$ 4.0M	\$ 1.1M	
Budget Check		55.4%	15.8%	79.4%	45.3%	115.7%	512.0%	63.4%	102.4%	230.9%	118.0%	33.9%	
Leftover Funds		\$ 2.5M	\$ 3.9M	\$ 1.7M	\$ 2.9M	492K	\$ (12,925,102)	\$ 2.3M	943K	-3407K	416K	\$ 3.3M	
ZNE Percentage		4%	5%	11%	15%	21%	64%	67%	74%	86%	98%	100%	
For Plots	Grid Purchased		96.2%	95.3%	89.1%	85.2%	78.5%	36.3%	33.0%	25.8%	13.6%	1.8%	-0.1%
	EEM Energy Saved		1.96%	2.10%	2.85%	3.80%	9.75%	18.63%	19.34%	24.19%	34.51%	36.69%	37.54%
	Renewable Energy		1.9%	2.6%	8.1%	11.0%	11.7%	45.1%	47.7%	50.0%	51.8%	61.5%	62.6%

PVWatts[®] Calculator NREL

My Location: **santa barbara, CA** + Change Location

HELP FEEDBACK ALL NREL SOLAR TOOLS

RESOURCE DATA SYSTEM INFO RESULTS

RESULTS

11,488,147 kWh/Year*

System output may range from 11,037,812 to 11,752,374 kWh per year near this location. [Click HERE](#) for more information.

Go to system info

Month Solar Radiation AC Energy Value

Total Cost	
Energy Efficiency	\$ 21M
Solar PV & BESS	\$ 25M
Solar Water	\$ 96,000
Total	\$ 45M

REMEMBER THIS!

A usable tool is key to keeping your projects on track and to keep you moving toward your goals

Thank you!

Alelia Parenteau
Energy & Climate Manager
City of Santa Barbara

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Statewide Energy Efficiency Collaborative

Identifying, Prioritizing and Funding Energy Projects for Your Organization

A Large City's Approach to Clean Energy Retrofits

Lindsey Hawes

Municipal Energy Program Manager

July 16, 2020



- ▶ Team Structure
- ▶ Muni Energy Targets
- ▶ Plan for 45+ Clean Energy Retrofits via Energy Savings Performance Contracts

WHAT'S THE POINT?

We're going to cover a lot today!





Sustainability Department

- ▶ 25 team members, 4 program teams
 - ▶ CAP Implementation & Reporting
 - ▶ Regulatory & Billing
 - ▶ Sustainability & Technology
 - ▶ Municipal Energy
- ▶ Smart & Sustainable Communities Branch
- ▶ Mission: to facilitate *innovative* efforts across *multiple* City departments to *enhance* economic, social and environmental sustainability

WHAT'S THE POINT?

Big team that is building the plane while flying.

