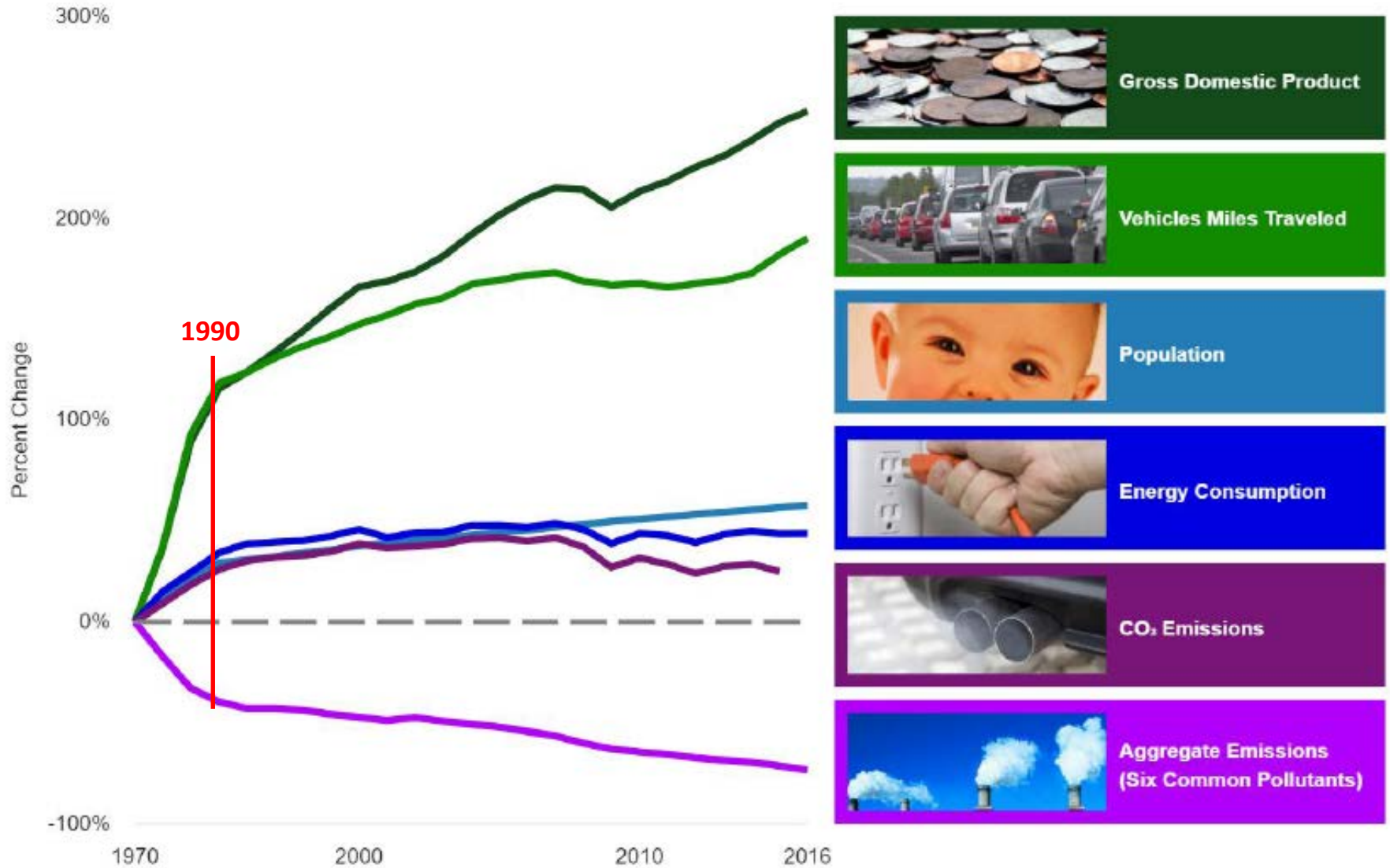




# Trends in Air Quality

## Patrick Cummins

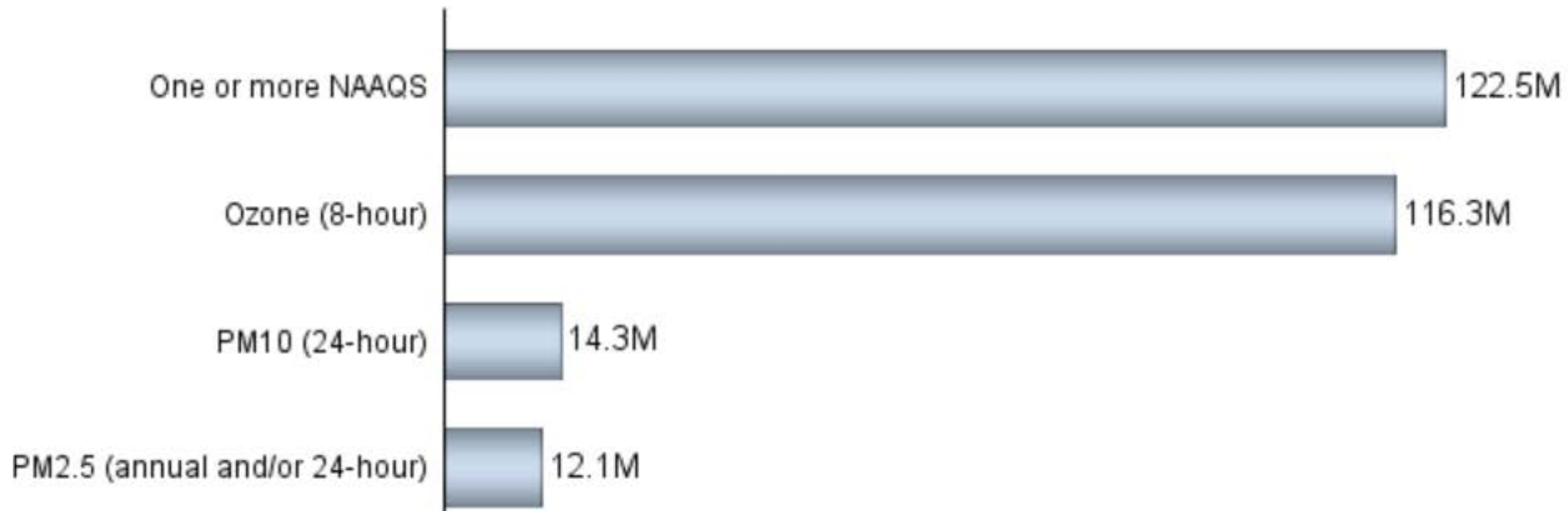
# Comparison of Growth Areas and Declining Emissions 1970-2016



