WORLD RESOURCES INSTITUTE

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USDN urban sustainability directors network

BROADLY BENEFICIAL CLEAN ENERGY PLANNING

Developing Processes, Indicators, Scenarios and Policies for Equitable And Inclusive Decarbonization

Session 3: Turning scenarios into policies

Funded by: THE SUMMIT FOUNDATION

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Engagement partner: CUSP canadian urban sustainability practitioners

Introductions – training team

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Overall outline of training series

	Session 1: Stage-setting and baseline data	Session 2: Defining and modeling scenarios	Session 3: Turning scenarios into policies
	• Concepts and methods for equity-focused planning • Overview of scenario-based planning • Choosing indicators • Obtaining data to measure indicators	• Interpreting and communicating baseline data • Defining and modeling scenarios • Evaluating scenarios	• Understanding scenario outcomes • Identifying and prioritizing and policies and programs • Preparing for implementation
Scenario Planning "test exercise" (Level 1 cities)	• Select indicators	• Review baseline • Select scenarios	• Review scenario outcomes

Our theory of change

Information is power

scenario planning

- Partially frees process from biases & blindspots
- Promotes foresight, not forecasting
- Encourages cross-sector communication
- Structures iterative solution development

Values and voice provide direction

equity focus

- Diversity of voices produces larger solution-space
- Identifying and measuring what matters
- Broader inclusion and more equitable distribution of benefits
- More durable public and political support

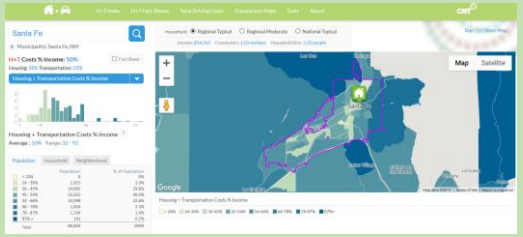
Recap of Session 1

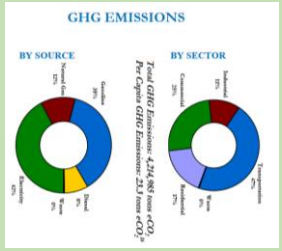
Equity and inclusive stakeholder engagement

Scenario planning

1. Assess the current situation
2. Choose variables for defining scenarios
3. Choose scenarios by exploring plausible combinations of the variables
4. Examine and evaluate scenarios

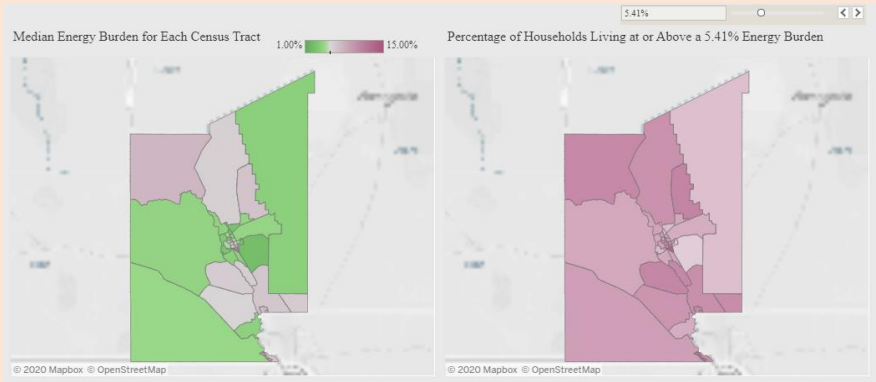
Selecting indicators and baseline data



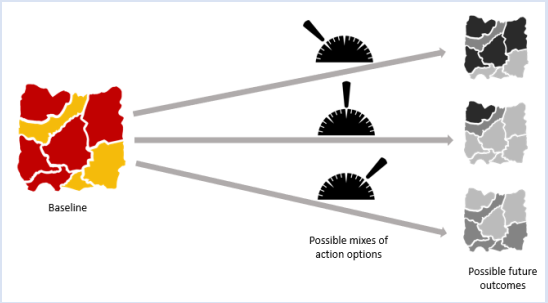


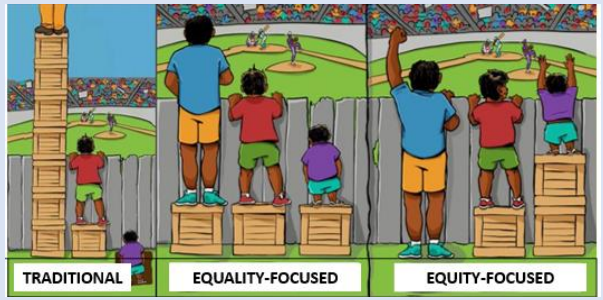
Recap of Session 2

Energy equity indicator baselines

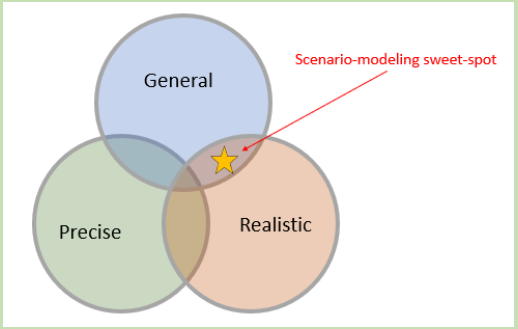


Scenario development





Scenario modeling



Components of Equitable Clean Energy Scenario Planning

Planning component	Questions
Goals	What are your government's and/or community's goals?
Process	How do you assure stakeholders are listened to?
Indicators	What are stakeholders' values and concerns?
Baseline	Where are you now?
Scenarios	What are your possible pathways? • What actions do you want to consider? • How do you design them equitably?
Impacts	What are the likely outcomes?
Policies and programs	How do you design and implement the actions?
Distributional design	Who benefits? Who pays?

Objectives for today

By the end of today's session, you should…

- Identify practices to use your privileged capacity to support frontline leadership
- Feel comfortable interpreting your modeled scenario outcomes
- Be familiar with methods for identifying and prioritizing policies and programs aligned with your preferred scenario
- Feel ready to facilitate a stakeholder-directed process of prioritizing, designing and implementing policies

Agenda

Core session – 1.5 hours

1. Reflecting on planning, privileged capacity and frontline leadership
2. Scenario calculator selections - discussion
3. Interpreting your scenario results - discussion
4. Identifying and prioritizing policies and programs
5. Designing and implementing policies and programs
6. Case study: policy/program assessment, selection and design – City of Orlando
7. Wrap-up & next steps

Optional Q & A and discussion – 30 minutes

Technocratic solutions frequently worsen inequity, including systemic racism

	PROBLEM	ANALYSIS	SOLUTION	UNSOLVED ROOT PROBLEMS AND UNINTENDED CONSEQUENCES
				
COVID-19 pandemic	• Public-health expertise • Case studies from other countries • Epidemiological models	• Lockdowns and distancing policies • Essential-worker designations • Economic-relief programs	• Racially inequitable exposure • Racially inequitable economic relief • Racially inequitable access to care	
Climate change	• Climate-risk models • Mitigation and adaptation best-practices	• Decarbonization programs • Green infrastructure and open space • Buyouts and managed-retreat programs	• Exacerbation of existing inequality • Green gentrification	

Inequity can arise from every step from planning through implementation

East Boston's green development projects

- Piers Park
- East Boston Greenway
- 2018 Resilient Boston Harbor Project

Planning: Persons with experience of violence or insecurity were generally not included in planning processes, excluding critical context from consideration

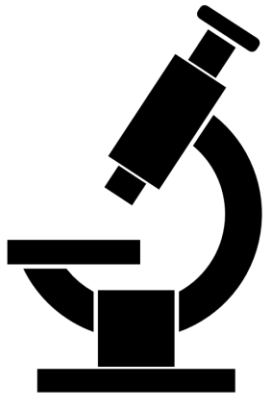
Modeling: Many neighborhoods adjacent to new green projects were not included in impact-modeling and now are at greater risk of flooding

Financing: City partnerships with private finance resulted in emphasis on high-end "luxury" developments

Roll-out: Many long-term residents feel socially excluded from new green spaces

Source: I. Anguelovski et al. 2019. *Why green "climate gentrification" threatens poor and vulnerable populations*. *PNAS* 116(52): 26139-43.

Key tendencies and drivers of inequity: analytical reductivism and engagement of power-holders



Problem

Analytical problem-solving works by excluding many factors as extraneous—and which factors will those be?

Solution

Leave problem-definition to affected communities

Problem

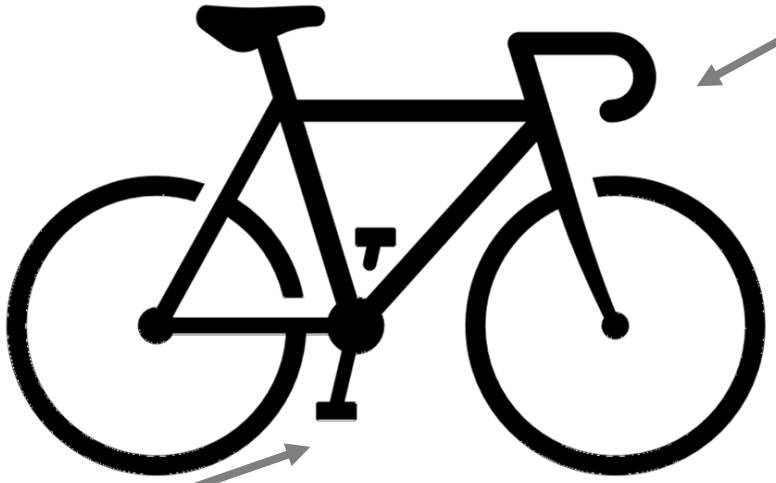
Power-holders (including financial resources) can move society, but power-holders typically lack frontline perspectives

Solution

Draw perspectives from affected communities and redistribute power to them

The critical role of planners: using privileged capacity to empower frontline leadership

Community (direction)
Community expertise
Frontline priorities
Black and indigenous (BIPOC) prominence



Government (power)
Data
Technical orientation
Modeling
Visualizations, data interpretation
Time and resources
Legal authorities

Some practices for centering frontline leadership

- **Listen with curiosity** and honor community knowledge
- **Start with stories** to build empathy and a common language
- Take the time and put in work to **meet people where they are**, understand their history, and build relationships
- **Make space for conflict** and radical candor – not "buy-in" – anger is often about trauma, is valid, and essential to get to the root of problems
- Recognize (and get partners and officials to recognize) that there is a difference between **what you want out of a process** vs. **what is needed for it to be a success for community**
- **Be willing to pivot** focus, goals, and timelines
- **Reciprocity**: Identify both what you want from the community, and what they will get from the process, and confirm its value to them
- **Compensate** people for their time and knowledge

Sources: Summarized from remarks of Tamika Butler, Orlando Bailey, Jay Pitter. Webinar: "Moving to Action: How do we respond to anti-Black racism in urbanist practices and conversations?" See also Part 1 and Jay Pitter, "A Call to Courage"

Discussion: Centering Frontline Leadership

How can you better use your privileged capacity to support frontline leadership?

What knowledge and support do you need to do so?

Interpreting scenario outcomes

Our “test exercise” Scenario Calculator tool

Energy Pathways for Denver, CO

About the Tool This tool allows you to design energy pathways in Denver, CO. It covers outcomes of energy efficiency and solar investments within the residential and commercial sectors. This tool was created by Greenlink Analytics using industry wide assumptions and sample outputs from Greenlink's ATHENIA clean energy model.

How to use You can create your own energy future by inputting clean energy target values in the 'ACTION' cells. After entering your target values, your report card will give a deeper breakdown of the potential impacts of those actions.

Customization

	Residential	Commercial
Denver's Current Electricity Consumption (MWh):	189,372	14,086,430
Denver's Current Natural Gas Consumption (MMBTU):	2,027,148	12,231,963

Values to the left reflect energy consumption values specific to Denver, CO. Other cities that wish to enter their own energy consumption data may do so by overwriting these values.

