



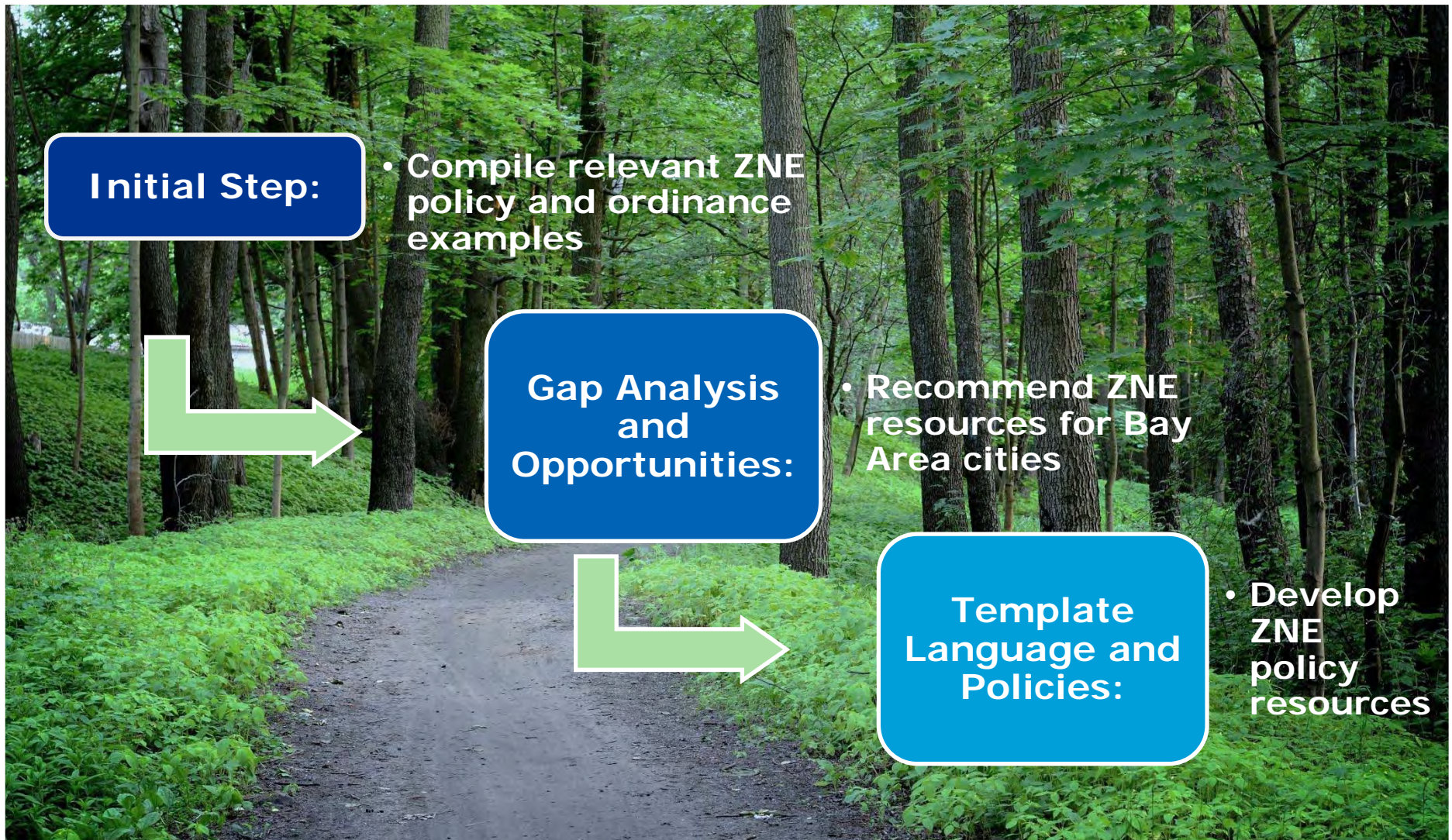
# Municipal Policy Templates

Accelerating ZNE Buildings Community-wide

November 16, 2016



# Developing template language and policy



# Targeted ZNE policy resources for new commercial/institutional buildings

## RFP Template Language



- Energy Use Intensity (EUI) targets
- Lifetime cost (not just upfront capital)
- Bay Area region climate zones

