

CITY COUNCIL

The City of Orange Township, New Jersey

DATE May 21, 2024

NUMBER 288-2024

TITLE: RESOLUTION TO ADOPT THE CITY OF ORANGE TOWNSHIP COMMUNITY ENERGY PLAN (CEP) AS PART OF THE NEW JERSEY BOARD OF PUBLIC UTILITIES CEP GRANT PROGRAM

WHEREAS, New Jersey Board of Public Utilities (NJBPU) authorizes and oversees the NJCEP program and has created a Community Energy Plan Grant program for municipalities to develop a community energy plan (CEP) to meet the goals of the New Jersey Energy Master Plan; and,

WHEREAS, New Jersey’s Energy Master Plan: Pathway to 2050 (“EMP”) established that community-level action is necessary to achieve the state’s goals of 100% clean energy by 2050; and

WHEREAS, Community Energy Planning is the process by which communities collaboratively select and strategically implement emission-reducing initiatives that fulfill the EMP goals (“Process”); and,

WHEREAS, by way of Resolution No. 137-2022 the City applied for and was awarded a grant from the NJBPU to formulate a Community Energy Plan, and;

WHEREAS, the City of Orange Township is invested in developing a community energy plan to help the state achieve its goals of 100% clean energy by 2050; and,

WHEREAS, the CEP was presented at a community meeting, and subsequently posted on the City’s website, where stakeholders were invited to submit feedback, comments and/or questions; and,

WHEREAS, the resulting Community Energy Plan will help the City of Orange Township plan for and invest in renewable energy and to work towards a better environment for all residents by using the state’s Energy Master Plan (“EMP”) as a guide to develop sustainable strategies that increase clean energy production, reduce energy use, and cut emissions.

NOW, THEREFORE, BE IT RESOLVED, the City of Orange Township Municipal Council officially adopts the City of Orange Township Community Energy Plan as the guiding document to continue to improve energy efficiency in the City of Orange Township.

Adopted: May 21, 2024

Joyce L. Lanier
Municipal Clerk

Tency A. Eason
Council President



CITY COUNCIL

The City of Orange Township, New Jersey

DATE March 1, 2022

NUMBER 137-2022

TITLE: A RESOLUTION OF THE MUNICIPAL COUNCIL OF THE CITY OF ORANGE TOWNSHIP, COUNTY OF ESSEX, STATE OF NEW JERSEY, AUTHORIZING THE SUBMISSION OF AN APPLICATION TO THE NEW JERSEY CLEAN ENERGY PROGRAM COMMUNITY ENERGY PLANNING GRANT PROGRAM

WHEREAS, a sustainable community seeks to ensure that its environmental, economic and social objectives are balanced and mutually supportive; and

WHEREAS, the City of Orange Township strives to assure clean land, air and water for current and future generations; and

WHEREAS, New Jersey's Energy Master Plan: Pathway to 2050 ("EMP") established that community-level action is necessary to achieve the state's goal of 100% clean energy by 2050; and

WHEREAS, the New Jersey's Board of Public Utilities (NJBPU) has created a Community Energy Plan Grant program for municipalities to develop a community energy plan to meet the goals of the state's Energy Master Plan; and

WHEREAS, the City of Orange Township is invested in developing a community energy plan to help the state achieve the goal of 100% clean energy by 2050; and

WHEREAS, the Community Energy Plan Grant program will help the City of Orange Township to plan for and invest in renewable energy to work towards a better environment for all residents by using the state's Energy Master Plan (EMP) as a guide to develop sustainable strategies that increase clean energy production, reduce energy use, and cut emissions; and

WHEREAS, the Municipal Council of the City of Orange Township has determined that the City of Orange Township should apply for the aforementioned Community Energy Plan Grant program; and

WHEREAS, the City of Orange Township will commit to providing staff support for the duration of the Community Energy Planning process, including for gathering of relevant data and for convening at least two public meetings.

