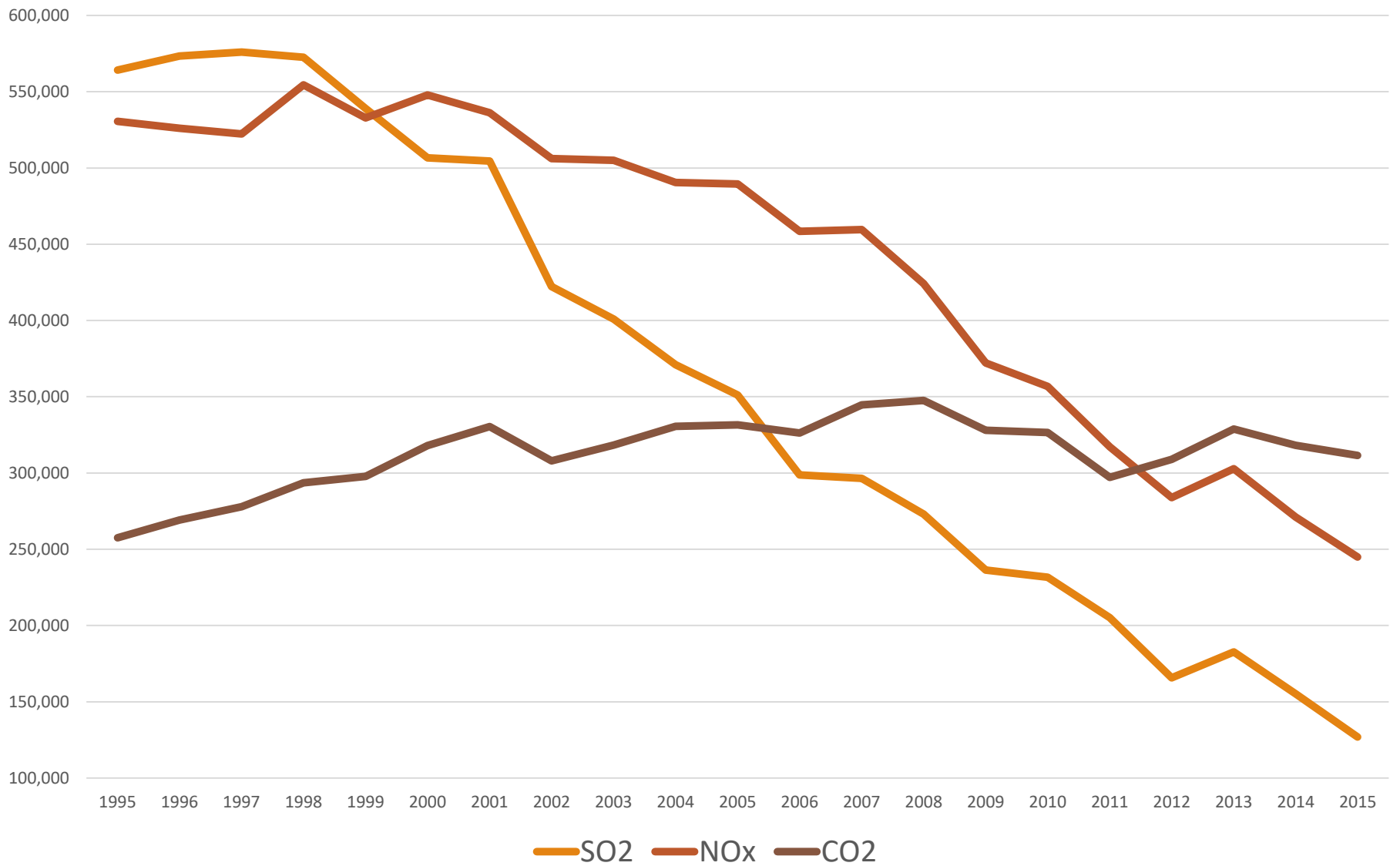




*Colorado State University*

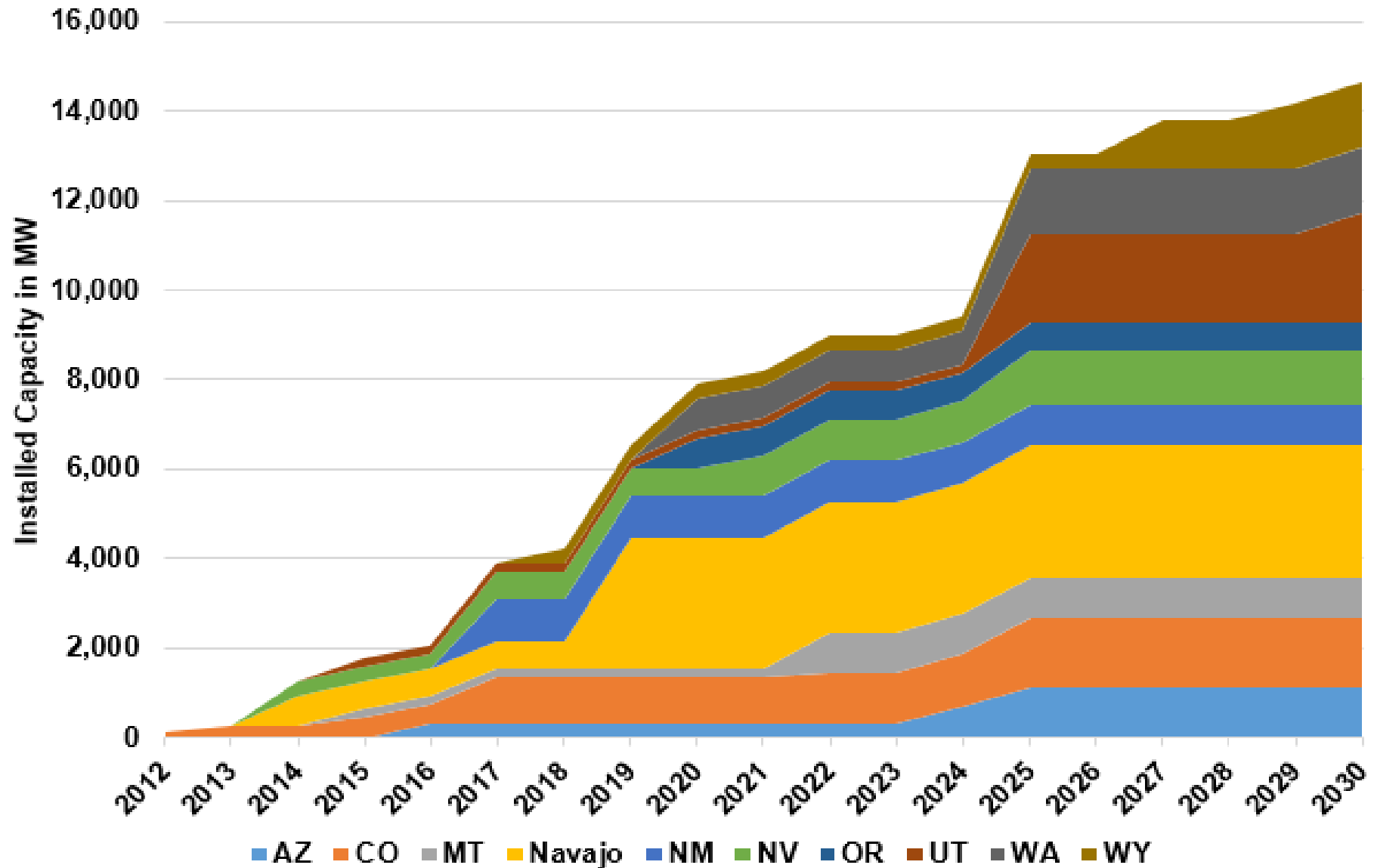
Patrick Cummins  
AAPCA Spring Meeting  
Tucson - March 28, 2017

