Building Energy Conservation & Efficiency

JUNE 2025

A toolkit for PA municipalities for regulating and incentivizing a transition to energy efficiency and renewable energy in the built environment

CHESTER COUNTY Planning COMMISSION

MONTGOMERY COUNTY PLANNING COMMISSION MCPC

Created jointly by the Chester and Montgomery County Planning Commissions

"The Hamilton at Eagleview, a Passive House apartment building in Exton, PA"

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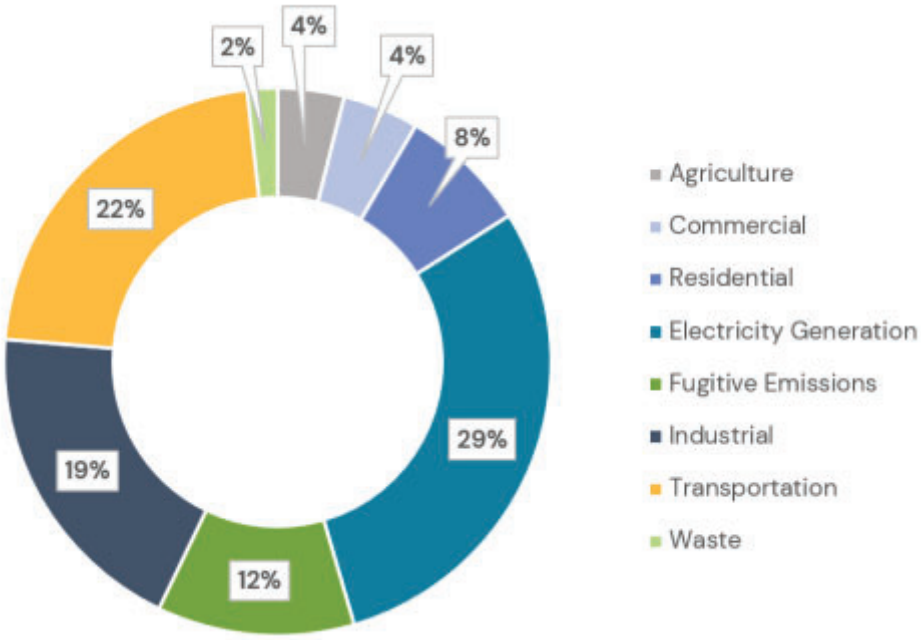
Introduction

Climate change is a challenge that is affecting our world, our nation, our region, and our local communities. Climate change is affected by greenhouse gas (GHG) emissions from the decisions we make, from how we move from place to place, where we live, and how we behave in those places.

Chester County adopted a Climate Action Plan in 2021 that sets a goal of reducing greenhouse gas emissions county-wide by 80% of 2005 levels by 2050. The Montgomery County government and many communities in the county have adopted similar goals of reducing GHG emissions by 2050. Most of the greenhouse gases in our region are generated by the energy used by our buildings, so reducing building related emissions is a top priority. However, Pennsylvania municipalities struggle finding avenues that make an impact on building energy conservation. Pennsylvania state law restricts a municipality's ability to require energy conservation measures in new construction or building remodels that go above and beyond requirements in the state's building code. While municipalities' regulatory authority is limited, some creative interventions are possible. This document serves as an introduction to the issues of energy conservation ordinances, why they are difficult to implement, and what a municipality can do to help reduce building energy consumption and transition to renewable energy through its ordinances.

Pennsylvania 2020 GHG Emissions % of Total by Sector



Data from the 2024 Pennsylvania Climate Action Plan Update

Why does energy efficiency matter in buildings?

One of the largest contributors to GHG emissions in the nation and in Pennsylvania are buildings and the energy they use (often referred to as stationary energy). According to the U.S. Green Building Council, buildings account for 39% of the nation's carbon dioxide emissions. In Pennsylvania, 43% of 2020 GHG emissions came from buildings; buildings in the residential sector alone accounted for 8% of GHG emissions. Stationary energy accounted for 62% of Chester County-wide greenhouse gas emissions, and 65% of Montgomery County's greenhouse gas emissions. Addressing the energy consumption and GHG emissions from buildings is crucial if we are to tackle climate change.

Progress has been made to improve building energy efficiency and reduce their GHG emissions. Incremental changes in building and energy codes have steadily increased efficiency over time, and many state and federal incentives exist for implementing energy efficiency improvements and transitioning to low-carbon energy sources.

Additionally, public awareness of the importance of reducing greenhouse gas emissions has risen in recent years, as has the demand for sustainable alternatives to the status quo- including in real estate. According to **2015 data** from the Institute for Market Transformation, Energy efficient properties have occupancy levels up to 10% higher than less efficient properties, rental premiums over 10% higher than less efficient properties, and sale prices up to 25% higher than less efficient properties.

While this price premium can justify builders including these features in new construction, some argue that building "greener" contributes to the housing unaffordability crisis afflicting our region. While this is a consideration, energy efficiency and renewable energy design features can significantly reduce energy costs borne by the tenant/owner and contribute to significant long-term savings. Additionally, a number of tax credits, **utility rebates**, and green financing solutions can significantly reduce upfront costs of construction for these features, further reducing their "payback" time.