Energy Efficiency

	ACTION			Equivalent To:
Residential Potential Achieved	50%	*Residential Potential Achieved*	308,868	*Homes cutting electricity in half*
Level of Energy Efficiency Investments Going Toward Low-Income Communities*:	Medium			
Commercial Potential Achieved	50%	*Commercial Potential Achieved*	13	*kWh-saved per sqft*

Solar Power

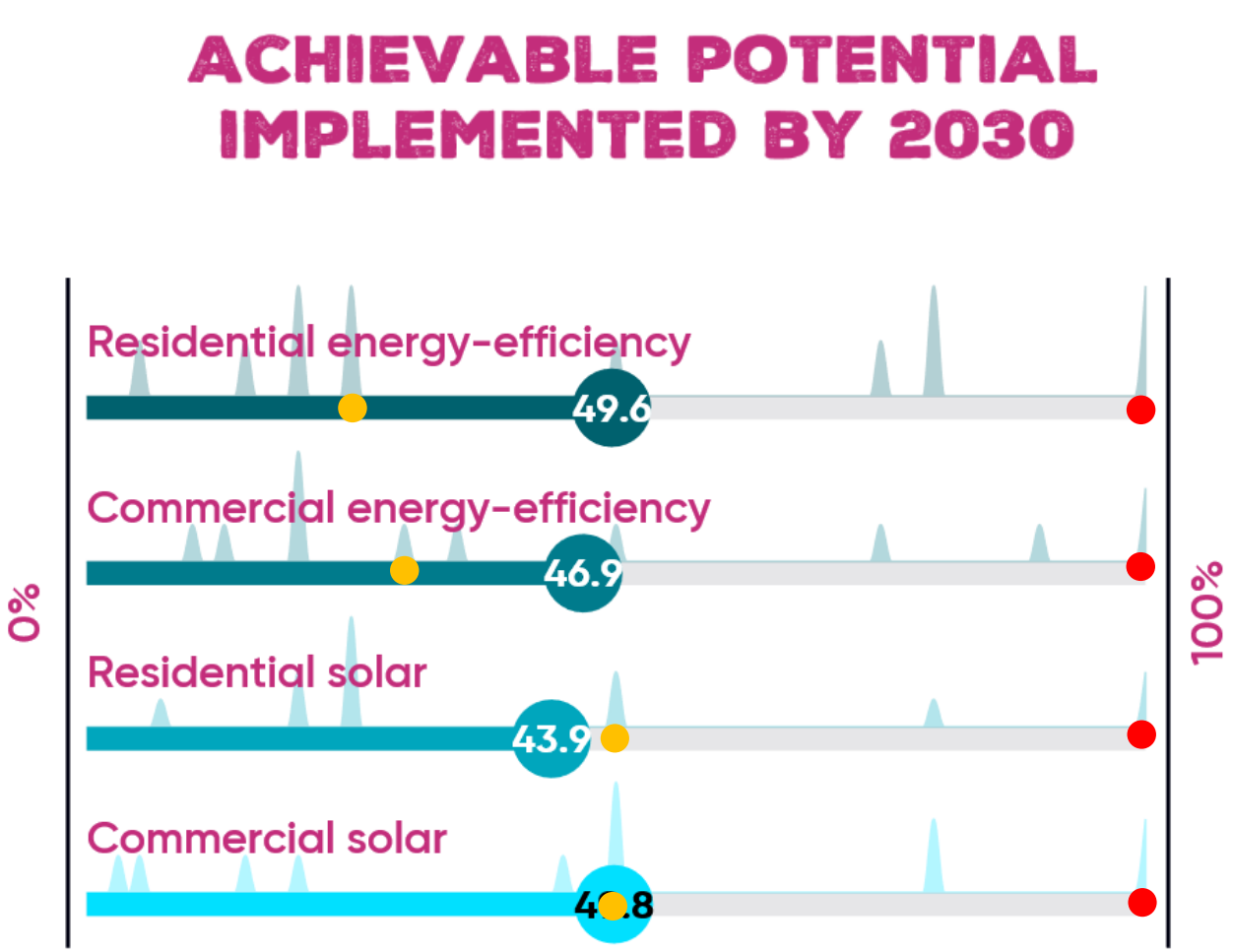
	ACTION			Equivalent To:
Residential Solar Power	50%	*Residential Solar Potential Achieved*	5,806	*Homes Adding Solar*
Commerical Solar Power	50%	*Commercial Solar Potential Achieved*	7,044	*Cars off the Road each Year*

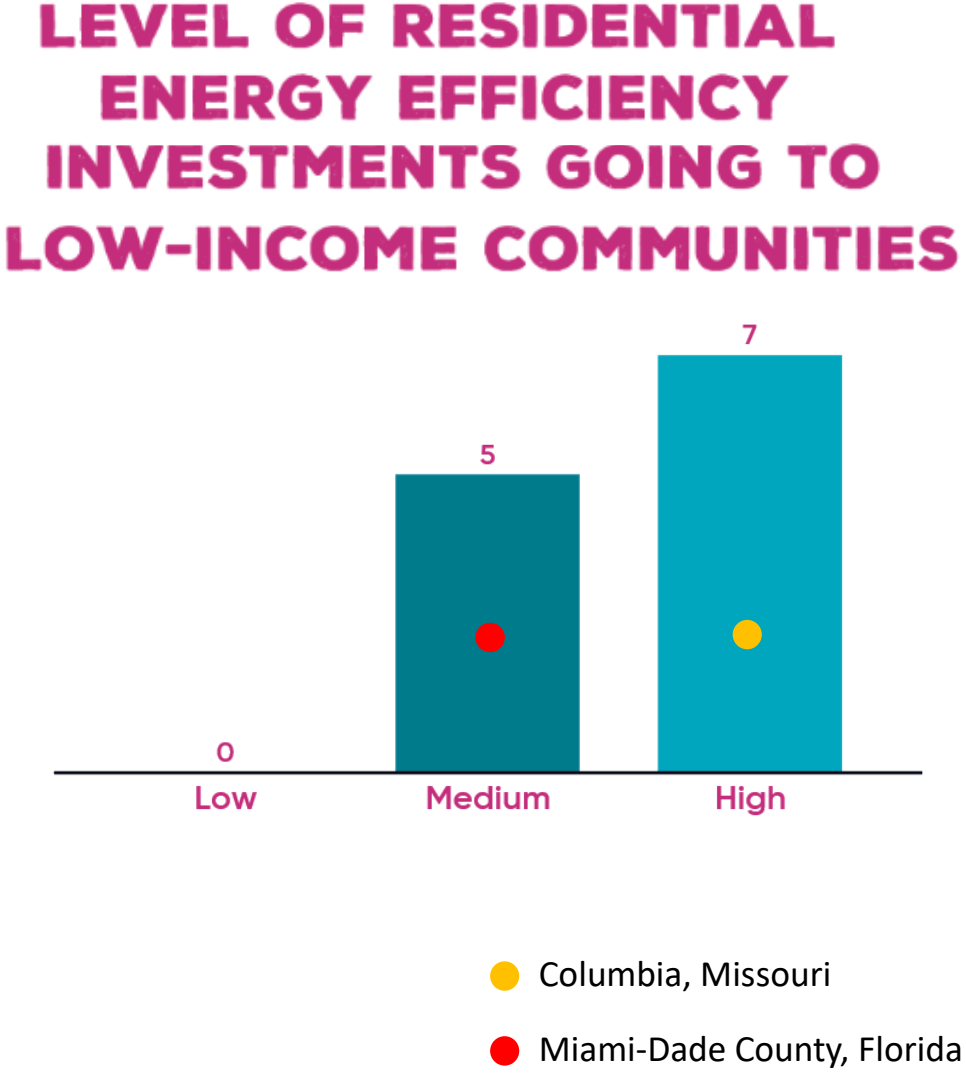
Your 2030 Pathway Report Card

Cost Overview		2030 Clean Energy Summary	
Total Investment	$1,632,000,000	Energy Demand Met by Efficiency	20%
Net Benefits ($M)	$466,000,000	Residential Solar Capacity Installed (MW)	29
Benefit-Cost Ratio	1.3	Commercial Solar Capacity Installed (MW)	73
Net Jobs Created	7,300	Avoided Climate Damages ($)	$517,000,000
		Metric Tons CO2 Avoided	9,352,000

Source: Greenlink Analytics. Links to scenario calculators for all 12 Level 1 cities here.

Scenario option selections from Level 1 cites





Scenario Outputs based on selected options for all 12 Level 1 cities are available here.

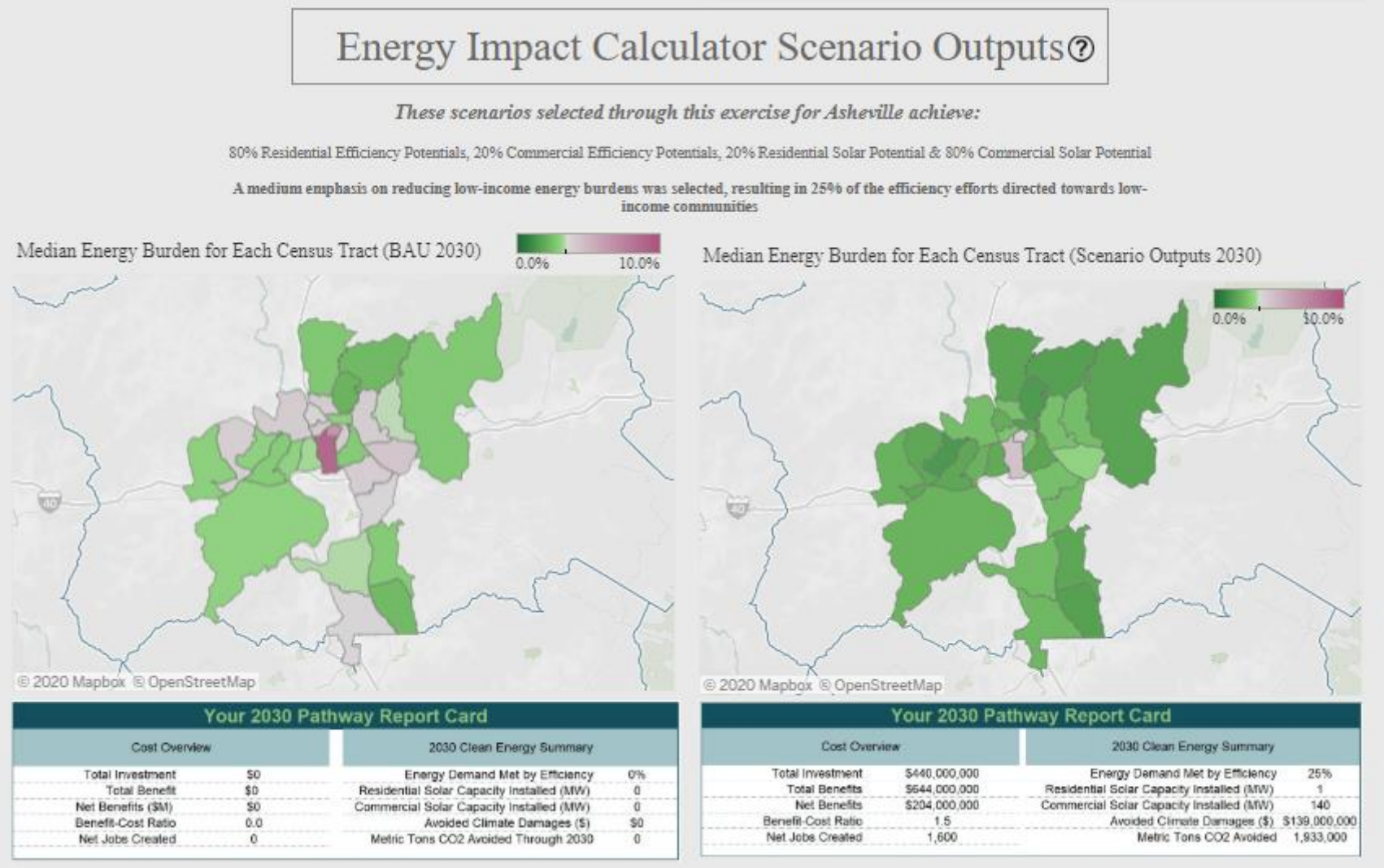
Discussion: Scenario Calculator

What insights did you have from using the test exercise scenario calculator?

What was your process to decide which mix of actions to include in your final scenario?

How might you use this information to engage and communicate with stakeholders?

Scenario Outputs: Business-as-Usual and Impact scenarios



Results for all 12 Level 1 cities are available here.

Discussion: Scenario Outputs

What insights or surprises did you have from reviewing the scenario outputs?

What might you do differently in your planning processes as a result of this information?

How might you use this information to engage and communicate with stakeholders?

Identifying policies and programs

Which is the “best” scenario?

- Once you have multiple scenario outputs, you need to decide which one most represents the future your community wants:
  - Which ones achieve the **core goals** you set for the planning process?
  - Which ones best match the **vision** that stakeholders, especially frontline communities, want to achieve?
  - Which ones provide the most **additional benefits**?

