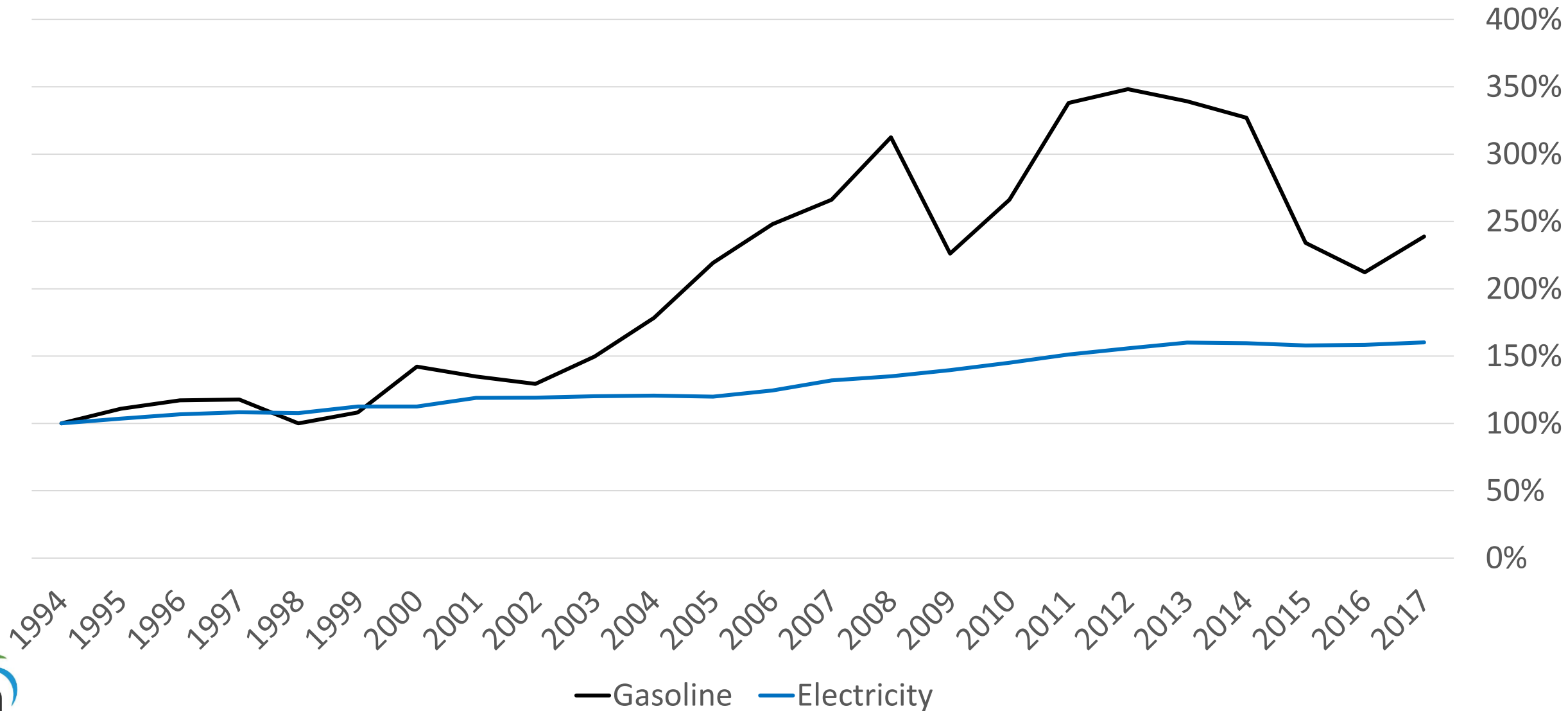


# Vermont Electricity: Predictable & Stable

## Percentage Change in Gasoline & kWh Rates Since 1994



# WINTER IS WARMING

Since 1970



Source: NOAA/NCEP Climate at a Glance

CLIMATE  CENTRAL

# WARMING WINTERS

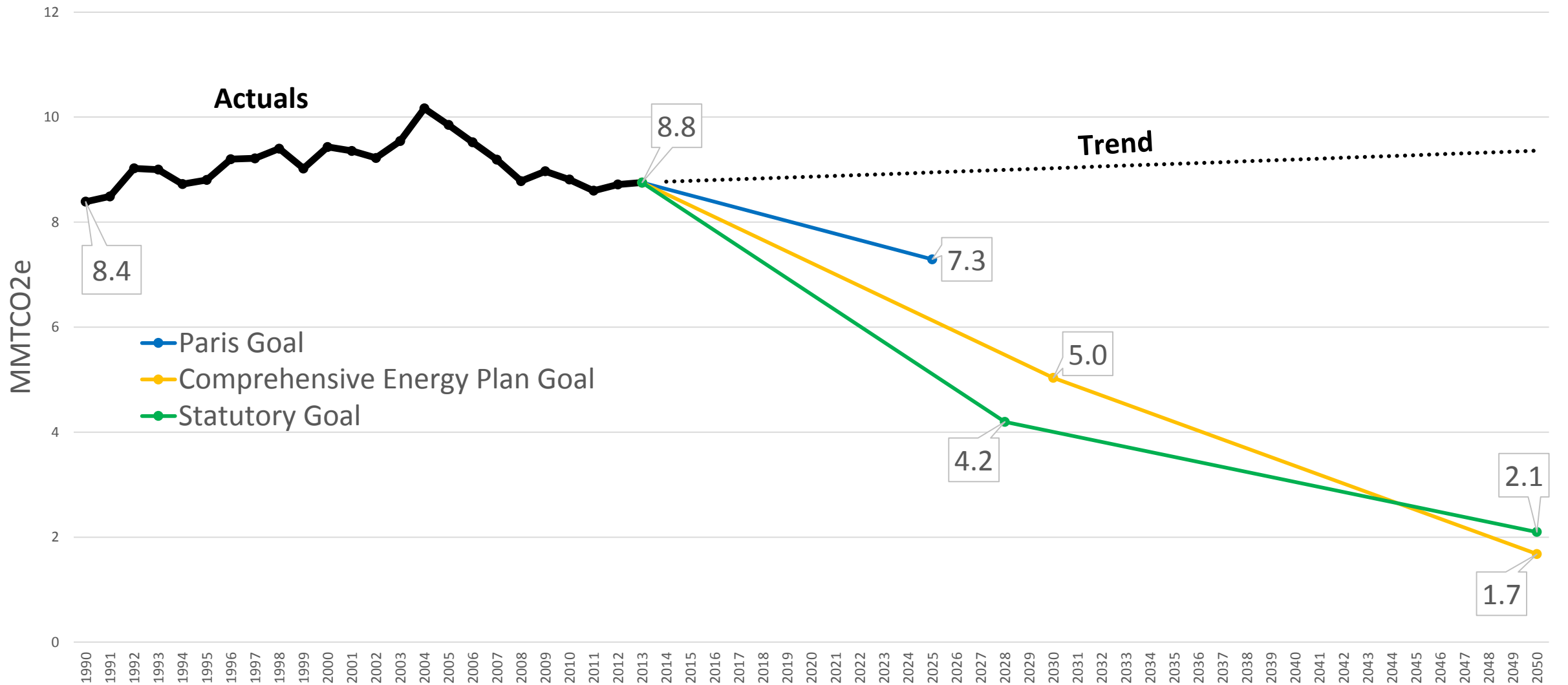
Burlington



Source: RCC-ACIS.org

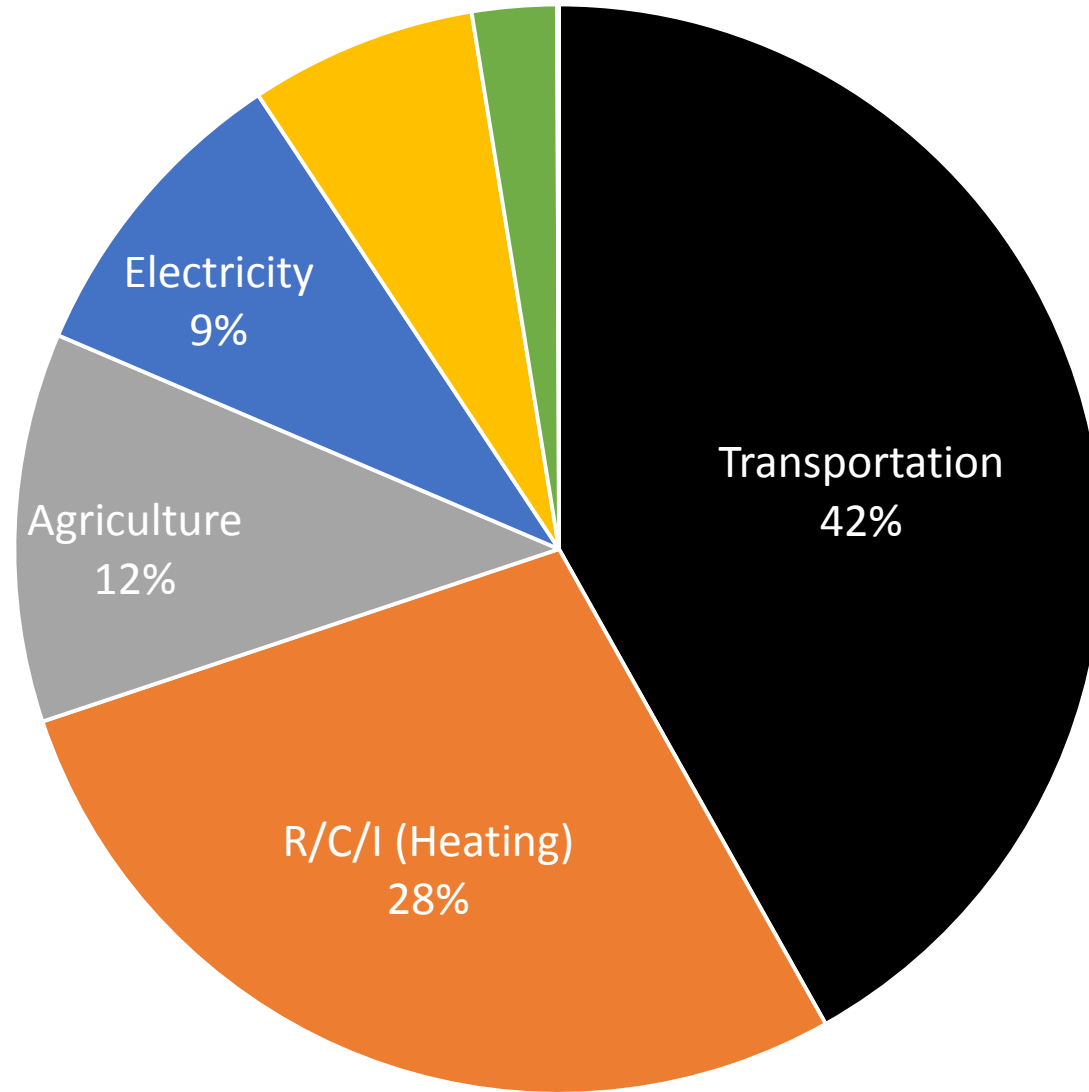
