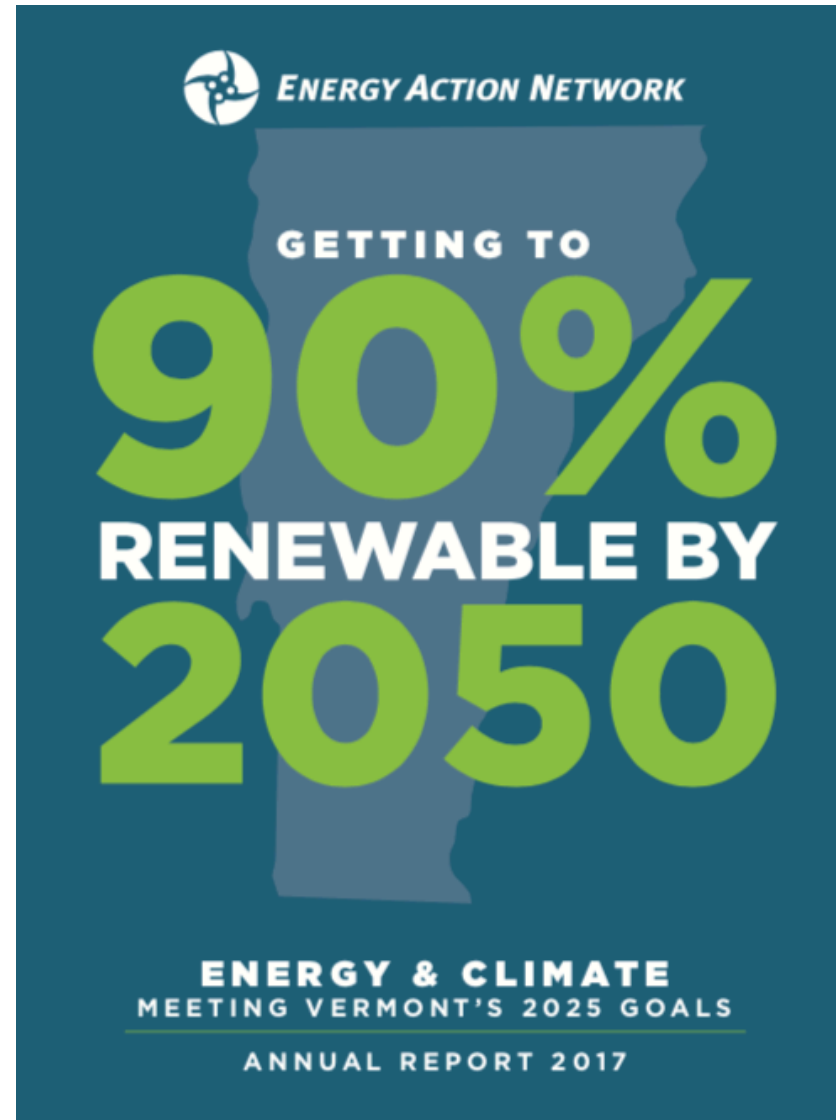


Getting Serious About Vermont's Energy, Emissions, and Economic Goals

House Energy & Technology Committee, Vermont Legislature
January 25, 2018

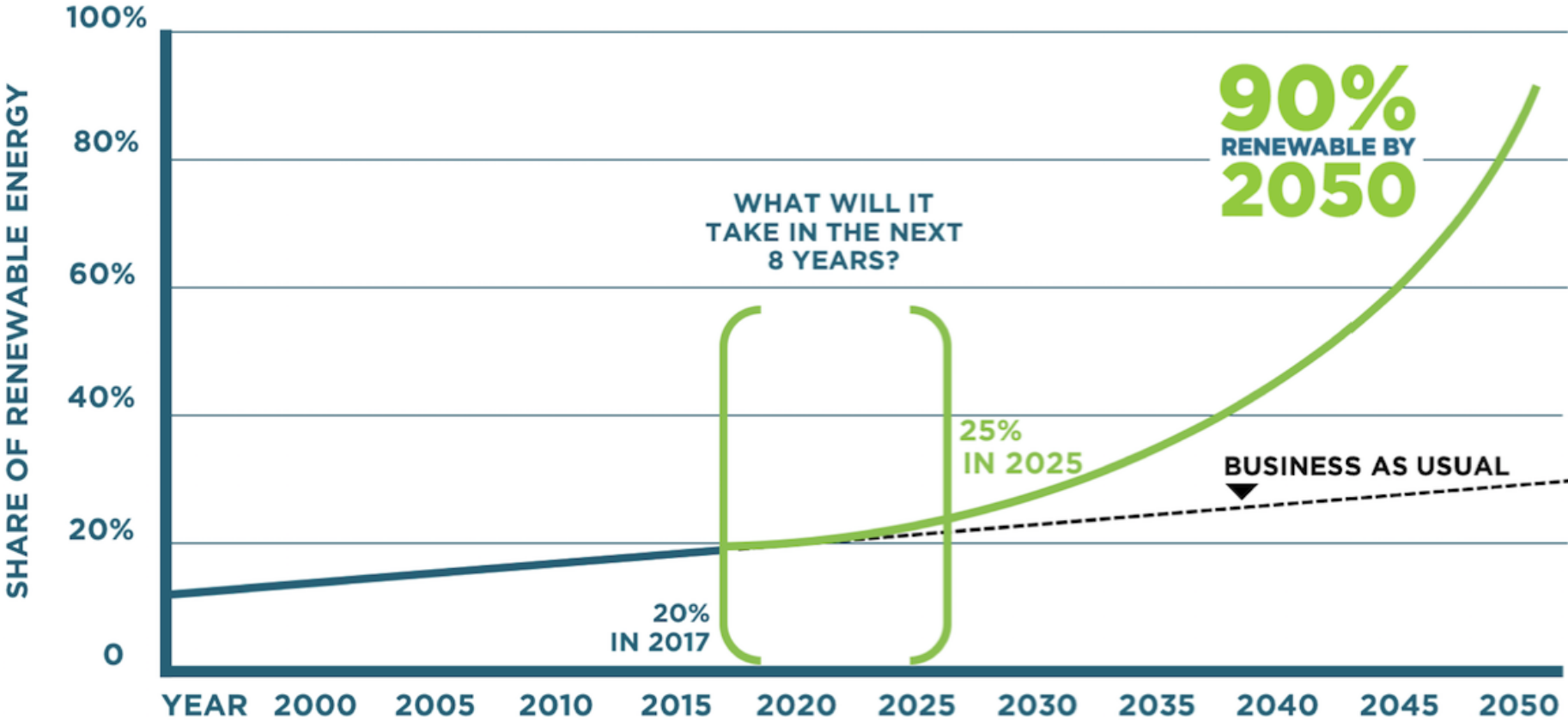


EAN: A Diverse Network Committed to Vermont's Goals

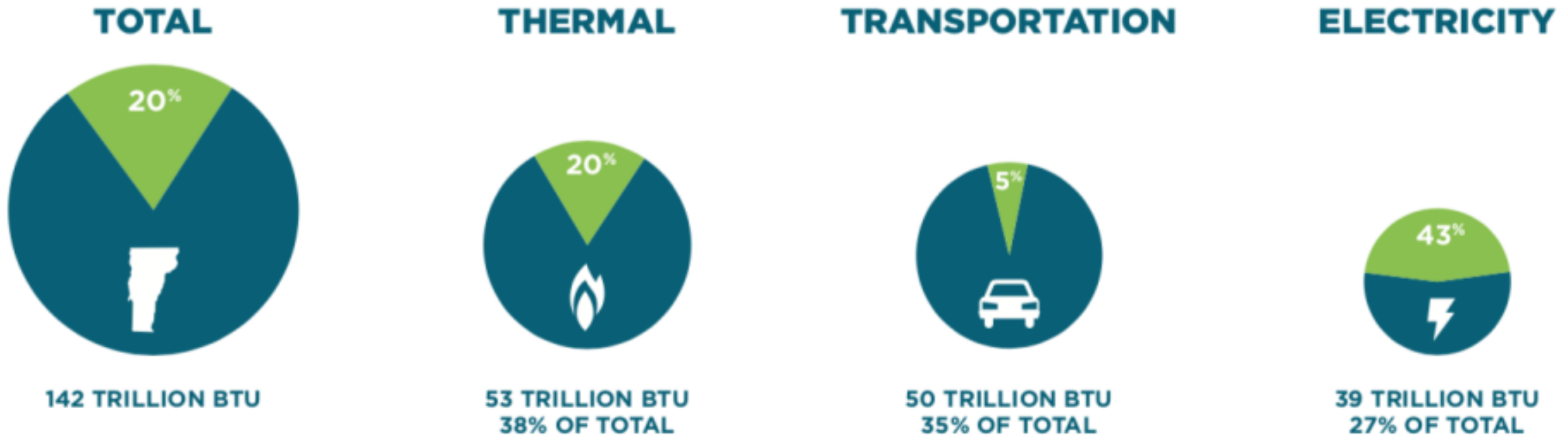


We've Made Real Progress but the Climb is About to Get A Lot Steeper...

BUSINESS AS USUAL WILL NOT GET US TO 90% BY 2050 (OR 25% BY 2025)



Total Energy: Not as Renewable As You Might Think...

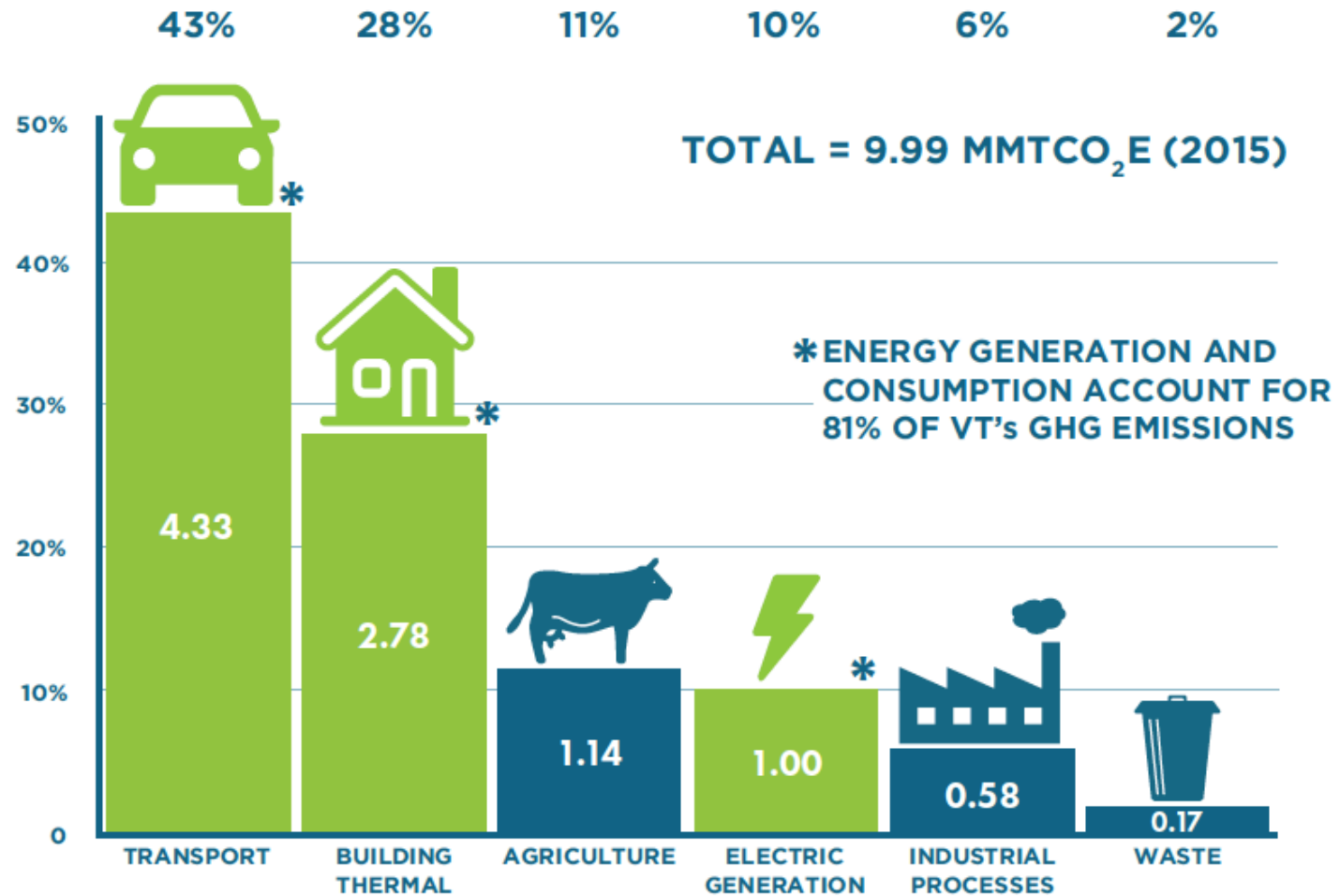


SOURCES: All data comes from EAN calculations based on Energy Information Administration, Public Service Department, and VTRANS sources. The sectoral pie charts reflect the calculations used for Vermont's Comprehensive Energy Plan. Electricity is calculated using Source Energy which takes into account efficiency and transmission losses that occur when converting energy sources (primarily fossil fuels) to electricity and bringing it to Vermont. Transportation and thermal are calculated using "Site Energy", which does not take these losses into account.