# Power Sector Emissions in the Western US 1995-2015

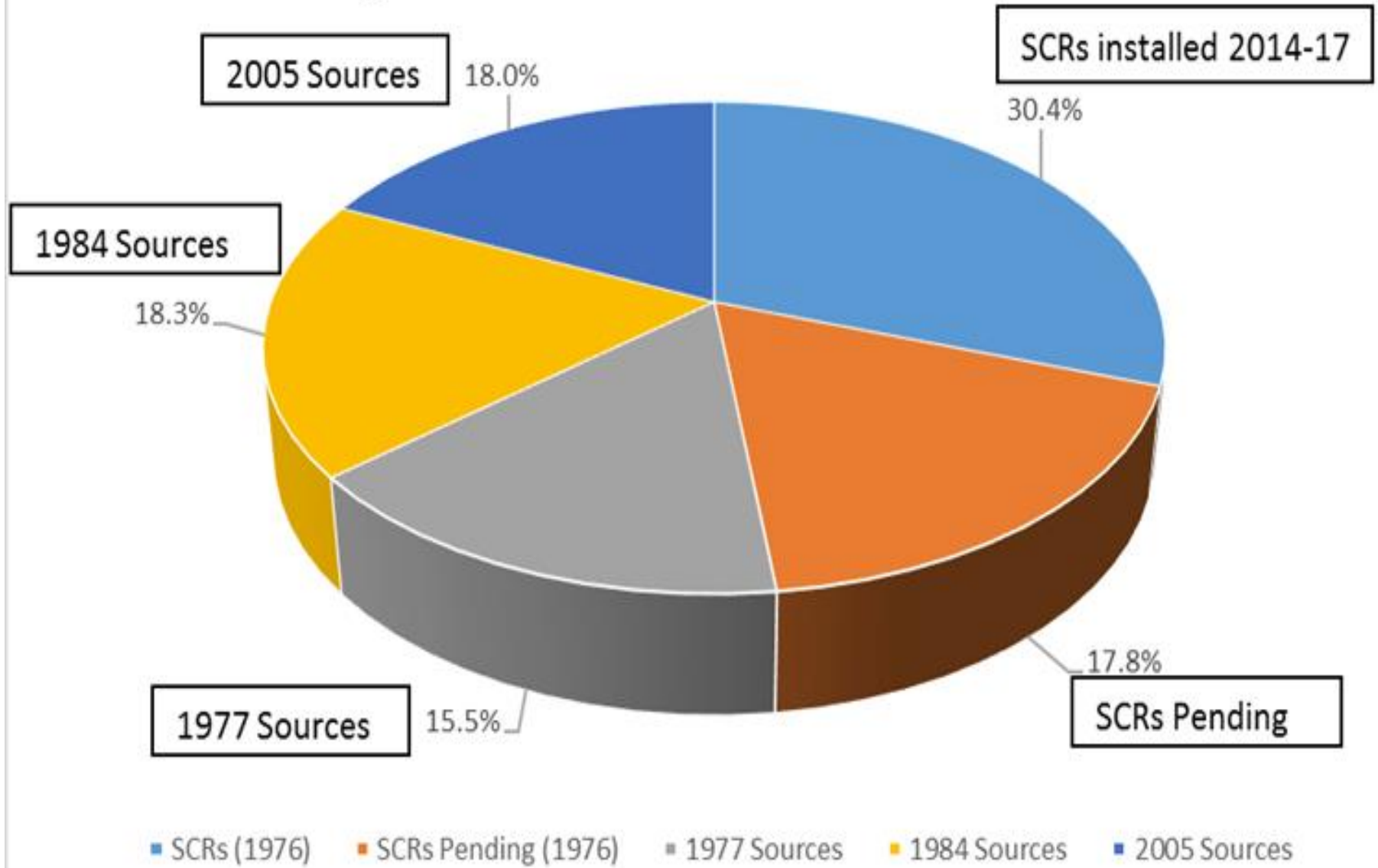


# Coal EGU Retirements by State and Retirement Year

(N = 45, Capacity = 14,633 MW)