- Gross Domestic Product
- Vehicle Miles Traveled
- Population
- Energy Consumption
- CO<sub>2</sub> Emissions
- Aggregate Emissions (Six Common Pollutants)

Source: US EPA

## Number of People Living in Counties with Air Quality Concentrations Above the Level of the NAAQS in 2016



Source: US EPA

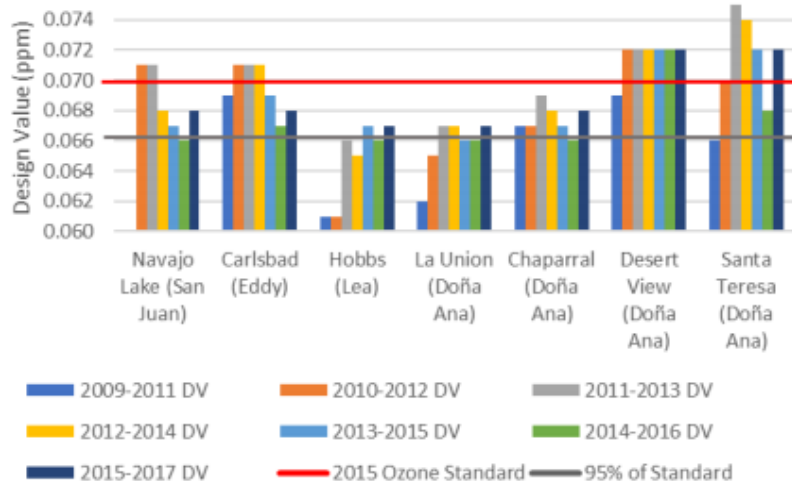


# Ozone Attainment Initiative

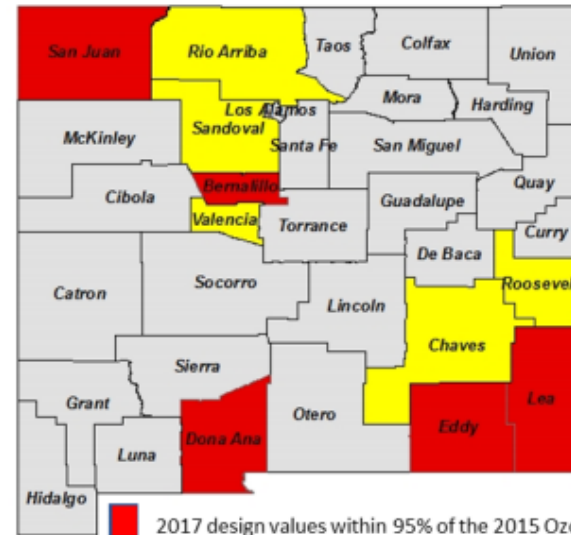
NMED-AQB has embarked on a new Ozone Attainment Initiative (OAI) for attainment and maintenance of national ambient air quality standards for ozone in areas for which design values exceed 95% of the standard. Pursuant to 74-2-5.3.A:

*If the environmental improvement board or the local board determines that emissions from sources within its jurisdiction cause or contribute to ozone concentrations in excess of ninety-five percent of a national ambient air quality standard for ozone, it shall adopt a plan, including regulations, to control emissions of oxides of nitrogen and volatile organic compounds to provide for attainment and maintenance of the standard.*

Recent Design Values  
Monitors within 95% of Standard as of 2017



## Ozone - Areas of Concern



- 2017 design values within 95% of the 2015 Ozone Standard
- Preliminary 2018 design values within 95% of Ozone Standard or likely contributions to high ozone levels in adjacent counties

\*Albuquerque / Bernalillo County Department of Environmental Health is implementing parallel planning for sources located in Bernalillo County.

