



Energy and Climate Change in Community Plans

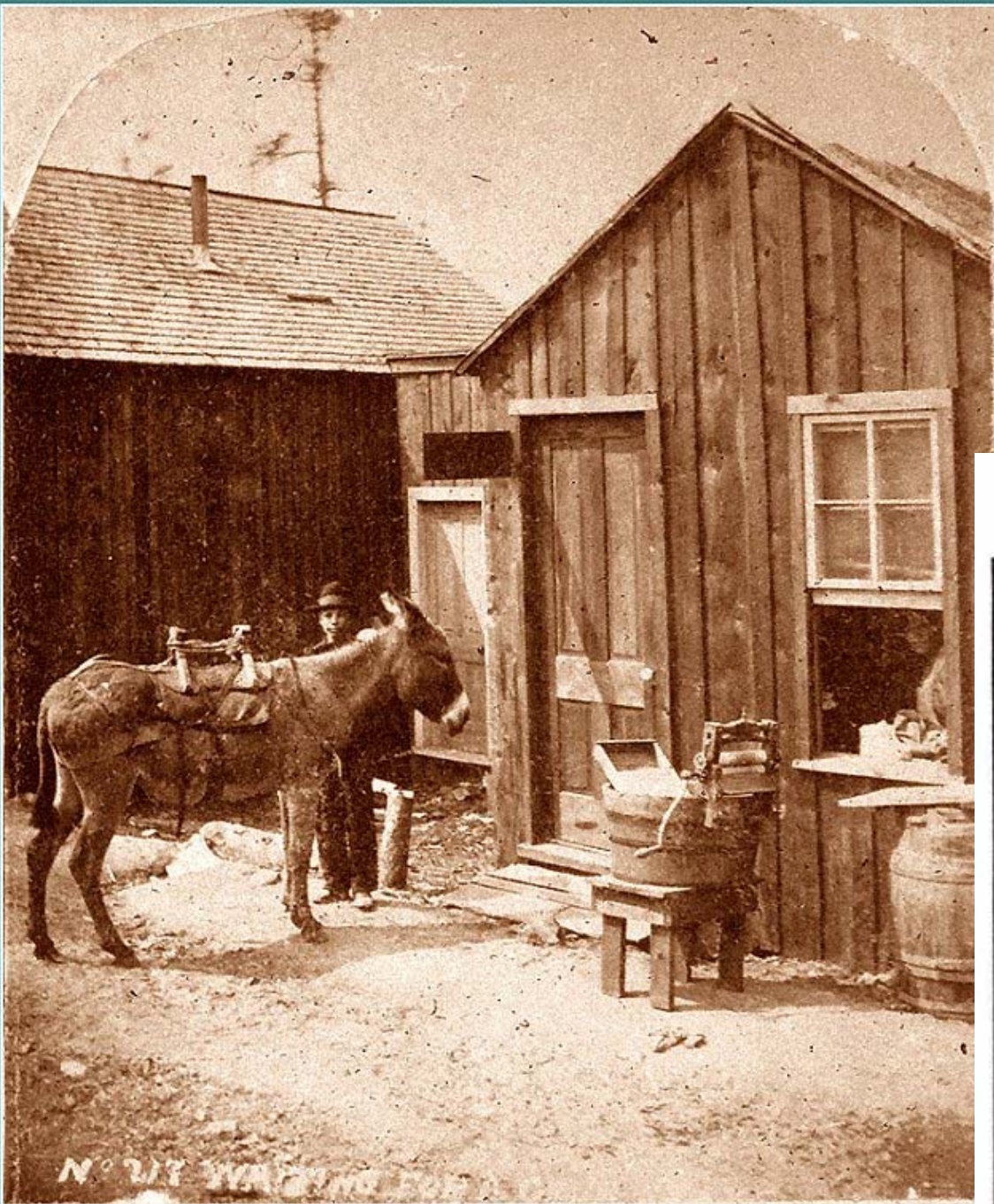
Dave Wortman, Brendle Group

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Engineering Sustainable Change

...1881



A typical home in Leadville, Colorado - 1880 - Ted Kiersey Collection



...and 2011





Session Objectives

Topic	Purpose
Why Climate and Energy Planning?	Benefits of addressing topics in a community plan.
Trends in Energy and Climate Planning	To understand you are not alone.
Planning Approach to Develop Effective Policy	There's a method to the madness.
Examples of Energy and Climate Policy	Closing the gap between theory and practice.