Electrification of building systems

Electrification is the process of converting systems and devices that consume fossil fuel-based energy to those that run off electricity. As the power supplied by the grid continues to be generated more by cleaner sources and as households and commercial buildings adopt renewable energy systems, electrifying our heating, cooling, and other appliances is the most effective pathway to decarbonize our buildings. Electrification should be optimally coupled with energy efficient technologies like improved insulation, more efficient windows and doors, and using energy efficient appliances and fixtures to reduce electricity demands. Electrified buildings that are powered by renewable energy systems, whether on or off-site, can be considered "net zero energy" buildings and strongly support a transition toward clean and sustainable energy sources.

An Overview of Energy Efficiency and Conservation in the Zoning and Subdivision and Land Development Ordinances

Municipal Planning Code Authorization

Because Pennsylvania follows Dillon's Rule, local governments only have the powers that the state has explicitly authorized them. The **PA Municipalities Planning Code** (MPC) authorizes municipalities to "promote the conservation of energy through the use of planning practices and to promote the effective utilization of renewable energy sources" (section 105). Additionally, Section 503(6) enables municipalities to include "provisions for encouraging the use of renewable energy systems and energy-conserving building design" within the SALDO. These two sections expressly enable municipalities to encourage renewable energy and energy conservation in buildings, but justification for regulating energy-related features can be found in other sections of the MPC, as well.

Related to a municipality's power to regulate through its zoning ordinance, Section 603(b)(2) says that "zoning ordinances… may permit, prohibit, regulate, restrict and determine… size, height, bulk, location, erection, construction, repair, maintenance, alteration, razing, removal, and use of structures." This gives municipalities broad latitude to regulate how buildings are constructed and altered.

By-Right Authority

While municipal ordinances cannot require changes to existing structures unless they are being renovated, and the improvements are subject to building codes and/or the land development process, ordinances can be an effective tool to optimize new construction and major renovations for maximizing energy efficiency and minimizing greenhouse gas emissions from their operation. Municipalities use two different ordinances that work in coordination to govern land use: the Zoning ordinance and the Subdivision and Land Development ordinance.

The zoning ordinance controls use of land and the form and extent of development. In addition, zoning can provide incentives that encourage development that meets a community's goals—including more sustainable development.

The subdivision and land development ordinance (SALDO), in conjunction with elements of the zoning ordinance, provides standards for how lots or new property lines are created and the development of buildings and improvements, sidewalk design, landscaping, basic building design, and street/streetscape design.

Related to energy conservation and transitioning to renewable energy, municipal zoning and SALDO ordinances can regulate:

- Where certain uses are permitted in a community.
- The type, size, and placement of principal and accessory structures on a parcel.
- Impervious surface and lot coverage limits.
- Building exterior design such as windows, facade treatments, and door placement.
- The preservation of natural resources on a property.
- The amount and type of landscaping that is required to be installed.
- The location of renewable energy systems, such as rooftop and ground-mounted solar arrays.

Examples of best practices municipalities can include in their Zoning ordinance and SLDO to decrease energy consumption and encourage decarbonization include:

- Orienting buildings and landscaping to optimize solar gain in winter and shading and cooling in summer;
- Requiring the latest adopted building energy codes be used, and incentivize above-code energy efficiency features;
- Encouraging new construction to be heated, cooled, and powered by electricity where appropriate;
- Encouraging new construction to employ on-site renewable energy systems where feasible.

Conditional Use

Conditional uses are those that are allowed by-right in a zoning ordinance, but which must go through an additional vetting process by the municipal planning commission and elected officials to ensure certain stated requirements are met prior to receiving approval for the use. Section 605.c.5 of the MPC requires "provisions for each class of uses within a district to be uniform, except that additional classifications may be made within any district for the purpose of encouraging innovation and the promotion of flexibility, economy, and ingenuity in development… and for the purpose of authorizing increases in the permissible density of population or intensity of a particular use based upon expressed standards and criteria set forth in the zoning ordinance." Such expressed standards could include energy efficiency standards, green building standards, and/or including renewable energy. Additional classifications could include energy efficiency districts wherein these expressed standards would apply.

Article VII. Planned Residential Development (PRD) provisions of the MPC provide flexibility in site design. "For this reason, PRD enhances subdivisions designed for such criteria as solar orientation and energy conservation…"[1] Developers may be motivated to include energy efficiency standards, green building standards, and/or renewable energy to unlock a conditional use. Being able to develop a commercial land use, a mixed-use development, a drive-thru, or build to greater heights or density can be a powerful economic driver for developers. A developer may be eager to include sustainable building practices if it allows them to use the land in a way they hope has a greater return on investment.

Energy Efficiency and Conservation in the Building Codes

Pennsylvania has adopted a statewide building code (the 2018 version of the Uniform Construction Code (UCC)/International Building Code, and the 2018 Energy Conservation Code (IECC), with some state-specific amendments. The Commonwealth is expected to adopt the 2021 International Building Code with state specific amendments in 2025. Municipalities are required to adopt and enforce the state's adopted building code or to have it enforced by the state on their behalf. Section 301.d of the PA Construction Code Act states that the building code adopted by the municipality supersedes and preempts all other codes, deed restrictions, and ordinances that regulate any aspect of the construction, alteration and repair of buildings. This strong statement makes it challenging for a municipality to require things like above-code energy efficiency, electrification, or renewable energy systems through other ordinances.