### Proposed Timeline

Fall 2018 – Planning for public meetings in 9+ Counties and opportunity for initial comments

Winter/Spring 2019 – Research on and review of possible options for mandatory or voluntary controls, and additional public outreach

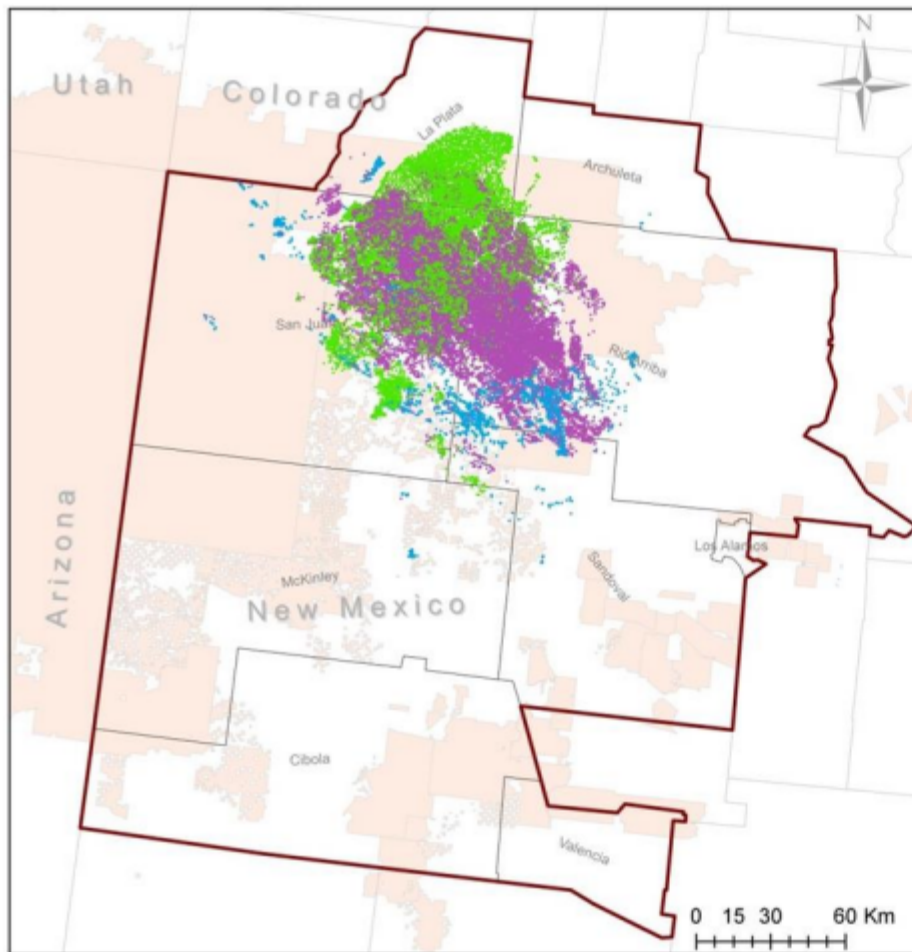
Summer 2019 – Gather input on researched options with opportunity for further public input

Fall 2019 – Analyze feedback and develop rules and other measures for inclusion in a draft ozone attainment plan



Winter/Spring/Summer 2020 – Draft plan with formal comment period  
Summer 2020 – Hearing to adopt a plan

# Greater San Juan Basin: 2014 Well Locations by Type

3



## Legend

-  Greater San Juan Basin (consistent with GHGRP Subpart W definition)
-  Tribal Lands

