



# EZ SIM

## BILLING ANALYSIS SOFTWARE

### **Back to School Savings:**



### **Comparing Energy Accounting Tools**

Mike Meinecke is the energy manager for the Tigard School District in Oregon. Mike has been using an energy accounting package to track consumption and savings. Recently, he also had the opportunity to use EZ Sim to model the

same buildings. What are the pros and cons of the two approaches?

Energy Accounting is a database program that helps to combine multiple meters, make simple corrections for weather, define the "baseline" for savings, perform on-going tracking of bills and compare a group of facilities with each other. Using

energy accounting, Mike has been able to identify simple operational changes that have saved roughly 25% on utility bills.

Typically, Mike reviews plots or tables that show the estimated savings (relative to a baseline) for each monthly bill. As Mike says, "I can look at the bills to track how we are using energy. I look for the peaks and valleys. If a building is performing well, I see it here. If it comes up high, I go to the site to find out why."



A key advantage of the reports is that Mike can show them to others. It really helps to show people in the facility a graph of how they are doing. Staff will be more likely to turn off equipment at night if they know that someone is actually looking at the bills and watching their performance. And if people do a good job, it's important to praise their efforts.

In general, the energy accounting packages do a good job of aggregating bills from different meters and sites. The process of normalizing for weather changes is invisible. That can be a good or a bad thing. The good part is that the user doesn't have to do anything. The bad part is that it's not always clear what the software assumes. The method is to fit a regression against heating and cooling degree-days. However, base-65 degree-days are often a poor match to actual buildings.

The greatest problem with the accounting tool is that the

baseline cannot be adjusted. For example, Mike has one building that will be changed from electric to gas heating. What will the new energy consumption be? For this we need an engineering simulation model that will allow us to change a specific enduse. Another example would be the case where the school adds some portable classrooms or operates under extended hours. It's easy to make these changes in the simulation model.

So how do the two methods compare?

<b>Features</b>	<b>Energy Accounting</b>	<b>EZ Sim</b>
Aggregates across meters	Yes	Set up sums in spreadsheet
Aggregates across sites	Yes	Set up multiple models
Provides tracking graphs	Yes	Yes
Uses local weather	Yes, primarily degree-days	Yes, computes humidity and solar
Weather data are obtainable	Varies, usually available on internet	Yes, from internet or purchase
Time to set up	Initial setup 30-60 minutes, includes	Initial setup 15 minutes, can cut-
Learning Curve	Several hours to learn database filters and	None for spreadsheet users
Shows weather impact	Shows bill deviation and the amount due to	Shows actual bills and weather, also
Shows enduses	No	Yes
Can adjust baseline	Some statistical adjustment, if correlated	Yes, based on physical parameters
Conduct "what-if" scenarios	No	Yes

Conduct "what-if" scenarios	No	Yes
Compare to performance targets based on measures	No	Yes
Used for performance contracting	Yes, but no precision discussion	Yes, includes precision statistics
Price	From \$300 up to thousands	\$199

Where does one locate these tools? Here are some resources on the Internet:

<b>Energy Accounting Software</b>	
Utility Manager	<a href="http://www.eqnetwork.com">www.eqnetwork.com</a>
Faser	<a href="http://www.eeis.ees.enron.com">www.eeis.ees.enron.com</a>
Metrix	<a href="http://www.abraxasenergy.com">www.abraxasenergy.com</a>
Z-Power	<a href="http://www.z-power.com">www.z-power.com</a>
<b>Billing Simulation Software</b>	
EZ Sim	<a href="http://www.ezsim.com">www.ezsim.com</a>

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