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<th><strong>Docket Number:</strong></th>
<th>19-IEPR-08</th>
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<tr>
<td><strong>Project Title:</strong></td>
<td>Natural Gas Assessment</td>
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<tr>
<td><strong>Document Title:</strong></td>
<td>Natural Gas Demand Updates for North America</td>
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<tr>
<td><strong>Description:</strong></td>
<td>Presentation for April 22, 2019, IEPR Workshop on Preliminary Natural Gas Price Forecast and Outlook</td>
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<td><strong>Filer:</strong></td>
<td>Stephanie Bailey</td>
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<td><strong>Organization:</strong></td>
<td>California Energy Commission</td>
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<td>Commission Staff</td>
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Natural Gas Demand
Updates for North America

IEPR Commissioner Workshop

Robert Gulliksen
April 22, 2019
California Energy Commission
Introduction

- 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**
CDD Update

CDD Comparison

[Line chart showing the comparison between CA (Original) and CA (Updated) over the years from 1995 to 2030. The chart indicates fluctuations in the values with a general trend towards an increase in recent years.]
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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