Measuring the Efficiency of Oil Burners with Boilers and Furnaces

1. Measuring the **efficiency** or combustion efficiency by oil burner technicians:
    a. Oil burner technicians use commercially available testers to measure the following:
        i. Stack temperature, which equals 85-88% of the formula
        ii. Carbon Monoxide, which equals 10-12 % of the formula
        iii. Oxygen (in flue stack), which equals 3-7 % of the formula
        iv. **These testers do not measure fuel usage.**
    b. This method of determining efficiency is based upon various assumptions, which worked for pre-1995 combustion systems. The invention of ***The Burner Booster™*** changed these assumptions (or better stated, changed the coefficients of the math formula).
    c. The oil industry uses this combustion formula to increase its number of sales and upgrades.

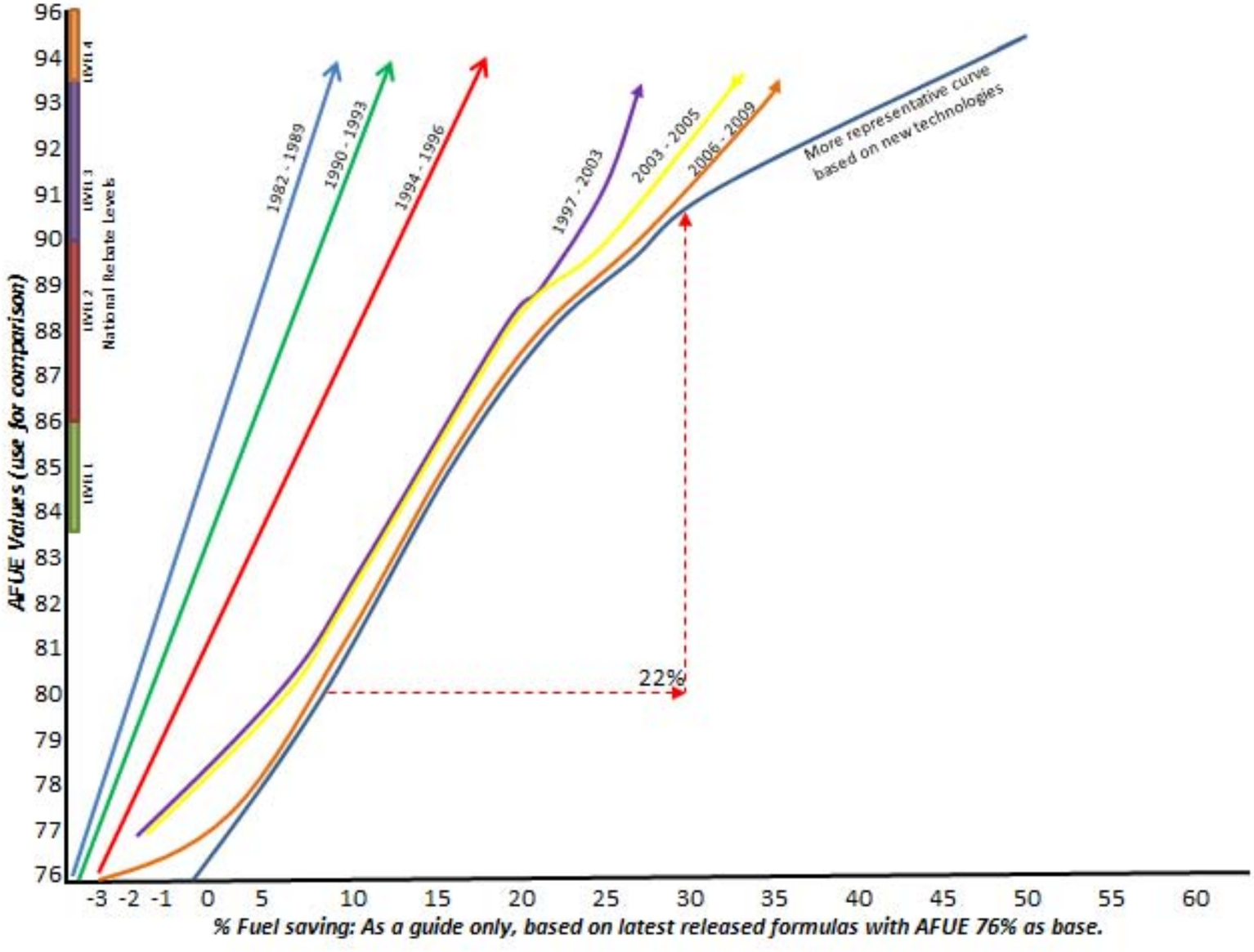
2. Measuring the **AFUE** ratings (Annual Fuel Utilization Efficiency) by boiler manufacturers:
    a. This is based on the total system efficiency of a boiler/furnace with a standard working burner.
    b. These tests are based upon a U.S. government-approved test, which is somewhat flawed. A principal scientist for the government agency involved has publicly spoken about some of the flaws.
        i. The government-approved testing **does not test the following**:
            1. The amount of oil used to develop the heat desired in a real-world setting.
            2. Inefficiency during start-up and shutdown.
            3. Inefficiency due to excess air used.
            4. Inefficiency due to build up of soot/carbon on the walls of the boiler or furnace during a year of operation (results in poorer performance after five months).
            5. Inefficiency due to the poor combustion of oil and air, resulting in higher stack temperature and additional air necessary to reduce soot output.

