AB802 workshops days 1 and 2 Informal Comments by John Avina

Below are some informal comments. Thank you for taking the time to read them.

Risk

1. It might be wiser to "walk before you run." There is an existing Option C utility bill tracking programs in existence that have been successfully used by ESCOs for over 20 years. The program meets ASHRAE 14, and IPMVP standards for Option C. One ESCO alone is guaranteeing over $2B in energy savings using this software.
2. The interval data applications that were much discussed in the meetings appear to be still in the experimental stage. Why would you design programs with software that is not yet proven? It seems to me that by using unproven software, you are going to face large headaches when the problems with these methods come to light.
3. I believe the CPUC will achieve the most success by taking as little risk in procedure as possible, while at the same time endeavoring to meet the spirit of AB 802. We are talking about tens of thousands of data sets. The sheer number of datasets leads to complexity. Using unproven solutions with these numbers may lead to a disaster.
4. One problem that was mentioned and quickly skirted to the side what managing and holding onto the data. How many terabytes of information are we talking about by tracking the interval data, the weather data, and other variable data for a large number of customers. There are questions about the size of the server farms required, whether accessing the data will be slow due to the huge amount of data.
5. Perhaps the best method would be to use time tested methods for now. Get the Option C program working with established software using weekly or monthly data, and perhaps have one utility program use the interval data. Once it is determined whether the interval data systems can produce the desired results, shift the other programs to these interval programs.

Method

6. Correlations of 15 minute data will not be successful as often as correlations of weekly or monthly data. 15 minute data is subject to variations that occur when AHUs, chillers and other equipment cycle on and off. Fork lifts are plugged in at different times. Equipment gets turned off when mechanics work on it. Occupants complain about being too hot or too cold, and facility staff make changes to the controls. Human behavior, along with equipment cycling, is a major cause of 15 minute data not producing a good correlation. There are no independent variables that will account for this. When this data is smoothed out into larger intervals, such as weekly intervals, the cycling goes away, the times forklifts get charged doesn't matter, the hot and cold calls and the equipment being shut off for repairs—all of this is spread out so that it has no effect on the correlation.
7. One presenter talked of how a large percentage of 15 minute correlations had very good fits. But they did not talk about those correlations that did not. As I described above. There will be many more of these with 15 minute interval data, than with weekly data.
8. So what is to happen to those meters that cannot get a good correlation? According to the presenters, these meters should not be allowed to participate in utility programs. By employing this 15 minute interval data, then, you have decreased the number of buildings that can be served by the utilities.

9. Even with weekly or monthly data not all meters will correlate to weather or other variables. In the ESCO world, the savings still needs to be tracked. What the ESCOs do is not correlate the data at all, but compare pre-retrofit to post-retrofit raw data. This can be done with weekly or monthly data. I suppose it can be done with 15 minute data as well.
10. It is my contention that the following would be the best way to handle Option C M&V. Aggregate the interval data into weekly amounts. Insert this weekly data into Option C software. Produce correlations to weather and possibly other variables. Create reports. Each program only need own one copy of the software.

Expense

1. The desktop software I speak of costs $3000 for a license. Compare this to the systems that the others are speaking of, which I am sure will run at hundreds of thousands to millions of dollars.