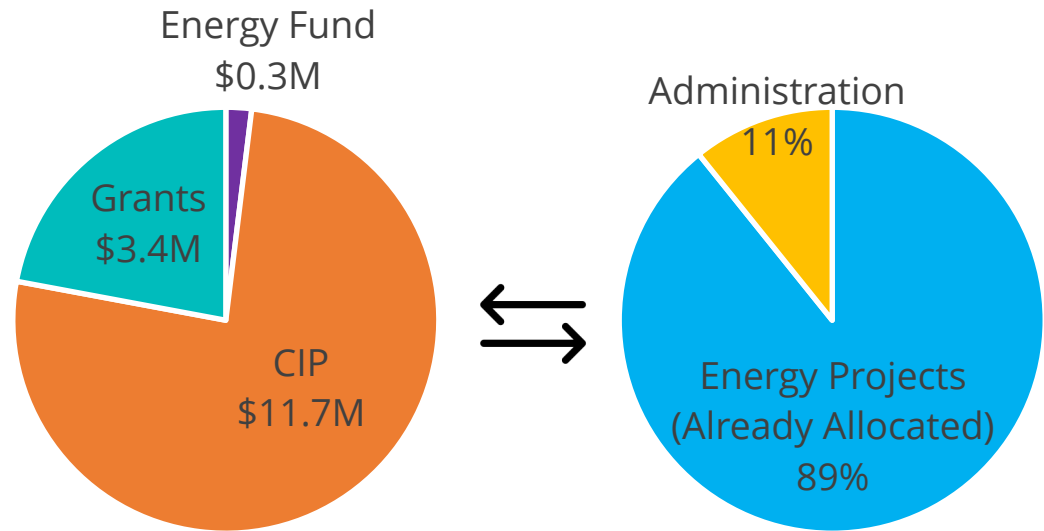


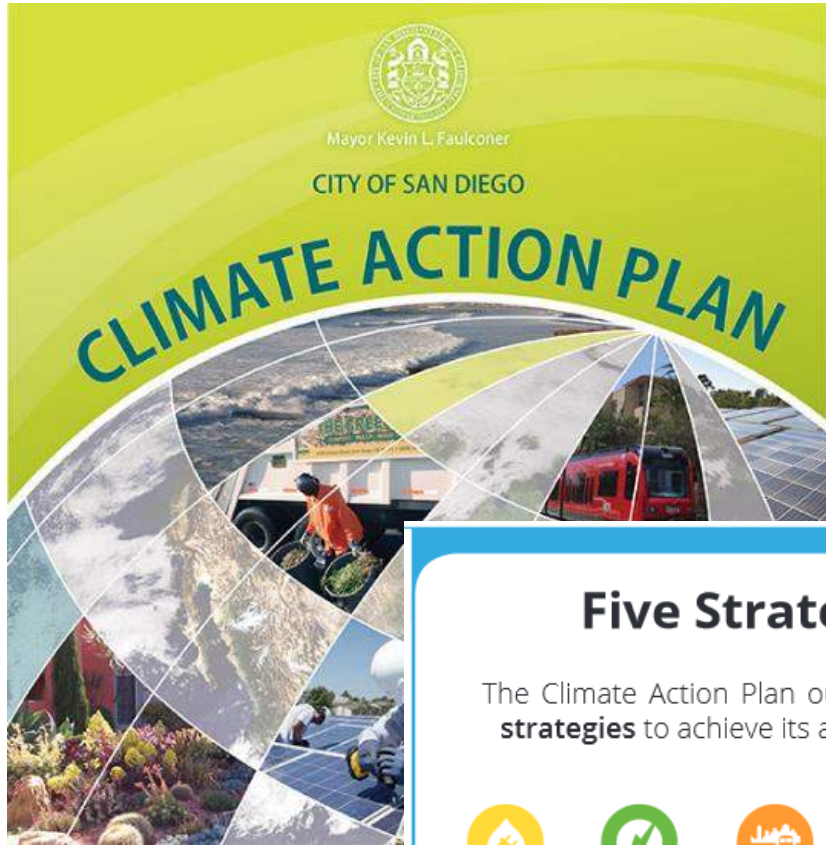


Municipal Energy Team

- ▶ 7 team members
 - ▶ 5 civil engineers, 1 project officer, 1 program manager
- ▶ We identify, prioritize & execute energy projects across 500+ facilities owned & operated by other “Asset Managing Departments”
- ▶ FY21 budget ~ \$15.4M

WHAT'S THE POINT?
Mixed group of professionals learning as we go.





By 2035:

- ▶ Eliminate half of all Citywide GHGs
- ▶ Achieve 100% renewable energy

WHAT'S THE POINT?
 Ambitious CAP adopted in 2015 with tons of internal support.

Five Strategies

The Climate Action Plan outlines **five bold strategies** to achieve its ambitious goals.



Energy and Water Efficiency



Clean and Renewable Energy



Bicycling, Walking, Transit and Land Use



Zero Waste



Resiliency

STRATEGY 1: ENERGY & WATER EFFICIENT BUILDINGS

LEAD DEPARTMENTS:

Environmental Services, Planning, Public Utilities and Development Services Departments

GENERAL PLAN POLICIES:

CE-I.7, CE-I.5b, CE-I.13, CE-A.11e, CE-A.11h, CE-A.11i, CE-D.1h, CE-D.1i, CE-D.1j, CE-D.1k, CE-D.1l, CE-D.1m, CE-I.4

GOAL:

Reduce municipal energy consumption.

ACTION 1.2:

Present to City Council for consideration a Municipal Energy Strategy and Implementation Plan.

PHASE 1

TARGET:

Reduce energy consumption at municipal facilities by 15% by 2020 and an additional 25% by 2035.

GHG REDUCTIONS:

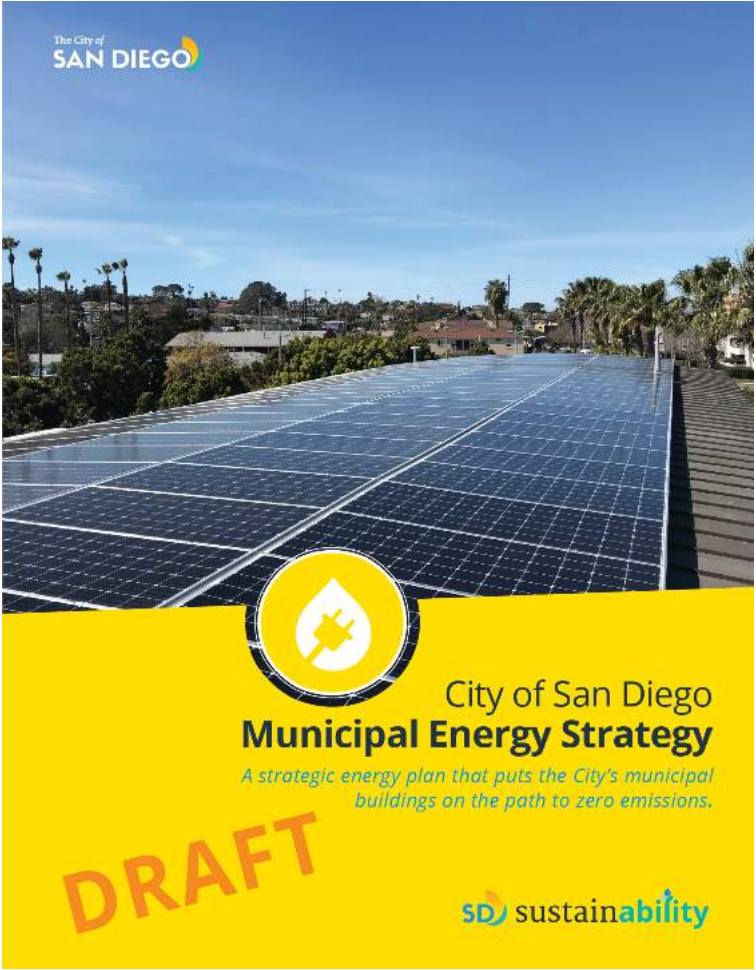
2020	2035
11,580 MT/CO ₂ e	9,011 MT/CO ₂ e





