# CLEAN ENERGY DRAFT REPORT
# FOR
# Westtown Township

DRAFT 7/29/2021

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## EXECUTIVE SUMMARY

This Energy Transition Plan (CLEAN ENERGY REPORT) focuses on municipal operations as the first step in the energy and efficiency planning and implementation process.

The Introduction (1.0) and Scope of Work and Statement of Purpose (2.0) explain the background and reasons addressing the issues of energy policy and management. Section 3.0 suggests an approach to the implementation of actions related to Township operations and policy making.

In Section 4.0, information for achieving an energy transition in the Township is defined and explained with tables and graphs of energy use. Electricity and natural gas in buildings are responsible for 58% and 21% of the total energy use of the township, respectively. Gasoline and diesel motor fuel are responsible for 3% and 14% of the total energy use of the township, respectively. The information in this section points to priority areas to be addressed to save energy and manage costs. The summary of energy management practices recommends benchmarking, utility bill audits, energy efficiency building profiles and audits, building retrofits, the conversion of the municipal to electric vehicles and other areas to be addressed.

Section 5.0 describes goals and recommendations with detailed actions and timelines focused on Township facilities and operations.

Section 6.0 focuses on the Township's role in providing the support and guidance for enabling policies and regulatory mechanisms which will encourage and promote energy efficiency, the transition to electric vehicles and renewable electricity procurement and production. These include planning, the zoning code, building codes for efficiency, benchmarking and the transportation sector. Energy consumption for residential is 30%, commercial sector is 29%, and transportation is 36%. This will guide energy policy decisions as they affect energy use in these sectors.

Section 7.0 focuses on supporting community outreach, education, and advocacy. The community is residents, schools, businesses, and all energy consumers. The goal is to promote and educate about best energy practices to everyone and to recognize community partners in the planning process.

Section 8.0 presents a tabular summary of recommended actions by the Westtown EAC with suggested timeframes in which to conduct them. The thrust of these actions is to:

1. Conduct a detailed energy audit for municipal operations and establish a township energy management plan that includes benchmarking and bill audits.
2. Prepare for a gradual but steady transition of the municipal vehicle fleet to electric vehicles (EVs) or other zero emission vehicles (ZEVs).

3. Review and update township ordinances for zoning, codes, benchmarking, encouraging renewable energy, and high efficiency energy net zero expectations for new construction.
4. Establish a budget that will include energy transition planning and implementation costs, including an energy reinvestment savings plan.
5. Planning for the electrification of municipal buildings and operations.
5. Conduct community outreach, education, and advocacy to promote energy efficiency best practices, education of the need and benefits, and collaborate with and recognize community partners who are leading the way in Westtown Township.

# 1.0 INTRODUCTION

As a municipality which has joined with our neighbors in the West Chester Area Council of Governments (WCACOG) to develop a shared intention to reach 100% clean, renewable energy by 2035 for electricity and 2050 for heat and transportation, this report and its recommendations provide several strategies that represent an initial energy transition plan for municipal operations and for the community. These strategies will help our community reduce greenhouse gas (GHG) emissions, effectively deploy taxpayer dollars, and advance community goals for health and safety, economic vitality, and energy.

The report is designed to support our Board of Supervisors in selecting actions which achieve:

- increased efficiency of energy use, which will not only reduce the amount of energy needed but will also reduce the costs of energy,
- the transition to efficient electric energy for both heating of buildings and operation of motor vehicles, and
- the transition from fossil fuel-generated electricity to electricity generated by renewable sources.

The scale of intervention required to reduce and adapt to the effects of climate change will require action at all levels of government and society. International accords to limit overall carbon emissions will involve national governments. Across the country, there are now more than 165 municipalities, 10 counties and 9 states with similar targets in line with the international agreement on climate change mitigation. In total, over 100 million people in the United States now live in a community with an official 100% renewable electricity target. Westtown, by virtue of its participation in the WCACOG Cadmus study, was an early leader in the national municipal movement to set aggressive emissions reduction targets.

There is increasing unanimity from every level of government regarding the need for a transition to clean, efficient renewable energy:

- The Paris Climate Agreement signed by 197 countries pledges to achieve the emission reductions needed to limit the global temperature rise to less than 2.0 degrees Celsius and make every effort to keep the increase below 1.5 degrees Celsius.
- The Biden administration proposes to set the United States on a path to achieve net zero emissions of greenhouse gases by 2050 with interim dates for interim progress.
- Pennsylvania has set aggressive energy and climate goals, including meeting a 26 percent reduction in GHG emissions by 2025, and 80 percent reduction in GHG emissions by 2050.
- The Delaware Valley Regional Planning Commission’s (DVRPC) long-range plan supports a goal to reduce regional GHG emissions by 60 percent by 2040, which will put our region on track to achieve an 80 percent reduction in GHG emissions by 2050. DVRPC's Office of Energy and Climate Change Initiatives leads, supports, and coordinates efforts to reduce energy consumption and GHG emissions in our region.

- The Chester County Climate Action Plan advocates an 80% reduction in GHGs by 2050 in line with the state goal.
- WCACOG approved the Cadmus study and its recommendations in 2020.

This Clean Energy Report builds on the approved Cadmus study and addresses the challenges and opportunities of the coming decades related to public and private investment, jobs creation, public health concerns, energy reliability and independence, and climate disruption as it applies to our current energy consumption patterns. The Clean Energy Report recommends changes that will support the Township of Westtown and its residents, businesses, and other community stakeholders in recognizing the breadth of these challenges and then pursuing the steps outlined to enhance the economic, social, and environmental foundations of the community, and by extension the region, state, nation and the world.

The conversion to clean, renewable energy will provide direct and indirect benefits to the Township of Westtown. Early steps include energy efficiency measures to be assessed and implemented where the return on investment is within an acceptable range. Typically, these measures will provide net savings within a few years, savings that can then be rolled back into further efficiency investments as well as renewable energy installations. It will create investments in local infrastructure that will improve sustainability and create jobs. And, at the national level, the transition to clean, renewable energy will save U.S. citizens hundreds of billions of dollars annually in reduced cost of air pollution[1], which will translate to billions of dollars annually in southeastern Pennsylvania and improve the health of residents.

This report and the recommendation were prepared by members of the Westtown EAC in consultation with other EACs and SACs members in the WCACOG.

The following sections of this report present:

- A statement of purpose (Section 2.0),
- Recommendations for implementation of recommendations for municipal operations (Section 3.0)
- Information for achieving an energy transition in the Township energy (Section 4.0),
- Recommendations for leading by example (Section 5.0)
- Support and Guidance for Enabling Policies and Appropriate Regulatory Mechanisms (Section 6.0), and
- Additional useful materials (Appendices).

[1] How much does air pollution cost the U.S.?, Center for Air Quality, Climate, and Energy Solutions (CACES) at Carnegie Mellon University (CMU), 2016, https://earth.stanford.edu/news/how-much-does-air-pollution-cost-us#gs.2xjx59.

# 2.0 SCOPE OF WORK AND STATEMENT OF PURPOSE

Municipalities are limited in the extent that they can address energy transition issues because many of the legislative and regulatory powers needed to address these issues reside in the county, state, and federal governments. Powers such as large-scale energy policy, vehicle efficiency standards, and state-approved building energy efficiency standards are beyond the jurisdiction of local government.

Westtown Township is committed to playing its role at the local level to promote energy efficiency and the transition to renewable energy through the best means at our disposal. These include:

- Leading by example: The Township will implement energy efficiency measures and shift its energy sources to renewable energy as expeditiously as possible.
- Support and guidance: The Township will undertake changes to its planning, zoning code, road system, and other aspects of municipal governance as allowed by law that affect energy usage throughout the community.
- Reducing roadblocks: The Township will consider implementing changes to reduce roadblocks for climate-positive investments and encourage adoption of energy transition programs and investments by residents, institutions, and businesses.
- Public education: The Township will collaborate with other municipalities in the WCACOG (and independently as appropriate) to provide information and encouragement to all stakeholders in the community to increase energy efficiency and make the transition to the use of renewable energy.
- Applying for grants: The Township will seek grants from state/federal programs or nonprofits that subsidize some aspect of projects for energy transition.

## 2.1 ENERGY TRANSITION RECOMMENDATIONS FOCUS

These recommendations focus primarily on Township operations as part of Westtown's commitment to leading by example and reducing roadblocks. It also provides guidance and high-level recommendations for community emissions reduction.