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

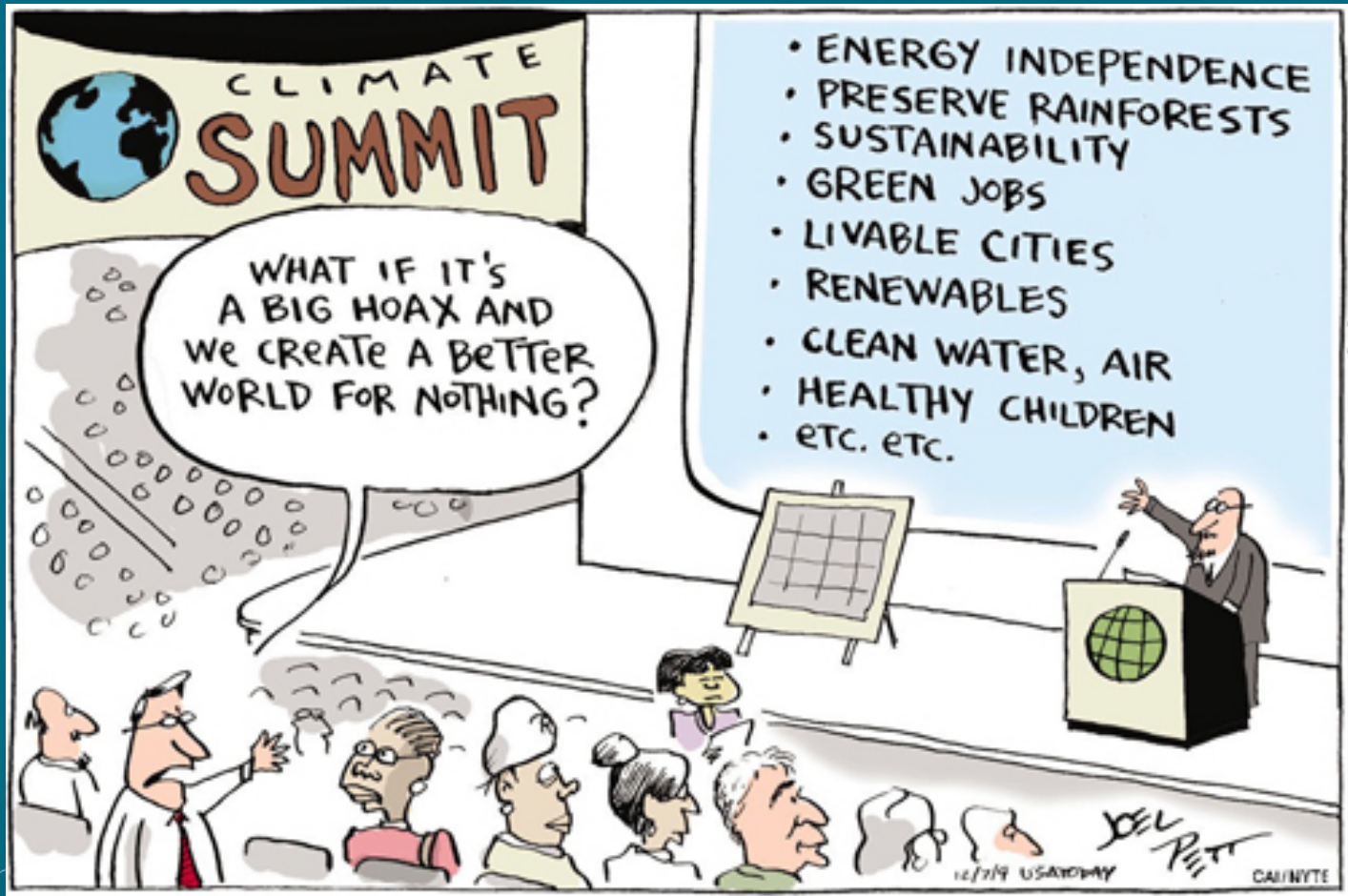


Impacts of Buildings: The Facts

- 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

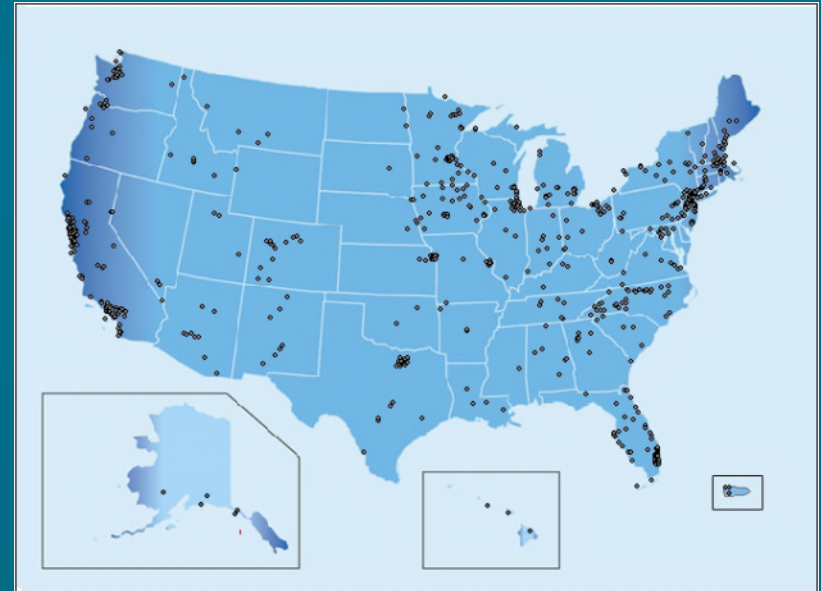
Source: U.S. Green Building Council





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

Develop Shared Vision that Reflects Community Values