There are two potential ways municipalities could achieve higher standards for new construction and renovation through their adopted building codes:

1. **Municipalities may adopt their own amendments to the UCC**, though any proposed amendments must be approved by the PA Department of Labor and Industry. Any amendments must satisfy requirements outlined in section **503(b)-(k) of Act 45** and section **403.102(i)-(k)** of the UCC regulation. Under these sections, a municipality may:
    a. Adopt stricter code requirements than the minimum standards within the UCC or other codes adopted by reference;
    b. Enact ordinances which adopt additional code requirements for alterations or repairs to residential buildings.

    While it is not advisable that a municipality develop its own unique technical standards with which to amend the building code, some standards and requirements have already been vetted by the International Code Council and have appeared in recent versions of the International Building Code and/or International Energy Conservation Code that the state has not yet adopted, or that the state has stricken from the UCC. Again, any proposed amendment to the building code enforced by a municipality would have to be approved by the PA Dept. of Labor and Industry.

    For example, the IBC requirement to provide EV ready circuits for charging in new construction may be stricken by the PA UCC. A municipality may request to reinstate these sections in their ordinance with PA L&I concurrence.
2. **Adopt a Stretch Code**. Building codes that require or include provisions for energy efficiency or sustainable practices above and beyond the requirements of the state's adopted building code are called "above-code programs," or sometimes "stretch codes." Example stretch codes include the International Green Construction Code (IGCC) and the ZERO Code.

[1] Zoning: Planning Series #4," Tenth Edition, April 2015, by Pennsylvania Governor's Center for Local Government Services.

One of the state-specific amendments to the 2018 International Energy Code adopted by PA is the removal of a provision in the IECC allowing above-code programs to automatically satisfy the requirements of the UCC. The provision (C102.1.1 of the 2018 IECC) allows for code officials to designate certain stretch codes as exceeding the energy efficiency requirements of the IECC, and to consider any building built in compliance with the stretch code automatically in compliance with the IECC. Similar to amending the UCC, to adopt this provision a municipality would have to submit an application to the PA Department of Labor and Industry for approval and specify which stretch codes would automatically meet the requirements of the IECC.

Municipalities could also incentivize the use of stretch codes such as the IGCC for specific building types, in specific zoning or overlay districts, or in other ways that align with their stated policies. Incentives like increased density, additional height, increased impervious surface, or reduced permit fees could be considered to incentivize above-code construction.

For instance, in the Borough of West Chester Zoning Ordinance, additional building height and floor area are allowed if the building is certified LEED Silver or has a reduced parking count.

Require Code Compliance when Properties Transfer Ownership.

Although municipalities have little ability to mandate improvements to existing buildings, an ordinance clearly tied to ensuring the health, safety and welfare of residents, tenants, and other property owners in the municipality could be adopted that requires buildings to be inspected and upgraded as needed to comply with the municipality's Property Maintenance Code and/or the International Property Maintenance Code prior to transferring a property from one owner to the next. In addition to certain safety-related standards, a municipality could potentially include items related to energy efficiency, such as LED lighting, weather stripping, and addressing any significant weatherization deficits and malfunctioning boilers, furnaces, etc. causing energy inefficiencies. This strategy could provide an opportunity to address major energy inefficiencies but should not create an unnecessary burden for those selling a property.

Adopting Municipal Policy to Support Energy Efficiency Efforts

Because the comprehensive plan should be the policy basis for zoning and subdivision ordinances, municipalities that wish to encourage energy efficiency and a transition to clean and renewable energy should include related policies in their comprehensive plan. These policies, along with any specific goals (like a greenhouse gas reduction goal) will provide justification for regulations and incentives in the zoning and subdivision ordinances.

Municipal governments can adopt sustainability and climate change related goals to show leadership within their communities and can include sustainability purpose statements within their ordinances to substantiate codes that promote, or require, energy efficiency, electrification and the inclusion of renewable energy production. Further planning is needed to achieve those goals, and to do this municipalities throughout Pennsylvania have adopted municipal sustainability plans, climate action plans, energy transition plans. Pennsylvania Department of Environmental Protection created the **Local Climate Action Program** which funds climate actions plans throughout the state, and the **Sustainable Pennsylvania** program helps municipalities plan and implement sustainable actions. These plans are critical to guide our governments' efforts to tackle climate change and energy issues.

Municipalities can also take energy conservation measures in their own buildings and operations to be a leader in the community. By promoting those measures to the public, municipal governments can inspire others to do the same.

How to Use This Publication

This publication will focus on how a municipality can use the power and influence of its zoning and SALDO ordinances to promote energy efficiency and a transition to clean and sustainable energy in buildings.

