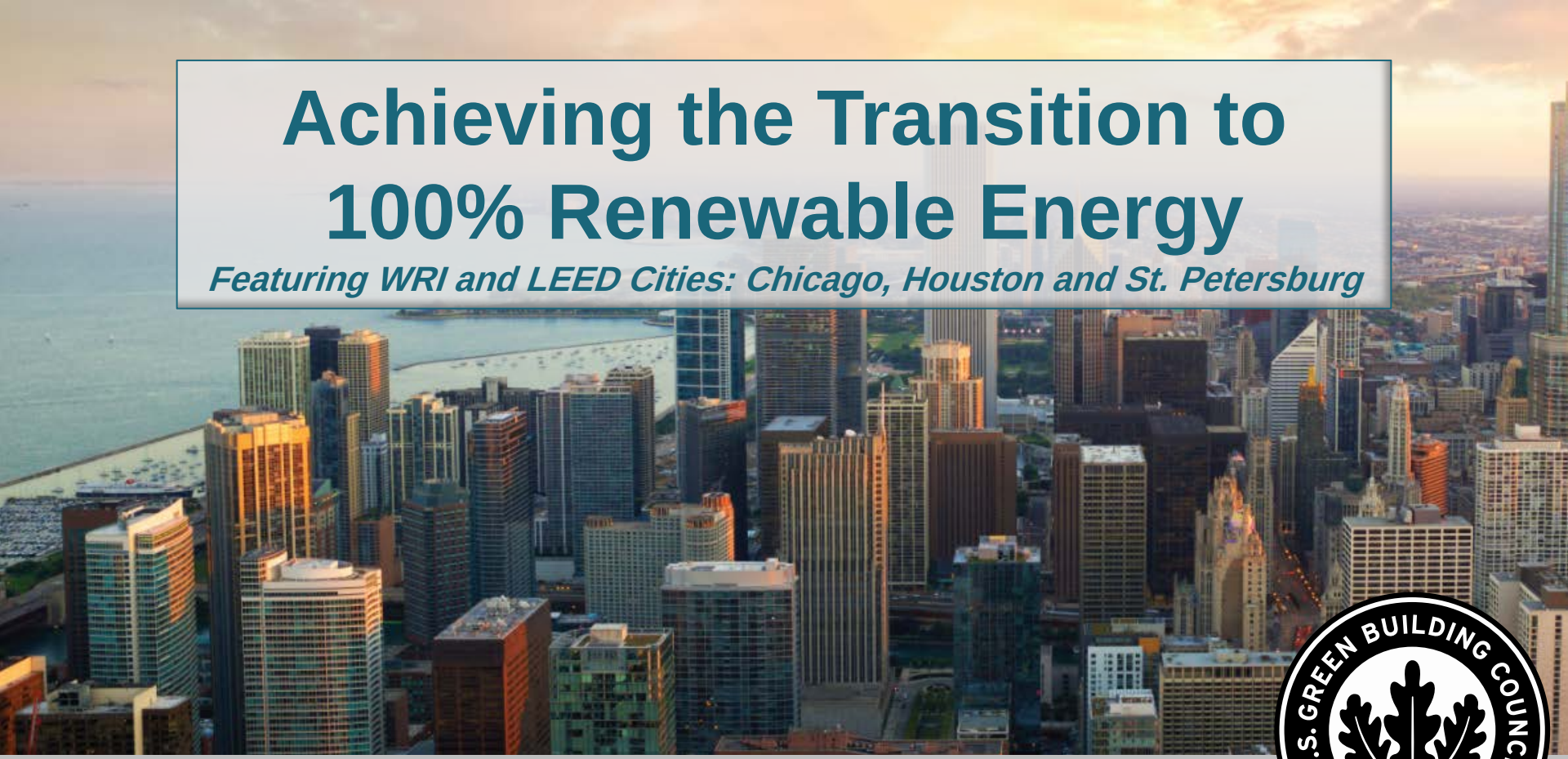
Achieving the Transition to 100% Renewable Energy

Featuring WRI and LEED Cities: Chicago, Houston and St. Petersburg



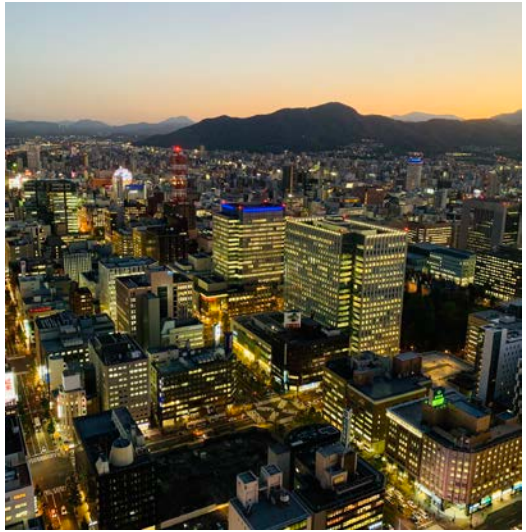
Local Government Leaders Forum | August 18, 2021

This event is hosted by the LEED for Cities and Communities program at the U.S. Green Building Council.

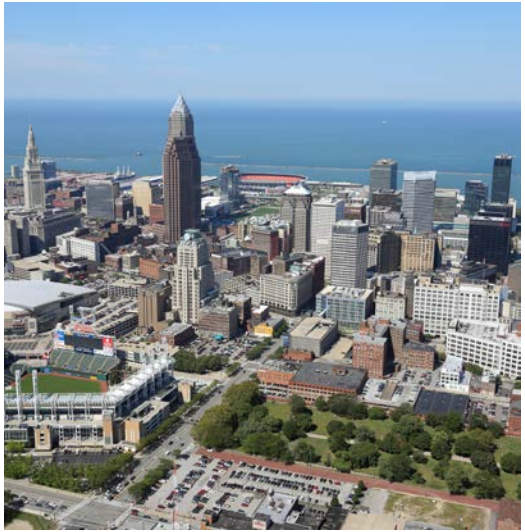
Agenda

- Welcome by Hilari Varnadore, VP for Cities, USGBC
- Introduction of Speakers
- Opening Remarks, WRI
- Presentations from Chicago, Houston and St. Petersburg
- Moderated Discussion
- Questions from Audience

LEED for Cities Engages Diverse Local Governments Around the World



Large cities and counties
Surat, Sapporo, Chicago, San Diego County, Houston, Miami-Dade County

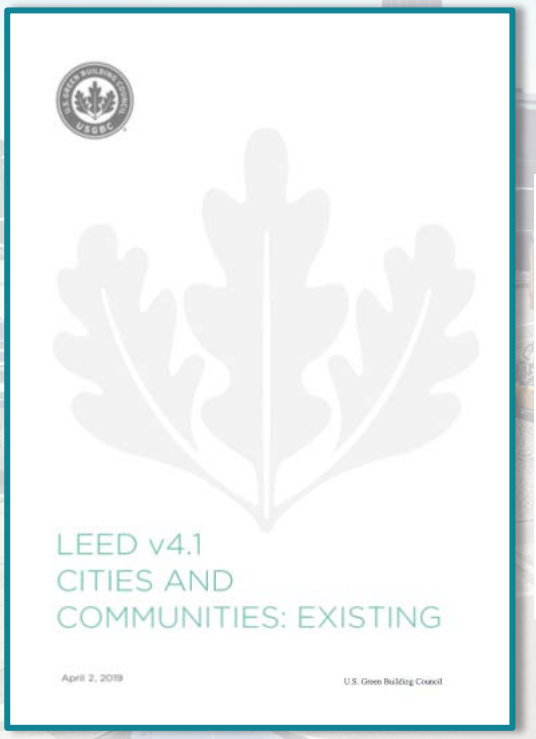


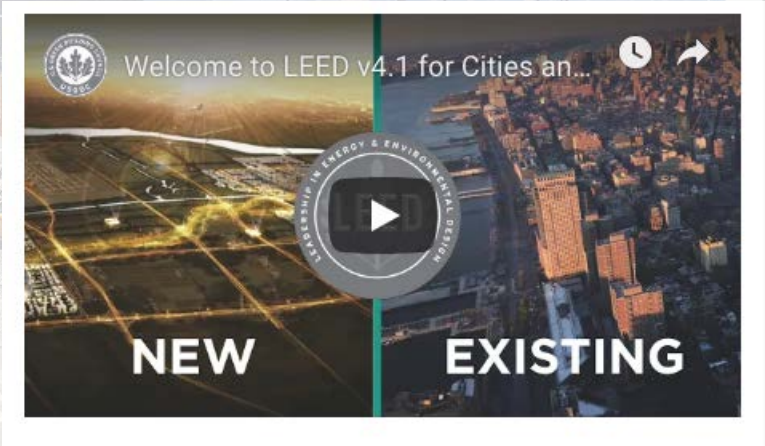
Mid-sized places
The average population of a registered LEED city or county is 400,000, the size of Atlanta, Tampa or Cleveland.

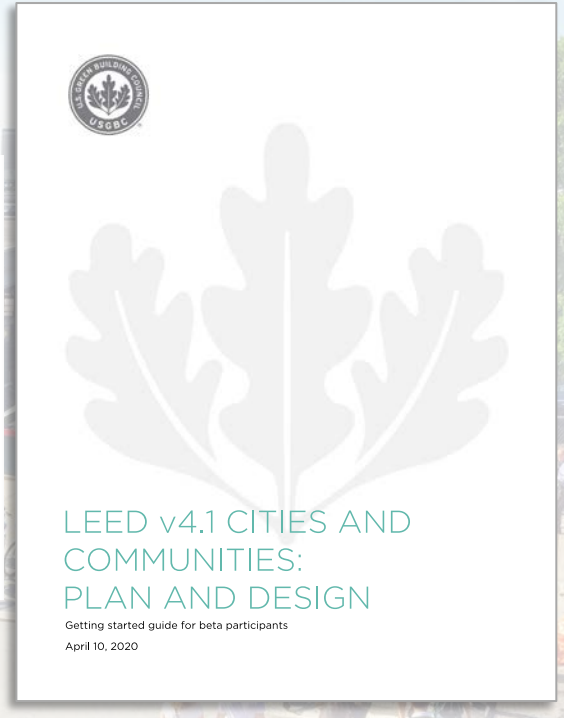
Smaller local governments
Jupiter Inlet Colony is a town of less than 500. Other small cities include Middleton and Durango.

There are 127 Certified and 232 Registered Cities and Communities around the world.

Visit our website to access the rating system, guide and other tools and resources for local governments.