MES guides our work

WHAT'S THE POINT?
 Muni buildings are on the path to zero emissions by 2035!



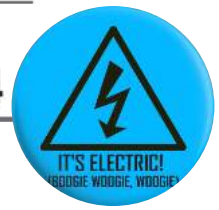
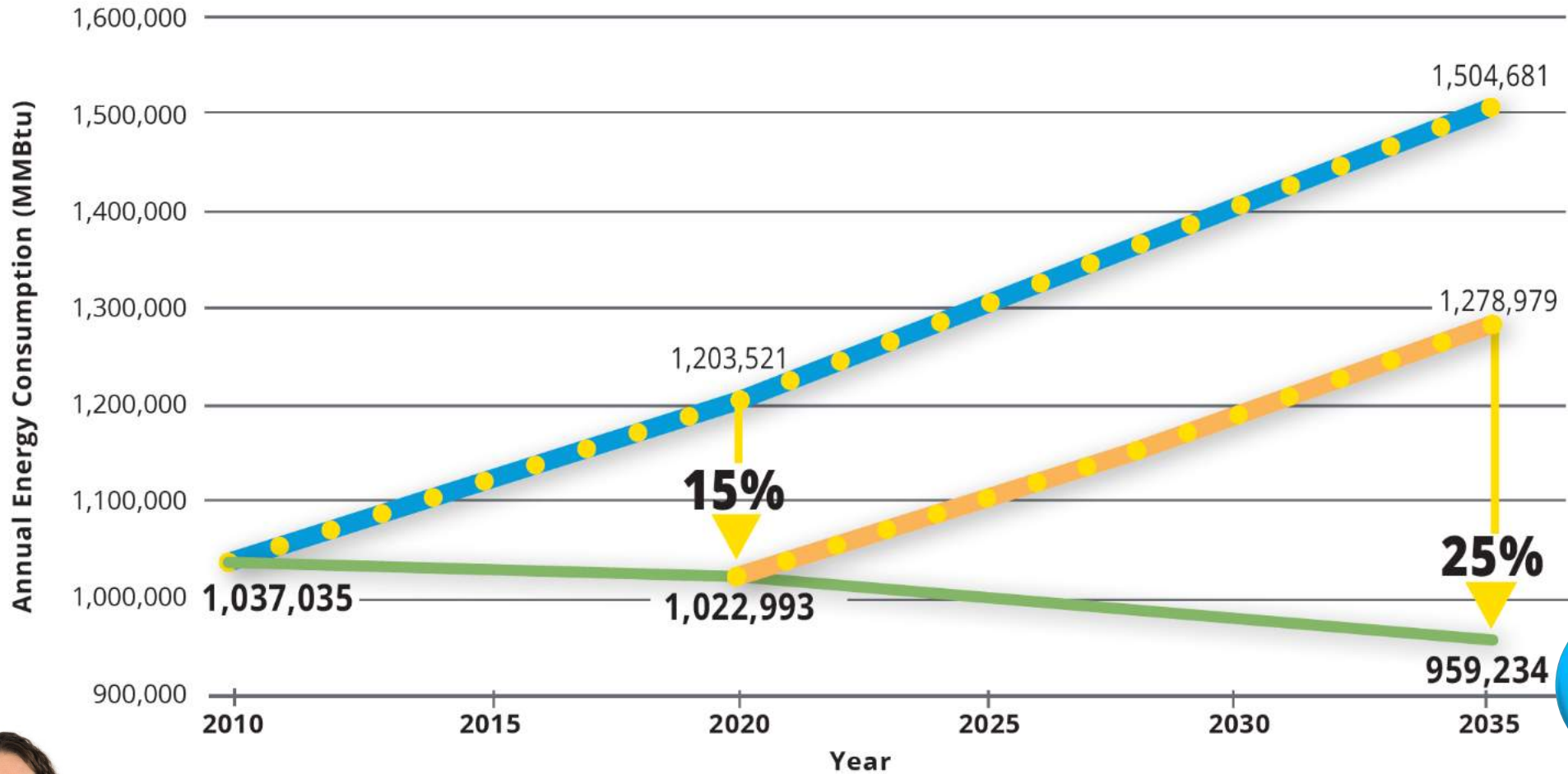
Strategies	Actions
STRATEGY 1: Reduce Energy Consumption	ACTION 1: Identify and implement energy efficiency projects ACTION 2: Measure and manage energy performance
STRATEGY 2: Increase Onsite Renewable Energy Generation	ACTION 1: Implement renewable energy projects ACTION 2: Assess the impacts of a changing market
STRATEGY 3: Strive for Zero Emissions Buildings	ACTION 1: Adopt and enforce zero emissions standards and policies ACTION 2: Reduce embodied carbon
STRATEGY 4: Support Resiliency and Grid Stability	ACTION 1: Deploy smart, connected distributed energy resources ACTION 2: Secure funding for grid-interactive efficient building pilot projects
STRATEGY 5: Engage and Educate	ACTION 1: Engage and educate building occupants and patrons. ACTION 2: Train the local workforce.





