

Industrial team plans for AEO2014



Macro Industrial Working Group (MIWG)

Industrial Team: Kelly Perl, Team Leader; Peter Gross, Susan Hicks, Paul Otis, and Mark Schipper (OECEA)

July 30, 2013 | Washington, DC

WORKING GROUP PRESENTATION FOR DISCUSSION PURPOSES

DO NOT QUOTE OR CITE AS RESULTS ARE SUBJECT TO CHANGE

Overview -- AEO2014

- Process flow status & updates
- Other model updates
- Major data updates
- CHP updates

Process flow models

- General:
 - Replace energy consumption based on engineering judgment with specific technology or equipment choice e.g. anode production for primary aluminum
 - Also can choose technology diffusion
 - Technologies are primarily based on CIMS data from DOE's Pacific Northwest National Laboratory
- Completed by AEO2013
 - Cement & Lime
 - Aluminum
- Completion for AEO2014
 - Glass (defaulted)
 - Food (not a process flow model; revise on more detailed shipments data)

Glass characteristics

- Glass types used in process flow model
 - Flat glass
 - Container glass
 - Pressed & blown glass
 - Glass fiber
 - Note: glass made from purchased glass still uses TPC approach
- Process steps: preparation, furnace, form & finish, tempering (flat glass only)
- Furnace types include conventional, electric boost, & oxygen fueled