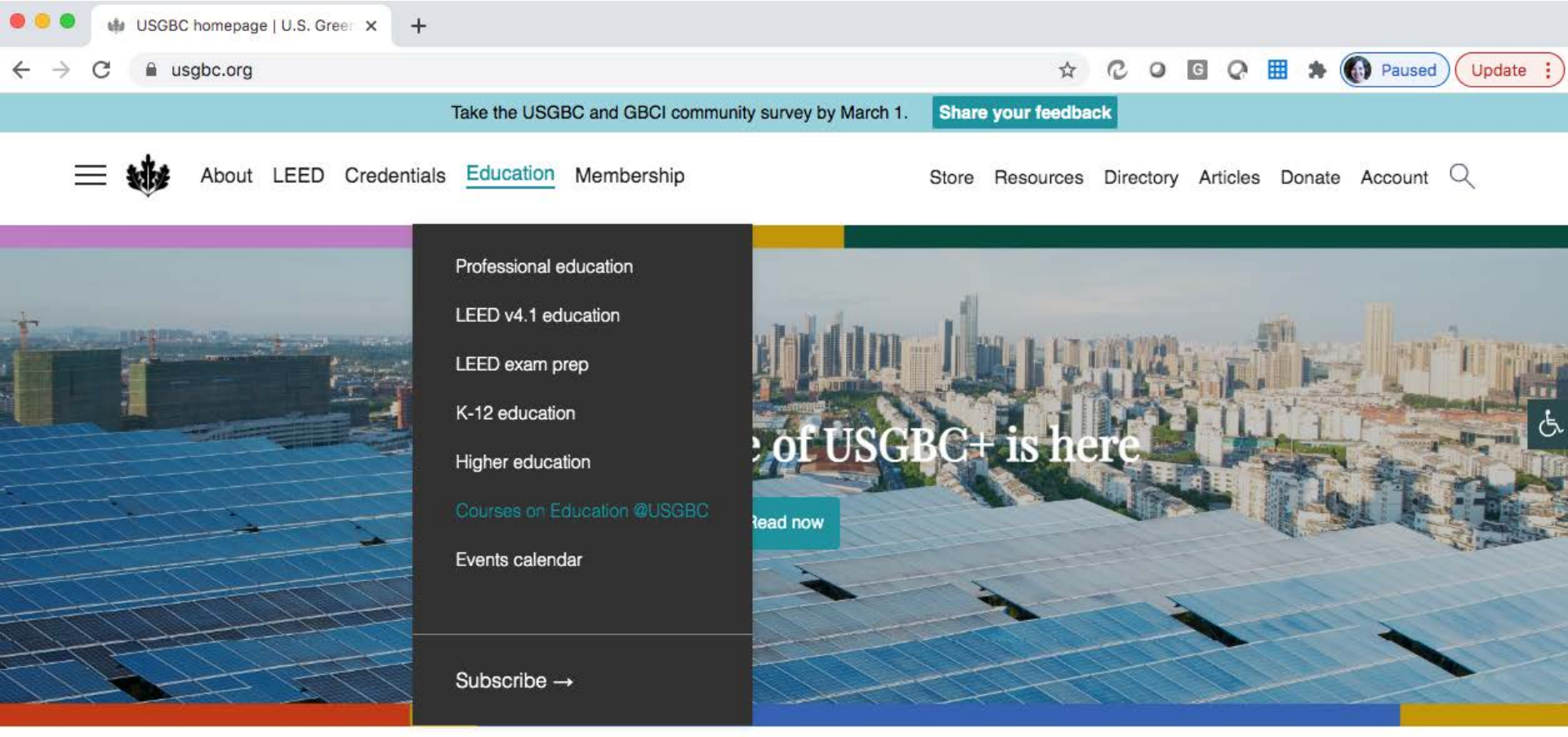






https://www.usgbc.org/leed/rating-systems/leed-for-cities

- Go to www.USGBC.org/Events to view our calendar and register
- Go to Courses on Education @ USGBC for on-demand education and CEUs



Call for Applications ~ LEED Committees and Working Groups

LEED Cities and Communities Working Group

https://www.usgbc.org/articles/volunteer-leed-committee-2021

Our Speakers

Lacey Shaver
World Resources Institute

Lara Cottingham
City of Houston, TX

Sharon Wright
City of St. Petersburg, FL

Angela Tovar
City of Chicago, IL

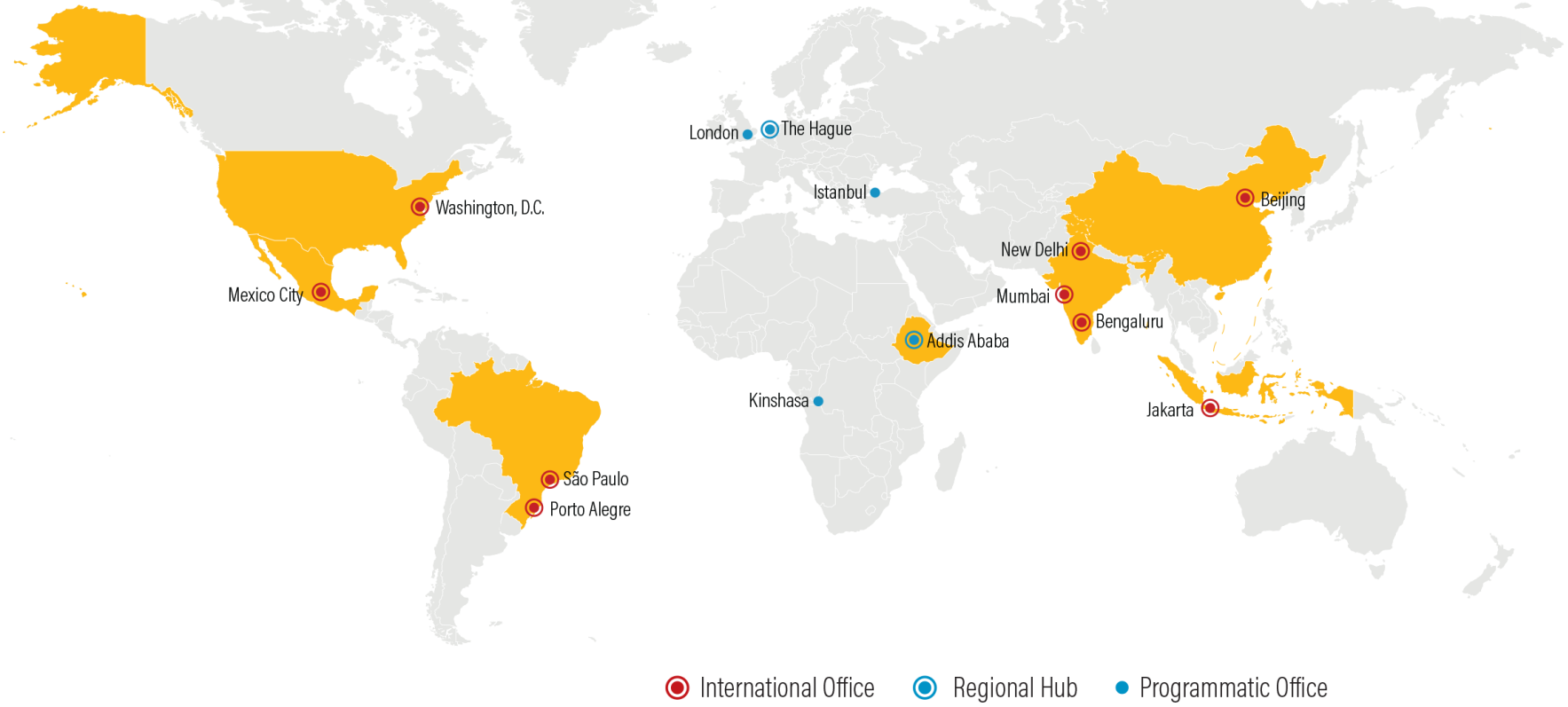
WORLD RESOURCES INSTITUTE

ADVANCING RENEWABLE ENERGY IN U.S. CITIES

Lacey Shaver, City Renewable Energy Manager

U.S. GREEN BUILDING COUNCIL, LOCAL GOVERNMENT LEADERS FORUM, AUGUST 18, 2021

WRI IS A GLOBAL RESEARCH ORGANIZATION WITH OVER 1,200 EXPERTS WORKING ACROSS 60+ COUNTRIES



HELPING U.S. CITIES ADVANCE AMBITIOUS RENEWABLE ENERGY GOALS

200+ U.S. LOCAL GOVERNMENTS HAVE COMMITTED TO 100% COMMUNITYWIDE RENEWABLE ENERGY (RE)

DC Heads to 100% Renewable Energy, a Symbolic Move for the Country

Published Apr. 19, 2019

LA now biggest U.S. city to announce 100% renewable energy goals

5/8/2019

Arlington County becomes first locality in Virginia to commit to 100% clean, renewable electricity by 2035

ARLINGTON VIRGINIA

September 23, 2019

City of Houston Surprises: 100% Renewable Electricity - $65 Million in Savings in 7 Years

May 2nd, 2020

Menlo Park becomes first U.S. city to set goal to be carbon neutral by 2030

CITY OF MENLO PARK

July 16, 2020

1. https://www.sierraclub.org/ready-for-100/commitments
2. https://www.nbcconnecticut.com/news/national-international/the-nations-capital-moves-toward-all-renewable-energy-federal-buildings-included/174461/
3. https://www.power-grid.com/2019/05/08/la-now-biggest-u-s-city-to-announce-100-percent-renewable-energy-goals/#gref
4. https://www.sierraclub.org/press-releases/2019/09/arlington-county-becomes-first-locality-virginia-commit-100-clean-renewable?id=7013q000001apXRAAY&utm_medium=web&utm_source=sierraclub&utm_campaign=readyfor100&utm_content=map
5. https://cleantechnica.com/2020/05/02/city-of-houston-surprises-100-renewable-electricity-65-million-in-savings-in-7-years/
6. https://www.almanacnews.com/news/2020/07/16/menlo-park-becomes-first-us-city-to-set-goal-to-be-carbon-neutral-by-2030

CITIES CAN CHOOSE FROM A RANGE OF RE SOLUTIONS AND RESOURCES

Unbundled Renewable Energy Certificates

OR

RE Energy Produced On-Site
(Primarily on-site solar)