CAP-Established Municipal Energy Targets

WHAT'S THE POINT?
We have ambitious muni energy and GHG reduction goals.

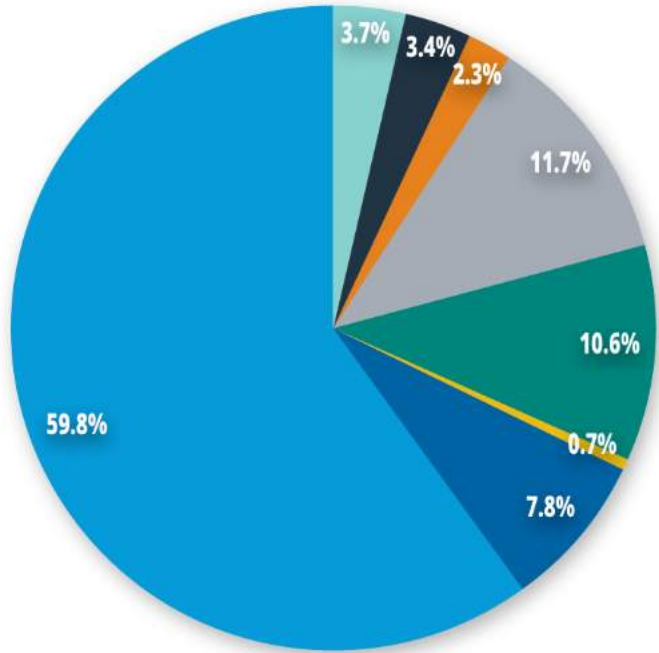




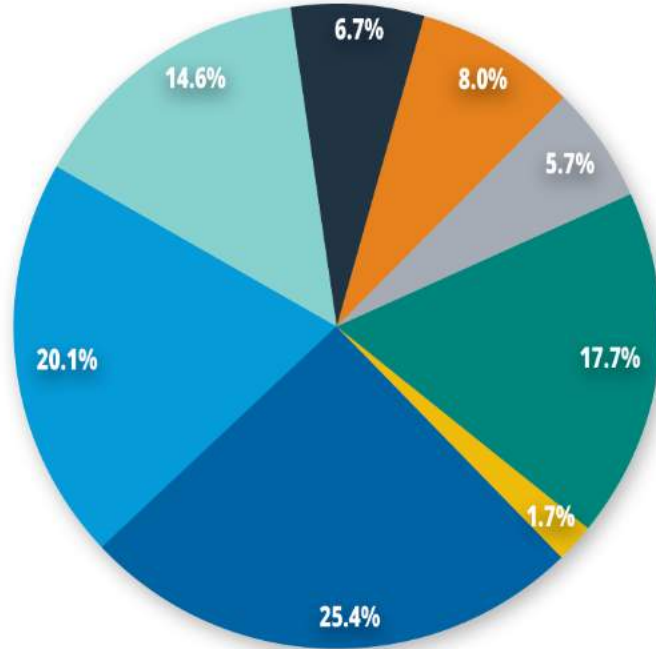
City of San Diego Municipal assets

WHAT'S THE POINT?
500+ facilities
and \$50M
annual
energy bill

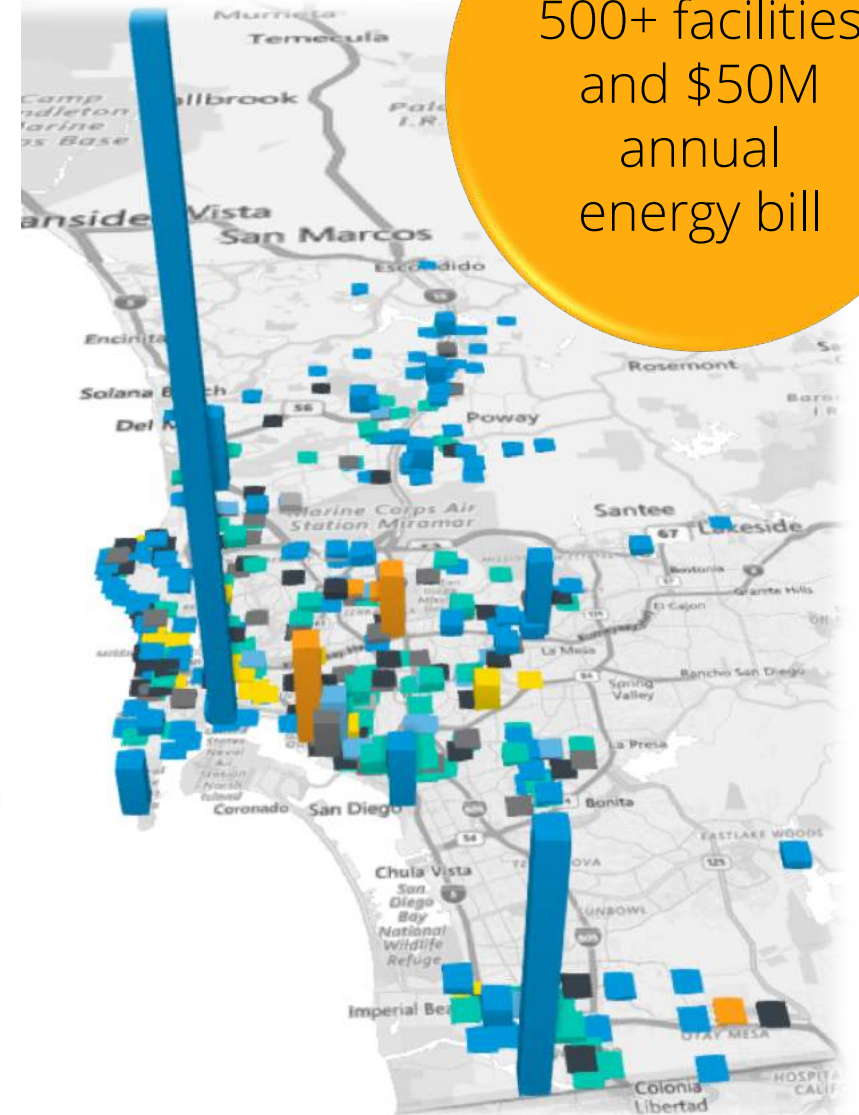
Energy Use by Department (2016)



Floor Area by Department (2016)



- Libraries
- Fire & Rescue
- Parks & Recreation
- Real Estate Assets
- Police
- Transportation & Stormwater
- Environmental Services
- Public Utilities



- ▶ As-need energy engineering consulting services
5-year contract
 - ▶ Performed 40+ Level 1 ASHRAE audits
 - ▶ Interviewed asset managers and owners
 - ▶ Reviewed audit reports from last 5 years
 - ▶ Reviewed deferred maintenance logs, CIP requests, EUI, FCI, etc.
- ▶ Identified 880 energy measures across 220 facilities
- ▶ \$27M investment required to achieve 12% annual savings, with a combined 6.5 year payback

WHAT'S THE POINT?

We have a ton of energy data on our existing buildings!





Energy Project Prioritization



WHAT'S THE POINT?