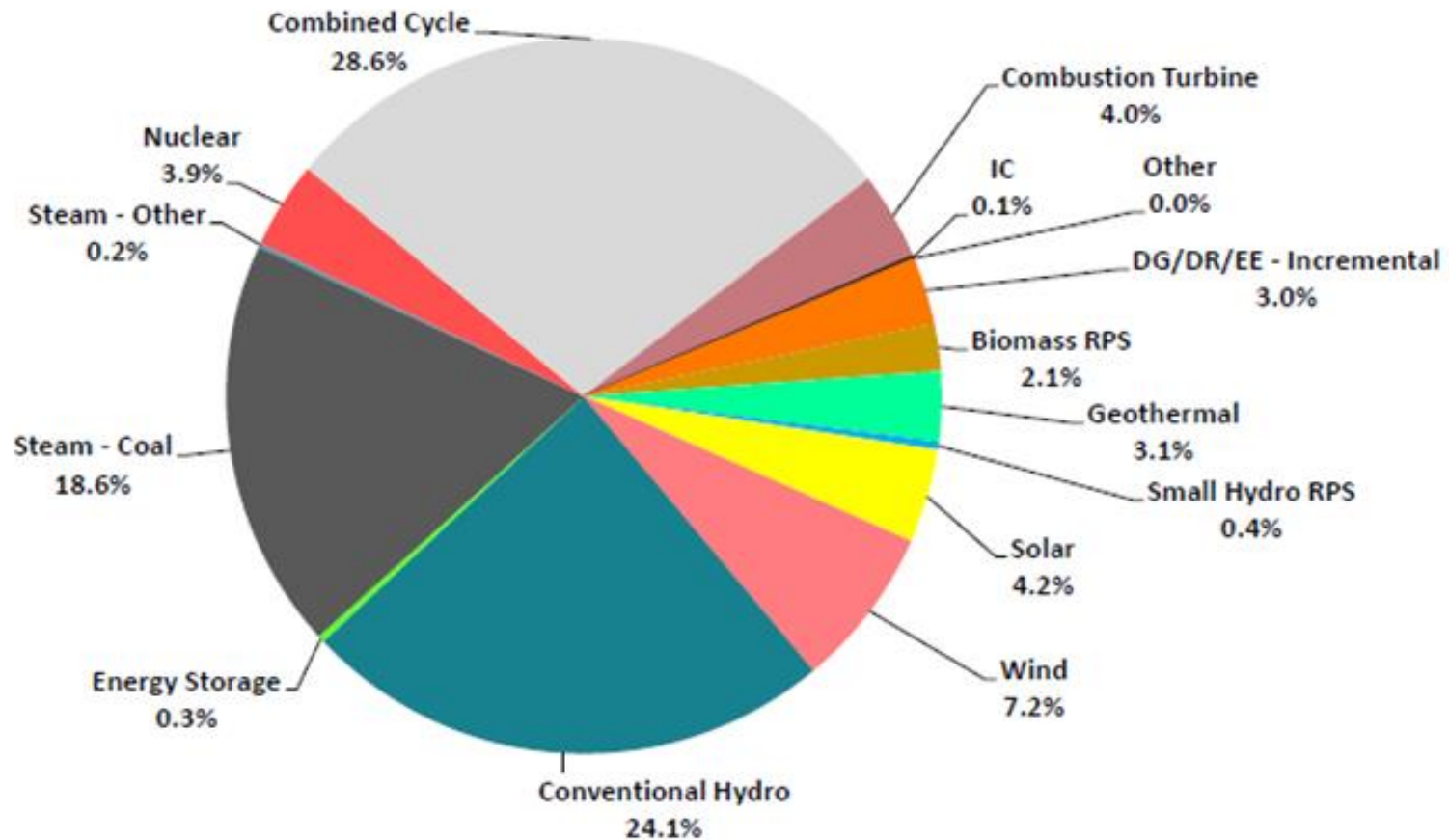
# Remaining Western Coal Units after Planned Retirements



