

The items listed below are for consideration and discussion, not final recommendations. The intent is for them to be vetted by stakeholders, municipalities and the public to identify the actions that will end up in the region's Climate Action and Adaptation Plan (CAAP).



ENERGY AND BUILDINGS

10/14/20

- ✦ 67% of the Centre Region's GHG emissions are energy related
- ✦ Co-Benefits: improved resiliency (shelter in place longer, less reliant on grid), reduced operating and infrastructure costs, improved indoor air quality, improved health
- ✦ **Projected Goal:** Reduce building energy usage 30%-residential and 25%-commercial

1. Encourage increased commercial building energy efficiency and conservation

A.1 Outreach to expand participation in energy efficiency programs and promote climate friendly practices in building and construction

- Support and promote C-PACE (Commercial Property Assessed Clean Energy)
- Support and promote First Energy rebate programs
- Promote building energy efficiency to address the demand side of the resilience equation. Increased shelter in place buildings have a benefit to emergency management.
- Educate on the importance of reducing energy consumption, not just the energy costs.
- Promote automated sensors to support behavioral change
- Promote investment in closed loop heating/cooling systems
- Education and Field study to test performance on newer standards (building envelope test, insulation, duct leakage). Study can help determine priorities.
- Identify and interpret energy code changes and create enforcement policies
- Create new position in Code Agency to provide outreach and implement energy programs

B.1 Implement a commercial Benchmarking Program (Energy Star Portfolio Manager)

- Encourage West Penn Power and Columbia to participate in electronically sharing data with Energy Star.
- Consider an ordinance to require benchmarking for a certain sized property.

- C.1 Identify and support an energy audit program (WPP, PennTAP, etc.)
 - While initial focus will be on reducing energy consumption, audits should grow to provide decarbonization road maps for property owners.
- D.1 Develop a commissioning program (commercial) that will promote tuning up existing equipment and provide a 5-year payback.
 - Train-the-trainer: target facilities managers to teach them the basics of commissioning, then they teach their staff.
- E.1 Identify and adopt strategies to reduce energy efficiency barriers in rent/lease properties
 - Require landlords to provide energy budgets to tenants
 - Pursue energy efficiency standards for rentals – part of rental permit
 - Incorporate efficiency integrated systems packages (lighting, plug loads, HVAC commissioning, envelope) into real estate life-cycle (tenant fit-out, rooftop unit replacement and whole building renovation)
 - <https://buildings.lbl.gov/cbs/isp> : toolkits
- F.1 Garner support for businesses to create a District 2030 in the Centre Region where businesses strive toward 50% reductions in energy use, water consumption, and transportation emissions by 2030.
- G.1 Expand partnerships with Centre Region authorities and SCASD to support energy efficiency programs
- H.1 Consider creating an infrastructure bank that would allow infrastructure investments if they met the guidelines for a rapid payback.
- I.1 Determine the feasibility of district heating/cooling between State College Borough and Penn State, where heating and cooling would be provided to buildings that are connected to and powered by Penn State’s localized utility plant.
- J.1 Advocate for statewide standards to ensure support for energy efficiency and renewable energy.
- K.1 Establish a process to collect accurate, local refrigerant data (building usage) in order to include in the next GHG inventory and develop strategies for refrigerant loss reductions.
- L.1 Promote new construction and major renovations that meet high green building standards – energy efficiency, carbon impact and construction waste, while respecting community context
- M.1 Outreach and education to promote climate friendly practices in building and construction
- N.1 Identify and adopt green zoning ordinances that incentivize energy efficiency

- Incentivize passive solar design strategies and improved building envelope designs
- Connect the region's forest landscape to the building sector by utilizing more wood in our building materials
- Green roofs

2. Make more homes affordable, comfortable, healthy and energy efficient

A.2 Develop and implement a residential energy efficiency program

- Energy Star Energy Yardstick, Home advisor
- DOE's Energy Score Program (DOE)

B.2 Identify and support a weatherization program, with priority being on lower income housing

C.2 Identify and support a home or building energy audit program (WPP, PennTAP, etc.)

D.2 Establish minimum energy efficiency standards for affordable housing program

3. Maximize efficiency of municipal facilities, equipment and operations

A.3 Hire facilities coordinator and train them in energy efficiency training

B.3 Perform energy audits and benchmarking of municipal facilities to establish an energy management plan for public facilities.

- Initial focus should be on energy conservation measures and then expanded to be a decarbonization roadmap.
- Align capital improvement plans and maintenance improvements to support energy efficiency and renewable energy projects.
- Replace all outdoor lighting to LEDs

C.3 Track and reduce refrigerant emissions in COG facilities

D.3 Consider an ordinance for all new municipal buildings to meet high performance building standards, such as LEED certification, net zero energy ready standard

4. Enhance resiliency throughout the community

A.4 Enhance community-wide resilience through investments in critical facilities and microgrids.

B.4 Help bake resilience into electricity system planning through engagement with utilities and regulators.

C.4 Collaborate with West Penn Power to make sure they will have the infrastructure to meet the increasing demand for commercial and personal electric vehicles.