There are two basic ways municipalities can use their ordinances to affect energy efficiency and building energy system decisions for new development:

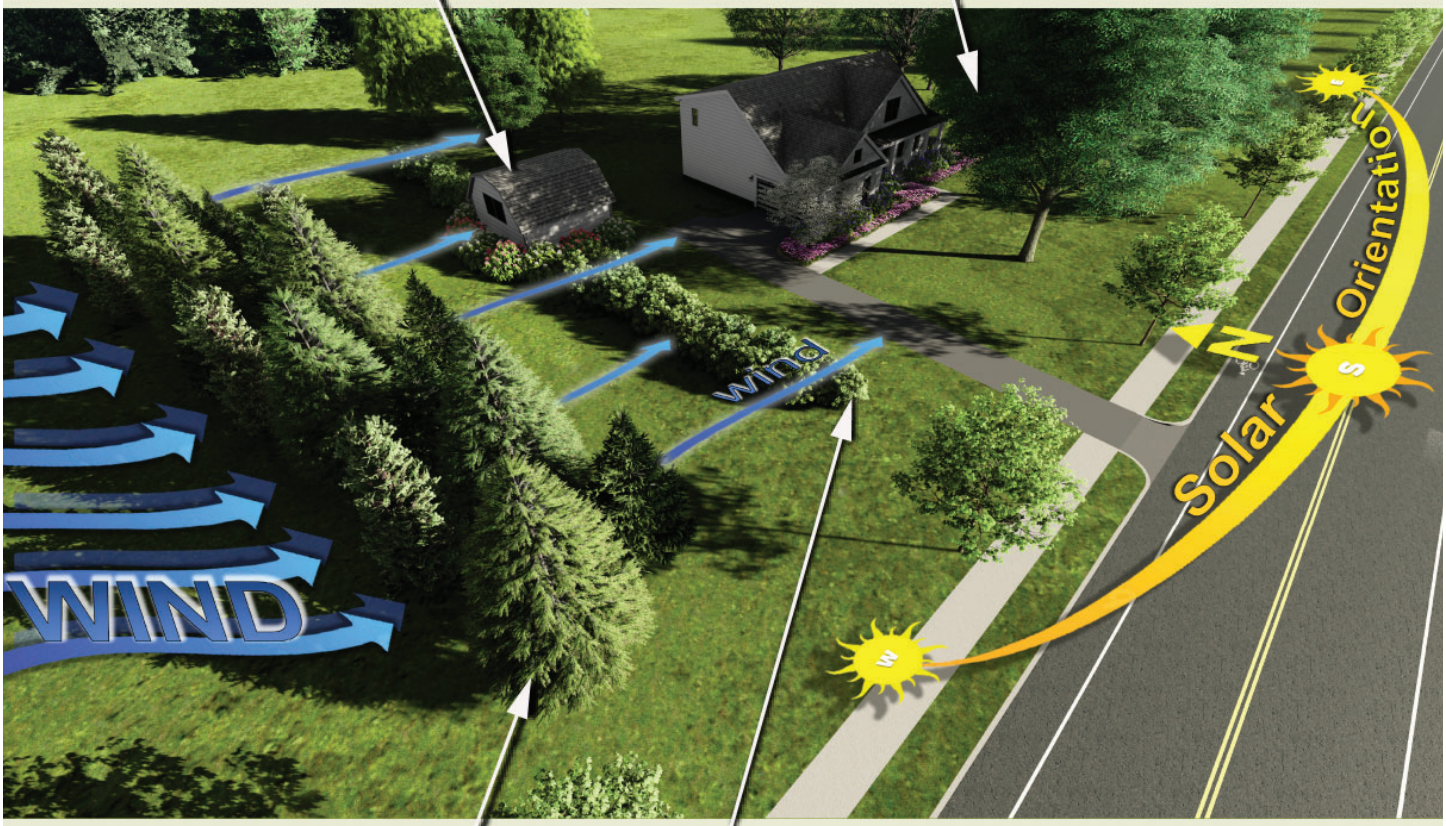
1. Design considerations that are within the **regulatory** scope of a zoning or SALDO ordinance, such as building placement to maximize passive solar gain (Section 3 of this guide).
2. Design considerations that would typically be **incentivized** through a zoning or SALDO ordinance rather than required because they could conflict with the minimum requirements of the building code, such as above-code energy efficiency and promoting certain building energy systems (Section 4 of this guide).

Commentary is provided to help municipalities understand the potential issues with requiring vs. incentivizing certain building energy standards so they can decide where on the regulatory spectrum their ordinance should fall: from showing support for the concept of energy efficiency, to more proactively addressing greenhouse gas emissions.

Examples from adopted municipal ordinances are included to demonstrate how communities have implemented the ordinance work. An explanation of the ordinance example is provided along with a link to the municipal ordinance. A municipality should discuss the example ordinances with their solicitor before adopting any ordinance language to ensure it is a good fit for their municipality.

Building Energy Measures That Can Be Regulated Without Incentives

This section provides examples for how a municipality can incorporate energy efficiency techniques into regulations without needing an incentive. Current SALDO ordinances can be amended to include these techniques since they clearly fall into the scope of what a municipality can regulate. These techniques focus on building orientation, building placement, and landscaping standards that can help reduce the energy consumed by buildings. While these can be incorporated into existing ordinances without an incentive, a municipality could include these techniques as part of an incentive program if desired.