- Many available tools:
  - Evaluation matrices
  - Polling/surveys
  - Visualize and discuss

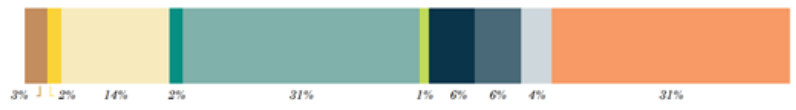
- Fullest answers come through using multiple mechanisms for ***deep community engagement***

Example: Atlanta's scenario results & stakeholder identified priorities

Scenario No.1: Business As Usual, Renewable Energy Credits Only

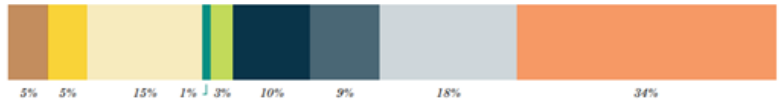
Cumulative Benefits	**Through 2035**	**Full Impact**	**Equal To**	
$0	Local Jobs Created	0	0	Coca Cola HQ
Cumulative Costs	Local Incomes Increased By	$0	$0	Per Atl. Citizen per Year
$1,000,000	Local GDP Growth	$0	0%	Delta Global Revenue
Net Benefits	Public Health Savings	$0	$0	Months Health Ins. Savings
-$1,000,000	Metric Tons CO_2 Reduced	0	0	Months without Cars
Benefit to Cost Ratio				
0	**In 2035**			
	Household Bill Savings	$0		
	Monthly Bill Savings: Participants	$0	0%	Home Electricity Savings
	Monthly Bill Savings: Non Participants	$0	0%	
	Commercial Total Bill Savings	$0		
	Monthly Bill Savings: Participants	$0	0%	Commercial Electricity Savings
	Monthly Bill Savings: Non Participants	$0	0%	

Scenario No. 2: Achieving 50% of Atlanta's Local Clean Energy Potential



Cumulative Benefits	**Through 2035**	**Full Impact**	**Equal To**	
$15.435 Billion	Local Jobs Created	4,250	1.9	Coca Cola HQ
Cumulative Costs	Local Incomes Increased By	$991 Million	$117	Per Atl. Citizen per Year
$373 Million	Local GDP Growth	$838 Million	13.7%	Delta Global Revenue
Net Benefits	Public Health Savings	$231 Million	$2.26	Months Health Ins. Savings
$15.062 Billion	Metric Tons CO_2 Reduced	5.3 million	7	Months without Cars
Benefit to Cost Ratio				
41.4	**In 2035**			
	Household Bill Savings	$1.3 Billion		
	Monthly Bill Savings: Participants	$141	57%	Home Electricity Savings
	Monthly Bill Savings: Non Participants	$35	14%	
	Commercial Total Bill Savings	$2.4 Billion		
	Monthly Bill Savings: Participants	$770	28%	Commercial Electricity Savings
	Monthly Bill Savings: Non Participants	$513	19%	

Scenario No.3: 100% Renewable Energy



Cumulative Benefits	**Through 2035**	**Full Impact**	**Equal To**	
$28.783 Billion	Local Jobs Created	7,775	3.5	Coca Cola HQ
Cumulative Costs	Local Incomes Increased By	$1.8 Billion	$213	Per Atl. Citizen per Year
$1.379 Billion	Local GDP Growth	$1.5 Billion	25.2%	Delta Global Revenue
Net Benefits	Public Health Savings	$594 Million	$5.82	Months Health Ins. Savings
$27.404 Billion	Metric Tons CO_2 Reduced	13.5 Million	17	Months without Cars
Benefit to Cost Ratio				
20.9	**In 2035**			
	Household Bill Savings	$2.3 Billion		
	Monthly Bill Savings: Participants	$234	95%	Home Electricity Savings
	Monthly Bill Savings: Non Participants	$63	26%	
	Commercial Total Bill Savings	$4.4 Billion		
	Monthly Bill Savings: Participants	$2,040	74%	Commercial Electricity Savings
	Monthly Bill Savings: Non Participants	$929	34%	

The following three scenarios outline estimated impacts from clean energy investment with no change (0%), a 50% investment in clean energy, and a 100% investment.

Scenario No.1 *Business as Ususal - 0%*	Scenario No.2 *50% Clean Energy*	Scenario No.3 *100% Clean Energy*
18% of Atlanta's electricity is directly provided by clean energy sources.	38% of Atlanta's electricity is directly provided by clean energy.	66% of Atlanta's electricity is directly provided by clean energy.
No homes and commercial buildings undergo energy renovations.	45K homes undergo energy renovations.	90K homes undergo energy renovations.
No homes and commercial buildings install solar panels.	6.75K commercial buildings undergo energy renovations.	13.5K commercial buildings undergo energy renovations.
No homes powered by community solar.	24.2K home solar installs.	48.3K home solar installs.
Out-of-state wind farms financed by Atlanta.	715 commercial solar installs.	1,430 commercial solar installs.
	6.2K homes powered by community solar.	12.5K homes powered by community solar.
	15 out-of-state wind farms financed by Atlanta.	30 out-of-state wind farms financed by Atlanta.

Renewable Energy Source Key

- Residential Solar
- Commercial Solar
- Utility Solar
- Hydro Con
- Imported REC Purchase
- Imported Wind
- Single Family Efficiency
- Multifamily Efficiency
- Commercial Efficiency
- GA SREC

Priorities

100% of Atlantans have a right to 100% clean energy

01 Energy equity must be a priority

02 Investments in energy efficiency must be increased

03 Local investments in renewable energy must be prioritized over investments outside of the Atlanta Metro

Turning the actions from your preferred scenario into policies and programs

Many policy and program options

Policy T..	Policy Item	Action	Sector	
Financing	Energy Savings Performance Contracts (ESPCs)	Partnership between building owners and an energy ser..	Cross-cutting	
	Exploration of Greywater and Rainwater Harvesti..	Investigate opportunities to increase greywater use and..	Cross-cutting	
	Green Building Rebate for New Construction	Rebate proportional to performance level achieved.	Commercial/ Resi..	
	Incentives Education Programming	Promoting awareness of existing programs and opportu..	Municipal	
	Local Utility Commercial Incentives	Tools and resources provided to business owners that h..	Commercial	
	Local Utility Residential Incentives	Tools and resources provided to residential homeowners..	Residential	
	On-Bill Financing	Allows the utility to absorb the upfront cost of a clean e..	Residential	
	PACE - Commercial	Property-Assessed Clean Energy (PACE); program that fi..	Commercial	
	PACE - Residential	Property-Assessed Clean Energy (PACE); program that fi..	Residential	
	Promote 'Green' Loans	Promote effective loan approaches and practices to sup..	Cross-cutting	
	Renewable Energy Credit Procurement	Organized bulk purchases of credits for renewable energ..	Commercial/ Resi..	
	Residential Rebates Provided through Local Utiliti..	Utility-sponsored rebates for energy efficient home tech..	Residential	
	Revolving Loan Fund	Self-replenishing clean energy fund.	Cross-cutting	
	Round-It-Up Energy Efficiency Program	Fund low income energy efficiency by "rounding up" par..	Residential	
Information	Audit Building Energy Use	Implement commercial building energy audit efforts.	Commercial	
	Engagement and Communication on Efforts	Ongoing outreach to keep the general public aware of pr..	Cross-Cutting	
	Track, Publish and Review Municipal Energy Usage	Provide energy efficiency planning and design approach..	Municipal	
	Update and Publish Greenhouse Gas Inventories	Provide city with a streamlined way to update an existin..	Cross-cutting	
Programmatic	Bundled Energy Efficiency	Utility bundling energy efficiency (EE) financing along wi..	Cross-cutting	
	Clean Energy and Equity Planning	Onging outreach to keep the public aware of progress to..	Cross-cutting	
	Energy Conservation Outreach	Provide information on how to reduce energy consumpti..	Cross-cutting	
	Energy Efficiency Demonstration Programs	Support or implement innovative energy efficiency proje..	Cross-cutting	
	Energy Operations Manager Position	Hire a full-time employee to oversee energy operations f..	Municipal	
	Municipal Energy Efficient Task Force	Establish a clean energy task force to identify ongoing ef..	Municipal	
	Solar Co-op	Group of homeowners within close proximity to each oth..	Cross-cutting	
	U.S. Department of Energy's (DOE) Better Buildin..	A national program where leading businesses, manufact..	Commercial	
	Utility Community Solar	Help identify good locations for new solar installationa a..	Cross-cutting	
	Work Source Training Collaboration	Collaborate with technical colleges and trades to develo..	Municipal/ Comm..	
Regulatory	Buildings Energy "Stretch" Code	Adopt a buildings code that requires new buildings to be ..	Commercial/ Resi..	
	Commercial Building Energy and Water Efficiency ..	Implement water audit requirements when national wat..	Commercial	
	Net Zero Energy Code	Phase-in energy codes that require new buildings to pro..	Cross-cutting	
	Net Zero Water Code	Phase-in code requirements that new buildings match to..	Municipal/ Comm..	
	Update Building Energy Codes and Increase Code ..	Increase energy efficiency through updated energy code..	Cross-Cutting	
Technology	Develop and Deploy Smart Grids and/or Meters	Allow households and businesses to monitor and adapt t..	Cross-cutting	
	Develop Local Micro-Grids for Critical Infrastructu..	Provide local leaders with an understanding of what mic..	Cross-cutting	
	Efficient Equipment Procurement Policy	Require that energy-using products purchased meet effi..	Municipal	
	Electric Vehicle (EV) Battery Reuse	Recycling EV batteries in order to provide electricity ser..	Cross-Cutting	
	Encourage Insulation Additions to Municipal and C..	Highlight emerging building envelop or insulation-relate..	Cross-cutting	
	Expand DWM CHP	Use more combined heat and power technology at waste..	Municipal	
	Floating Solar Options	Investigate and install floating solar on suitable water b..	Cross-cutting	
	Improve Lighting in Municipal Buildings Througho..	Take advantage of savings opportunities through high-e..	Municipal	
	Improve Wastewater Energy Efficiency	Enhance GHG emission reduction strategies that local g..	Municipal	

Source: Greenlink Group, Clean Energy Strategy Toolkit

Clean Energy Policy Toolkits

National Conference of State Legislatures
[Solar Policy Toolkit]

American Cities Climate Challenge
[Procurement Guidance]

Zero Net Carbon Building Alliance
[Zero Net Carbon Policy Toolkit]

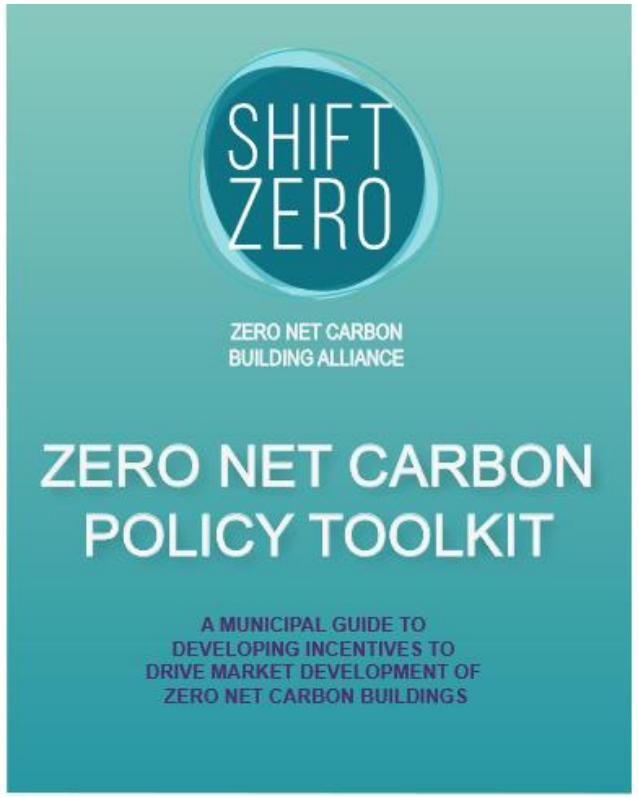
NAACP
[Just Energy Policies and Practices]

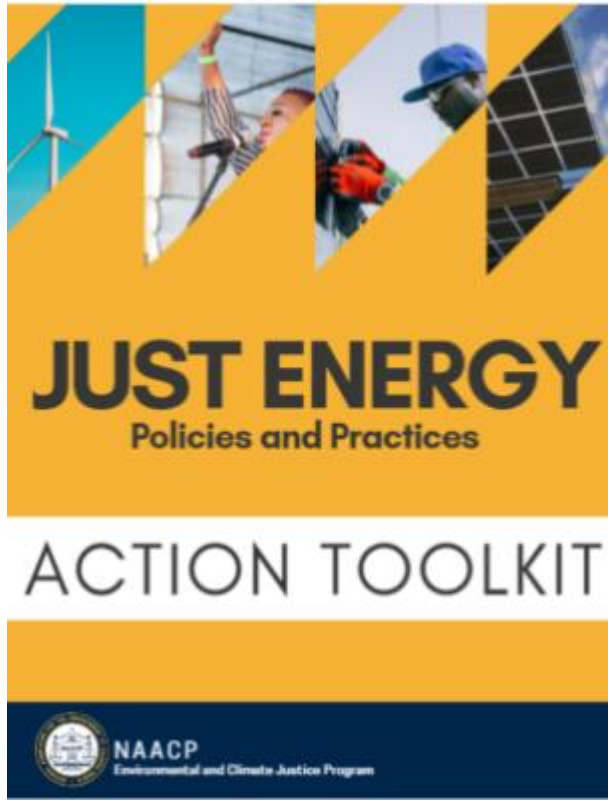
Northwest EcoBuilding Guild
[Building Innovations Database]

LEDS Partnership
[Low Emission Transport Toolkit]

Greenlink Group
[Clean Energy Strategy Toolkit]

Cadmus
[Pathways to 100]