The goal of this report is to actively mitigated GHG emissions related to fossil fuel use within municipal operations and the wider community. We recognize that these are not the only contributors to GHG emissions. We also recognize that there are other strategies that will need to be undertaken to complement those recommended in this report.

Although this report addresses mitigation, we also recognize the importance of preparing to adapt to climate disruption already affecting us. Adaptation, which refers to adjusting to a changing climate, is not addressed in this report. We recommend that the EAC oversee the development of a plan that will help our community reduce our vulnerability to the harmful

effects of climate change (droughts, flooding, outages, and damages from more intense extreme weather events) in the near future. This could take the form of a new working group or be folded into the work of Westtown's Hazard Mitigation Plan. We hope Westtown will pursue participation in and respond to the upcoming Chester County Hazard Mitigation Plan.

## 2.2 Guiding Principles for Clean Energy Planning

All municipalities find themselves in the midst of a transition to clean, efficient renewable energy. This section discusses the principles for this transition.

The following are the guiding principles and general goals which form the foundation for the recommendations being made. Our intention is to provide an integrated approach for recommendations and actions:

- Appropriate *stewardship* of energy resources, incorporating best practices in energy conservation and energy efficiency efforts, which are the most cost-effective ways of reducing energy consumption. They can significantly reduce energy use in our Township facilities as well as buildings in the wider community and in our transportation systems. These strategies comprise the early steps of this Clean Energy Report and are central to its structure.
- *Redirection* in capital investment: The stakeholders of the Township of Westtown spend almost $24 million annually on electricity, natural gas, propane, heating oil, gasoline and diesel fuel. This Clean Energy Report recommends changes in our energy consumption patterns to efficient, clean sources of energy.
- Emphasis on stimulating new economic activity or *job generation*: Renewable energy projects create good paying, stable, local jobs. The economic downturn of 2020 requires that the creation of new, good paying jobs be foremost in our planning. This Clean Energy Report factors job creation into the actions recommended by emphasizing efficiency measures and prioritizing renewable energy produced in Pennsylvania and our region.
- *Public health*: This Clean Energy Report strives to maximize the health benefits provided by the transition from our fossil fuel-based economy to a renewable energy economy. Elimination of air contaminants by reducing and replacing polluting energy sources is one of the goals of this Clean Energy Report. Decisions made in this decade will have a lasting impact on the health and well-being of current and future residents.
- *Social fairness*: This Clean Energy Report considers the impacts of the energy transition on local economic and environmental conditions community wide. While Westtown Township is largely a higher income community compared to others in the state, many people do not have the financial stability or resources to qualify for loans needed to invest in home weatherization improvements and renewable energy installations. They will require support, which must be seen as maintaining the overall public good. Another group of citizens that will need fair and equitable treatment are those whose livelihoods are eliminated by the transition, such as many of the workers in energy extraction and refining and related support industries. Job training and adequate

community support programs must be developed to smooth the transition for these workers, some of whom are employed in the southeastern Pennsylvania region.

- *Climate stabilization*: This Clean Energy Report addresses the need to immediately reduce and ultimately eliminate human-generated greenhouse gases, enabling the Township of Westtown to do its part in the world-wide effort to rein in the continuing increase in average global temperature which has destabilized our climate.
- *Energy independence*: This Clean Energy Report endeavors to make the municipality and the larger community more self-reliant through energy efficiency and conservation and on-site renewable energy development, allowing for reductions of imported fuels.
- *Inclusion* of all stakeholders: This Clean Energy Report invites and welcomes the participation of all sectors within the Township. Working with WCACOG and it's Clean Energy Future working group, we will work to integrate community stakeholder input as part of the community wide voluntary action development process.
- *Coordination* with other governments: This Clean Energy Report uses the Cadmus study as a starting point and we fully support collaboration either individually or in groups at the county or regional levels, to develop aggregated planning strategies.

# 3.0 Implementation for Municipal Operations and Policies Recommendations

Westtown Township will want to consider strategies that will be effective in managing Township energy use (leading by example), providing guidance and support through policy making and reducing roadblocks that may exist in current policies. The following section describes one approach to implementing this plan.

## 3.1 Establishment of a Clean Energy Management Working Group

A municipal Clean Energy Management Working Group of the EAC could be designated to work closely with the Township manager and other staff to oversee the development and subsequent implementation of this plan. The Clean Energy Management Working Group's charge would be to:

- Plan for and coordinate energy transition related recommendations approved by the Board of Supervisors
- Monitor the implementation of adopted initiatives
- Prepare and undertake procedures to maintain the effectiveness of changes made
- Research and plan for new initiatives as the energy transition proceeds
- Coordinate funding and financing for related projects.

This last point is an important part of the work of this working group. Funding is often needed to enable implementation. The DSIRE website provides a fairly complete listing of existing funding sources for energy efficiency and renewable energy projects in Pennsylvania. Alternatively, the Township could consider local financing mechanisms such as the following:

- Allocate funds for staff time to work on actions
- Prepare requests for the annual budget process
- Develop local bank partnerships
- Consider a bond
- Partner with other municipalities or county agencies
- Develop an energy savings reinvestment plan: Establishing an Energy Savings Reinvestment Plan allows future projects to be internally self-funded. These plans can be set up so that up to 80% of a project's savings goes to the energy fund to pay for future energy efficiency projects, while the remaining amount is returned to the Township's general fund.

## 3.2 CONSULTATION

The Westtown Borough through the Clean Energy Management Working Group will consult and coordinate with:

- Township departments including Public Works, Code Enforcement and Zoning, Trash and Recycling, and Police.
- WCACOG
- PECO
- SEPTA
- Relevant Chester County departments

## 3.3 REPORTING AND MONITORING

The Clean Energy Management Working Group would report monthly to the EAC and to the Board of Supervisors Council on a quarterly basis.

# 4.0 Information for Achieving Energy Transition in Westtown Township Operations

## 4.1 Introduction

Pennsylvania has historically been a major producer and consumer of energy and is currently responsible for 1% of the entire global emissions of greenhouse gases. All municipalities within the state need to contribute to the emissions reductions necessary to eliminate GHG emissions by 2050 or earlier. The identification of the emissions of GHGs in each municipality is a first step in this effort.

The purpose of creating an energy profile is to establish a municipal energy baseline, as well as to identify the significant energy users in the area. These baselines include all relevant sectors and serve as starting points for the analysis of potential program and policy recommendations. The data for this baseline was assembled from our municipal accounts with PECO and third party vendors, consultations with Township staff, and the wealth of information available from the Delaware Valley Regional Planning Commission (DVRPC).

As part of the Clean Energy Report, this section provides the energy use and GHG emissions of the municipal operations for calendar year 2019. This data serves as the baseline year for the Clean Energy Report. The review includes energy usage and GHG emissions from electricity, natural gas, gasoline, and diesel oil in the buildings, the wastewater collection system, motor vehicles, and outdoor and traffic lighting. Emissions from the West Chester Area School District are not included.

## 4.2 Municipal Operations Baseline

As part of the Clean Energy Transition planning process, we assembled a snapshot of municipal energy use by looking at 2019 data. This data serves as the baseline year for this report and recommendations for Westtown Township.

### 4.2.1 Electricity

The electricity we use in Westtown is generated within the regional electricity grid, and several entities are collectively responsible for providing our electricity:

- PJM Interconnection: PJM operates the regional electricity grid and wholesale electricity marketplace, ensures reliability of the electricity grid, and conducts long-term planning for the future of electricity generation and transmission across 13 states and the District of Columbia.

- Pennsylvania Public Utilities Commission (PUC): Electricity is regulated at the state level by the PA PUC. The PUC sets rates (which influence how much your electricity costs) and manages programs to improve energy efficiency and promote renewable electricity.
- PECO: PECO is the distribution company in our area. While all customers can choose electricity suppliers through the PUC's PAPowerSwitch website, PECO is the sole distributor of electricity to area homes and businesses.
- Our current electricity generation supplier is: Constellation Energy

### 4.2.2 Westtown's Municipal Operations Energy Profile

According to the information received from PECO, the total annual electricity consumption of the municipality in 2019 was 847 megawatt-hours (MWh). The cost of the electricity was estimated to be approximately $71,000. The total annual natural gas consumption of the municipality in 2019 was 1,020,000 cubic feet of gas, costing approximately $79,000. Municipal motor vehicles consumed 1,712 and 6,158 gallons of gasoline and diesel fuel, respectively, at a total cost of approximately $20,000.