Energy Buyer

OR

RE Produced & Purchased from the Market

- Physical or Virtual PPA
- Utility Solutions
- Community Solar

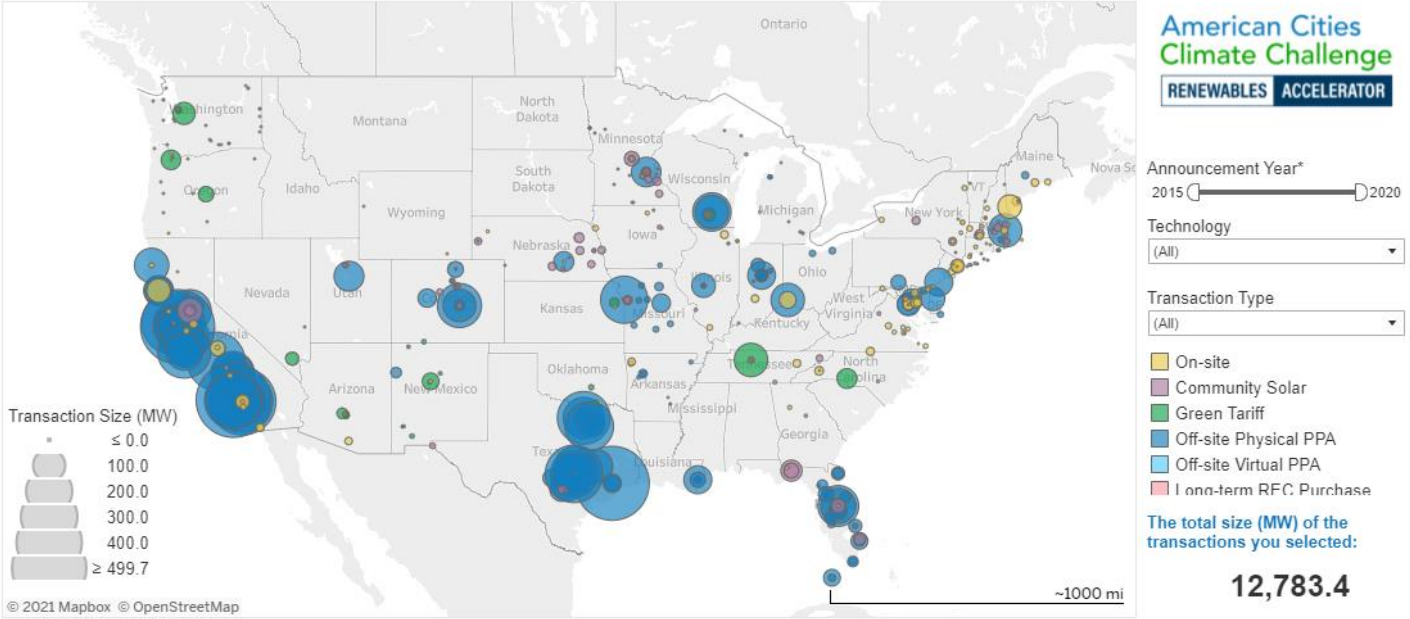
Developer / Renewable Generator

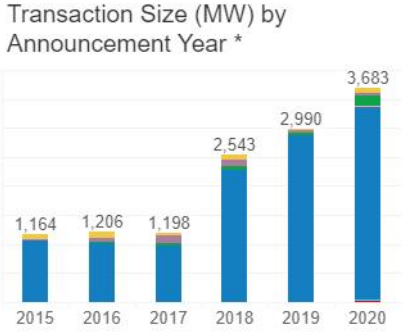
Traditional Utility

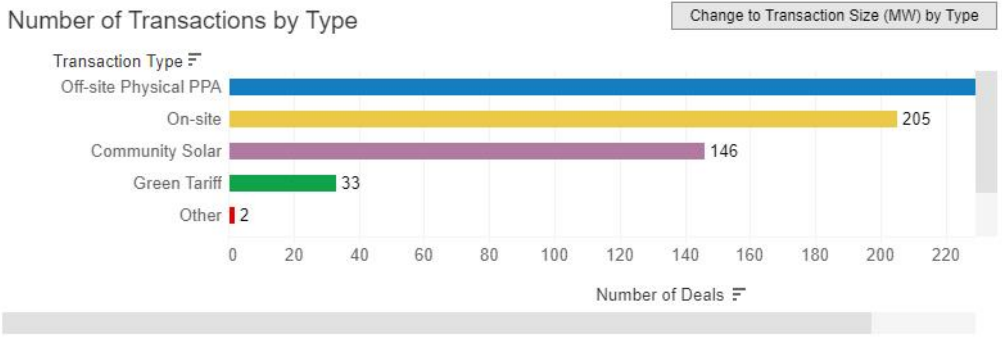
CITIES FACE MANY CHALLENGES WHEN WORKING TOWARD 100% RE GOALS

- Understanding current and future energy load
- Navigating complex regulatory and market landscape
- Aligning available procurement options with city goals and priorities
- Working with the local utility – municipal or IOU
- Building internal capacity, including legal and finance
- Funding on-site and community installations
- Executing complex financial transactions
- Figuring out how to do all this in an equitable way…

CITIES ACROSS THE COUNTRY ARE PURCHASING MORE RE THAN EVER BEFORE



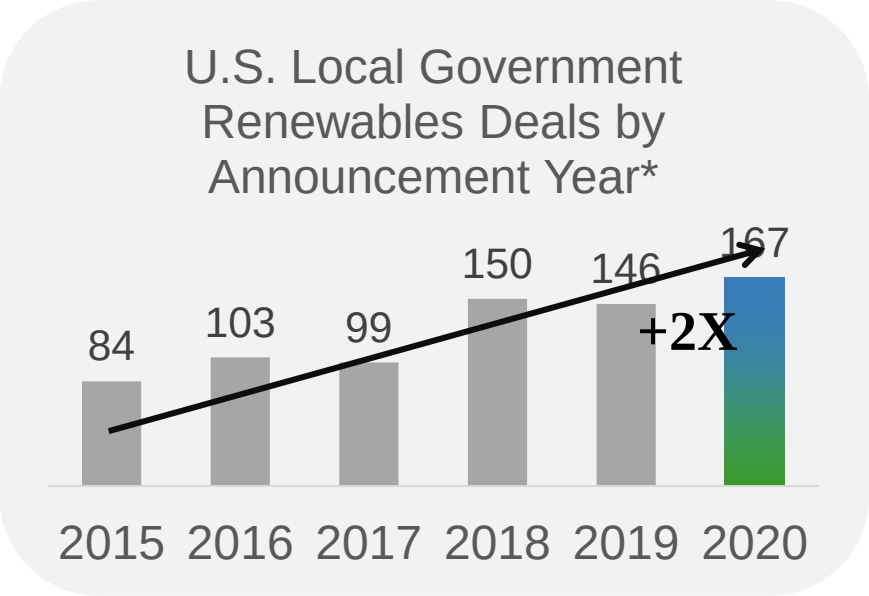




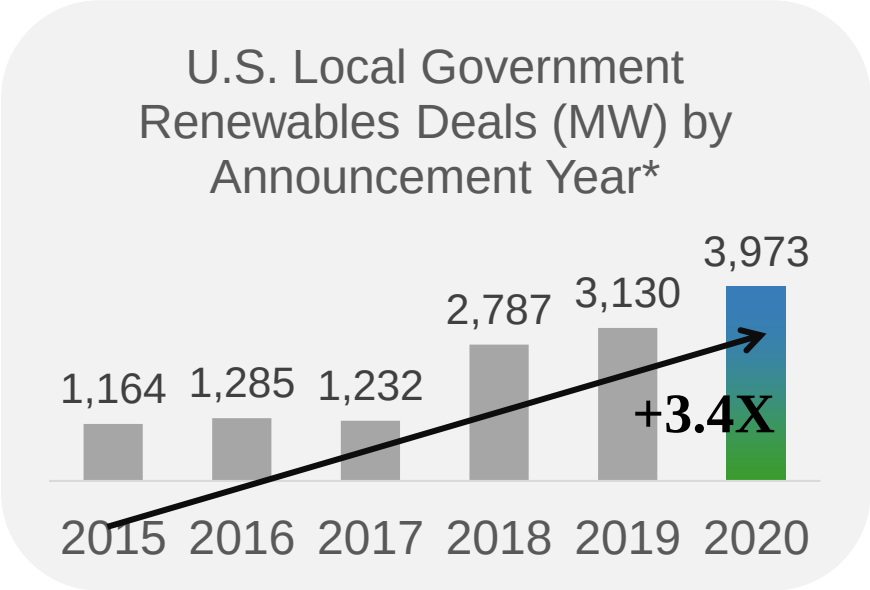
Source: RMI & WRI, Local Government Renewables Action Tracker

WORLD RESOURCES INSTITUTE

U.S. LOCAL GOVERNMENTS BOUGHT NEARLY 4,000 MW OF RE IN 2020, UP 3.4X FROM 2019



* Or operation start year if announcement year is not available
Source: Local Government Renewables Action Tracker (www.cityrenewables.org)



* Or operation start year if announcement year is not available
Source: Local Government Renewables Action Tracker (www.cityrenewables.org)

Source: RMI & WRI, Local Government Renewables Action Tracker

CITIES MUST CONSIDER MANY PATHWAYS TO ACHIEVE COMMUNITYWIDE RE GOALS

Helping residents and businesses access RE (esp LMI and BIPOC)

- Solarize campaigns
- Solar for All programs
- Community solar
- Community choice aggregation
- Upgrading building and permitting codes

Enabling innovative financing mechanisms for equitable RE access

- Green banks
- CDFIs
- Franchise agreements
- Sales and retail taxes
- Climate and resilience bonds

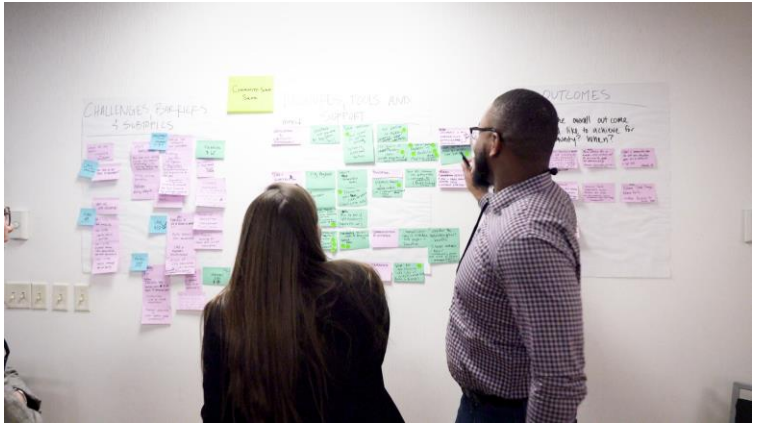
Removing market barriers and creating system-wide change

- Developing coalitions for statewide action
- Participating in regulatory proceedings like utility IRPs
- Commenting on wholesale market issues

THE CITY RENEWABLES ACCELERATOR HAS SUPPORTED ~200 CITIES AND COUNTIES

The American Cities Climate Challenge Renewables Accelerator, staffed by WRI and RMI, is designed to support U.S. cities as they set and pursue low-carbon renewable energy goals. Working with the Urban Sustainability Directors Network, the Renewables Accelerator provides:

1. One-on-one technical assistance and support for ACCC winners
2. A one-stop shop website for renewables procurement guidance, and
3. Trainings and cohort-based support to increase and scale city impact through peer-to-peer learning.



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THANK YOU!

Lacey Shaver
City Renewable Energy Manager
lacey.shaver@wri.org

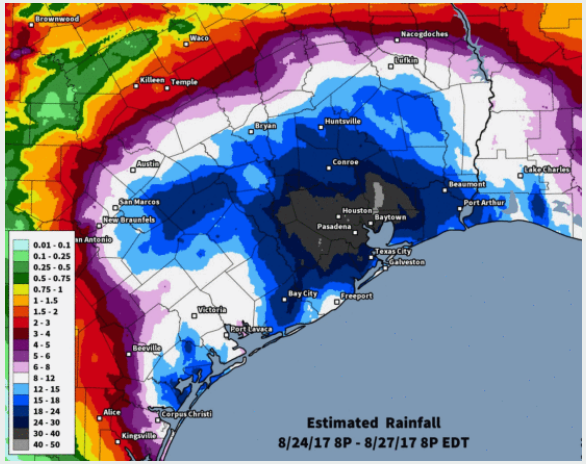
HOUSTON CLIMATE ACTION PLAN

August 2021

Lara Cottingham, Chief Sustainability Officer

CLIMATE IN HOUSTON

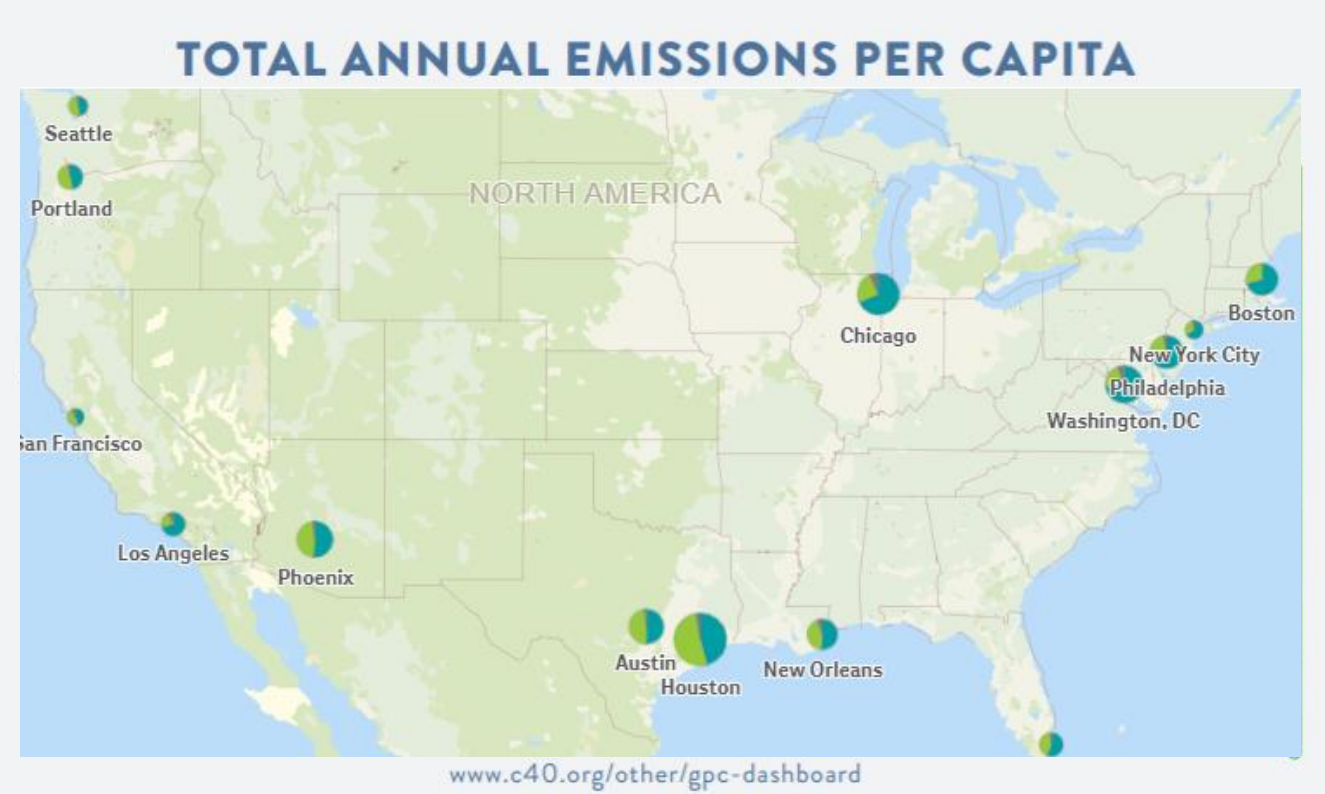
2015 Memorial Day Flood, 2016 Tax Day Flood, 2017 Hurricane Harvey, 2018 4th of July Flood, 2019 Tropical Storm Imelda, 2021 Winter Storm Uri…