Categories of action as entry points

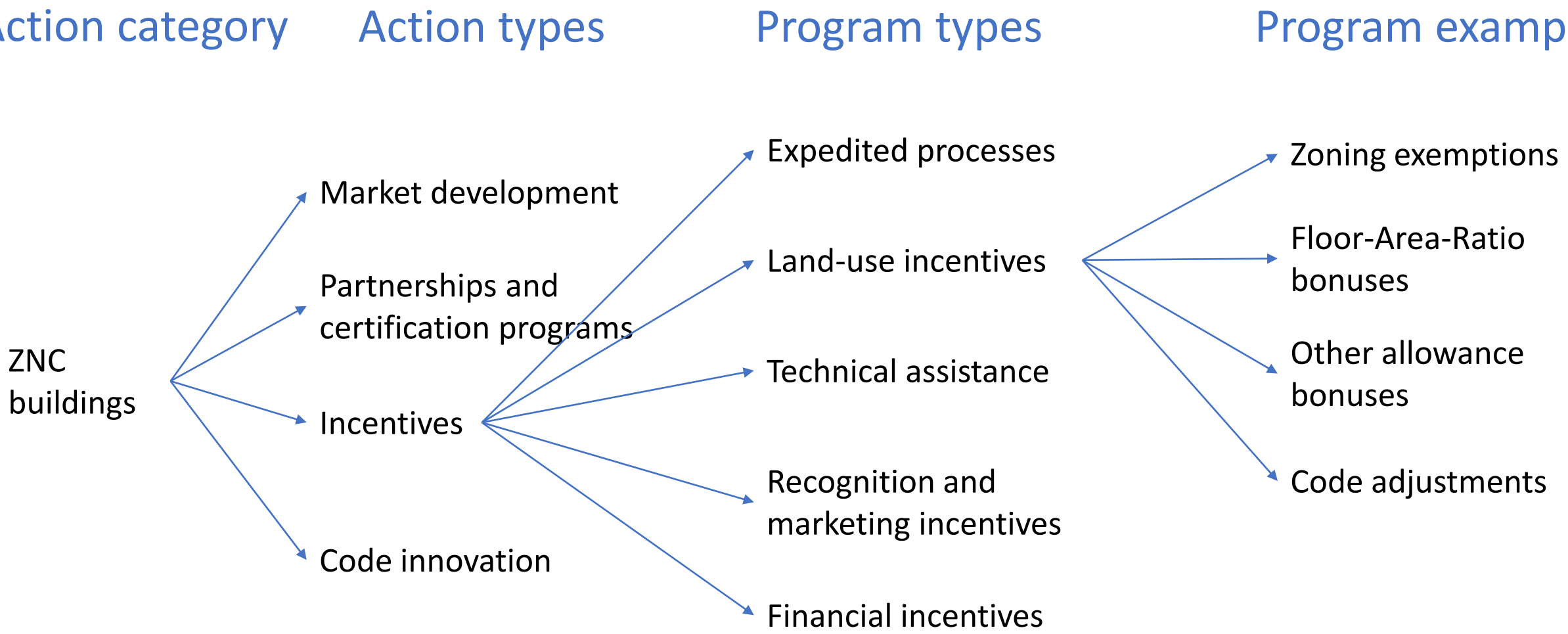
Energy sub-sectors

- Building efficiency
- Building electrification
- Renewable generation
- Transportation
- Storage

Influence mechanisms

- Financing
- Information
- Technical assistance
- Marketing
- Incentives
- Regulation
- Technology pilots

Action option trees to identify relevant actions



Source: [Zero Net Carbon Policy Toolkit]

Prioritizing policies and programs

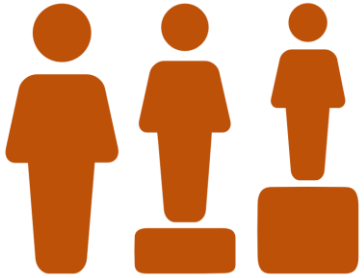
Dimensions of policy assessment

Feasibility

Authority/influence to implement

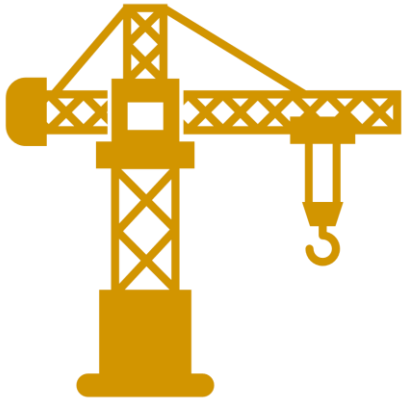
Desirability

Cost-effectiveness



Equity

Impact



Local economic benefits

Stakeholder input for *qualitative* comparison

CLEAN ENERGY FINANCING

Short Term Policy

Municipal & Community				
Revolving Loan Fund (Y)	*Self-replenishing clean energy fund*	3	2	2
Incentives Education Programming	*Promoting awareness of existing programs and opportunities*	3	1	3
Commercial PACE (Y)	*Funds repaid through property taxes*	2	4	3
Green Bonds	*Bond funds designated for clean energy*	2	3	2
Energy Savings Performance (Y)	*Financing building improvements through a budget-neutral partnership between a contractor and an owner*	2	2	2

Equity, Economics, and Cost Effecitveness Key

The following pages highlight energy recommendations across seven categories which can be made at both the community and municipal level

Already In Place = **(Y)**

Score of 4 = ●

Policy Score	Overall Equity	Economic Development	Cost Effectiveness
1	*Unfair costs/benefits; may exacerbate inequities*	*Little/No development*	*High cost/slow return*
2	*Fair costs/benefits; unlikely to move the status quo*	*Some development*	*Average cost and return*
3	*Good costs/benefits; could improve the status quo*	*Strong development*	*Better than average cost and return*
4	*Very good costs/benefits; could greatly improve the status quo*	*Very strong development*	*Low Cost/Excellent return*

Source: City of Atlanta, Clean Energy Atlanta. This general type of mixed qualitative/quantitative assessment method is known as a *Goeller Scorecard*.

Assessing available authority

What actions are directly available to your government?

Consider also authorities beyond direct municipal action – state, private, community

Available strategy		Available strategies lie entirely within the city's jurisdiction.
Potentially available strategy, depending on:		
	State legislation	Strategies that lie within a city's jurisdiction, but are dependent on enabling state legislation.
	Utility governance structure	Strategies that may lie within a city's jurisdiction depending on the city's level of jurisdiction over their municipal utility.
Possible indirect influence		Strategies that a city may be able to indirectly influence through interventions in state policymaking or rural electric cooperative boards.
Strategy not available or not applicable		

Sources: Cadmus, *Pathways to 100*. C40, C40 Cities: The Power to Act.

Assessing available influence mechanisms

Feasible policies and programs options come from the four “power dimensions”

Owning and operating assets

Budgeting

Regulation and enforcement

Vision-setting

Sources: Cadmus, *Pathways to 100*. C40, C40 Cities: The Power to Act.

Distributional equity*

Who is impacted?

Inclusivity Focus	Icon	In your city?	Impacted Group
Income level		☐	Low-income communities
Migrant status		☐	Migrants
Gender		☐	e.g. Women
Race and ethnicity		☐	Racial and ethnic minorities
Religion		☐	Religious minorities
Informality status		☐	Informal communities (e.g. residents, workers)
Disability		☐	People with disabilities
Age		☐	Elderly, Youth, Children
Working conditions		☐	Outdoor workers, temporary workers, workers in transitioning industries

What is the likely distributional impact?

Unfair costs/benefits; exacerbates inequities

Very fair costs/benefits; addresses inequities

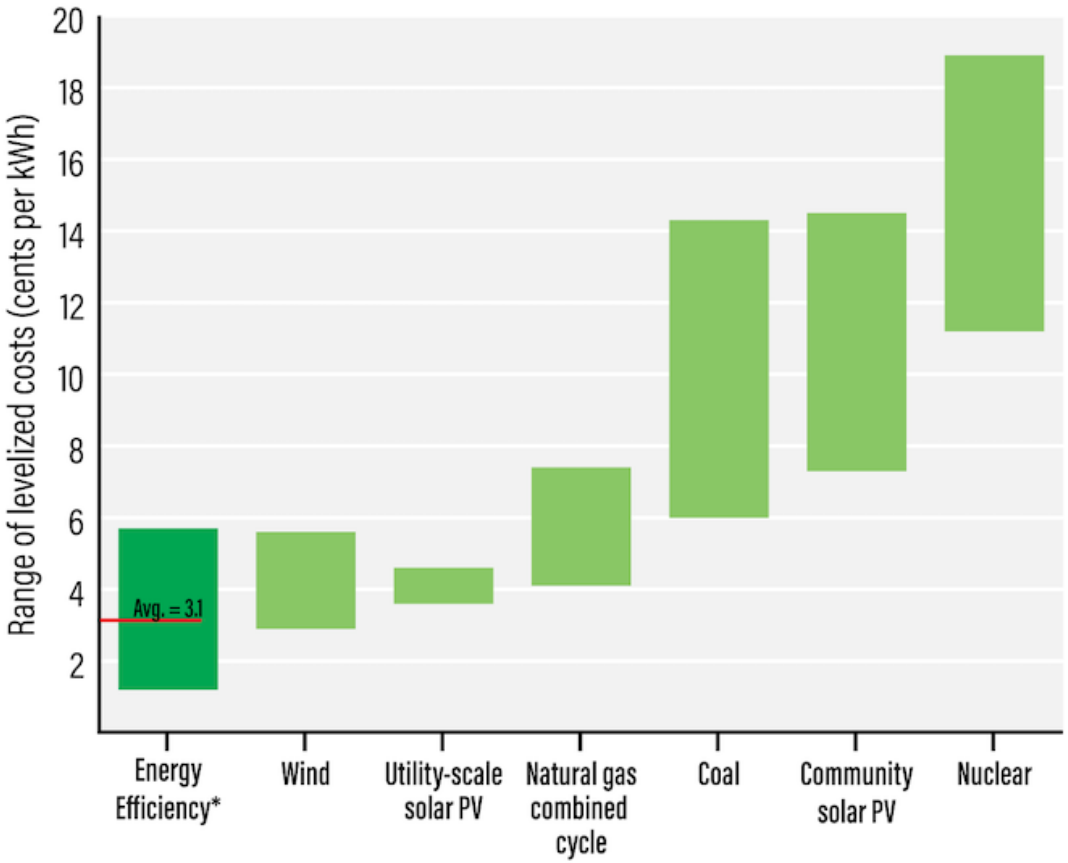
** Procedural and structural equity also need to be a focus in the upcoming design and implementation stages.*

Source: C40 Cities & WRI, Inclusive Climate Action Roadmap

Cost-effectiveness

What is the return on investment?

- Energy efficiency first – cheap and local
- Perspective and scope matter
  - Whose point of view? Program administrator, program participant, society, etc.
  - Which benefits are monetized? Climate, AQ, reliability, employment, etc.
- Sources/Methods
  - Program evaluation studies and databases



*Notes: Energy efficiency program portfolio data from Molina and Relf 2018. Represents costs to utilities or program administrators only, including shareholder performance incentives if applicable. All other data from Lazard 2018 Unsubsidized Levelized Cost of Energy Comparison.

Sources: ACEEE 2018. Lazard 2019.

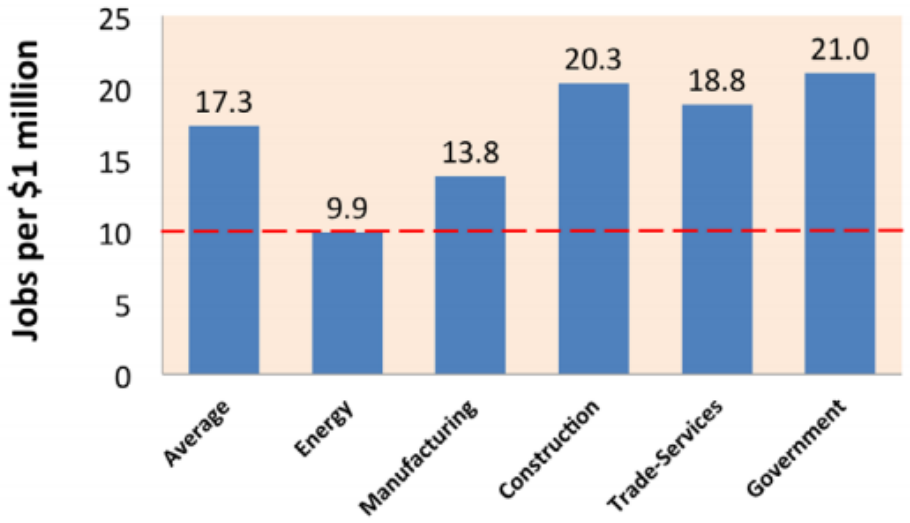
Local economic benefits

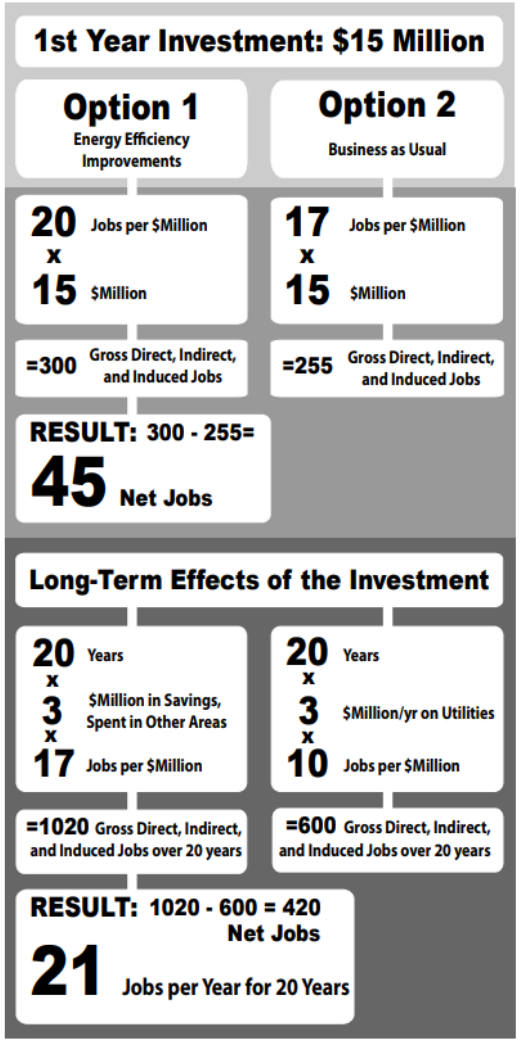
How much of the benefit stays in the community?