NOW, THEREFORE, BE IT RESOLVED, that the Municipal Council of the City of Orange Township, State of New Jersey, authorizes the submission of the aforementioned application to the NJBPU Community Energy Plan Grant program.

BE IT FURTHER RESLOVED, that if said application is approved, the City of Orange Township is hereby authorized to accept award of grant funds.


A. MITRATH
CITY ATTORNEY

Adopted: March 1, 2022

Joyce Lanier
City Clerk

Kerry Coley
Council President

City of Orange Township Community Energy Plan May 2024



Table of Contents

- I. Introduction
- II. Community Overview
 - Population Characteristics
 - Electricity and Natural Gas Usage
 - Greenhouse Gas Emissions
 - Municipal Facilities Work History
- III. Work Plan
 - Strategy 1: Reduce Energy Consumption and Emissions from the Transportation Sector
 - 1.2 Train First Responders on EVs and EVSE
 - 1.4 Purchase Alternative Fuel Vehicles
 - 1.6 Install Public EV Charging Infrastructure
 - Strategy 2: Accelerate Deployment of Renewable Energy and Distributed Energy Resources
 - 2.11 Support Community Solar as a Project Ambassador
 - 2.12 Support Community Solar as an Outreach Coordinator
 - Strategy 3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand
 - 3.1 Upgrade Energy Efficiency in Municipal Facilities
 - 3.2 Residential Energy Efficiency Outreach Campaign
 - 3.3 Commercial Energy Efficiency Outreach Campaign
 - Strategy 6: Support Community Energy Planning and Action with an Emphasis on Encouraging and Supporting Participation by Low- and Moderate-Income and Environmental Justice Communities
 - 6.3 Support Shared Mobility Programs
- IV. References
- V. Data Resources

Introduction

The City of Orange Township is committed to addressing climate change and reducing greenhouse gas emissions. This Community Energy Plan details the specific strategies that the City of Orange will pursue in the coming years to reduce greenhouse gas emissions from the local energy system. The Plan covers municipal operations such as the municipal vehicle fleet and buildings, as well as public policies and programs designed to support the community in reducing emissions.

The City of Orange Township Municipal Council will consider the adoption of this Community Energy Plan on May 21, 2024. During the creation of this plan, the City has provided several opportunities for public input, taking care to enable low- and moderate-income residents to participate. A draft of the Plan is posted on the City's website. The City has taken efforts to allow for public comments from residential stakeholders.

Starting in 2022, the City's Department of Planning and Economic Development began reviewing the Sustainable Jersey Guide for Sustainable Energy Communities and Community Energy Plan Workplan Template and meeting with municipal staff to determine how to prioritize and implement the high-impact initiatives. Relevant community data was gathered from the Sustainable Jersey Data Center. The City presented a draft of the Plan to its Green Team. The final Community Energy Plan is expected to be adopted by resolution on May 21, 2024.

The City of Orange's Community Energy Plan establishes how the municipality will promote the transition to sustainable energy over the next several years. Initiatives were selected based on demonstrated effectiveness, unique local opportunities, and co-benefits for the community as a whole, such as improved local air quality, energy savings for residents, and workforce development.

Climate change is one of the greatest threats to our future prosperity in the City of Orange, and globally. New Jersey is both a significant source of greenhouse gas (GHG) emissions and a state particularly vulnerable to climate change. Increasing heat waves, intense storms, and sea-level rise caused by climate change will dramatically alter our coastal state for many years to come (NJDEP, Scientific Report on Climate Change). According to the New Jersey Department of Environmental Protection's NJ Greenhouse Gas Emissions Inventory Report, New Jersey adds almost 100 million metric tons of CO₂e to the atmosphere annually. New Jersey can mitigate the local and global impacts of climate change with a rapid transition from the current GHG-intensive energy system to one that optimizes energy use and produces energy with minimal GHG emissions.