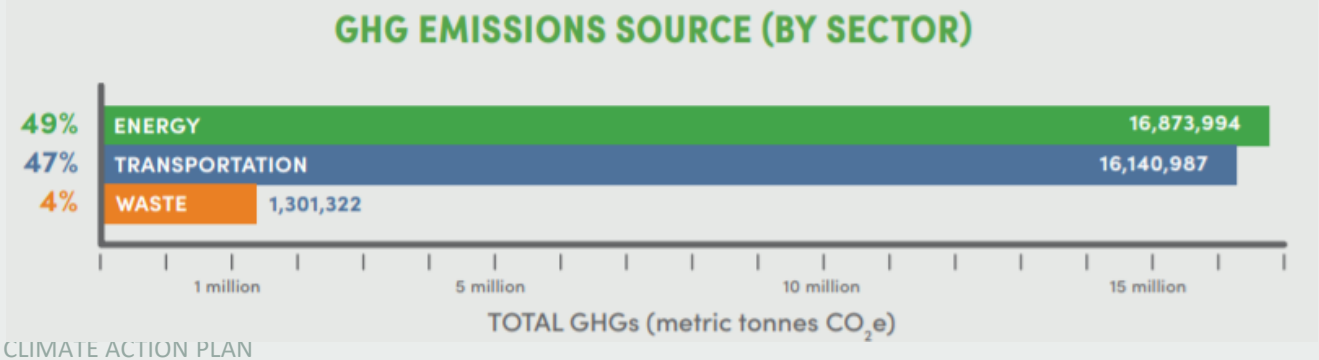


Low vs High Emission Climate Projections:

	1970-1990	2050	2100
High Temp	99	104 - **106**	104 - **109**
Days above 100	1 day	12-**23 days**	14-**54 days**
Nights above 80	.6 nights	20-**50 nights**	30-**96 nights**
Heat Wave Length	2.5 days	15 – **27 days**	19 – **47 days**
Annual Rain Fall	Average remains the same, but extremes range from 5 to 110 inches		

BASELINE EMISSIONS

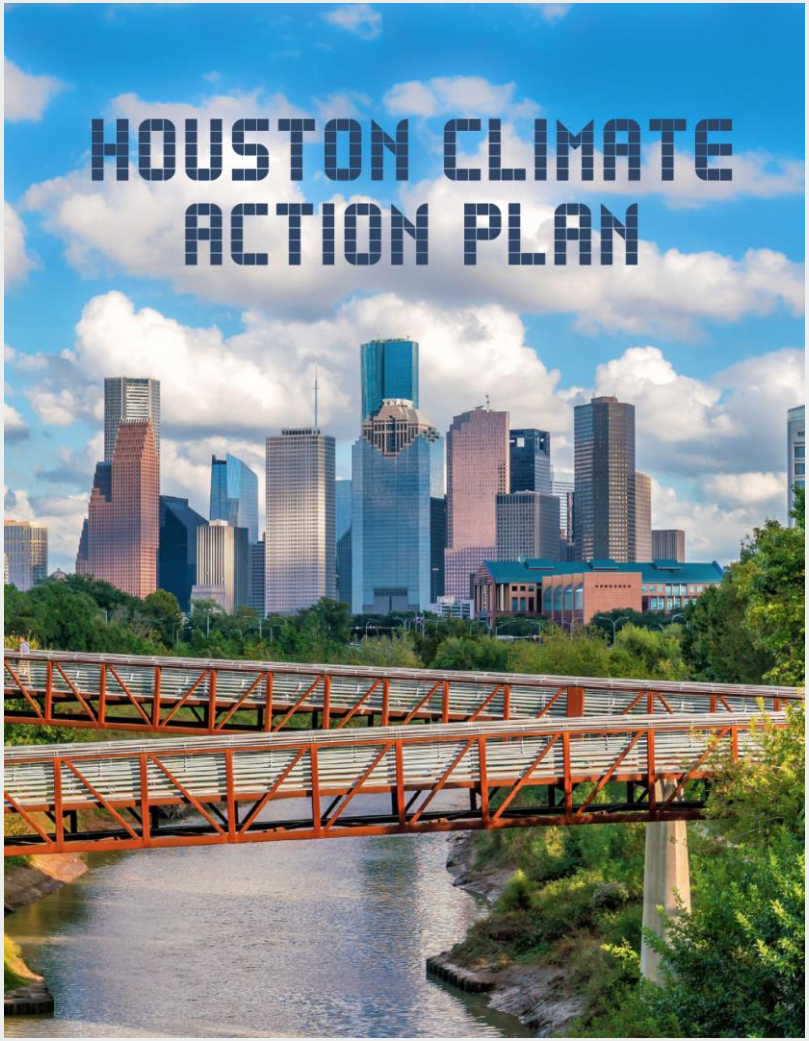




HOUSTON CLIMATE ACTION PLAN

A science-based, community-driven strategy for Houston to reduce greenhouse gas (ghg) emissions, meet the Paris Agreement goal of carbon neutrality by 2050, and lead a global energy transition.

12 goals, 12 targets, 36 strategies, and 96 actions

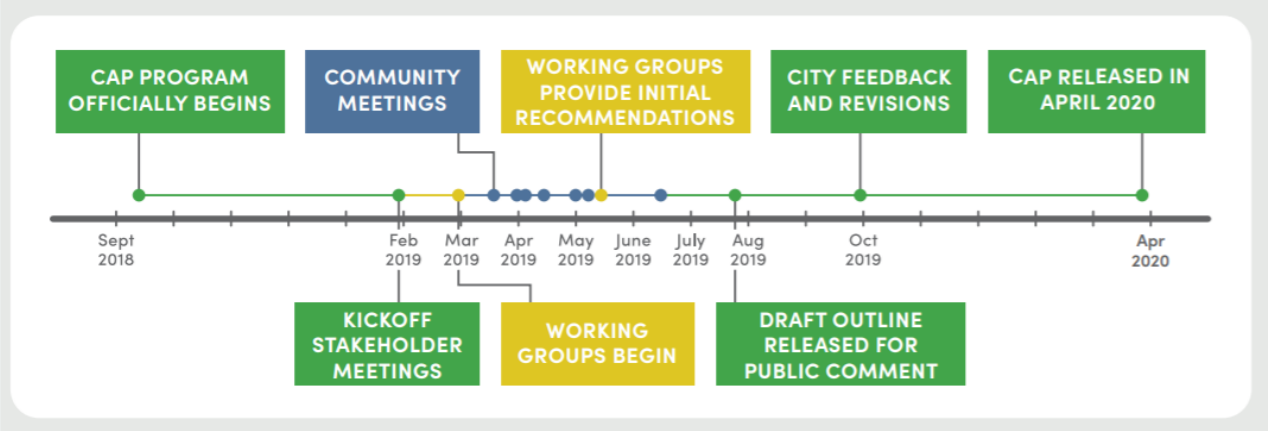


COMMUNITY BENEFITS:

- **Advance mobility and transportation safety**
- **Improve air quality**
- **Reduce energy costs**
- **Address environmental justice concerns**
- **Create resilient, equitable communities**
- **Spur regional economic growth**

A DATA AND STAKEHOLDER-DRIVEN PROCESS

- Complementary Initiatives
- +30 town hall meetings
- 25 working group meetings
- 500+ one-on-ones
- 700+ comments from 400 individuals and organizations



ENERGY TRANSITION

GOAL 1 Grow Houston's Investment in Renewable and Resilient Energy Systems.

GOAL 2 Make Houston The Leader In Carbon Capture Technology and Energy Innovation.

GOAL 3 Restore, Protect, and Enhance Houston's Natural Ability to Capture and Store Carbon.

100 RENEWABLE COMMITMENT

PARTNERSHIP WITH NRG:

- **1,034,399 MWh of renewable electricity annually through NRG Renewable Select plan**
- **Estimated $9.3 Million Reduction in its Annual Electricity Bill**
- **Estimated Total Savings of $65 Million Over Seven Years**
- **#1 Municipal User of Renewable Energy in the US**
- **5 years earlier than CAP goal**
- **Create a new, third-party utility-scale solar facility in Texas that is dedicated to City operations****
- **In addition to 50MW PPA with NRG in Alpine, TX**

Bloomberg Green Subscribe

Energy & Science

Built by Oil's Riches, Houston Goes 100% Green Years Earlier

By David Wethe
May 22, 2020, 10:11 AM CDT
Updated on May 22, 2020, 11:36 AM CDT

- Five-year contract with NRG Energy to power city properties
- Mayor seeks to broaden out image of city beyond oil and gas

SUNNYSIDE SOLAR FARM

SUNNYSIDE ENERGY PARTNERSHIP

- **Winner of the 2019 C40 Reinventing Cities Competition**
- **50 MW utility scale/2MW community solar**
- **Enough electricity to power 5,000 homes annually**
- **Transform the former 240-acre landfill in Sunnyside into a multi-component asset for historically underserved community**
- **Largest urban solar installation in US = $70M private sector investment**
- **120 Million pounds of CO2 off-set per year**
- **Environmental and flood protection**
- **Solar training and education center**
- **Agricultural Hub and community benefits**
- **Address long-standing environmental justice concerns**
- **Community revitalization: sustainability + resilience = complete community**
- **Target construction and commercial operation date 2022**

QUESTIONS?

CONTACT INFORMATION:
LARA COTTINGHAM
CHIEF SUSTAINABILITY OFFICER
LARA.COTTINGHAM@HOUSTONTX.GOV
832-393-8503

THANK YOU!