# Annual Energy Breakdown

*\*These results include Navajo 2&3 which total 6.3% of coal generation.*

## Annual Generation Breakdown By Category - 2026 WECC V1.7



# 2026 CO2 emissions compared to 2026 Clean Power Plan Goals

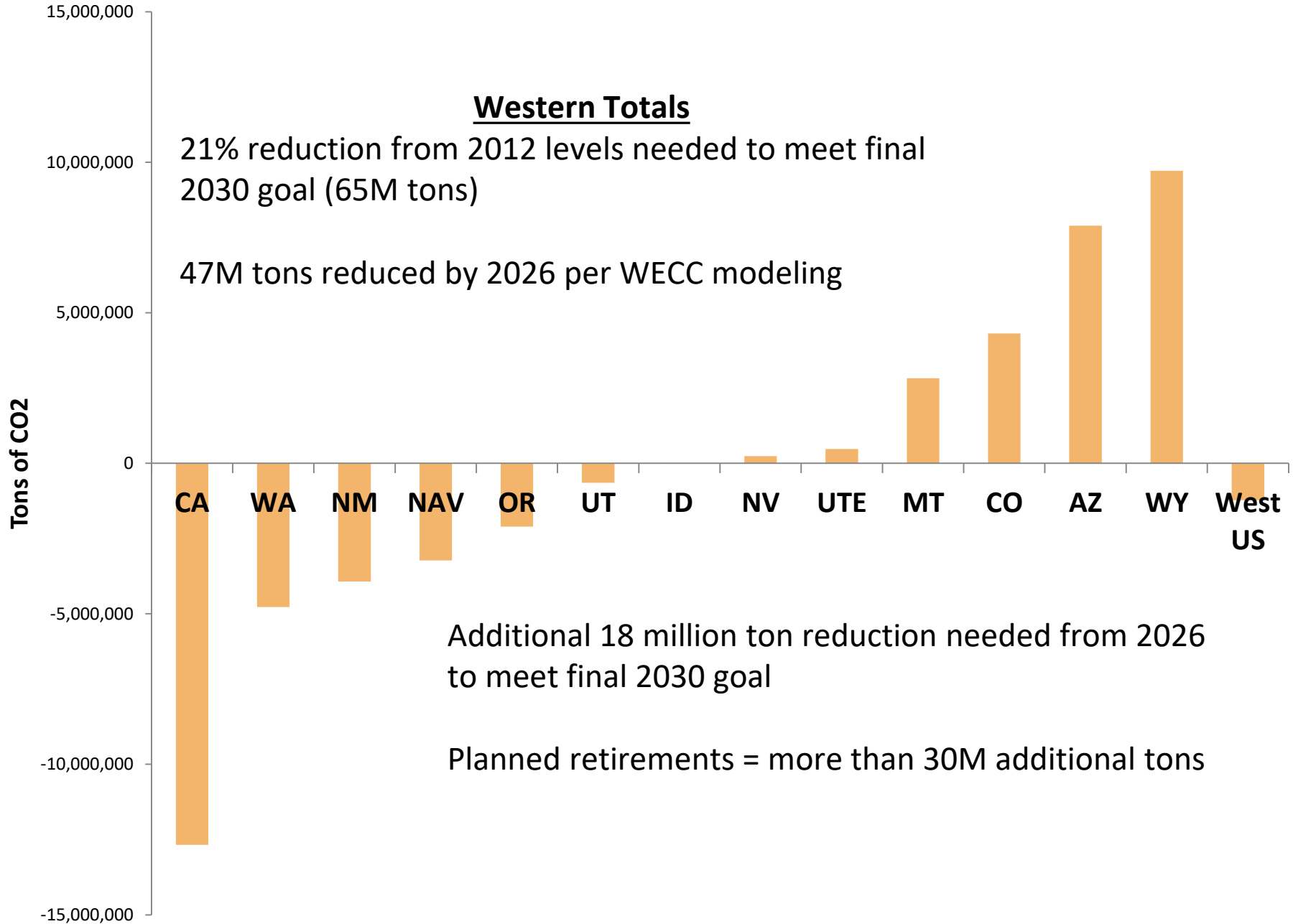