Develop Energy Baseline/GHG Inventory and Forecast

Set Energy/GHG Goals and Targets

Identify and Analyze Strategies

Compare, Prioritize, and Organize Into a Cohesive Whole

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

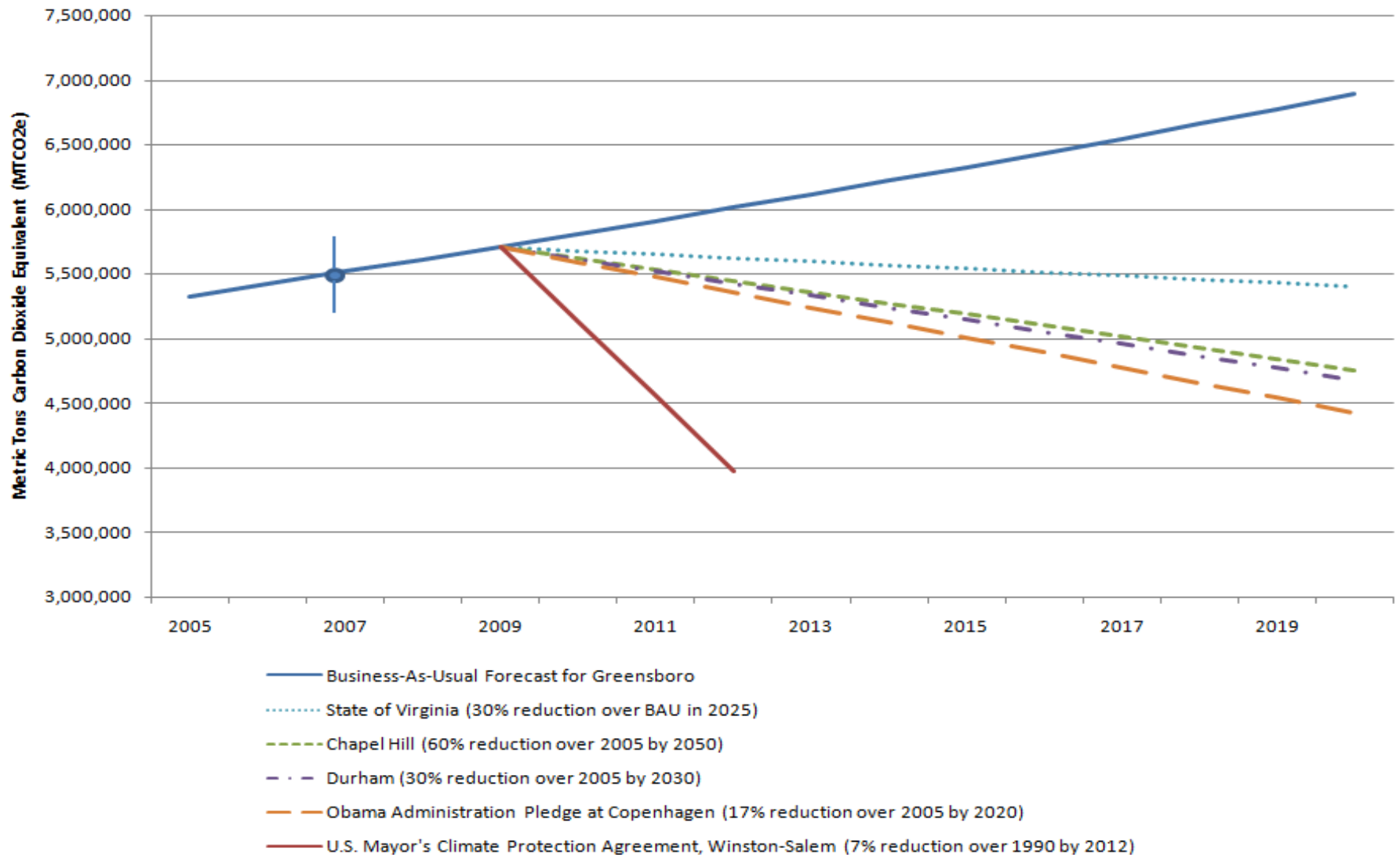
- Compile and analyze data: Who are our biggest energy users by sector? Our largest sources of GHG emissions?