The Energy & Emissions Story

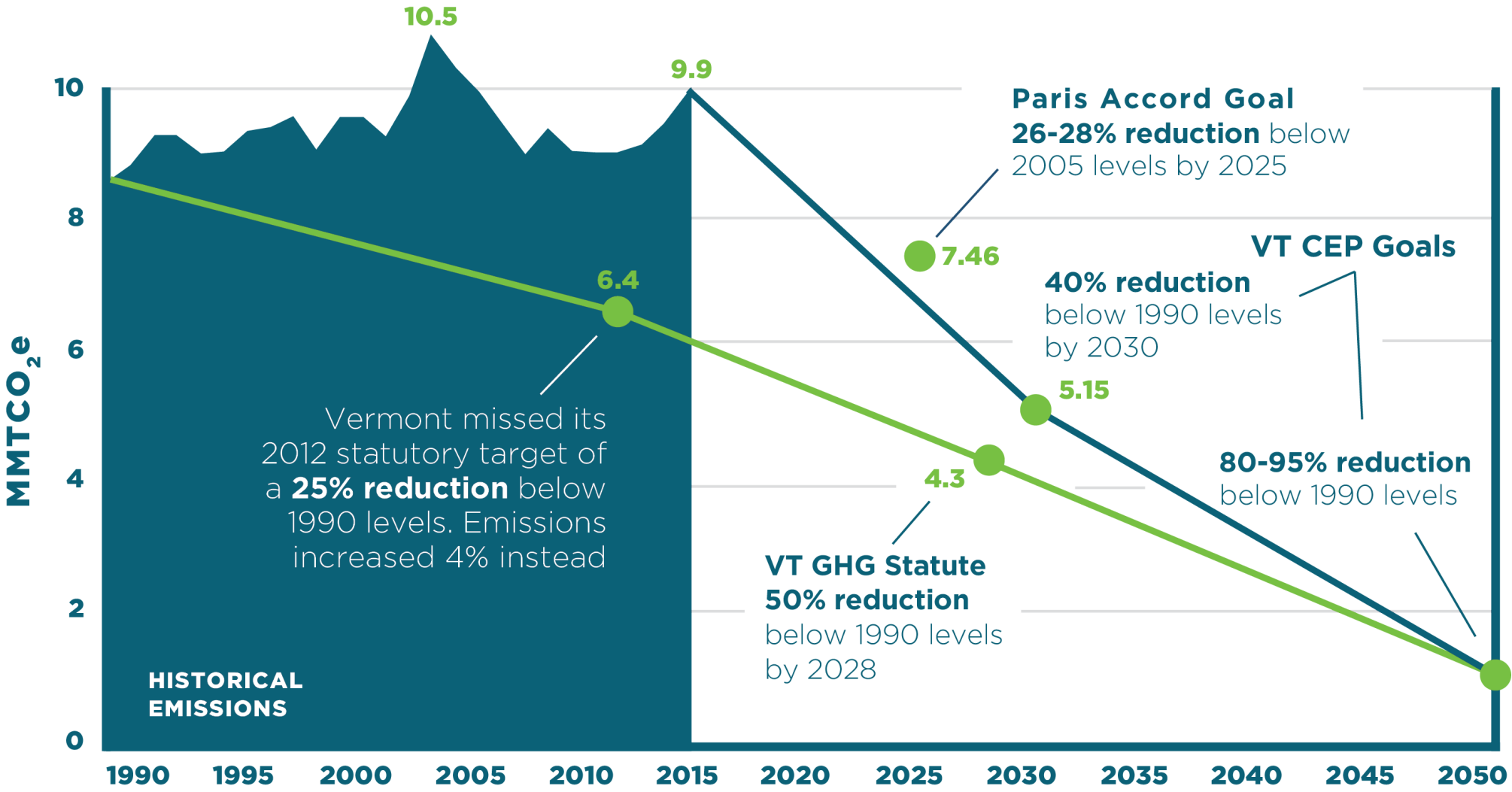
THE CLIMATE CONVERSATION IS AN ENERGY CONVERSATION



SOURCE: HISTORICAL AND CURRENT EMISSIONS FROM VERMONT AGENCY OF NATURAL RESOURCES: CLIMATECHANGE.VERMONT.GOV



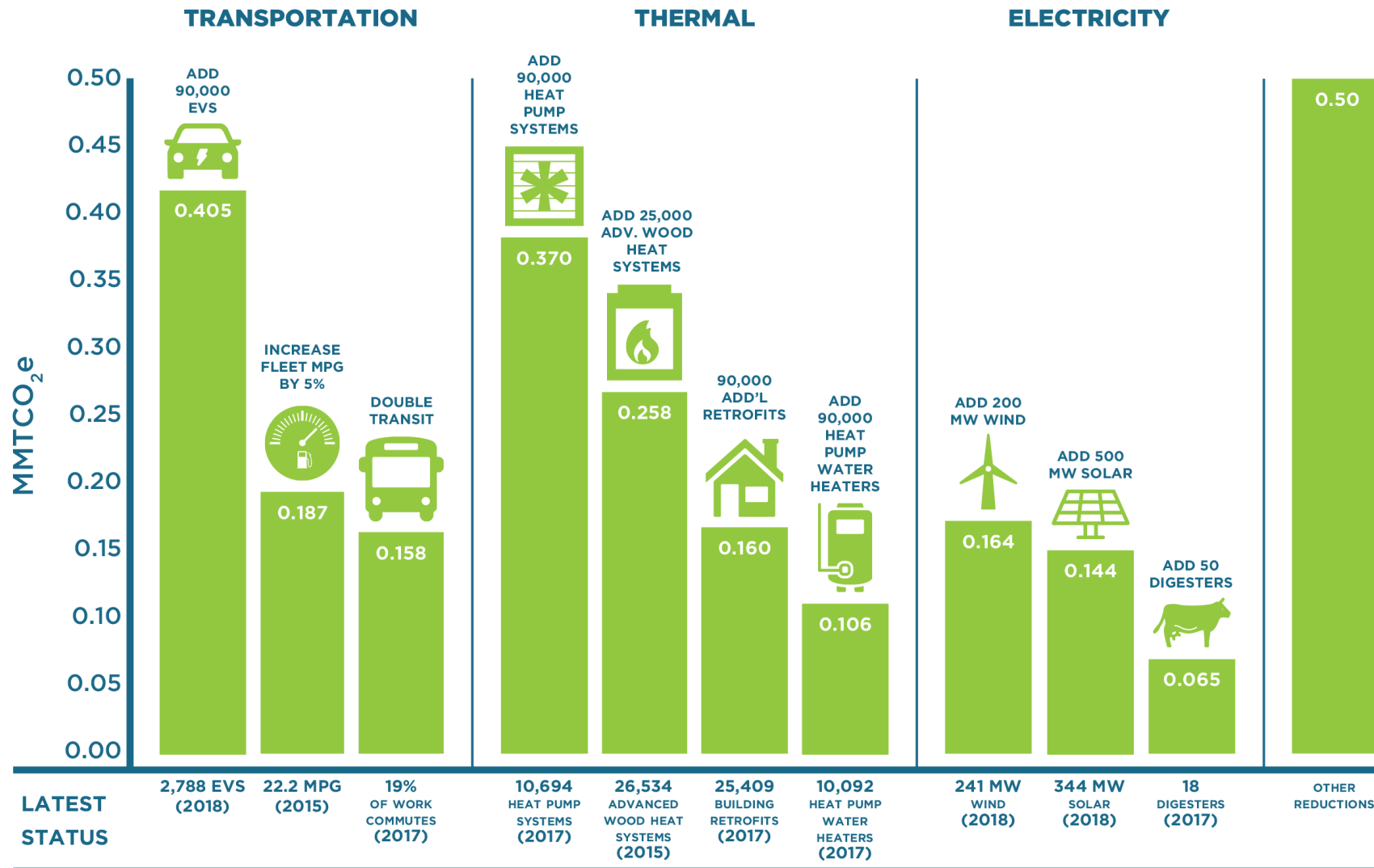
VT's Greenhouse Gas Emissions are Increasing