Recognizing New Jersey's role in climate change mitigation, the State of New Jersey has established a goal of 100% clean energy in the state by 2050. The New Jersey Energy Master Plan: Pathway to 2050 outlines the state's strategies for achieving that goal while also addressing issues of social and economic inequity. To promote action at the local level in support of the state's goals, the New Jersey Board of Public Utilities (NJBPU) launched the Community Energy

Plan Grant Program, offering support and funding for municipalities to develop a Community Energy Plan. The City of Orange Township received the Community Energy Plan Grant and completed this Plan as a participant of the grant program.

If you would like to offer comments, or have questions about the draft plan, please email Christopher Mobley, Deputy Director of Planning and Economic Development at cmobley@orangenj.gov.

Community Overview

The City of Orange Township is a 2.2 square mile community of 11,895 households located in Essex County. According to the 2020 US Census American Community Survey, the racial composition of Gotham's 30,570 residents is 13% White, 66% Black, 1% Asian or Pacific Islander, 19% multiracial or "other," and 28% of the population is Hispanic/Latinx.

The City of Orange's median household income is \$43,422, with 21.9% of households below the U.S. poverty threshold. The City of Orange's Municipal Revitalization Index (MRI) score, a measure of a municipality's economic conditions, is 59 out of a possible 100, which ranks 21st of New Jersey's 564 municipalities (Sustainable Jersey Community Profile Data by Municipality).

Population Characteristics for The City of Orange Township

Population	Households	Median Household Income	Percentage of Population in Poverty	MRI Score	MRI Rank
30,570	11,895	\$43,422	21.9%	59	21

Table 1. 2020 Population Characteristics for The City of Orange Township.

Source: Sustainable Jersey. Community Profile Data by Municipality

*MRI = Municipal Revitalization Index (MRI)

Electricity and Natural Gas Usage

Most electricity and natural gas use is currently associated with buildings. Utility companies generally organize electricity and natural gas use into four sectors – residential, commercial, industrial, and street lighting. The commercial sector includes nonprofits and government entities such as schools and municipal buildings, as well as businesses.

As illustrated in the charts on the next page, the commercial sector accounts for the majority of electricity use in the township. For natural gas, the City of Orange's residential sector accounts for the most use. This data shows us that all sectors present an opportunity for energy use reductions.

Amount of Electricity Purchased by Sector (kWh)

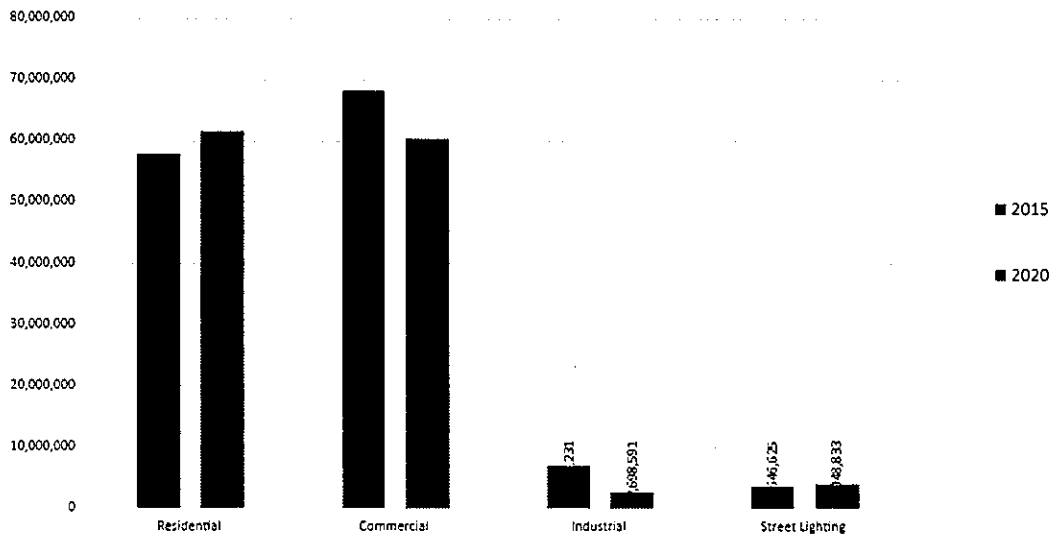


Chart 1. Amount of Electricity Purchased by Sector (kWh)

Source: Sustainable Jersey. Aggregated Community-Scale Utility Energy Data

Note: electricity values represent purchased electricity and do not include customer-generated electricity, such as from rooftop solar.