## ZNE Incentive Programs



- New city climate fee
- Refunds for ZNE or ZNE-ready buildings
- Based on the EUI targets

## ZNE Incentive Programs



- Expedited permitting
- Expedited inspections
- Based on the EUI targets



# Non-residential EUI benchmarking

	Type	US National Median kBtu/sqft (Site)	2006 CEUS PG&E Electric Service Area kBtu/sqft	2009 ASHRAE Standard Benchmark - CZ3C (San Fran) kBtu/sqft	Proposed EUI Target Range	
					25% below	50% below
<b>Government</b>	Small Office (<30,000 sf)	-	64	35	26	18
	Large office (>30,000 sf)	-	81	37	27	18
	Office building	67	73	36	27	18
	Hospital	197	155	142	107	71
	Schools (K-12)	58	45	51	38	26
<b>Commercial</b>	Hotel	73	72	89	66	44
	Restaurant	224	297	415	311	208
	Retail	47	49	50	38	25
	Warehouse (non-refrig)	29	21	15	11	8
	Office building	67	73	36	27	18
	Supermarket	186	173	166	125	83

# PG&E Zero Net Energy case studies

Volumes 1 (2014) & Volume 2 (2016)



	Schools	Municipal	Office	Lab
Modeled EUI	18 – 37	18 - 46	19 – 26	119
Measured EUI	16 – 44	23 - 42	14 – 22	207

# RFO template language



## Insert in Project Description:

Project shall be designed and constructed to maximize sustainable attributes including, but not limited to, state-of-the-art building design, mechanical design, and material selection, and building integrated renewable energy generation systems to perform, once occupied, at an energy use intensity of no more than **33kBtu/sf**.

## Insert in Experience:

Submit a maximum of five (5) project profiles representative of the AOR's ability to design projects of similar size, scope, character and complexity to this Project.

- **At least one (1) project must be designed to perform at Zero Net Energy, documented via EUI performance post-construction.**

Project Profiles Summary/References: For each project, complete the Project Profile Template attached.

- Include a narrative addressing the salient features for each project ..., **specifically stating the overall goal of achieving "carbon neutrality" or Zero Net Energy**. Indicate the degree of involvement by key construction personnel being proposed for this Project.