Rainbows make me happy.





Energy Project Prioritization



Phase 1 Clean Energy Retrofit Proposed Facility List

Department	# of Facilities	Floor Area	Avg # of Measures/ Site	Estimated Project Cost	Estimated Annual Savings	Average Payback (yrs)	Est. Energy Reductions (kBtu/yr)
Library	6	567,555	4	\$1,077,396	\$205,690	5	12,638,791
Fire-Rescue	8	58,446	5	\$242,645	\$78,686	3	4,904,263
Parks & Recreation	18	221,508	4	\$1,422,622	\$328,761	4	14,446,958
Environmental Services	3	127,107	4	\$800,436	\$106,697	8	2,247,211
Police	8	139,527	4	\$877,828	\$135,503	6	3,546,737
Transportation & Storm Water	1	207,344	8	\$1,473,280	\$347,522	4	4,597,793
READ	2	93,483	4	\$405,767	\$64,153	6	2,092,226
TOTAL	46	1,414,970	5	\$ 6,299,974	\$1,267,012	5	44,473,980

WHAT'S THE POINT?
 Pursuing retrofits on 45+ sites.
 Seeking guaranteed minimum savings of \$1.2M/yr.

▶ We are currently vetting the proposed list with AMDs and iterating to address stakeholder input

*Estimated costs and savings account for EE & BAS only – do not include renewables, battery storage, deferred maintenance measures, etc. Assume these numbers will increase several fold.

