

# RGGI Modeling Update

NY Stakeholders Meeting

**September 12, 2005**

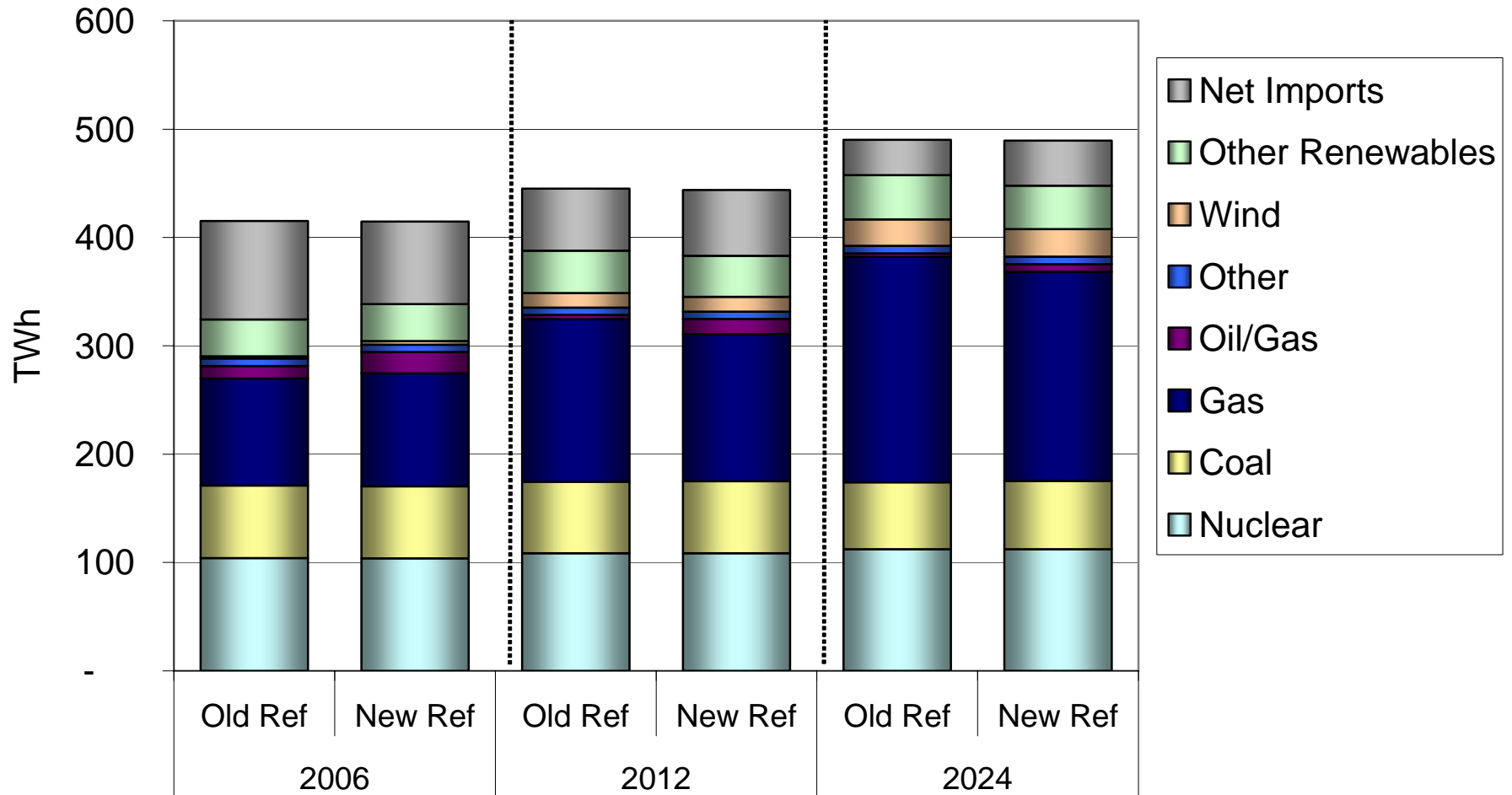
**Karl Michael**

Program Manager  
NYSERDA

Updated Reference  
compared to  
Original Reference

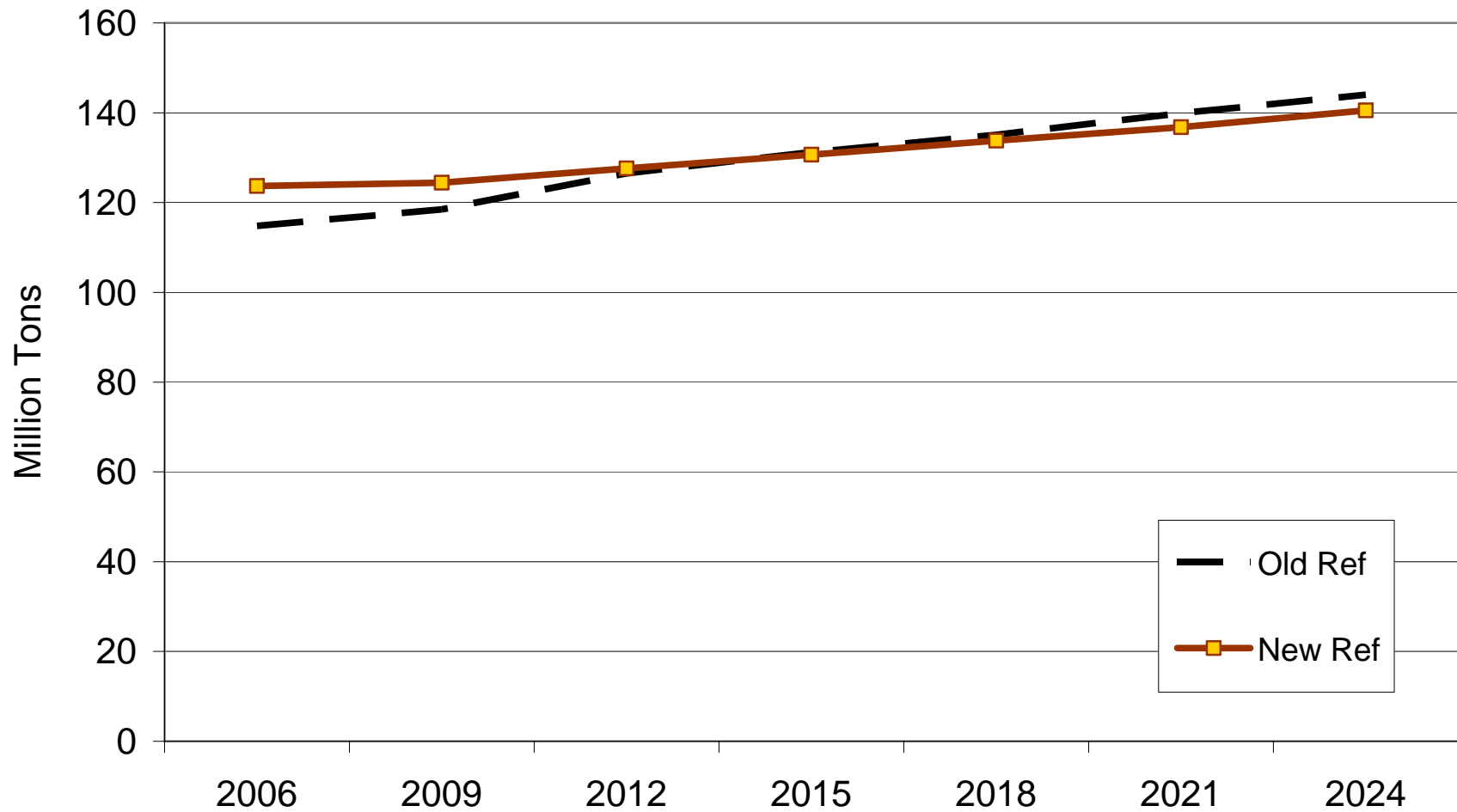
# RGGI Generation Mix

## New Reference v. Old Reference



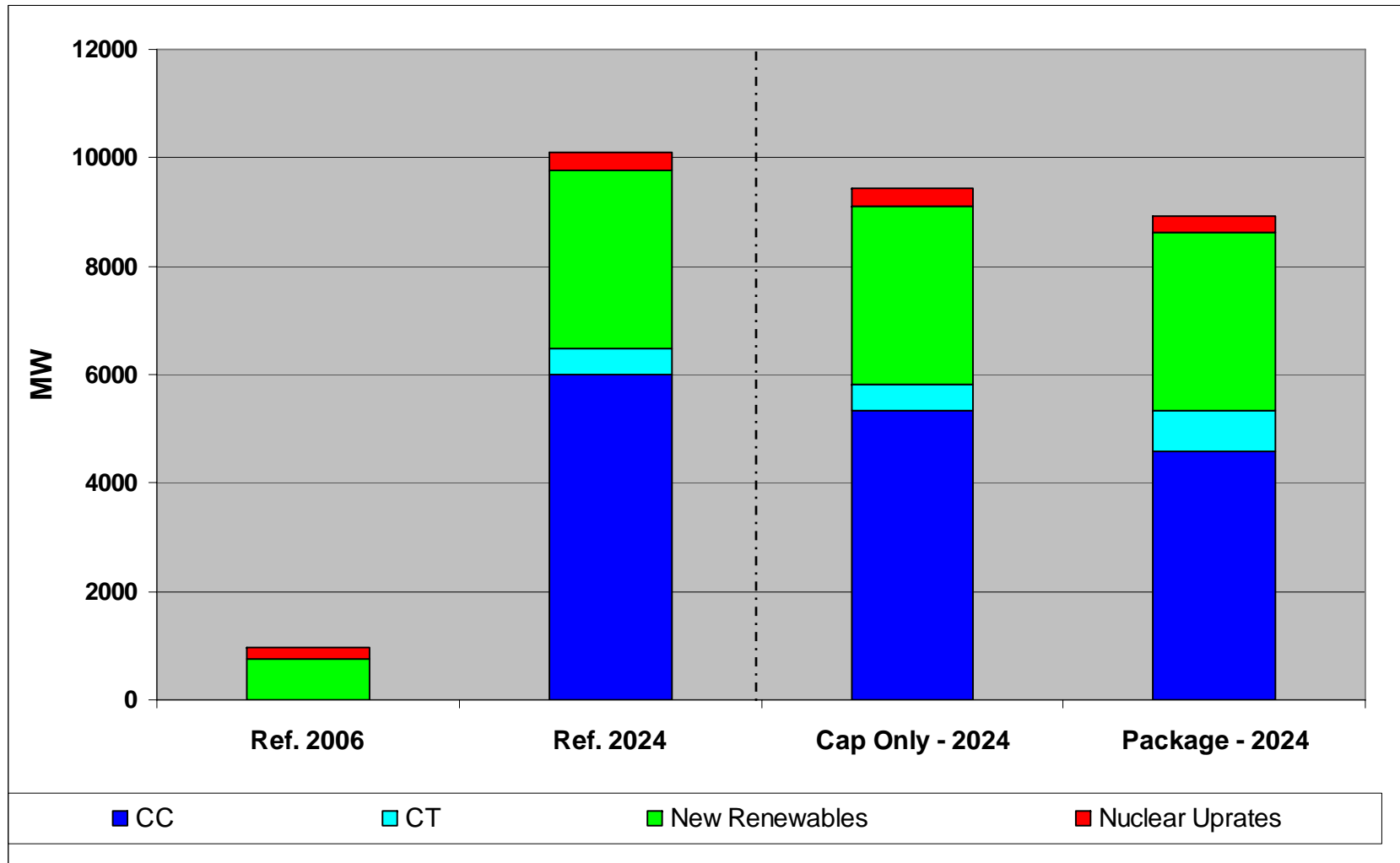