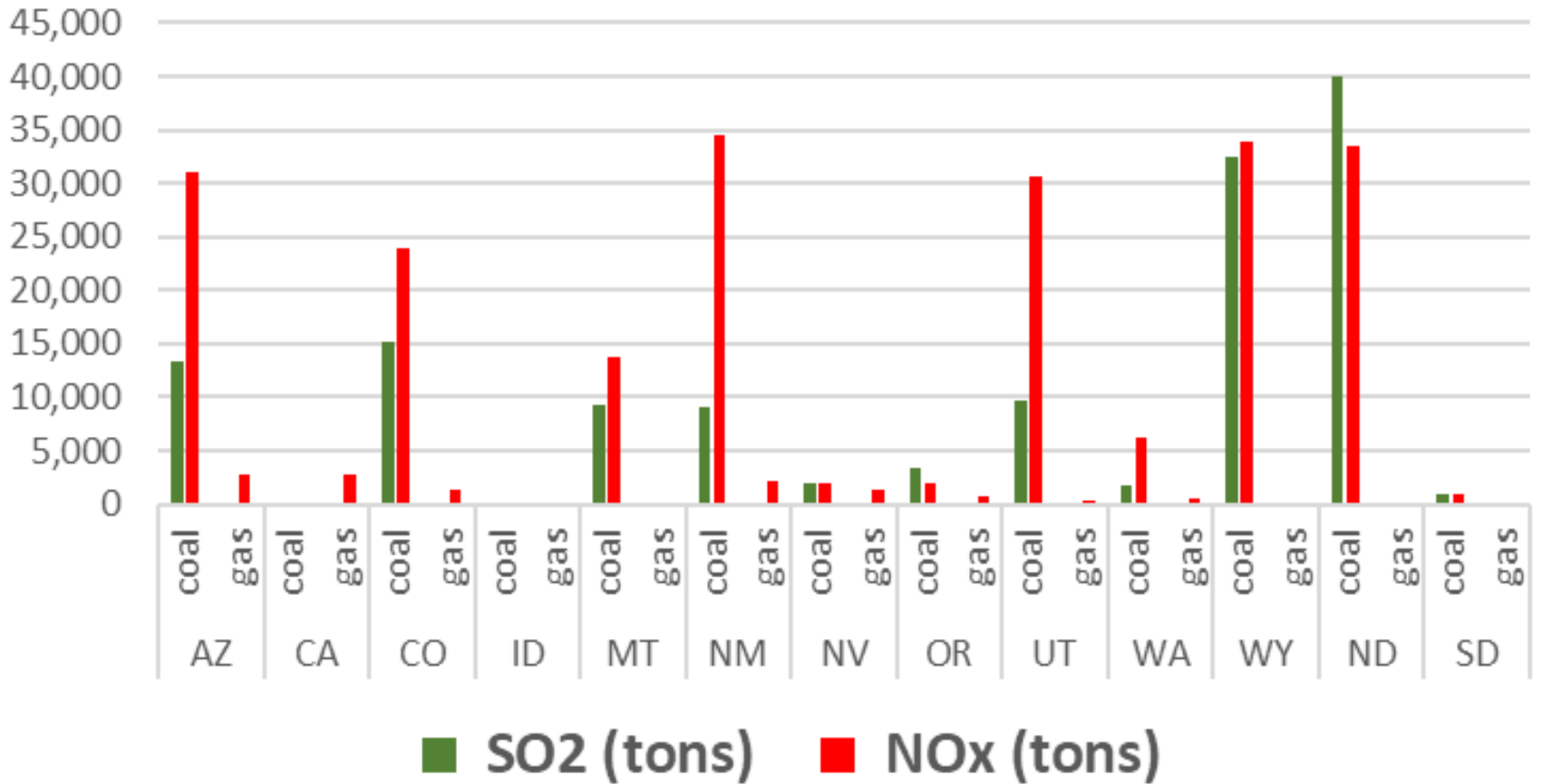
## Well Type

-  Oil
-  CBM
-  Gas

Reference: Parikh, R., J. Grant, A. Bar-Ilan. 2017 "Development of Baseline 2014 Emissions from Oil and Gas Activity in Greater San Juan Basin and Permian Basin". Ramboll Environ. November 2017.

# Western Power Sector Emissions

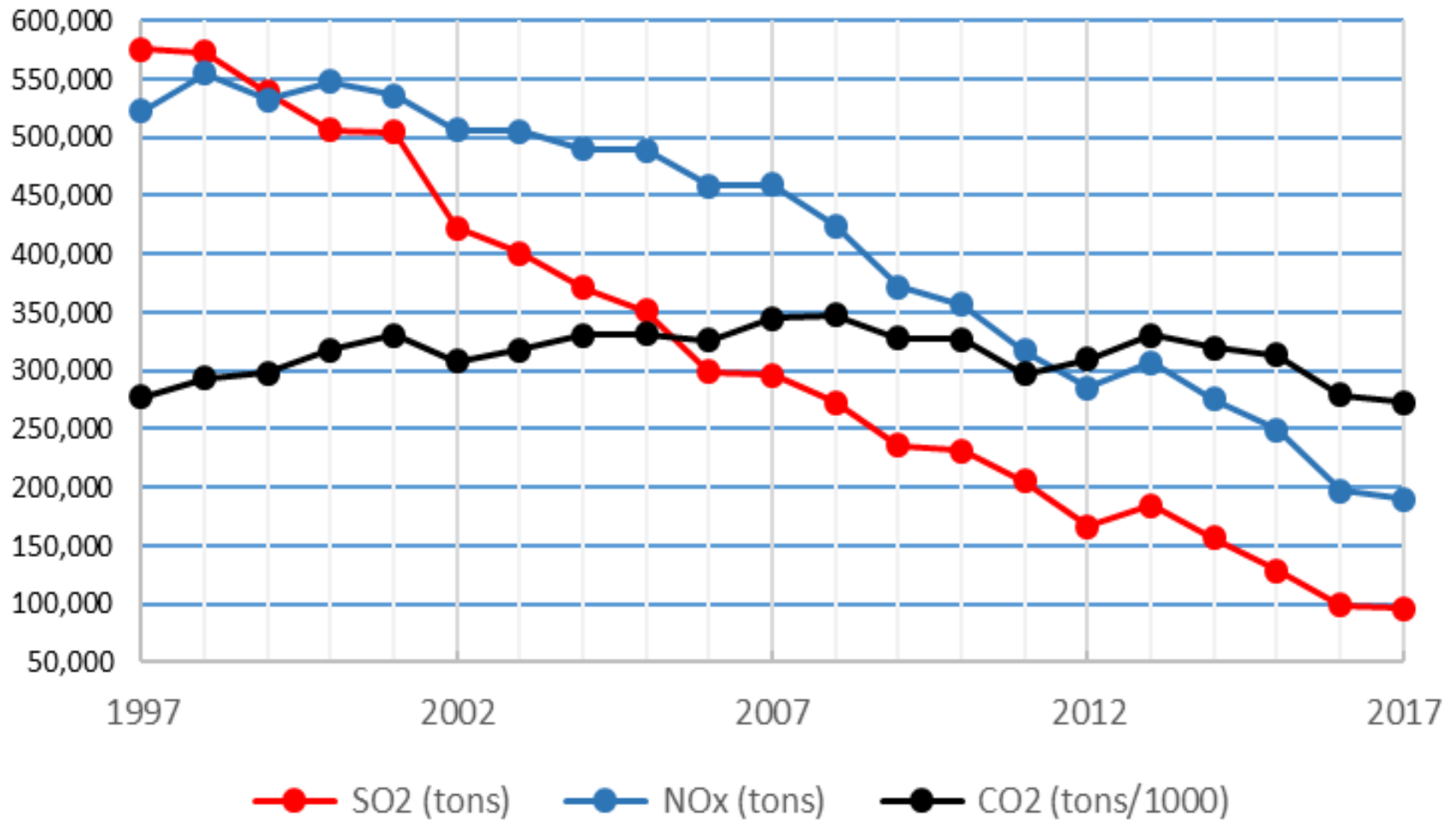
## 2017 Emissions by State



Source: EPA

# Western US Power Sector Emissions 1997-2017

Source: US EPA (11 WECC states)

