

# Writing an Energy Master Plan



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# Energy Master Plan

- Energy Master Plans- SB 422 (2008)

- Enabling Legislation
- Permits Communities to adopt Energy Chapters in their Master Plans

CL 269:1(n)

“An Energy Section, which includes an analysis of energy and fuel resources, needs, scarcities, costs, and problems affecting the municipality and a statement of policy on the conservation of energy.”

# Energy Master Plan

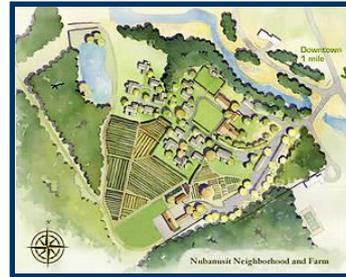
- **Why do Communities need an Energy Master Plan?**
  - Set Goals- Vision of the community
  - Sets Action- Foundation for the community
    - Department actions
    - Board actions
  - Regulations must advance the goals state in the master plan

You **CAN NOT** adopt energy regulations without the master plan reflecting energy conservation vision.

# Components

## 1) Make Connection between Energy & Planning

### Smart Growth



### Building Codes



### Alternative Transportation



### Nodal Development



# Components

## 1) Connection Energy & Planning Cont'...

RSA 672:1 III-a: (Declaration of Purpose)

- Encourage energy efficient patterns of development.
- Zoning Ordinances should not unreasonably limit renewable energy systems.

RSA 674:17: (Purpose of Zoning Ordinances)

- Assure proper use of natural resources
- Encourage agriculture
- Encourage renewable energy
- Protect access to energy sources by regulation of orientation of streets, lots, and buildings

Relation to Other Master Plan Chapters

# Components

## 2) Recognize Steps Already Taken

In many cases the Energy Master Plan won't be the first actions taken by a municipality.

- Think about what steps have already been taken
  - Zoning ordinances enacted
    - Cluster Subdivision
    - Village Districts
    - Mixed Use
    - Agriculture
  - Inventories conducted
  - Actions taken in municipal buildings (lighting retrofits, energy star products)
  - Committees formed (Local Energy Committee)