HISTORICAL EMISSIONS FROM VERMONT AGENCY OF NATURAL RESOURCES: CLIMATECHANGE.VERMONT.GOV



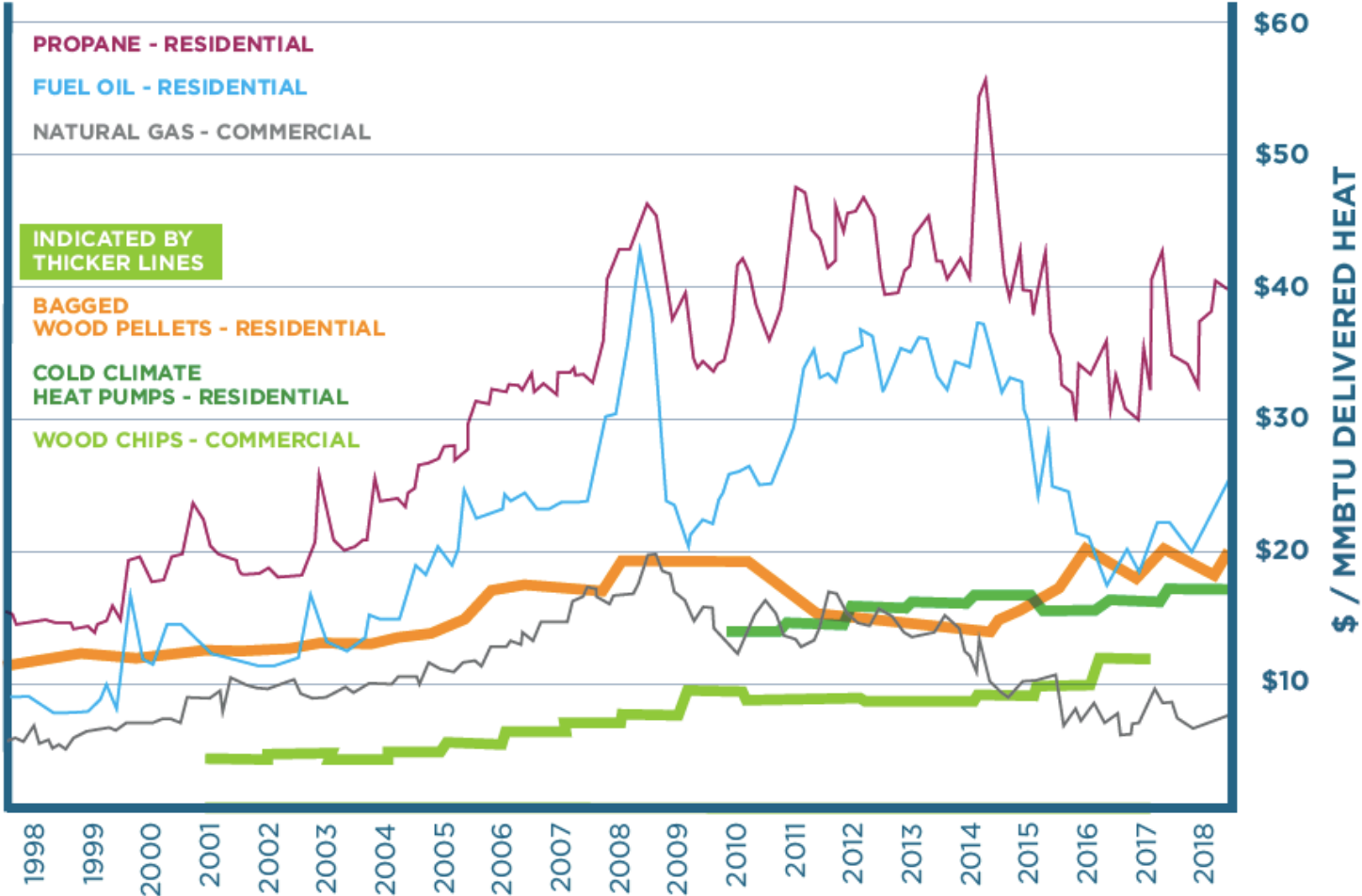
Pathway to 2025: Top Ten Drivers



Vermonters Stand To Save

Stable and low-cost renewables
vs.
Volatile fossil-fuel prices

AVERAGE HEATING FUEL PRICING TRENDS (1998-2018)¹⁶



Gas vs. Electric: A Comparison

GAS POWERED CAR

\$2.60/gallon

Regular Maintenance Costs (Oil Changes, Transmission Fluid, etc)