# CO<sub>2</sub> Emissions

## New Reference v. Old Reference



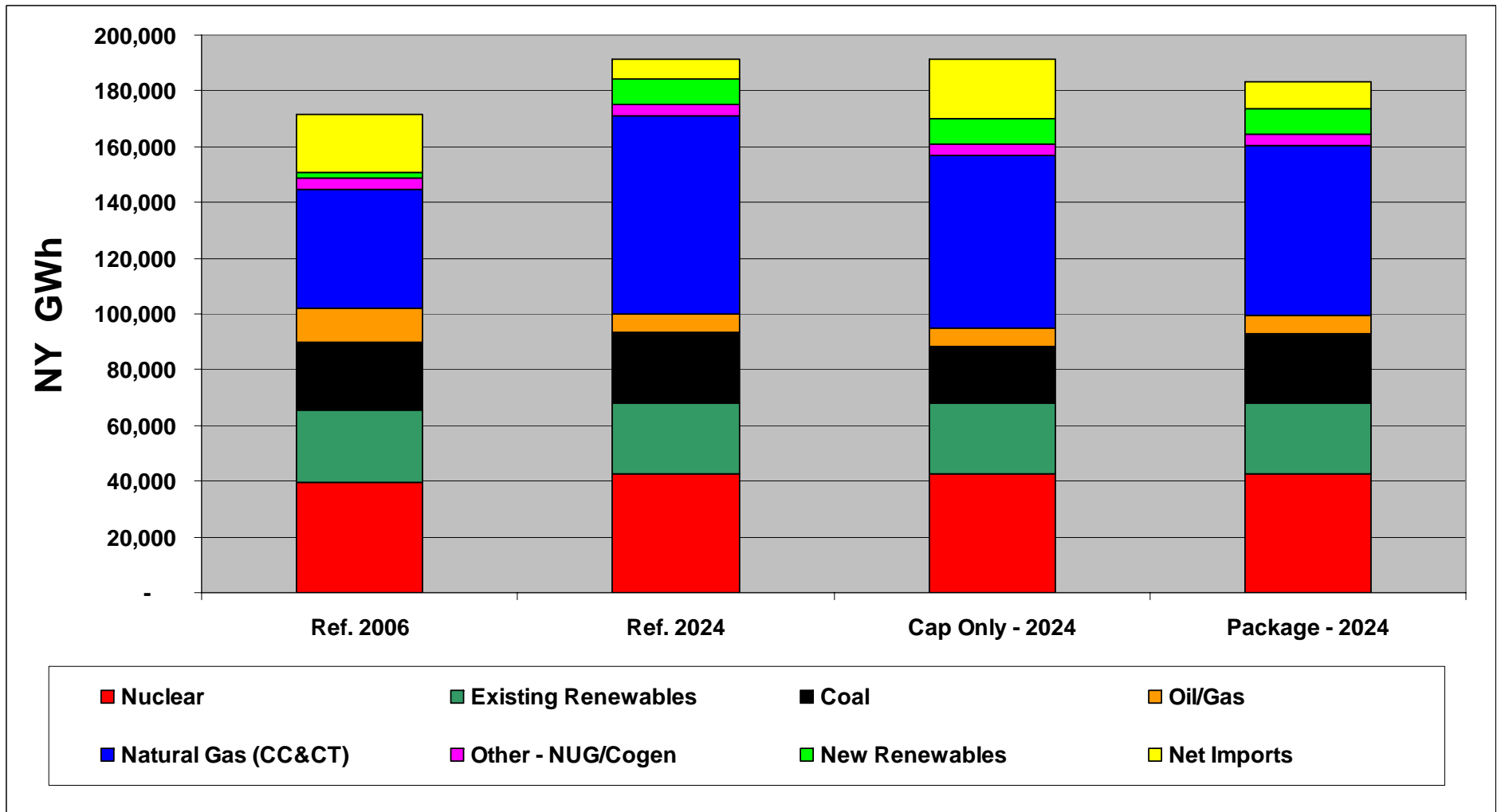
New York  
Package vs. Reference

# NY Cumulative Capacity Additions\*

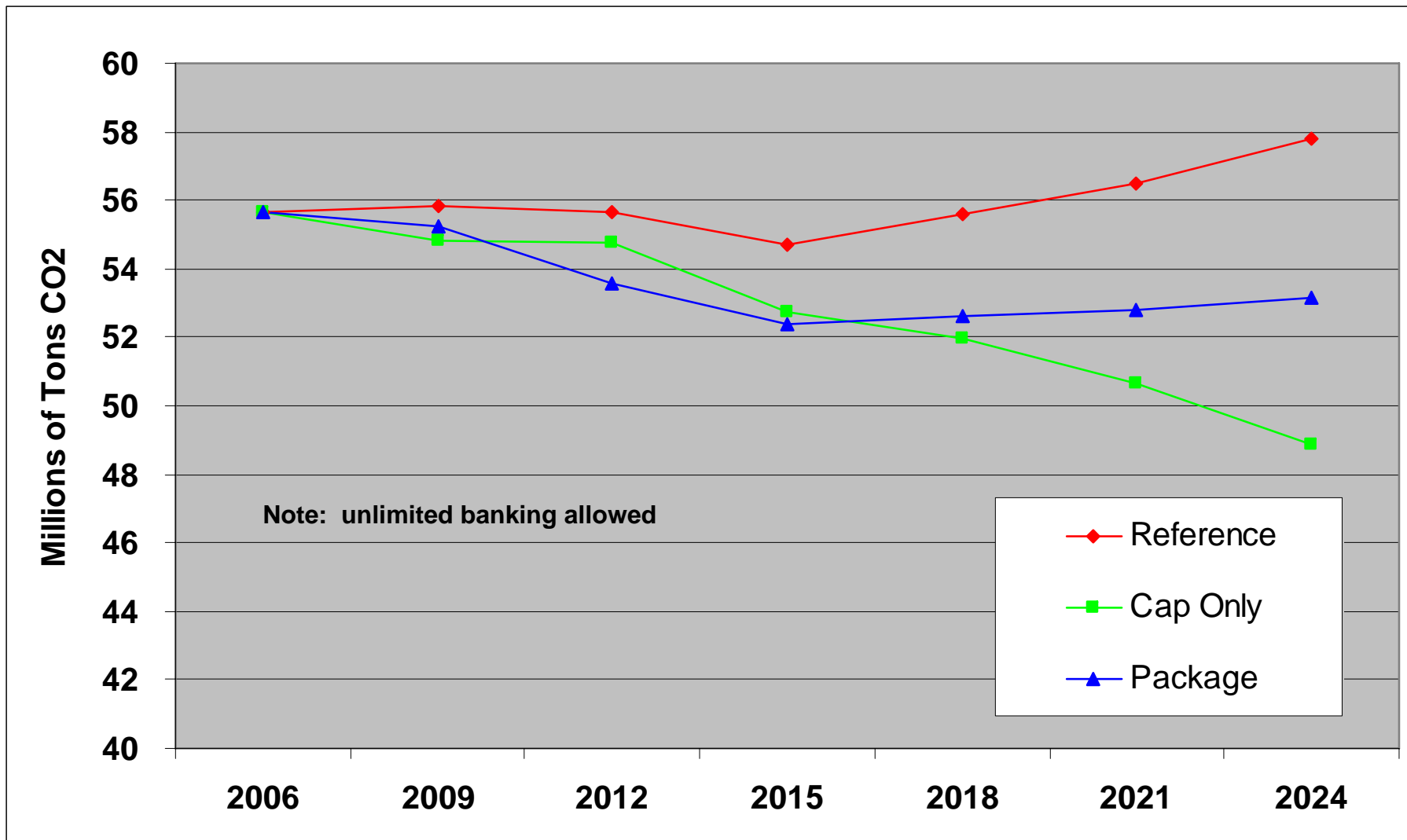


\* Excludes firmly planned additions and retirements

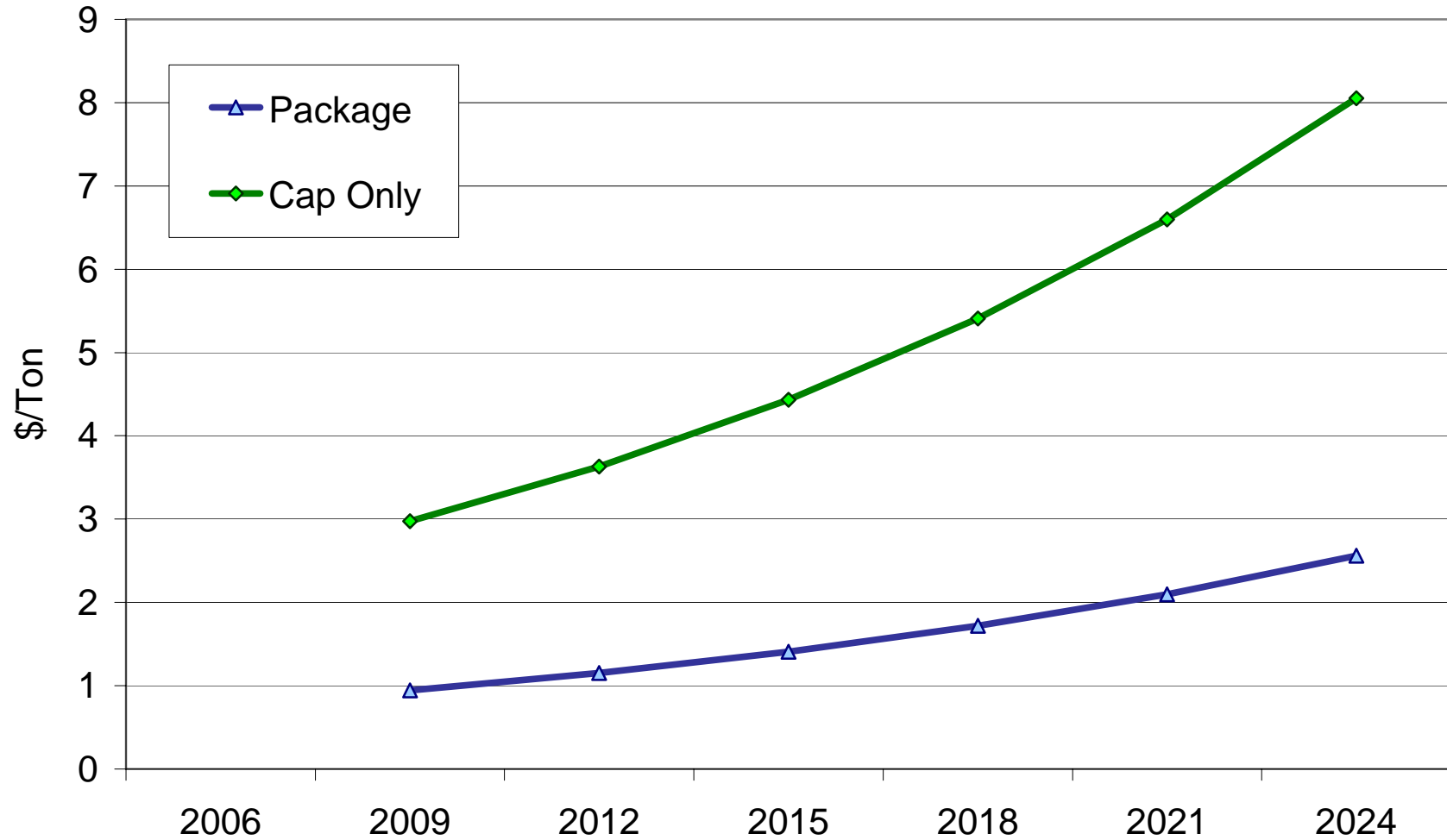
# NY Generation Mix



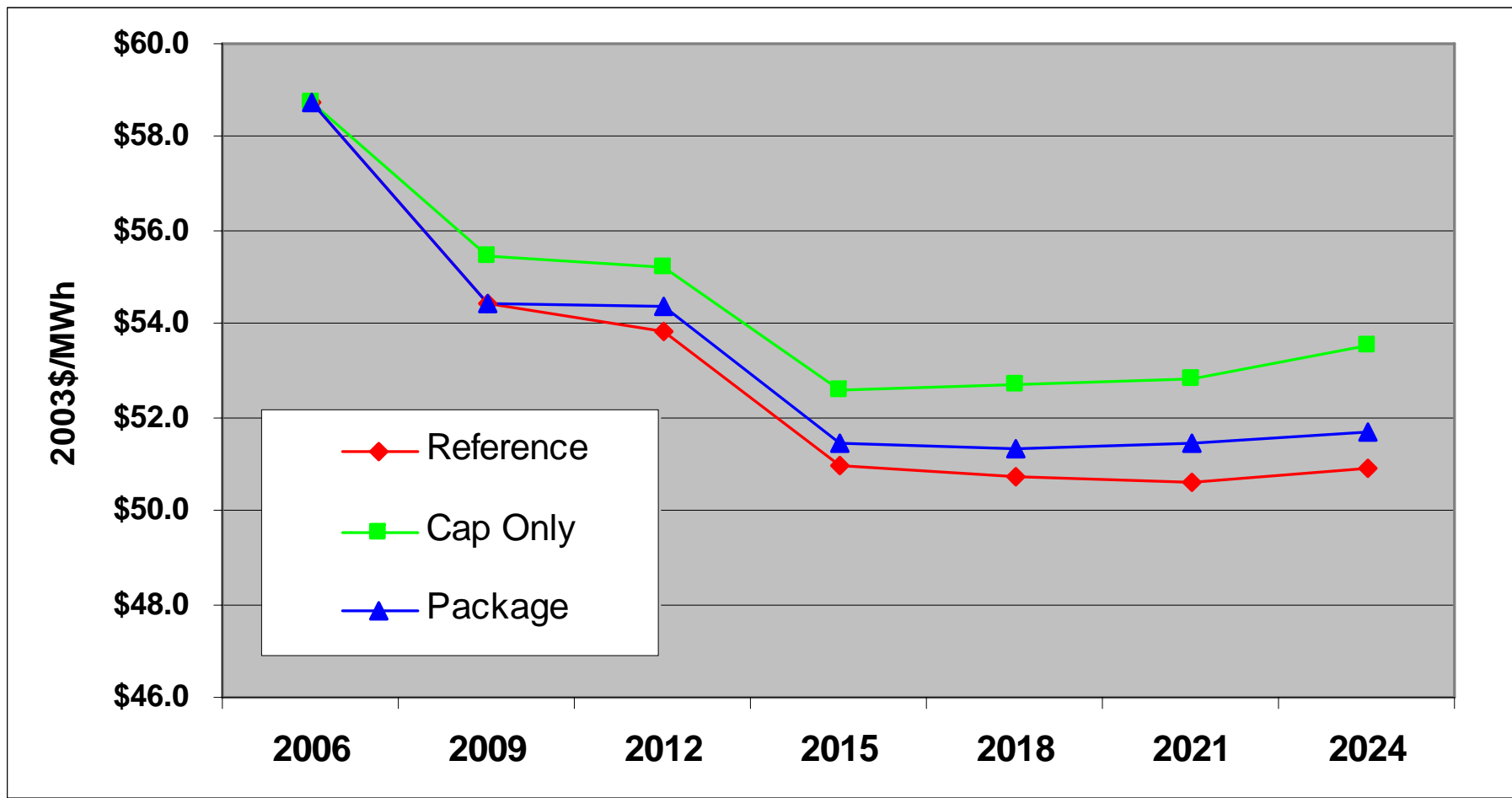
# NY CO<sub>2</sub> Emissions Trajectories