Building Orientation & Placement

When considering building orientation and placement, it is important to assess how the building will receive sunlight and wind. Properly orienting a building will ensure the building will gain solar heat in the winter and be shaded in the summer. Solar access is maximized by orienting a new building on an east-west axis within 20 degrees of south. New homes and businesses may have associated outbuildings such as garages, sheds, barns and storage buildings that are not heated or cooled. When feasible, these unheated buildings should be placed upwind from the home or heated building in the direction of the prevailing winds, which is primarily to the west and northwest in Pennsylvania. These buildings serve as a windbreak to protect the heated building from winter winds.

This same concept can be used by itself or in combination with other natural elements such as landforms and vegetation to create windbreaks that effectively lower heating costs. Municipalities can require that applicants for new construction and renovations show proposed landscaping, building orientation, and direction of prevailing winds on a site analysis plan submitted with their application.

Building orientation requirements should be considered in tandem with other community development goals. For example, rigidly applied building orientation requirements could result in more disturbance to sensitive natural areas on a site or could cause buildings to "turn their backs to the street", reducing walkability and diminishing a neighborhood's appearance.

Building density is also a key factor in conserving energy: the fewer exterior walls, the lower energy usage is typically. Higher density developments have an energy advantage over detached units in that they have a lower proportion of exterior surfaces to interior space. Compact, higher density development also typically has less embodied energy within streets, utilities, and other infrastructure than low density, detached development.

Example Ordinances

Hampden Township in Cumberland County, PA has a Planned Residential Development ordinance that encourages innovations in residential design and efficient use of the land where housing type, design, and layout are proposed based on the characteristics of a particular site. Energy saving techniques may be applied, including clustering of development, higher densities than normally allowed, mix of housing types and uses, and flexibility in layout.

Palmer Township in Northampton County, PA is a suburban community that has planned for higher density residential development in their High-Density Residential District. While not explicitly designed for energy conservation, the higher density will promote efficiencies.

Lower Providence Township in Montgomery County's Subdivision and Land Development Ordinance contains a provision encouraging streets to be oriented in an east-west direction to allow structures to optimize their southern exposure for solar energy.

Landscaping

The landscaping installed or the natural features preserved on a site can significantly impact energy conservation. Vegetation can be utilized in multiple ways to lower heating and cooling costs, which should be considered when landscaping around new and existing buildings.

Preserving or installing native shade trees can have a tremendous impact on heating and cooling costs. Properly placed shade trees can reduce cooling costs by up to 25 percent. Deciduous trees work best because they shade buildings in the summer but allow the sun to heat buildings in winter. The planting of shade trees should also be considered over air conditioning units, patios, driveways and roadways.

Tall deciduous trees can be planted to the south of the building to provide maximum summertime roof shading (unless the building will have a rooftop solar array). Trees or large shrubs with crowns lower to the ground can be planted to the west of the structure where shade is needed from lower late afternoon sun angles, or to the south on solar-heated homes. More information can be found in the US Department of Energy's guidance on **Landscaping for Shade and their Consumer Guide to Home Landscaping**.

For buildings on windy sites, like those on or near ridgelines, hedgerows, whether existing or proposed, can serve as effective windbreaks, reducing heat loss caused by winter winds. Evergreen trees make the most effective windbreak and should be planted upwind of the building.

Example Ordinance

North Lebanon Township in Lebanon County, PA requires landscaped wind breaks between the parking lots and buildings and along buildings that face westerly, southwesterly or northwesterly. The ordinance also requires that plantings should not be designed to interfere with southern exposure to solar radiation.

Exterior Lighting

Lighting fixtures that use inefficient technology, are poorly targeted, or operate at unnecessary times of day waste energy. The International Dark-Sky Association estimates that 15 million tons of carbon dioxide are emitted in the United States each year to power residential outdoor lighting, and that at least 30% of this light is wasted by unshielded or poorly aimed fixtures. Municipalities can use lighting ordinances to ensure safe, aesthetically pleasing, and energy-efficient lighting by mandating or encouraging the use of shielded light fixtures, intelligent timing controls, improved technology (such as LED lighting), requiring lighting be dimmable during off-peak hours when appropriate, and other methods. Lighting requirements can be context-sensitive, requiring brighter lighting in high-traffic and commercial locations, and allowing dimmer lighting (or no lighting at all) in residential neighborhoods.

LED lighting has become less expensive in recent years, creating a natural transition away from older, less efficient light sources like metal halide and high-pressure sodium. Although lower color temperatures of LED light (warmer whites and amber light- 2000-3000 K) use more energy than higher color temperatures, higher color temperature lights (cooler whites with more blue light- 3000K and higher) have been shown to negatively impact human health and wildlife by affecting circadian rhythms.

Example Ordinances

The following ordinances have been curated by **WeConservePA.org** as examples of Pennsylvania municipalities that have adopted exemplary lighting ordinances.

- **London Grove Township**
- **North Coventry Township**
- **Wallace Township**
- **Westtown Township**
- **West Whiteland Township**

Other examples include the Borough of Ambler's recently adopted **outdoor lighting ordinance**, and the 2009 **Indian Valley Regional Planning Commission**'s model outdoor lighting ordinance.

Bringing Existing Buildings up to Code

A municipality could adopt a stand-alone ordinance requiring buildings to be inspected and upgraded as needed as a condition of sale or transfer to a new owner. The inspection process could include a checklist of safety-related standards that align with the municipality's Property Maintenance Code and/or International Property Maintenance Code.