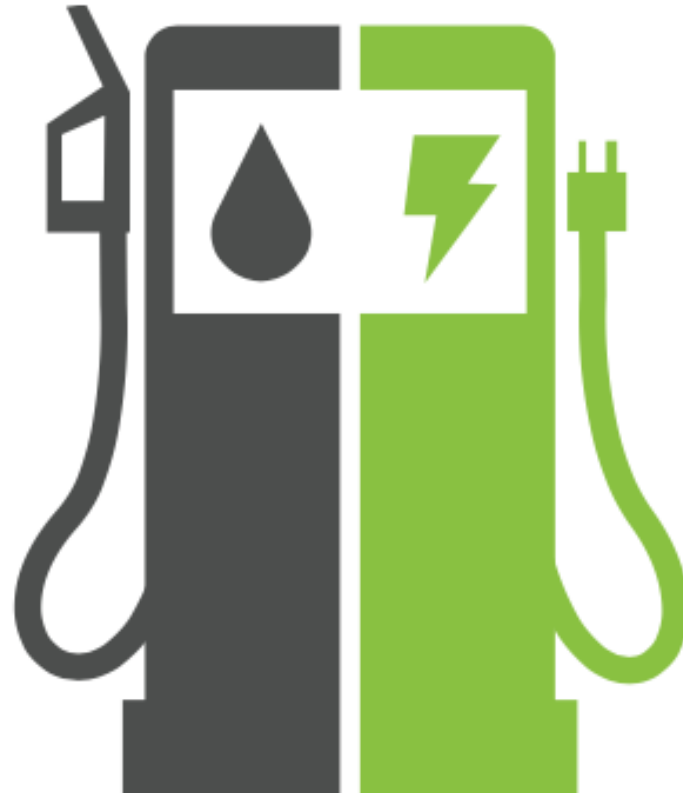
Drive to Fill Up

Air Pollution

High Carbon Emissions

Fuel Dollars - 78% leave Vermont

Gas Price Volatility



ELECTRIC VEHICLE (EV)

\$1.50/gallon equivalent¹³

Low Maintenance Costs

Fill Up at Home

No Tailpipe Emissions

No or Low Carbon Emissions

Renewably Sourced (and if from rooftop solar, most \$ stays in Vermont)

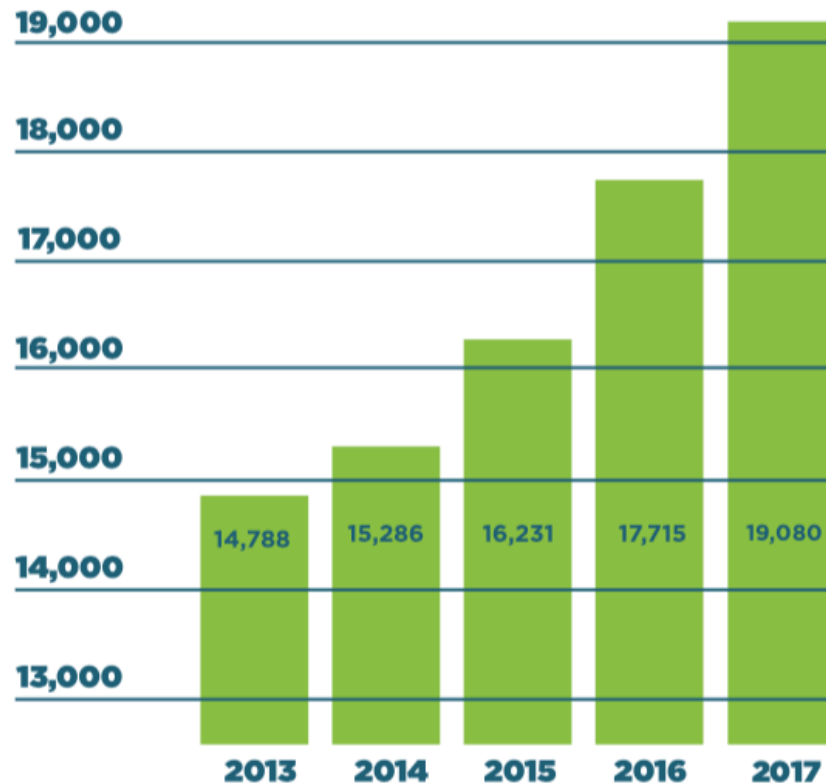
Electricity Price Stability



Vermont Stands to Grow

VERMONT CLEAN ENERGY JOBS²¹

Up 29% since 2013



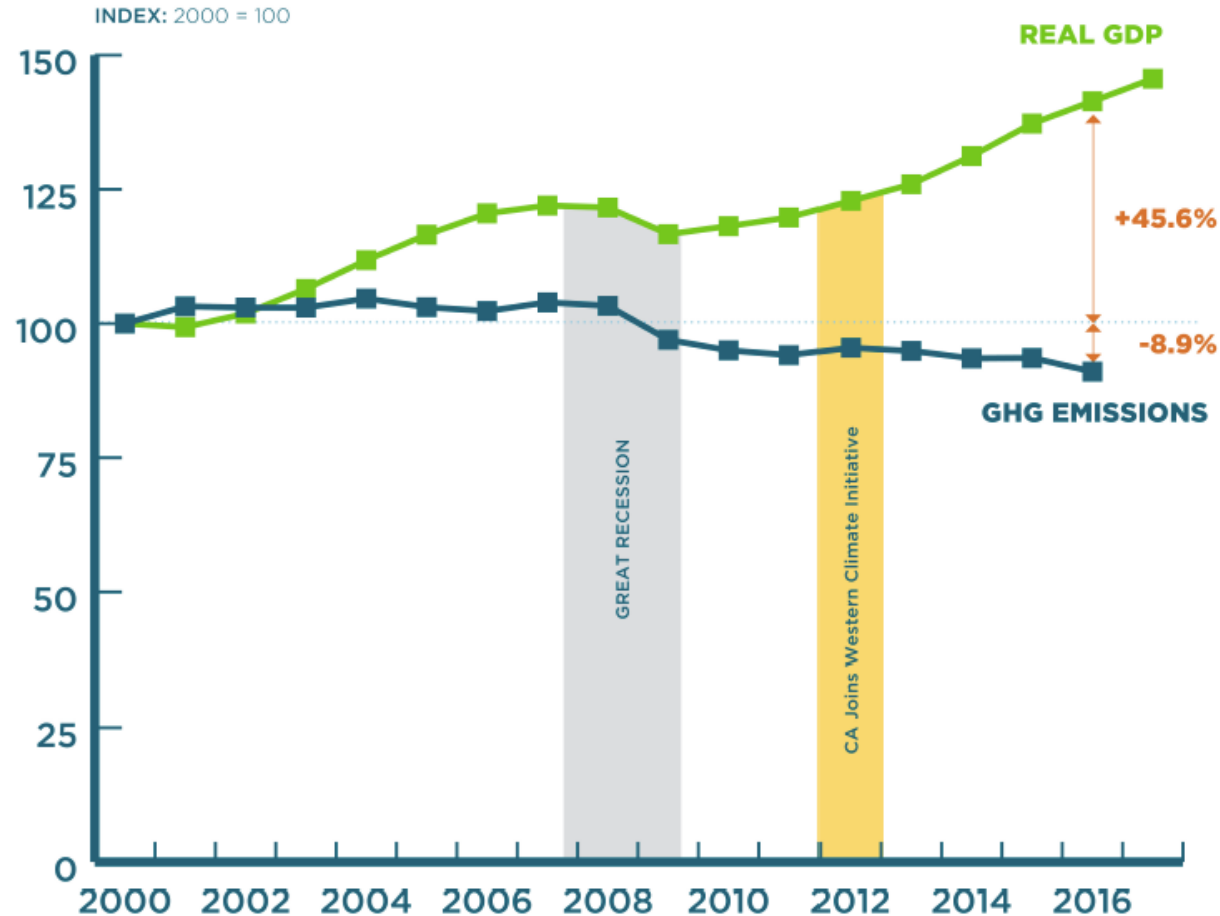
**78¢ OF EVERY \$1
SPENT ON FOSSIL
FUEL LEAVES
VERMONT... NEARLY
\$1.5 BILLION PER
YEAR²²**

...but \$\$ spent on local renewables
creates more jobs for Vermont



One U.S. State Has Capped Carbon Economy-Wide...