# CO<sub>2</sub> Allowance Prices

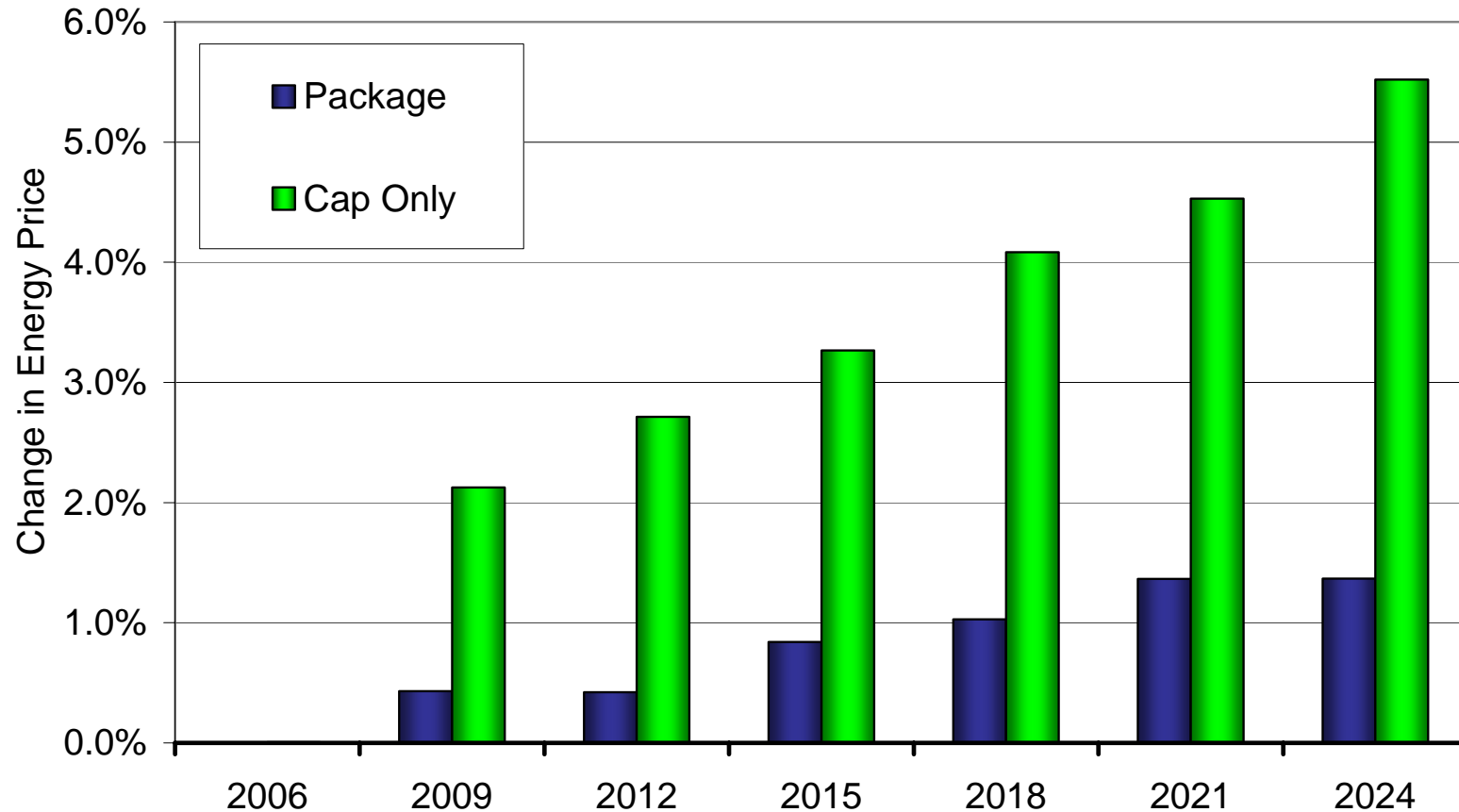


# NY Annual Energy Prices



NOTE: Energy prices include annualized capacity prices.

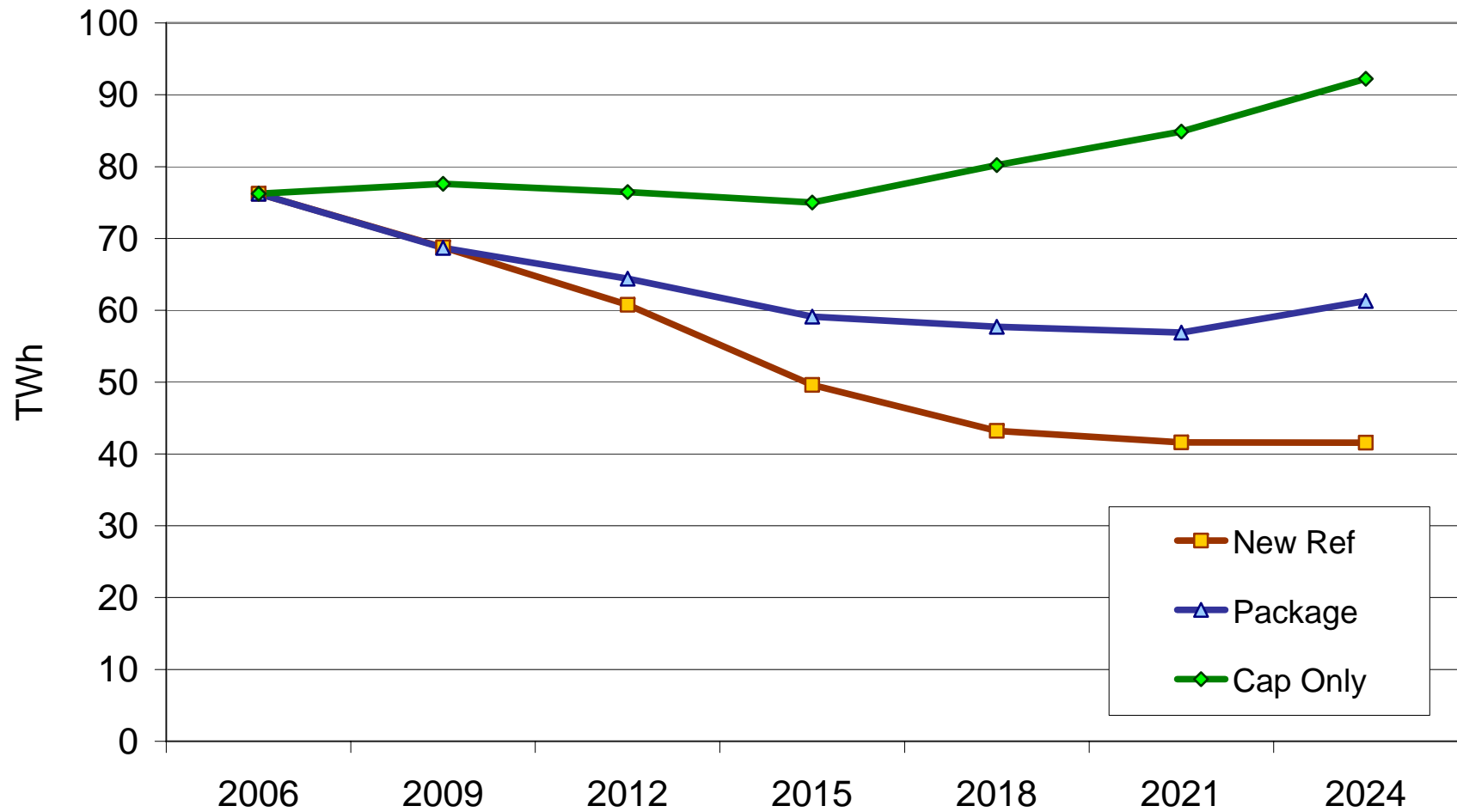
# Change in RGGI Average Annual Energy Prices



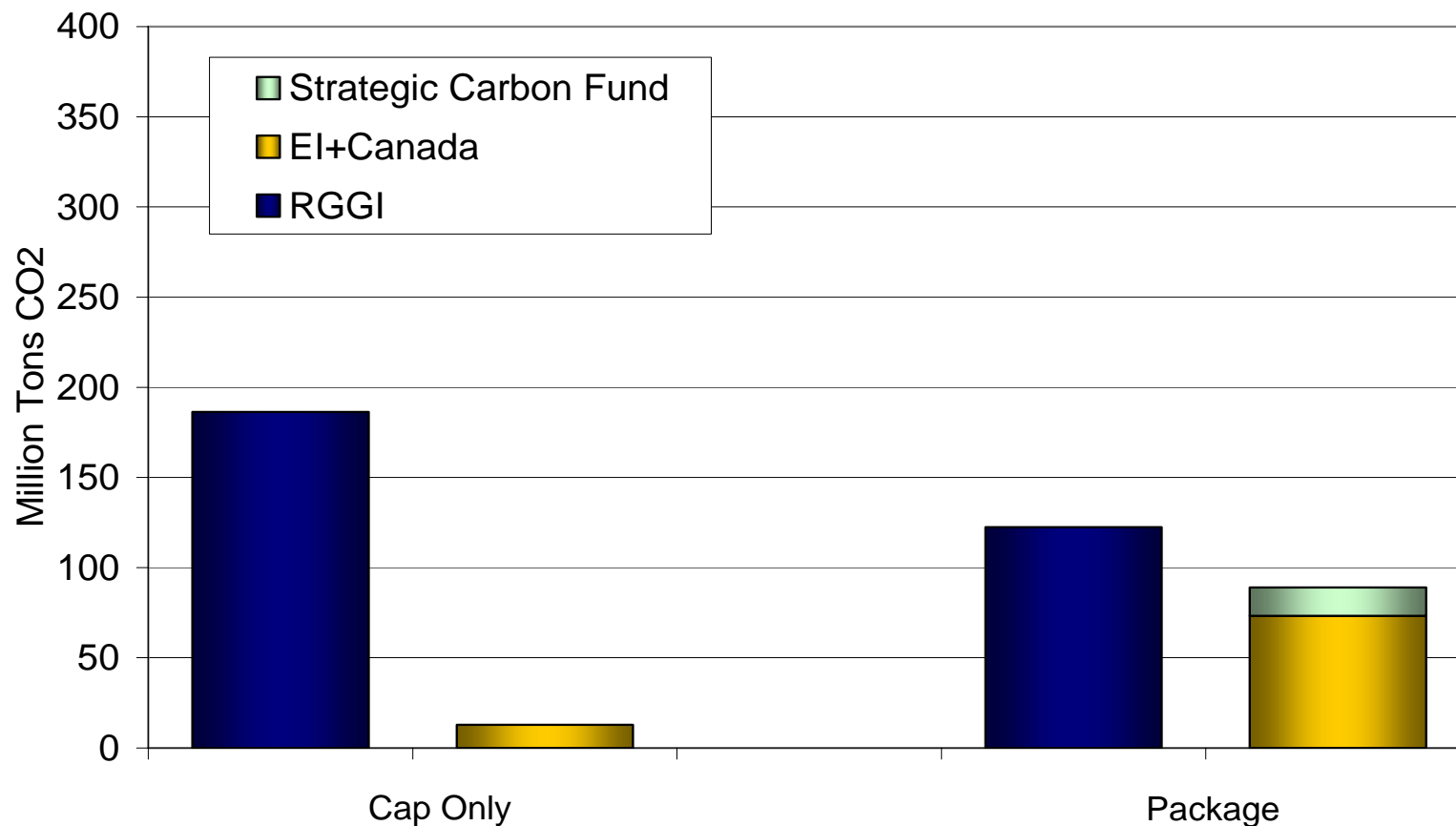
NOTE: Energy prices represent wholesale market prices and include annualized capacity prices. Note that the RGGI Package Scenario assumes that current levels of annual state expenditures for public benefit programs continue through 2025. While these types of programs cause lower wholesale prices by reducing electricity demand, they are paid for by consumers through a line item charge at the retail level, and are therefore not reflected in the wholesale price changes shown above. Current retail electricity prices already include the annual costs of these programs.

While the modeling assumes that end-use energy efficiency is implemented entirely by public benefit programs, it is recognized that energy efficiency could also be implemented by actions such as appliance standards and building codes that do not require state funding and could possibly be done at lower costs.

