

# Comprehensive Energy Plan Vermont's Energy Future

Legislative Briefing



# Comprehensive Energy Plan

*What is it?*

## **Title 30, Section 202b - The CEP must include:**

### **Comprehensive Analysis and Projections**

- Usage
- Supply
- Cost
- Environmental Effects

### **For All Sectors of Energy Usage**

- Electricity
- Thermal Energy
- Transportation
- Land Use
- Efficiency

**First plan mandated in 1994, with required plan every 5 years thereafter.**

**No adopted Department plan since 1999.**



# Comprehensive Energy Plan

## *Process*

- **Launched in February 2011**  
**Interagency/Department coordination key**  
**Used Department 2009 draft energy plan as a starting point**



- **18 public meetings, hearings, and Stakeholder events all over state, plus many other community/nonprofit /business organization and media outreach.**



# Comprehensive Energy Plan

## *Process*

**Created website:**

[vtenergyplan.vermont.gov](http://vtenergyplan.vermont.gov)

**...for engagement, information, and comment**

**Released Draft in early September**

**Created comment period, extended after requests – Closed November 4**

**Over 9100 comments since we launched the process**

**Over 700 of these were individual, substantive, detailed comments**



# Comprehensive Energy Plan

## *Process*

- Working on updates and revisions now
- Targeting December final
- Creating recommendations and possible legislative actions lists

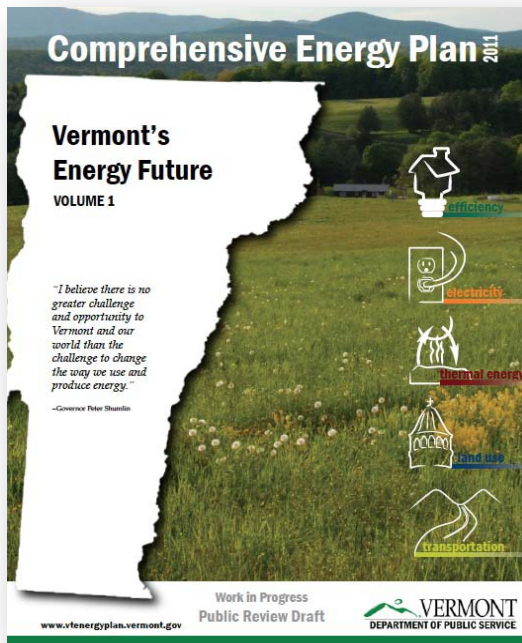


**Will be first plan adopted by the Department as required by statute since late 1990s...but it is just the beginning of the real work...**



# Comprehensive Energy Plan

## Content Overview



*I believe there is no greater challenge and opportunity to Vermont and our world than the challenge to change the way we use and produce energy.*

– Gov. Peter Shumlin



# Comprehensive Energy Plan

## Vol 2: Facts, Analysis & Recommendations



# Comprehensive Energy Plan

## *Appendices*

Vermont Agency of Natural Resources



### Forest Management for Bio-Energy



Department of Health  
Agency of Human Services



Public Health Assessments and Energy Planning

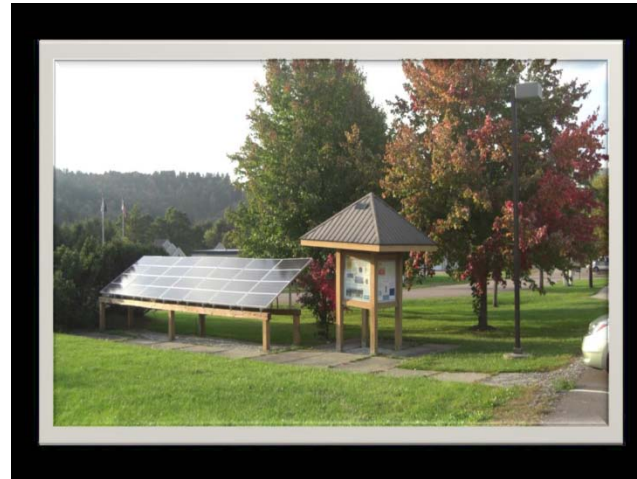


# Comprehensive Energy Plan

## *Appendices*



State Agency Action Plan

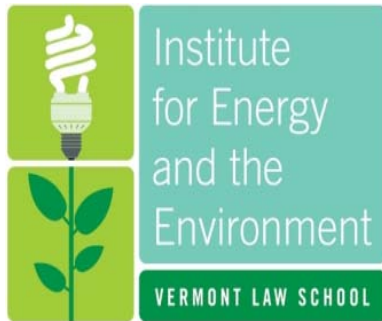


### Economic Impacts of Energy Efficiency Investments

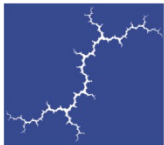


# Comprehensive Energy Plan

## *Appendices*



Vermont's Energy Future:  
A Conceptual Map of  
Vermont's Energy Goals &  
Decision Makers