# OPR template language

## Sustainability and Energy Efficiency

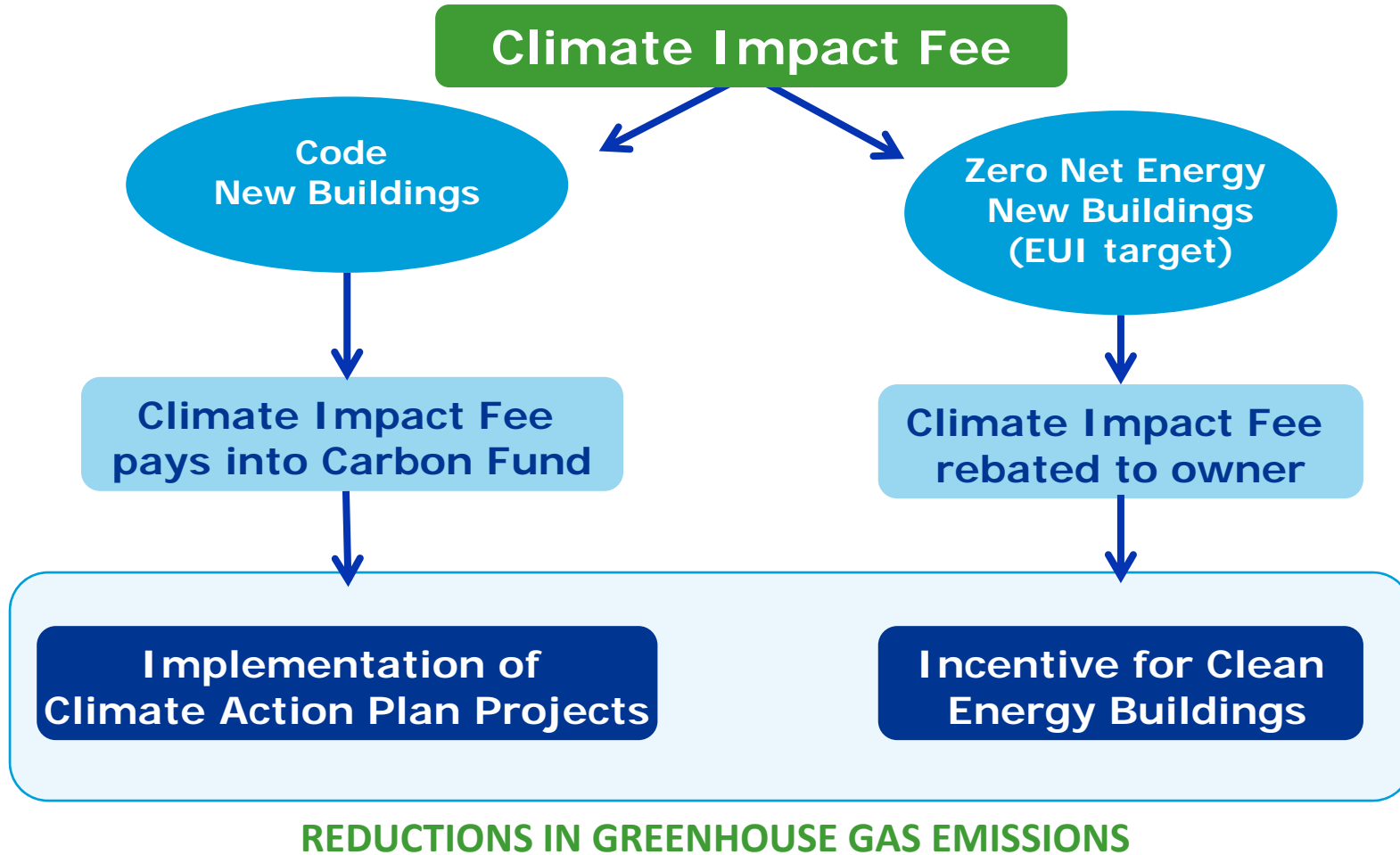
As part of an overall commitment to sustainability and a goal of achieving “carbon neutrality” [the county] builds its facilities to last and promotes environmental quality and resource conservation through sustainable design and construction.

Sustainability and energy efficiency goals for this project include:

- Operate the facility at a maximum of **33 kBtu/sf**
- Include segregated collection and recycling of construction waste
- Incorporate strategies, measures, and systems to conserve energy, such as heat/enthalpy wheels, energy recovery units, “setback” modes, etc.
- Utilize Building Automation System and other controls to efficiently maintain and track performance of key building systems, particularly HVAC and lighting.
- Optimize air conditioning systems for maximum building efficiency
- Use low-VOC, regionally-available, and high recycled content materials.
- **Establish project team (owner, architect, engineers, energy manager, contractor, operations team, etc.) involvement throughout entirety of the project: initiation, design, construction, and conclusion.**

# Zero Net Energy incentive program

Modeled after City of Watsonville Carbon Fund Program





# Zero Net Energy incentive program



**Key question:**  
What is the appropriate climate impact fee level?



## Considerations:

- What are the current permit fees?
- Higher climate impact fee = higher ZNE incentives
- Political feasibility and appetite

## Research into Bay Area jurisdiction fee levels

Wide range of fees associated with new construction (building permit fee, plan check fee, inspection fee, design review, affordable housing impact fees)

City of Watsonville = 50% of building permit fee

# Looking ahead

Finalize EUI recommendations

Complete RFP/OPR Template Language

Continue to vet Climate Impact Fee approach

Promulgate ZNE resources for cities





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