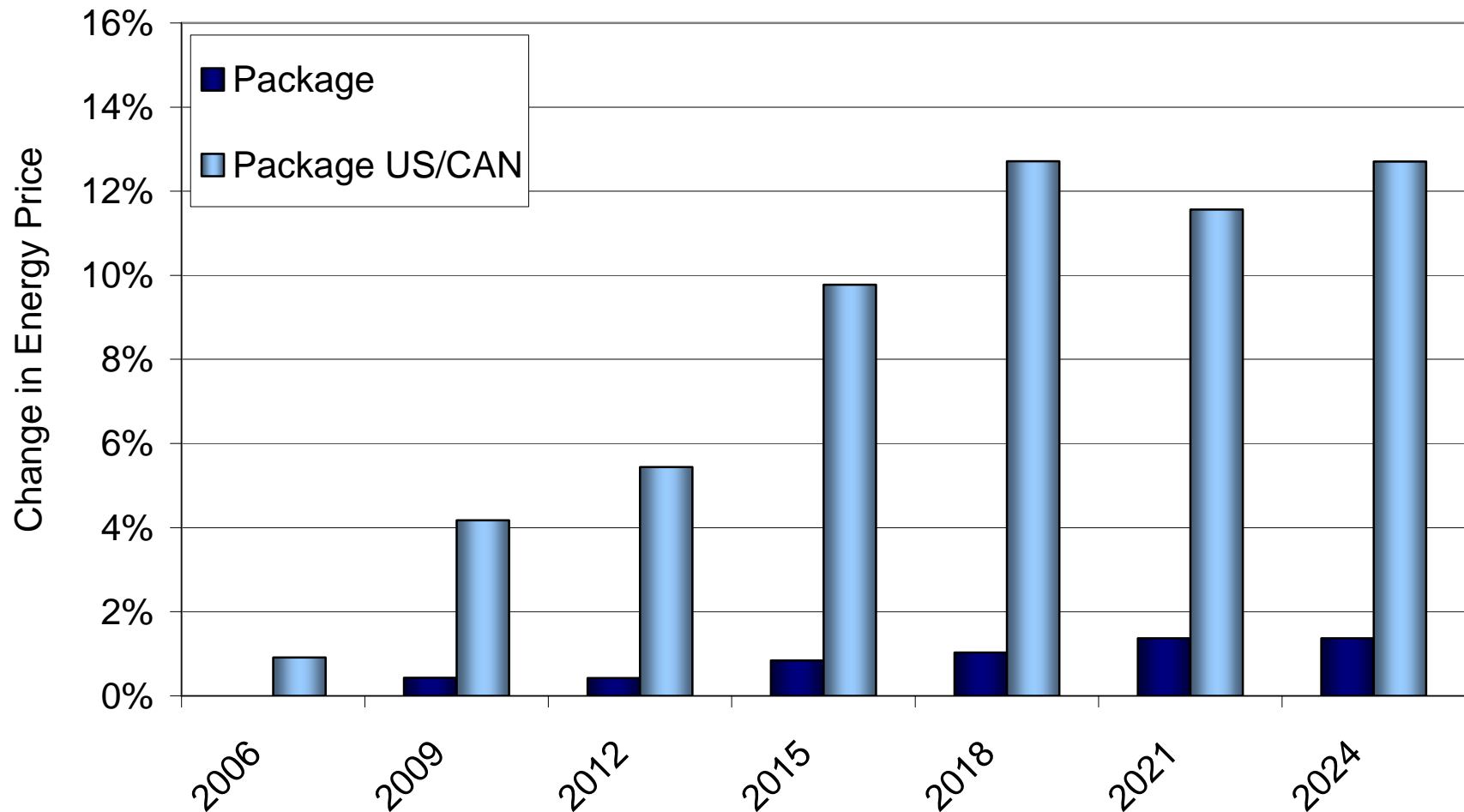
# RGGI Net Imports



# Cumulative CO<sub>2</sub> Reductions by 2021 RGGI and Eastern Interconnect/Canada



# Change in RGGI Average Annual Energy Prices

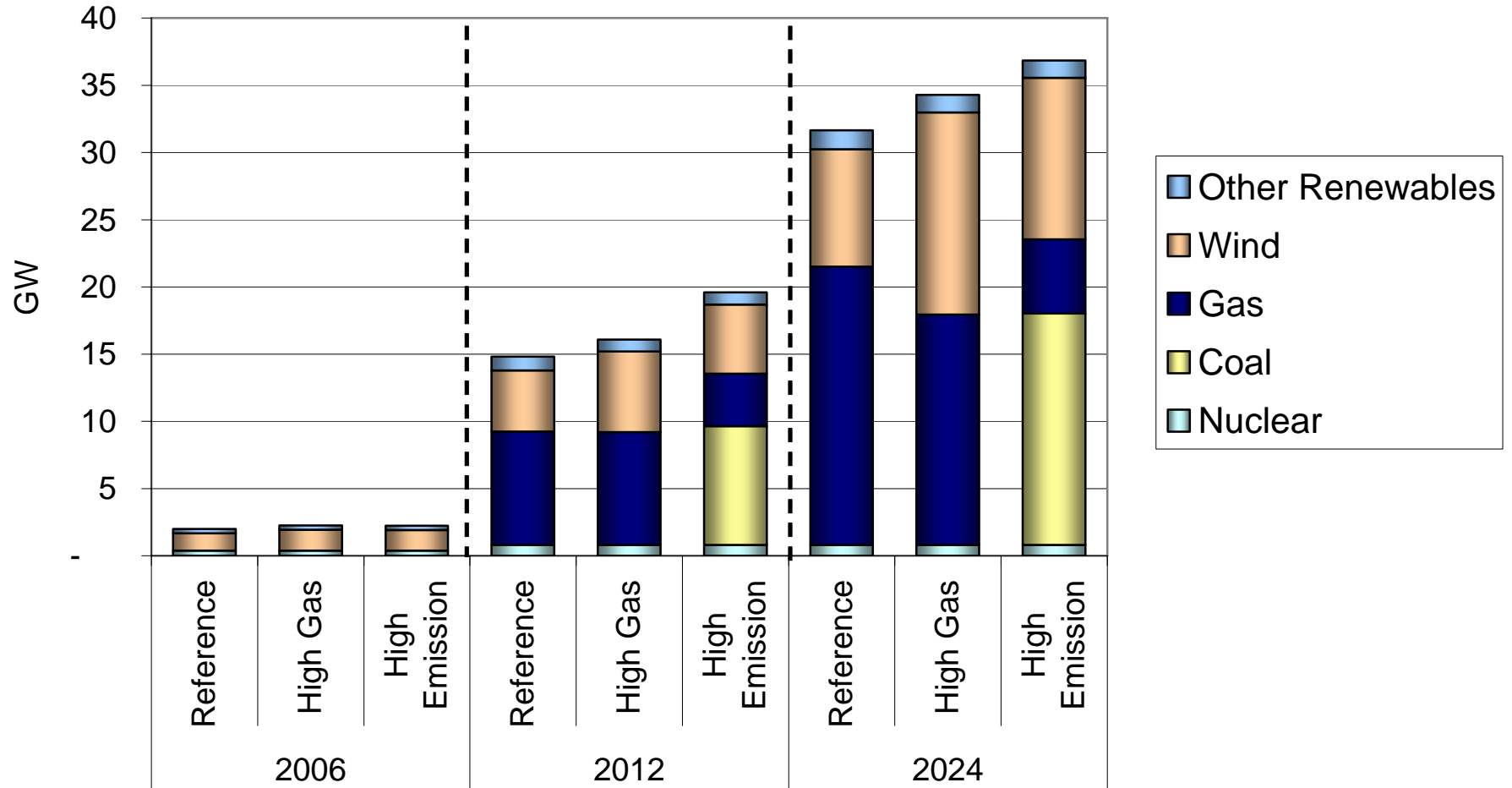


NOTE: Energy prices include annualized capacity prices.