3. Measuring the efficiency improvement when using The Burner Booster™ with new combustion technology:
    a. The improved efficiency exceeds the maximum efficiency calculated using the flawed methods in 1 and 2 above.
    b. Burner Booster™ customers anticipate their fuel needs based on how much fuel they have used in the past.
    c. After a Burner Booster™ is installed, the customer determines how much fuel was used in the same period of time and under the same conditions to meet the same specific needs.
        i. Degree days are used where appropriate.
        ii. When a Burner Booster™ is used for manufacturing facilities, the oil used per unit of item produced is measured to determine fuel savings improvement.
        iii. The dramatic decrease in emissions is a direct result of the Burner Booster™ science.
        iv. The comparison to natural gas emission/same BTU is either on par or slightly better with the Burner Booster™.

4. We test the same way oil burner and boiler manufacturers do and have also tested according to Brookhaven's National Testing Lab.
    a. We ramp up - we have a cycle on-off with a load, and a restart of 2-3 hours.
    b. We measure, calculate and take every factor into account and only use stack temperature as a reference.
    c. By using our method, we mimic a real-world situation.

5. The Burner Booster™ saves the average person or business 18-25% on oil consumption a year! Better yet, since 2012, we can guarantee 15% savings guarantee on fuel or your money back!

6. Eric, the inventor of the Burner Booster™, drew up a chart based on stats from the Department of Energy (see below), which shows that the relationship between the efficiency of a boiler and the subsequent savings gains is not a 1:1 ratio, but closer to 1:3. It is not linear, it is a curve. It shows that since it was contemplated in the 1980's the curve has changed regularly to allow for new technology.



USING THE CORRECT MATH

- With new technology come new math, yet some are still using old values and assumptions.
- From a 76% AFUE rating, you can save 40% on fuel, enabling the achievement of a 94% rating (level 4 rebate)
    - This explains why a 12 year old appliance tested to new standards falls short in ratings.
    - Test a system with an AFUE value, repeat test with the Burner Booster, get new fuel amount used (ex: 20% less), move 20% points right on the chart and find corresponding graph line, see new AFUE rating.
- In 1996 the AFUE acknowledged that condensing systems were far superior so the rating curve was changed.
    - If your 2004 boiler is rated at 82%, and your AFUE test resulted in an 80% rating, then add the Burner Booster. If you reduce fuel use by 22% then move 22 points to the right. Your new AFUE rating is 91.5. The older formula would have you rated above 100%.
- The graph shows values over 88.5% systems harder to achieve and might require new technology compared to 1980 technology.
- A National standard needs to be established with progressive rebate