**The largest energy user and source of GHG emissions from municipal operations is the municipal complex**, which consists of the police building the township building at 1041 and 1039 Wilmington Pike. In 2019, it consumed 397 megawatt-hours of electricity and 397,000 cubic feet of natural gas, resulting in the emission of 171 metric tons of GHGs or 38% of the total emissions from municipal sources.

**The second largest energy user and source of GHG emissions from municipal operations is the public works complex and communication tower** located at 10 East Pleasant Grove Road. In 2019, it consumed 271 megawatt-hours of electricity and 590,000 cubic feet of natural gas, resulting in the emission of 133 metric tons of GHGs or 29% of the total emissions.

**The motor vehicles owned and operated by the Township are the third largest energy user** and source of GHG emissions. In 2019, they consumed 1,712 gallons of gasoline and 6,158 gallons of diesel fuel, resulting in the emission of 76 metric tons of GHGs or 17% of the total emissions from municipal sources.

**The sewage pump station located at 1147 South Concord Road** is the fourth largest energy user and generator of GHG emissions. In 2019, it consumed 109 megawatts of electricity, resulting in the emission of 41 metric tons of GHGs or 9% of the total emissions.

**These four sources account for over 93% of the emissions of GHGs by the Township.** The remainder of the energy usages by the Township consists of electrical service to pump station, parks, and other minor Borough installations. Figure 1 presents the 2019 energy use snapshot.

**Graphic 1 - 2019 Energy Use Snapshot**

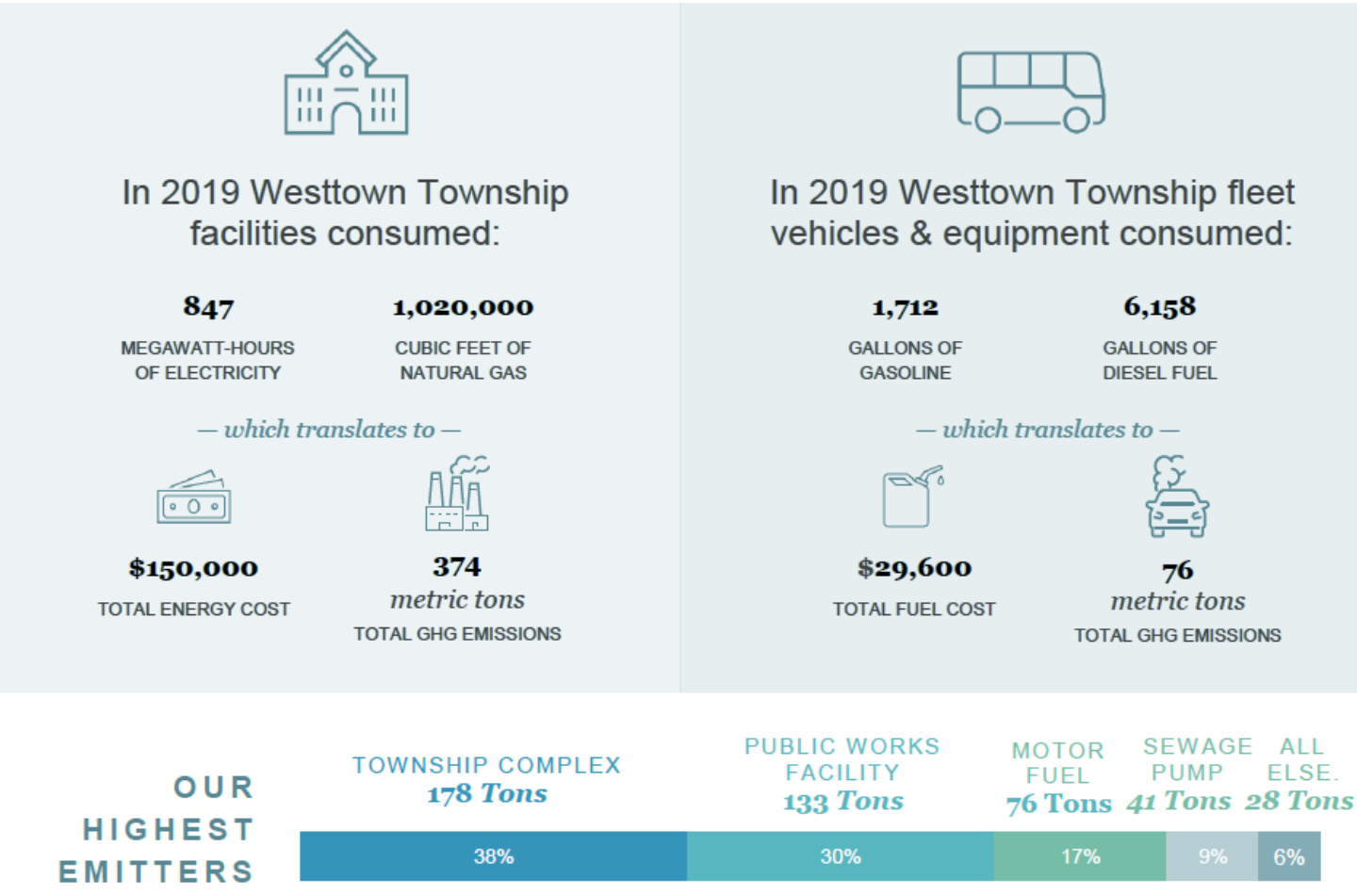
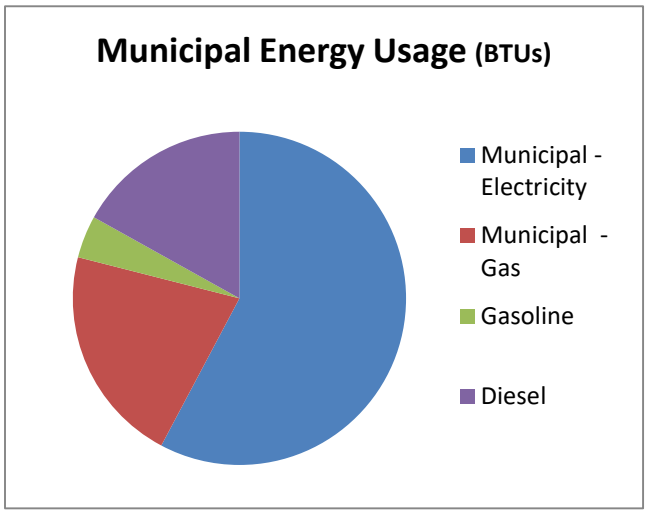



**Figure 1**
**Municipal Energy Usage and GHG Emissions**



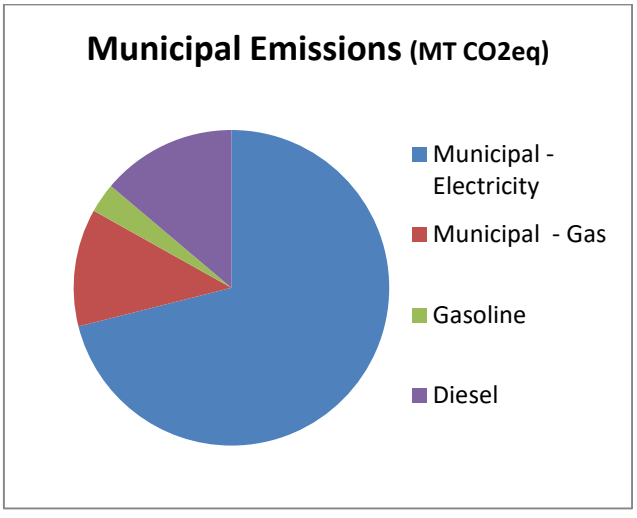



Table 1 presents the 2019 usage of electricity and gas for all Township facilities.