CLIMATE  CENTRAL

# Vermont GHG Emissions 1990-2050: Actuals, Trend and Goals



**BUSINESS AS USUAL  
IS NOT WORKING**

# Vermont GHG Emissions by Sector, 2013



Industrial Processes

7%

Waste Management

2%

Fossil Fuel Extraction &  
Refining

0%

Electricity

9%

Agriculture

12%

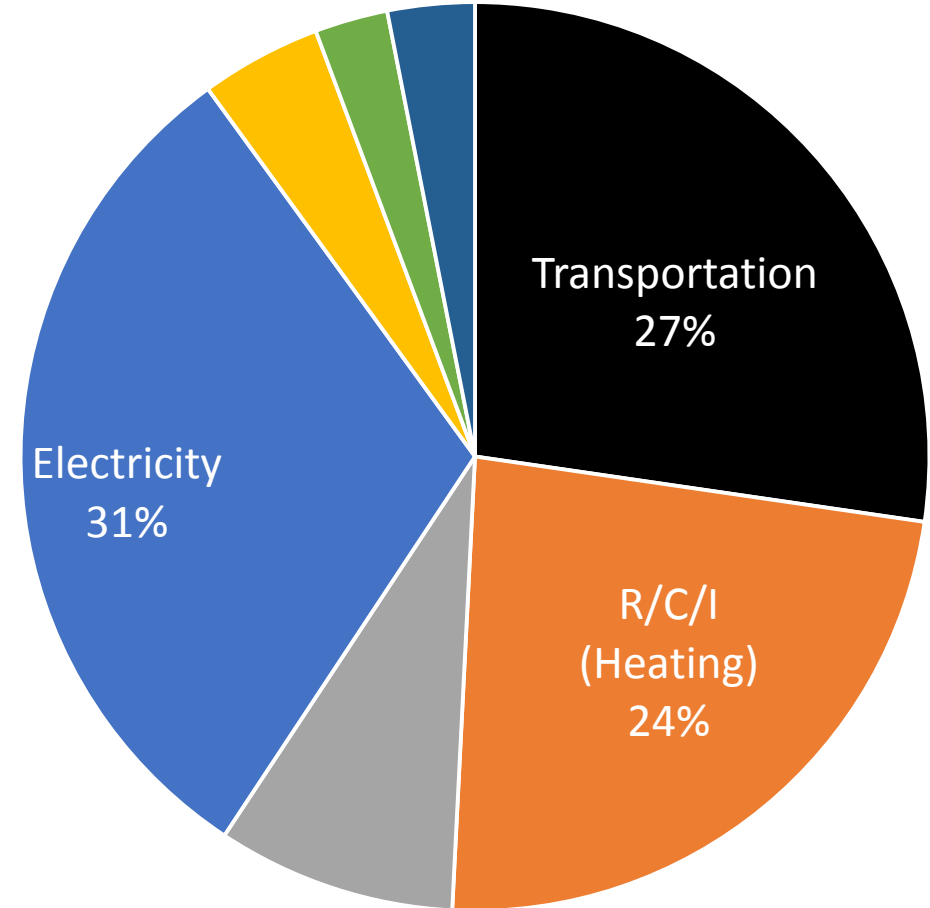
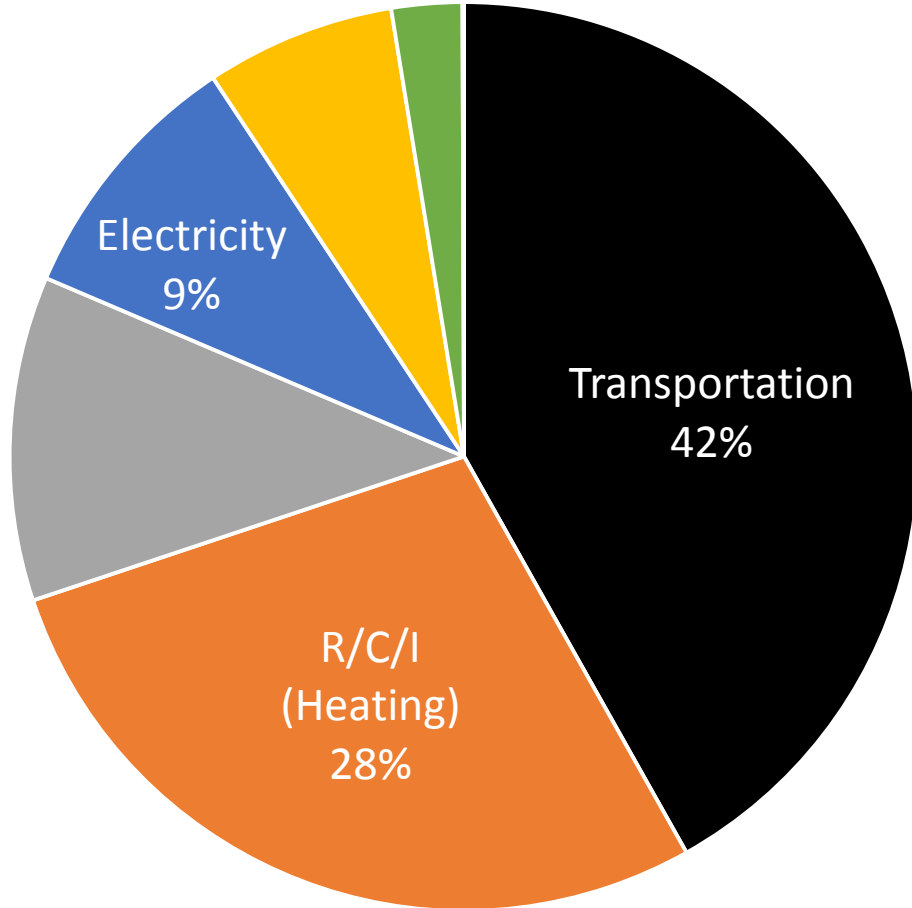
R/C/I (Heating)