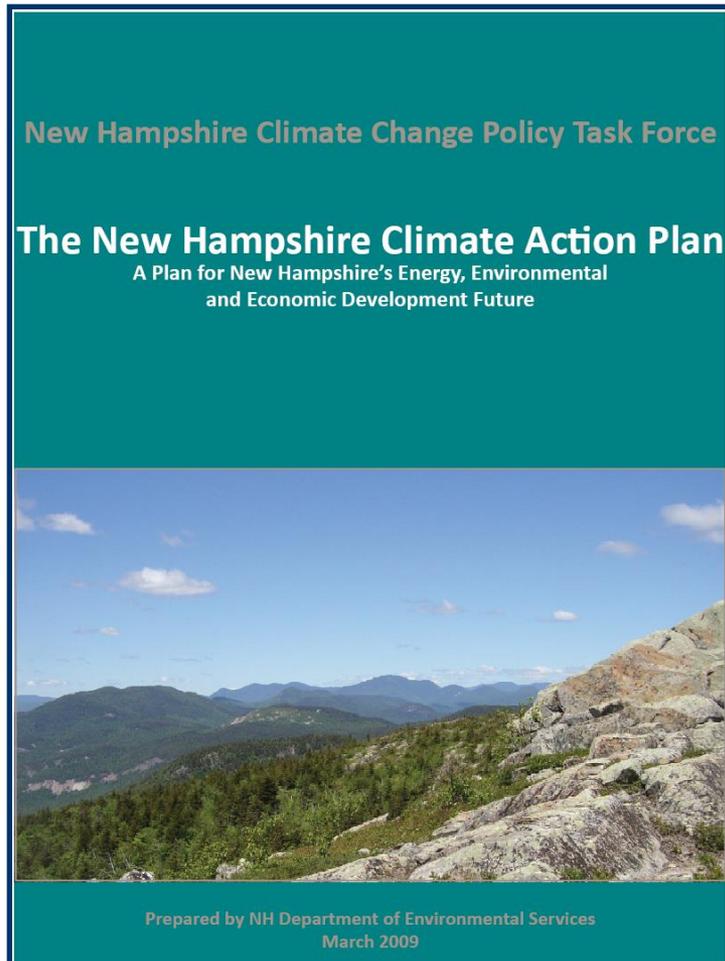
# Components

## 3) Establish Community's Vision for Energy

- State Present Concerns
  - Climate change concerns
  - Escalating cost and volatility of energy
  
- Suggest Future Direction
  - Interest in renewable energy (electric and thermal)
  - Distributed generation
  - Diversify fuel use
  - Importance of local agriculture
  - Preserve Ag/Forestry land
  - Alternative transportation

# Components

## NH Climate Action Plan (TOOL)



- Exemplifies state support
- Climate change science
- Recommends action
  - Adaptation
  - Agriculture & Forestry
  - Electric Generation
  - Government Leadership
  - Residential & Commercial
  - Transportation & Land Use

# Components

## APA Policy on Sustainability (TOOL)

1. Reduce dependence upon fossil fuels, extracted underground metals and minerals.



2. Reduce dependence on chemicals and other manufactured substances that can accumulate in Nature.



3. Reduce dependence on activities that harm life-sustaining ecosystems.



4. Meet the hierarchy of present and future human needs fairly and efficiently.



# Components

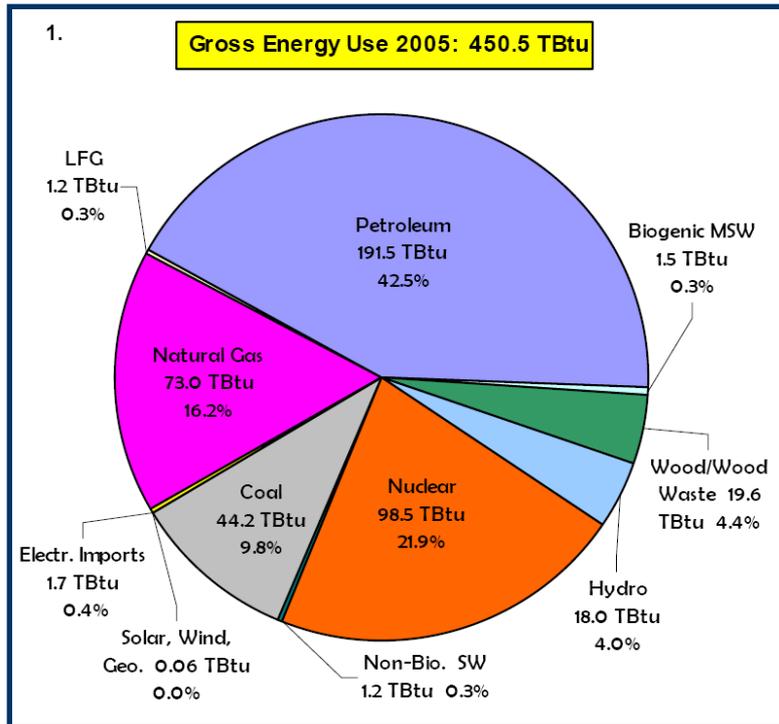
## 4) Inventory Energy Uses

- Regional Energy Use
  - Strong correlation between communities energy use and state energy use
- Municipal Energy Use
  - Thermal Uses (Oil, Propane, Natural Gas, Biomass)
  - Electrical Uses
  - Transportation Uses
  - Building Sq. Ft