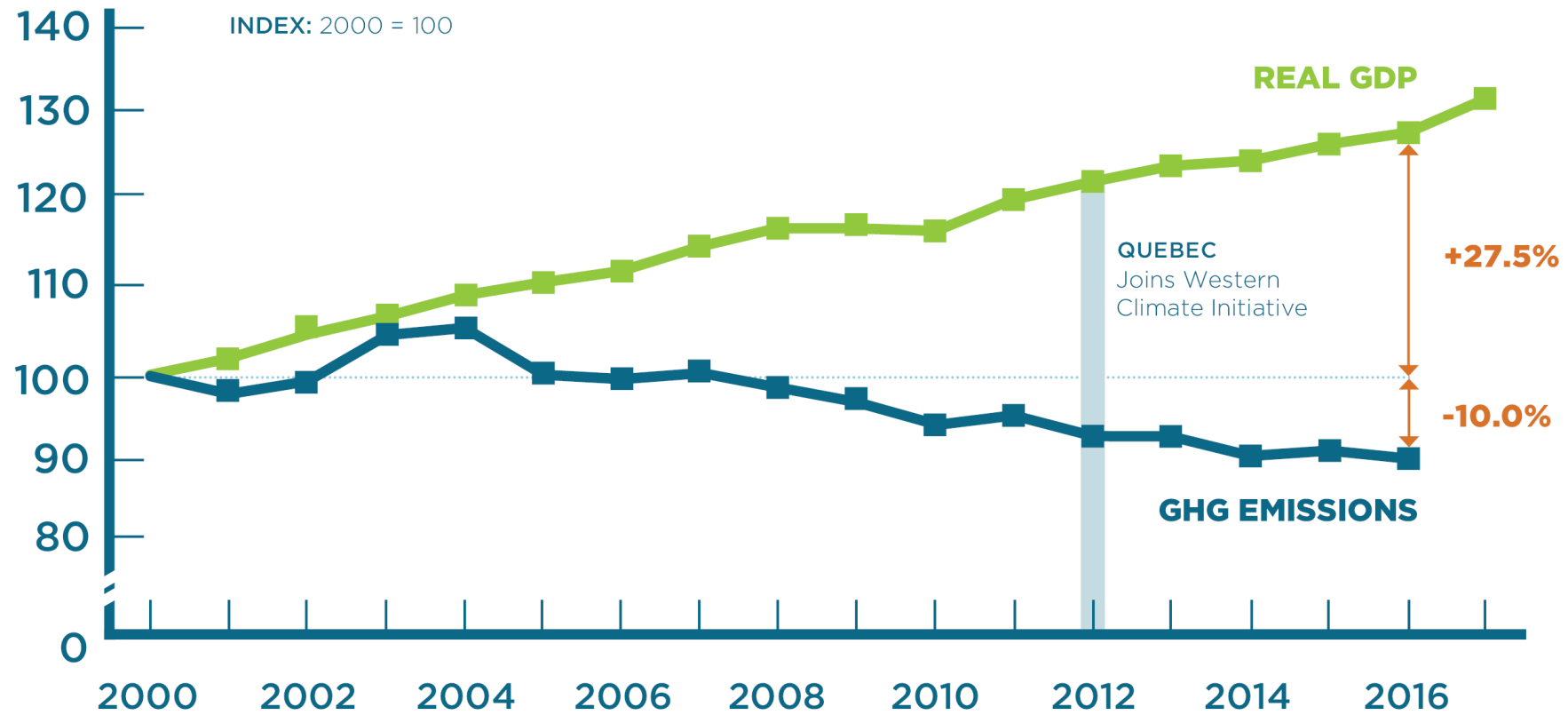
DECOUPLING: CALIFORNIA'S REAL GDP AND GHG EMISSIONS, 2000-2017



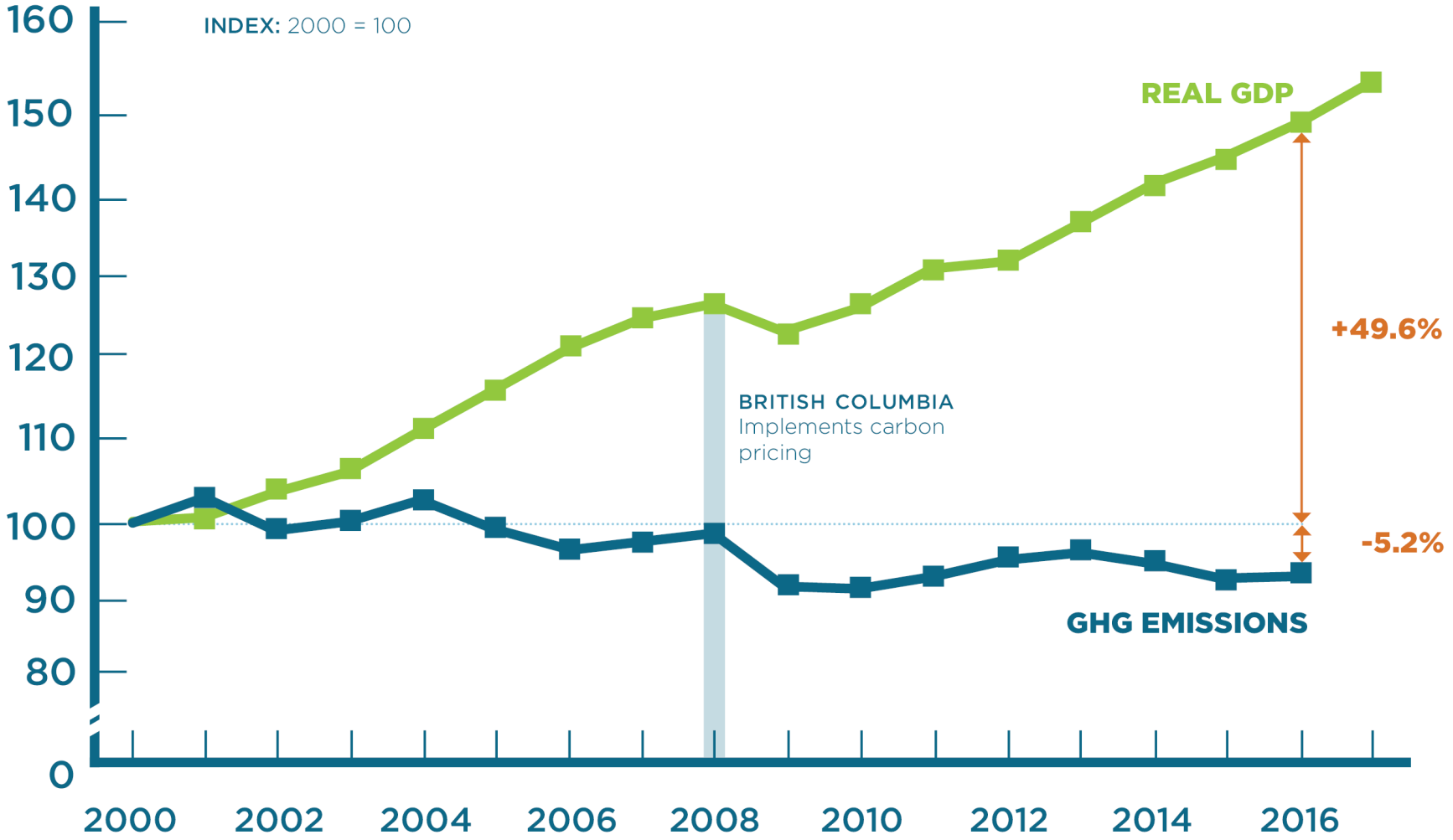
EMISSIONS: WWW.ARB.CA.GOV/CC/INVENTORY/DATA/GRAPH/BAR/BAR_2016_BY_GHG.PNG
GDP: [HTTPS://FRED.STLOUISFED.ORG/SERIES/CARGSP](https://FRED.STLOUISFED.ORG/SERIES/CARGSP)