- *Key local benefits to quantify:*
  - Local jobs
  - Reduced energy bills
  - Air quality

- Sources/Methods
  - Regional economic analysis models
  - Input-output analysis

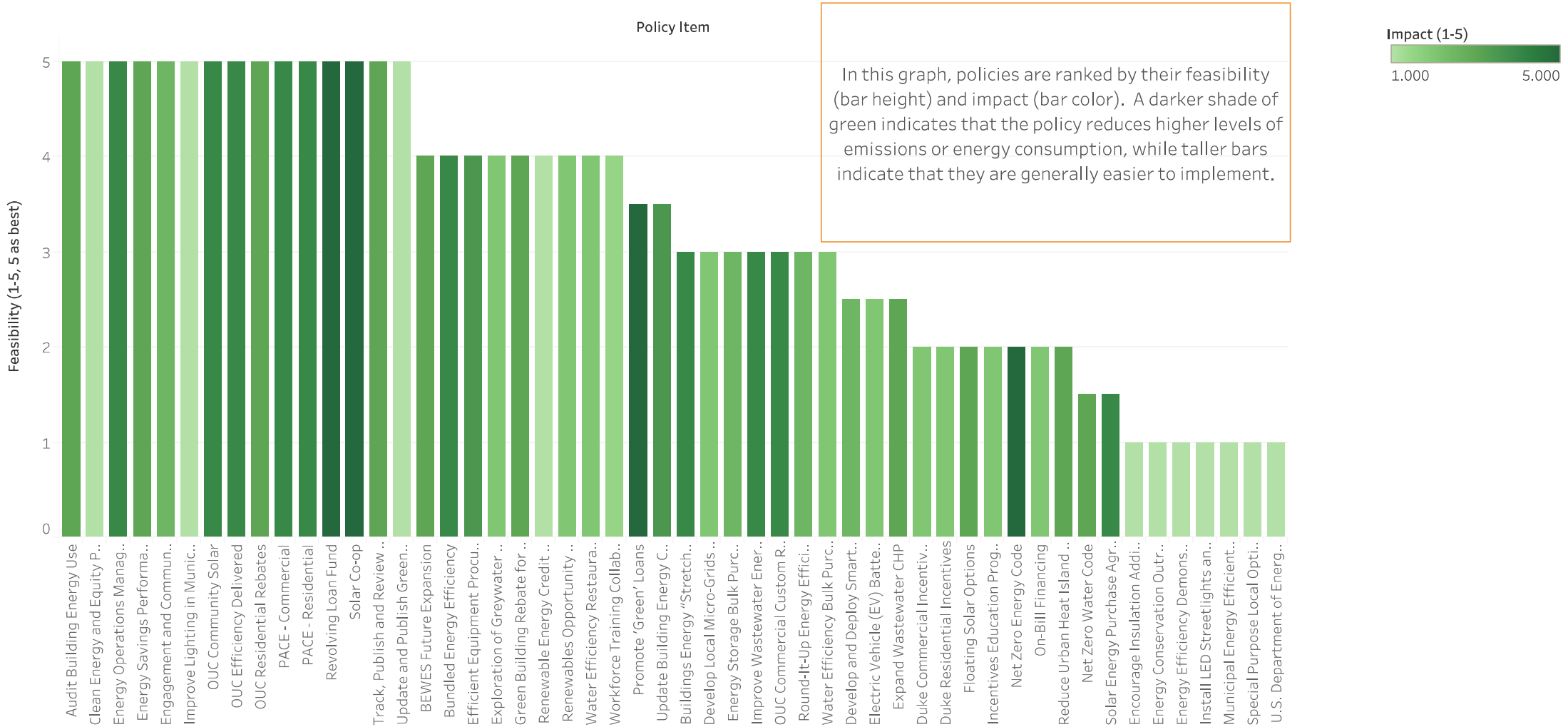
Figure 1. Jobs per Million Dollars of Revenue by Key Sectors of the US Economy





Source: ACEEE, How Does Energy Efficiency Create Jobs?

Policies ranked using multiple dimensions



Source: Greenlink Group, [Clean Energy Strategy Toolkit]

Designing and implementing policies and programs

From priorities to design

You now have a list of prioritized policies and programs based on the outcomes that stakeholders most want to achieve

Next up:

- **Detailed policy/program design**
- Securing funding or finance
- Implementation
- Communication and marketing
- Evaluation and improvement

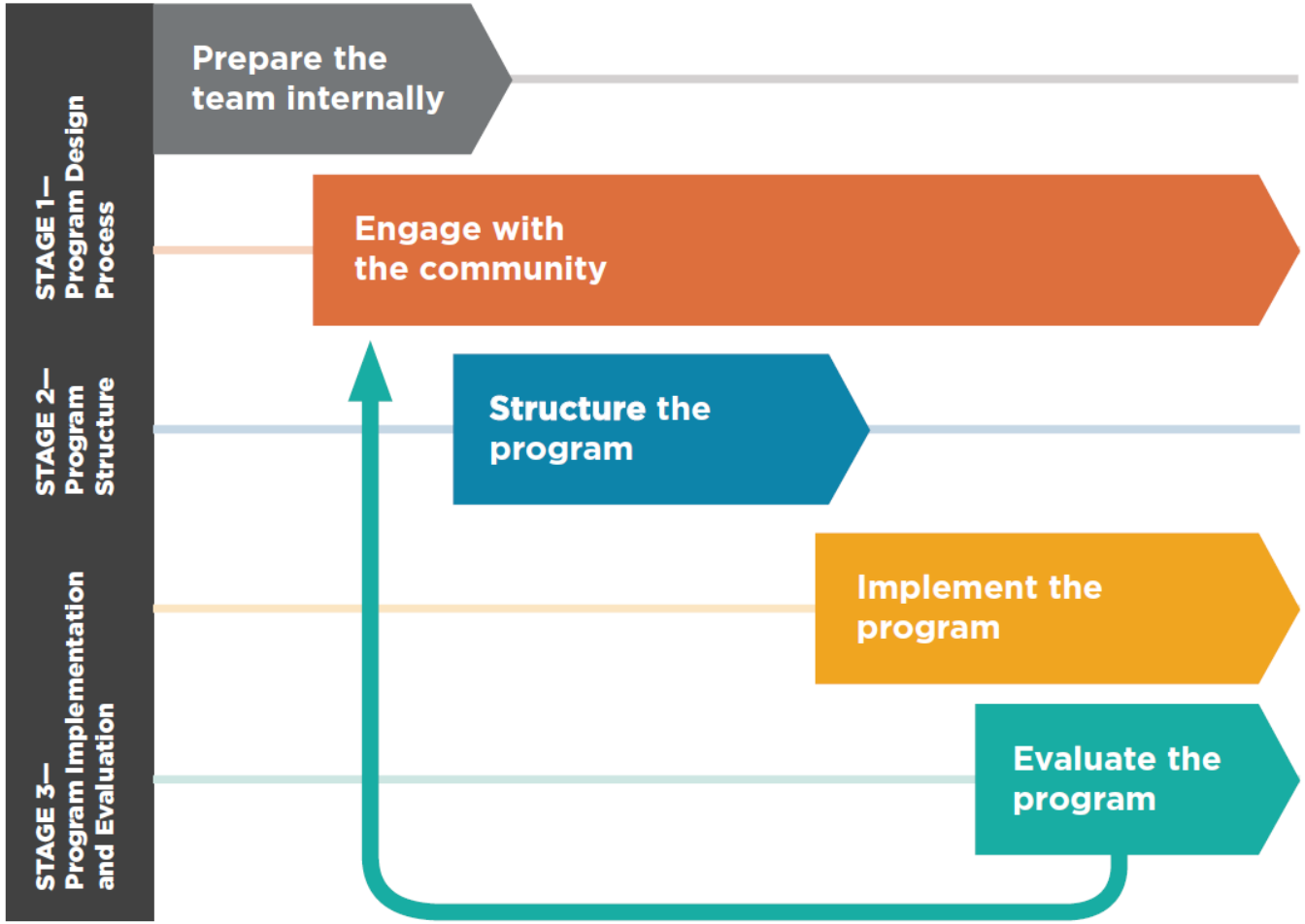
Continued stakeholder engagement throughout

Principles and process for program and policy design

Principles of Equitable Clean Energy Program Design

1. Listen and respond
2. Partner with trusted community organizations
3. Recognize structural racism
4. Efficiency first
5. Reduce financial burdens
6. Increase benefits
7. Make it easy
8. Integrate with other services
9. Protect consumers and workers
10. Beyond carve-outs
11. Track progress
12. Long-term commitment

Figure 1: Sample Timeline for Program Design



Source: USDN/Cadmus, 2018, Guidebook on Equitable Clean Energy Program Design

Equity questions for policy/program design

Is there a stated or implied equity goal or outcome?

How is equity being defined for this policy?

Procedural Equity (who, how?)	• Are impacted communities engaged? • Do impacted community members want the program? • Are impacted communities able to meaningfully contribute to program design? • Is there willingness to build a relationship of trust with impacted communities?
Distributional Equity (what, where, to whom?)	• Who bears the costs? How can those be more fair? • Who receives the benefits? Are they going to those who most need them? • What data is needed to create a fairer distribution of benefits and costs? • What are the mechanisms that further inequitable distribution?
Structural (Intergenerational) Equity (Why, to what end?)	• How open is the city to shifting it's priorities? • How to cultivate a meaningful dialogue and shared ownership between city, technical experts, and community towards shared goals? • How to recognize and respect historical context/legacy that can affect program design and who shows up? • How to balance pressures to get to GHG impact quickly with making sure benefits go to where they are most needed even if more expensive? • How can the program build power and wealth for the community?

Source: adapted from Kapwa Consulting. *Equity Inquiry Questions*.

Program design should include equity-focused indicators and targets

TABLE 1.

ANNUAL PERFORMANCE BENCHMARKS

Contractual: Requirement of the contract and financial bonuses and penalties can be issued.

Tracking: Requirement to track no financial bonus or penalty associated.

***Contractual**: Requirement of the contract based on District law, financial penalty can be issued by DSLBD.

	Goal Type	FY 2019 Actuals	FY Maximum Target	% of Maximum Target
Total Electric Savings (MWh)	Contractual	154,065	115,297	134%
Total Gas Savings (Therms)	Contractual	2,718,547	1,705,129	159%
Total Renewable Capacity (kW)	Contractual	7,129	1,000	713%
Summer Peak Demand (kW)	Tracking	23,406		
Total Low-Income Savings (MMBTU)	Contractual	51,784	46,556	111%
Total Low-Income Budget Spend	Contractual	$4,037,175	$3,818,333	106%
General & Administrative Spend	Contractual	$3,536,937		
Total Budget Spend	Contractual	$19,285,210	$19,294,410	100%
Total Green Jobs Created (FTEs)	Contractual	76	88	86%
Large Energy Users Engaged	Tracking	95	50	190%
CBE Spend	*Contractual	$7,182,963	$6,845,900	105%
Electric Spend	Tracking	$15,389,790	$15,428,168	
Gas Spend	Tracking	$3,895,400	$3,857,042	

Source: District of Columbia Sustainable Energy Utility, 2019 Annual report; Note: CBE is a "Certified Business Enterprise" which must be based in DC and have 50%+ of employment or business activity in DC.