## Western Totals

21% reduction from 2012 levels needed to meet final 2030 goal (65M tons)

47M tons reduced by 2026 per WECC modeling

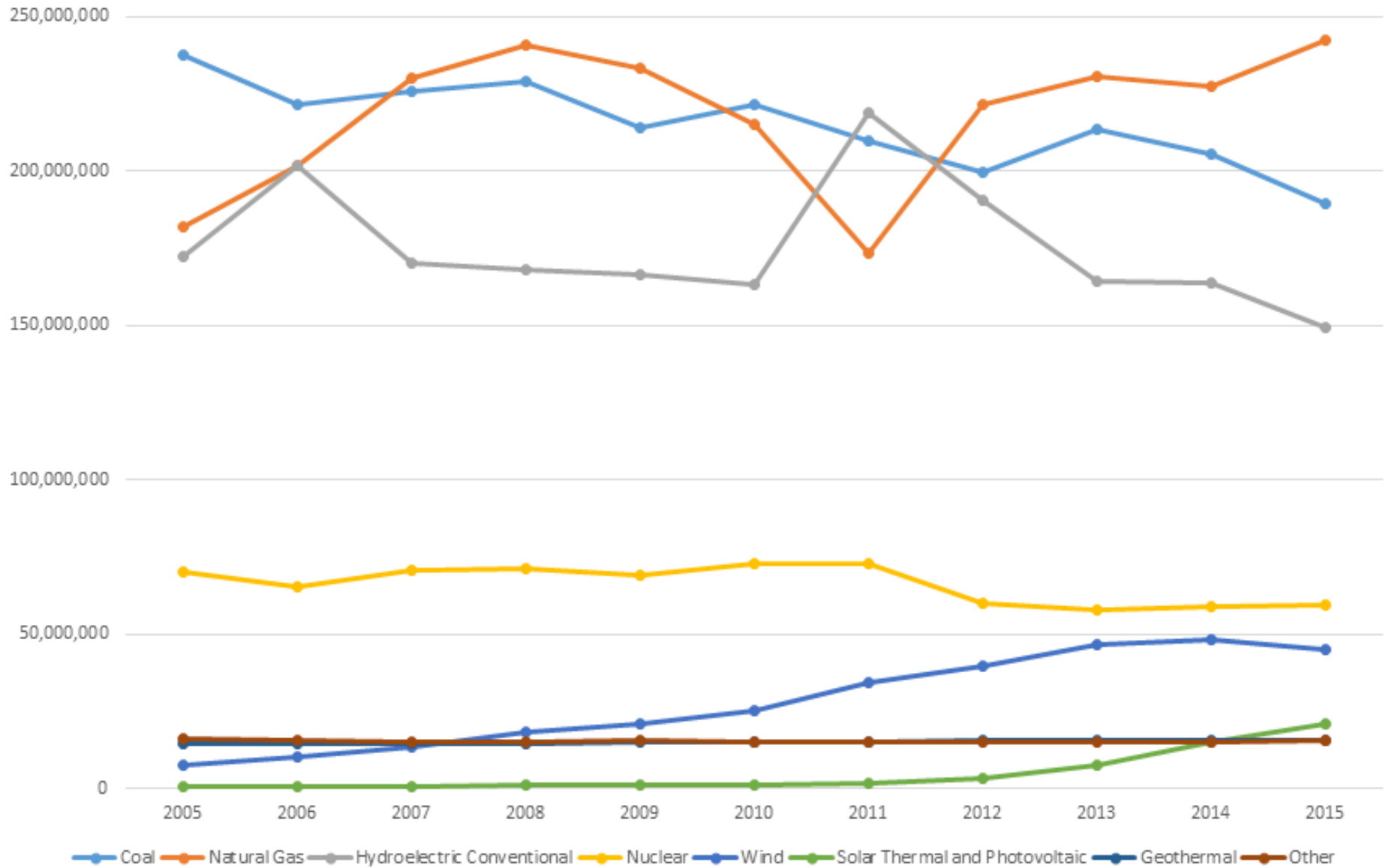
Additional 18 million ton reduction needed from 2026 to meet final 2030 goal

