

VCCS

Energy Savings Measurement and Verification Procedures

June 2006

1. The Vice President of Finance and Administration, or their designee, will be responsible for monitoring the energy savings acquired through the performance contracting program.
2. TAC, the VCCS Facilities Management Office and the Department of Mines Minerals and Energy will provide technical assistance with understanding the quarterly measurement and verification reports prepared by TAC.
3. The individual colleges will provide TAC with all applicable utility bills for that period. Along with the submittal of the energy bills, the college will also complete and attach the checklist below to certify the status of all variables that impact the energy calculations.
4. TAC will give the college and the VCCS a quarterly update on the energy use and savings for that college.
5. At the conclusion of each yearly cycle for this program, TAC will make any financial adjustments due the college, if the guaranteed savings is not realized by the college for the year.

Checklist:

- _____ Number of days in billing cycles; information on the college's energy invoices.
- _____ Changes in facility square footage
- _____ Changes in facility usage. (e.g. conversion from classroom to lab space)
- _____ Changes in facility calendar, schedule, or set points by >5% of baseline; (e.g. new night classes, extended summer)
- _____ College initiated Energy Conservation Measures; information provided by the College to TAC. (e.g. equipment replacements or behavior modification)

Background:

TAC's method for measuring and tracking savings is described in full in the contract documents for each college. A brief description of this process is described below:

In general, TAC measures savings in the following manner:

1. Establish a utility baseline, which is typically the 12 months immediately preceding construction.
2. Twelve months after construction completion, TAC subtracts the new utility bills from the *adjusted baseline* bills to obtain energy unit savings. ("*Adjusted Baseline*" represents what the energy bills would have been had TAC not implemented the project.)
3. Current utility rates are applied to the energy unit savings to obtain dollar savings.
4. TAC will acquire weather data (Cooling Degree Days, Heating Degree Days); from the National Weather Service by TAC. This information will be share with the college.

Notes:

It is important that the College inform TAC of anything that has the potential to alter energy use on the campus, whether positive or negative. The Colleges will maintain the flexibility to operate their campus as they see fit; TAC will provide impact data to help the College make more informed decisions.

TAC uses a third party software called Metrix to perform the mathematical operation for weather normalization and billing day adjustment. This represents the majority of any adjustment to the baseline. (Metrix is an approved tool compliant with the International Performance Measurement and Verification Protocol, and is industry standard.)

Other adjustments may require computer simulation or simple ratio calculations, and it is TAC's responsibility to prove to the College and the VCCS of the merit of those calculations. Any adjustment that does not seem reasonable may be contested by the College or a VCCS representative.

It is important for the College to maintain flexibility and control of their facilities as they see fit. All initial savings guarantees are based on baseline operating conditions, calendar, class and event schedules, and set points either provided by the College or observed by TAC during project development. Therefore, no adjustments will be made if no changes are made in those variables.