**Table 1**
**Municipal Electricity Usage**

| Facility Nickname | Total Annual Electric Consumption (kWh) | Total Annual Gas Consumption (Ccf) | Liquid Fuels (gallons) | Facility Type | Street Address |
|---|---|---|---|---|---|
| Gasoline | | | 1,712 | | |
| Diesel Fuel | | | 6,158 | | |
| WESTTOWN TWP T A T A POLICE | 335,103 | | | Government Office | 1041WILMINGTON PIKE |
| WESTTOWN TWP PUBLIC WORKS | 147,219 | 4,680 | | Property Management | 10E PLEASANT-GROVE RDPUBLIC WORKS |
| WESTTOWN TOWNSHIP | 123,652 | 1,234 | | Government Office | 10E PLEASANT-GRV RDCOMM TOWERS |
| WESTTOWN TWP SUPV SEWAGE PUMP STATION | 108,805 | | | Other-Utility | 1146S CONCORD RD |
| WESTTOWN TWP PUBLIC WORKS | 62,051 | 1,321 | | Government Office | 1039WILMINGTON PIKE |
| WESTTOWN TOWNSHIP MUNICPAL AUTHORITY | 22,777 | | | Other-Utility | 0SHILOH RDPUMP |
| WESTTOWN TWP | 22,212 | | | Government Office | 1646W CHESTER PIKE |
| WESTTOWN TWP PUBLIC WORKS | 10,022 | 305 | | Other-Utility | 0PLEASANT-GROVE RDPUMP STA |
| WESTTOWN TOWNSHIP T A PUMPING STATION | 8,811 | 7 | | Other-Utility | 0TRELLIS LNPMP STN |
| WESTTOWN TOWNSHIP | 3,591 | | | Government Office | 0S SAGE RD |
| WESTTOWN TWP PUBLIC WORKS | 2,340 | | | Property Management | 1026S CONCORD RD |
| WESTTOWN TWP | 1 | | | Government Office | 0THORNE DR |
| WESTTOWN TOWNSHIP | 0 | | | Government Office | 0LTL-SHILOH RD |
| WESTTOWN TWP | | 2,651 | | Government Office | 1041WILMINGTON PIKEPOLICE |
| **TOTAL** | **846,585** | **10,197** | **7,870** | | |

Table 2 presents a summary of the GHG emissions generated by municipal operations.

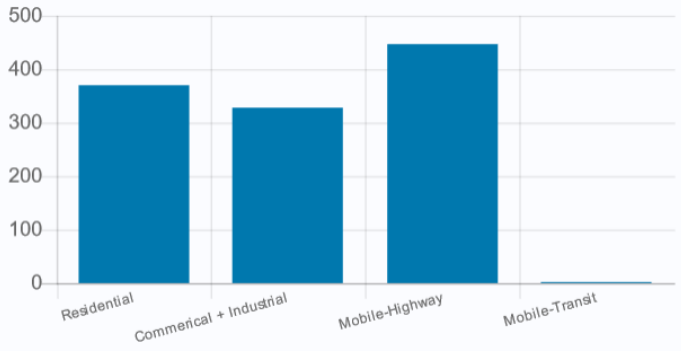
**Table 2**
**Municipal Greenhouse Gas Emissions**

| Facility Nickname | Facility Type | Street Address | Carbon Emissions from Electricity | Carbon Emissions from NG | Liquid Fuel Emissions | Total Carbon Emissions |
|---|---|---|---|---|---|---|
| Gasoline | | | | | 13.76 | 13.76 |
| Diesel Fuel | | | | | 62.64 | 62.64 |
| WESTTOWN TWP T A T A POLICE | Government Office | 1041WILMINGTON PIKE | 127.37 | | | 127.37 |
| WESTTOWN TWP PUBLIC WORKS | Property Management | 10E PLEASANT-GROVE RDPUBLIC WORKS | 55.96 | 23.99 | | 79.94 |
| WESTTOWN TOWNSHIP | Government Office | 10E PLEASANT-GRV RDCOMM TOWERS | 47.00 | 6.33 | | 53.32 |
| WESTTOWN TWP SUPV SEWAGE PUMP STATION | Other-Utility | 1146S CONCORD RD | 41.36 | | | 41.36 |
| WESTTOWN TWP PUBLIC WORKS | Government Office | 1039WILMINGTON PIKE | 23.58 | 6.77 | | 30.36 |
| WESTTOWN TOWNSHIP MUNICPAL AUTHORITY | Other-Utility | 0SHILOH RDPUMP | 8.66 | | | 8.66 |
| WESTTOWN TWP | Government Office | 1646W CHESTER PIKE | 8.44 | | | 8.44 |
| WESTTOWN TWP PUBLIC WORKS | Other-Utility | 0PLEASANT-GROVE RDPUMP STA | 3.81 | 1.56 | | 5.37 |
| WESTTOWN TOWNSHIP T A PUMPING STATION | Other-Utility | 0TRELLIS LNPMP STN | 3.35 | 0.03 | | 3.38 |
| WESTTOWN TOWNSHIP | Government Office | 0S SAGE RD | 1.37 | | | 1.37 |
| WESTTOWN TWP PUBLIC WORKS | Property Management | 1026S CONCORD RD | 0.89 | | | 0.89 |
| WESTTOWN TWP | Government Office | 0THORNE DR | 0.00 | | | 0.00 |
| WESTTOWN TOWNSHIP | Government Office | 0LTL-SHILOH RD | 0.00 | | | 0.00 |
| WESTTOWN TWP | Government Office | 1041WILMINGTON PIKEPOLICE | 0.00 | 13.59 | | 13.59 |
| TOTAL | | | 321.77 | 52.27 | 76.40 | 450.44 |

TABLE 3 **ENERGY AND EMISSIONS PROFILE FOR WESTTOWN TOWNSHIP, CHESTER COUNTY, PA (DVRPC FROM 2015)**

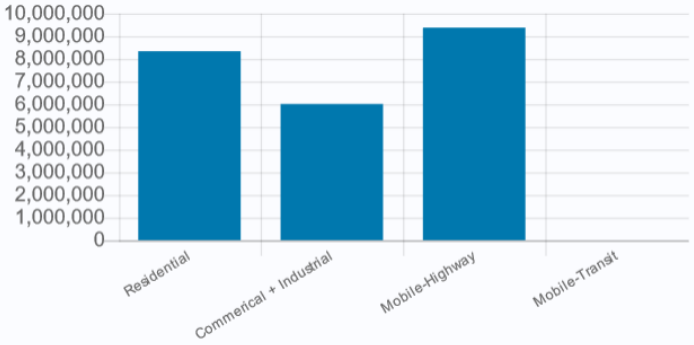
**Energy Use By Sector**

| Sector | Energy Use (BBTU) | % |
|---|---|---|
| Residential | 370 | 32% |
| Commercial & Industrial | 328 | 29% |
| Mobile-Highway | 447 | 39% |
| Mobile-Transit | 2 | <1% |
| **Total** | **1,147** | **100%** |



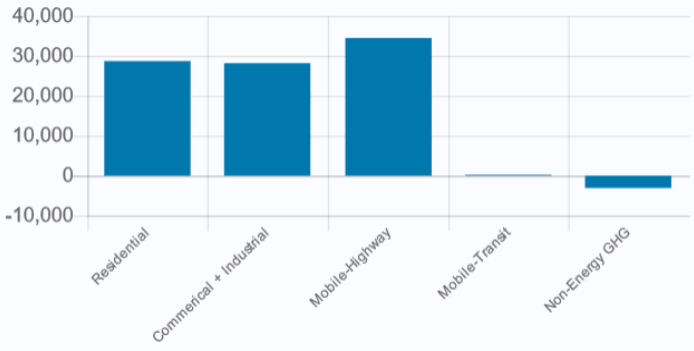

**Energy Expenditures By Sector**

| Sector | Expenditures (Dollars) | % |
|---|---|---|
| Residential | 8,338,135 | 35% |
| Industrial & Commercial | 6,011,465 | 25% |
| Mobile-Highway | 9,377,726 | 40% |
| Mobile-Transit | N/A | 0% |
| **Total** | **$23,727,326** | **100%** |




**GHG Emissions by Sector**

| Sector | Emissions ($MTCO_2e$.) | % |
|---|---|---|
| Residential | 28,700 | 32% |
| Industrial & Commercial | 28,171 | 32% |
| Mobile-Highway | 34,481 | 39% |
| Mobile-Transit | 202 | <1% |
| Non-Energy GHG | -3,099 | -4% |
| **Total** | **88,456** | **100%** |




## 4.2.3 Summary

The energy review found that in the 2019 year, municipal operations generated a total of 450 metric tons of carbon dioxide equivalent ($MTCO_2e$), which were broken up into four general areas: the municipal township and police building complex (171 $MTCO_2e$, 38%), the public works area (133 $MTCO_2e$, 29%), motor fuels (76 MTCO2 e, 17%), the sewage pump station (41 $MTCO_2e$, 9%), and all other facilities (28 $MTCO_2e$, 7%)

The GHG emissions from the municipal operations (450 $MTCO_2e$) are a small percentage of the total GHG emissions within the municipality (as shown in Table 3). The municipal emissions constitute 0.47% of the total emissions. Nevertheless, the municipality can lead by example, providing direct experience of the decision-making process and emission reduction options, and acquiring the knowledge to support energy transition projects in other sectors of the economy within the municipality.