28%

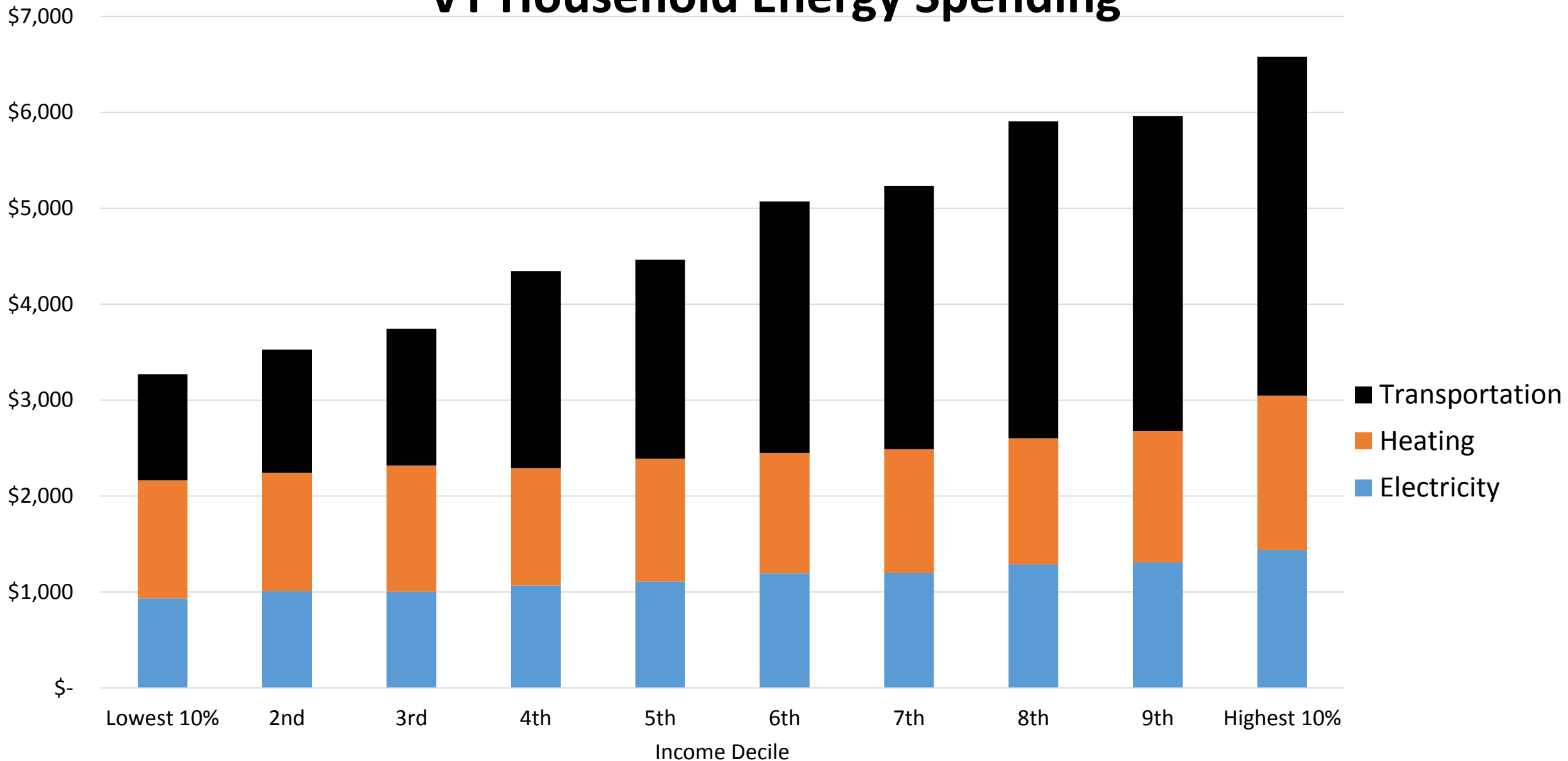
Transportation

42%

# Vermont vs. US Emissions, 2013



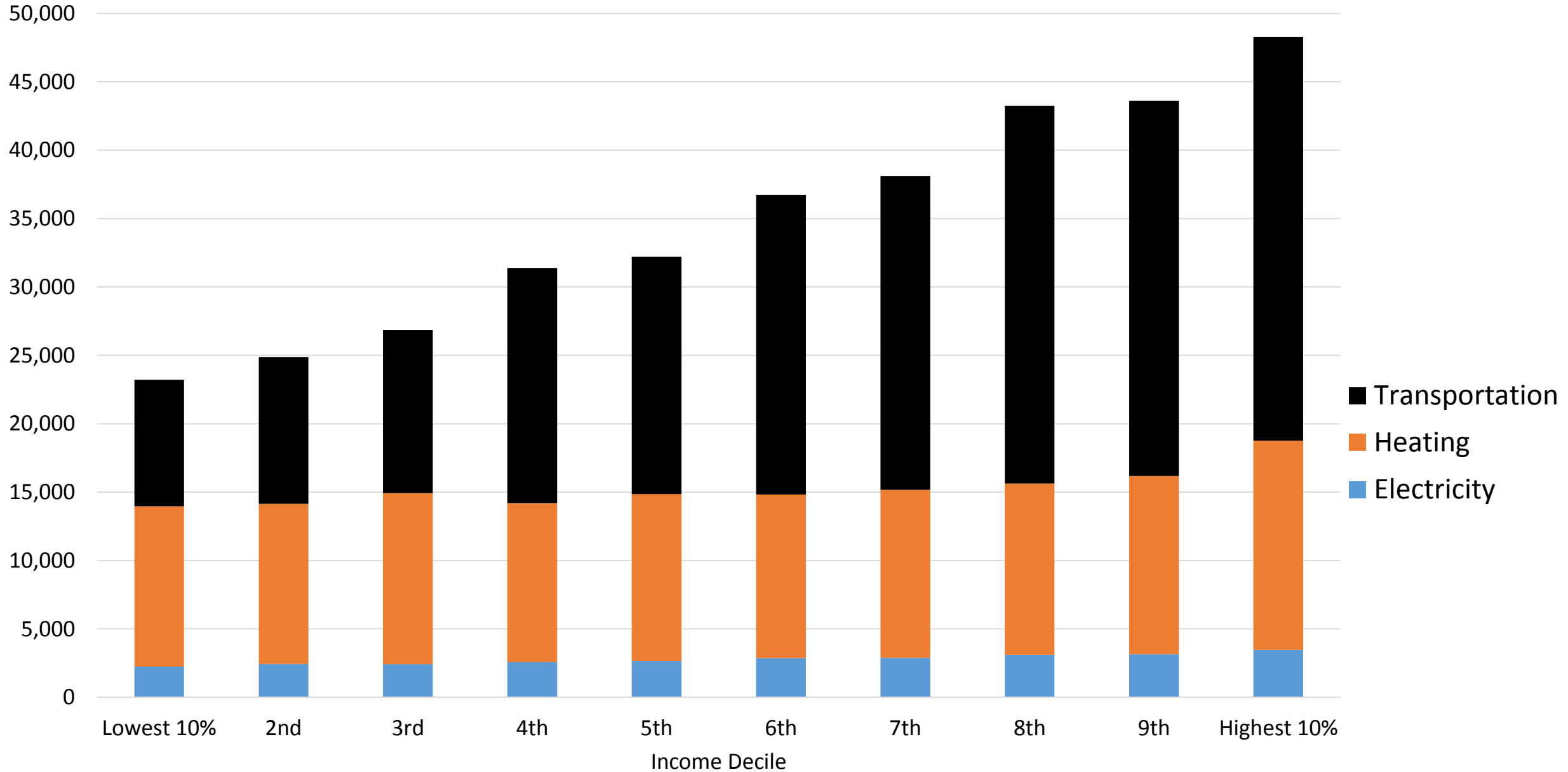
# VT Household Energy Spending



Electricity and Heating calculations based on the Vermont Law School's Institute for Energy and the Environment ENERGY COSTS AND BURDENS IN VERMONT: BURDENSOME FOR WHOM? report. Transportation calculations based on the US DOT 2009 National Household



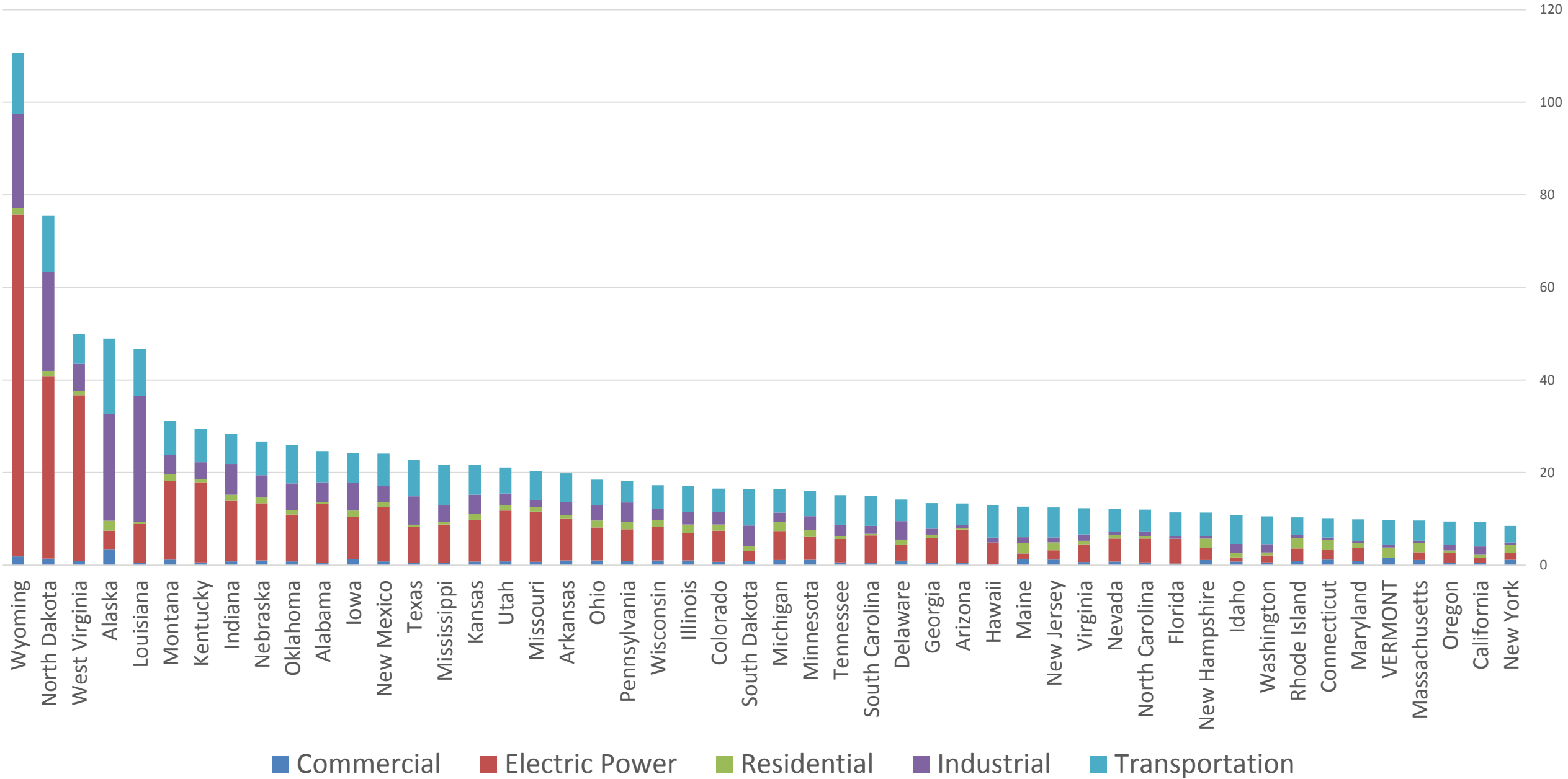
# VT Household CO2 Emissions



Electricity and Heating calculations based on the Vermont Law School's Institute for Energy and the Environment ENERGY COSTS AND BURDENS IN VERMONT: BURDENSOME FOR WHOM? report. Transportation calculations based on the US DOT 2009 National Household Travel Survey.