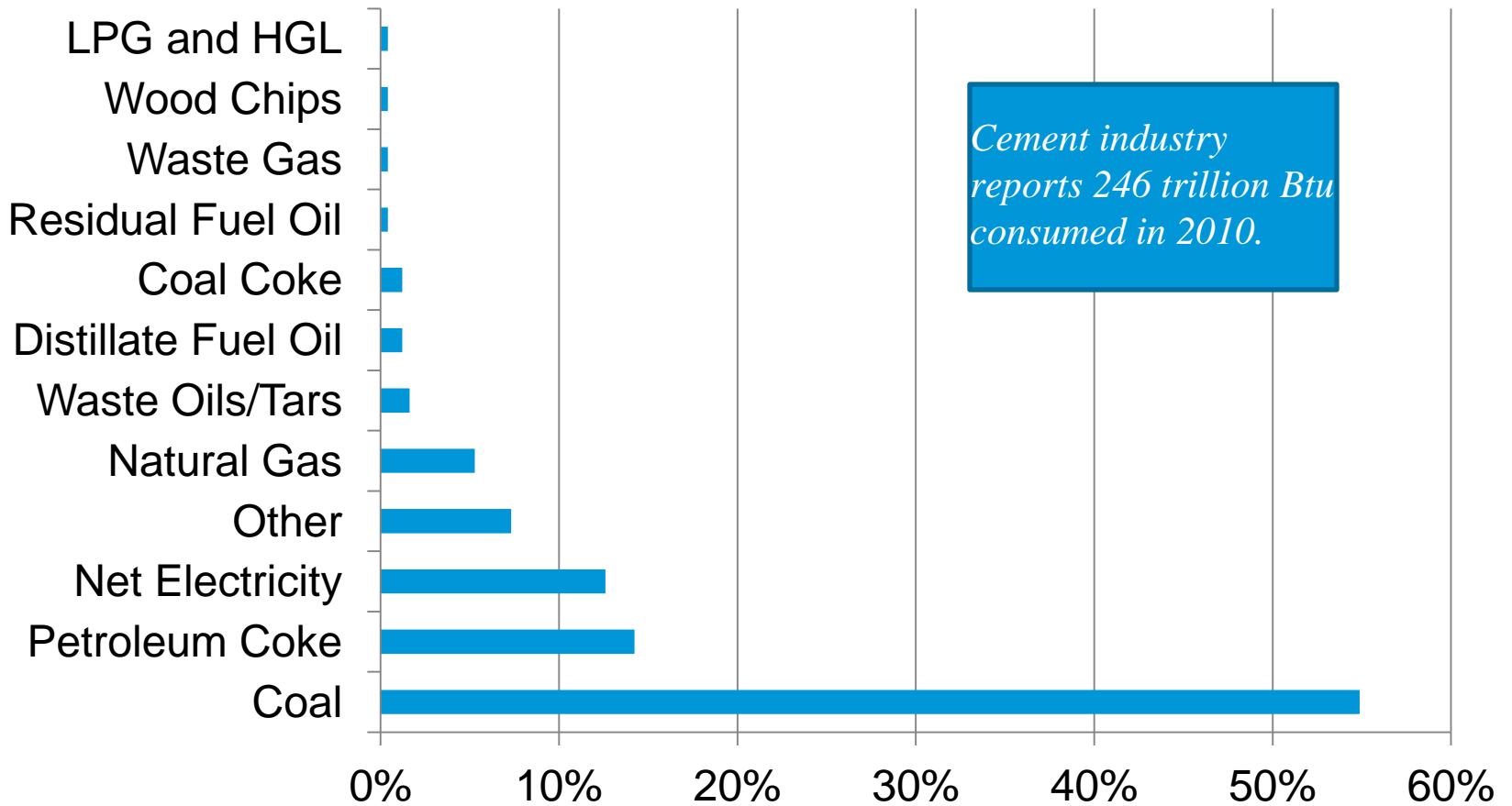
Other planned model updates

- Cement multi-channel burner addition to CIMS (defaulted) adds flexibility for fuel mix of mono-channel burners for later AEOs and contributes to AEO2014 efficiency side cases.
- Efficiency case for cement
 - Multi-channel burners considered state-of-the-art in cement industry
 - Allow significant amounts of secondary fuels – i.e., achieve high or higher levels of alternative solid fuels (ASF) – e.g., tires, plastics, wood, waste
 - Fuel mix for individual kilns is unavailable but IDM presumes a 12 percent share of ASF in dry process kilns; wet process is likely higher
 - More rapid penetration of energy efficient grinding; affects electricity
- Efficiency case for aluminum

Cement burner technology update

Fuel share in the cement industry percent

AEO2013: 6 mono-channel burner technologies
AEO2014: Adds a multi-channel burner technology