## 4.3 Energy Efficiency. Energy Management Practices, and Energy Management Information

We also examined current energy management practices including benchmarking, audits, procurement practices, status of energy consuming systems (HVAC, lighting, etc.), types of energy purchased, among others. The results of this review are summarized here.

### 4. 3.1 Benchmarking

Westtown currently does not benchmark energy use for the municipal facilities. Energy benchmarking is considered a best practice because it establishes reference points for measuring energy performance. It provides an indication of the relative performance of the facility and helps prioritize poor performing facilities for immediate improvement.

### 4.3.2 Utility Bill Audit

Westtown has not recently conducted a utility bill audit.

The purpose of an energy bill audit is to find errors or overcharges in energy bills. If a bill is inaccurate, we may be overpaying. Some managers pay the utility bills without review or are unclear as to how to review bills for accuracy. An in-depth utility expense audit requires a consultant or someone with a moderate amount of experience who will analyze your bills and determine whether there are any incorrect charges (i.e.: classification, surcharges, tariffs, taxes, demand charges, etc.) which can be refunded. All utility bills, such as gas, water, and electric, can undergo an audit and potentially result in cost savings. Industry wide it is estimated that invoices may be off an average of 10%.

### 4.3.3 Energy Efficiency Building Profiles and Audits

The municipality operates various facilities that use electricity, as shown in Table 1. Most of the electricity used in these facilities is consumed at three locations, the township police and building complex, the public works area and communication tower, and the sewage pump station at 1146 South Concord Road. Therefore, an energy analysis of these facilities offers the greatest opportunity for achieving energy reductions and cost savings.

An energy efficiency audit of Township facilities has not been performed on any of the municipal facilities.

None of the Township facilities have been commissioned or recommissioned in the last 10 years.

A new building is "commissioned" when it undergoes a quality assurance process**.** Ideally, this begins during design and continues through construction, occupancy, and operations. The purpose of commissioning is to ensure that a new building is operating as intended. It also confirms that building staff are prepared to operate and maintain the building's systems and equipment. Existing buildings are "recommissioned" when a consultant conducts a systematic process of improving an existing building's performance by identifying and implementing relatively low-cost operational and maintenance improvements. The goal is to ensure that the building's performance meets owner expectations and the building's operating system is optimized. Costly problems and inefficiencies are often detected in commissioning and recommissioning buildings correction of them can save the owner money.

### 4.3.4 Actions already taken

The Township participated in the WCACOG Cadmus study and approved the report. It is also considering an aggregated renewable power purchase agreement for electricity purchased by the Township along with other members of the WCACOG. currently purchases 100% wind RECs with all its electricity purchases.

In 2016 the Township worked with the Brandywine Conservancy and completed a Sustainable Community Assessment.

### 4.3.5 Anticipated future actions

There are plans to further develop facilities at Oakbourne Park within the next 5 years.

## 4.4 Procurement Policy

Energy-efficiency procurement policies achieve environmental and economic benefits. Energy-efficient products often have a lower life-cycle cost and lower GHG emissions than the inefficient alternatives. Energy-efficient procurement policies take these considerations into account when setting product requirements or choosing between alternatives. Relevant areas include:

- IT equipment – computers, displays, imaging equipment
- Lighting (indoor and outdoor)

- Heating, ventilation and air conditioning
- Data services
- Building design and construction
- Vehicles and transport services

Westtown currently does not have an energy efficient procurement policy.

## 4.5 Energy Efficiency and Transportation Related Energy

Westtown employs a police force and consequently owns and operates police vehicles. These and other vehicles that the Township owns may be replaced over time with electric vehicles (EVs) or plug-in hybrid EVs. A conversion to electric vehicles and plug-in hybrid electric vehicles would significantly reduce GHG emissions and other air pollutants and save the Township money. The conversion to EVs should be investigated for the vehicles that will be replaced in the next two years. Large equipment vehicles are not yet candidates for electrification, although we are investigating steps taken by another Pennsylvania municipality to replace their internal combustion engine landscape/mowing equipment with electric equipment.

## 4.6 Summary for Energy Management

Current Energy Management Practices: The following is an overview of the current energy management practices including benchmarking, audits, procurement practices, status of energy consuming systems (HVAC, lighting, etc.), and types of energy purchased:

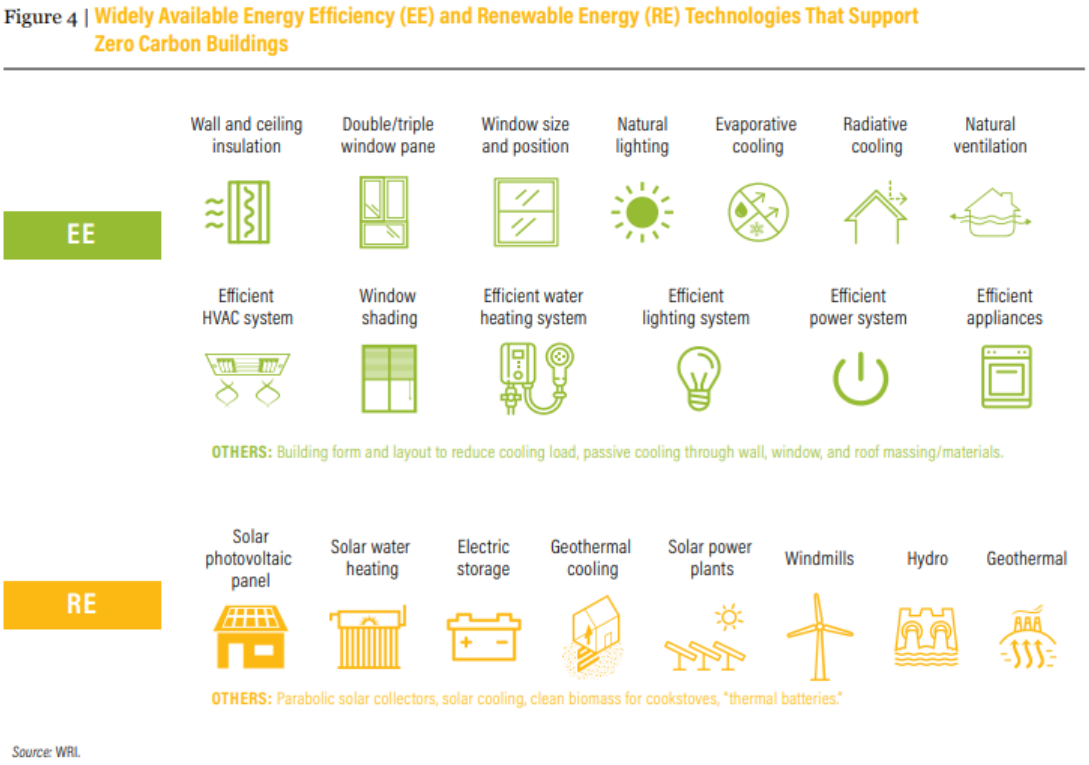
- Benchmarking: Westtown Township does not benchmark energy use for the municipal facilities. Energy benchmarking is considered a best practice because it establishes reference points for measuring energy performance. It allows us to identify high-performing facilities and to prioritize poor performing facilities for immediate improvement.
- Utility bill audits: Westtown Township has not conducted a recent utility bill audit.
- Energy Efficiency Building Profiles and Audits: The Township has not conducted benchmarking of buildings or an operational audit.
- Purchase of renewable energy: The Township is considering entering into a long term contract for electricity generated by a specific utility solar facility over the next few years for all of its electricity purchases, in conjunction with other members of the WCACOG.
- Electric vehicles: The Township has not purchased any EVs or hybrid EVs, but has opportunities (1) to compare the total costs and emissions reduction potential for replacing vehicles in the near term and (2) to develop a 10 year transition plan.

### 4.6.1 Where there is room for improvement:

- benchmarking
- bill audit

- energy star equipment audit and written procurement policy
- building operational energy audits
- HVAC replacement policies
- lighting replacement policies
- weatherization analysis as part of operational audit
- retrofit policies
- commissioning as a policy
- setting LEED or other building standards for any new Township construction and retrofits
- vehicle replacement policies

**Graphic 2** Illustrates the most common efficiency steps (Labeled Figure 4) from the World Resources Institute



# 5.0 RECOMMENDATIONS FOR LEADING BY EXAMPLE

The Township of Westtown invests in, owns, and manages physical infrastructure used to provide public services. This infrastructure ranges from the Township office building to a wastewater system, some outdoor lighting, Oakbourne Mansion and Park and a modest vehicle fleet. These physical assets provide an opportunity for the Township to lead by example through taking actions to improve the efficiency of energy use directly under our control. Such actions, if publicly communicated, can demonstrate the value of efficiency to private market stakeholders and catalyze additional private-sector action. Additionally, institutionalizing resource efficiency as a founding principle for how the Township does business—through guidelines regarding procurement, investment, capital asset management, and operations—can stimulate the market for efficiency products and services and, as a result, help to develop local capacity to provide them.