# Per-capita emissions by sector, 2015

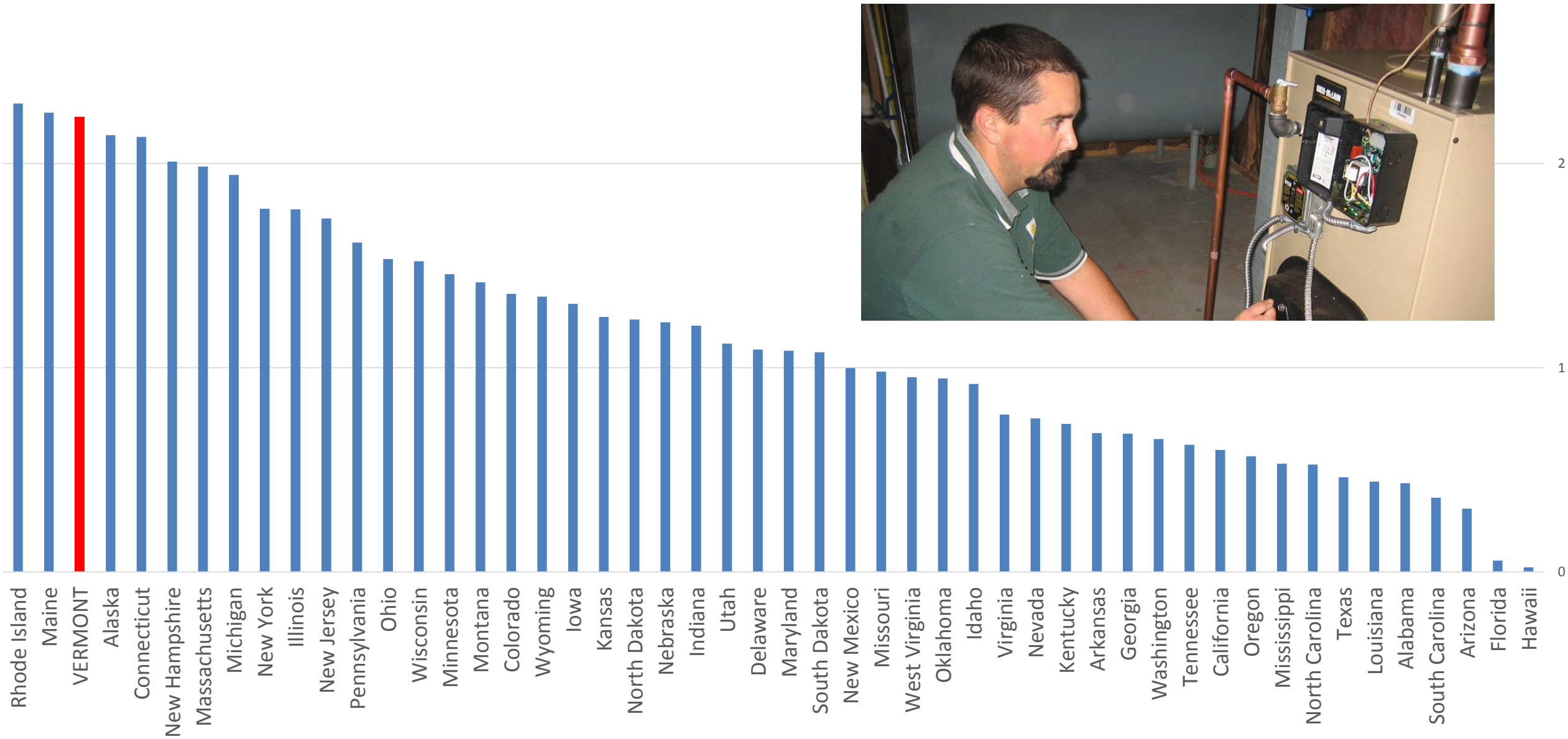
metric tons carbon dioxide per person



# Per-capita residential sector (heating) emissions, 2015

metric tons carbon dioxide per person

3



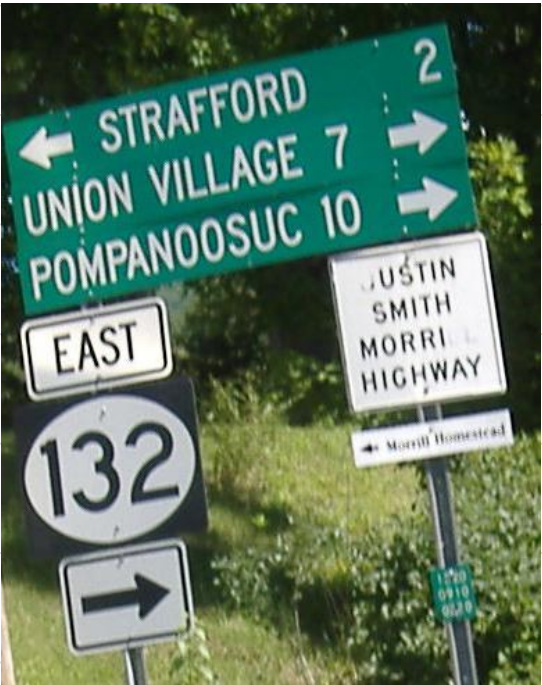
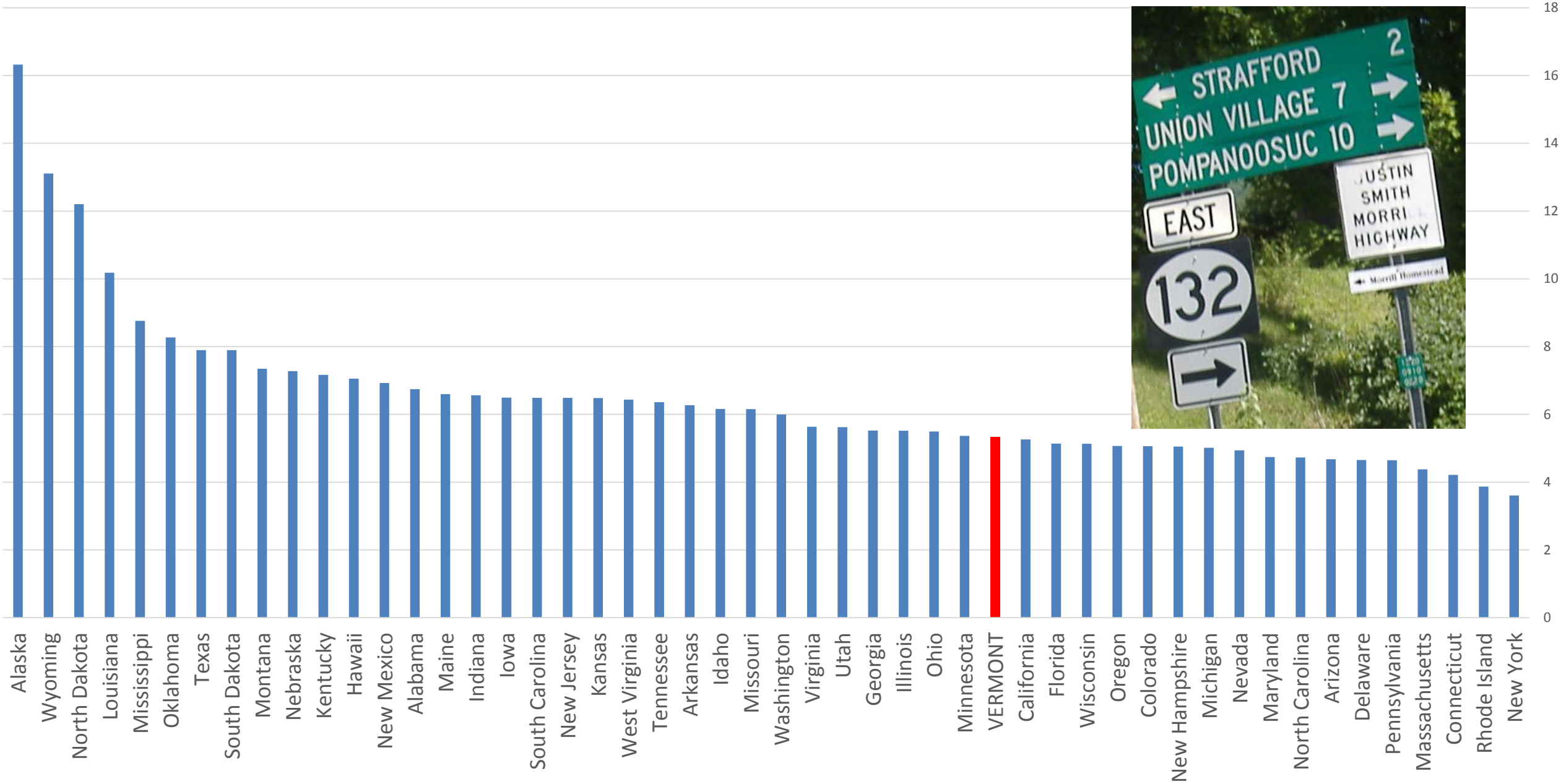
2

