

**DOCKETED**

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# Natural Gas Demand Updates for North America

## IEPR Commissioner Workshop 2019 Integrated Energy Policy Report



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April 22, 2019  
California Energy Commission



# Introduction

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- **Four sectors make up demand in the “Little M” model**
- **Sector demand factors: weather, prices, etc.**
- **Two recent updates**
  - Cooling degree day (CDD) trends
  - Heating degree day (HDD) trends



# Residential Sector

## Residential Demand Factors:

- Weather (HDD)
- Population
- Natural gas price
- Income
- Heating oil price





# Commercial Sector

## Commercial Demand Factors:

- Weather (HDD)
- Population
- Income
- Natural gas price
- Heating oil price





# Industrial Sector

## Industrial Demand Factors:

- Industrial production
- Weather (HDD)
- Natural gas price





# Electric Generation Sector

## Electric Generation Demand Factors:

- Total electricity generation weather (CDD)
- Natural gas price
- Fuel oil price
- Renewable generation
- Coal price





# NAMGas Input

- **Provides natural gas reference demand for each time period for each demand region defined in the NAMGas model.**
  - California and WECC state's demand replaced by WECC data
- **NAMGas continues to model onward with all other factors (supply, pipeline development, price fluctuations, etc.) that can further tweak demand.**



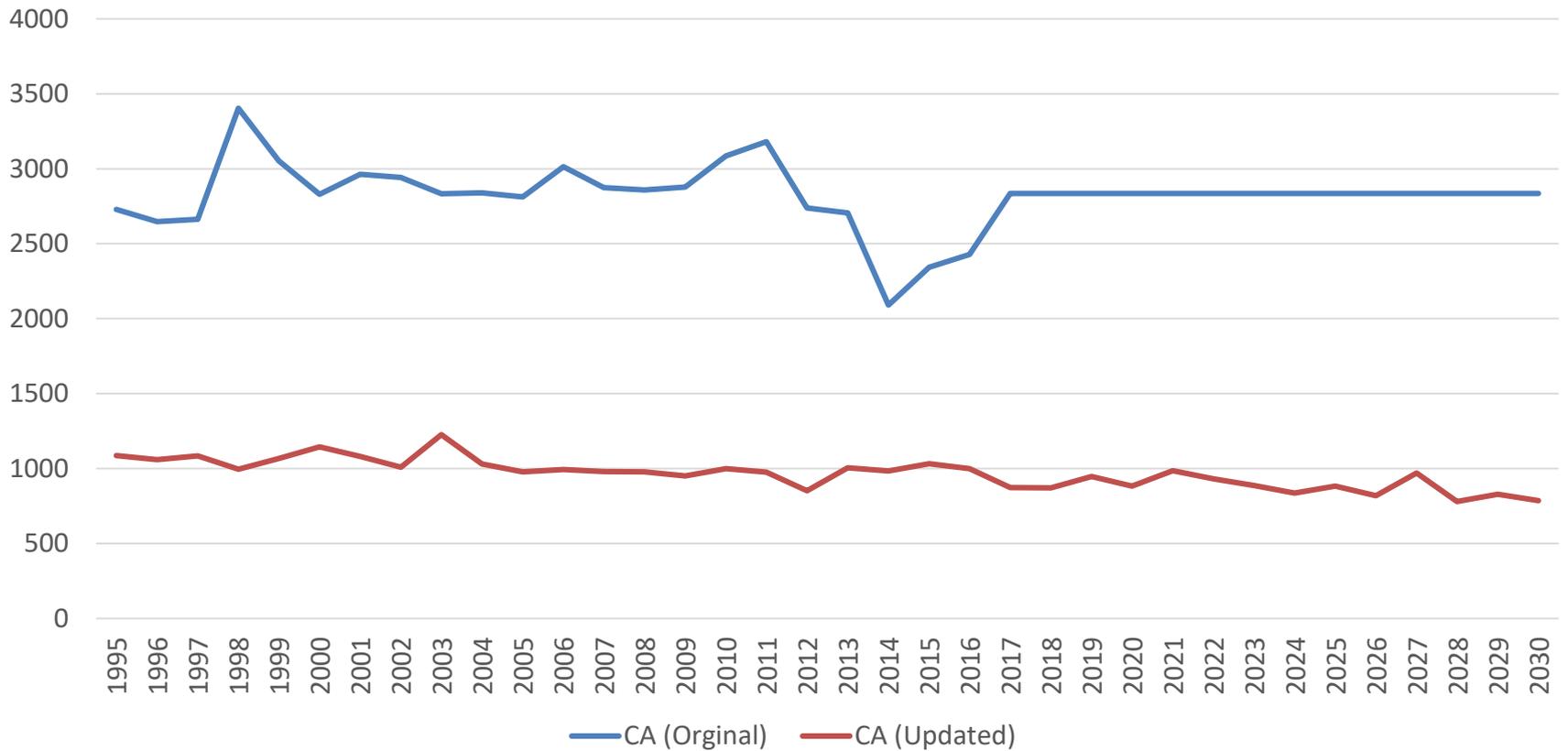
# Recent Updates

- **CDD and HDD w/climate change data added**
  - Incorporates past climate data as well as modeled future CDD/HDD out to 2055
  - Sourced from Energy Commission Research and Development Division
- **Updated heat rates for coal**