**Synapse**  
Energy Economics, Inc.

Electricity Scenario Analysis  
for the  
Vermont Comprehensive Energy Plan 2011

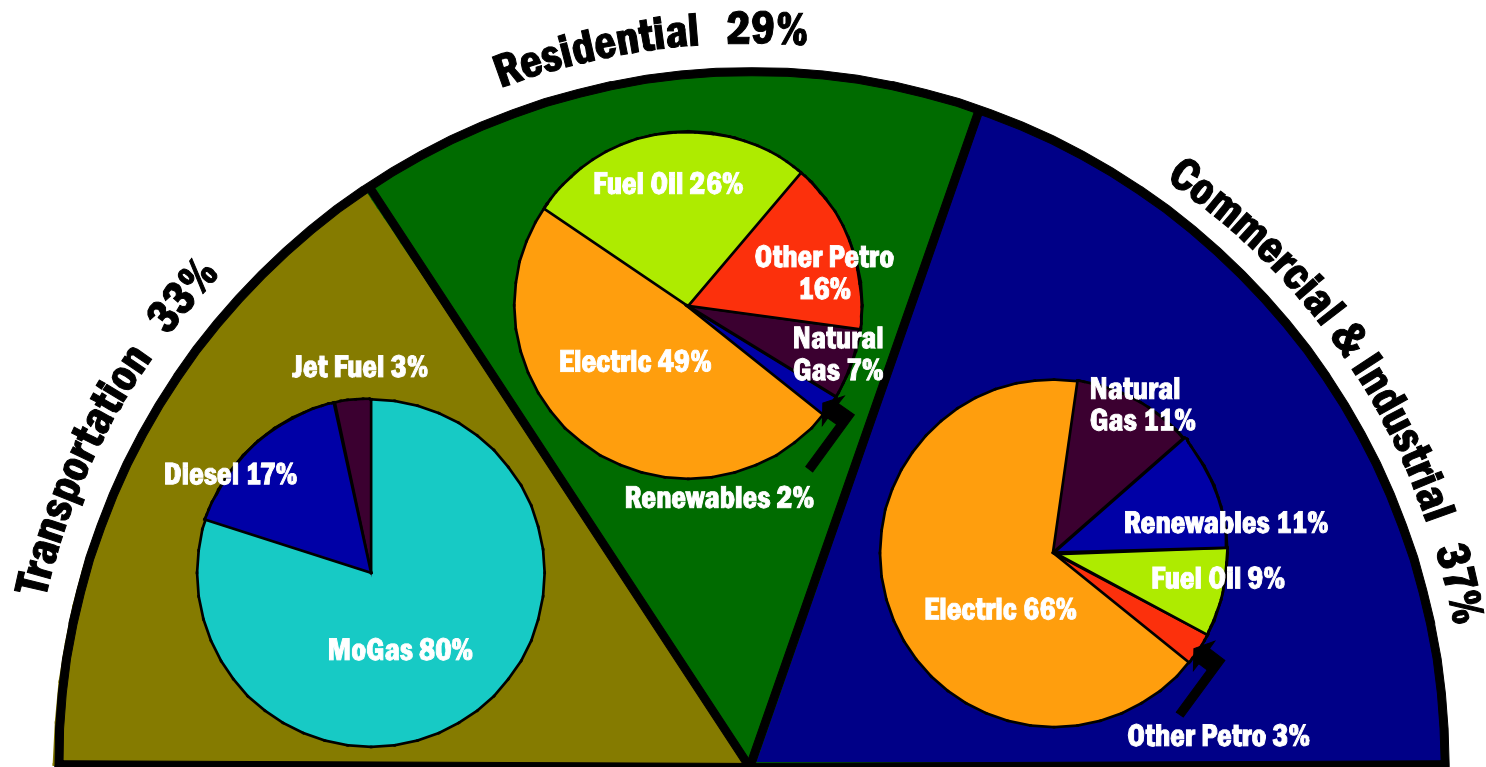