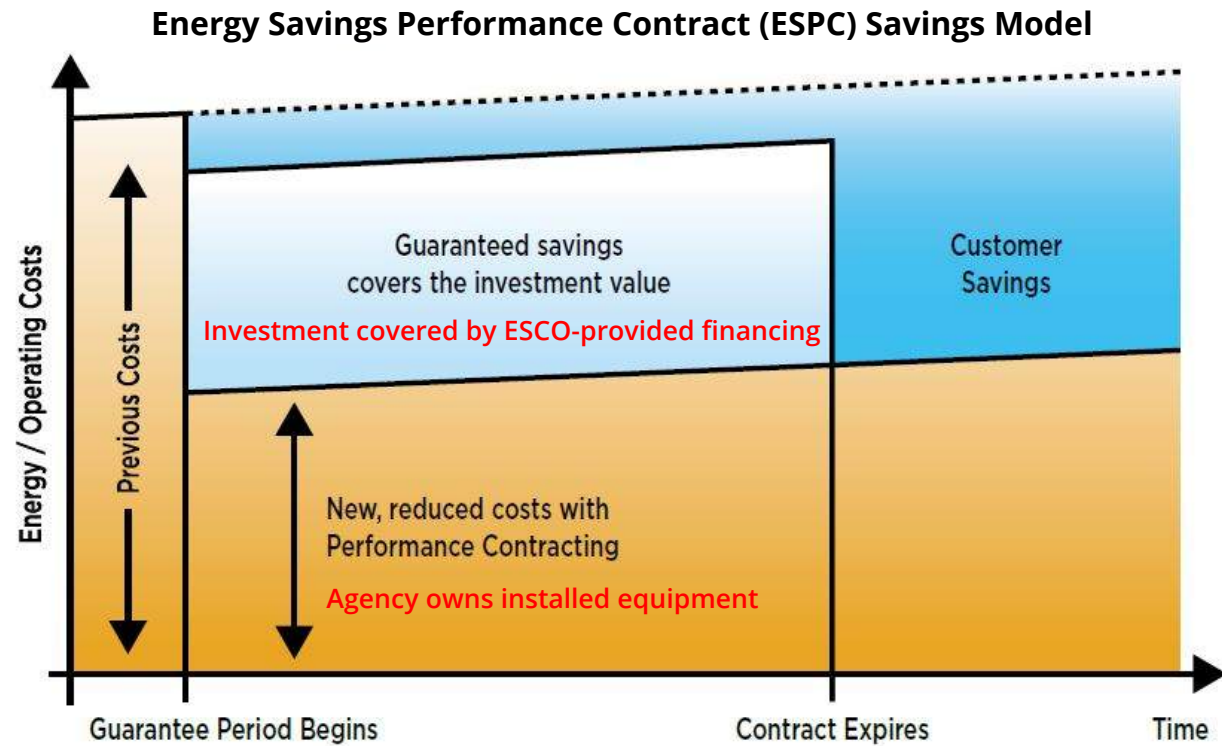


- ▶ Energy Savings Performance Contracts
- ▶ Ideally ESPCs are developed by the Energy Service Company (ESCO) and the agency in partnership
- ▶ Design-Bid-Build / Low Bid approach is not ideal for ESPCs

WHAT'S THE POINT?

ESPCs are great for agencies with no money!

(...if it's allowed...)



Source: Codema

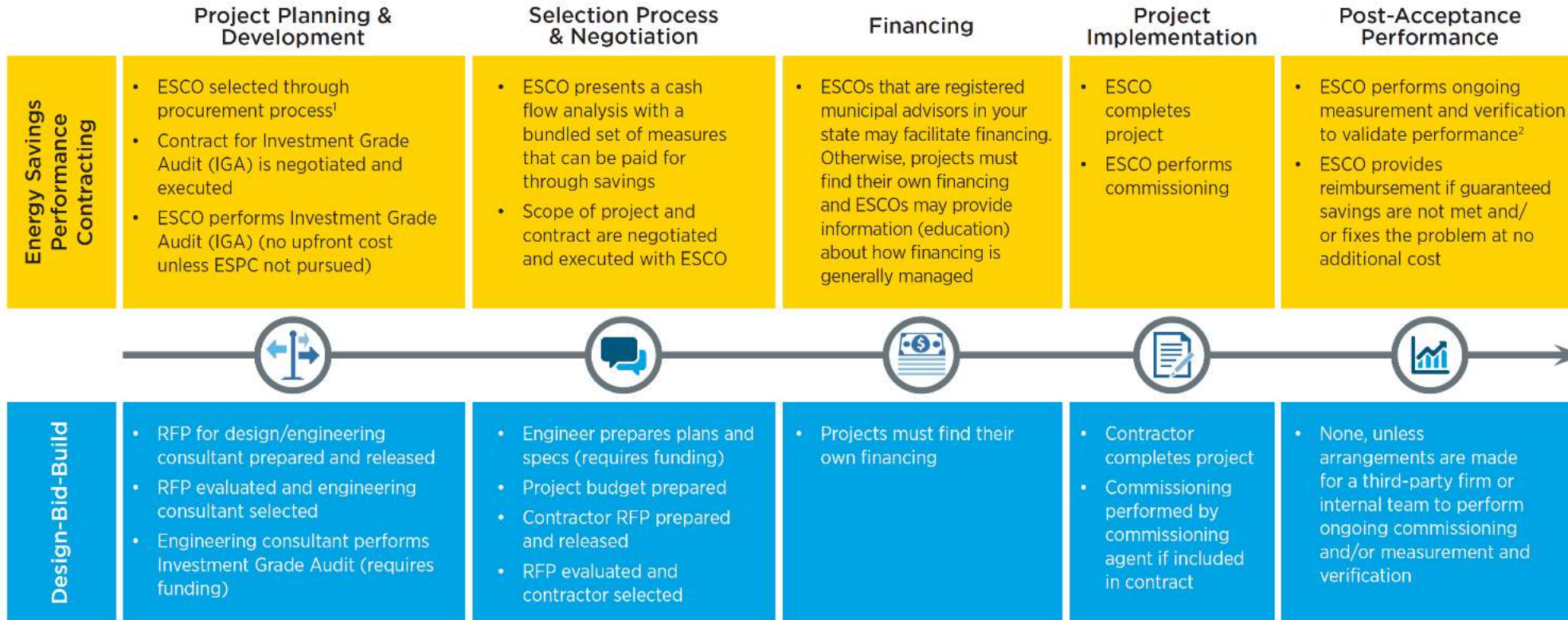


ESPC vs. DBB

U.S. DEPARTMENT OF ENERGY

Energy Efficiency & Renewable Energy

ESPC or Design-Bid-Build for Your Retrofit?