Learn more:
WWW.GREENHOUSTONTX.GOV

LEED Cities Achieving the Transition to 100% Renewable Energy

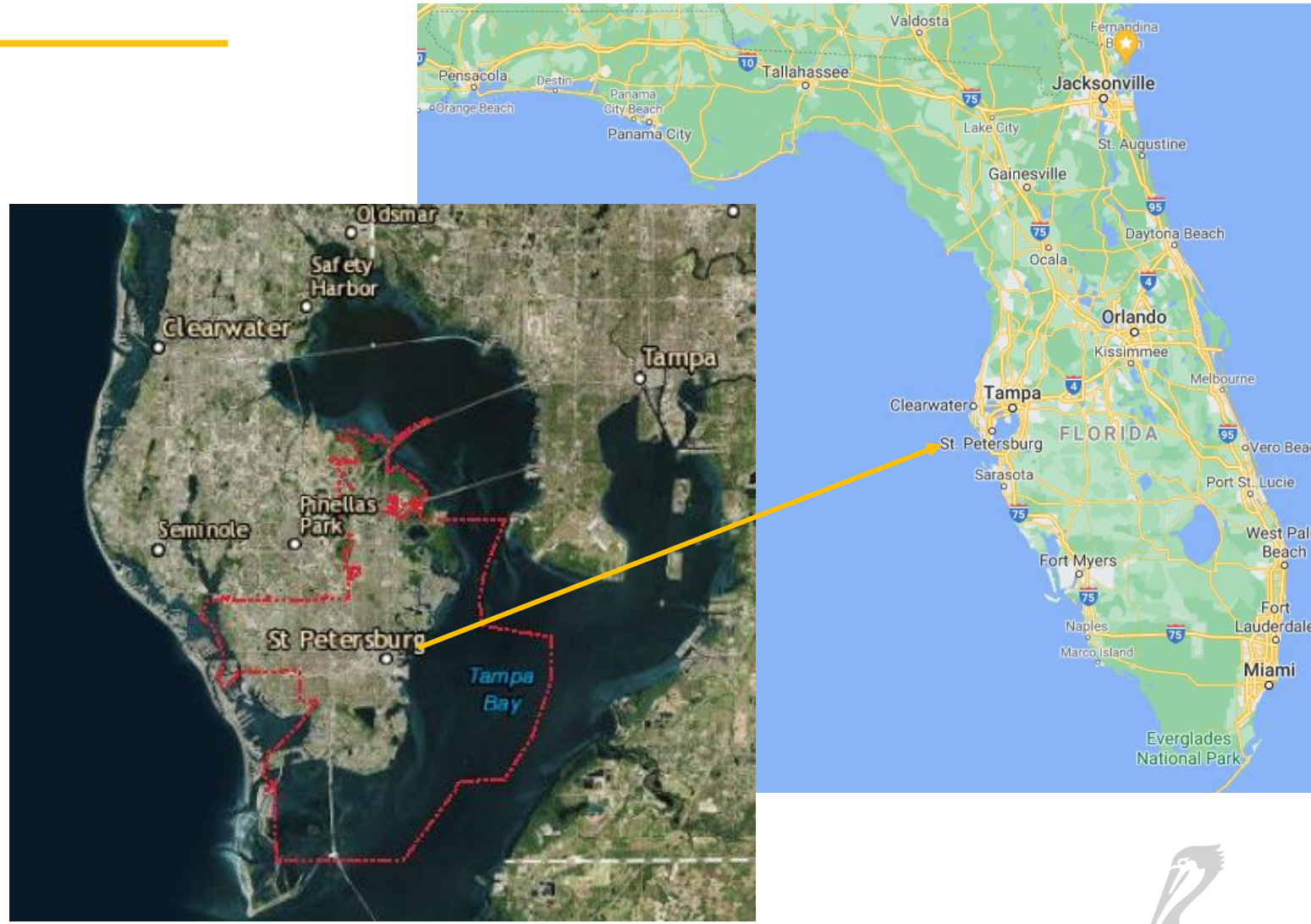
August 18, 2021

Presenter:
Sharon Wright, Director, Office of Sustainability & Resiliency

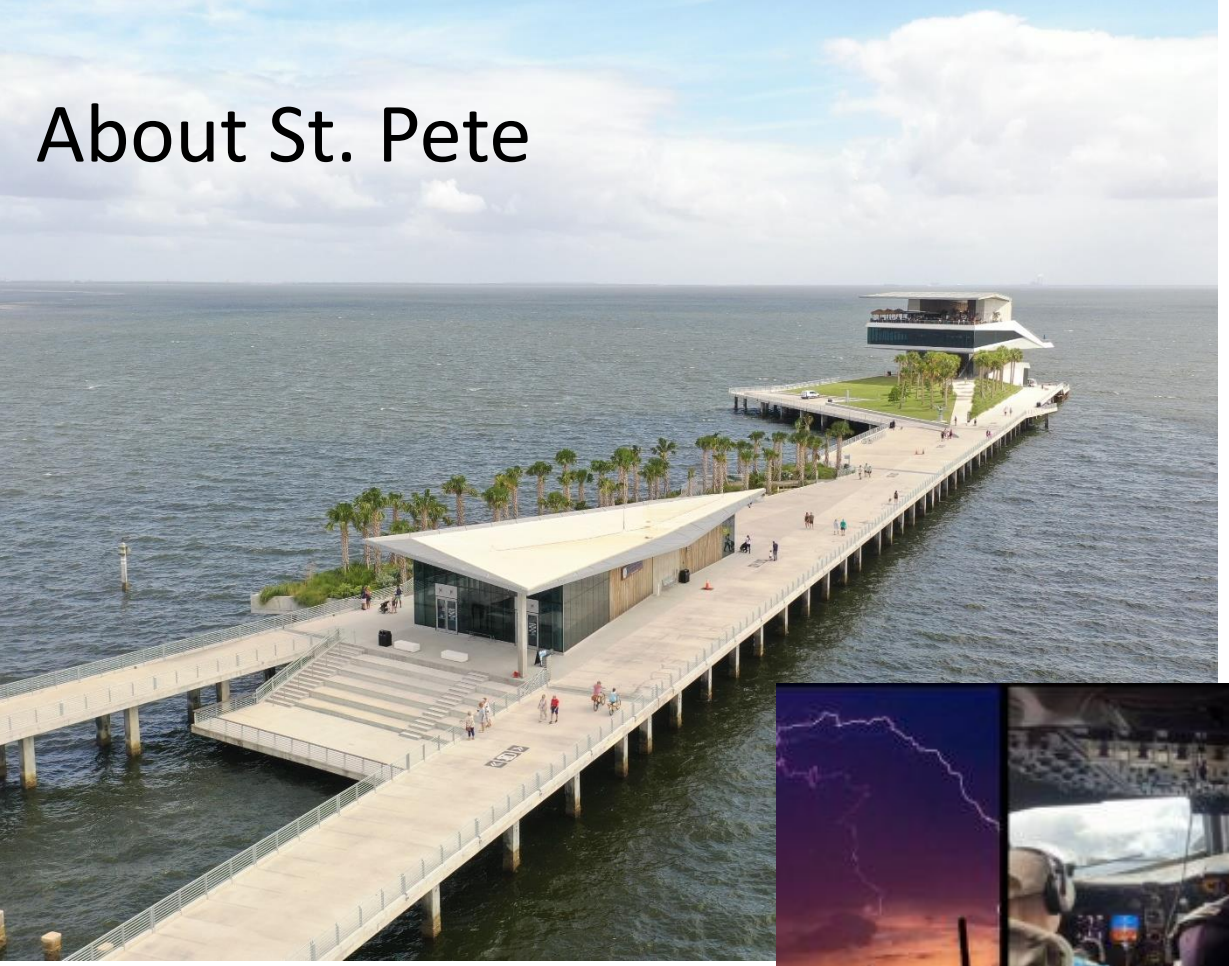
st.petersburg
www.stpete.org

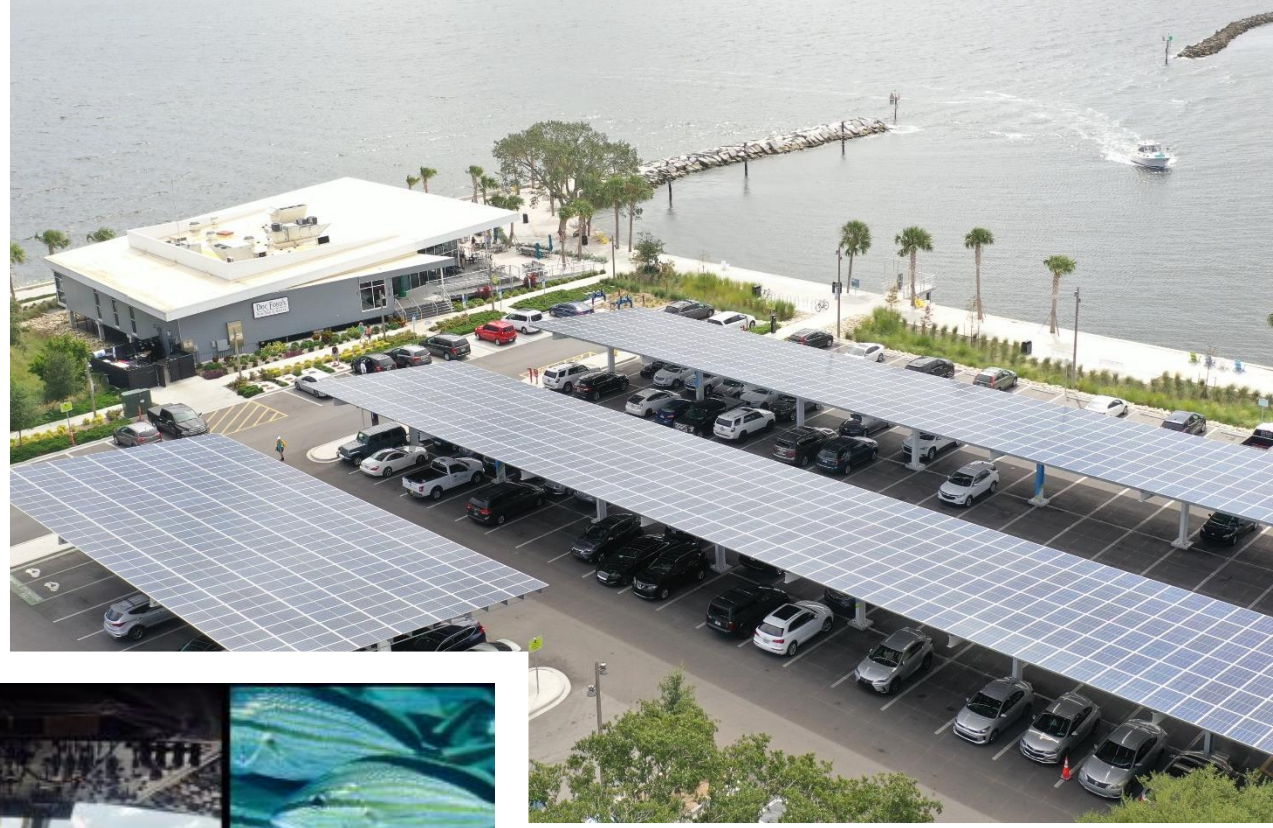
Overview

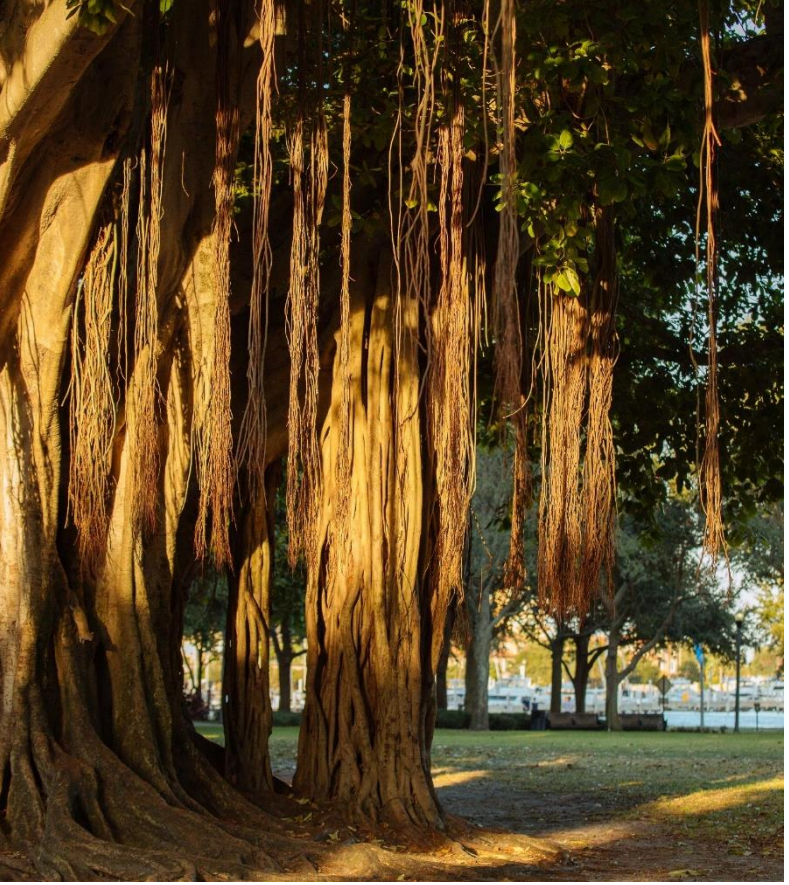
- City of St. Petersburg Intro
- 100% Clean Energy Commitment
- Integrated Sustainability Action Plan (ISAP)
  - Climate action
  - Community sustainability
  - Realizing Resilience
- Actions/Implementation Highlights
  - State/regional contexts
  - Equity
  - Challenges
  - Other Cities



About St. Pete







Arts & Culture
Historic Preservation
City of Neighborhoods

Access
Business
Opportunities for All

A SUSTAINABLE CITY

is one that balances social equity and environmental stewardship with a thriving economy. It is a community that emphasizes resource efficiency and minimizes its impacts to the local, regional, and global environment, while providing healthy and equitable opportunities to live, work, and play.