# RGGI Higher Emissions Sensitivities

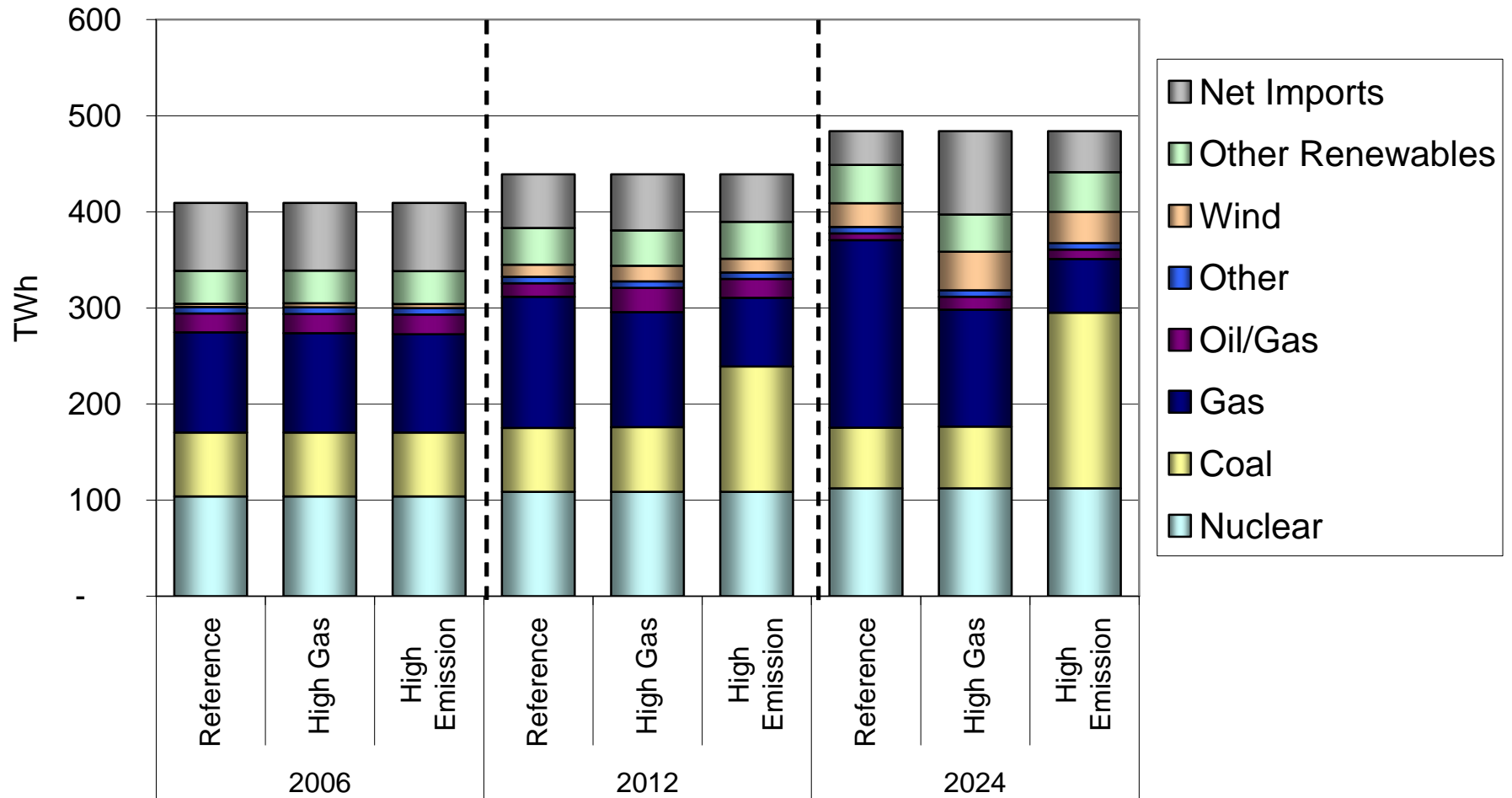
# RGGI Cumulative Capacity Additions

## Reference v. High Gas v. High Emissions

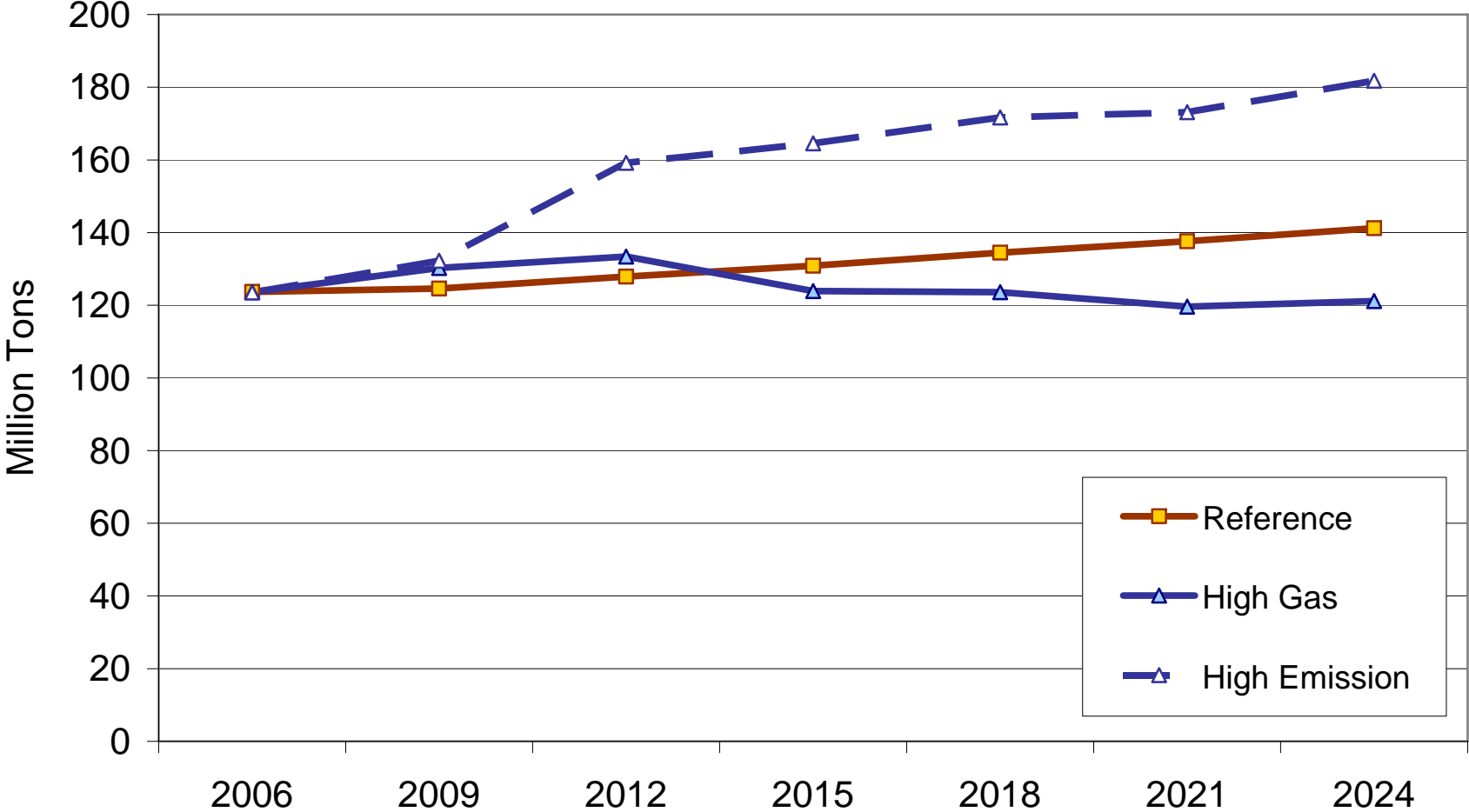


# RGGI Generation Mix

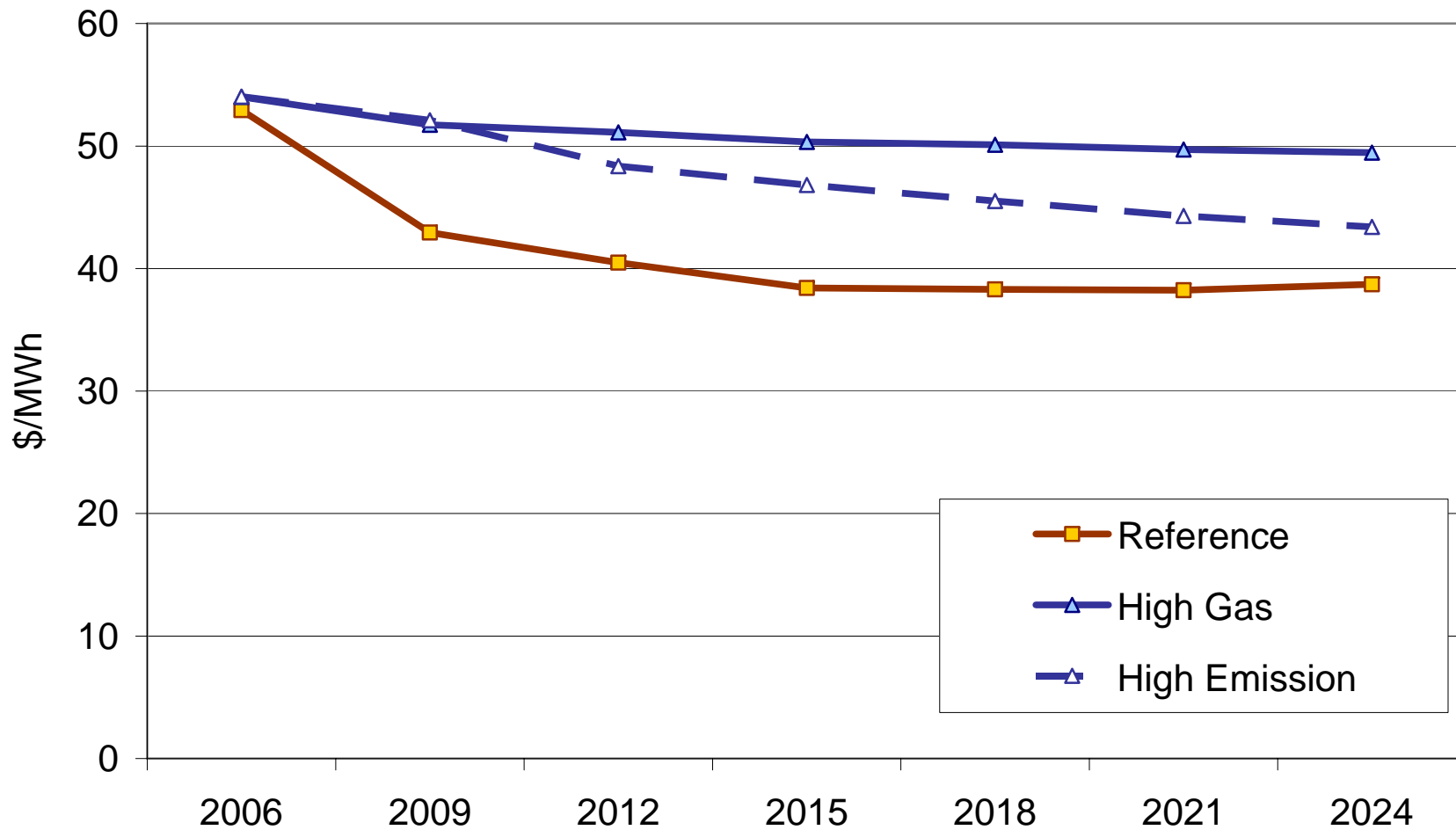
## Reference v. High Gas v. High Emissions



# CO<sub>2</sub> Emissions Reference v. High Gas v. High Emissions



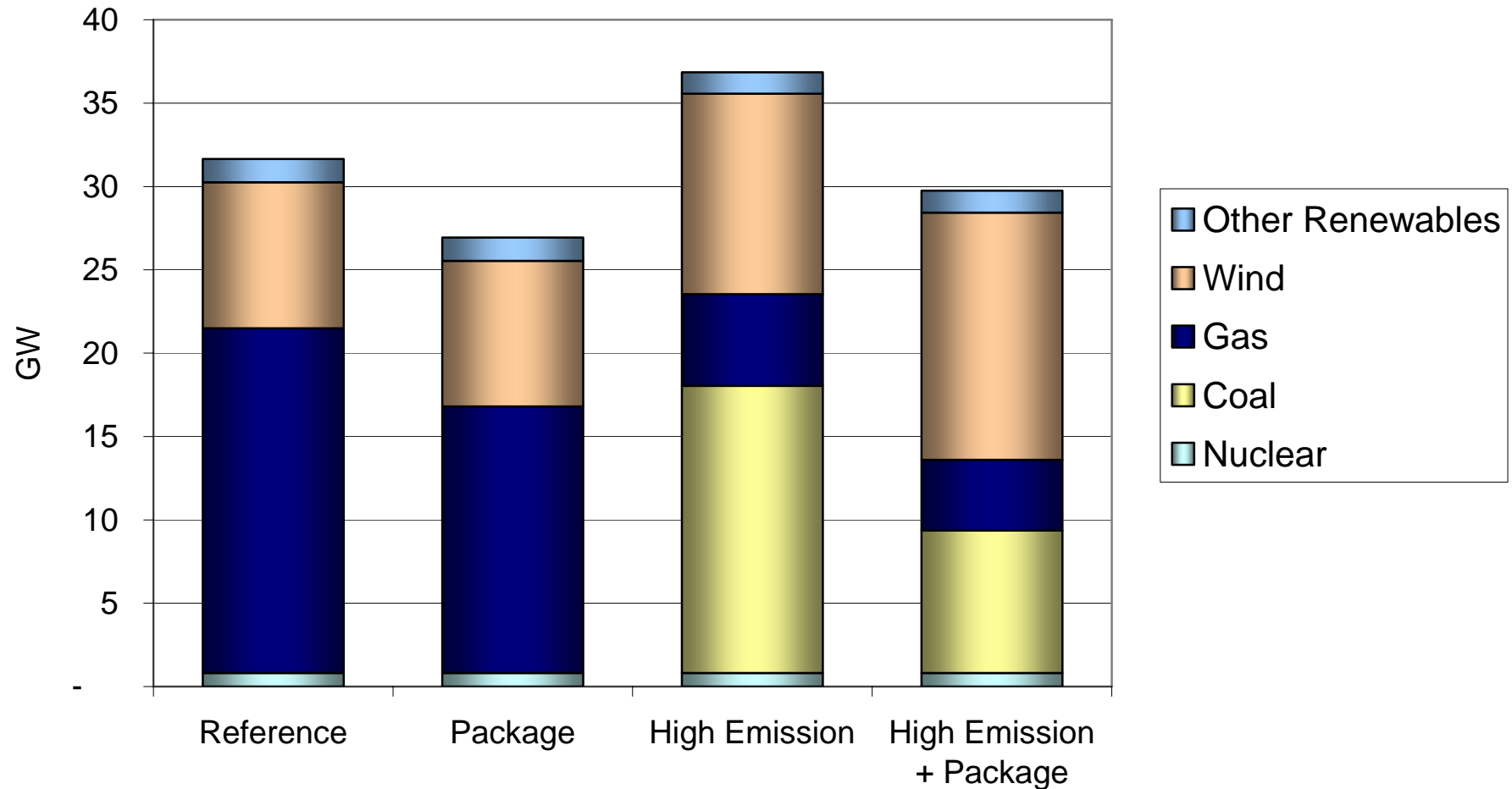
# RGGI Average Annual Energy Prices Reference v. High Gas v. High Emissions



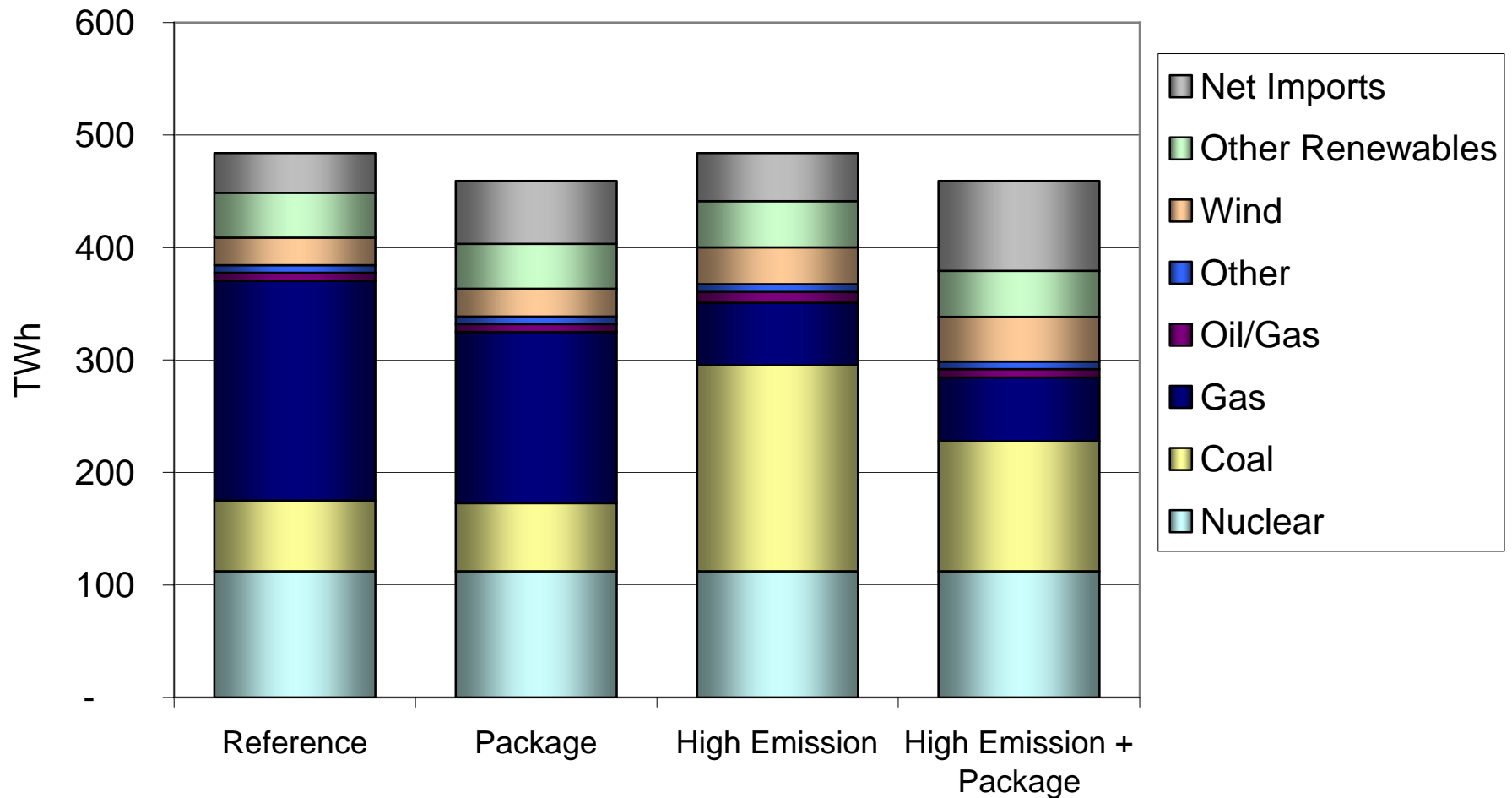
NOTE: Energy prices include annualized capacity prices.