**INVENTORY? AUDIT? BENCHMARK?**

# Components

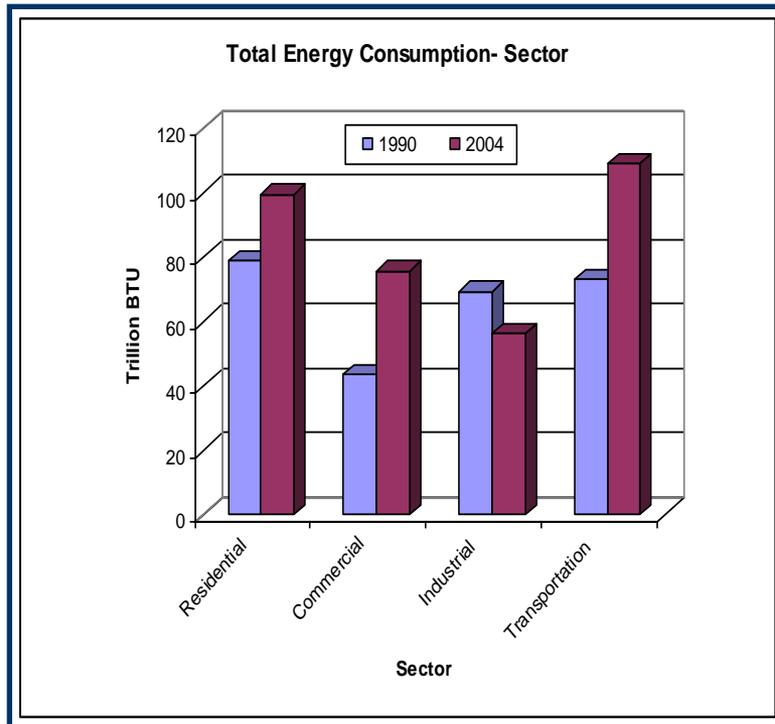
## OEP Energy Facts (TOOL)



- Shows State Energy Use
  - Sectors
  - Sources
  - Uses
- Snapshot Look

# Components

## Rockingham Planning Commission (TOOL)



- Energy Use Section
  - Can be used as template
  - Timeline for energy use (1990-2004)
    - Sector
    - Fuel Source

# Components

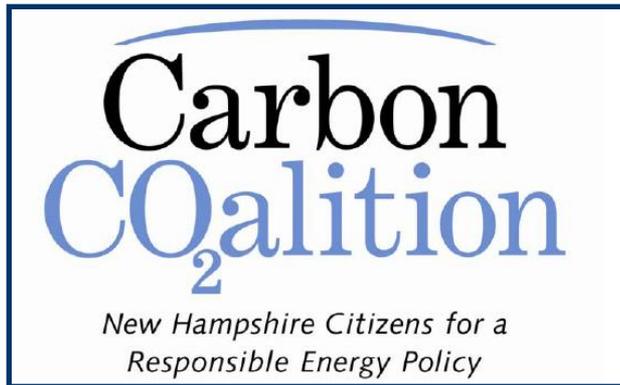
## EPA Portfolio Manager (TOOL)



- Data tracking tool
- Buildings only
- Energy Intensity Unit
  - Btu/sq. ft.
- Benchmark buildings