Review

- Verify assumptions
- Establish buy-in on results

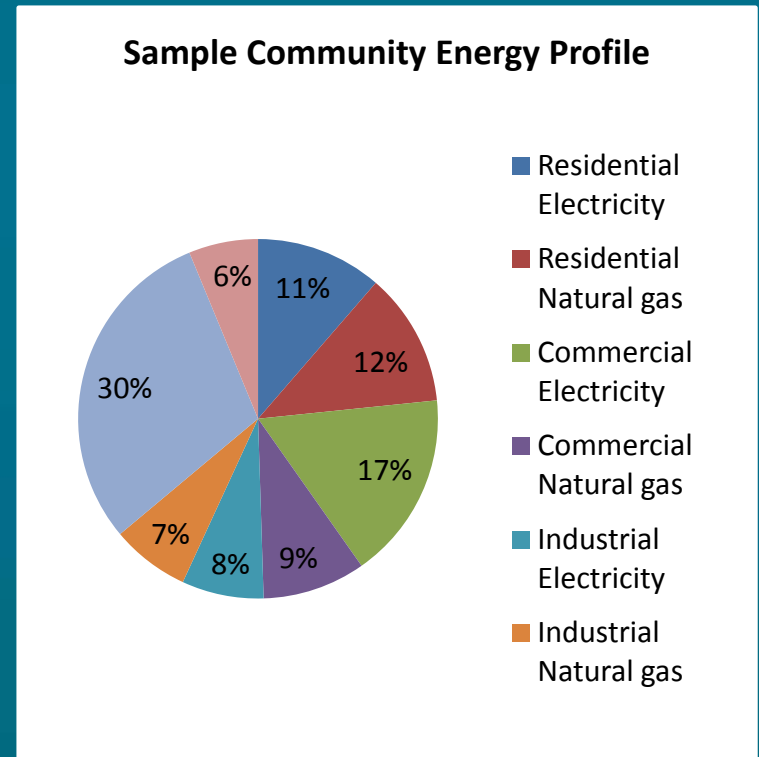
Setting Goals and Targets

GHG Action Plan Process - Consider Other Targets

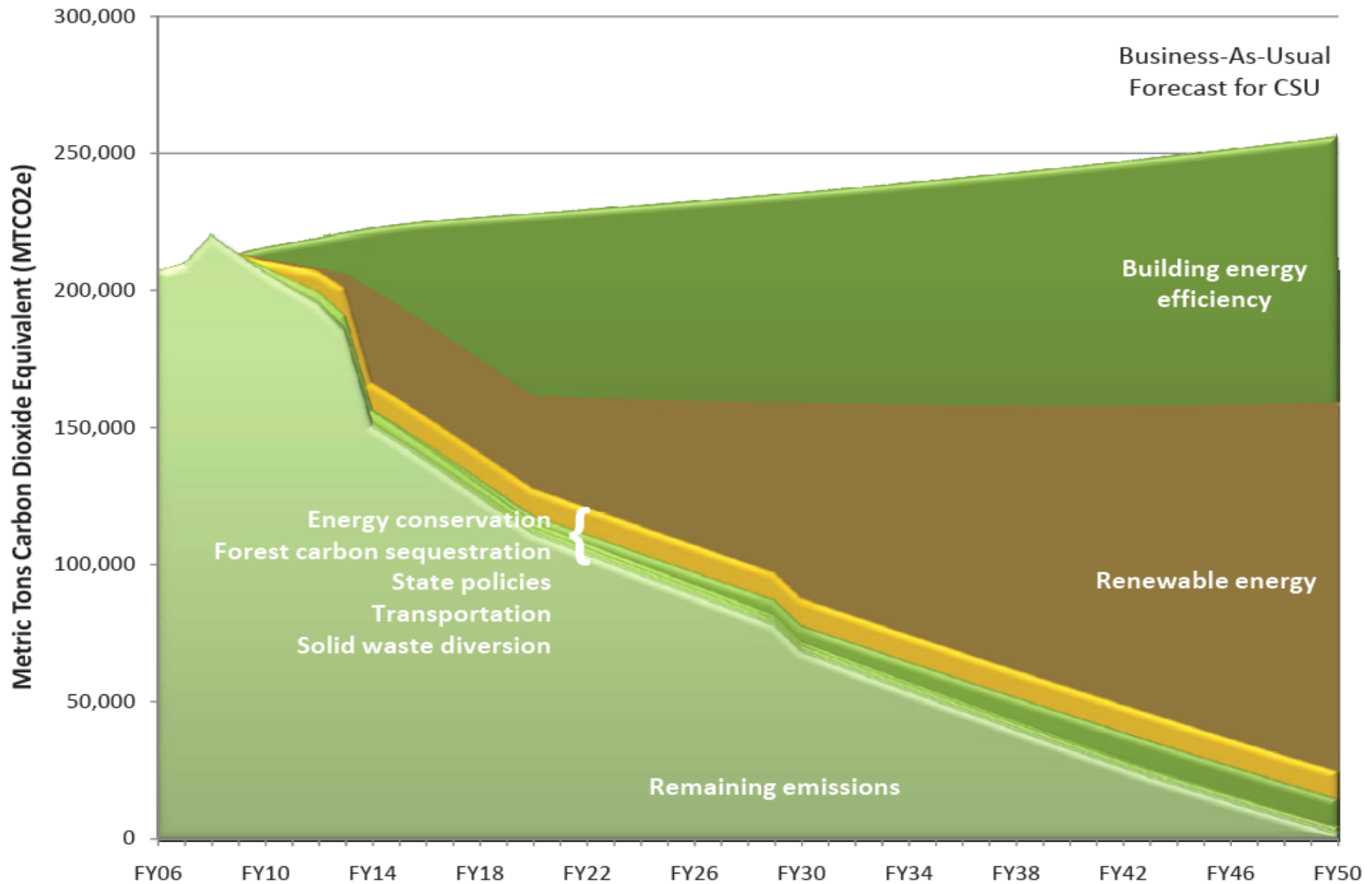


Energy and GHGs: Translating Findings to Policy

- 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



Translating Findings to Policy



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?



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