A RESILIENT CITY

adapts and prepares for effects of climate change like sea level rise and extreme weather. A resilient city means that municipal operations, businesses, and residents, including vulnerable populations, can thrive in the face of changing conditions.

The Commitment

100% CLEAN ENERGY

- 1ST Florida City - 2016
- 20TH City nationally
- Transition to 100% clean energy by 2035
- Community-wide

WHY?

- Reduce GHG emissions
- Cleaner and healthier air
- Cost savings
- Job creation and economic growth
- More resilient and sustainable city

ISAP Framework (plan adopted 2019)

1. CLIMATE ACTION

- GHG Emissions Inventory
- GHG emissions reduction strategies
- Roadmap to 100% Clean Energy

2. SUSTAINABILITY ACTION

- STAR Communities to prioritize policies, programs, & projects

3. REALIZING RESILIENCE

- Vulnerability Assessment
- Resiliency policies and regulations
- Communication & outreach

STAR Framework of Sustainability Goals & Objectives

Built Environment	Climate & Energy	Economy & Jobs	Education, Arts & Community	Equity & Empowerment	Health & Safety	Natural Systems	Innovation & Process
Ambient Noise & Light	Climate Adaptation	Business Retention & Development	Arts & Culture	Civic Engagement	Active Living	Green Infrastructure	Best Practices & Processes
Community Water Systems	Greenhouse Gas Mitigation	Green Market Development	Community Cohesion	Civil & Human Rights	Community Health	Biodiversity & Invasive Species	Exemplary Performance
Compact & Complete Communities	Greening the Energy Supply	Local Economy	Educational Opportunity & Attainment	Environmental Justice	Emergency Management & Response	Natural Resource Protection	Local Innovation
Housing Affordability	Energy Efficiency	Quality Jobs & Living Wages	Historic Preservation	Equitable Services & Access	Food Access & Nutrition	Outdoor Air Quality	Good Governance
Infill & Redevelopment	Water Efficiency	Targeted Industry Development	Social & Cultural Diversity	Human Services	Health Systems	Water in the Environment	
Public Parkland	Local Government GHG & Resource Footprint	Workforce Readiness	Aging in the Community	Poverty Prevention & Alleviation	Hazard Mitigation	Working Lands	
Transportation Choices	Waste Minimization				Safe Communities		

How Do We Get There?

5 PATHWAYS

Pathway 1

Energy Efficiency and Reduction in Existing Buildings

Pathway 2

Smart, Efficient, and Renewables-Ready New Construction

Pathway 3

Renewable Energy Deployment and Procurement

Pathway 4

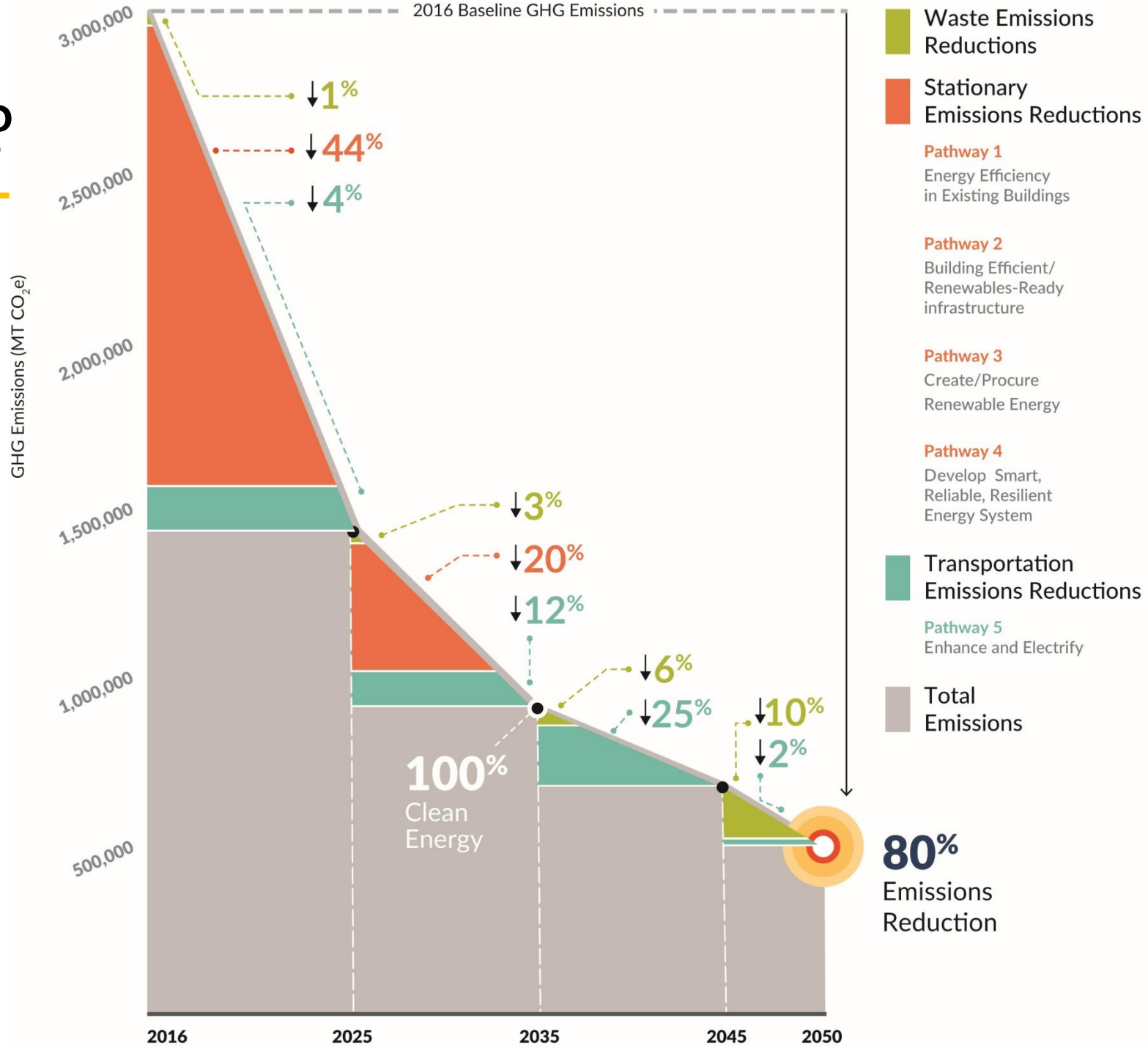
A Reliable and Resilient Energy System

Pathway 5

The Role of Transportation

How Do We Get There?