RGGI Package Scenario  
compared to  
*Higher Emissions Reference Case*

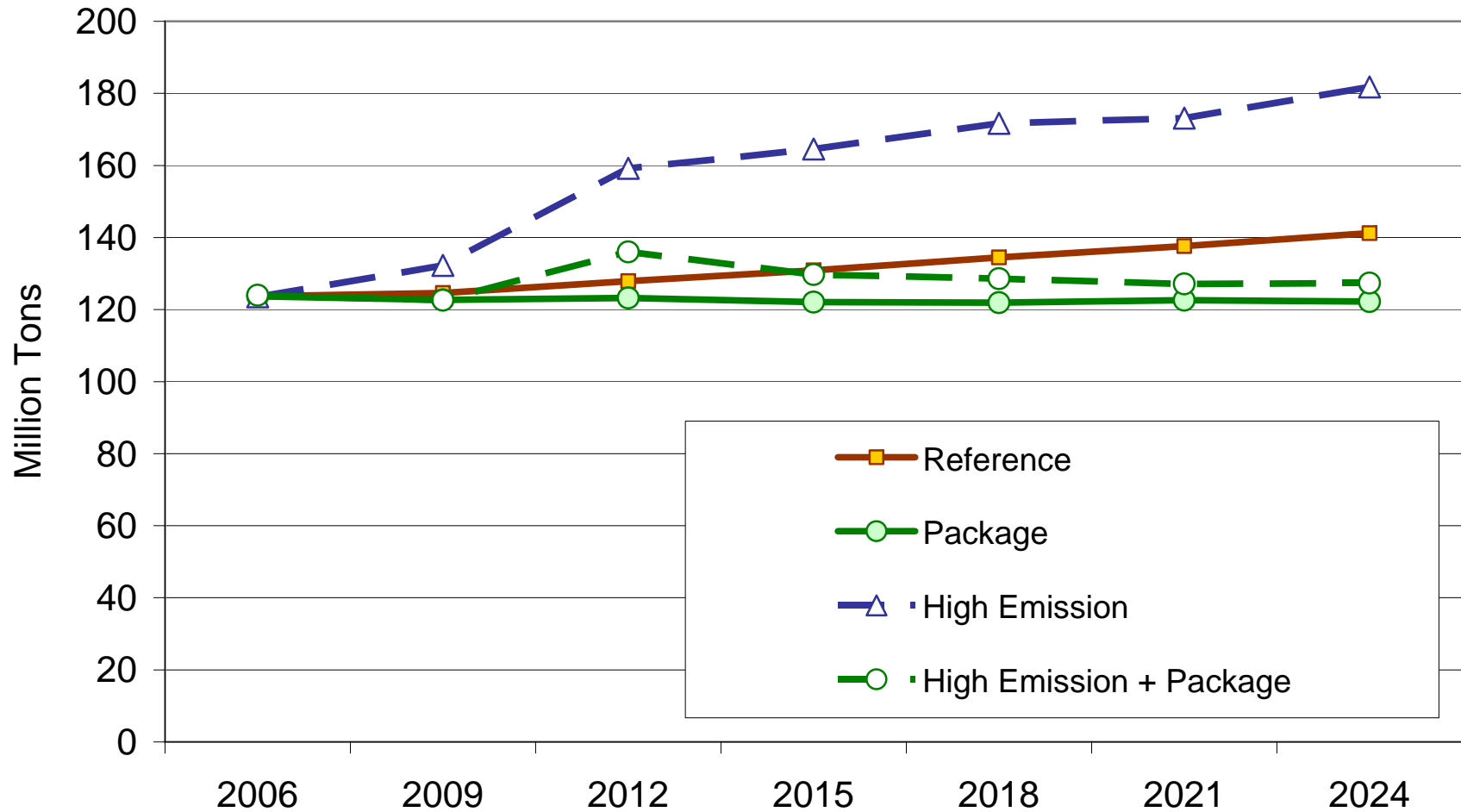
# RGGI Cumulative Capacity Additions by 2024