Example Ordinances

The Borough of Norristown has an **ordinance** requiring anyone selling a residential, commercial or industrial building to first obtain an occupancy certificate. The **process** of obtaining the certificate involves the municipality's code inspector performing an inspection of the building and its adherence to a **list of criteria**, including weather-tight windows and ensuring boilers and furnaces are in good repair. The occupancy certificate is issued only when the building has passed the inspection. If it does not pass it must be brought up to compliance.

The Borough of Phoenixville requires a **Property Transfer Permit** be issued prior to the transfer of real estate in the Borough. The permit is issued contingent to an inspection to ensure the property is in compliance with the borough's **Property Maintenance Code**.

Incentivizing a Transition to Energy Efficient, Electrified and Renewably-Powered Buildings

Municipalities can encourage high performing and net-zero buildings through incentivizing certain design standards in their zoning and subdivision ordinances. Not only are these high-performing buildings typically more attractive to tenants and buyers due to their lower cost to operate, but they can also have a higher degree of indoor comfort and indoor air quality depending on the design standards used. Providing land use-related bonuses for energy efficiency measures is a widely accepted practice throughout the region and nationwide but creating the appropriate bonuses can be difficult.

How it Works

1. Decide what your municipality's policy goals are. Are you focused on greenhouse gas reduction? Do you want to encourage energy efficiency? Do you want high-quality, desirable buildings in a key part of your municipality, like a main street?

2. Determine the design features you'd like to incentivize to achieve your policy goals. These could be LEED-certified buildings or another green building certification, buildings built to a higher standard for energy efficiency such as Energy-Star certified, buildings that use electricity for heat and cooling, buildings with on-site renewable energy, and/or buildings built with future renewable energy in mind, such as solar-ready or EV-ready.

3. Determine what incentives are acceptable to the municipality to achieve these design features. Incentives will have to be attractive enough that applicants will want to take advantage of them. Common incentives include:
    a. **Use incentives:** allowing a use that is otherwise not permitted within the zoning district as long as the use includes the incentivized design feature(s).
        i. **Conditional Use, Option 1:** allowing projects by-right that propose the incentivized design feature(s), and those that do not must go through conditional use process.
        ii. **Conditional Use, Option 2:** include the desired design feature(s) as one or more conditions that must be met to receive conditional use approval for a particular use in a district. Examples of potential conditions could include:
            1. meeting above-code standards for energy efficiency and building envelope
            2. requiring building to a certain green building standard (LEED, Energy Star, Passive House, etc.)
            3. requiring electrification of all systems
            4. requiring the inclusion of renewable energy
            5. meeting above-code standards for energy efficiency and building envelope
    b. **Density bonuses:** allowing additional residential units, impervious surface, and/or floor area ratio
    c. **Reduced permit fees** for applications that include the incentivized feature(s)

Incentivization Examples

The following are some of the design features a municipality may wish to incentivize, along with local examples of ordinances that have been adopted to incentivize or require these features.

Energy Efficiency

Building codes set minimum standards for energy efficiency of building components, from insulation to windows and doors. A building's "envelope" plays a key role in determining levels of comfort, natural lighting, ventilation, and how much energy is required to heat and cool a building. Municipalities can incentivize building to higher standards of energy efficiency than those specified in the 2018 International Energy Code – the code adopted by the state along with some state-specific amendments.

Example Ordinance

In **Narberth Borough (Montgomery County, PA)** if a property owner wants to develop a new or substantially improved portion of an Accessory Dwelling Unit (ADU) through a conditional use application, it is a required condition that the ADU be constructed pursuant to the standards of the most current version of the International Energy Conservation Code (IECC), regardless of whether such version of the IECC has been adopted in the Pennsylvania Construction Code.

Also in **Narberth Borough** incorporates energy efficiency requirements into their conditional use process that applies to apartment buildings, most uses in their 4a District, and uses in "civic institutional" buildings.

Building Energy Systems

In Southeastern PA, new construction that is heated and cooled by electric energy systems generally has significantly lower greenhouse gas emissions than those using natural gas or oil furnaces. Once electrified, a building could then potentially be powered solely by renewable energy generated either on or off site. Ordinances could incentivize that new construction be electrified or provide incentives for the installation of on-site renewable energy systems at the time of construction.

If a municipality wishes to incentivize the use of renewable energy, it should first review its renewable energy ordinance/supplemental use provisions to ensure existing codes are not too restrictive. If the municipality does not have supplemental use provisions for accessory use renewable energy systems like solar panels, it is recommended they adopt these provisions. For more information refer to **DVRPC's Renewable Energy Ordinance Frameworks** for best practices that encourage renewable energy development and Chester County Planning's webpage on **Solar Ordinances and Permitting for municipalities**.

Example Ordinances

Lansdale Borough's Downtown Business Overlay District offers a 20 foot height bonus when an applicant installs a solar, wind or geothermal power-generation facility that is designed to provide at least 15% of the expected annual energy use for the building. The facility shall be designed and installed under the direction of a professional with demonstrated expertise in the design and construction of such facilities.