Discussion: Identifying, prioritizing, designing and implementing policy

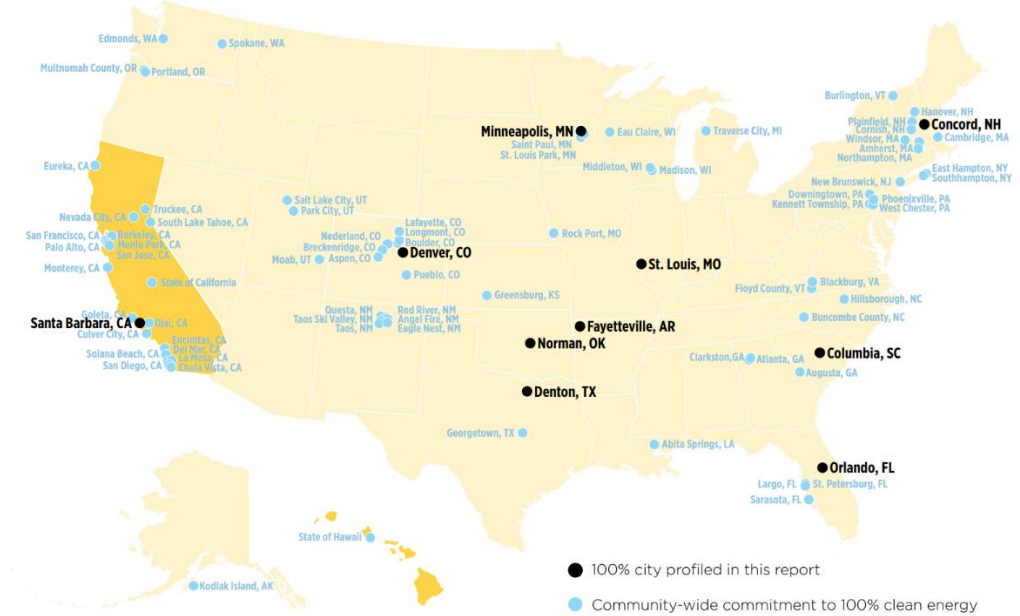
Based on your scenario outcomes what are some policies/programs you think are most important to assess?

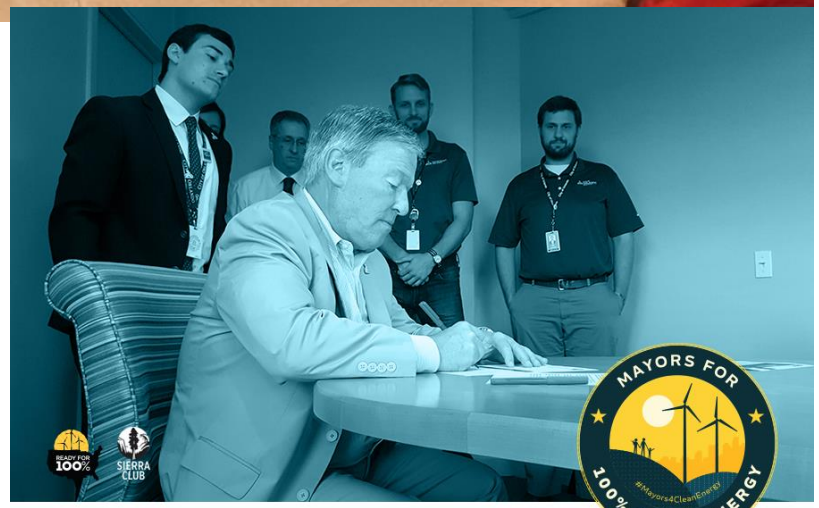
What methods have you used to engage stakeholders in prioritizing or designing policies/programs?

What barriers do you see to implementing this idealized process in your community?

Orlando Renewable and Resilient Roadmap

STATE AND COMMUNITY COMMITMENTS TO 100% CLEAN ENERGY





"I am proud to support a vision of transitioning entirely to 100 percent clean and renewable energy in our City."

—**MAYOR BUDDY DYER** *of Orlando, Florida*

CLEAN ENERGY GOALS

- Reduce GHG Emissions by 90% by 2040
- Achieve ~~50%~~ → **100%** Renewable Energy by ~~2040~~ → **2050** Community-Wide

SOLAR ENERGY INNOVATION NETWORK

U.S. DEPARTMENT OF ENERGY

ORLANDO RENEWABLE & RESILIENT TEAM

GREEN WORKS ORLANDO

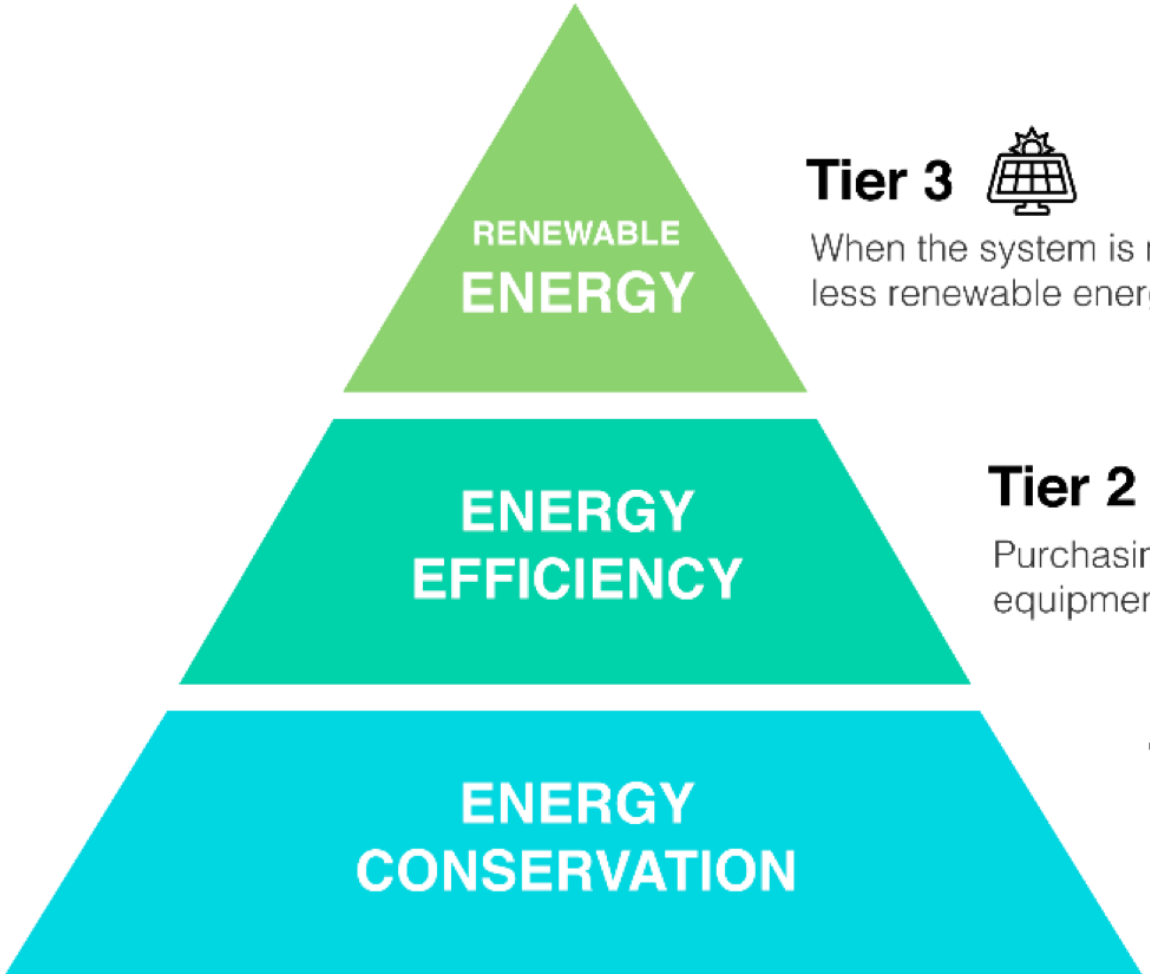
FLORIDA SOLAR ENERGY CENTER

OUC
The *Reliable* One

greenlink

ORLANDO ENERGY TRANSFORMATION

STARTING WITH THE BASICS



Tier 3

When the system is modified to use efficiency, less renewable energy is needed

Tier 2

Purchasing and installing efficient equipment and processes

Tier 1

Largely based on behavioural & operational practices.
Best return on investment.

ABOUT THIS TOOL	This tool allows you to design 100% renewable energy pathways in the City of Orlando. It covers all sectors of the Orlando economy, including the residential, commercial, transportation and power utility sectors. The tool is powered by The Greenlink Group's ATHENIA model, which is translating clean energy actions into energy, carbon, economic, and social impacts for Orlando.
USERS' GUIDE	You can create your own low-carbon vision for Orlando by inputting the values in the ACTION cells. After entering your target values, your report card will give a deeper breakdown of the impacts.

Actions and Impacts

ENERGY EFFICIENCY

Residential Energy Efficiency		Commercial Energy Efficiency	
	ACTION		ACTION
Residential Potential Achieved	100%	Commercial Potential Achieved	100%
	IMPACT		IMPACT
# of homes cutting electricity by half	162,859	kWh-saved per sqft	23.1

SOLAR POWER

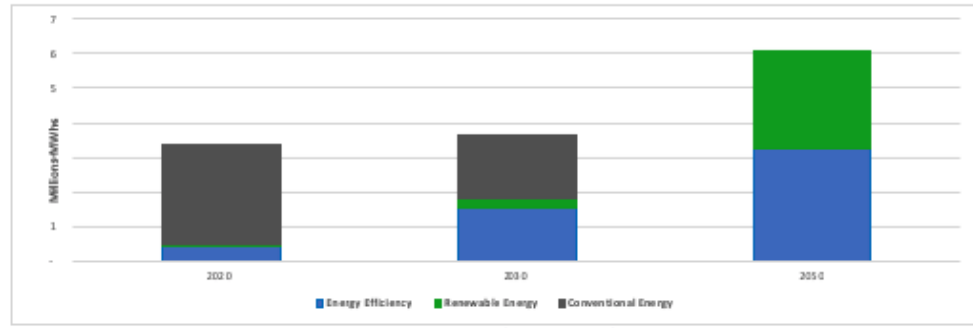
Residential Solar Power		Commercial Solar Power	
	ACTION		ACTION
Residential Solar Potential Achieved	100%	Commercial Solar Potential Achieved	100%
	IMPACT		IMPACT
Homes adding solar	18,600	Buildings adding solar	35,521

Utility Scale PV	
	ACTION
Utility Scale PV Potential	100%
	IMPACT
Number of homes powered by greenspace solar	122,800

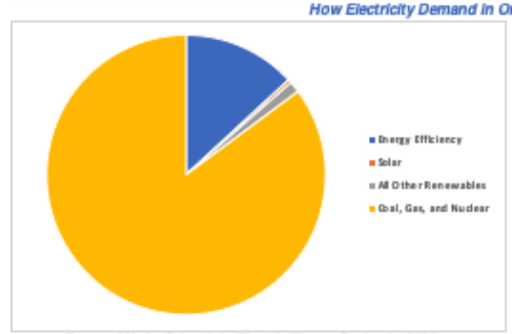
Electric Vehicles Adoption

Electric Vehicle	
	ACTION
EV Potential Achived	100%
	IMPACT
# of Electric Vehicles in Orlando	442,373

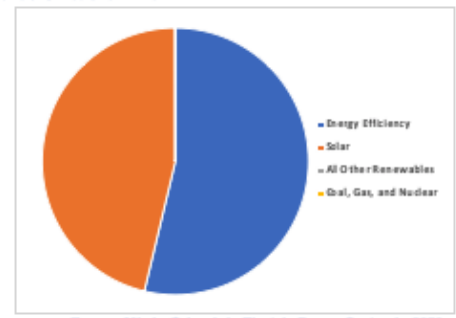
ORLANDO'S ENERGY USE AND CARBON EMISSIONS UNDER THE LOW CARBON PATHWAY



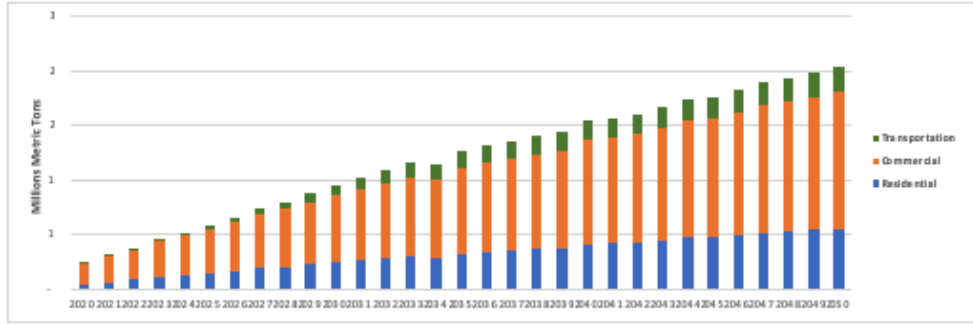
How Electricity Demand in Orlando is Met Over Time