## 5.1 ENERGY EFFICIENCY FOR WESTTOWN TOWNSHIP FACILITIES AND OPERATIONS

Committing to and acting on energy efficiency measures in Township operations is essential to reducing Township energy consumption and costs and optimizing the effective use of taxpayers' money. These actions are the cornerstone of any recommendations.

Increasing energy efficiency includes benchmarking energy use as a best practice. Benchmarking allows us to understand and optimize our facilities' efficiency potential. It also allows us to compare our performance to similar facilities and prioritize efficiency projects. Benchmarking and energy assessments together will provide us with a foundation to implement energy saving retrofits.

### Recommendation 1: Establish a baseline for energy improvements for all municipal facilities.

***Actions:***

| *A* | *Baseline for Efficiency* | *Timeline* |
|---|---|---|
| | | |
| ***A1*** | **Benchmark, rate, and report energy use for all municipal facilities** by using Energy Star Portfolio Manager | *Near term* |
| ***A2*** | **Set up connection with PECO** for Energy Star Portfolio Manager. | *Immediate* |
| ***A3*** | **Complete** free high-level PECO First Advisor assessment (if still available) | *Immediate* |

| | | |
|---|---|---|
| ***A4*** | **Conduct an operational assessment** in cooperation with a focus on the Wastewater treatment plant, the Township Building and the Oakbourne Mansion. | *Near term* |
| ***A6*** | **Compile an inventory of equipment type and age and expected service life of HVAC** and other equipment. | *Near term* |
| ***A7*** | **Consider enrolling as a municipality as part of the Better Building Challenge** and get guidance on benchmarking and disclosure **Consider joining in the Better Communities Alliance** to set goals, partner with other communities and be eligible for technical support and potential funding. | *Near term* |

## Recommendation B: Use cost effective upgrades for all municipal facilities to improve and maximize Energy Star Portfolio Manager Score and reduce unnecessary energy use in Township operations.

### *Actions:*

| B | ***Improve and Maximize Energy Star Portfolio Manager Score*** | ***Timeline*** |
|---|---|---|
| B1 | **Implement short term operational changes** per assessment recommendations. | |
| B2 | **Create an Energy Efficiency Master Plan** for building upgrades and retrofits including:<br>For the Township Building and Oakbourne Mansion:<br>▪ Complete the upgrade or retrofit of facilities to highest efficiency office lighting.<br>▪ Install energy management systems to control heating and cooling in buildings, if not already installed.<br>▪ Upgrade or retrofit facilities to highest efficiency heating and cooling, prioritizing electrification.<br>▪ Upgrade and install insulation as appropriate. | Near term |
| B3 | **Inventory the current and future lighting for which the Township is responsible and design a process to convert, streetlight, future playing field, parking lot lights and other municipal lighting** (maintenance buildings) to advanced energy saving lighting (LED):<br>• Take advantage of PECO conversion programs<br>• Assure new outdoor lights meet the highest health and safety standards by requiring they meet The International Dark Sky Association's Fixture Seal of Approval or equivalent dark sky compliant standard. | Near to medium term |

| | | |
|---|---|---|
| B4 | **Identify potential capital upgrades for wastewater plant, township building and Oakbourne** | Near term |
| B5 | **Timeline for a phase out plan for non-electric** HVAC in Township facilities where possible | Near term |
| B6 | **Develop a Financing Plan**<br>• Consult with state agencies for federal and state incentives and programs<br>• Communicate with PECO staff regularly regarding rebates, incentives and other efficiency opportunities<br>• Conduct a utility bill audit and commit to using any refunds or savings for efficiency projects | Near term |

## Recommendation C: Assure energy management is a priority in all aspects of Township operations.

### *Actions:*

| ***C*** | ***Prioritize energy management*** | ***Timeline*** |
|---|---|---|
| ***C1*** | **Create energy management systems plan** for the Township building, Oakbourne and the wastewater facility based on energy assessments, including summer and winter temperature set points across all facilities and training for relevant staff. | |
| ***C2*** | **Establish metrics for measuring annual energy performance** for buildings, other operations and public lighting and schedule reporting | |
| ***C3*** | **Assign energy management to a specific person on** staff | |
| ***C4*** | **Provide training** regarding building and other energy-related codes for relevant municipal staff on a regular basis | |
| ***C5*** | **Encourage participation in the International Code Council** efforts to improve efficiency codes | |
| ***C6*** | **Promote employee energy conservation** through education on the Township's efforts toward energy efficiency to save taxpayer dollars and reduce GHG emissions | |

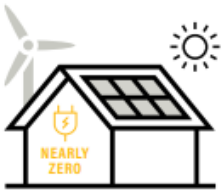
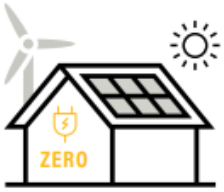
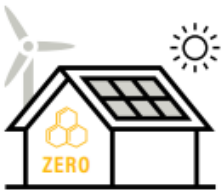
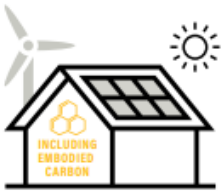
## Recommendation D: Modify policies in municipal government to promote efficiency and reduce emissions

### *Actions:*

| *D* | *Policies for municipal operations* | *Timeline* |
|---|---|---|
| ***D1*** | **Adopt Energy Star® compliant appliances and equipment policy**. Purchase or lease all energy-using equipment based on lifecycle cost-effectiveness rather than lowest first cost | *Near term* |
| ***D2*** | **Require all new municipal buildings to be solar and EV ready** (including roof and electrical work, parking canopies, etc.) | *Near term* |
| ***D3*** | **Require all new municipal parking be EV ready** | *Immediate* |
| ***D4*** | **Require a life-cycle evaluation** of energy savings and emission reduction options during the Township's capital improvement request process | *Immediate* |
| ***D5*** | **Establish municipal building policy** to ensure new government buildings achieve high performance green building standards (e.g., Net Zero (NEZB), LEED, or comparable standard). | *Near term* |
| ***D6*** | **Develop energy conservation policies** for new and replacement outdoor lighting (see above B3) | *Near term* |
| ***D7*** | **Develop policies that prioritize energy efficiency for renovations** and retrofits for existing municipal facilities | *Near term* |
| ***D8*** | Adopt an energy code that includes efficiency in comprehensive plan | |

Graphic 3

Table 1 | Overview of Commonly Applied Zero Building Concepts and What They Entail

| | | |
|---|---|---|
|  | **Nearly zero energy building** | An energy efficient building that supplies most (but not all) of its annual energy use through on- or near-site renewable energy sources. |
|  | **Net zero energy building** | An energy efficient building that produces enough on-site or nearby renewable energy to meet building operations' energy consumption annually on a net basis (the building delivers at least the same amount of renewable energy to the grid than is used from the grid over the course of a year).<br><br>Note: Not all renewable energy is considered to be carbon-free in its generation. |
|  | **(Net) zero carbon building (ZCB)** | An energy efficient building that produces on-site, or procures, enough carbon-free renewable energy to meet building operations' energy consumption annually.<br><br>Note: Zero carbon is often used interchangeably with net zero carbon, whether or not the building uses potentially fossil fuel–derived grid electricity to make up for temporary gaps in on-site renewable energy generation to meet demand or uses carbon offsets. If it does, it is usually called a "net" zero building. |
|  | **(Net) zero carbon building, including embodied carbon** | An energy efficient building that produces on-site, or procures, enough carbon-free renewable energy to meet building operations' energy consumption annually and also over its life cycle, compensating for the carbon embodied in the building's construction.<br><br>Note: An emerging goal is to also include embodied carbon arising from the materials, machinery, and equipment used in building construction, maintenance, and repair into the net zero definition. Preferably, these embodied emissions are reduced during the design and construction phase rather than compensated during the operational building phase. |
|  | **(Net) zero carbon building portfolio** | A group of energy efficient buildings sharing a similar characteristic and usually under the same ownership or management, with carbon-free renewable energy demands mainly provided for within the boundaries of the portfolio rather than at the level of individual buildings. |
|  | **(Net) zero carbon district** | A group of energy efficient buildings within a geographically defined urban area, with carbon-free renewable energy mainly supplied through nearby off-site sources, generating clean energy at the district level. |

*Source:* WRI.