Narberth Borough - **Prohibition of fossil fuel systems for Accessory Dwelling Units**: Utility hook-ups, installations, and/or storage of natural gas, propane, oil, and other fossil fuels shall be prohibited for new Accessory Dwelling Units or new portions of the Accessory Dwelling Unit through a conditional use application. Such prohibition does not apply to the conversion of existing portions of an Accessory Building to an Accessory Dwelling Unit. In addition, backup/emergency generators utilizing fossil fuels shall be permitted for the sole purpose of maintaining a power supply during a temporary interruption of the power grid to which the Accessory Dwelling Unit is connected may be subject to power outages.

Narberth Borough - **Conditional Use Flexibility for Green Buildings**: Narberth Borough's zoning ordinance allows for certain uses otherwise not permitted in a zoning district to be permitted as a conditional use if they meet the conditional use criteria plus specified "Green Building Bonus Standards." These standards include:

- Construction pursuant to the most recently revised version of the International Energy Conservation Code, regardless of whether PA has adopted the code or not.
- New fossil fuel powered utility hookups are prohibited for new or substantially improved portions of the building.
- Electricity, heating, and cooling must be provided from onsite renewable sources if reasonably viable.
- Uses on the property must acquire their electricity from a 100% renewable energy provider.
- Electric vehicle charging stations are required for at least 25% of the required parking spaces.

Restricting Fossil Fuel-Based Energy Systems in New Construction

While many states across the country preempt local governments from restricting the use of gas in buildings, Pennsylvania has not passed such a pre-emption. As of May 2025, there are no municipalities in the commonwealth of PA that have banned new gas hookups or required building electrification. As more cities and states adopt regulations aimed at reducing greenhouse gas emissions from the built environment, more court cases are determining the legality of such ordinances. The two main court cases that have been decided- one from Berkeley, CA, and one from New York City - have reached different conclusions on essentially the same issue.

The City of Berkeley, CA was the first city in the nation to ban new natural gas hookups in new construction. Lawsuits were filed against the city (California Restaurant Assn. v. City of Berkeley), and the city lost their case in the 9th Circuit federal appellate court in 2024. The court found the city's ordinance was pre-empted by the federal Energy Policy and Conservation Act of 1975 (the Act that creates mandatory appliance efficiency standards and that spawned the Energy Star program for appliances). The court's sweeping interpretation of the Act found the city's ordinance was pre-empted because it concerned "reducing energy use to zero" for gas-powered appliances, and the Act pre-empts city and state ordinances from regulating energy efficiency or energy use of appliances covered by the Act. This decision only applies to jurisdictions within the 9th Circuit (PA is within the 3rd Circuit), leaving an opportunity for other courts to interpret other cases differently.

Instead of banning natural gas in new construction, New York City's Local Law 154 sets a limit on the carbon emissions that can be generated by fuel sources used in new construction. The limit set of 25 kg CO2/MMBtu essentially cannot be met by fossil-fuel based systems, making electric heating, cooling, and hot water systems, as well as appliances, the best option for new buildings. This law applies to more and more types of new buildings over the next few years, with the majority of residential building types being covered by the end of 2027. This law was challenged by the Association of Contracting Plumbers whose claim was similar to the Berkely case. The case was heard in the federal district court of the Southern District of New York, which disagreed with the Berkely decision and found that EPCA does not preempt a law that prevents some EPCA-covered appliances from being used in buildings.

If a municipality is considering adopting an ordinance to regulate the type of building energy systems permitted in new construction, or to limit greenhouse gas emissions associated with the energy systems in new construction, a holistic look at potential impacts of such a regulation should be taken, including how it will impact affordability. As Pennsylvania is a major producer of natural gas, this energy source is relatively inexpensive in comparison with other sources, including electricity, and the potential for energy cost burden should be a significant consideration in adopting such a regulation.

Setting Building Performance Standards

The adoption of Building Performance Standards (a regulation requiring a certain level of energy efficiency or emissions for existing buildings) is widely viewed as the most powerful policy tool available to drive improved performance and decarbonization in existing buildings.

The City of Philadelphia instated a "building tune-ups program" whereby owners of non-residential buildings over 50,000 SF are required to submit tune-up reports, plans, and certifications every five years. The City's Building Performance Policy does not set quantitative limits for energy usage but rather requires that a check and tune-up of building systems, such as sensors, set points, outside air control, and lighting, be performed by a Professional Engineer or Certified Energy Manager and submitted to the City.

Another example of a BPS is New York City's Local Law 97, which applies to buildings 25,000 square feet and above. This law sets carbon limits that tighten every five years and creates a series of annual fines for exceeding those limits. Two New York City co-ops brought suit against the law in Glen Oaks Village Owners v. NYC, claiming that the City's law is preempted by New York State's Climate Leadership and Community Protection Act (CLCPA). The New York Appellate Court found that the City defendants failed to show that the CLCPA did not preempt the local law. This decision is currently being appealed to the New York State Supreme Court.

Preparation for Energy Transition Technologies (i.e., "solar-ready" and "EV-ready")

Preparing new construction to be compatible with a future rooftop solar array or electric vehicle charging station has a nominal impact on upfront construction costs and can reduce future barriers to building owners adopting these technologies. While requiring parking spaces to be EV-ready can be incentivized or required, the building preparations required for solar-readiness (such as reinforced roof structures, wiring and conduit installation) must be incentivized and will typically not be burdensome for an applicant.