1

0

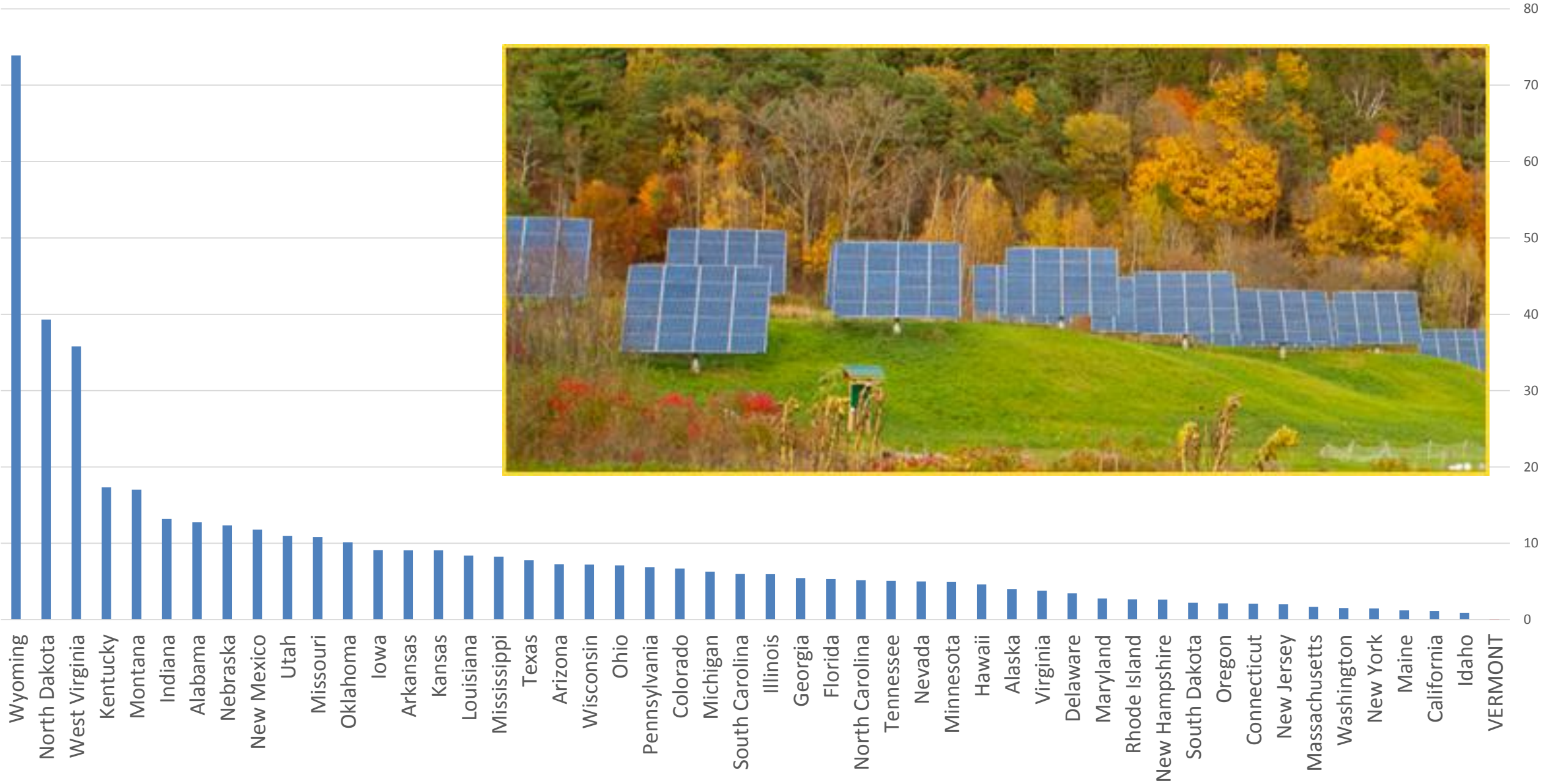
# Per-capita transportation sector emissions, 2015

metric tons carbon dioxide per person



# Per-capita electric power sector generated emissions, 2015

metric tons carbon dioxide per person



**CLEAN ELECTRICITY**

**IS VERMONT'S**

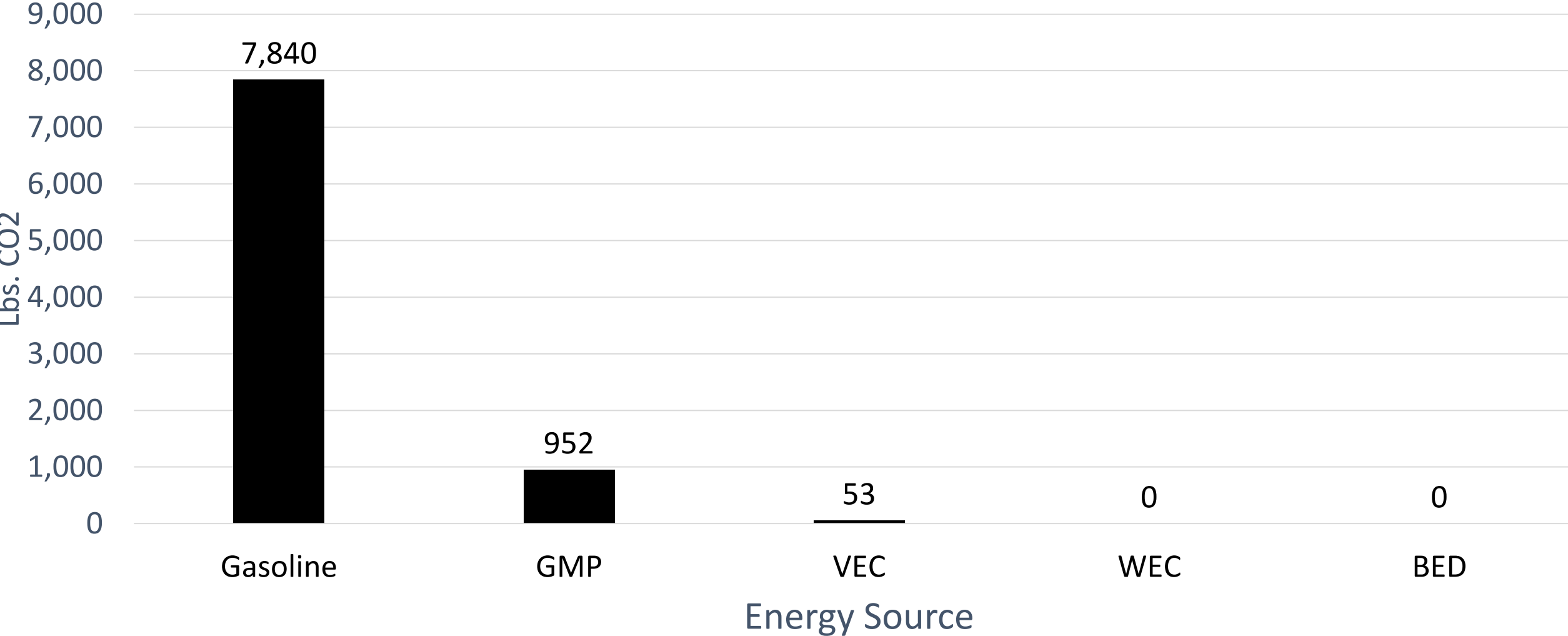
**COMPETITIVE ADVANTAGE**

# Vermont Leads in Low-Carbon Electricity

- **Renewable Energy**
- **Efficiency Vermont**
- **Regional Greenhouse Gas Initiative (RGGI)**
- **Renewable Energy Standard (RES)**