# Where Are We Now?

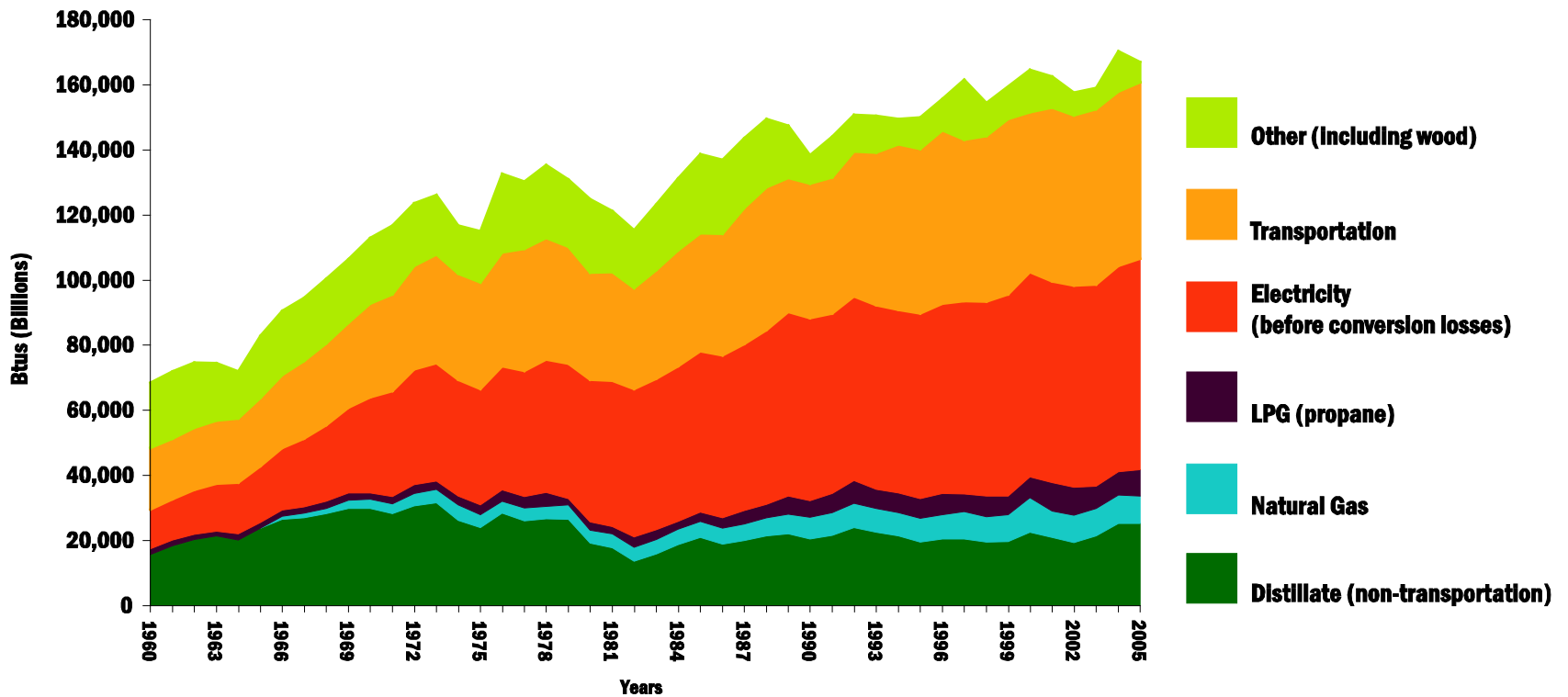


# Vermont Total Energy Use by Sector

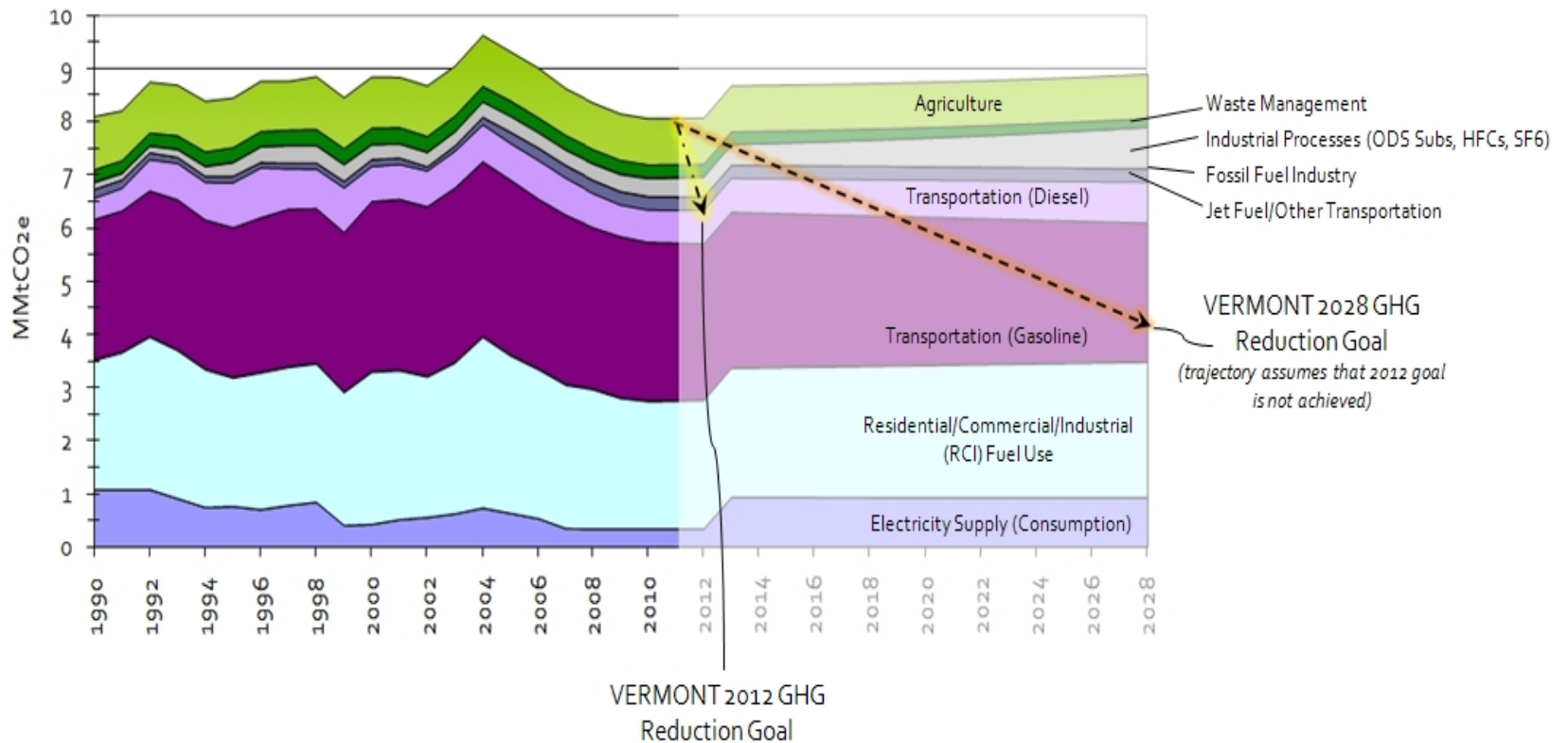
(percent of total BTUs consumed, 2008)