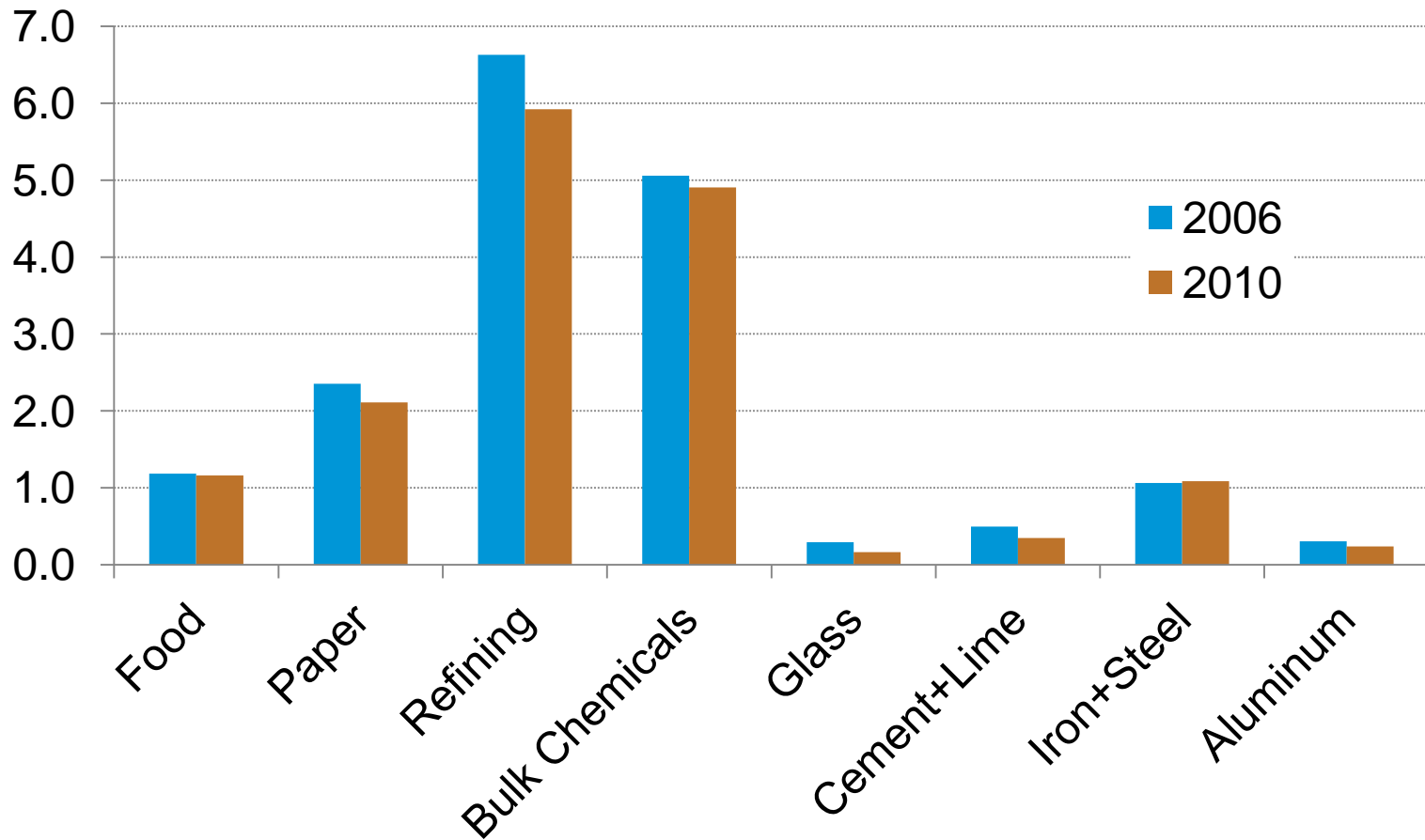
Source: U.S. Energy Information Administration, MECS2010.

Major data updates

- Quadrennial MECS update to 2010
- New nonmanufacturing data approach
 - Uses Census and USDA data to derive usage data from expenditures
 - Improves estimation of nonmanufacturing energy use for *individual tables* instead of relying on SEDS – MECS;
 - construction use of natural gas had been overestimated
 - Construction expenditures were for “Natural gas OR manufactured gas”
 - Will use SEDS – MECS for benchmarked figures in Table 6, main industrial table, of the AEO

MECS 2010 v. MECS 2006

Energy use in quadrillion btu



Combined Heat and Power (CHP)

- Differentiation for major CHP-using industries: bulk chemicals, paper, food, iron & steel (refining modeled in LFMM)
 - Allow variation in utilization, risk factor, penetration rate for four major CHP industries allows to run mini side cases
 - Big 4 industries constitute more than 75% of IDM CHP in all AEO2013 years
 - All other industries undifferentiated
- Regional differentiation
- Data updates
 - Update industrial CHP based on EIA's historical data
 - Will update regional CHP scorecards when ACEEE data becomes available

Thank you for your attention!

Macro Team:

Kay Smith (202) 586-1132 | kay.smith@eia.gov
Vipin Arora (202) 586-1048 | vipin.arora@eia.gov
Russell Tarver (202) 586-3991 | russell.tarver@eia.gov
Elizabeth Sendich (202) 586-7145 | elizabeth.sendich@eia.gov

Industrial Team: EIA-OECEAIndustrialTeam@eia.gov

Kelly Perl (202) 586-1743
Peter Gross (202) 586-8822
Susan Hicks (202) 586-4388
Paul Otis (202) 586-2306
Mark Schipper (OECEA) (202) 586-1136