## 5.2 Municipal Transportation-Related Recommendations

The municipal vehicle fleet is responsible for approximately one-sixth of the cost of fuel and the emissions of GHGs from municipal operations. The Township can reduce these fuel costs and GHG emissions by gradually transitioning to electric vehicles (EVs). Westtown is committed to a

vehicle procurement policy that requires all future vehicles to meet an energy efficiency standard aligned with our long-term energy goals.

## Recommendation E: Accelerate the electrification of the Township Fleet Procurement Policy

### *Actions:*

| *E* | *Efficient transportation* | *Timeline* |
|---|---|---|
| ***E1*** | **Develop a 10-year fleet decarbonization plan and process** | *Near term* |
| ***E2*** | **Conduct fleet-wide inventory of vehicles** that could be replaced with Zero Emissions Vehicles (ZEV) quantifying potential fuel and maintenance cost savings and encouraging vehicle selection based on total cost of ownership and assessing opportunities to secure the benefit of the federal electric vehicle tax credit through leasing or other means. | *Near term* |
| ***E3*** | **Establish Municipal Procurement** policies to purchase low GHG emitting vehicles to replace existing or "retiring" conventional, fossil-fuel vehicles | *Near term* |
| ***E4*** | **Reward workplace charging** by installing workplace chargers for fulltime employees at Township offices. (Workplace chargers significantly increase EV miles travelled (eVMT). Employees are 20 times more likely to drive EV if they can charge EVs at work.) | *Mid term* |
| ***E5*** | **Raise awareness and acceptance of ZEVs among employees** by offering information; maintenance training; opportunities for test drives; and direct conversations with municipalities that have purchased EVs and hybrids. | *On-going* |
| ***E6*** | **Consider working with the West Chester Area School District,** and members of the WCACOG to make aggregated hybrid and EV purchases or leasing contracts for a reduced price. | *Mid to long term* |
| ***E7*** | **Advocate for continued availability of state funded subsidies** for charging stations and federal PEV and FCEV tax credits for all automakers | *On-going* |
| ***E8*** | **Stay informed regarding the availability of hybrids and EVs for heavy use** (trucks, plows, trash haulers, streetsweepers, etc.). | *On-going* |

## Recommendation F: Lead by example by providing electric vehicle charging at Township parks

***Actions:***

| *F* | **Leadership in EV charging** | ***Timeline*** |
|---|---|---|
| ***F1*** | Identify municipal parks to **assess the feasibility of installing EV chargers for residents' use** | *Near term* |
| ***F2*** | **Develop a timeline** to install charging infrastructure at all public parking and frequently used parks in the Township | *Near term* |
| ***F3*** | **Participate in state funding** to subsidize charging infrastructure or other financing plans | *Immediate* |
| ***F4*** | **Coordinate EV charging infrastructure with neighboring municipalities** to provide ready access to charging across the region | |

### 5.3 Energy Procurement and Production

In the near term, continue to purchase renewable electricity through a competitive retail supplier or broker while assessing options for a renewable power purchase agreement.

## Recommendation F: Create a plan to procure renewable electricity for all municipal operations by 2035.

***Actions:***

| *G* | ***Transition to Renewable Electricity Procurement*** | ***Timeline*** |
|---|---|---|
| ***G1*** | **Assess the Township's current electricity purchasing contracts** to determine any appropriate changes current policy of buying renewable energy, taking into account efficiency measures and any on-site renewable production projections. | *Near term* |
| ***G2*** | **Participate in the WCACOG proposal to make future electricity** through a Direct or Physical Power Purchase Agreement (PPA) for on-site or off-site production or through a financial or virtual PPA. | *Near term* |

## Recommendation H: Lead by example by producing electricity locally by installing solar electricity on municipal properties.

| *H* | **Local Electricity Procurement** | ***Timeline*** |
|---|---|---|
| ***H1*** | **Develop a goal to self-generate a given percentage of municipal operations electricity** needs and create a plan to install the corresponding renewable capacity. | *Near term* |
| ***H2*** | **Conduct a study to assess the potential capacity** and feasibility of solar electricity on municipal properties, including the wastewater treatment plant and parks. | *Near term* |
| ***H3*** | **Compare the costs and benefits** of purchasing or leasing on-site and off-site solar installations for municipal properties. | *Immediate* |
| ***H4*** | **Develop a financing plan** | *Near term* |
| ***H4*** | **Install renewable systems** on municipal properties as indicated by the previous assessments. | *Immediate* |
| ***H5*** | **Assess use of renewable electricity back-up systems** for emergency services. | *Mid term* |

# 6.0 Support and Guidance for Enabling Policies and Appropriate Regulatory Mechanisms

The Township will undertake changes to its planning, zoning code, road system, and other aspects of municipal governance that impact energy usage throughout the community.

## 6.1 Building Efficiency

Westtown Township has the capability to enforce building efficiency regulations and other policies through a combination of mandates and incentives. Land-use planning and zoning, business and building permitting, and other codes are among the main regulatory mechanisms. Specific mechanisms used to promote building efficiency include:

- Implementing and enforcing the highest performance building codes allowed by the state;
- Updating the existing housing/building codes to include energy efficiency, and updating permitting policies and zoning codes to remove any barriers to electrification, solar or EV installation,
- Expediting permitting,
- Financial incentives,
- Programs leveraging municipal finance for private buildings; and
- Requirements for energy benchmarking, labeling and rating energy of commercial and multifamily buildings, audits, retro-commissioning, or equipment upgrades.

The right combination of policies can help transform buildings to be far more energy efficient over time.

Given the wide choice of available policies, Westtown should seek to prioritize those policy actions which provide the greatest environmental and social benefits. We are recommending policies which will help achieve Westtown's goals, including reducing community wide GHG emissions, addressing access to energy efficiency, electrification of HVAC systems, and curbing air pollution through vehicle electrification.

While Westtown, as a local government, is not authorized to set building energy efficiency codes and standards, it is essential that the most recent codes are incorporated in our local bylaws and enforcement. While the Commonwealth sets building code standards, Westtown can work with state agencies to advance the energy code at triennial revisions and introduce net-zero stretch energy code options.

The Township staff, the EAC, or Board of Supervisors can initiate the recommendations listed below to develop the policies that enable and encourage community wide energy efficiency, electrification, and renewable energy production.

The following are the goals and actions to work with the community to move toward a transition of the economy to efficient, clean renewable energy:

## Recommendation I: Promote Energy Use Transparency and Benchmarking for Commercial Sector

Greenhouse gas emissions in the commercial sector are associated with the use of electricity, natural gas and propane in businesses in single occupancy and mixed-use buildings, whether owner-occupied or tenant-occupied. In Westtown, these properties vary widely in age, quality, size, occupancy, and use. In general, they are all typically served by both electric and natural gas utilities. Opportunities to reduce GHG emissions are tied to consuming less energy in the buildings themselves and decarbonizing the supply of energy flowing to them. The co-benefits of successfully reducing commercial sector GHGs include direct financial savings for businesses and enhancing the health, safety and comfort within the built environment. The municipality can provide support and guidance through requirements and voluntary guidance.

### *Actions:*

| *i* | *Commercial Sector Guidance - Transparency and Benchmarking* | *Timeline* |
|---|---|---|
| ***I 1*** | **Leverage the business license renewal process** to increase benchmarking participation and performance. | |
| ***I 2*** | **Assess the Township's ability to set requirements for energy audits and energy disclosure based on milestones**, such as time of sale, period of time, or compliance period for benchmarking polices for buildings of a certain size. | |
| ***I 3*** | **Consider an energy efficiency challenge program.** These programs challenge building owners—for example, for commercial offices—to voluntarily reduce their energy use to meet a predefined target. | |
| ***I 4*** | **Consult with the contracted code enforcement officer regarding** any changes or updates to the energy code. | |
| ***I 5*** | **Confirm regular up to date support** and training for the contracted code inspector | |
| ***I 6*** | **Budget for sufficient staff** to support code compliance. | |

## Recommendation J: Promote and support advanced building codes and standards for new and existing buildings.

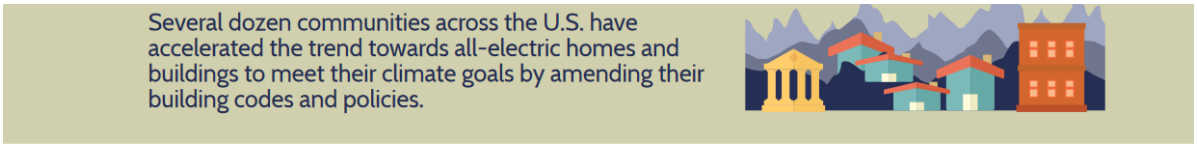
Making a building net zero energy ready at the point of construction is very cost-effective. The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) is an example of a third-party entity that sets sustainability standards for "green buildings." LEED certification is based on a system of points, awarded for improvements ranging from certain types of plumbing features (such as faucets that turn themselves off) to energy-efficient appliances and HVAC systems. Different certifications are possible, depending on the number of points earned. Building to LEED or another similar standard reduces operating costs and minimizes strain on the municipal infrastructure needed to support it, such as wastewater treatment. Building to standards can be undertaken for local government facilities and can also be encouraged for all new commercial and large-scale residential buildings.