Amount of Natural Gas Purchased by Sector (Therms)

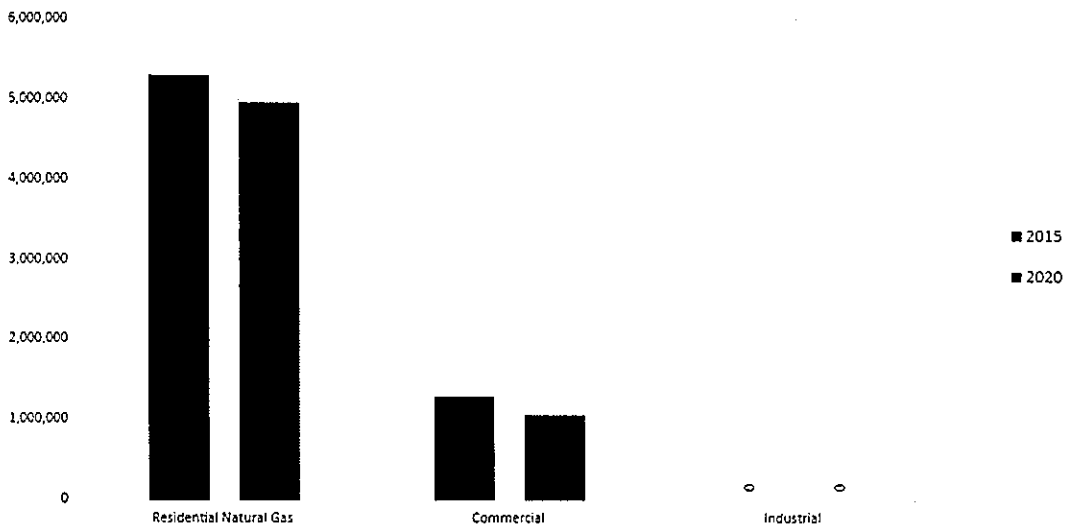


Chart 2. Amount of Natural Gas Purchased by Sector (Therms)

Source: Sustainable Jersey. Aggregated Community-Scale Utility Energy Data

Community GHG Emissions from Energy Use

In 2020, the total community-wide greenhouse gas emissions from electricity, natural gas/heating fuel, and transportation energy use in The City of Orange was 168,713 metric tons CO₂e. The largest share of community emissions came from On-Road Vehicles, followed by Residential Natural Gas Use.

2020 Community-Scale Energy-Related GHG Emissions by Sector and Energy Type (MT CO₂e)



Chart 3. Overall GHG Emissions of The City of Orange by Subsector

Source: Sustainable Jersey. Community-Scale Greenhouse Gas (GHG) Emissions Data

Municipal Facilities Work History

The City of Orange has participated in multiple NJCEP Energy Efficiency Programs, as listed in the table below. Energy efficiency work in municipal buildings involves a systematic process starting with the identification of buildings for audit. Trained auditors then conduct thorough assessments, collecting data on energy usage and building systems to identify inefficiencies. Opportunities for improvement, such as upgrading lighting or optimizing HVAC systems, are identified, and a cost-benefit analysis is conducted to prioritize measures. A detailed report with recommendations and an action plan is prepared for implementation, involving resource allocation and coordination with facility managers. Through these efforts, The City of Orange aims to reduce operating costs, lower their emissions, and demonstrate their commitment to sustainability.