Example Ordinances

Solar-Ready Ordinance Example:

Delaware's **state code** includes a requirement for new buildings with a footprint of 50,000 SF or greater and under five stories to design a portion of the roof to support future solar development. Pennsylvania municipalities could request approval from the State to adopt a change to the UCC requiring a similar provision, although as of 2024 the State has not received any requests to include such a provision. Alternatively, municipalities could incentivize this design feature in their zoning or subdivision ordinance. Delaware's code could serve as a model for what types of buildings might be subject to such a requirement or incentive.

EV-Ready Ordinance Example:

West Chester Borough's **Subdivision and Land Development Ordinance** requires a certain percentage of parking spaces serving non-residential or multi-family uses to have electrical switchgear installed to support the operation of level 2 charging stations (also known as "make ready" spaces). For new single-family dwellings, the dwelling or garage must be wired to accommodate a future level 2 charging station.

Narberth Borough and **Phoenixville Borough**'s SALDO ordinances both include broad provisions authorizing the Borough to designate and EV charging spaces within public parking lots and enforce their proper use.

Green Building Certifications / Design Features

A municipality can leverage existing building performance programs and rating systems when incentivizing building energy efficiency. These programs have the benefit of being thoroughly vetted by industry experts and come with ready-made standards. Popular programs include; **LEED**, **Energy Star**, **Passive House**, **Well certification**, **Green Globes**, **Energy Conservation Codes** from the International Code Council, and others. As each program has different goals, municipalities should thoroughly research these programs to ensure they meet the goals of the municipality before incentivizing one program over another.

Example Ordinances

West Chester Borough has a voluntary **Sustainable Certification Program** that recognizes developers who integrate sustainable features into new commercial developments and rehabilitation projects. To achieve certification, participants must secure points from a checklist of sustainable practices. Certified projects receive a plaque for display on the frontage of the business, along with press initiated by the Borough once completed. The Borough's Zoning Ordinance includes a "**Height Option Overlay District**" that specifies that all new buildings over 45 feet must be designed, constructed and maintained at a minimum certification level of gold based on their Sustainable Certification Program.

Doylestown Township's **Green Points system** awards applicants for new development projects (both residential and non-residential) points for green building elements, including energy efficiency measures. Each point equates to a 1% reduction in permit fees, with a maximum reduction of 25%. Any non-residential building that wishes to participate in the Green Points program must comply with the United States Green Building Council requirements for a certified LEED project (and points are awarded for achieving each level of LEED designation).

Kennett Township's zoning ordinance permits additional height in exchange for renewable energy, green building design, or Transferrable Development Rights (TDRs) for Traditional Neighborhood Developments within their Commercial District. See Section 240 -1003.F.12.

Lower Merion's BMV Bryn Mawr Village District provides a bonus Floor-to-Area Ratio (FAR) of .02 if a building is constructed with a green roof.

Chester City's zoning ordinance includes "**Green Incentives**" (see section 1361.018) that allow for increased flexibility, including provisions such as:

- Flexibility in dimensional requirements and building height when solar panels are included in the project
- Projects that include a green roof may exceed the maximum building coverage
- Pervious pavement is considered impervious coverage, but proposals that include pervious pavement are permitted additional impervious coverage.
- Buildings that will be LEED certified may exceed the maximum building coverage and/or impervious coverage
- Applicants are encouraged to provide electric vehicle charging stations, and these spaces may take the place of required parking spaces.

Abington Township's Business Center District ordinance (starting on page 61) allots bonus points for green building features which can be used to achieve increased height or density. The ordinance awards one bonus point for:

- Provision of a green roof. At least 50% of the roof must have vegetative cover, and an operating & maintenance (O&M) agreement must be made with the Township, with provisions acceptable to the Township for the design and maintenance of the Green Roof, and
- Provision of a solar array with panels meeting a minimum size of 50 s.f., or 10% of the roof area, whichever is greater.

Cheltenham Township's **Bonuses for Sustainable Development** apply to certain classes of development within their MU3 Mixed Use district. Class 1 developments that utilize this incentive may: increase maximum impervious area to 50% of the total lot area; reduce required green area to a min. of 50% of the total lot area, or increase the building height to 60 feet. Class 2 developments may increase their Floor Area Ratio to 0.5. To achieve these incentives, applicants must incorporate at least three sustainable development practices from a specified list that includes: green stormwater infrastructure, green roofs, on-site renewable energy systems, minimized woodland disturbance, dedication of habitat/conservation land, and reduced heat island effect.

Next Steps

If your municipality is interested in exploring how it can amend its ordinances to require and incentivize energy efficiency, electrification, and renewable energy, start by discussing your goals and existing policies with a planning consultant and your solicitor. Ordinances should help enact stated municipal policies, so if no explicit policies are in place, that might be a good place to start. Your county planning commission can advise on how you might establish an effective system of goals, policies, and ordinances to achieve the municipality's objectives and effectively reduce greenhouse gas emissions.

We would like to add more ordinance examples to this toolkit! If your community has adopted building energy efficiency ordinance language, or you are aware of a local municipality that has adopted building energy efficiency ordinance language please share that information with:

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