...As Have Our Neighbors to the North in Quebec

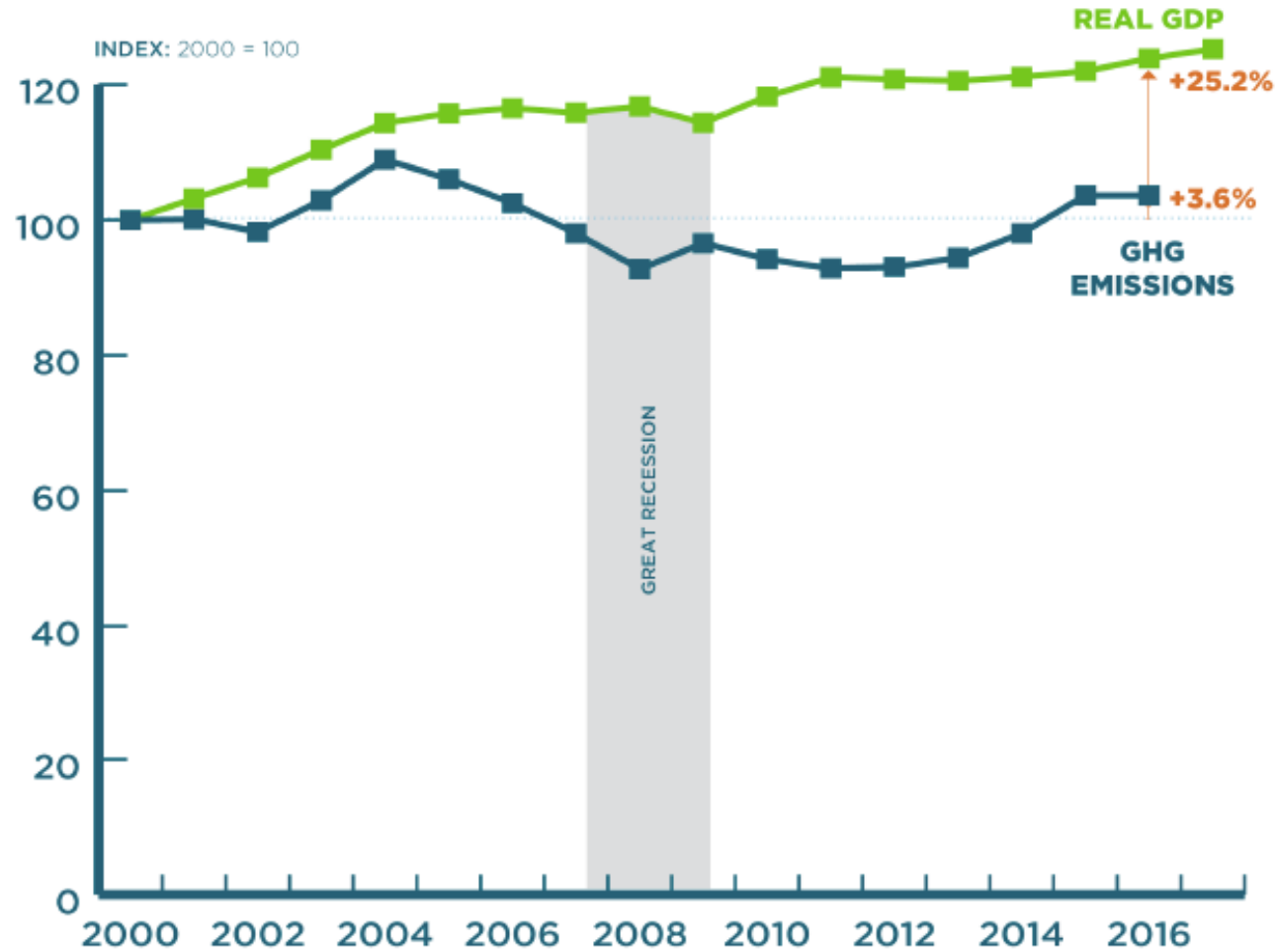


And British Columbia Implemented a Carbon Tax in 2008



But Vermont?