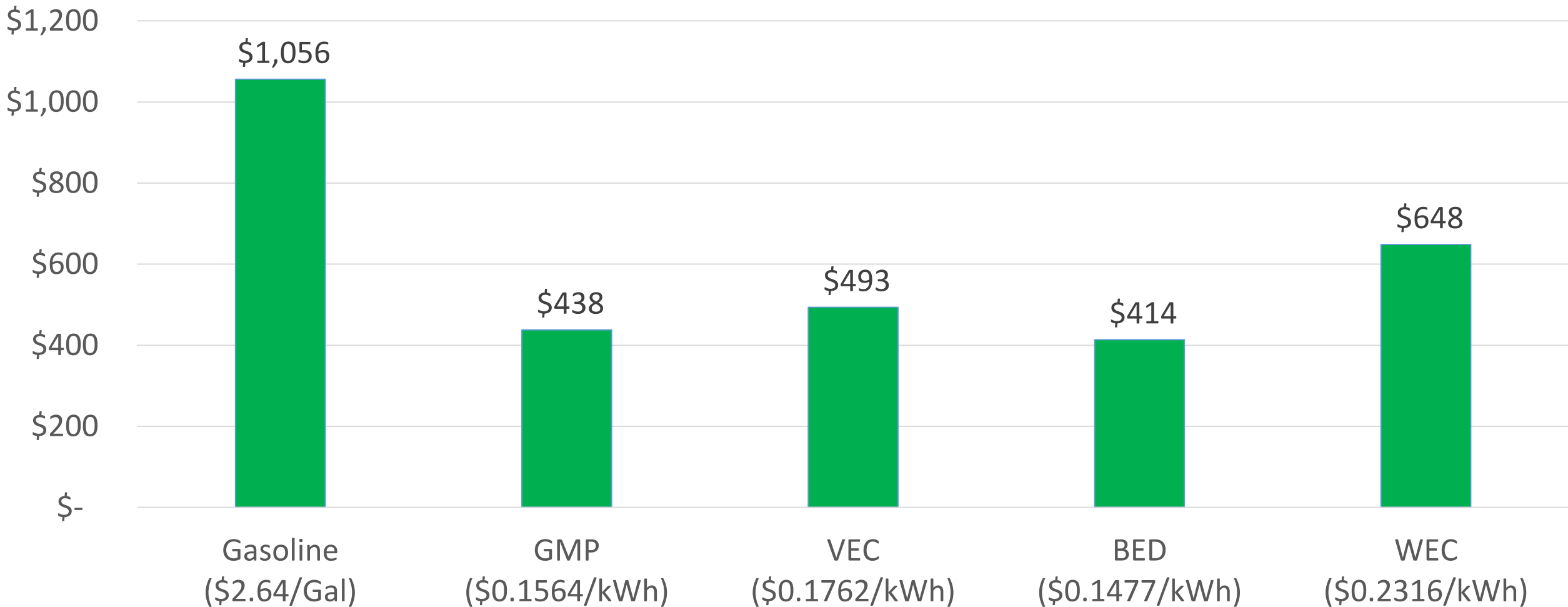


# CO2/10,000 miles in Vermont: 25 mpg Internal Combustion Engine vs 0.28 m/kWh EV

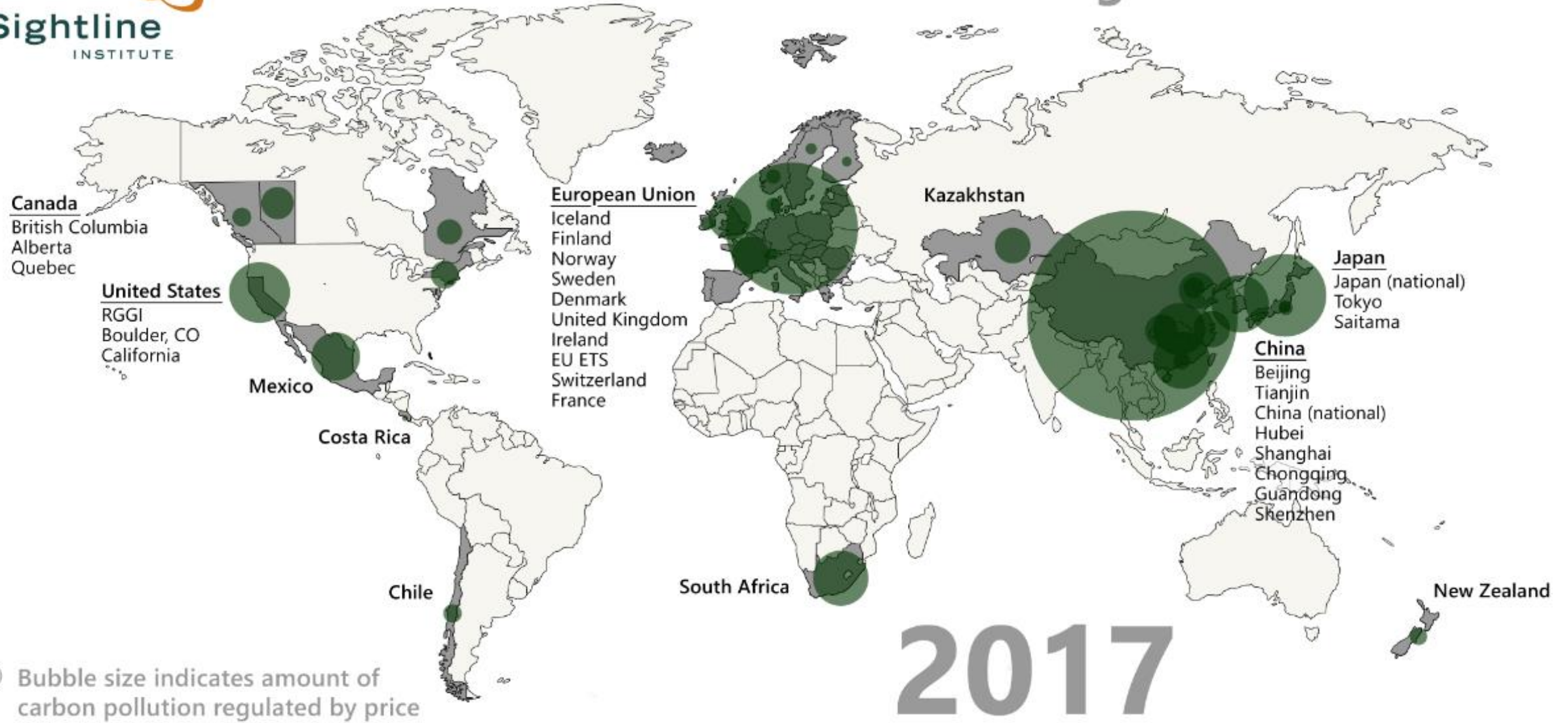




# Current Cost/10,000 miles in Vermont: 25 mpg Internal Combustion Engine vs 0.28 kWh/mile EV



# Carbon Pricing Around the World



# 2017

CLIMATE  
LEADERSHIP  
COUNCIL

# THE CONSERVATIVE CASE FOR CARBON DIVIDENDS

How a new climate strategy can strengthen our economy,  
reduce regulation, help working-class Americans, shrink  
government & promote national security

**James A. Baker, III**

**Martin Feldstein**

**Ted Halstead**

**N. Gregory Mankiw**

**Henry M. Paulson, Jr.**

**George P. Shultz**

**Thomas Stephenson**

**Rob Walton**

February 2017



# The ESSEX Collaborators



# THE ESSEX PLAN



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AN ECONOMY STRENGTHENING  
STRATEGIC ENERGY EXCHANGE

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**1. CLEAN ELECTRICITY AT THE LOWEST COSTS**