# HDD Update

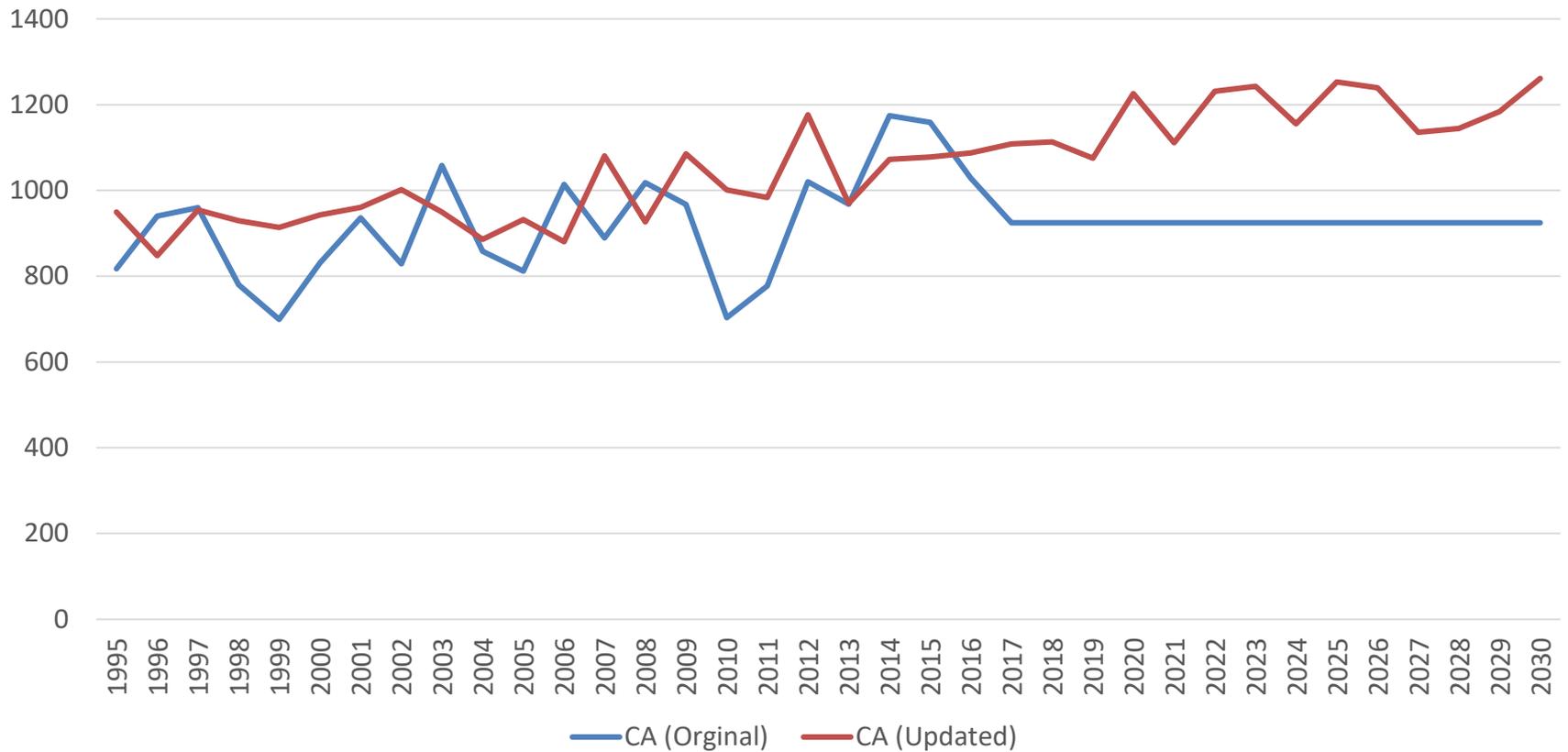
## HDD Comparison





# CDD Update

## CDD Comparison





# Future Updates

- Readdress regression equations
- Investigate historical as compared to changes in the market after 2008 (Fracking revolution)
- Modify 'Little M' to monthly time periods to support NAMGas monthly modeling

# Thank you!

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