### *Actions:*

| *J* | New and existing buildings | *Timeline* |
|---|---|---|
| *J1* | **Expedite permits and reduce permit fees (sliding scale)** for commitment to carbon neutral, Net Zero Standards or LEED/FGBC Gold performance standard or better and/or on-site PV solar. | *Near term* |
| *J2* | **Incentivize above-code buildings** similar to the West Chester Sustainable certification program which recognizes developers who integrate sustainable features into new commercial developments and rehabilitation projects. | *Near term* |
| *J3* | **Explore requirements or incentives for new green buildings**, such as encouraging those over a certain square footage to obtain certification or providing monetary or policy incentives to building owners who earn green buildings labels. | |
| *J4* | **Create policies to encourage adoption of building automation systems and building commissioning** on buildings of a certain size. | *Immediate* |
| *J5* | **Pass municipal ordinance to require cool roofs on new buildings** and cool reroofs of existing buildings (when retrofitted) to reduce heating and cooling needs. | *Immediate* |
| *J6* | **Phase in requirements for all new buildings and major remodels to achieve net-zero energy or net-zero energy ready** (deep efficiency without renewable energy on site) status using building code requirements. Establish target years after which all new buildings that enter the planning and permitting process will be designed. | *Near term* |

| | | |
|---|---|---|
| ***J7*** | Ensure all new homes are as efficient as possible by **adopting the most-current residential building codes** | *Near term* |
| ***J8*** | **Create a process of consultation with developers** and encourage all developers to:<br>make all new buildings to be solar ready<br>make all new buildings to be EV ready<br>install all electric systems for appliances and the HVAC system, such as geothermal heat pumps, air source heat pumps, or other heat exchange technology | *Near term* |
| ***J9*** | Explore creating and incentivizing **an above-code buildings district** | |

Graphic 4




## 6.2 TRANSPORTATION

*"State and local governments nationwide are paving the way for plug-in electric vehicles (PEVs) by allowing, incentivizing, and even requiring electric vehicle supply equipment (EVSE) infrastructure in their communities. While there is no 'ideal' or one-size-fits-all deployment*

*strategy, zoning, codes (including permitting), and parking ordinances are three particularly powerful tools to encourage PEV and EVSE adoption.*

*"It is important to understand how zoning, codes, and parking ordinances can further the PEV readiness of communities and regions, whether implemented individually or in combination with one another. State and local jurisdictions can then assess their unique objectives and identify the best of these approaches to support PEV industry growth and innovation. Just as important, they can do so while ensuring that no individual, organization, or adjacent industry is overburdened with any requirements that are intended to facilitate the deployment of PEVs and EVSE."*

Source: Plug-In Electric Vehicle Deployment Policy Tools: Zoning, Codes, and Parking Ordinances

## *Recommendation K: Encourage and support broad adoption of electric transportation options*

### *Actions:*

| *K* | Transportation | *Timeline* |
|---|---|---|
| ***K 1*** | Leverage zoning ordinances to formally define EVSE **and ensure that installation is permissible in single- and multi-family dwellings as well as commercial or industrial zones.** | *Near term* |
| ***K 2*** | **Incentivize the installation of EVSE** by providing a bonus, such as additional floor area or reduced parking requirements, in exchange for including EVSE in new construction. | *Near term* |
| ***K 3*** | **Review parking ordinances** to encourage EV deployment by providing direct parking incentives or providing access to charging in high-density areas. | *Immediate* |
| ***K 4*** | **Stay up to date on EV related codes and standards** developed at the national level. This includes the two key bodies (and relevant codes) that govern EVSE installation and inspection:<br>• National Fire Protection Association (NFPA)<br>  ○ National Electrical Code (NEC)<br>• International Code Council (ICC)<br>  ○ International Building Code (IBC)<br>  ○ International Residential Code (IRC)<br>For an overview of current PEV and EVSE-related codes and standards, see the National Renewable Energy Laboratory's Electric Vehicle and Infrastructure Codes and Standards Citations *(PDF)* and Electric Vehicle and Infrastructure Codes and Standards Chart *(PDF)*. | *Immediate* |
| ***K 5*** | Include **mandatory minimum requirements for future EVSE installation.** PEV-ready requirements may include EVSE | |

| | | |
|---|---|---|
| | installation, pre-wiring, or space reservation. For example, newly constructed buildings in Oakland, CA must provide for EVSE charging, and developers in Palo Alto, CA must provide EVSE charging infrastructure in all new detached single-family dwellings and new multi-family residential and non-residential construction. New York City also requires that newly constructed and upgraded parking garages and open lots include the necessary hardware for EVSE in at least 20% of the parking spaces. | |
| ***K 6*** | **Establish a flat, consistent fee** for residential and commercial EVSE installation. | |
| ***K 7*** | Pass an **anti-idling policy** | |

## 6.3 Renewable Electricity Procurement and Production

The Borough's transition of its electricity supply to clean renewable sources of energy will be accomplished primarily by purchase of renewable electricity but could be supplemented by production from sources within the Borough. Purchase of electricity is likely to be done as it has in the past through energy brokers, or electricity services companies (ESCOs). Renewable energy products are increasingly available through them. In addition, there are many rooftops and other areas within the Borough that could be equipped with solar arrays.

### *Recommendation L: Encourage local renewable energy adoption*

### *Actions:*

| ***L*** | **Renewable Energy Procurement and Production** | ***Timeline*** |
|---|---|---|
| ***L 1*** | Westtown should participate in the WCACOG effort to **aggregate energy demand** in order to engage in a PPA for off-site Renewable Energy. This approach is becoming increasingly popular because it allows building owners with smaller energy loads to benefit from PPA options and generally lowers the cost of energy provision for the participants. See Recommendation H. | |
| ***L 2*** | **Engage with PECO to request a proposal for renewable energy delivery**. When a municipality or group of municipalities set ambitious renewable energy goals and ask its utility for cleaner energy, the utility may be interested in collaborating rather than getting cut out of the deal by third-party renewable energy suppliers. | |
| ***L 3*** | **Explore programs to incentivize buildings with rooftop space—** such as warehouses, factories, and parking garages—to install | |

rooftop renewables and become net energy producers. By feeding the excess generated energy into the grid, they can provide for part of the renewable energy demand of nearby buildings with limited on-site generation opportunities.

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## 6.4 REDUCING ROADBLOCKS

Westtown will consider implementing changes to reduce roadblocks for climate-positive investments and encourage adoption of energy transition programs and investments by residents, institutions, and businesses.

### *Recommendation M: Review Township policies*

### *Actions:*

| *M* | *Reducing Roadblocks and Providing Guidance* | *Timeline* |
|---|---|---|
| ***M1*** | **Register for the Solsmart designation** in order to streamline the solar permitting process. . | *Near term* |
| ***M2*** | **Review policies related to solar access** in local Home Owners Associations (HOAs); | *Near term* |
| ***M3*** | **Screen Township permitting and zoning policies** and processes for any clauses which impair building and vehicle electrification, and update language to remove any barriers; | |
| ***M4*** | **Review policies to remove prohibitions on fuel switching** which currently lock in the use of gas. | |
| ***M5*** | **Review whether current zoning or ordinances prohibit or preclude EVSE under existing regulations.** Level 1 and 2 EVSE and DC fast charging (which is useful in roadside or commercial applications) may require different zoning considerations. | |
| ***M6*** | **Review existing requirements around historic preservation.** The goal is to explore cost-effective approaches to make all buildings as close to carbon neutral as possible, regardless of age or historic classification. | |
| | | |