Overview

• AEO2018 – Reference case and potential side cases

• Scorecard – what’s been done, what remains

• Preliminary Industrial Demand Module results – excludes refining EXCEPT for CHP
  – Total energy consumption and energy intensity AEO2018 vs. AEO2017
  – Energy by energy source and industry
  – CHP

• Discussion
AEO2018 is a full year with major model updates and variety of side cases

- AEO Reference case projections assume laws / regulations currently on books (including those that take effect in future); some examples
  - California carbon policies and 2030 reduction goal in effect – planning issues in focus for AEO2018
  - Clean Power plan in AEO2018 Reference case

- Side cases
  - Usual: Hi/Low Price, Hi/Low Macro, Hi/Low Resource and Technology
  - General categories of cases – new thinking this year
    - Renewable and electricity policy
    - Efficiency – may be role for IDM Energy Efficiency side case from AEO2016
AEO2018 Scorecard

• Done
  – CHP: new archetypes, new data, & regional cooperation coefficients
  – SEDS (State Energy Data System) benchmarking

• Almost done
  – MECS2014 upgrade – today’s results reflect this
  – Renewables/waste in cement - figured out energy use, need to implement in model

• Still to be done
  – Chemical history and near term projections
  – New physicals – working on steel
  – Individual industry benchmarking: found the reason for the 50 trill problem
Preliminary findings

• Energy consumption shares similar to AEO2017: natural gas share about 40% in both AEO2018 and AEO2017 renewables share slightly higher in AEO2018

• Energy consumption grows at 1.2%/yr, Shipments 1.7%
  – Energy intensity declines but projected energy intensity higher than AEO2017
  – Some explanations
    • Greater shares of energy intensive manufacturing shipments for AEO2018
    • More bulk chemicals CHP than last year

• CHP higher than last year, especially for bulk chemicals
AEO2018 industrial energy consumption considerably higher than AEO2017 consumption

- Energy consumption grows steadily through the projection period – no lull in the 2020s
- Energy intensive manufacturing shipments share greater in AEO2018, including bulk chemicals

EXCLUDES REFINING. Source: NEMS runs AEO2017.0920a, AEO2017.0920_nocpp and AEO2016 Reference case
AEO2018 energy intensity greater than AEO2017 and generally declining; higher share of energy intensive shipments

EXCLUDES REFINING. Source: NEMS runs AEO2017.idmb2k1.0926n and AEO2017 Reference case

Preliminary results. Do not disseminate.
Natural gas share is at or slightly above 40% throughout the projection; bulk chemicals becomes a 10 quad industry by 2030.

EXCLUDES REFINING. Source: NEMS runs AEO2017.idmb2k1.0926n and AEO2017 Reference case.

Preliminary results. Do not disseminate.
CHP generation considerably higher in AEO2018 vs. AEO2017

Industrial CHP generation

billion kWh

AEO2018 run idmb2k1.0926n

AEO2017 Reference case

INCLUDES REFINING. Source: NEMS runs AEO2017.idmb2k1.0926n and AEO2017 Reference case

Preliminary results. Do not disseminate.
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Bonus slide
MECS changes

• Manufacturing
  – All manufacturing industries will be benchmarked to MECS
  – New Unit Energy Consumption (UEC) and Technology Possibility Curves (TPC)s for the end use industries change
  – Starting values for manufacturing for the process flow industries

• Nonmanufacturing changes too
  – Base year (2014) nonmanufacturing energy is total energy less manufacturing – with some adjustments
    • Formula: Non-manufacturing energy = (2014 SEDS – 2014 MECS)
    • We adjust if the result is implausible using series such as EIA’s Fuel Oil and Kerosene Sales (FOKS), Economic Census, and USDA products
  – Bring back the agriculture TPCs by activity – irrigation, vehicles and buildings

• Base year reset to 2014 from 2010 – year model results start