Year	Program Type	Program Name	Investment	Energy Savings
2009	Audit	Local Government Energy Audit	\$5,813	28,777
2009	Audit	Local Government Energy Audit	\$9,650	47,450
2009	Audit	Local Government Energy Audit	\$3,706	13,428
2009	Audit	Local Government Energy Audit	\$3,706	10,000
2009	Audit	Local Government Energy Audit	\$3,706	10,328
2009	Audit	Local Government Energy Audit	\$2,516	4,297
2011	Work	Direct Install	\$16,362	10,000
2011	Work	Direct Install	\$8,377	10,000
2012	Work	Direct Install	\$26,485	10,000
2021	Audit	Local Government Energy Audit		

Work Plan

The City of Orange Community Energy Plan is primarily an implementation and action plan. This section details all of the initiatives selected as township priorities for the next [four years (2024-2028)]. These initiatives will generate significant greenhouse gas emissions reductions for both municipal operations and the wider community while providing numerous local co-benefits, such as improved air quality and creation of local jobs.

The initiatives are organized by the Strategies of the New Jersey Energy Master Plan: Pathway to 2050. Each Strategy section includes one or more initiatives. Implementation details are provided for each initiative, including the initiative lead person/entity, the timeframe for implementation, and any significant obstacles to successful implementation.

Strategy 1: Reduce Energy Consumption and Emissions from the Transportation Sector

- 1.1 Adopt Supportive Zoning and Regulations for EV Infrastructure
- 1.2 Train First Responders on EVs and EVSE
- 1.4 Purchase Alternative Fuel Vehicles
- 1.6 Install Public EV Charging Infrastructure

Strategy 2: Accelerate Deployment of Renewable Energy and Distributed Energy Resources

- 2.11 Support Community Solar as a Project Ambassador
- 2.12 Support Community Solar as an Outreach Coordinator

Strategy 3: Maximize Energy Efficiency and Conservation and Reduce Peak Demand

- 3.1 Upgrade Energy Efficiency in Municipal Facilities
- 3.2 Residential Energy Efficiency Outreach Campaign
- 3.3 Commercial Energy Efficiency Outreach Campaign

Strategy 6: Support Community Energy Planning and Action with an Emphasis on Encouraging and Supporting Participation by Low- and Moderate-Income and Environmental Justice Communities

- 6.3 Support Shared Mobility Programs

Initiative 1.1: Adopt Supportive Zoning and Regulations for EV Infrastructure

Initiative Summary: Pass NJDCA’s Model Statewide Municipal EV Ordinance specifying electric vehicle charging stations (EVSE) as a permitted accessory use, establishing the permitting process for charging stations, and requiring Make-Ready and EVSE parking in new multifamily developments and parking lots. Modify the model ordinance standards for safety, signage, etc. as needed.

Priority	Start Date	Anticipated Length
High	July 2024	6 Months

Current Status/Community Notes:

Initiative Lead Contact: Chris Mobley
cmobley@orangenj.gov

Departments Involved:

- City of Orange Municipal Council/Attorney
- Department of Planning and Economic Development
- Township Administrator
- Law Department

Measures of Success:

- Reasonable Standards language modified and finalized
- Ordinance is passed

Next Steps:

1. Elected representatives direct municipal attorney to add City of Orange-specific information to Model Statewide Municipal EV Ordinance and edit the “Reasonable Standards” section to fit municipal needs.
2. Elected representative introduces ordinance to the elected body for review and approval.
3. Township Administrator works with code official to post permitting application and inspection processes on the municipal website

Initiative 1.2: Train First Responders on EVs and EVSE

Initiative Summary: To further public confidence and maintain emergency preparedness, require training on electric vehicles and associated infrastructure for local first responders.

Priority	Start Date	Anticipated Length
Medium	April 2024	6 Months

Current Status/Community Notes: The City of Orange completed training through insurance companies on EV + EV charging

Initiative Lead Contact: *Derrick Brown*
dbrown@orangenj.gov
862-347-8995

Departments Involved: - *City of Orange Fire Department*
- *Department of Planning and Economic Development*

Measures of Success: - Training held for each relevant department
- Policy established for ongoing training

Next Steps:

1. Chief investigates multiple options for a fire safety training program
2. Distribute program and schedule dates/times trainings will be held, and identify who needs to have them
3. Create procedure for any new staff to receive

Initiative 1.5: Replace existing municipal fleet vehicles with plug-in hybrid, battery electric, or other sustainable alternative fuel vehicles, using fleet analysis to inform purchases.