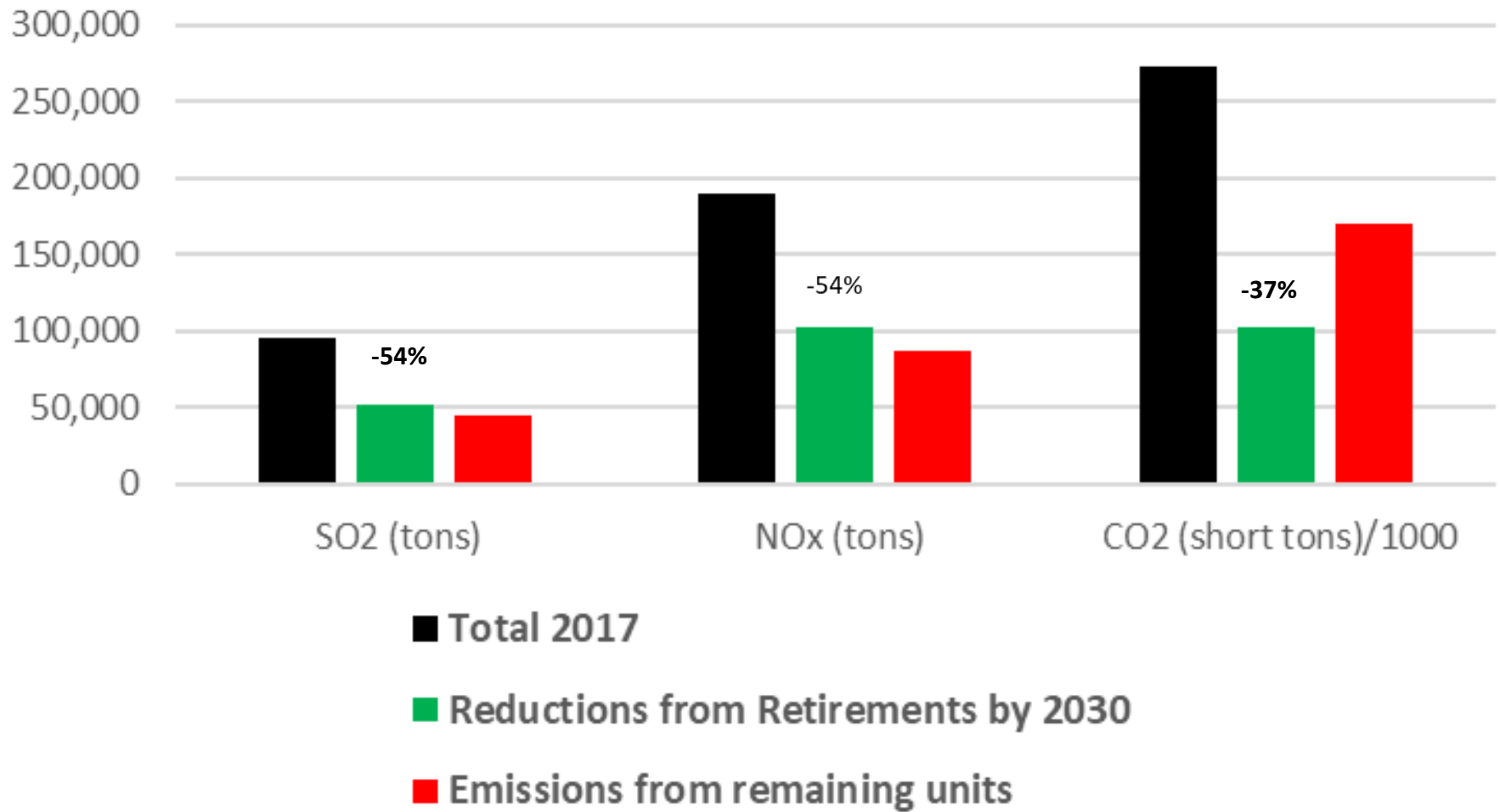


**SO2: -83%**

**NOX: -64%**

**CO2: -2% (-22% since 2008)**

## Expected emissions reductions from coal unit retirements: 2017-2030 WECC Region



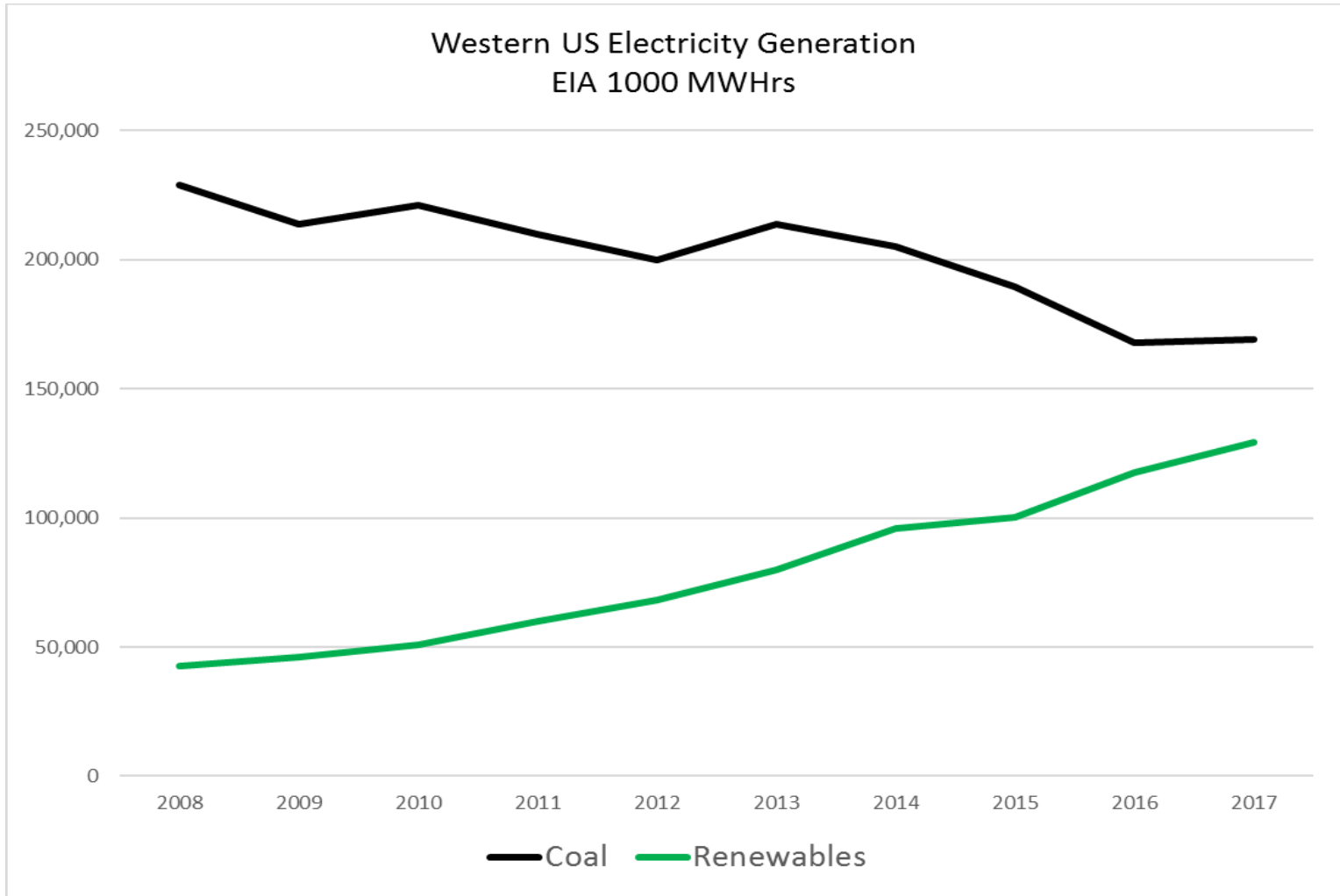
Source: EPA / CNEE



# Electricity Generation Trends on the 11-State Western Grid

- No increase in total generation since 2008
- 2017 vs. 2008
  - Coal **-26%**
  - Nuclear **-18%**
  - Hydro + Natural Gas **-4%**
  - Renewables **+205% (3X)**

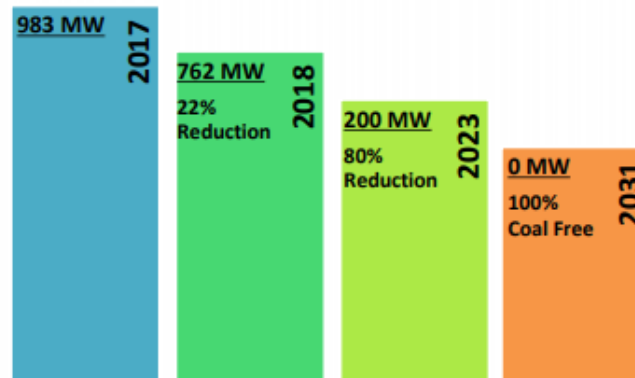
*The decline in coal and nuclear generation in the West since 2008 has all been offset by growth in renewables*



