

Questions:

- 1) At page 67045 of Federal Register / Vol. 76, No. 210 / Monday, October 31, 2011 / Rules and Regulations, DOE states: *DOE's total estimated average cost (\$1,596) is close to the lower end of AGA's estimate.* What is DOE's total estimated average cost now in Docket EERE-2014-BT-STD-0031?
- 2) The gas and electric forecasts are out of date and not in line with actual prices in the markets. EIA AEO 2014 forecasts natural gas to escalate at a much higher rate than electricity. Current forecasts and markets show the opposite, natural gas is flat to declining. Electricity is forecasted to increase dramatically due to environmental, renewable and energy efficiency regulations. Is DOE open to use more diverse energy price forecasts in their analysis?
- 3) The NPV calculations use discount rates referencing guidance from OMB circular A-4 from 9/17/03. While current discount rates have been extremely low, more realistic assumptions would utilize a higher discount rate in line with historic data. Interest rates have been kept artificially low due to the Feds quantitative easing policy. The Fed has been signaling that QE is coming to an end, which will lead to higher interest rates which will increase discount rates. When doing 21.5 year NPVs, a discount rate more in line with much higher historical rates would be more prudent. Is DOE open to using more diverse discount rates?
- 4) Table 8.2.23 lists discount rates for income groups. Income group 1 has a lower discount rate than income group 2. The lowest income group cannot have a lower discount rate as they have very little if not zero equity and much higher borrowing rates due to bad credit rating. Again, is DOE open to using more representative discount rates for low income group.
- 5) In chapter 11 DOE shows the rule impacting low income households to a higher degree than the general population. If a more realistic, higher discount rate is used for low income households; the payback period will increase even more. Is DOE going to address the disparate impact on low income households as a result of the proposed rule?
- 6) In section 2.11.1 DOE indicates they converted the site energy to source using Fuel Factors. Why didn't DOE use Source to Site ratios as recommended by EPA? Using electric source ratio of 3.14 and natural gas source ratio of 1.05 appears to results in large increases in CO2 emissions due to increased electricity use from furnace switching.
- 7) Social cost of carbon. Considering the sensitivities of future carbon costs, wouldn't it be more transparent and realistic to use published market prices (including futures)?
- 8) The marginal pricing that DOE uses is much higher than actual tail block tariffs. Will DOE correct their marginal pricing to reflect actual marginal rates that customers pay?
- 9) Question on product switching methodology
  - a. In the new construction market, is DOE assuming that gas water heaters will not be switched to electric water heaters due to the adoption of "DuraVents"?

- b. In the new construction market, has DOE considered that builders may opt to build “all-electric” homes because they are cheaper; and, if so, has DOE estimated the impacts?
- 10) DOE used 339 weather stations to develop HDD and CDD inputs. In 7C DOE calculates a least squares fit to weather stations based on location in the RECS/CBECS database. How big an error in total is introduced? How representative are the weather stations? Is the data over or under forecasting HDD? Isn't CBECS 2003 and RECS 2009 outdated? 2009 was colder than normal and DOE adjusted the data downward. Does the downward correction reflect actual HDDs experienced in the past few winters?
- 11) On page 8-35, DOE states that the product switching methodology is based on “proprietary data from Decision Analysts, which identified the willingness of a representative sample of consumers to purchase more-efficient space-conditioning systems.” Without access to the data and methodology, we cannot verify or easily duplicate the results. DOE committed to being transparent; will they make this data available?
- 12) Why did DOE choose to conduct physical and virtual tear down analysis to determine the future cost of a furnace instead of just getting prices from actual retail vendors and then adjust such actual prices for different inflation scenarios?
- 13) In the teardown analysis, DOE refers to “BOM Spreadsheets” and “cost model” tool. Can DOE make these documents available? Without this information we cannot analyze the accuracy of DOE furnace pricing.
- 14) What price and technology did DOE use for fan motor in the base price of the furnace?
- 15) DOE shows that significant emissions reductions are expected. However, the increased pressure drop associated with condensing furnaces cause an increase in electric consumption which appears to be massive according to [AGA's previous comments submitted in EERE-2012-BT-TP-0024](#) (at Figure 1). Moreover, increased pressure drops due to condensing furnace technologies are also present during the cooling season and anytime the fan is on for ventilation. How did DOE account for these factors in existing and new, residential and commercial applications (noting that ASHRAE 62 requires continuous ventilation)?
- 16) EPCA, as codified contains what is known as an “anti-backsliding” provision, which prevents the Secretary from prescribing any amended standard that increases the maximum allowable energy use. With product switching on a source basis, energy usage increases if the EPA source-site ratios are used. Under what scenarios could DOE possibly be implementing a rule that increases overall full fuel-cycle/primary energy use?
- 17) Page 49 of the NOPR states that DOE determines savings are significant because they are nontrivial. DOE does not define what level they consider nontrivial or significant. What is the dollar amount threshold is required by DOE to be considered nontrivial? If corrections are made to the inputs where DOE has overestimated marginal pricing and escalated natural gas prices at a much higher rate than the market, could the savings become trivial or nonexistent?
- 18) On page 112 of the NOPR, DOE states that “The increased comfort has a cost that is equal to the monetary value of the higher energy use.” The additional cost due to rebound effect should not

be offset by “comfort value” that has not been analyzed or justified. “Comfort value” increases the actual cost of furnace operation and cannot be removed due to some assumed customer comfort. Shouldn’t DOE consider the sensitivity of removes the undocumented “comfort value” from the analysis?