# Components

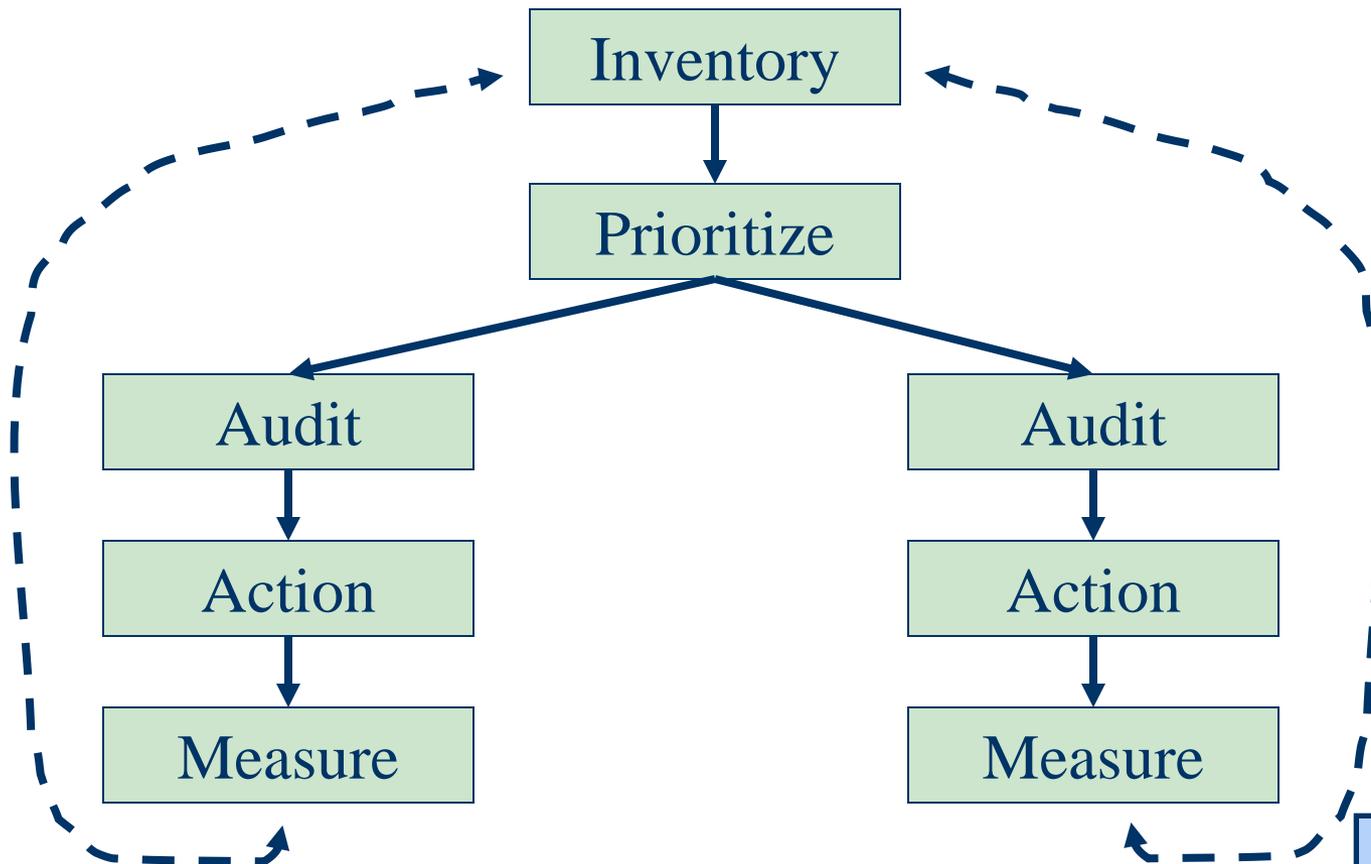
## Small Town Carbon Calculator (TOOL)



- Data tracking tool
- Buildings, Streetlights, Vehicles
- Calculates CO2 emissions

# Components

## 4) Outline Process



# Components

## 4) Outline Process Cont'...

- Who will be in charge of what
  - Planning Board
  - Board of Selectman
  - School Board
  - Local Energy Committee

# Recommendations

- **Form a Local Energy Committee**
  - HB189 (2009)- Pending

# Recommendations

- **Adaptation**

- Adapting to the inevitable aspects of Climate Change
  - Stormwater management
    - Handle more frequent and stronger storms
  - Siting of public facilities
    - Do you want to site them in flood prone areas?
  - Preservation of land