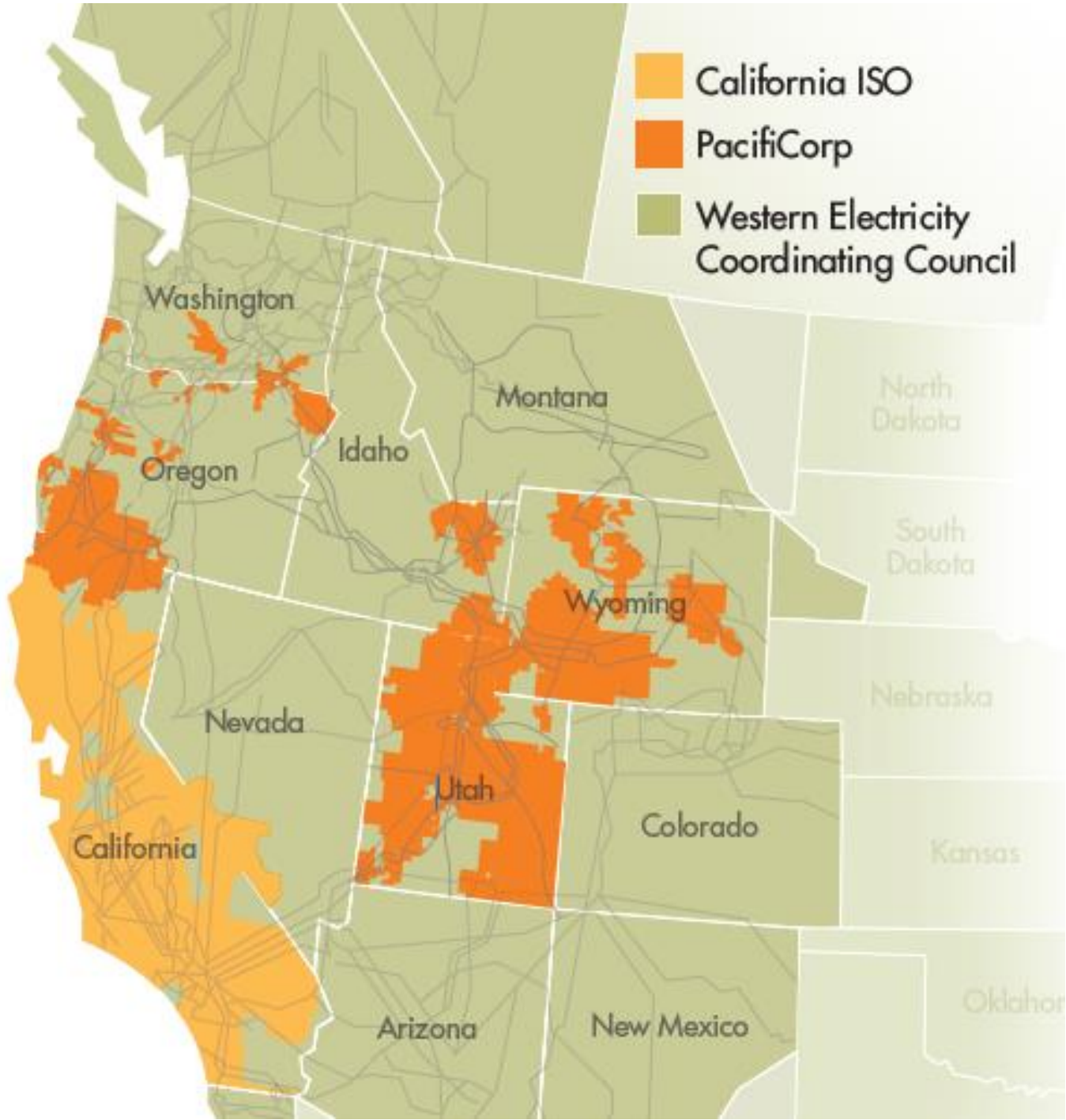
Planned retirements = more than 30M additional tons