## WHAT'S AHEAD

### PLANS FOR COAL FREE GENERATION PORTFOLIO BY 2031

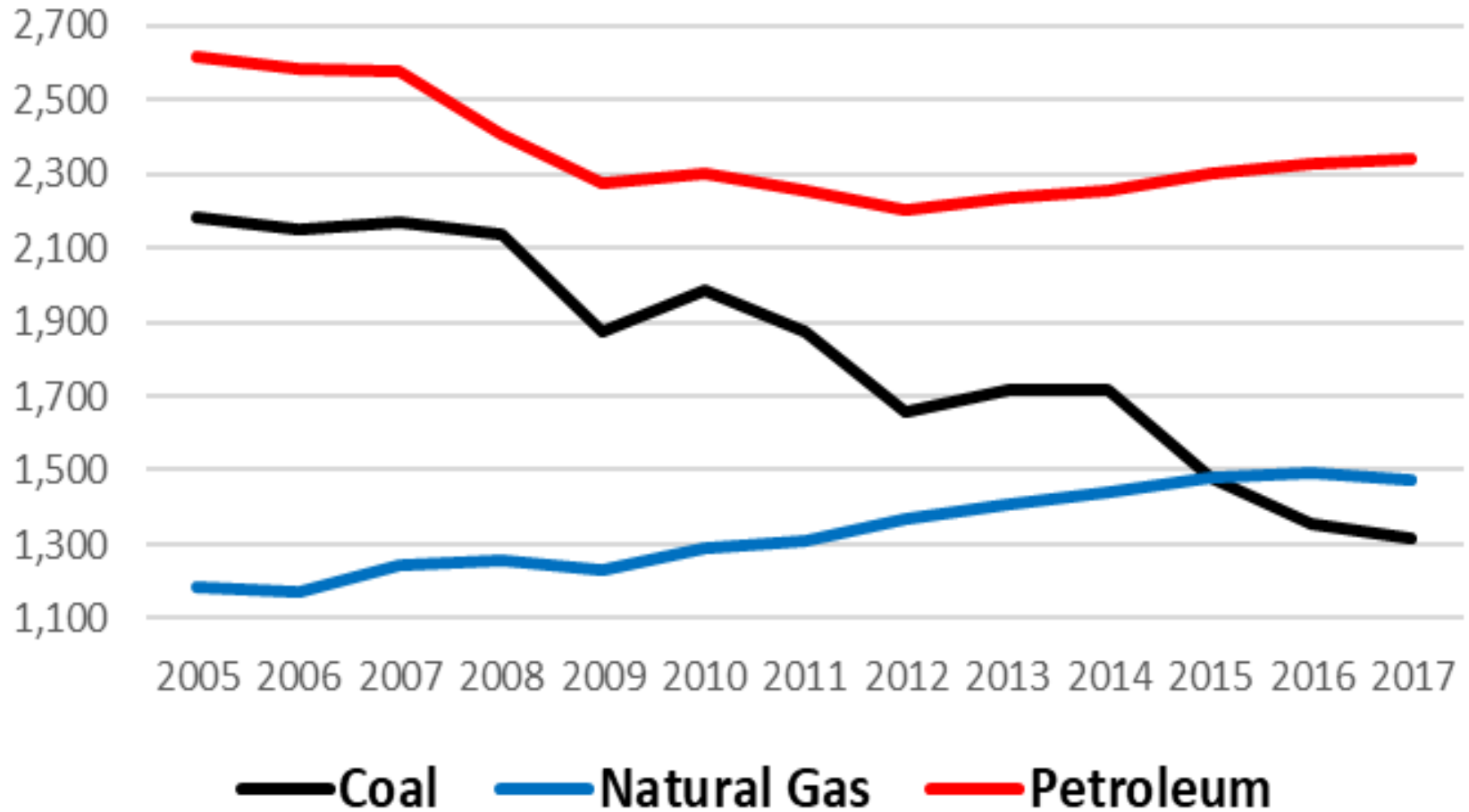
- Retirement of SJGS leads to 80% reduction in coal capacity by 2023; exit from Four Corners in 2031 completes transformation to a coal-free generation portfolio<sup>1</sup>
  - **2018:** Since the shutdown of Units 2 & 3, PNM anticipates an annual reduction in **system-wide** CO<sub>2</sub> emissions by approximately 40% over 2012 levels
  - **2030:** PNM expects to achieve an annual reduction of approximately 60 percent in CO<sub>2</sub> emissions over 2012 levels. PNM plans to exit all coal generation by 2031; and
  - **2040:** PNM's goal is to reduce annual CO<sub>2</sub> emissions in 2040 by a total of 87 percent from 2012 levels.



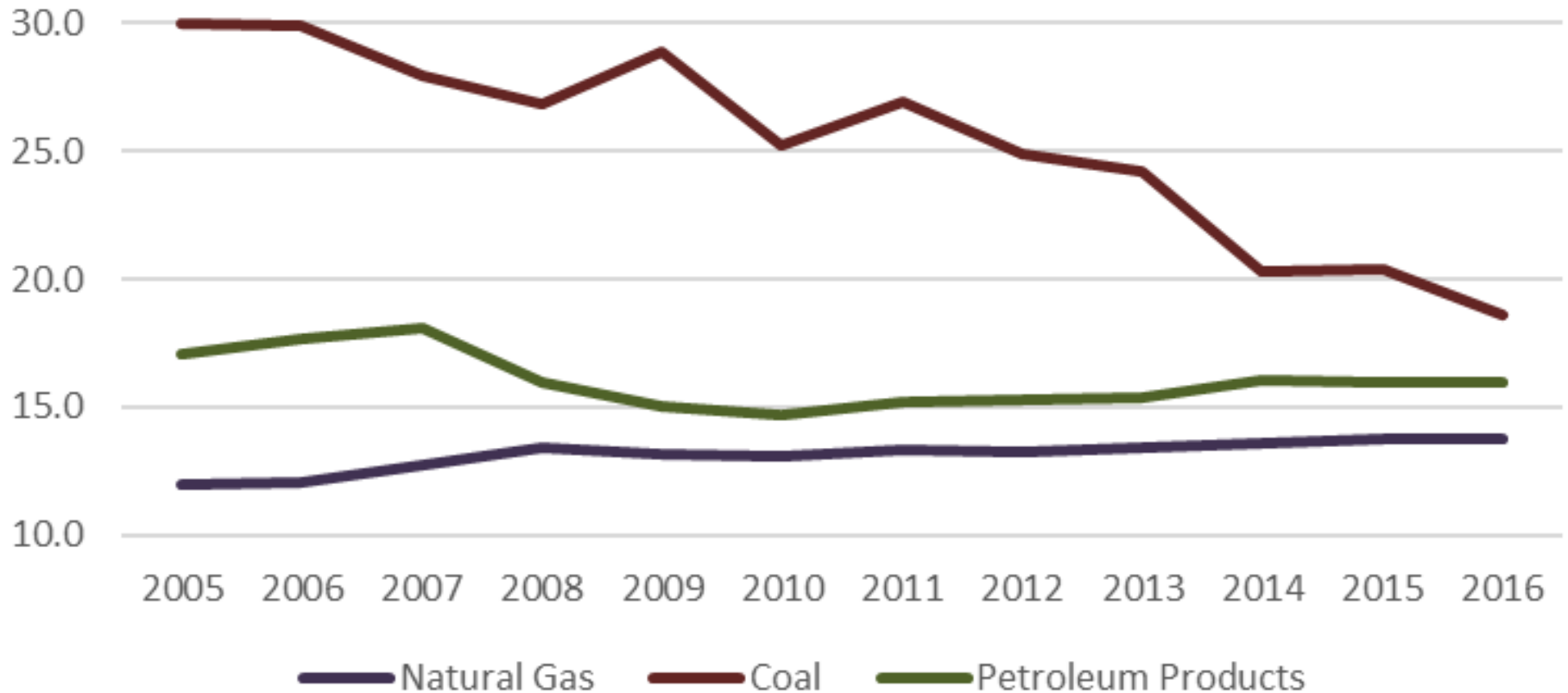
<sup>1</sup> PNMR Climate Change Report <http://www.pnmresources.com/about-us/sustainability-portal/climate-change-report.aspx>

