Municipal Sustainability

A primer on municipal decarbonization efforts
What does an Office of Sustainability DO?

- Track and model emissions
  - 500+ utility meters
  - Fuel use of over 1,000 vehicles (gas, diesel, propane, CNG, electric)

- Research policy & best practices
  - Urban Agriculture, Energy Savings Performance Contracting, Streetlight Retrofits, Adopting building codes, etc

- Track emissions trends
  - Baseline year: 2005
  - Operations inventories: Annually
  - Community inventories: Every 3 years

- Work with partners to advance goals
  - Collaborative grants (e.g. NGOs, UTK, LPCs, TVA)
  - Collaborative capital investments (e.g. Community Solar, EV Charging)
Operational Emission Trends

Municipal Government Emissions: Actual vs. Target
Operational Emissions cont.

- 50% Buildings and outdoor lighting
  - LED streetlight retrofit reduced energy use 65%
  - Efficiency investments reduced building energy approx. 26%
- 50% from Vehicles
  - Investing in EV (bus and light duty)
  - Adding workplace charging for employees
Community Emission Trends
Major drivers

• Building sector reductions driven mostly by investments in low-carbon production (TVA) and *some* efficiency gains.

• Population growth and increased job opportunities in the area are driving emissions (per capita gains).
  • Average vehicle in our area is 10 years old
  • Manufacturer MPG efficiency hasn’t increased significantly in the last 15-20 years
  • Significant economic commercial investments leading to increases in square footage
Framing our priorities

1. Potential emission reduction
2. Length of time experts thought it would take to start
3. Potential community benefit / likeliness to advance positive equity outcomes

Transportation Priorities

- Expand and improve bicycle and pedestrian facilities, connectivity, convenience, and/or safety in a manner that significantly increases the number of trips taken by walking or biking
  Measuring success: Miles of improvement, mapping corridors of connectivity, estimating pedestrian and bicycle trips

- Make public transit investments that significantly enhance coverage, service quality, frequency, and/or speed
  Measuring success: Number of trips, average route frequency, number of bus stop improvements, Community VMT

- Significantly accelerate community adoption of electric vehicles
  Measuring success: Number of EV registrations, number of EVSE by level of service, EVSE distribution

- Partner with major local commercial fleet operators to transition to electric vehicles
  Measuring success: EVSE on commercial property, EV registrations
Knoxville’s Priorities

Transportation
1. Expand bike/ped facilities
2. Make investments in public transit
3. Accelerate community adoption of EVs
4. Work with commercial fleets to transition

Buildings/Energy
1. Commercial and multifamily energy reduction
2. Residential energy reduction
3. Amplify opportunities to invest in renewables
4. Promote opportunistic thermal electrification

Waste
1. Commercial organic diversion
2. Increase recycling rate
3. Promote consumption-reduction
4. Residential organic diversion
National & Regional Commitments
(current)

- Carbon Disclosure Project
- Chicago Climate Charter
- Climate Mayors
- DOE Better Buildings Challenge (Goal Achiever in 2021)
- DOE Better Climate Challenge
- DOE Low-Carbon 2-year Pilot
- Drive Electric Tennessee & Drive Electric Smoky Mountains
- Global Covenant of Mayors (Paris Accord reporting & goal setting)
- Southeast Sustainability Directors Network
- TVA Connected Communities Steering Committee
- TVA Regional Energy Resource Council
- Urban Sustainability Directors Network
Thank you!

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