# Total Energy Usage Has Increased

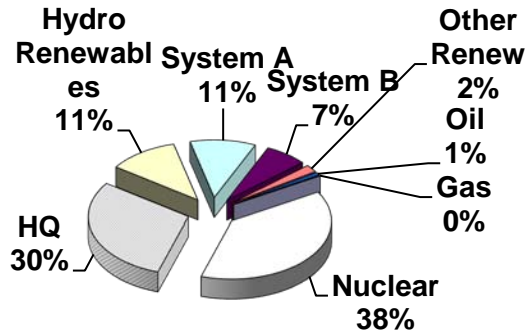


# VT GHG Emissions (MMTCO<sub>2</sub>e)



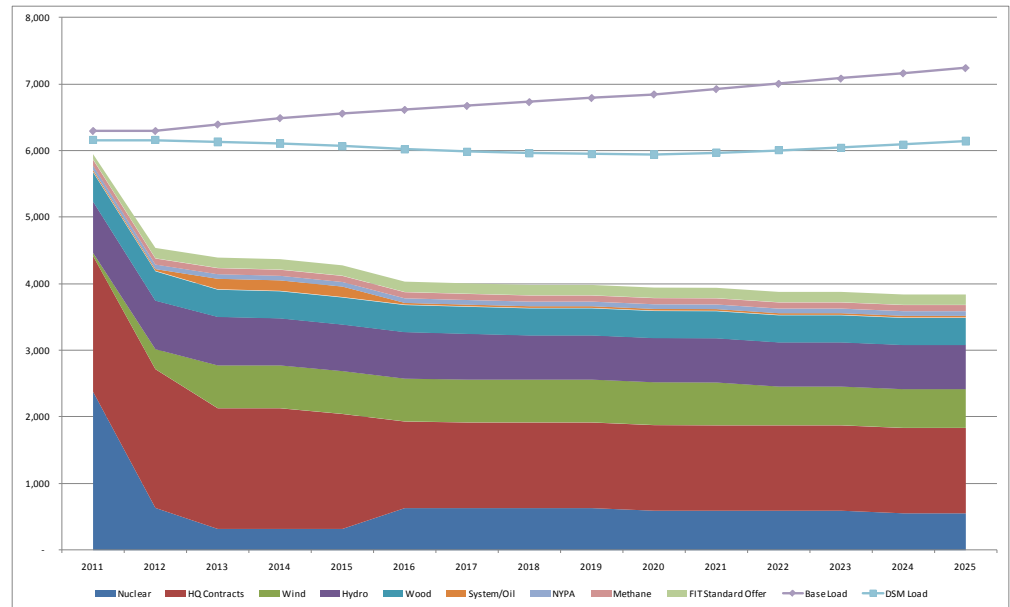
Source: VT ANR 2010

# Comprehensive Energy Plan

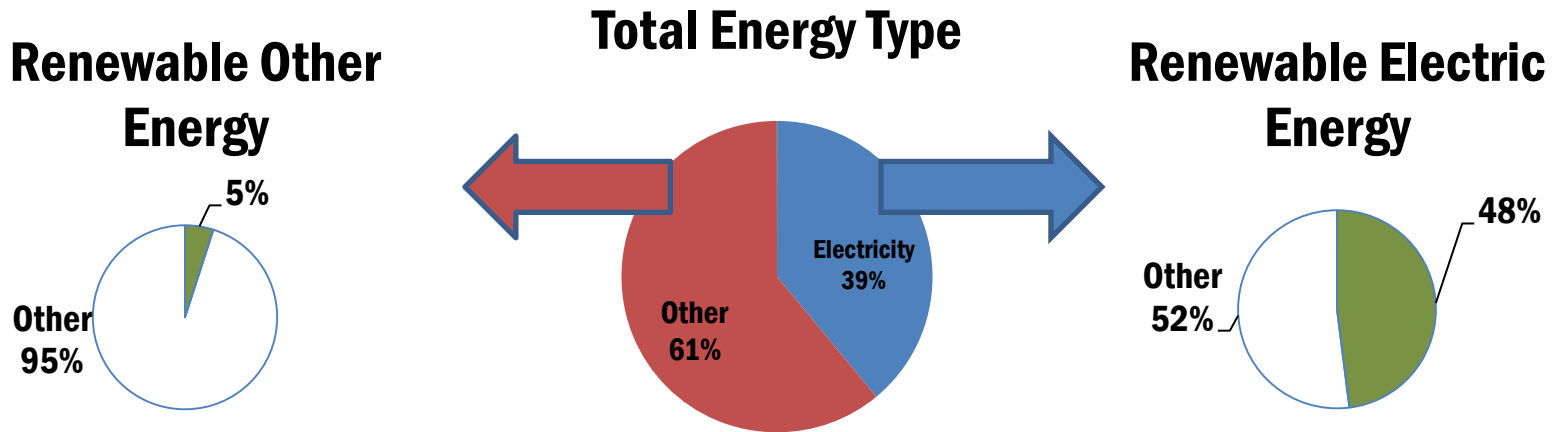


Current Electric Supply

Available Space to Meet Need



# Vermont Renewable Energy Usage



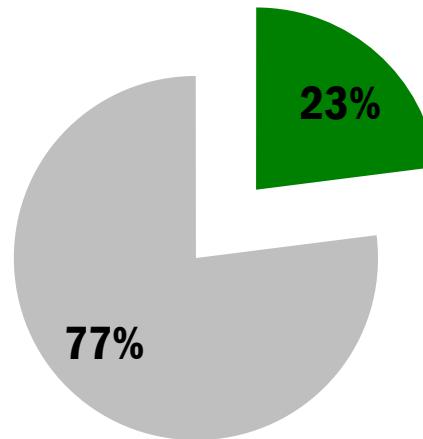
**48% of electricity is currently from renewable sources, including HQ hydro and projects with RECs sold out of state**