# US CO2 from Energy Consumption by Source

Million Tonnes - EIA



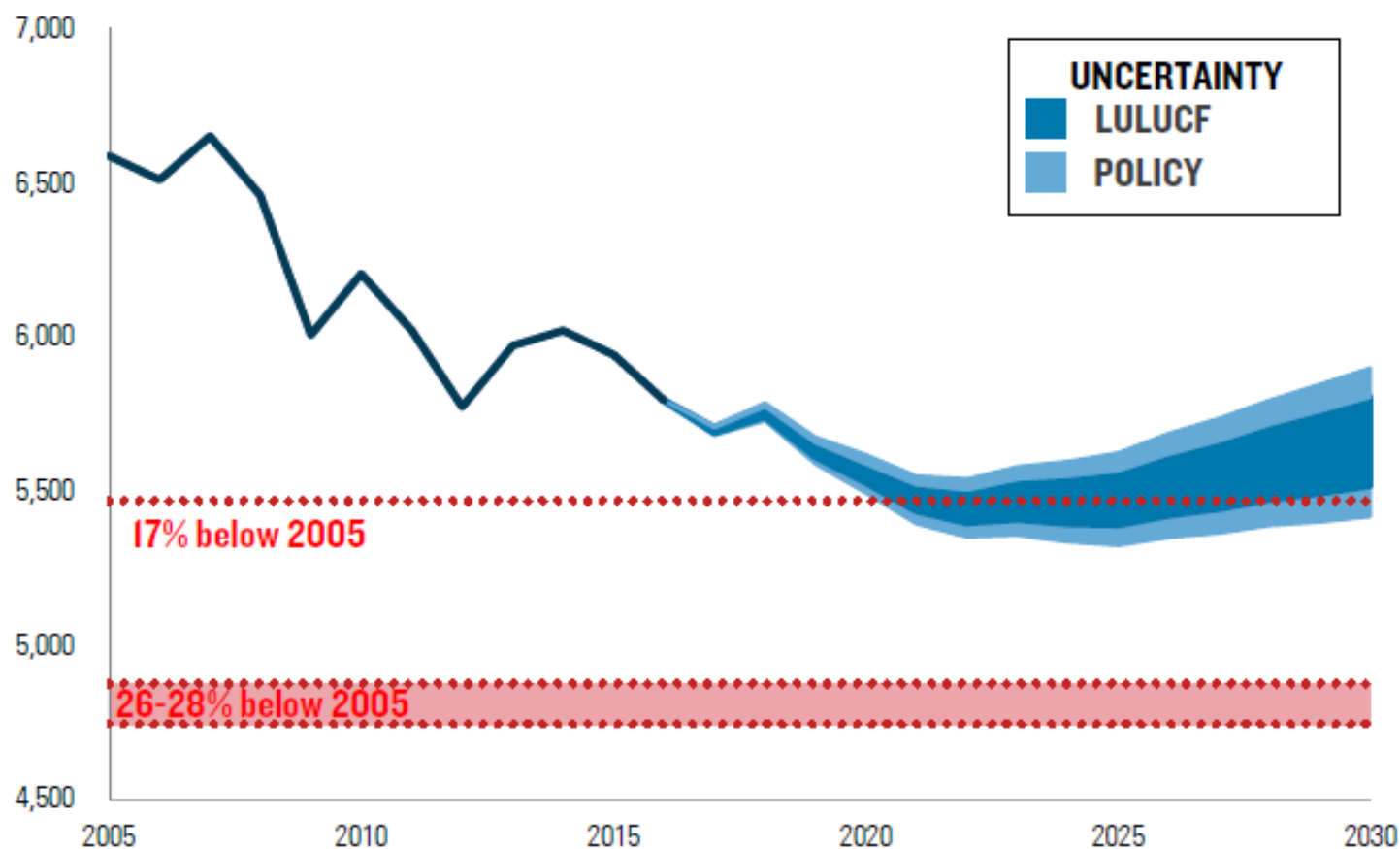
## New Mexico Carbon Dioxide Emissions from Fossil Fuel Consumption (2005-2016)



Source: EIA

**Figure 1: Net US GHG emissions under current policy, Baseline scenario**

MMt CO<sub>2</sub>e





Thank you