**2. PRIORITIZE WORKING-CLASS AND RURAL VERMONTERS**

**3. STRONG LOCAL ECONOMY**

**4. ESSENTIAL FOR CUTTING CARBON POLLUTION**

# STRATEGIC ENERGY EXCHANGE



**PRICE**  
**CARBON POLLUTION**

**SLASH** EFFECTIVE  
**ELECTRIC RATES**

# USE MARKET FORCES TO DRIVE CHANGE

**DISCOURAGE**  
**FOSSIL FUELS**

**ENCOURAGE**  
**CLEAN ELECTRICITY**





**ESSEX =**  
**REVENUE NEUTRAL**  
**AND A 100%**  
**INVESTMENT IN CLEAN ENERGY**

**BUILT ON EXISTING  
FEE & REBATE  
INFRASTRUCTURE**

# 1. CLEAN ELECTRICITY AT THE LOWEST COSTS IN THE REGION



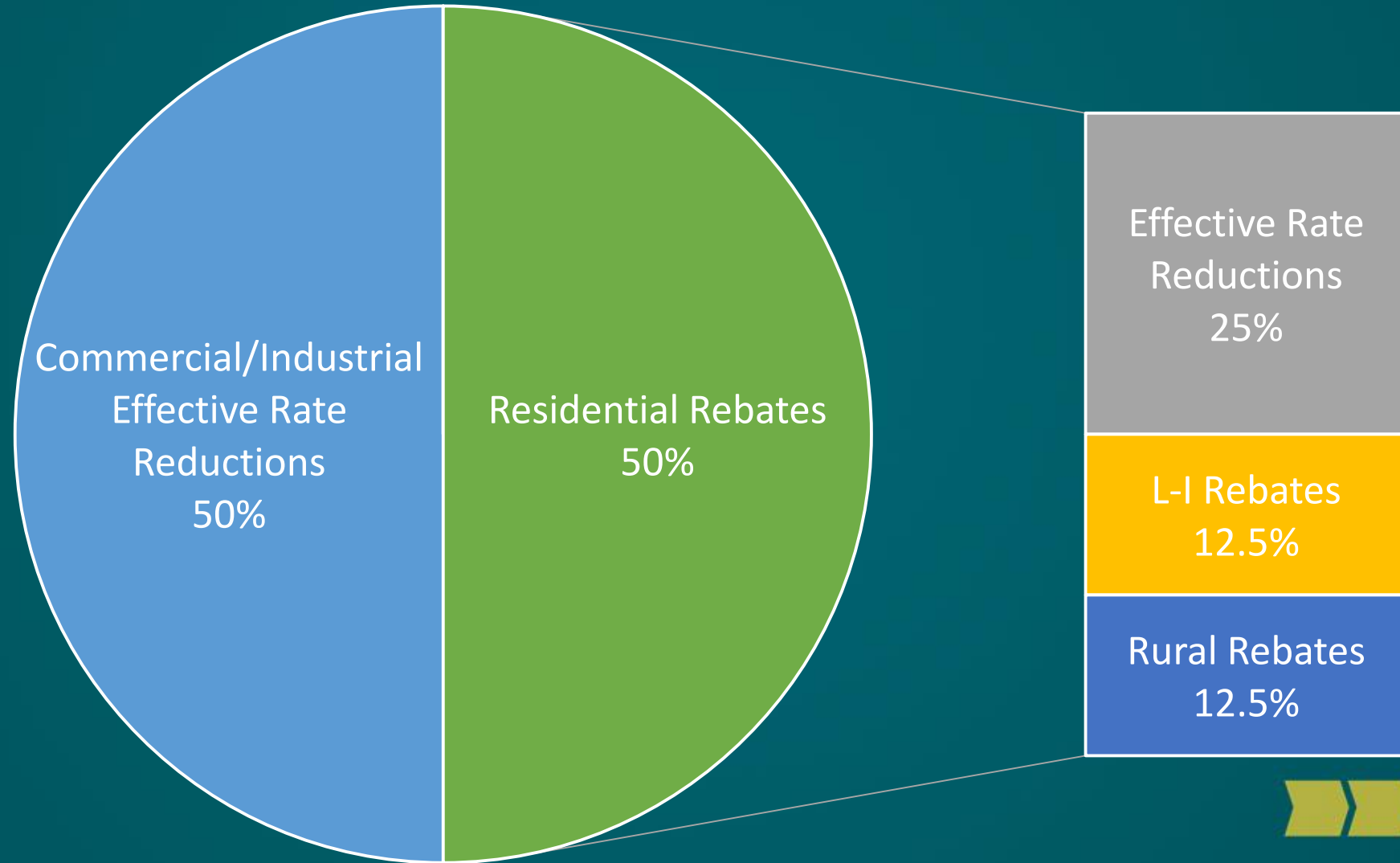
**ELECTRIC BILLS**



**25-30%**

# REBATE DISTRIBUTION

Sales



# LOWER ELECTRIC BILLS FOR VERMONT BUSINESSES

<b>KILOWATT HOURS USED</b>	<b>1000</b>	<b>\$0.1408</b>		<b>\$140.80</b>
<b>CUSTOMER CHARGE</b>				<b>\$18.75</b>
<b>ENERGY EFF. CHG-KWH</b>	<b>1000</b>	<b>\$0.01192</b>		<b>\$11.92</b>
<b>SUBTOTAL</b>				<b>\$170.67</b>
<b>CLIMATE RATE SAVINGS</b>	<b>1000</b>	<b>-\$0.0310</b>		<b>-\$31.00</b>

**BALANCE DUE: \$ 139.67**

## 2. PRIORITIZE WORKING-CLASS AND RURAL VERMONTERS.

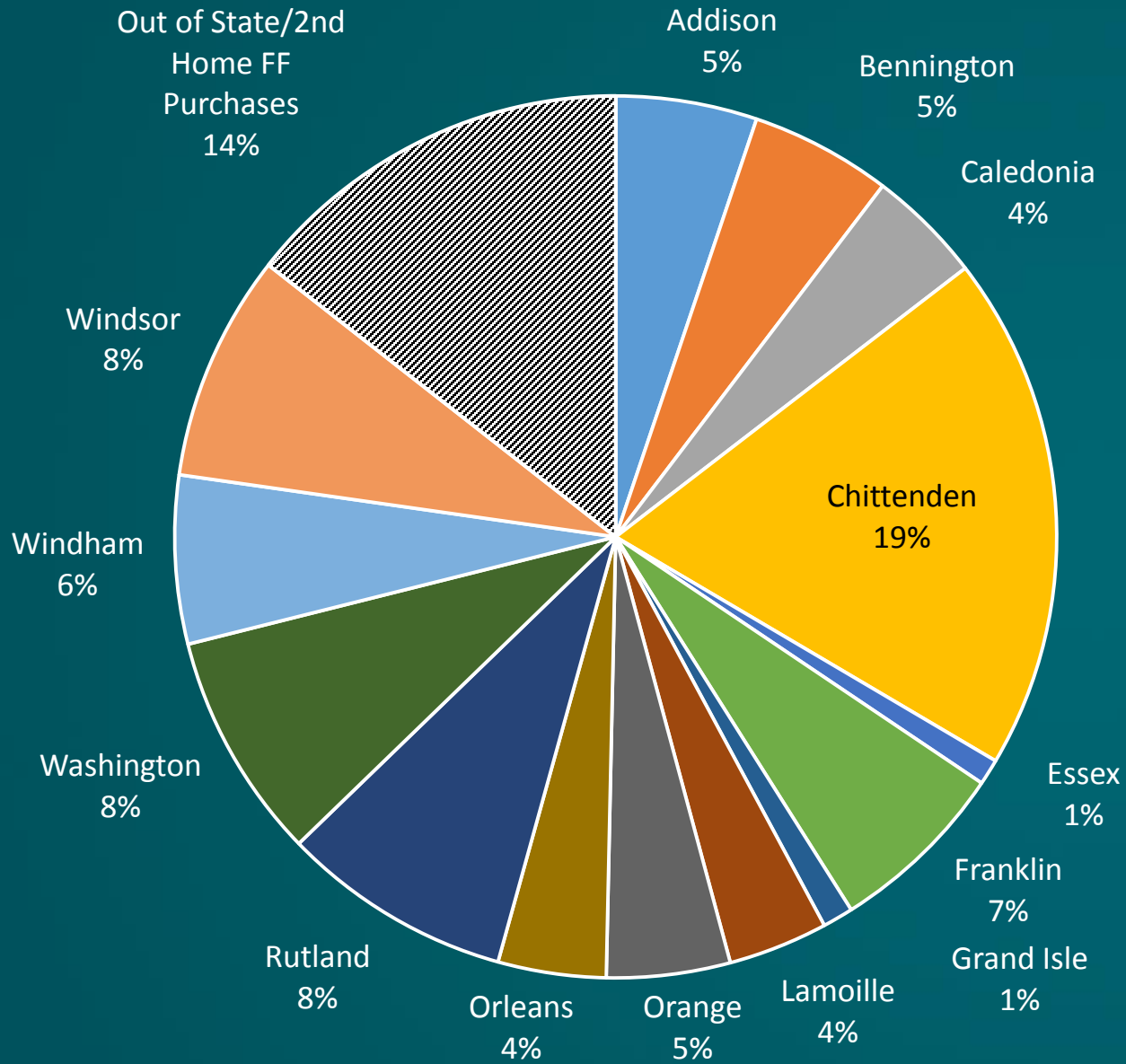
KILOWATT HOURS USED	500	\$0.1484	\$74.20
CUSTOMER CHARGE			\$12.99
ENERGY EFF. CHG-KWH	500	\$0.0091	\$4.55
<b>SUBTOTAL</b>			<b>\$91.74</b>
CLIMATE RATE SAVINGS	500	-\$0.0276	-\$13.80
LOW-INCOME REBATE			-\$21.24
RURAL REBATE			-\$13.92

**BALANCE DUE: \$ 91.74**

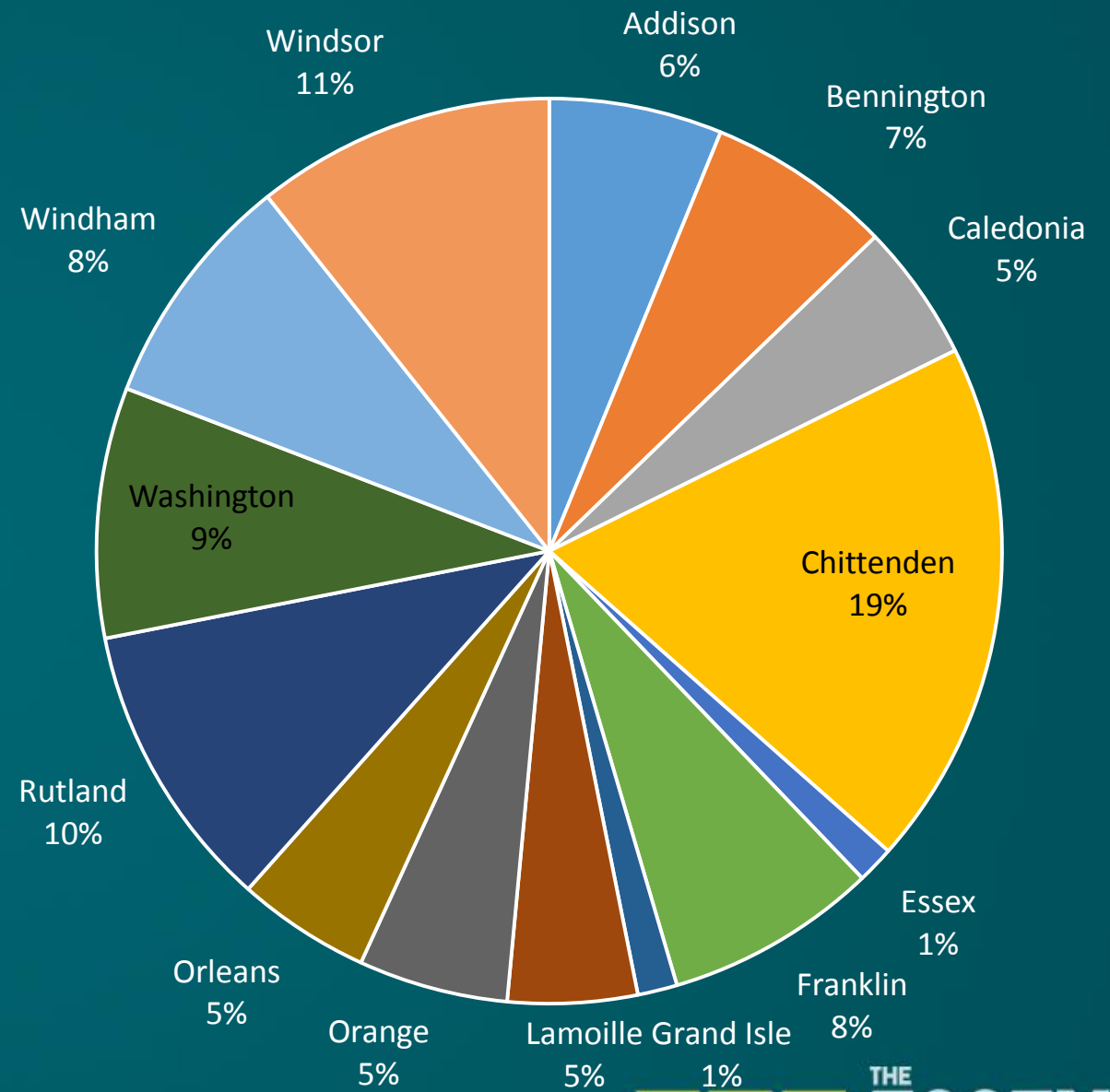
# Net Rebates (Expense) in Year 1 for Median Households by Income Decile