DECOUPLING? VERMONT'S REAL GDP AND GHG EMISSIONS, 2000-2017

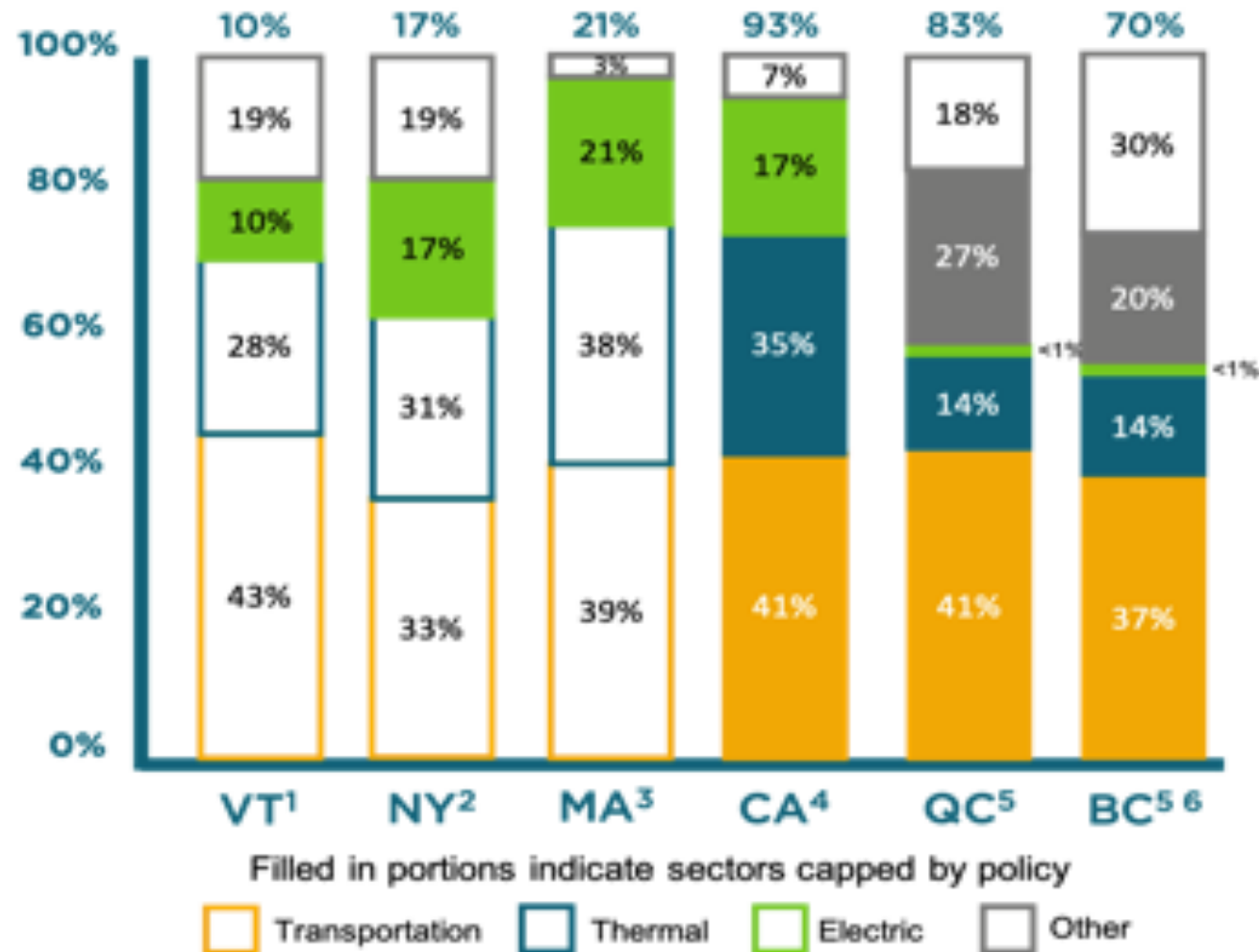


EMISSIONS: [HTTP://DEC.VERMONT.GOV/SITES/DEC/FILES/AQC/CLIMATE-CHANGE/DOCUMENTS/_VERMONT_GREENHOUSE_GAS_EMISSIONS_INVENTORY_UPDATE_1990-2015.PDF](http://dec.vermont.gov/sites/dec/files/aqc/climate-change/documents/_vermont_greenhouse_gas_emissions_inventory_update_1990-2015.pdf)
GDP: [HTTPS://FRED.STLOUISFED.ORG/SERIES/VTRGSP](https://fred.stlouisfed.org/series/VTRGSP)

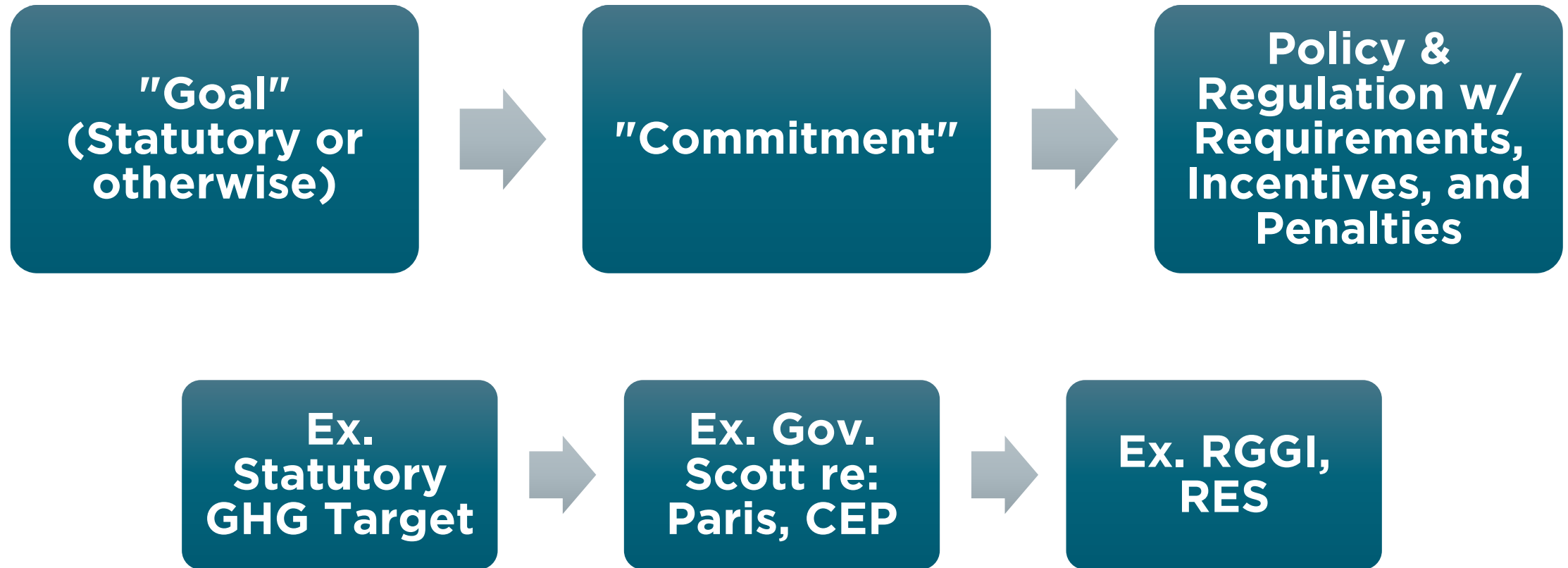


Only one energy sector in VT is subject to emissions caps

Percent of emissions covered by statewide decarbonization program



The Spectrum of Serious Action



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