Energy and Climate Change in Community Plans

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### Session Objectives

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<td>Trends in Energy and Climate Planning</td>
<td>To understand you are not alone.</td>
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<td>Planning Approach to Develop Effective Policy</td>
<td>There’s a method to the madness.</td>
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<td>Examples of Energy and Climate Policy</td>
<td>Closing the gap between theory and practice.</td>
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Why Address Energy and Climate?

- Provide Top-level Policy Support through the Community Plan
- Bridge Gaps Between Utilities, Planners, Others
- Integrate with Other Energy, Climate Plans and Policies
- Address Barriers, Incentives for Energy and Climate
- Build Community Resiliency
Impacts of Buildings: The Facts

- 36 Percent of Total Energy Use and 65 Percent of Electricity Consumption
- 30 Percent of Greenhouse Gas Emissions
- 30 Percent of Raw Materials Use
- 12 Percent of Potable Water Consumption

Source: U.S. Green Building Council
CLIMATE SUMMIT

What if it's a big hoax and we create a better world for nothing?

- Energy Independence
- Preserve rainforests
- Sustainability
- Green jobs
- Livable cities
- Renewables
- Clean water, air
- Healthy children
- Etc., etc.
Trends in Community Energy and Climate Planning

- Fast changing landscape bolstered by Recovery Act
- Potential climate legislation/regulation, energy implications
- Local governments filling leadership void
- Connecting the dots: energy, land use, transportation
Energy Policy: Exploring the Opportunities

- Residential energy efficiency
- Commercial energy efficiency
- Industrial energy efficiency
- Smart grid technologies
- Renewable energy
- Outreach and education
- City operations
Climate Policy: Exploring the Opportunities

- Climate Mitigation and Action Planning
  - Reducing GHGs from Vehicle Miles Traveled
  - Encouraging “Green” Building to Reduce Energy Use
  - Providing Policy Support for Managing Solid Waste
  - Reducing GHGs Associated With Utility Infrastructure
  - Educating and Engaging Citizens

- Climate Adaptation Planning
  - Identifying and Addressing Potential Future Hazard Areas from Changing Weather
  - Addressing Water Supply and Water Conservation
  - Anticipating Changing Vegetation and Habitats
Main Steps in the Energy/Climate Planning Process

1. Develop Shared Vision that Reflects Community Values
2. Develop Energy Baseline/GHG Inventory and Forecast
3. Set Energy/GHG Goals and Targets
4. Identify and Analyze Strategies
5. Compare, Prioritize, and Organize Into a Cohesive Whole
6. Implement, Evaluate, and Monitor Results
The Energy/GHG Baseline and Inventory: Principles and Approach

Define
• Boundaries: Do we include City limits, growth areas?
• Metrics: What do we measure? Tons of CO2, kWh of electricity.
• Methodologies: What protocols are most appropriate?

Collect
• Identify data sources: Utility records, VMTs from regional transportation organizations, stationary fuel sources (e.g. propane sales).

Analyze
• Compile and analyze data: Who are our biggest energy users by sector? Our largest sources of GHG emissions?

Review
• Verify assumptions
• Establish buy-in on results
Setting Goals and Targets

GHG Action Plan Process - Consider Other Targets

- Business As Usual Forecast for Greensboro
- State of Virginia (30% reduction over BAU in 2015)
- Chapel Hill (60% reduction over 2005 by 2050)
- Durham (30% reduction over 2005 by 2030)
- Obama Administration Pledge at Copenhagen (17% reduction over 2005 by 2020)
- U.S. Mayor’s Climate Protection Agreement, Winston-Salem (7% reduction over 1990 by 2012)
Energy and GHGs: Translating Findings to Policy

- Electricity and Natural Gas Consumption
  - Residential, commercial, industrial sectors
- Stationary Fuel Use: Propane, Diesel
- Mobile Emissions from Vehicles on Roads
- Community Generated Waste/Recycling
- Other Miscellaneous Sources

Sample Community Energy Profile

- Residential Electricity
- Residential Natural gas
- Commercial Electricity
- Commercial Natural gas
- Industrial Electricity
- Industrial Natural gas
Energy Policy: Plan Fort Collins

Topic/Element Area: Environmental Resources

“Principle ENV5: To reduce net community energy use for new construction from conventional fossil fuel sources (e.g., coal, natural gas), the City will expand on current efforts and develop new strategies for increased energy efficiency and use of renewable energy.”

Policies:

- **Leadership in Public Buildings**
- **Utilize Solar Access**
- **Remove Barriers in Codes**
- **Consider Renewable Energy in New Development Layouts**
- **Provide Information and Education**
- **Offer Incentives to Exceed Code Requirements**
Climate Policy: Plan Fort Collins

“Principle ENV 11: To help engender a more economically efficient, successful, and resilient community, and to reduce the impact of the Fort Collins community on global climate change, the Fort Collins community will reduce greenhouse gas emissions 20% below 2005 levels by 2020 and 80% by 2050.”

Policies:

- Implement Climate Action Plan
- Update Codes for Energy Efficiency in Buildings
- Provide Assistance to Residents and Businesses
- Lead by Example in Municipal Operations
Energy Policy: City of Omaha

- **“Urban Form and Transportation**: Through regulatory and other incentives, reward project designs that utilize neighborhood energy sources, such as a centralized area for solar collectors or pooled solar access.”

- **“Resource Conservation**: Encourage the supply of diverse, renewable and sustainable energy.”
  - Incentives for geo-thermal heating and cooling systems
  - Protection of solar access balanced with tree planting
  - Renewable energy in redevelopment plans
  - Infrastructure for electric vehicles
Questions for the Group

- How is your community approaching energy and climate planning? Stand alone or integrated plans?

- Have you learned any valuable lessons to share with the group? How did you overcome challenges?

- Where could energy, climate be addressed in your community plan elements?