CLEAN ENERGY ROADMAP



Select Actions & Implementation Strategies

Municipal building energy retrofits

Municipal Solar PV

Private Sector Benchmarking Pilot

Municipal Funding Options – REIF +

Solar United Neighbors (SUN) Solar Co-op

Solar Energy Loan Fund (SELF) program – non-profit CDFI

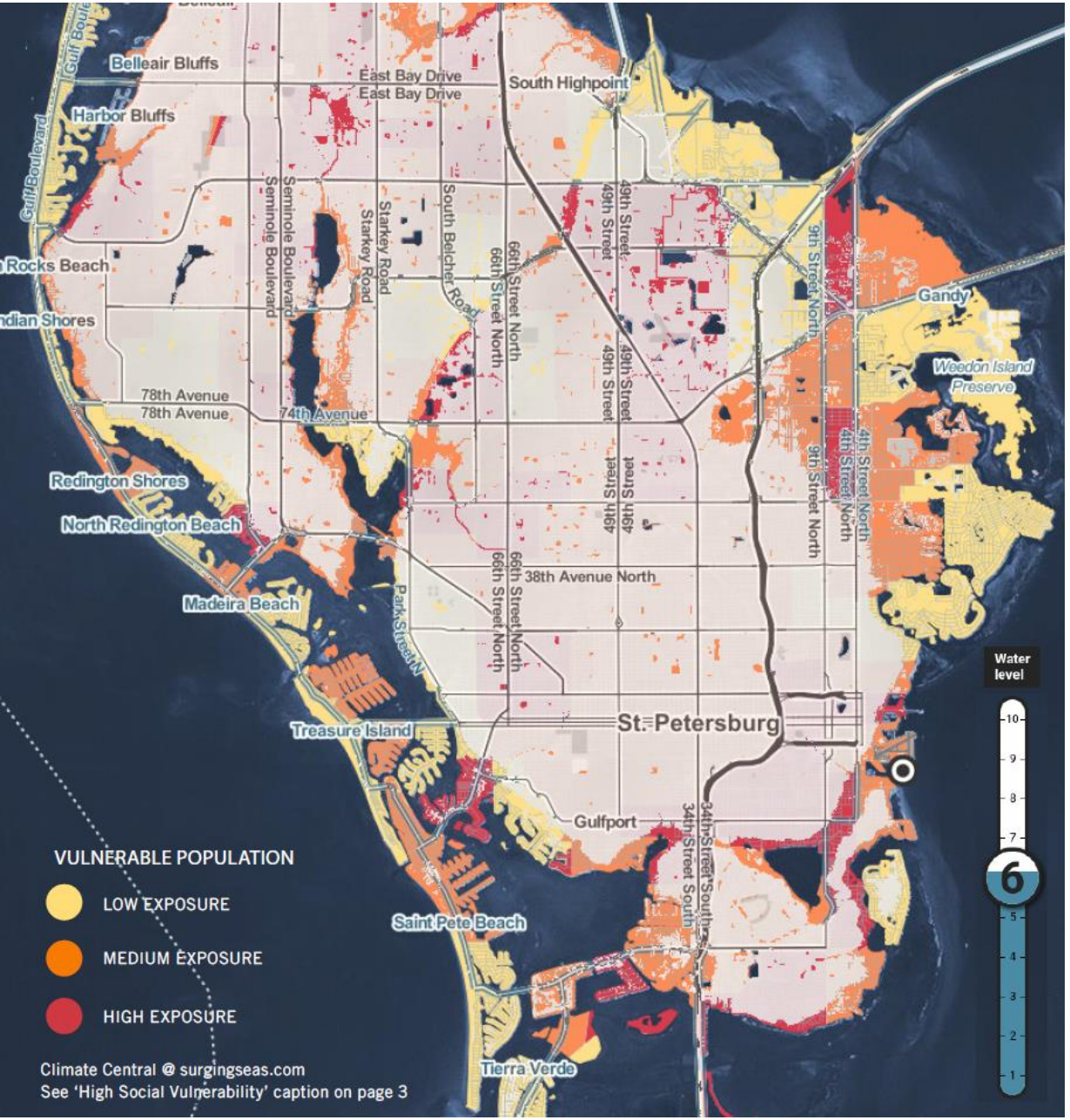
Duke Energy Collaborations

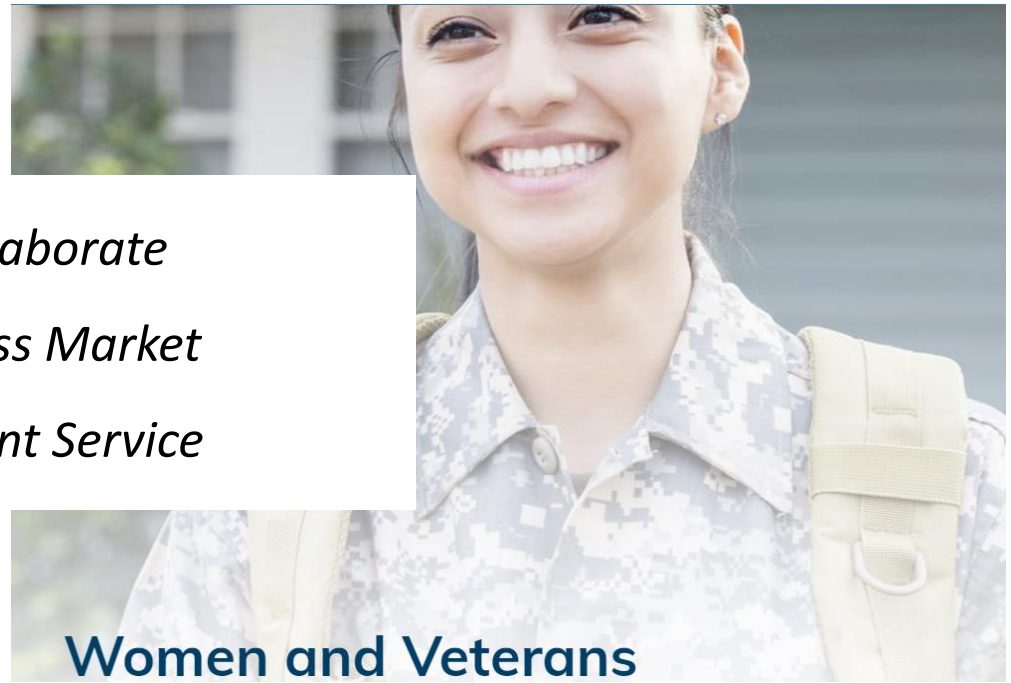
- Clean Energy Connection (CEC)
- MOU
- Project partnerships

EV Readiness Code (coupled w/solar ready + cool roofs)

Expand walking and bicycling networks across the city - Complete Streets Implementation

Expand Transit in connection to the BRT, other multi-modal





- ✓ *Collaborate*
- ✓ *Cross Market*
- ✓ *Client Service*

Women and Veterans

SUMMARY TABLE OF PERFORMANCE MEASURES:

Performance Measure	Year 1 Goal	Results	Year 2 Goal	Results	Year 3 Goal	Results	3-Year Goal	Final Results
Amount of Lending	$500,000	$482,946	$1 MM	$753,833	$1.5 MM	$1,180,746	$3 MM	**$ 2,417,525**
# Projects (Loans Closed)	50	57	100	92	150	114	300	**263**
LMI % "Priority Area"	60%	48%	60%	70%	60%	65%	60%	**63%**
Contractor Sessions	4	4	4	43	4	50	12	**97**
# Contractors	25	84	25	61	25	103	75	**248**
# Community Events	10	55	10	60	10	59	30	**174**
# Participants	100	2,000+	100	3,620	100	2,007	300	**5,627**
# Credit Seminars	2	2	2	2	2	2	6	**6**

A solar co-op success story
2016 - 2020

Homes Installed Solar
220

Total Lifetime Carbon (CO2e) Pollution Offset Metric Tons
31,592.50

Solar Jobs Created
32

kW Installed
2,041

Total $ Invested in Economy
$4,645,656

Lifetime Electricity Savings
$10,003,710

Be a part of the success story, Go Solar with your neighbors.
SolarUnitedNeighbors.org/StPete

SOLAR UNITED NEIGHBORS

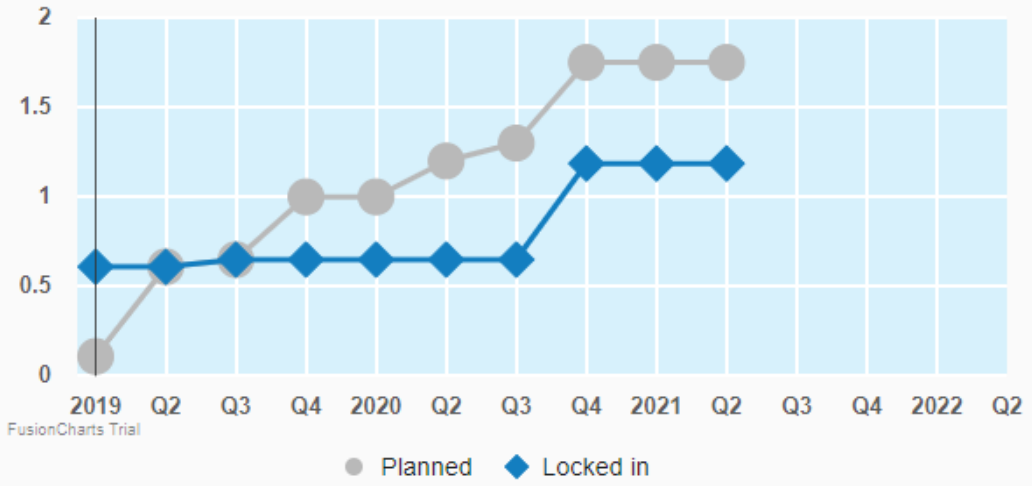
GHG Emissions Reduction Goals

Sector	2016 Emissions (in MMT CO2e)	20% by 2020	40% by 2025
Municipal Operations	87,364	69,891	52,418
Buildings	1,499,433	1,199,546	899,659
Transportation	1,146,805	917,444	688,083
Total	2,733,872**	2,187,097	1,640,323

***Municipal Operations are counted also in community operations, so this total is higher than the community total of 2,693,166 CO2e in 2016. Municipal operations are 3% of community total.*

Trajectory Progress

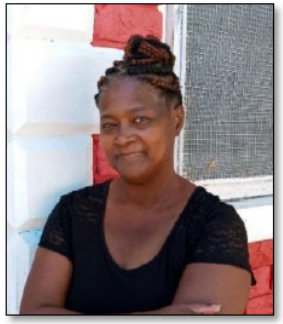
1.75 MW renewable energy capacity (4% muni electric)



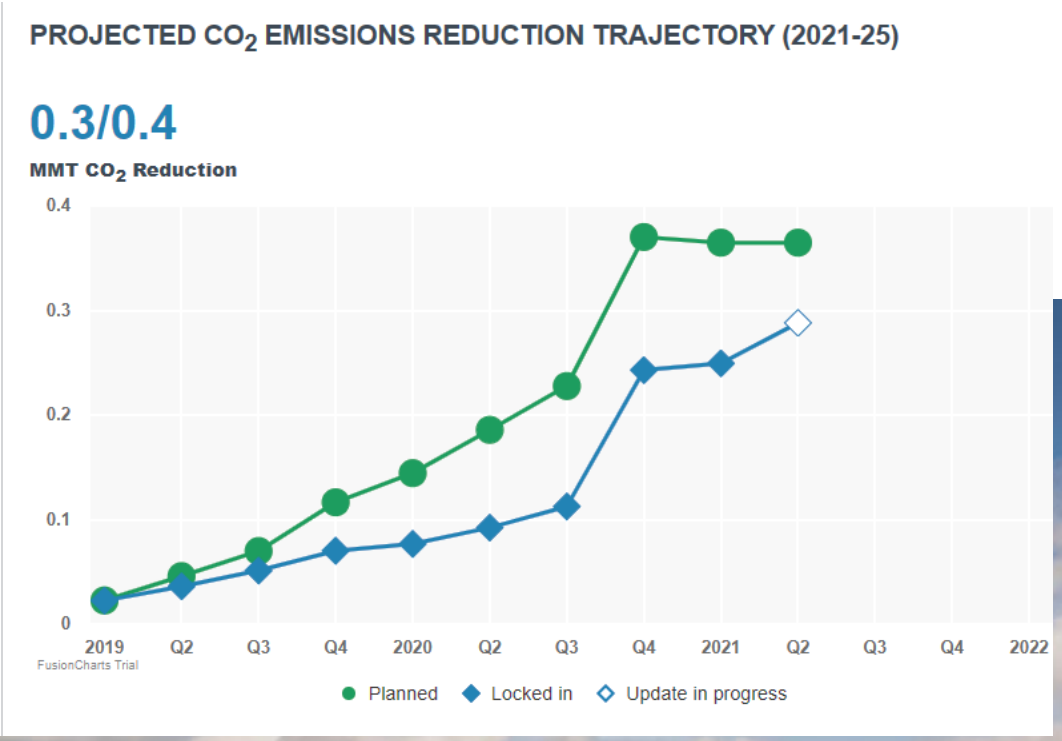
By the People

*As the sole caregiver for a family member, **PATRICIA** fell on hard times. When her air conditioning went out, she didn't know what to do until her contractor recommended SELF. She said, "This was a wonderful experience for me. The loan program manager was wonderful! He always kept me updated on every step that was made, as well as making sure everything went smooth and was done in a timely matter. I am so impressed with the SELF program I have sent information to my family in Georgia; they will be starting the process soon. With my new ac unit, **I am now living like a queen**! Thank you for everything! The SELF program is the best! I can guarantee that!"*

*It's bad enough when you find out that your air conditioner needs to be replaced; but, when **DORA** found out that she also had to replace her duct work and upgrade her electrical panel, she felt hopeless. Then she opened her water bill and found out about SELF. She said, "**I am so happy and blessed** that this company approved me. Everything was great from start to finish. Rob was great and always there when ever I needed something or to ask a question I appreciate everything such a blessing to have air. Thank you"*



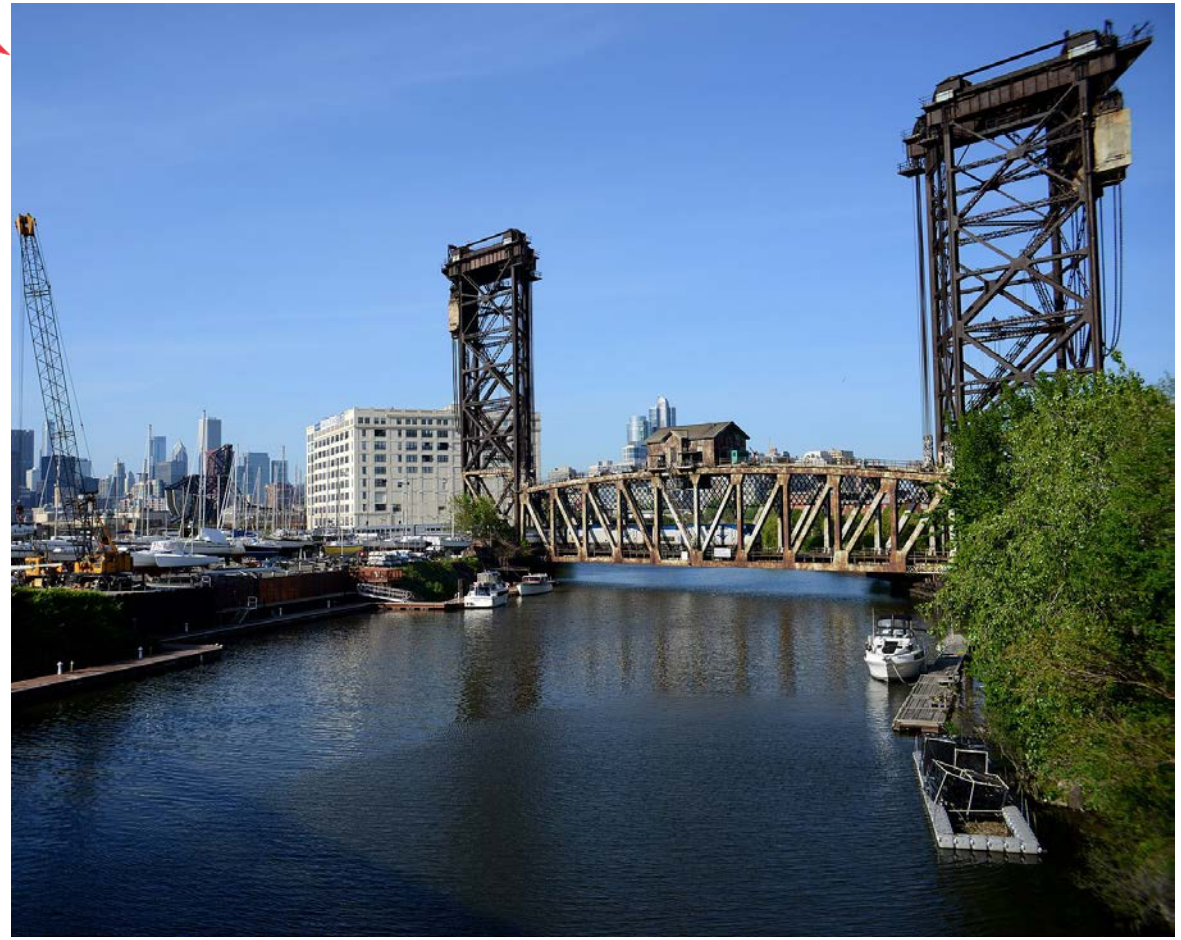
This is Hard – Join Us!