WHAT'S THE POINT?

DOE EERE & FEMP offer fantastic ESPC resources!



- ▶ Permits a public agency to procure an energy services contract instead of typical DBB approach provided that
 - ▶ The project is in the best interest of the public agency
 - ▶ Project costs are offset by energy savings
- ▶ 4217 conflicts with San Diego Muni Code provisions aimed at getting the best or lowest deal (aka DBB)
 - ▶ We're going to Council to request an amendment to the muni code to allow us to leverage 4217
- ▶ Will enable the public-private partnerships with ESCOs we need to execute energy projects at scale

WHAT'S THE POINT?
ESPCs > DBB for deep energy retrofits on a portfolio of buildings.

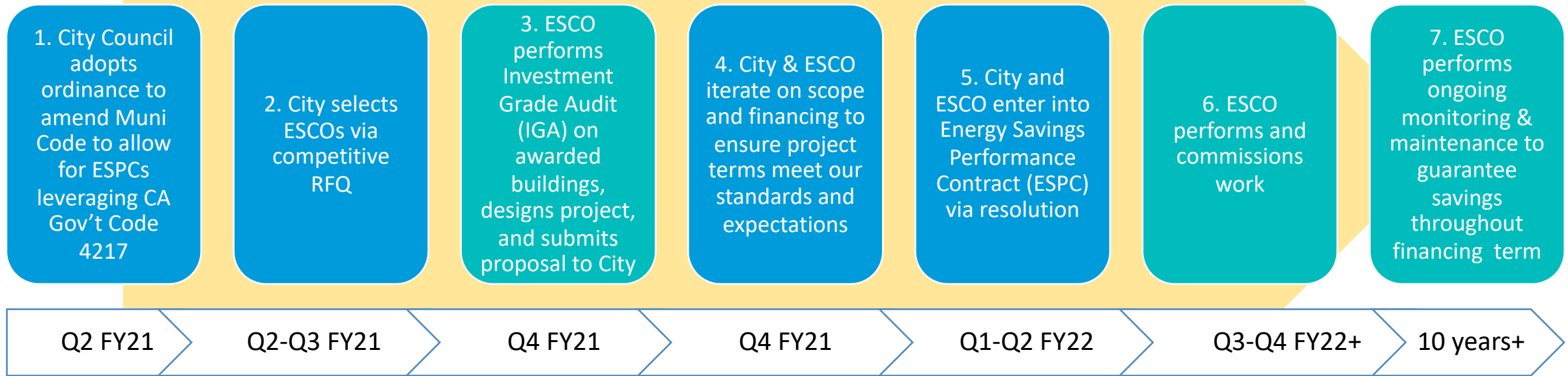




Phase 1 Clean Energy Retrofits

Process & Timeline

WHAT'S THE POINT?
ESPCs require a lot of work and *should* result in a lot of savings.