**Transportation and thermal are both heavily dependent upon fossil fuels**

# Total Renewable Energy

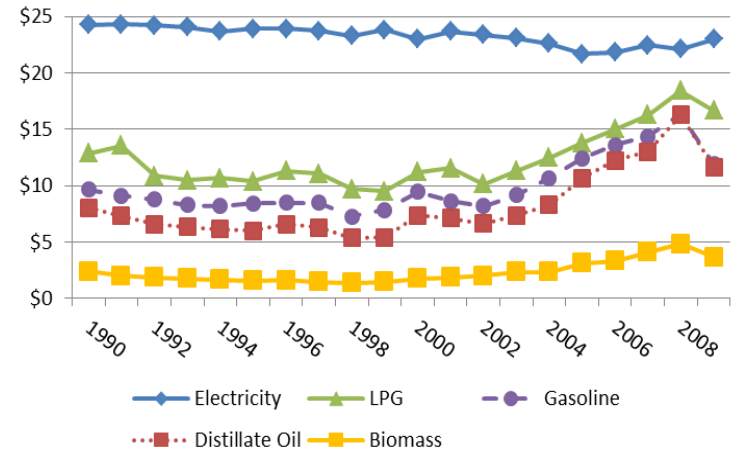
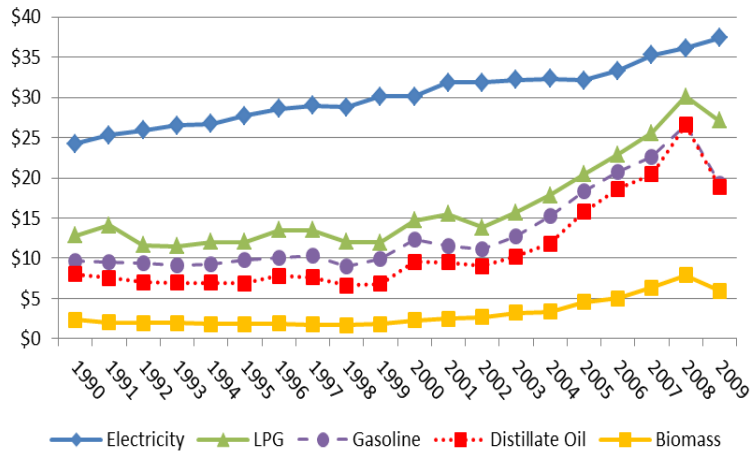
## Vermont's Current Renewable Energy

■ Renewable ■ Other



# Energy Costs

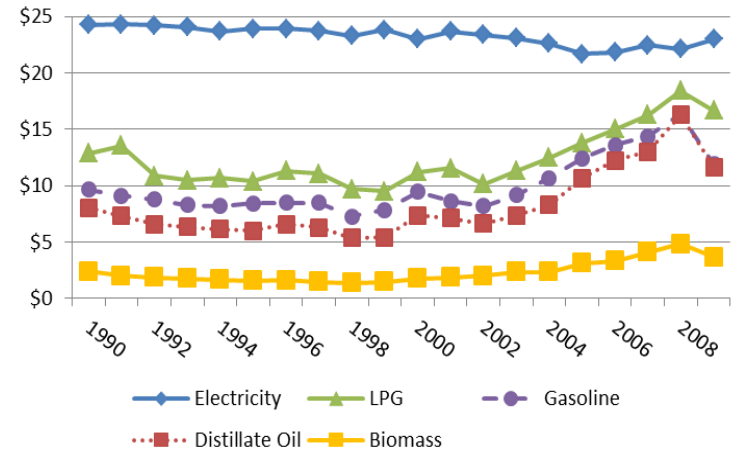
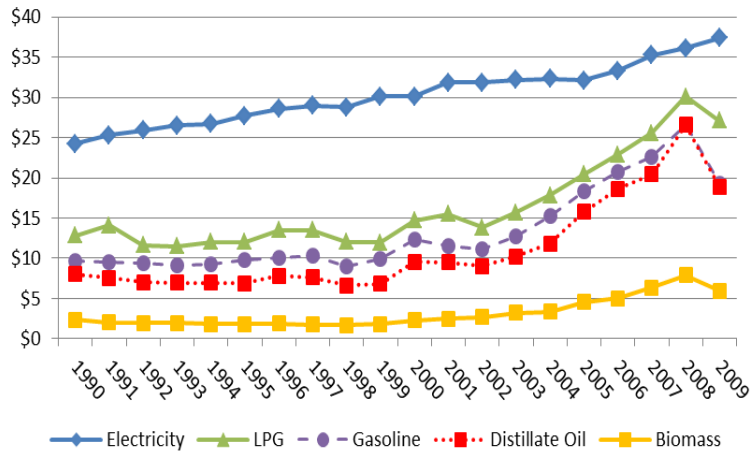
**Energy Source Prices (\$ /million BTU & inflation-adjusted 1990 \$ /million BTU)**