# WESTERN US ELECTRIC POWER INDUSTRY GENERATION (EIA - MWhrs)

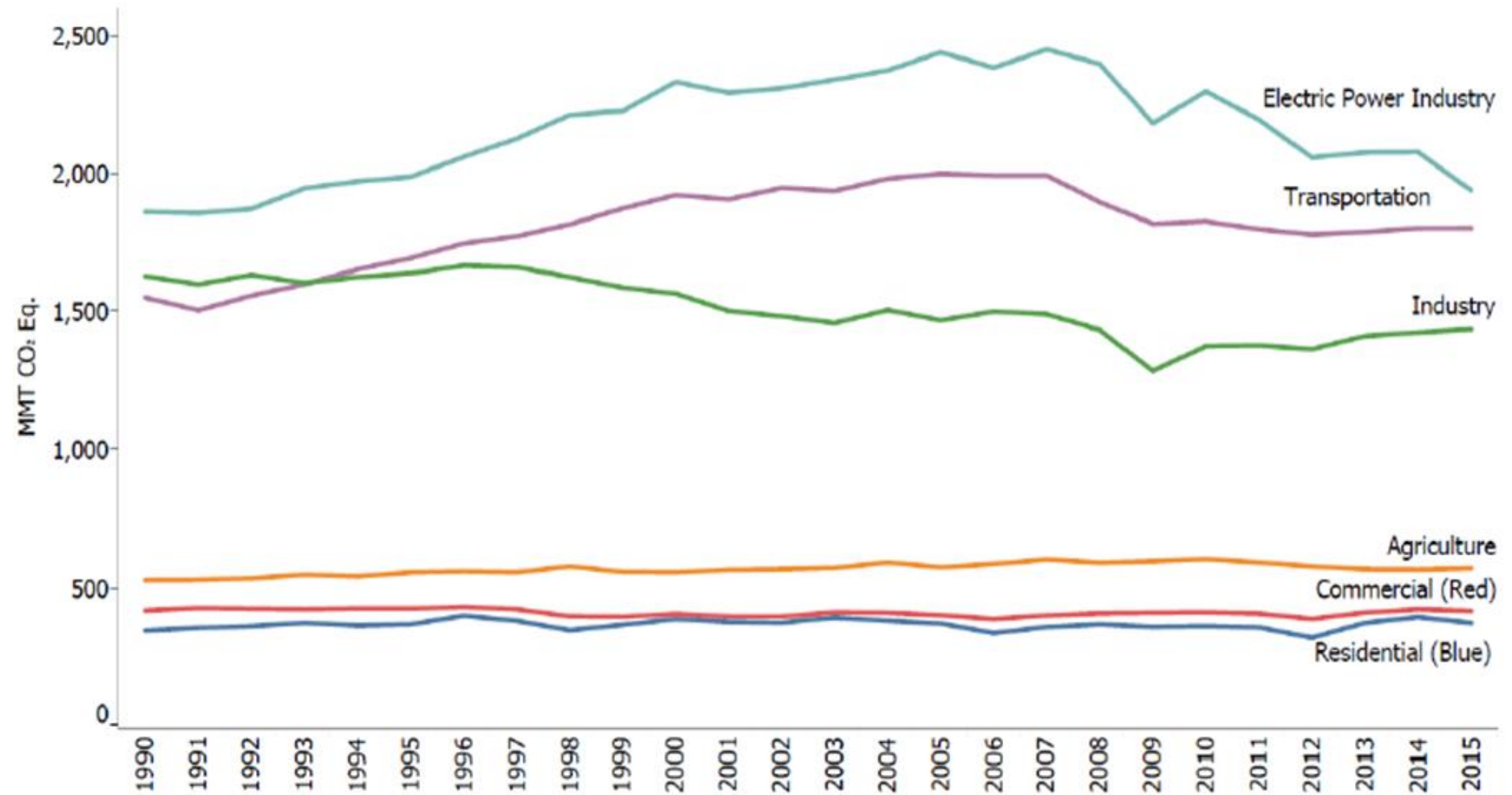
Does not include distributed generation







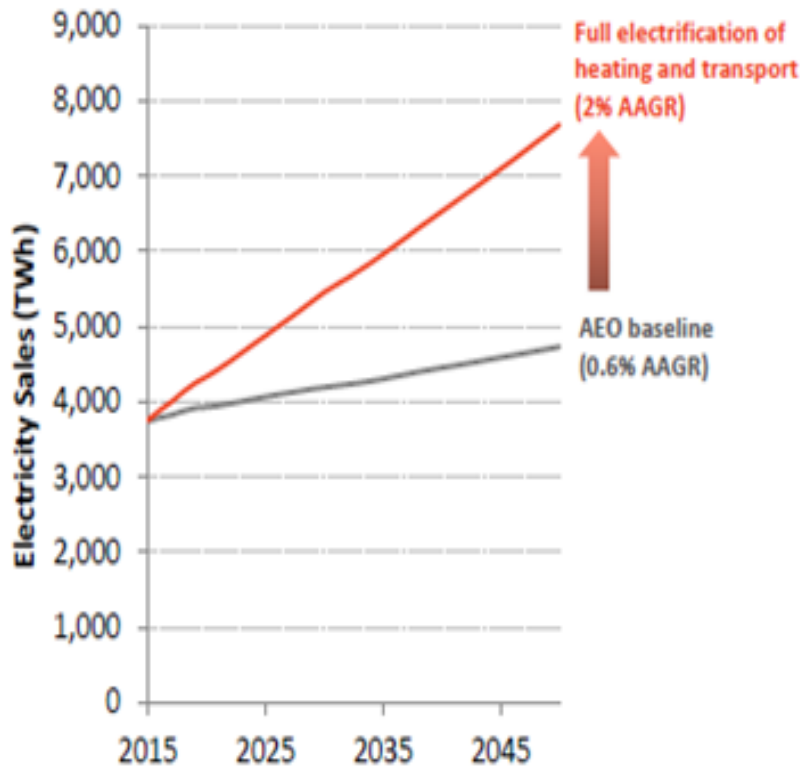
# US GHG emissions 1990-2015 (USEPA)



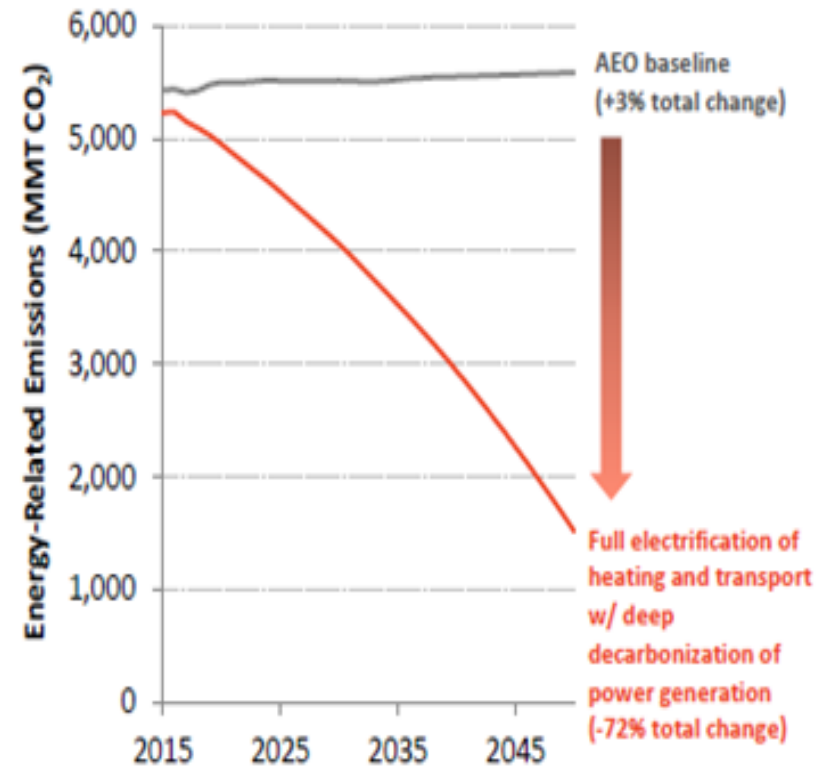
**FIGURE 1**

## Impact of Electrification Combined with Deep Decarbonization of Power Sector

### Impact on Electricity Sales



### Impact on GHG Emissions



Source: The Brattle Group analysis based on EIA AEO 2015 data