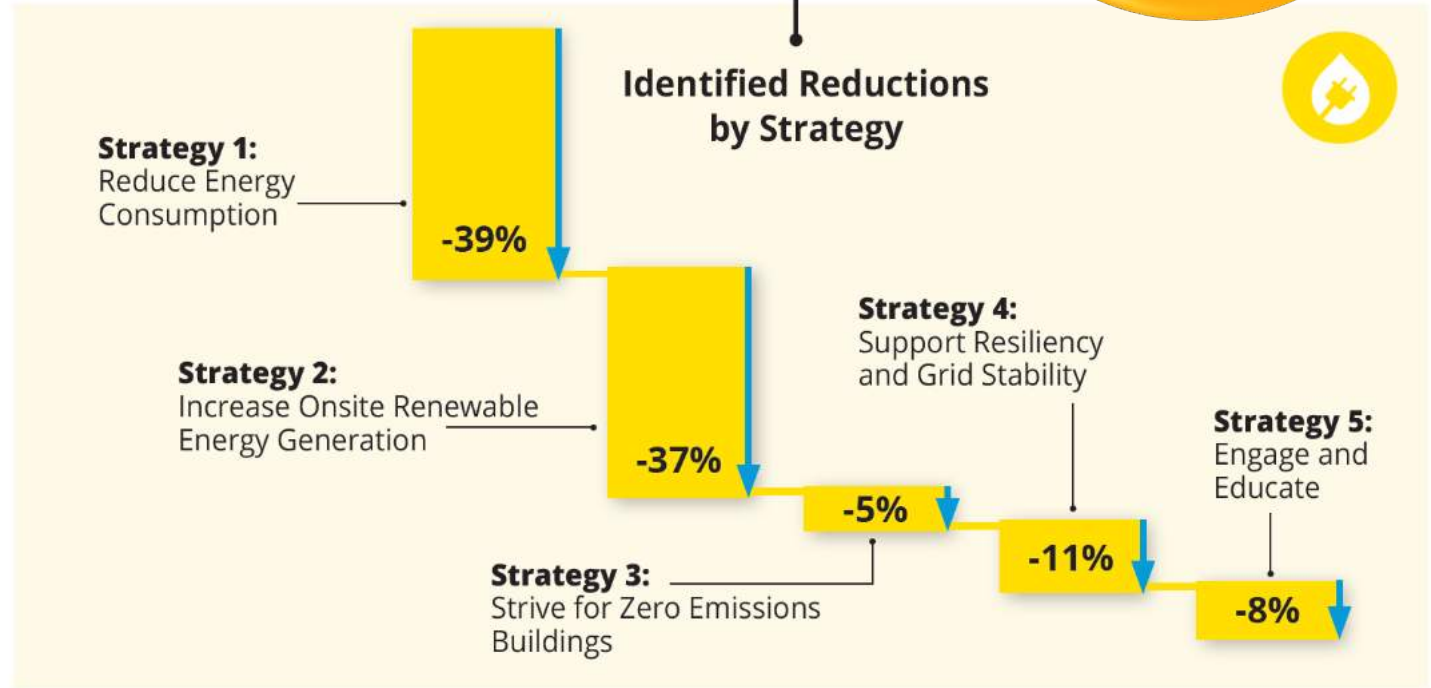
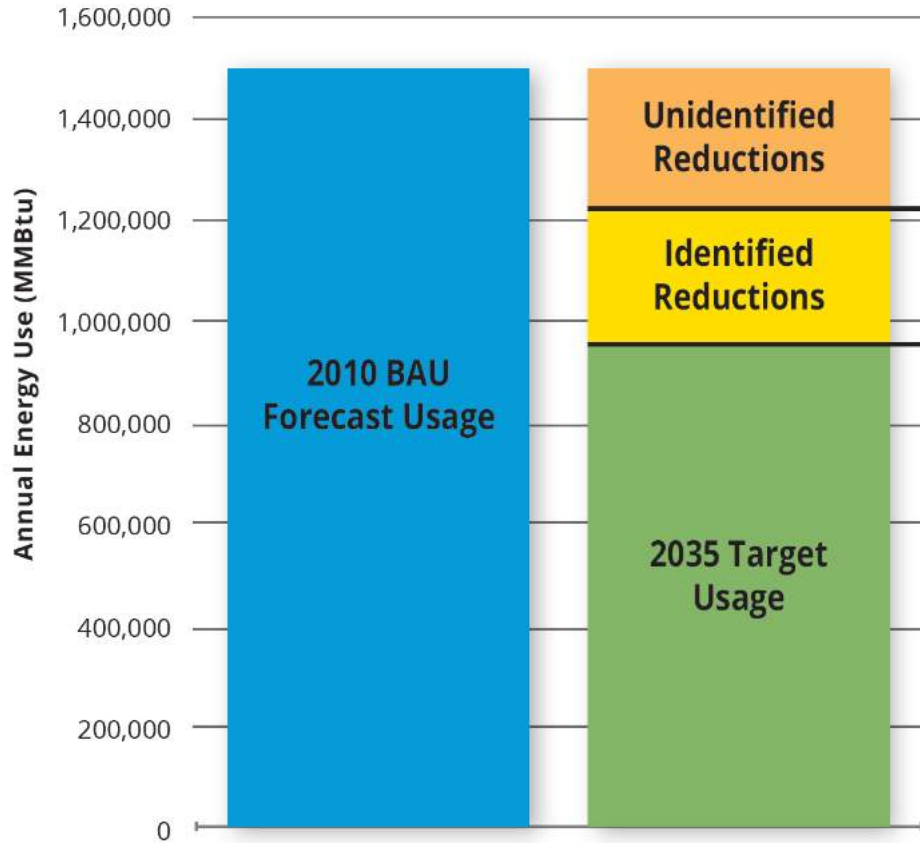




This is just the beginning...

WHAT'S THE POINT?
We have a lot of identifying, prioritizing & funding left to do!

Municipal Energy Strategy Targets & Impacts



THANK YOU!

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Upcoming Events

Learn more and register at:

californiaeec.org/2020-forum/



11th Annual Statewide Energy
Efficiency Virtual Forum

June - November | 18 Webinars | 6 Networking Events

7/21 – Networking Activity Climate & Energy Trivia Night!

8/4 – Webinar #7 Resources for Continuing Climate Action

8/12 – Webinar #8 Building Decarbonization Policy Tools for California Local Governments

8/20 – Webinar #9 Maximizing Value of Resiliency Programs: Case Study & Resources

9/1 – Webinar #10 Building Decarbonization Full Throttle: CPUC Updates and Regional Implementation

9/9 – Webinar #11 Not Your Grandma's Regulatory Update

9/17 – Webinar #12 State-Administered, Utility-Supported Financing for Energy Efficiency Retrofits



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