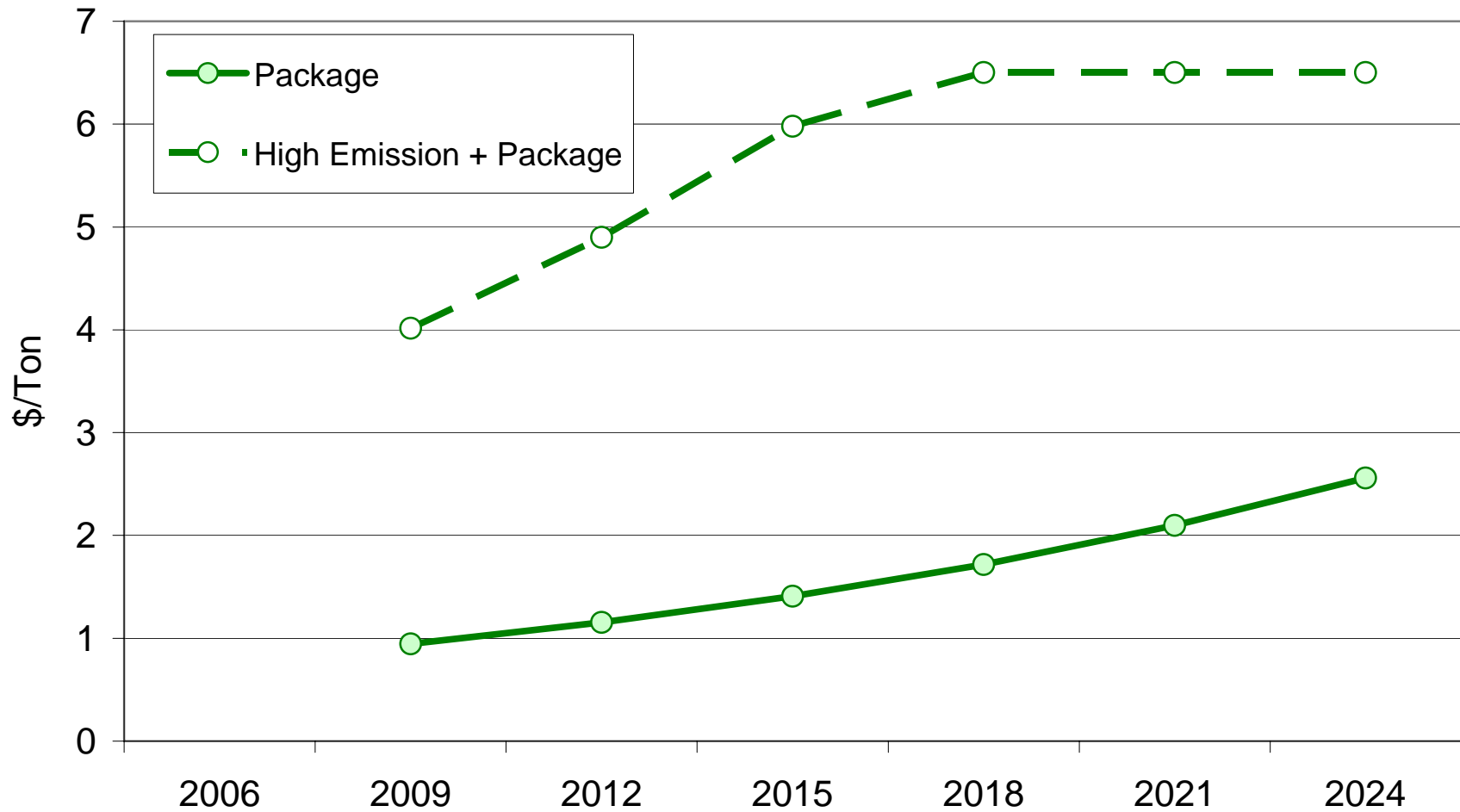
# RGGI Generation Mix in 2024



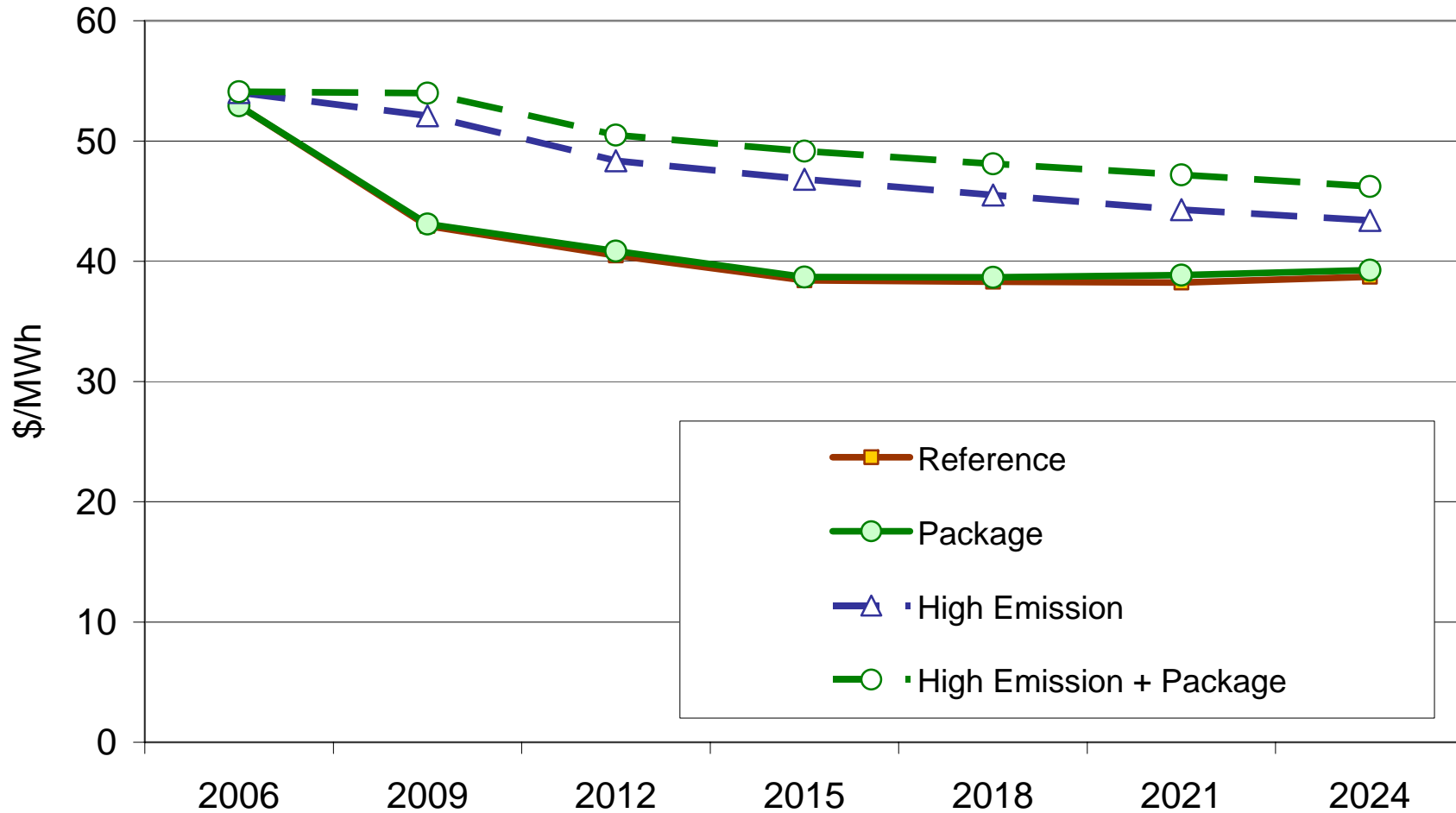
# CO<sub>2</sub> Emissions Trajectories



# CO<sub>2</sub> Allowance Prices

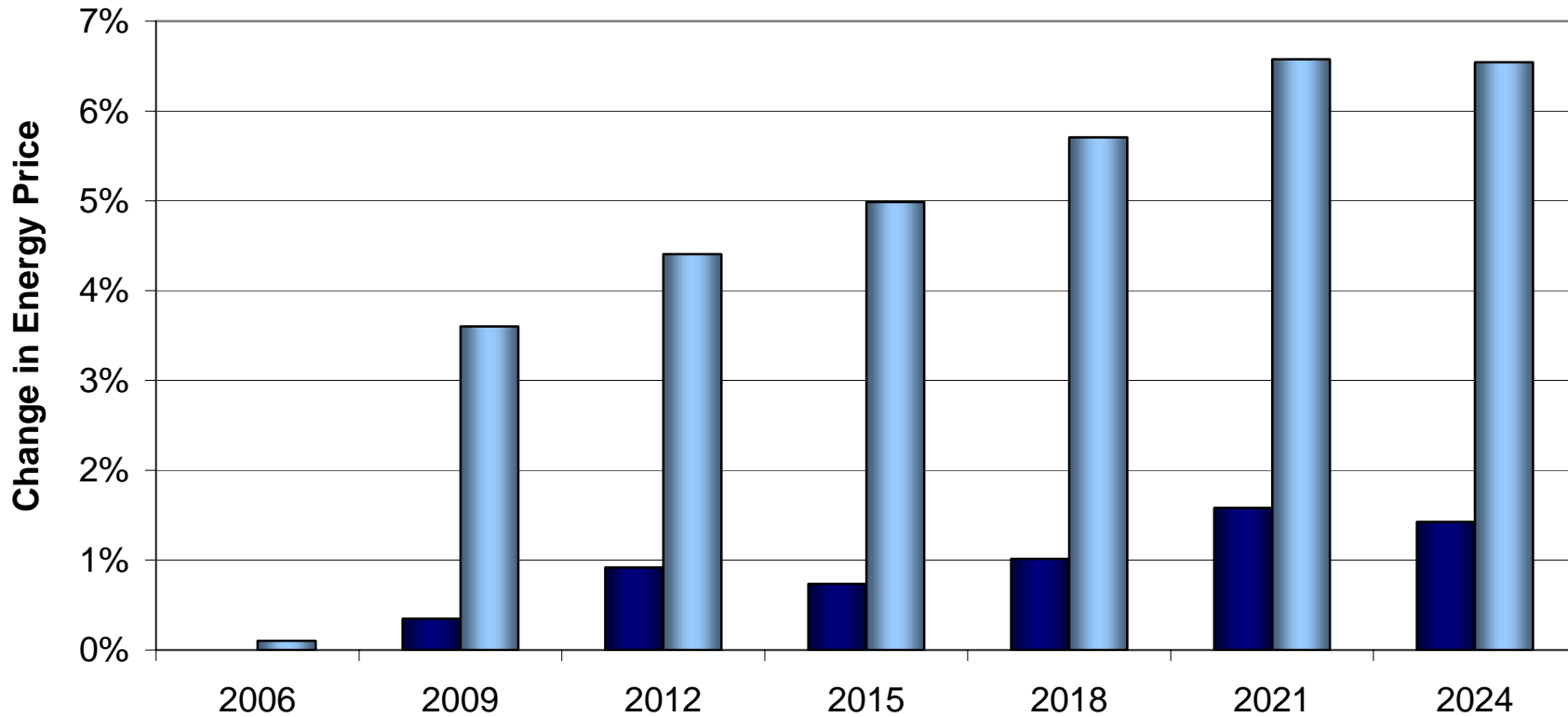


# RGGI Average Annual Energy Prices



NOTE: Energy prices include annualized capacity prices.

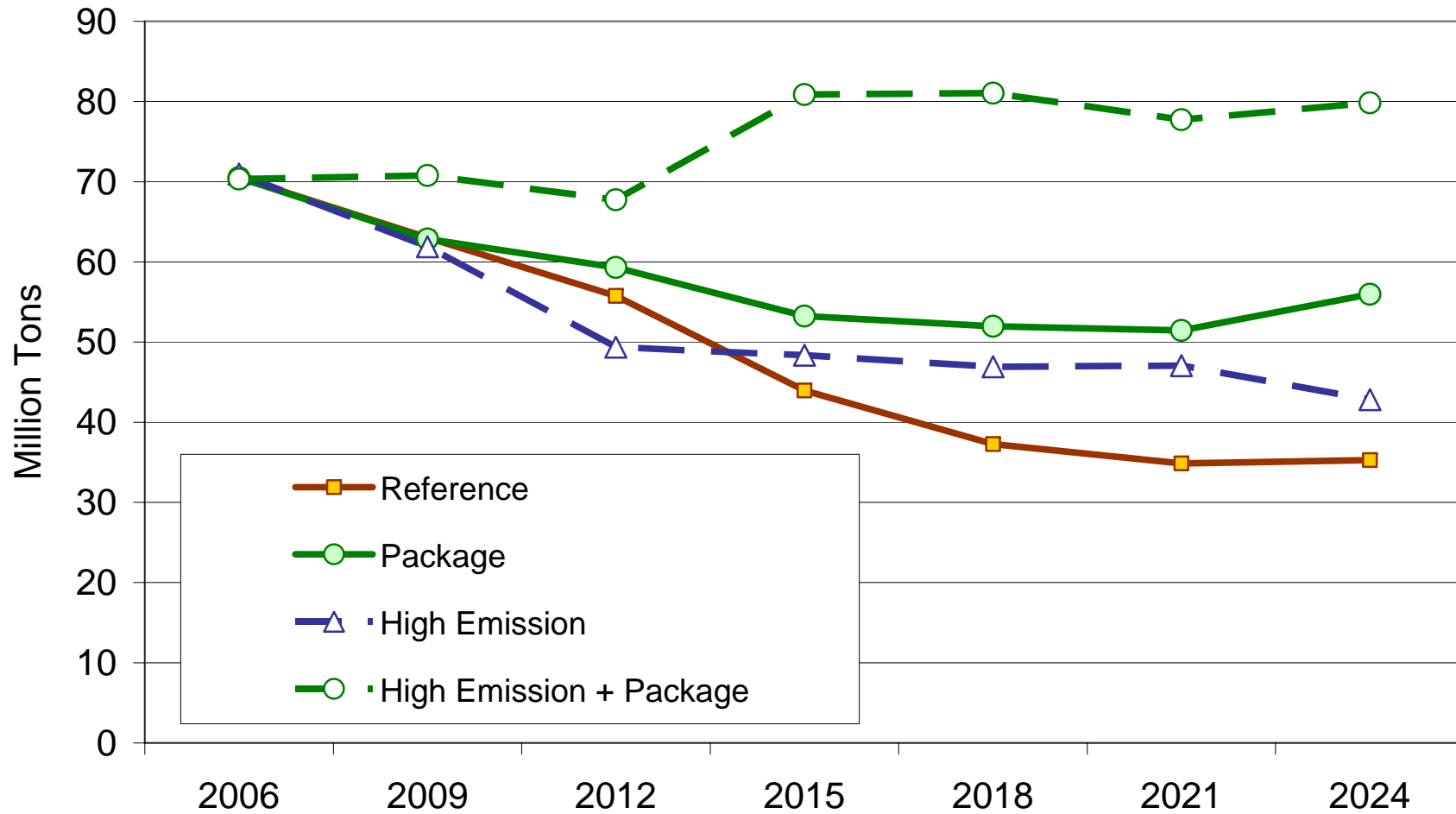
# Change in RGGI Average Annual Energy Prices



NOTE: Energy prices represent wholesale market prices. The RGGI Package Scenario assumes that current levels of annual state expenditures for public benefit programs cause lower wholesale prices by reducing electricity demand, they are paid for by consumers through a line item charge at the retail level, and are therefore not reflected in the wholesale price changes shown above. Current retail electricity prices already include the annual costs of these programs.

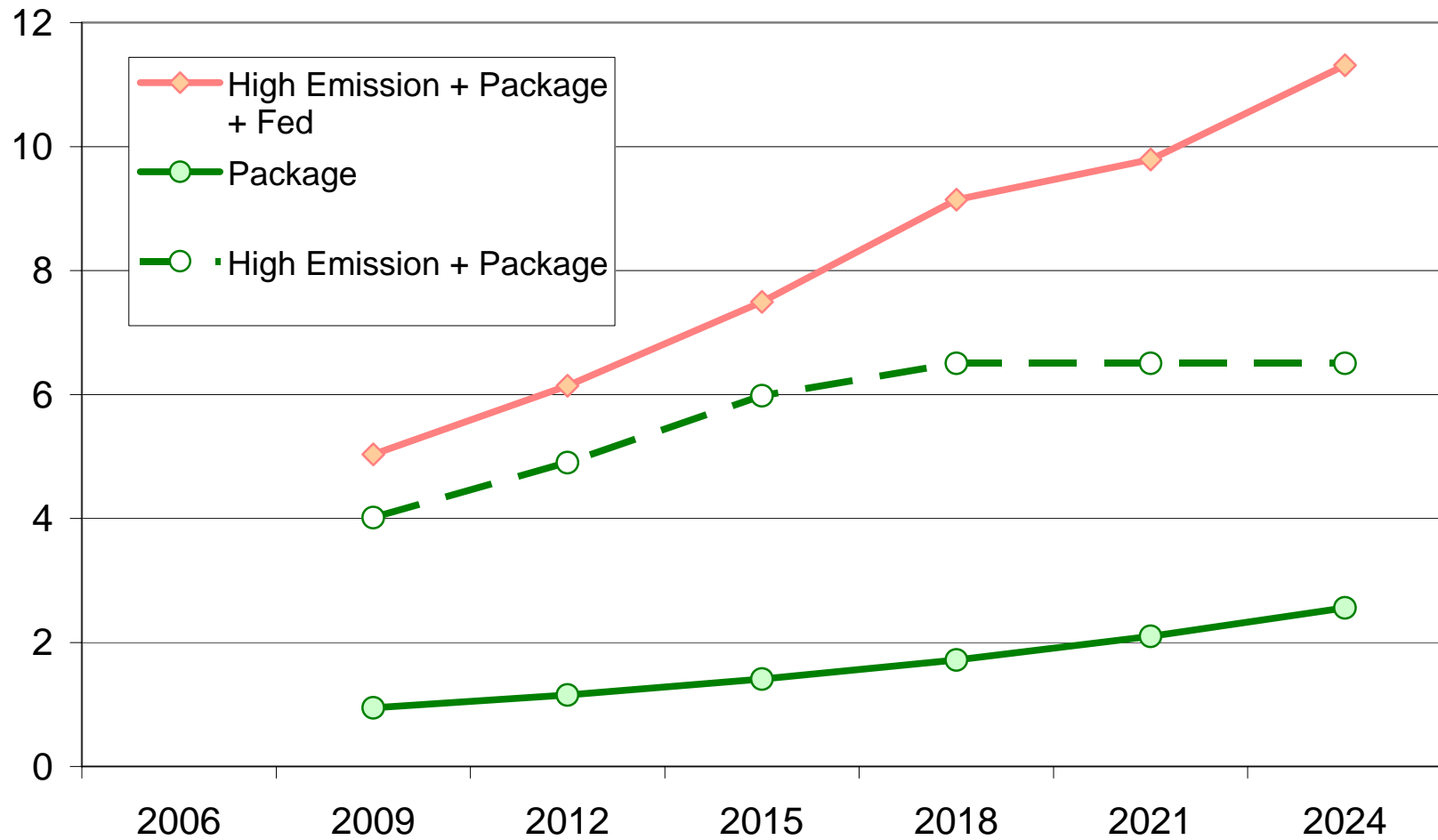
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# RGGI Net Imports