Initiative Summary: Replace existing municipal fleet vehicles with plug-in hybrid, battery electric, or other sustainable alternative fuel vehicles, using fleet analysis to inform purchases.

Priority	Start Date	Project Duration
High	Summer 2024	12 Months

Current Status/Community Notes: No charging on fleet property, no electric vehicles in the municipal fleet currently. Have a fleet inventory completed.

Initiative Lead Contact:

Marty Mayes
mmayes@orangenj.gov
Chris Mobley
cmobley@orangenj.gov

Department of Public Works

- DPW
- Department of Planning and Economic Development
- Finance
- Law Department

Department of Public Works

- First battery electric vehicle added to municipal fleet
- Fleet charging infrastructure installed for municipal vehicles
- First heavy-duty electric vehicle added to municipal fleet
- 2 salters as priority
- Light duty truck for municipal fleet

Department of Public Works

1. Look at the existing municipal fleet and identify possible vehicles that could be replaced with EVs, typically vehicles that are driven more/use more fuel are more cost-effective to electrify.
2. Build support among the intended user of the vehicle
3. Think about how the vehicle will be charged, see initiative 1.6.
4. Shop for an EV (co-op, contract, go out to bid?) Use AFV Procurement guide in resources for research.
5. Apply for incentives and identify funding pathway

Initiative 10: Electric Vehicle Charging Infrastructure

Initiative Summary: Install electric vehicle charging infrastructure, including chargers, signage, and safety and accessibility features, for public use.

Priority	Start Date	Anticipated Length
High	Summer 2024	1 Year

Initiative Description: Municipality has a plan to add EV Chargers to several municipal and public parking lots. We believe that we will target one municipal lot that needs other improvements first. Lot under consideration is the public lot adjacent to the DPW Garage.

City has an interest in implementing EV charging infrastructure on Main Street.

Initiative Lead Contact: Marty Mayes
mmayes@orangenj.gov
Chris Mobley
cmobley@orangenj.gov

Departments Involved:

- DPW
- Planning Department
- Administration
- Communications
- Finance

Initiative Objectives:

- DPW lot (24 S. Center Street), looking at performing upgrades on parking lot
- Update City's Master Plan to include EV charging

Initiative Tasks:

- DPW will do initial site evaluation to see what electricity is available. Will look for:
 - Meter (note the meter number)
 - Ensure sufficient space in panel for needed circuitry.
 - Each charger will have a dedicated circuit.
- How far is the ideal parking space from the panel (take pictures of the site.)

If meter/Panel is not available, reach out to PSEG for make-ready grant.

Initiative 2.11: Support Community Solar as Project Ambassador

Initiative Summary: Facilitate connections between community solar developers and the local site owner, anchor subscribers, nonprofit sponsors, and/or affordable housing property owners. Municipalities can lend credibility to the multi-benefit opportunity of a potential community solar project.

Priority	Start Date	Anticipated Length
High	Fall 2024	6 - 12 months

Current Status/Community Notes: Planning on participating as an outreach coordinator, but there is currently one project available in the City of Orange. Plan on using this initiative to expand community solar projects in the city.

Initiative Lead Contact: Chris Mobley
cmobley@orangenj.gov

Departments Involved:

- Department of Planning and Economic Development
- DPW
- City Engineering
- Finance Department
- Communications

Measures of Success:

- Adding a new project to The City of Orange
- Anchor subscribers established
- Project partner underwrites subscription fees for LMI residents

Next Steps: The city engineer is performing a survey on all public parking lots to determine ownership

DPW lot (24 S. Center Street), looking at performing upgrades on parking lot (~76,000sqft), potential for community solar canopy

Initiative 2.12: Support Community Solar as Outreach Coordinator

Initiative Summary: Use municipal resources and networks (mailing lists, websites, etc.) to educate the community about community solar in general and the details of local projects (e.g., subscription rates and requirements).