# Forecast Revenue



# Forecast Rebates





**VERMONTERS RECEIVE  
MORE IN REBATES  
THAN THEY CONTRIBUTE IN FEES**

# Before and After Cost/10,000 miles in Vermont: 25 mpg Internal Combustion Engine vs 0.28 kWh/mile EV



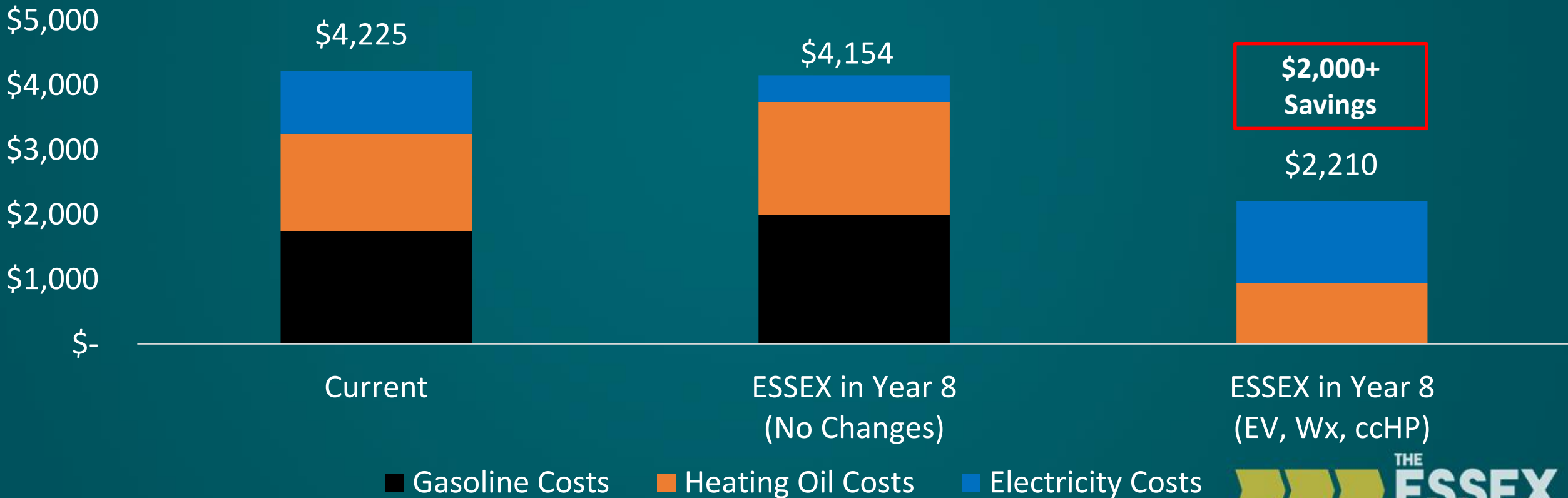
# ESSEX Costs/Benefits Example:

Rural Household, Income < 400% FPL

Transport - 17,500 miles/yr. @ 25 mpg @ \$2.50/gal -> EV

Heating - 600 gallons of heating @ \$2.50/gal -> Wx & ccHP

Electricity - 6500 -> 13,485 kWh in GMP territory



■ Gasoline Costs

■ Heating Oil Costs

■ Electricity Costs



# ESSEX Costs/Benefits Example:

Rural Household, Income < 400% FPL

Transport - 17,500 miles/yr. @ 25 mpg @ \$2.50/gal -> EV

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Electricity - 6500 -> 13,485 kWh in GMP territory



# 3. STRENGTHEN THE VERMONT ECONOMY



**VERMONT SPENDS OVER  
\$2 BILLION PER YEAR ON FOSSIL  
FUELS EXTRACTED  
AND REFINED OUT OF STATE**

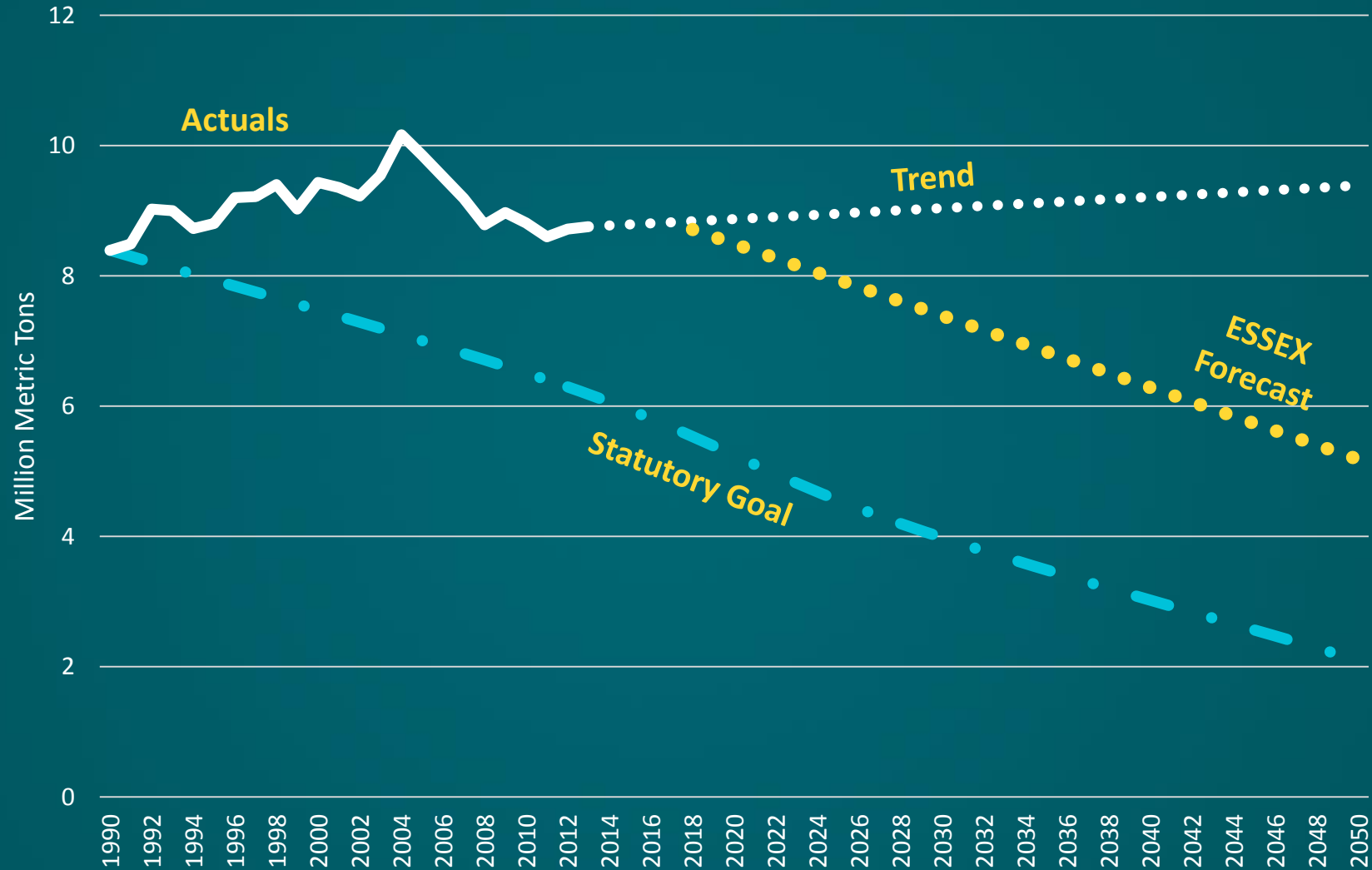
### 3. STRENGTHEN THE VERMONT ECONOMY



**IN ITS FIRST DECADE,  
THE ESSEX PLAN IS A  
\$1 BILLION  
'BUY LOCAL'  
CAMPAIGN**

# 4. ESSENTIAL ROLE IN CUTTING VERMONT'S CARBON POLLUTION

## ESSEX CHANGES THE TRAJECTORY



# What it Means for Ben & Jerry's



**\$258,992**



**\$573,812**

**Total Savings: \$832,804**





# REFUNDS FOR RENEWABLE ENERGY

<b>KILOWATT HOURS USED</b>	<b>1000</b>	<b>\$0.1408</b>		<b>\$140.80</b>
<b>CUSTOMER CHARGE</b>				<b>\$18.75</b>
<b>ENERGY EFF. CHG-KWH</b>	<b>1000</b>	<b>\$0.01192</b>		<b>\$11.92</b>
<b>SUBTOTAL</b>				<b>\$170.67</b>
<b>Net Metering Credits</b>				<b>-140.80</b>
<b>SUBTOTAL</b>				<b>30.67</b>
<b>CLIMATE RATE SAVINGS</b>	<b>1000</b>	<b>-\$0.0310</b>		<b>-\$31.00</b>

**REFUND**

**: \$**

**0.33**



# BORDER LEAKAGE

- ALL STATES HAVE DIFFERENT LEVELS OF TAXATION
- GAS STATIONS SET PRICES BASED ON MYRIAD FACTORS