**Electricity is the highest priced energy source, yet costs have risen less than the rate of inflation (US CPI). Gasoline and distillates prices have outpaced inflation.**

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# **Efficiency Is The Least Costly Way To Fulfill Our Energy Needs**

## **Electric Efficiency:**

- **Annual average load growth savings of 2%/yr**
- **Annual average cost per kWh saved = ~ 4 cents**
- **The benefits of electric efficiency**
  - **\$1 public spending = \$4.6 in NPV to state**
  - **Local jobs creation**
  - **Regional charges on electric bills are avoided**

## **Thermal Efficiency:**

- **Creates jobs**
- **Leverages fiscal resources**

# Transportation

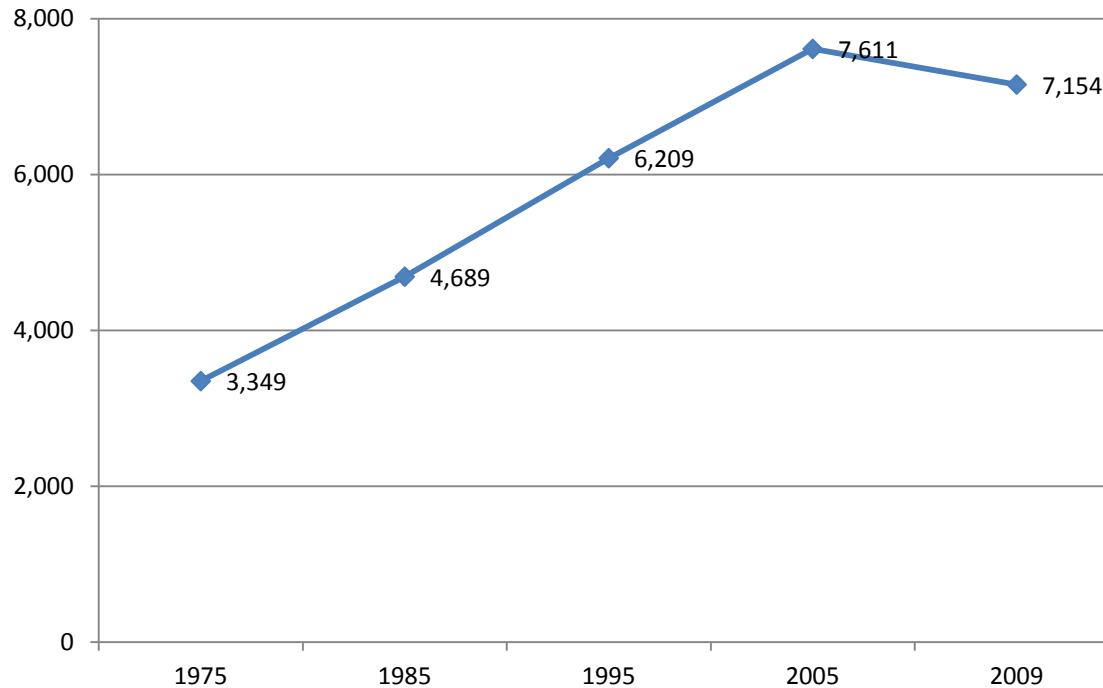
- **Nationally, transportation costs account for 21% of all household expenses**
- **Most Vermonters spend *more* than the national average**
- **Many Vermonters spend more on driving than health care, education, or food**
- **Driving is Vermont's single largest GHG source (more than 40%)**

