



Solar Field at Curran Place, University of Dayton

## Energy

Energy systems are in the midst of historic transitions and local governments can benefit from these advancements.

### The Issues

Over the past decade, a historic transition has been underway in the energy market. As a fuel for electricity generation, coal is steadily losing market share, especially within the Miami Valley. In 2012, Dayton Power & Light (DP&L) shut down the six coal-fired generating units at Hutchings Station in Montgomery County, replacing them with natural gas generators.

The global transition from fossil fuels to renewable forms of energy production is

evident throughout Ohio. The closure of coal-fired generation plants and the increasing share of production from renewable sources, particularly wind power, herald a coming future of clean (or cleaner) energy. Although [fossil fuels continue to dominate the energy mix](#) in the United States, the growth of renewable energy is [a clear trend](#), having doubled since 2008. While nearly all baseload electricity generated in our Region is fueled by natural gas, the Public Utilities Commission of Ohio [lists](#) over 200 renewable energy facilities in Darke, Greene, Miami, Montgomery and Preble Counties. Together, these facilities have a capacity of over 20 megawatts. Generation from renewable sources varies based on time of day, time of year, and daily weather conditions. This amount of renewable generation is conservatively estimated to be sufficient to power about 2,200 homes.

Renewable energy sources are more sustainable and offer some definite advantages over carbon-based sources. The main drawback to carbon-based fossil fuels, like coal, is the pollutants generated from their use, including particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide, volatile organic compounds (VOCs), and greenhouse gases (GHGs). These pollutants pose real threats to human health, the natural environment, agriculture, and climate stability. The environmental costs of fossil fuel [production](#) and its [waste by-products](#) are concerns as well. The market is moving away from the “dirtiest,” or highest polluting, of fossil fuels – [coal](#) – simply because it is better business to use cleaner fuels.

By demonstrating, educating, and facilitating energy efficiency, along with supporting local renewable energy development, communities can help their residents save energy, the environment, and money. Renewable energy, such as rooftop solar energy systems, can reduce our dependence on fossil fuels, while also reducing our need for out-of-region power generation. Locally produced energy can be cleaner, more reliable, and more resilient. Together, such efforts can build your community’s sustainability “brand” that can attract new business and residents.

## What Communities can do

There are many ways for local governments to participate in and encourage the transition to cleaner energy — either by providing incentives or removing unnecessary barriers. Educating your residents about energy efficiency, the many ways to buy clean

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### Local contacts

- Municipal and school energy procurement and efficiency programs – Ken Swink, [SW Ohio EPC](#), 937.890.3725, [Ken.Swink@epcschools.org](mailto:Ken.Swink@epcschools.org)
- Comprehensive energy audits – DP&L has a searchable list of auditors on their [Channel Partners](#) page.
- Energy finance - Jerry Brunswick, [Dayton-Montgomery County Port Authority](#) (PACE), 937.226.0457x120, [jerry@daytonport.com](mailto:jerry@daytonport.com)
- LED street lighting — Robyn Livesay, [Miami Valley Lighting](#), 937.259.7192
- Municipal climate action plans:
  - Mark Charles, Sustainability Manager, City of Dayton, 937.333.3600
  - Oliver Kroner, Sustainability Coordinator, City of Cincinnati, 513.352.6992, [oliver.kroner@cincinnati-oh.gov](mailto:oliver.kroner@cincinnati-oh.gov)
  - [Solar permitting](#) — Robert Beeler, Dayton Power & Light, 937.331.4094, [Robert.Beeler@aes.com](mailto:Robert.Beeler@aes.com)
  - Home Weatherization – Craig Idle, MV Community Action Partnership, [craig.idle@mvcap.com](mailto:craig.idle@mvcap.com), 937.341.5000
- Local energy policy – Trish Demeter, The Ohio Environmental Council, [tdemeter@theoec.org](mailto:tdemeter@theoec.org), 614.487.7506
- Ohio Energy Efficiency Program – Manny Anunike, [manny.anunike@development.ohio.gov](mailto:manny.anunike@development.ohio.gov), 614.466.4092

### Resources

- American Council for an Energy-Efficient Economy - [Local Energy Efficiency Policy](#)
- [Database for State Incentives for Renewables and Efficiency](#) (DSIRE)
- [DP&L Energy Efficiency Programs](#)
- [EPA Local Government Climate and Energy Strategy Series](#)
- [Green Energy Ohio](#)
- [Grow Solar Resources and Training](#)
- [Community energy aggregation](#)
- [Miami Valley Data Commons](#)

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energy, and financing options is a great way to get started.