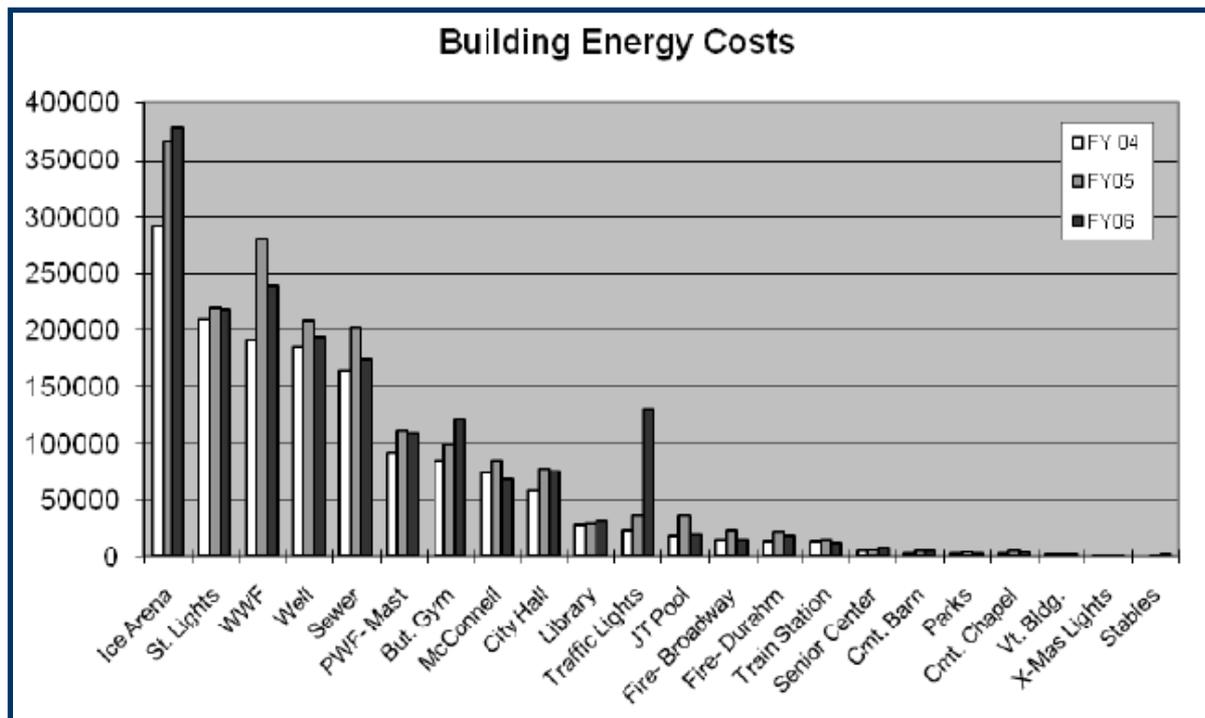
# Recommendations

- **Review Ordinances and Regulations**

- Are your ordinance/regulations encourage energy efficient development?
- Typical Findings
  - Low density residential uses
  - Auto-dependent communities
  - Minimal mixed use areas
  - Diversity in housing stock absent
  - Lack of alternative transportation

# Recommendations

- Report Energy Use/Costs Annually
  - Board of Selectmen/City Council
  - Town Meeting/Town Report



# Recommendations

- **Ordinances**

- Mixed Use Overlays/Village Districts
- Cluster/Open Space Subdivision
- Affordable Housing Zoning
- Agriculture/Forestry Overlay Zones
- Scenic Viewshed Corridors
- Access Management- Transportation
- Green Building
- Small Wind Energy System
- Building Codes
- Accessory dwellings (not just for the inlaws)

# Recommendations

- **Possible Regulations**

- Pedestrian walkways
- Bike lanes
- Orientation of buildings on lots
- Solar Thermal piping requirement
- District Heating

# Resources

- **Funding Resources**

- NH OEP: Energy Efficiency and Conservation Block Grant
- NH Public Utilities Commission
- New England Grassroots Environmental Fund

- **Municipal Resources**

- APA Policy on Sustainability
- NH Energy Communities: LEC Support
- OEP Energy Facts

- **Energy Plans**

- Temple: Energy Audit of Master Plan & Land Use Regulations
- Rockingham Planning Commission: Energy Plan

# Questions??



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