*Surface Transportation Policy Project, 2003.*

*"Driven to Spend: A transportation and Quality of Life Publication."*



# Transportation Costs Vermonters and Our Environment

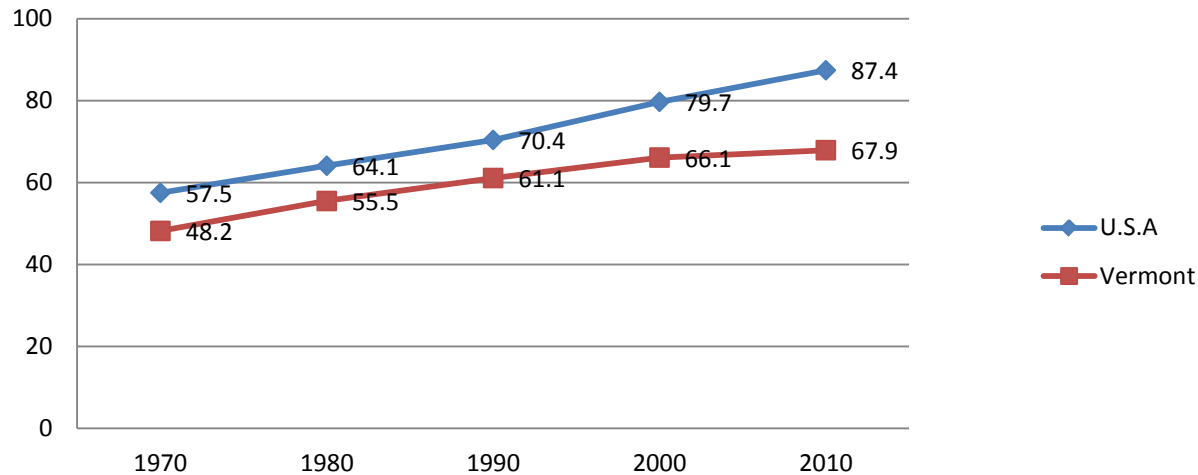


Vermont Annual Vehicle Miles Traveled, in millions, 1975-2009

**Vehicle Miles Traveled have increased dramatically in the last 30 years**

*Source: Vermont Agency of Transportation Highway Research VMT Report*

# Land Use and Energy Impact



Population density, Vermont vs. US, 1970-2010, U.S. Census

**Vermont is a rural state; over 30% of Vermonters live in our 21 designated downtowns**

**The 2010 Census shows that many of our 21 communities grew at a slower pace than the state average**

# The Transportation and Land Use Link

**People travel fewer miles as accessibility to service, density and/or mixing of buildings increase**



*-Source: Ewing & Cervero, 2001*

# What Is Our Long-Range Goal?



# What Is Our Long-Range Goal?

**90% renewable energy by 2050**

**By mid-century, Vermont can be nearly free of fossil fuel usage, in all energy sectors**

**2011: ~ 23% renewable**  **2050: 90% renewable**



# Why Strive To Achieve This Goal?



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**Four key benefits:**

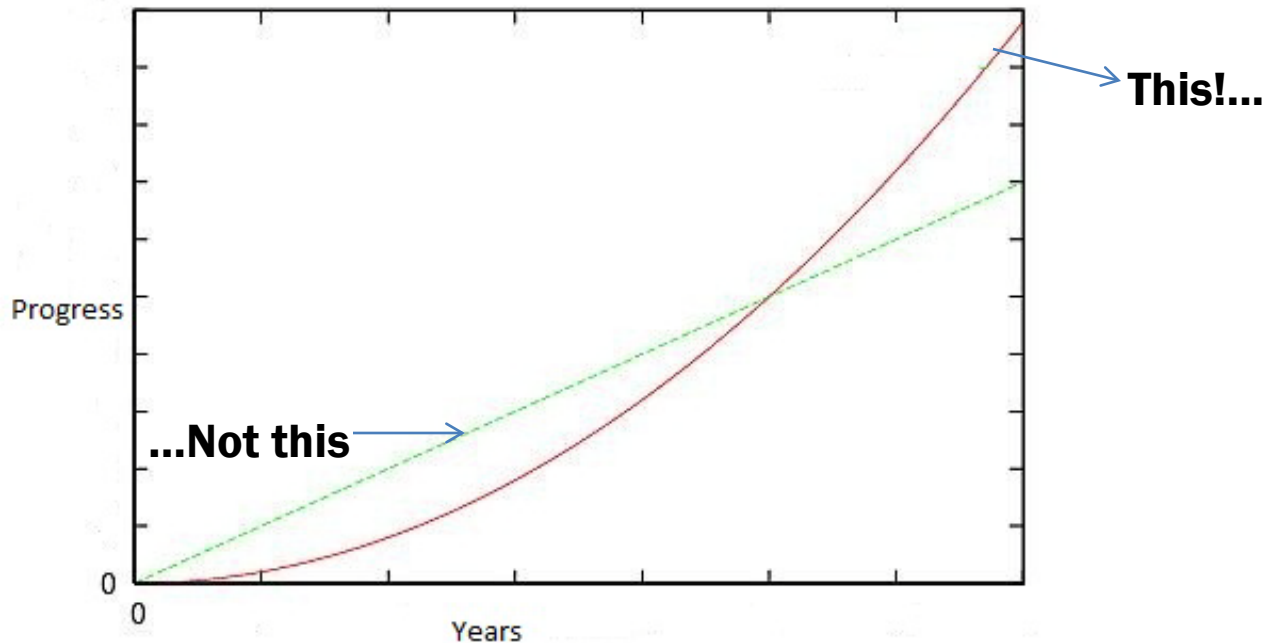
- 1. Foster Economic Security and Independence**
- 2. Safeguard Our Environment**
- 3. Drive Innovation and Jobs Creation**
- 4. Increase Community Involvement and Investment**



# How Will the Goal Be Achieved?



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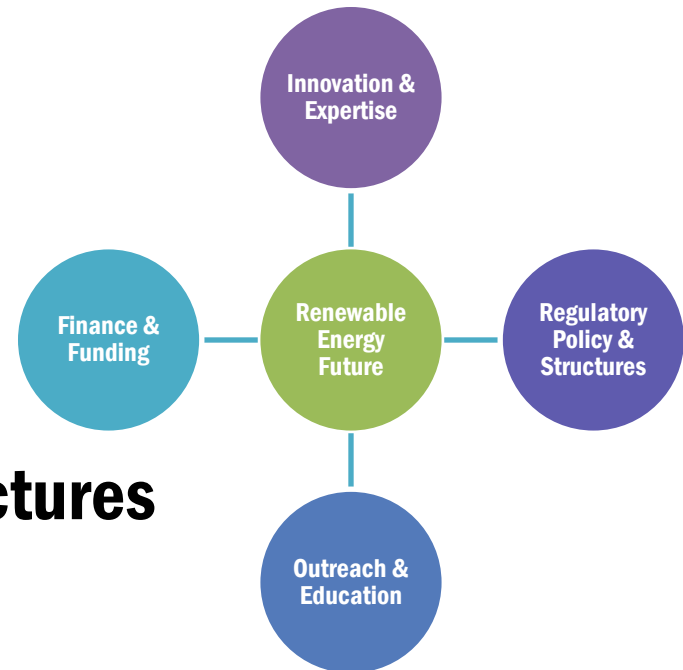
**Set Goals and Policies Now To Achieve Progress Over Time...**