### Community Education & Outreach

- Develop and communicate a climate action plan that reveals the major sources of carbon pollution in your community and the energy-saving ways to reduce emissions. The [Green Cincinnati Plan](#) and Cleveland's [Climate Action Plan](#) are good models.
- Offer residents the option of purchasing clean power through [community aggregation](#). In Ohio, villages, cities, townships and counties may be [aggregators](#). **BYG**
- Encourage residents and businesses to take advantage of low-cost energy audit services provided through [Vectren](#), [DP&L](#) and the [Dayton Regional Green](#) program.
- Connect eligible residents with Miami Valley Community Action Partnership's [Home Weatherization Assistance Program](#), which helps renters and low-income home owners improve their home's energy efficiency and in turn reduce their utility bills.
- Help educate residents about energy and water conservation, including opportunities to achieve deep energy reductions in existing housing. NOPEC has a great [online tool for residents to use](#).
- Provide services to make it easy for residents to install solar power. [Solarize Cincinnati](#) program is an example.
- Inform households and businesses of financing opportunities for energy improvements, including [loans](#), [rebates](#) and tax [abatements](#) and credits, [net metering](#), energy conservation subsidy exclusions, [clean energy financing](#), and [PACE](#) and [RPACE](#).

- Conduct feasibility studies to inform residents about the cost-effectiveness of energy alternatives.
- Provide information about [green leasing practices](#) so the interests of building owners and tenants are aligned to save energy.
- Help educate the public about local clean energy installations via municipal publications and support of the annual Green Energy Ohio [tour](#) and the [National Solar Tour](#).
- Encourage your residents to use the Public Utility Commission's [Apples-to-Apples](#) tool to compare utility providers and switch to renewable electricity and natural gas providers.

### Internal operations

- Adopt goals and a strategic energy plan for renewable energy usage, energy use reductions, and/or carbon emissions reductions (e.g., derive a percentage of the city's electricity from solar or wind sources). [Communities across the state are taking action](#). The U.S. Department of Energy has a [step-by-step guide](#) for community energy planning. **BYG**
  - Measure, monitor, and publicly report your municipal greenhouse gas emissions. One approach is submitting all of your buildings at the *Bring Your Green* tracking platform. **BYG**
  - Require the purchase of EnergyStar equipment for all municipal procurements.
  - Conduct an energy audit of all city-owned buildings and then implement cost-effective improvements in building energy performance. The City of Beavercreek conducted an audit encompassing seven public facilities in 2012.
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- Establish an energy manager position or dedicate a staff member to [manage municipal energy usage](#). **BYG**
- Conduct a citywide survey of solar suitability for public buildings and vacant sites. [Kansas City](#), MO, and [Minneapolis](#), MN did this. **BYG**
- Establish a Reinvestment Fund (using previous utility cost savings) to create a [revolving mechanism for funding energy improvements](#). **BYG**
- Educate building and electrical inspectors about permit and installation procedures for renewable energy systems. A good [guide is here](#).
- [Install](#) energy-efficient and cost-effective LED street lighting. This can be part of a “[Smart City](#)” initiative which may link to different funding streams.
- Vehicle fleet efficiency — See Transportation chapter.
- Tree planting — See Trees, Native Species & Land Management chapter.

### Ordinances and policies

- Update the zoning regulations and streamline the permitting process for small-scale solar and wind systems. The [Solar America Board for Codes and Standards](#) recommends an expedited permitting process. Vermont has a [10-day expedited permitting](#) process. The American Planning Association has [examples](#) from multiple communities in Ohio and across the country. The solar ordinance from [Orange Village is here](#), and a summary of planning and zoning issues for wind turbine permitting is [here](#). **BYG**
- Consider [benchmarking and disclosure ordinances](#) for large commercial buildings.
- Green building incentives — See Green Building chapter.

## Public Buildings Energy Case Studies

### Kettering Middle School

Installation of 150kW solar photovoltaic rooftop system at existing Kettering Middle School



### Cincinnati District 3 Police HQ

40,000 square foot new Net Zero Designed building, includes 330 KW solar system to produce 100% of the building’s consumption.



Photos Courtesy of Energy Optimizers, LLC

- Zoning for mixed-use and transit-oriented districts — See Land Use & Development chapter.

### Broader collaboration

- Work with financial institutions and other partners, such as Dayton Regional Green and Dayton Montgomery County Port Authority, to provide energy efficiency and renewable energy financing options, such as [Property-Assessed Clean Energy \(PACE\)](#). **BYG**

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- Create community aggregation for clean power generation service options available in Ohio. Examples are Northeast Ohio Public Energy Council ([NOPEC](#)) and Southeast Ohio Public Energy Council ([SOPEC](#)).
  - Work with Ohio General Assembly members to restore Ohio's energy efficiency and renewable energy mandates and programs. **BYG**
  - Work with other cities to adopt the latest version of the energy conservation code and get renewable energy and geothermal energy incorporated into the Ohio Building Code.
  - Join other local governments across the country for greater utilization of solar energy from on and off site solar projects that serve municipal operations. Leverage the experience of other municipalities who have gone before and shared their solar project development challenges and opportunities. [U.S. EPA has a portal](#) to get you started. **BYG**
  - Work in regional planning forums, such as MVRPC, to promote land use patterns and methods of transportation that use less energy.
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