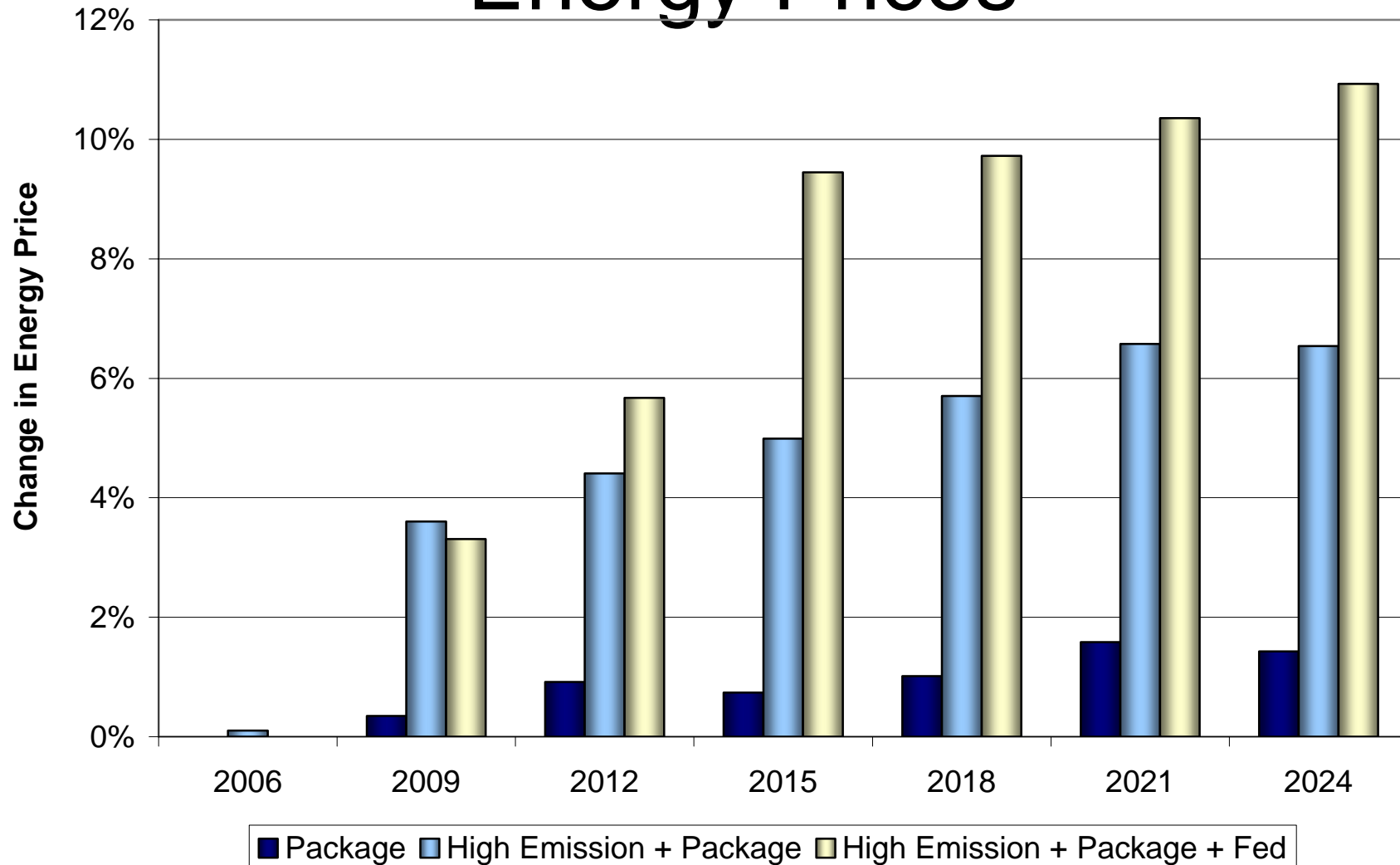


# Package Scenario with US/Canada Policies

# CO<sub>2</sub> Allowance Prices



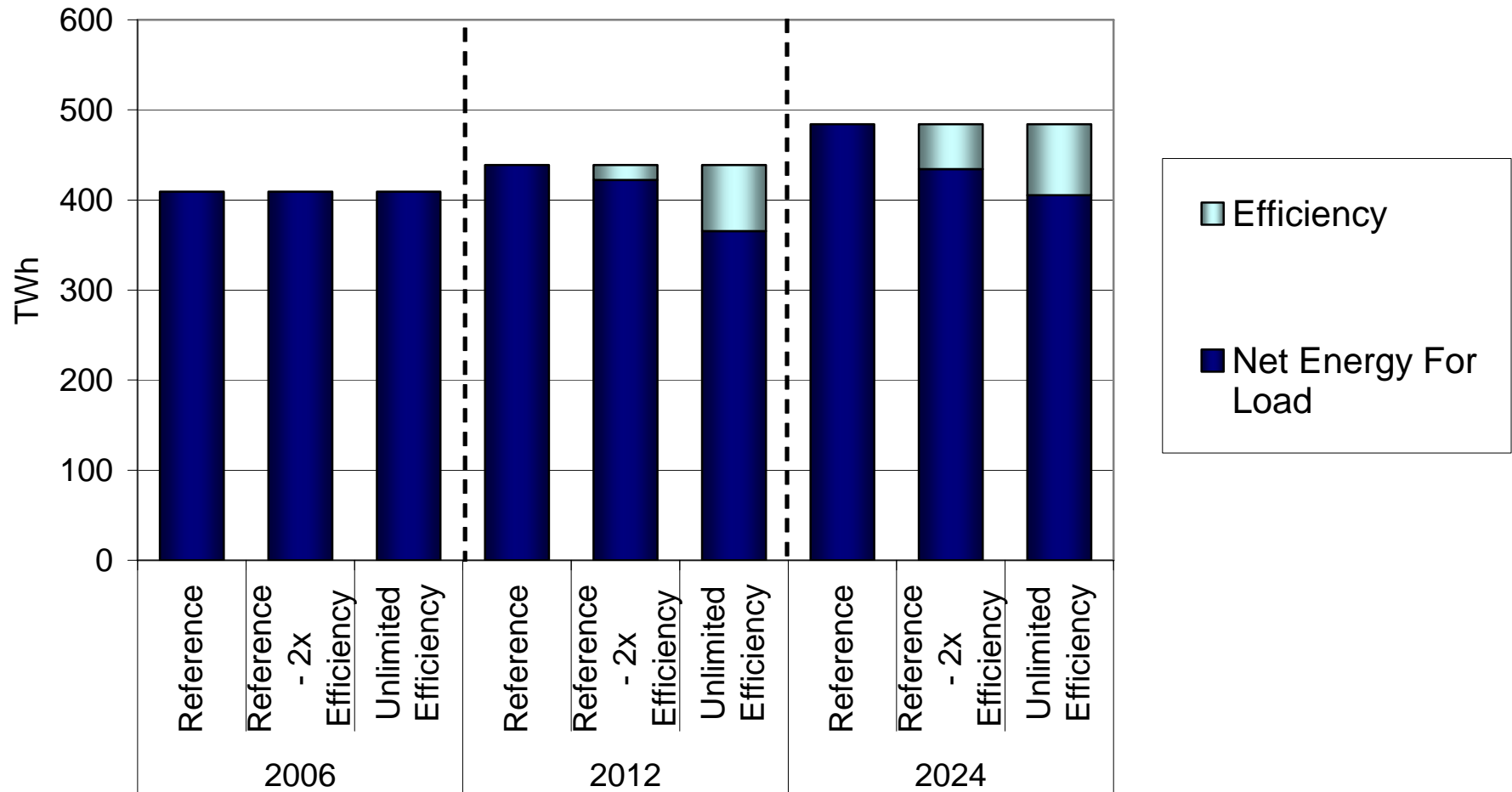
# Change in RGGI Average Annual Energy Prices



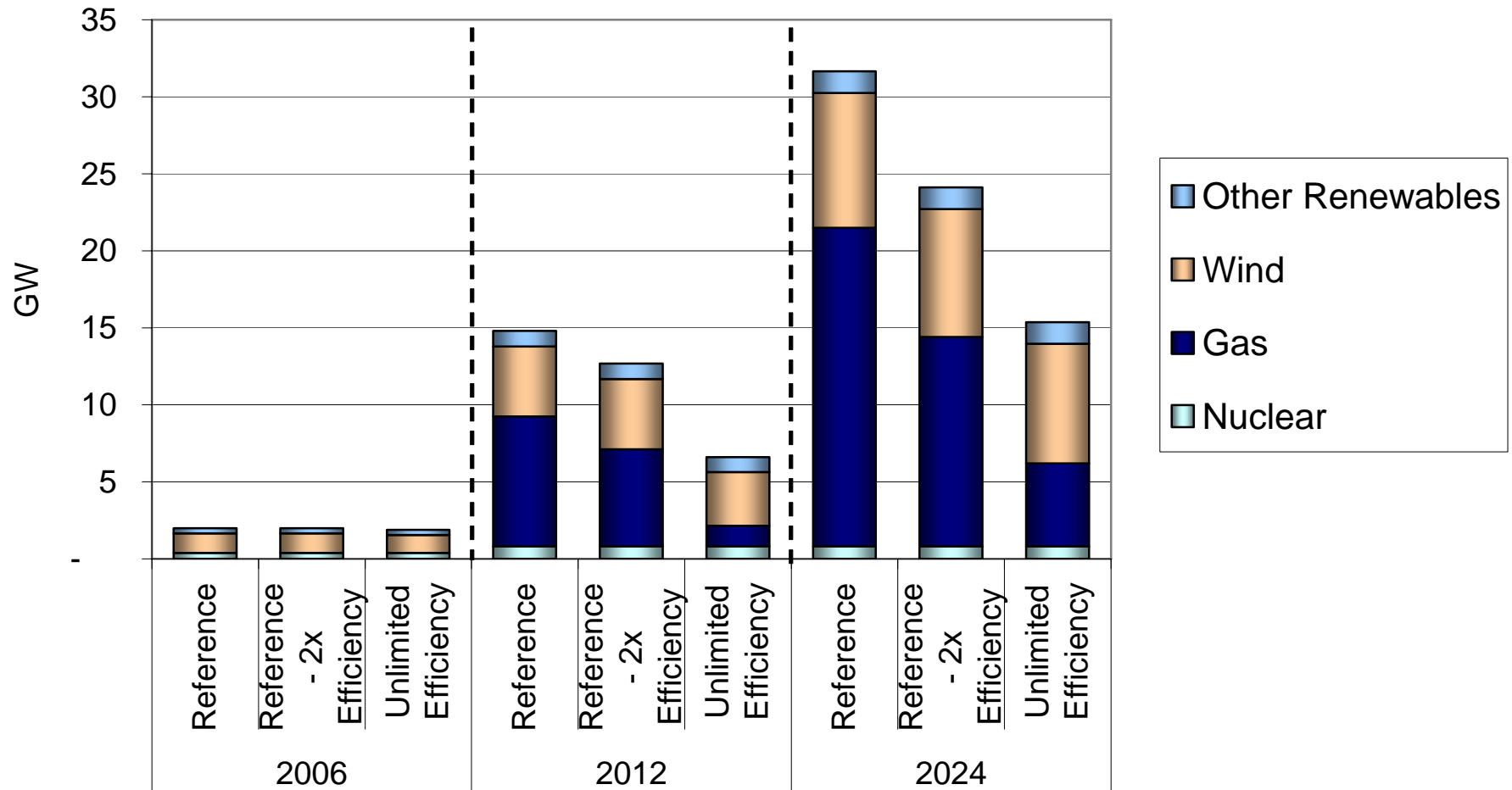
NOTE: Energy prices include annualized capacity prices.

# RGGI Efficiency Reference Sensitivities

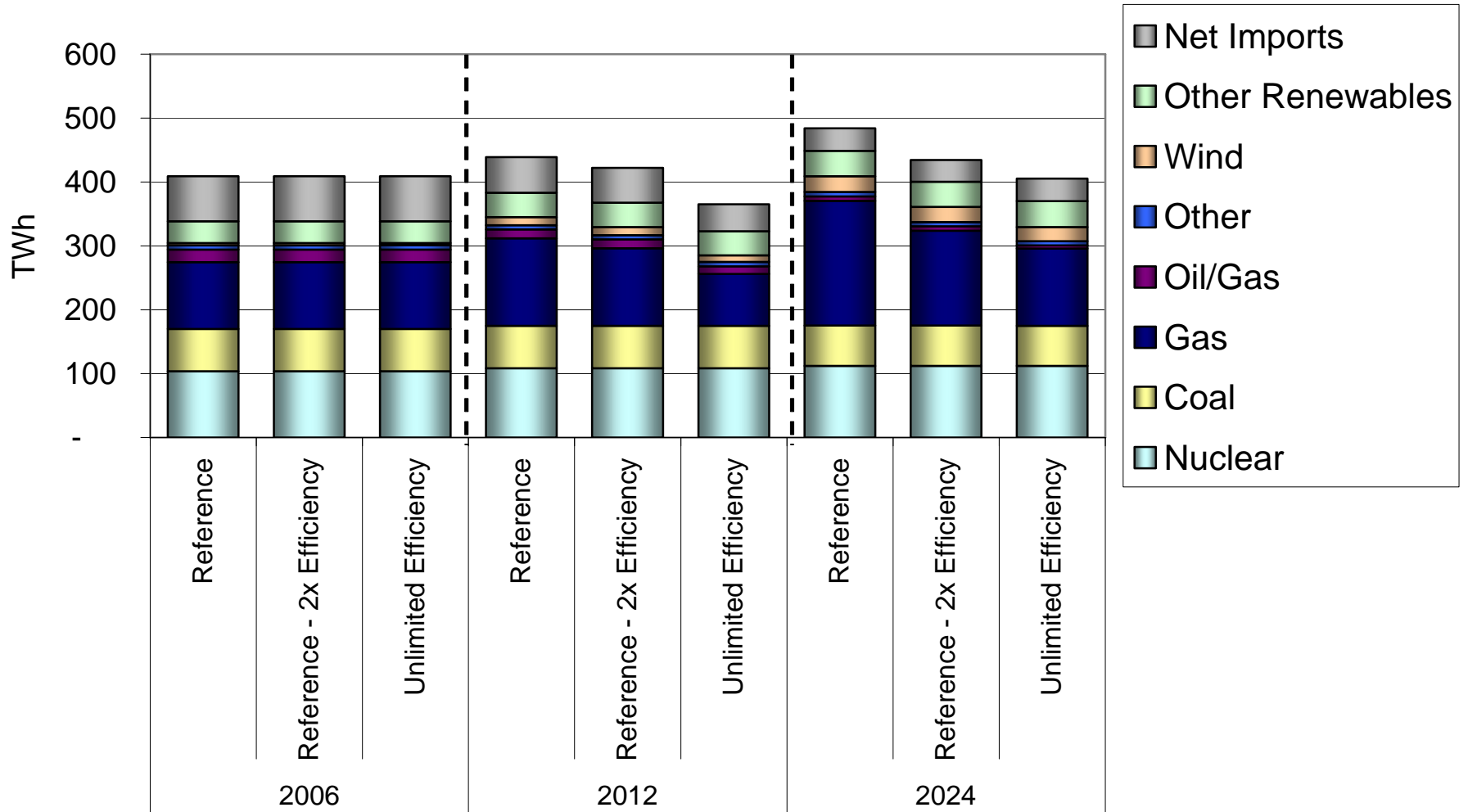
# RGGI Load Growth Comparison



# RGGI Cumulative Capacity Additions



# RGGI Generation Mix



# CO<sub>2</sub> Emissions