# How Will the Goal Be Achieved?

## Concerted Planning and Integrated Action Create Momentum:

1. Outreach and Education
2. Finance and Funding
3. Innovation and Expertise
4. Regulatory Policies and Structures



# The Plan Has Recommendations in Every Energy Sector

- **For a highlight of the recommendations in the Draft Plan, please visit:**

[vtenergyplan.vermont.gov](http://vtenergyplan.vermont.gov)

**And click on “Public Hearing Informational Slideshow”**

- **Reviewing all comments received and will revise.**



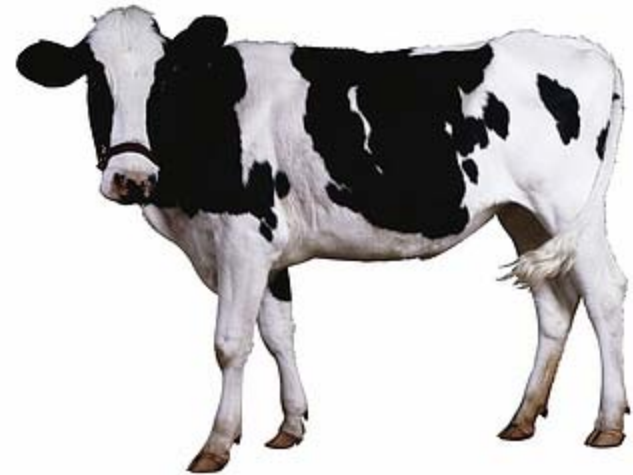
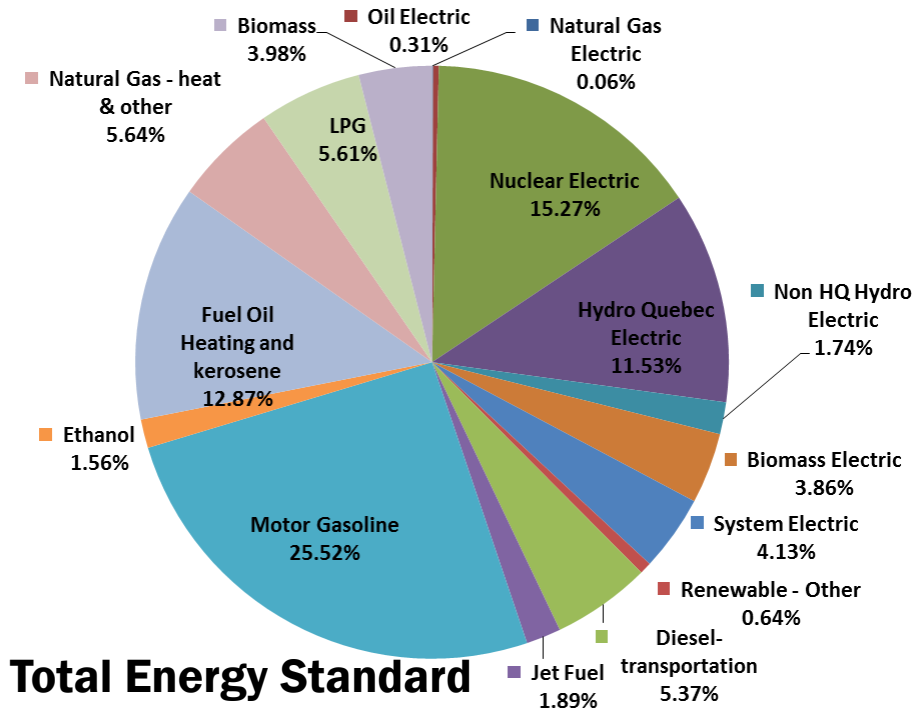
# The Plan Has Recommendations in Every Energy Sector

## Two Highlights:

- **Efficiency: Focus on thermal.** Task working group with delivery of report and draft legislation targeted at program delivery, ease of access, and finance/funding. Learn from significant ARRA investment projects now in final year, and successful programs like NeighborWorks of Western Vermont.
- **Transportation: Efficiency. Electric Vehicle challenge: infrastructure and funding.** It is not too early to task us with work on this subject so that we are at the forefront, not playing catch-up in 5 to 10 years.



# Other Highlighted Actions...



**Farm Energy Programs**



**State of Vermont  
Energy Leadership**



# Implementing the CEP

## **Recognizing the intersection of all energy usage:**

- **Climate Cabinet charged with oversight for executive branch**

## **Presentation to the Legislature in January 2011:**

- **List of possible legislative actions or changes**

## **Regional Planning Commissions & Town Energy Committees:**

- **Forums for RPCs and Energy Committee review and local action**

**Review, Revise, Repeat – Energy Policy and Progress is Dynamic**



# Thank you for inviting me...

For more information regarding the energy plan, go to:

[www.vtenergyplan.vermont.gov](http://www.vtenergyplan.vermont.gov)

Thanks to Agency of Transportation, Agency of Natural Resources, and  
Agency of Commerce &  
Community Development for slides and data

Elizabeth Miller

[elizabeth.miller@state.vt.us](mailto:elizabeth.miller@state.vt.us)

802-828-2321