- Vision
- Commitment
- Collaboration
- Cross Market
- Answers
- Collective impact

LEED for Cities – Chicago Green Recovery Agenda

August 2021



A Just and Equitable Climate Future for Chicago

The City of Chicago is reimagining our environment and sustainability priorities to ensure a just and equitable climate future for the City, our communities, and our residents. At a time where Chicago is facing a global pandemic, deep and systemic racial inequities, the downturn of many economic sectors, and the compounding impacts of the climate crisis, we must move toward more visionary agenda that to achieves our climate goals and results in deep, hyper-local benefits for our communities.

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A Just and Equitable Climate Future for Chicago

Address Profound Environmental Challenges

Uphold and Deepen Climate Commitments

Center Equity and Environmental Justice

Generate Economic Benefits for Local Communities

GREEN RECOVERY AGENDA

BUILDING DECARB
Equitably Increase Renewable Energy Use, Building Electrification and Zero Code Adoption

UTILITY FRANCHISE
Negotiate Parallel Energy and Equity Agreement that Prioritizes City Policy Goals

RENWABLE ENERGY TRANSITION
Active Procurement for 100% Renewable Energy by 2025

CLIMATE PLANNING
Develop Framework for Broader Climate Planning Effort Centered on Equity

Equitable Decarbonization

The Built Environment in Chicago account for ~70% of city emissions

Communitywide Goal: Power **100% of buildings** on renewable energy **by 2035**

Advance a Chicago zero net carbon (ZNC) buildings strategy that

- **Lowers** economic burdens on residents and businesses
- **Reduces** energy insecurity for communities of color
- **Uses an equity lens** to assess the costs and burdens of these strategies

Multiple pathways to a building decarbonization strategy

- New construction
- Energy efficiency
- Renewable energy
- Electrification

Policies

Programs

Partners

Electricity Franchise

- The Franchise Agreement has **only been re-evaluated twice in the modern history of Chicago**, 1948, and 1992. Now, after nearly 30 years, we are revaluating again.

- **We owe it to our constituents** to explore the energy landscape to determine if there is another structure that drives reliable and affordable service to the residents and businesses of the City.

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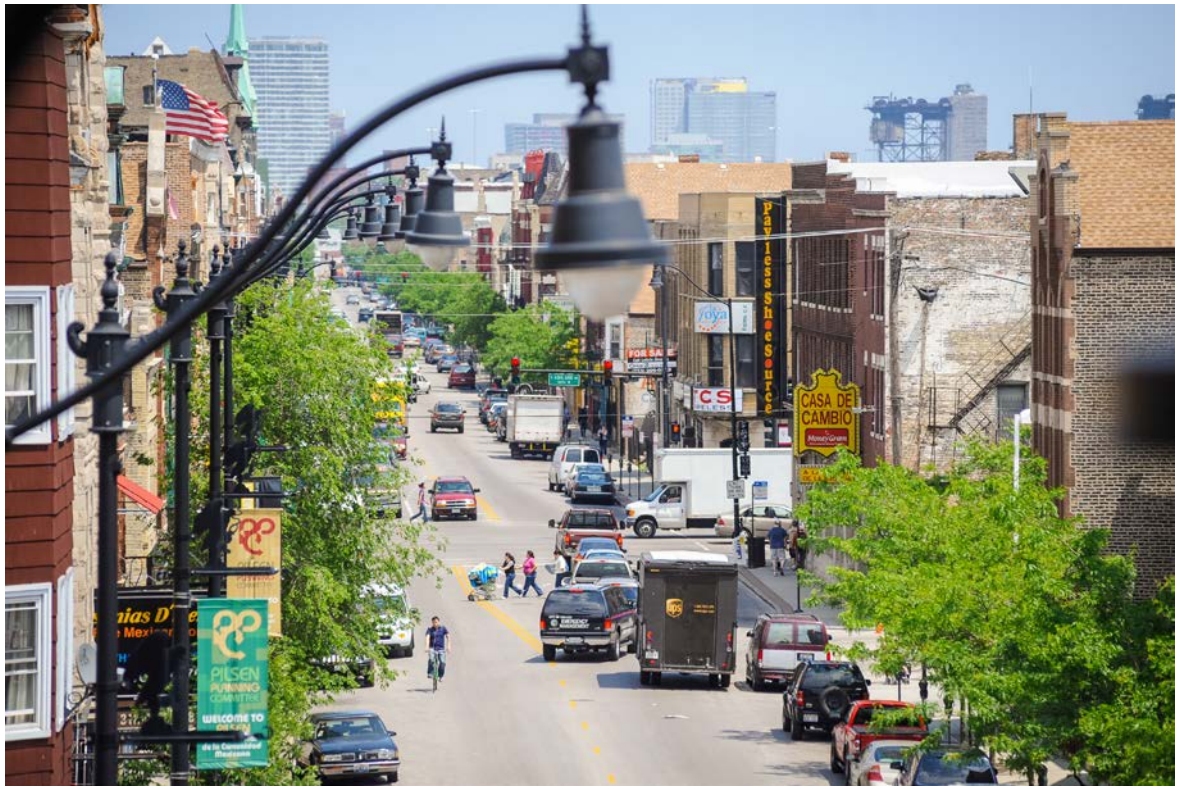
Electricity Franchise- Key Considerations

- Contract term length
- Traditional scope of franchise agreement
- Utility cost assistance for Chicago residents and businesses
- Expanding access to clean energy
- Climate commitments



Energy and Equity Agreement Development

Governance and Transparency

1

- Ethics Reforms
- Inclusive Energy and Equity Agreement Governance Process
- Traditional Ratemaking

Energy and Electrification

2

- Climate and Energy Targets
- Energy Efficiency
- Solar/Distributed Generation Interconnection
- Electric Vehicles and Electrification
- Energy Data Transparency

Equity and Neighborhood Development

3

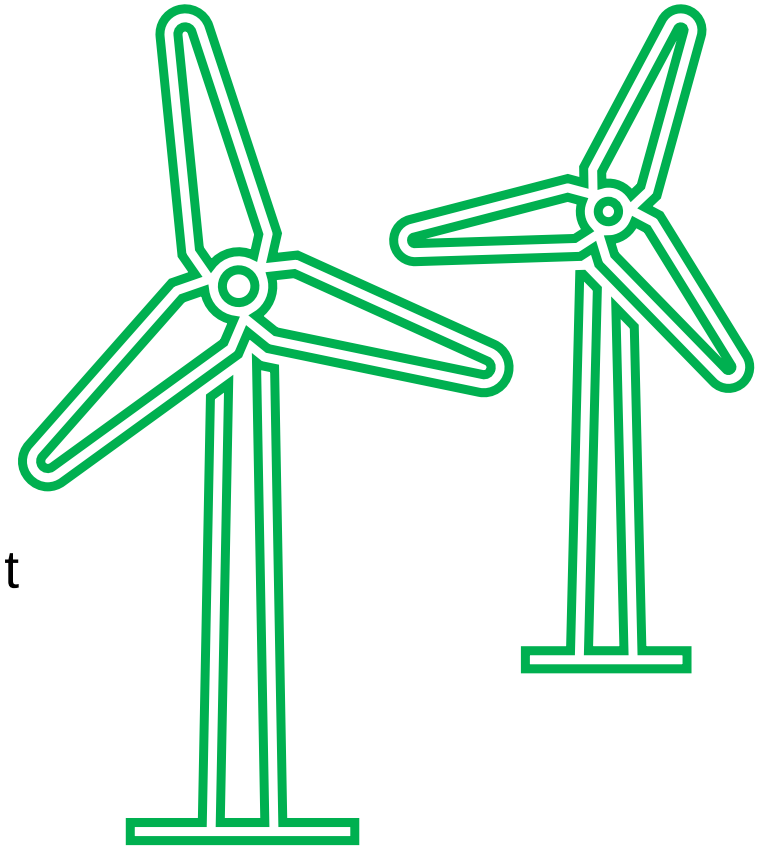
- Eliminate Customer Deposits
- Eliminate Late Fees and Disconnections
- Align Credit and Collection Policies with Customer Ability to Pay
- Facilitate use of LIHEAP Funds
- Workforce Development Initiatives
- Broadband Access

100% RENEWABLE ENERGY RFP

1. A Minimum Requirement for New Renewable Energy Projects

2. Contract Flexibility to Allow for Separable Power Purchase Agreements (PPAs)

3. Integrated Evaluation of Local Economic Development and Equity Benefits



Pathway to a Just Clean Energy Transition

Source: Bloomberg Business 2016

Category	*Description*	*Information / Data to be Completed*
Community benefit and involvement	Value of the proposed community benefit initiatives that benefit Chicago	*Dollar Value*
New Build Renewable Generation Siting – Within Chicago	Portion of new build capacity that will be located within Chicago	MWs of new build capacity
New Build Renewable Generation Siting – Within Chicago	Portion of new build capacity that will be located within PJM territory within IL, not including Chicago	MWs of new build capacity
Local Supply Chain	Revenue to Chicago local suppliers of goods and services related to New Build Renewable Generation	Dollar value
Local Long-Term Jobs	Estimated number of long-term jobs within Chicago associated with New Build Renewable Generation, based on full-time equivalency	Quantity
Local Short-Term Jobs	Estimated number of short-term jobs within Chicago associated with New Build Renewable Generation, based on full-time equivalency	Quantity of jobs and total labor hours
In-State Long-Term Jobs	Estimated number of long-term jobs within Illinois, not including Chicago, associated with New Build Renewable Generation, based on full-time equivalency	Quantity
In-State Short-Term Jobs	Estimated number of short-term jobs within Illinois, not including Chicago, associated with New Build Renewable Generation, based on full-time equivalency	Quantity of jobs and total labor hours
Diversity in Retail Supply Company	Quantity and percentage of women and minorities in ownership, leadership, and senior management positions for the retail supply company	Quantity and percent
Diversity in Developer Companies	Quantity and percentage of women and minorities in ownership, leadership, and senior management positions for the developer companies	Quantity and percent

Chicago Climate Action Plan 2021:

Equitably Benefit individual Chicagoans through Climate Action

Household Savings	Environmental Justice	Community Health

Decarbonization

CHICAGO

Thank You!

Angela Tovar

Chief Sustainability Officer,

City of Chicago

Angela.tovar@cityofchicago.org

Source: Reddit / PantonePat

Moderated Discussion

- What do you think will be some of the most important barriers to overcome over the next 10 years in order to achieve the scale of change needed?
- How have you seen the conversation change on clean energy and climate change in your cities? How has this influenced your work?
- What advice would you offer local governments contemplating committing to 100% renewable energy? How should they get started?

Q&A

Thank you for joining us!

- **Review the Renewable Energy credit in the LEED Credit Library,** www.usgbc.org/credits
- **Reach out to our team via email:** cities@usgbc.org
- **Visit our website for tools and resources:** usgbc.org/leed/rating-systems/leed-for-cities

U.S. GREEN BUILDING COUNCIL
USGBC