Priority	Start Date	Anticipated Length
Medium	Fall 2024	6-9 Months

Current Status/Community Notes: The City of Orange is currently participating in the PSEG Residential Track and will be having multiple outreach events occurring in the program. Planning on pair-bonding the community solar outreach at these events to promote community solar efforts.

Initiative Lead Contact: Chris Mobley, Sharee Harrison

Departments Involved: Office of Planning and Development
City of Orange Green Team

Measures of Success:

- Create a successful plan for outreach materials for Community Solar
- Host a successful marketing communication campaign
- Community solar promoted by outreach partners via their networks
- Promotion on social network platforms/cable channel
- Local community solar information posted to municipal website
- Project managers report uptake of community solar subscriptions in City of Orange

Next Steps:

1. Invite subscriber organizations eligible in the City of Orange to a green team meeting to discuss outreach materials for the municipality
2. Identify and contact event coordinators for tabling/outreach opportunities in fall community events (HarvestFest, Halloween, Trunk or Treat)
3. Host educational events for municipality, faith-based community
4. Passing a resolution listing community criteria

Initiative 1: Upgrade municipal facilities to be more energy efficient.

Initiative Summary: Upgrade municipal facilities to be more energy efficient. New Jersey's Clean Energy Program and electric and natural gas utilities offers incentive programs that guide municipalities through the upgrade process, starting with free audits to establish the most effective measures to reduce energy use. Following implementation, showcase upgrades in energy efficiency outreach to local commercial entities.

Priority	Start Date	Anticipated Length
High	Fall 2024	12-18 Months

Initiative Description: The City of Orange is exploring a joint ESIP with the school district. If this does not occur, the City will still pursue energy efficiency upgrades using the utility programs.

Initiative Lead Contact: Chris Mobley
cmobley@orangenj.gov

Departments Involved:

- Department of Planning and Economic Development
- QPA (Qualifying Purchasing Agent)
- DPW
- Law Department
- Finance Department
- Board of Education
- City of Orange Council Members

Initiative Objectives:

- Completing the joint ESIP with the school district
- Realize 20% annual energy savings for one building
- Realize 20% annual energy savings across the municipal building portfolio
- Sign agreement with school district for ESIP
- Issue RFP for contractor
- complete installation of new windows at City Hall

Initiative Milestones:

- Have meeting with school board to discuss next phase of ESIP planning
- Investigate utility operated funding resources/programs

Initiative 3.2: Residential Energy Efficiency Outreach Campaign

Initiative Summary: Implement an outreach effort to help residents take advantage of energy efficiency incentive programs offered by New Jersey's electric and natural gas utilities, including Home Performance with ENERGY STAR and Comfort Partners.

Current Status/Community Notes: Initiative already being implemented

Municipality is currently participating in PSEG Partnership Program Residential Outreach track.

Initiative 3.3: Commercial Energy Efficiency Outreach Campaign

Initiative Summary: Implement an outreach effort to help local businesses take advantage of energy efficiency incentive programs offered by New Jersey's electric and natural gas utilities, including the Direct Install program.

Priority	Start Date	Anticipated Length
Medium	Summer 2024	6 months

Current Status/Community Notes: Municipality is a part of the PSEG Partnership Program Residential Track, considering to move to the commercial track of the program once the residential campaign is complete

Initiative Lead Contact: Chris Mobley, cmobley@orangenj.gov

Departments Involved:

- Planning/Econ Dev Department
- Communications Department
- Administration
- Green team

Measures of Success:

- Outreach team training with Sustainable Jersey
- 5-8% of businesses participate in Direct Install program during the campaign
- Commercial business contact with PSEG

Next Steps:

- Apply to PSEG Partnership Program Commercial Track

Initiative Summary:

Promote and develop shared transportation networks of cars, bikes, scooters, etc. with design features that particularly assist low- and moderate-income residents. Encourage shared transportation services to expand access in low-income neighborhoods and provide low-income membership options.