Energy Mix in Orlando's Electric Power Sector in 2020



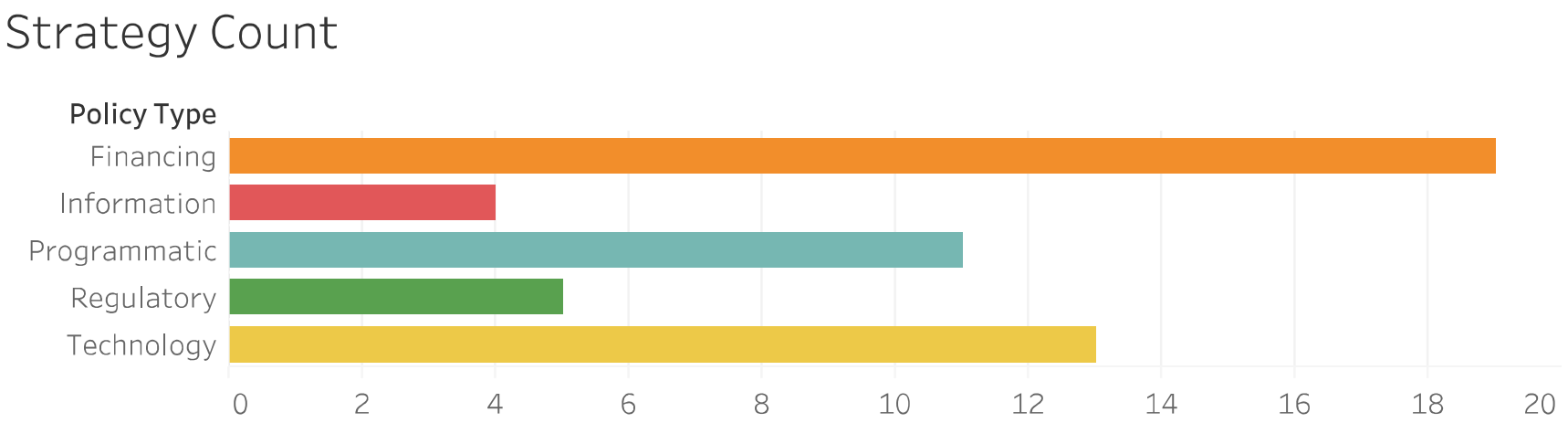
Energy Mix in Orlando's Electric Power Sector in 2050

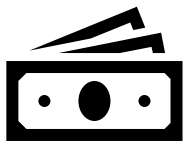


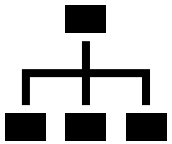
CO_2 Reduction in Orlando, 2020 - 2050

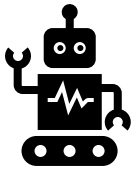

PACE - Residential
OUC Residential Rebates
Energy Efficiency Demonstration Programs
U.S. Department of Energy's (DOE) Better Buildings Challenge
OUC Efficiency Delivered
Special Purpose Local Options Sales Tax
Duke Residential Incentives
Encourage Insulation Additions to Municipal and Community-Wide Buildings
Net Zero Energy Code
Water Efficiency Bulk Purchasing
Energy Conservation Outreach
Municipal Energy Efficient Task Force
BEWES Future Expansion
Round-It-Up Energy Efficiency Program
Electric Vehicle (EV) Battery Reuse
Exploration of Greywater and Rainwater Harvesting Incentives
Incentives Education Programming
Clean Energy and Equity Planning
Engagement and Communication on Efforts
Promote 'Green' Loans Revolving Loan Fund
Improve Wastewater Energy Efficiency
Track, Publish and Review Municipal Energy Usage
Energy Savings Performance Contracts (ESPCs)
Develop Local Micro-Grids for Critical Infrastructure. Support Local Solar Generation
Net Zero Water Code
Update Building Energy Codes and Increase Code Enforcement
Storage Bulk Purchasing
OUC Commercial Custom Rebate Program
Solar Energy Purchase Agreement (PV PPA)
Solar Co-op
Develop and Deploy Smart Grids and/or Meters
Efficient Equipment Procurement Policy
Green Building Rebate for New Construction
Bundled Energy Efficiency
On-Bill Financing
Retrofit LED Streetlights and Traffic Signals
Energy Operations Manager Position
Audit Building Energy Use
Expand DWM CHP
Buildings Energy "Stretch" Code
Work Source Training Collaboration
Duke Commercial Incentives
Renewables Opportunity Exploration
Reduce Urban Heat Island Effect
Improve Lighting in Municipal Buildings Throughout the Community
Update and Publish Greenhouse Gas Inventories
Water Efficiency Restaurant Certification
OUC Community Solar
Floating Solar Options
Renewable Energy Credit Procurement
PACE - Commercial

POLICY TYPE BREAKDOWN







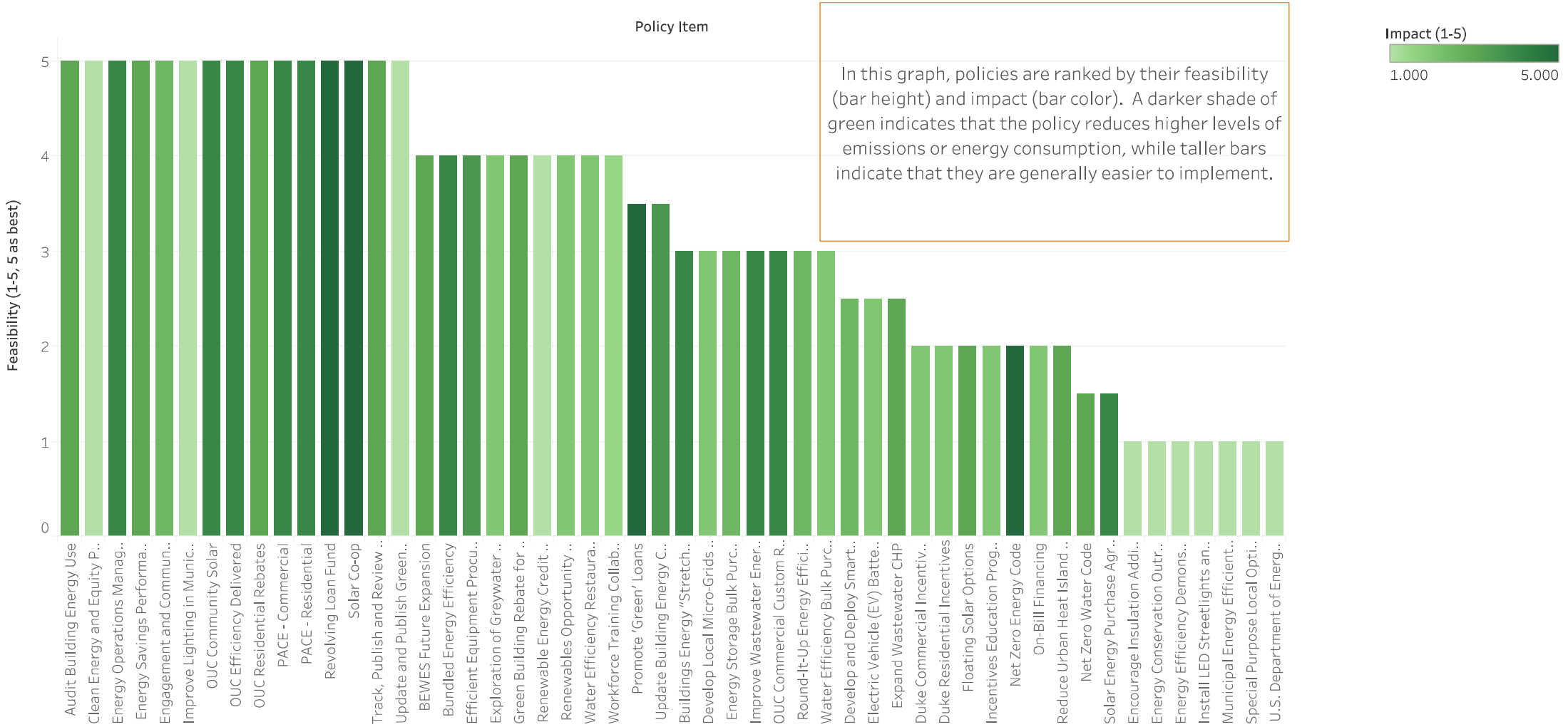


POLICY & PROGRAM RANKING

Description of Policy Rankings

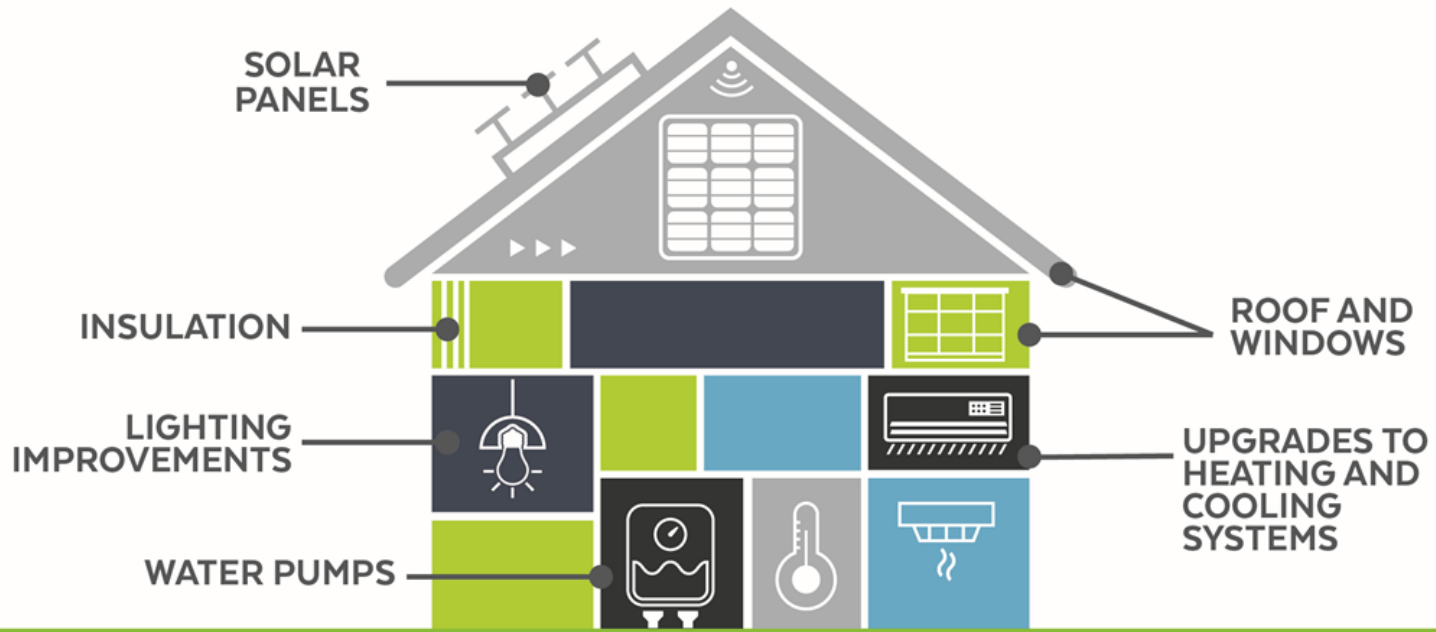
Ranking	Feasibility	Impact
1	Extremely high level of barriers and/or very large amounts of financial or political resources needed	Very Low
2	Somewhat high level of barriers and/or high amounts of financial or political resources needed	Low
3	Moderate level of barriers and/or moderate amounts of financial or political resources needed	Moderate
4	Slight level of barriers and/or mild amounts of financial or political resources needed	High
5	Low level of barriers and/or low amounts of financial or political resources needed	Very High

ONLINE INTERACTIVE POLICY PACKAGE



SELF
SOLAR AND ENERGY LOAN FUND

EXAMPLE OF IMPROVEMENTS:

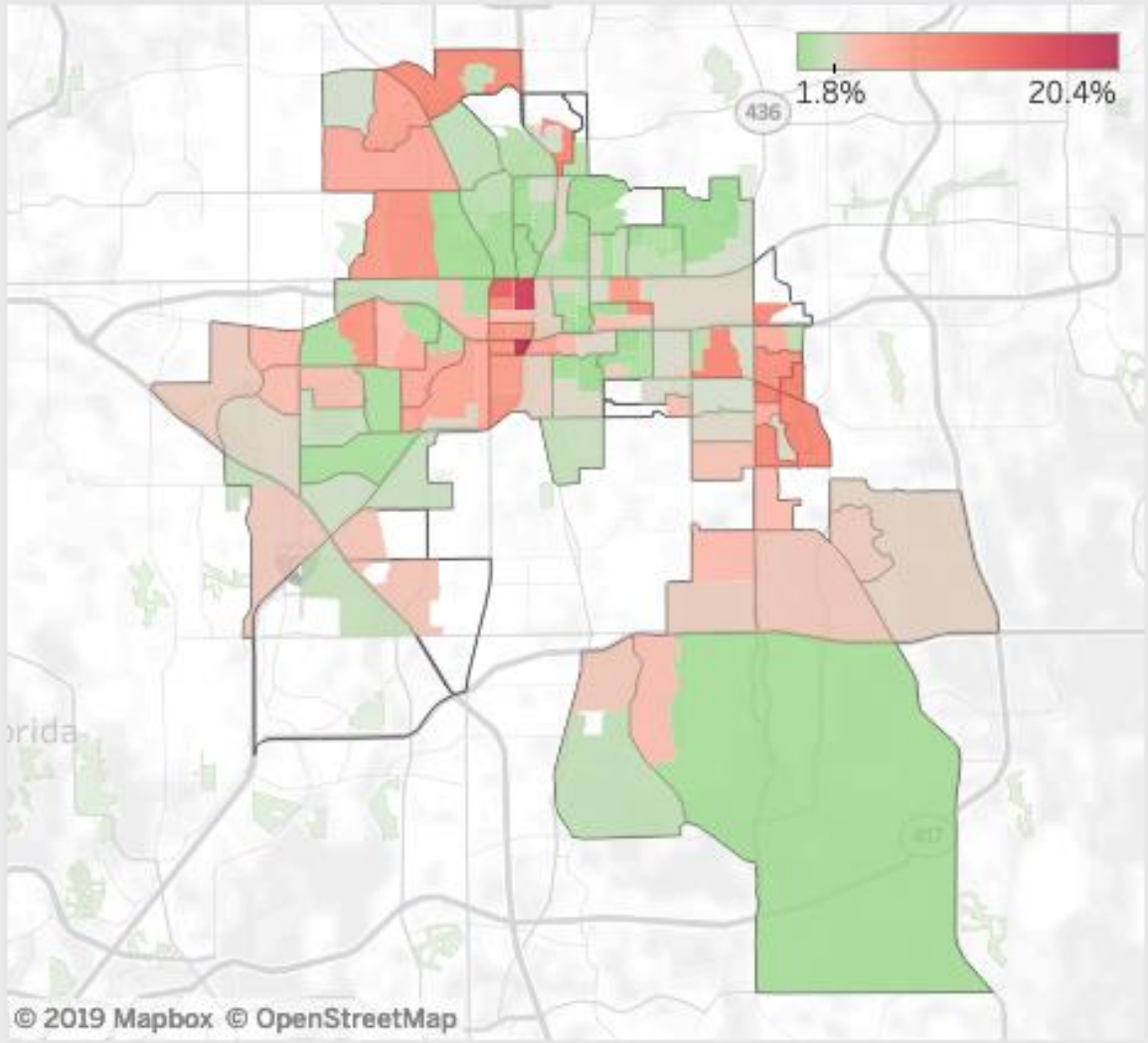


Pamela Turner
Loan Impacts: Safety, Health, Quality of life, Credit Rebuilding

Amount of Loan: $7,231.21

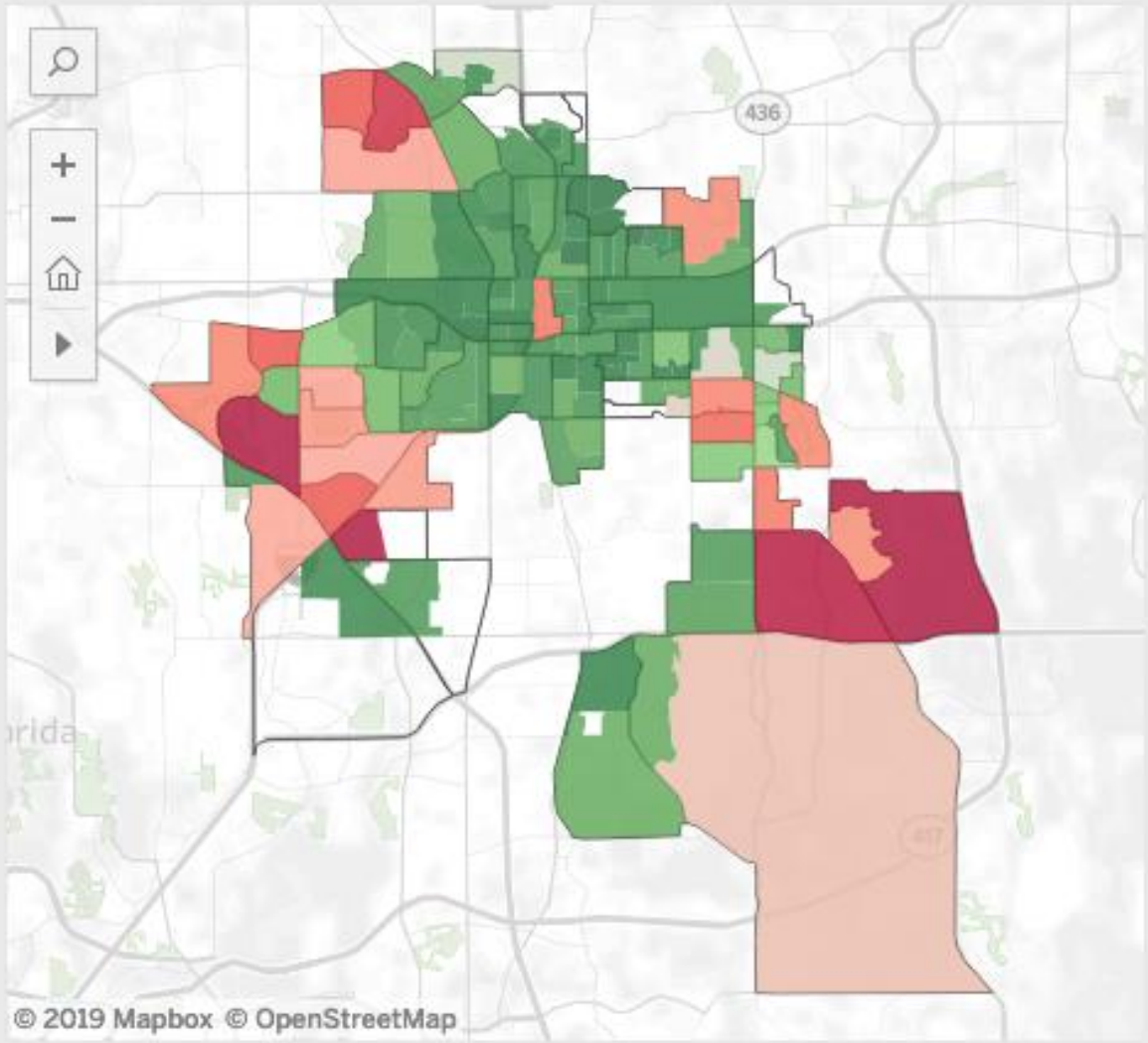
Type of loan: Wind Hazard Mitigation *(Roof Repair)*

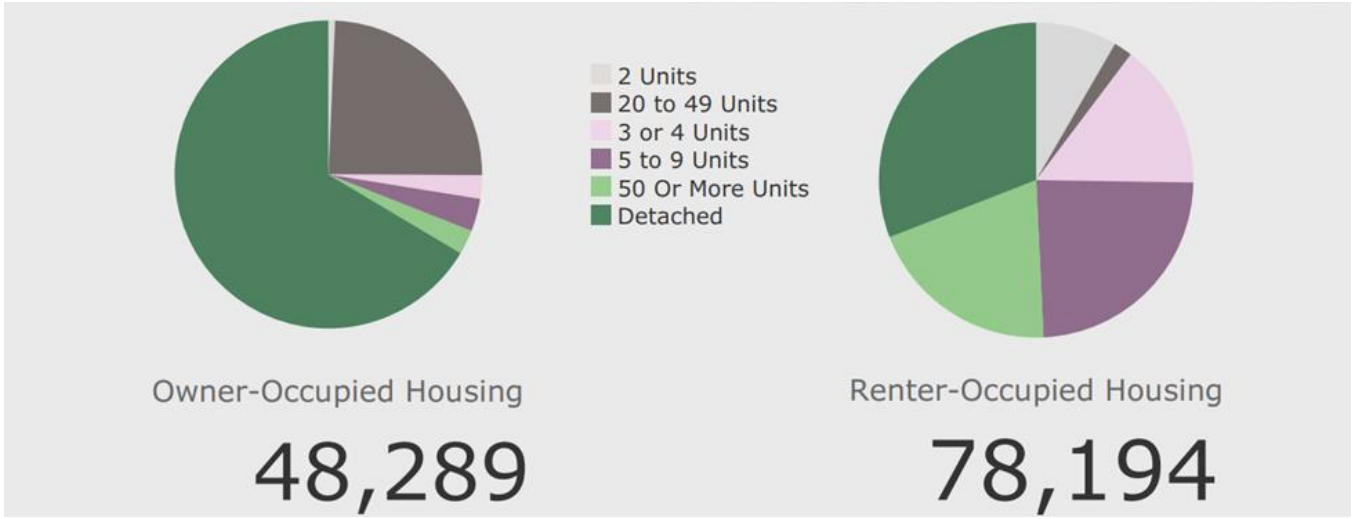
Electricity Burden



Households in Burden

Use the slider to see how many households are living above the electricity burden that you choose. The average electricity burden for Orlando is **4.48%**, while the national average is **2.56%.**





Owner-Occupied Housing

48,289

Renter-Occupied Housing

78,194

EFFICIENCY® DELIVERED

Energy Efficiency Home Upgrades by OUC

Brittany Sellers
Sustainability Project Manager
brittany.sellers@cityoforlando.net

CityofOrlando.net/GreenWorks

GREEN WORKS ORLANDO

Wrap-up

Post-quiz results – Session 3

In single words or short phrases, what are some of your professional goals for your clean energy planning process?

19

How confident are you about your ability to guide an equitable scenario planning process?

19

Pre-quiz results – Session 1 (for comparison)

In single words or short phrases, what are some of your professional goals for your clean energy planning process?

43

How confident are you about your ability to guide an equitable scenario planning process?

43

Next steps from here

- Share your feedback – https://bit.ly/broadly_feedback_3
- Use the practices, principles and data from the training in engagements with your stakeholders
- Develop a scenario planning process appropriate to your community's needs
- Engage with the WRI-Greenlink-USDN project team to sort through options and resources for your city
  - Join office hours
  - Share your ideas, questions and requests through the feedback survey or by email
- Share your successes and learnings

Community Engagement Process Guide

To be released Summer 2020

Lead Author: Rosa Gonzalez (Facilitating Power)

Engaging with impacted communities is key to:

1) understanding the stories behind data patterns - help with effectiveness
2) unlock the insights and capacity needed to **identify and implement genuine solutions** to equity gaps and effective climate action
3) ensure effective means by which to share the data with the larger population

Key Components of the *Community Engagement Process Guide*

- ❑The Spectrum of Community Engagement to Ownership
- ❑Ecosystem Approach to Regional Racial Equity

1 • PREPARATION - clarify what equity means and why/how it is core to the process; setting goals and timeline together; co-designing a process

2 • COLLABORATIVE DATA ANALYSIS - facilitation capacity, multiple meeting/engagement process, translating learning into action

3 • FOLLOW-THROUGH FOR SUSTAINED ACTION - evaluation, reflection, sharing the data and stories more widely, investing in community partnerships, equity impact assessments

Equitable Clean Energy Planning Resource List

Resource and Reading List

Broadly Beneficial Clean Energy Planning

This list compiles tools, datasets, reports, frameworks, and other resources that should be useful to city governments engaging in inclusive clean-energy planning. The list is necessarily incomplete, but the gold-highlighted items are particularly recommended.

Resource	Provider	Category	Type	Description
City and County Energy Profiles	DOE	baseline	data	Modeled state- and county-level data for electricity and natural gas consumption, vehicle use, and emissions.
Energy Poverty and Equity Explorer	CUSP	baseline	data	Income, housing, demographic, and energy-burden data at neighborhood-scale for Canadian cities. Based on data from Statistics Canada.
H+T Affordability Index	Center for Neighborhood Technology	baseline	data	Affordability of housing and transportation at a variety of spatial scales, down to US Census block. Based on census housing-cost data and modeled transportation-cost data.
Low-Income Energy Affordability Data (LEAD)	DOE	baseline	data	Income, housing, and energy-expense data at US, state, county, city, and census-tract levels. Data from US Census Bureau and Energy Information Administration.
State and Local Energy Data (SLED)	DOE	baseline	data	City-level energy use (by sector), energy expense, and demographic and income data.
State and Local Planning for Energy (SLOPE)	NREL	baseline	data	Modeled energy-efficiency potential, renewable generation potential, electricity and natural gas consumption BAU projections, levelized cost of energy (LCOE) projections, and population projections on a variety of spatial scales. Models based on numerous government-derived datasets and models.
Cities Leading through Energy Analysis and Planning (Cities-LEAP)	DOE	baseline	resource list	Guidance and modeled data supporting city adoption of clean-energy policies and programs.
Local Clean Energy Self-Scoring Tool	ACEEE	baseline	tool	Interactive tool for evaluating a community's existing energy policies against the ACEEE's 2019 City Clean Energy Scorecard.

Full resource list available here.

Thanks for your participation!

Thanks to our partners:

And advisors, reviewers and researchers:

- Allison Ashcroft, Canadian Urban Sustainability Practicioners
- Julie Curti, Metropolitan Area Planning Council (Boston)
- Megan Day, National Renewable Energy Laboratory
- Alex Dane, Natalie Elwell & Devashree Saha, World Resources Institute
- Denise Fairchild, Emerald Cities Collaborative
- Anthony Giancatarino, Movement Strategy Innovation Center
- Rebecca Kiernan, City of Pittsburgh
- Samantha McDonald, Greenlink Analytics

Q&A & Additional Discussion

Prompts for discussion

How can the WRI-Greenlink-USDN team support you in taking next steps and peer learning on the principles, methods and data discussed?

How can you better use your privileged capacity to support frontline leadership? What knowledge and support do you need?

What new questions do you have as a result of what you learned through the test exercise scenario modeling process?