<p>Priority</p> <p>High</p>	<p>Start Date</p> <p>Fall 2024</p>	<p>Anticipated Length</p> <p>12 Months</p>
<p><i>Last Mile Transit/Shuttle Bus Project: High</i></p> <p><i>EV Carshare: Medium</i></p>	<p><i>Last Mile Transit/Shuttle Bus Project: Currently in progress</i></p> <p><i>EV Carshare: Winter 2023/Spring 2024</i></p>	<p><i>Last Mile Transit/Shuttle Bus Project: 12-16 months</i></p> <p><i>EV Carshare: 12-16 months</i></p>

Current Status/Community Notes: Municipality is funded to receive two (2) buses for shuttle program. City is in the process of completed Title VI Plan.

Initiative Lead Contact: Chris Mobley, cmobley@orangenj.gov

Departments Involved:

- Planning/Econ Dev Department
- Communications Department
- Administration
- Department of Public Works
- Finance

Measures of Success:

- Agreement/contract established with NJT for buses
- Funding is appropriated to fund shuttle program
- Buses are delivered to the City

Next Steps:

- Complete Title VI, Drug and Alcohol, ADA and program operating budget; RFP, public survey/outreach of interest for EV carshare programs

References

EIA (U.S. Energy Information Administration). 2021. *New Jersey State Profile and Energy Estimates*. <https://www.eia.gov/state/analysis.php?sid=NJ>.

NJDEP (New Jersey Department of Environmental Protection). 2020. *New Jersey Scientific Report on Climate Change At-A-Glance*. <https://www.nj.gov/dep/climatechange/pdf/scientific-report-on-climate-change-at-a-glance.pdf>.

NJDEP. 2020. "Transportation and Emissions." <https://www.nj.gov/dep/ages/oepa-trans-emissions.html>.

NJDEP. 2021. *New Jersey Environmental Justice Mapping Tool*. <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=34e507ead25b4aa5a5051dbb85e55055>.

NJDEP. 2022. *NJ Greenhouse Gas Emissions Inventory Report Years 1990-2019*. https://dep.nj.gov/wp-content/uploads/ghg/2022-ghg-inventory-report_final-1.pdf

NREL (National Renewable Energy Laboratory). 2018. "Research and Analysis Demonstrate the Lack of Impacts of Glare from Photovoltaic Modules." <https://www.nrel.gov/state-local-tribal/blog/posts/research-and-analysis-demonstrate-the-lack-of-impacts-of-glare-from-photovoltaic-modules.html>.

SEIA (Solar Energy Industries Association). 2022. "Top 10 Solar States." <https://www.seia.org/research-resources/top-10-solar-states-0>.

State of New Jersey. 2018. *New Jersey's Railroad Network*. <https://www.state.nj.us/transportation/refdata/gis/maps/RailRoadlines.pdf>.

State of New Jersey. 2020. *2019 New Jersey Energy Master Plan: Pathway to 2050*. State of New Jersey. https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf.

Data Sources

Almost all data used in this plan is sourced from the [Sustainable Jersey Data Center](#).

Section, Map, or Table	Original Sources	Link to Data
General Information Section	U.S. Census American Community Survey (ACS)	SJ Community Profile Data by Municipality
Amount of Electricity Used by Sector (kWh) Chart	NJ Investor-Owned Utilities	SJ Aggregated Community-Scale Utility Energy Data
Amount of Natural Gas Used by Sector (Therms) Chart	NJ Investor-Owned Utilities	SJ Aggregated Community-Scale Utility Energy Data
Greenhouse Gas (GHG) Emissions Charts	SJ GHG Emissions by Municipality	SJ Community-Scale Greenhouse Gas (GHG) Emissions Data
Energy Efficiency Projects Completed by Municipality Data	NJCEP Data	SJ NJCEP Local Government Projects 2008-2021