



Are Your Profits Evaporating?

Capturing evaporative credits

ROBERT MABRY, CPM, VICE PRESIDENT, EVAPORATION CREDIT PROGRAM, TRIDENT NETWORK

In my 2014 *Best Practices* article, “Are Your Profits Evaporating?” I outlined the benefits of a program for assisting retailers in obtaining “evaporative credits” at cooling tower sites. In this article I will explore the concept in more detail.

Evaporative credits, also known as sewer credits, are a little known financial

advantage for businesses that operate cooling towers, evaporative condensers, irrigation systems, large humidifiers or ice machines. The savings realized can fund energy projects or reduce operating costs. Equipment costs are relatively low, with return on investment (ROI) typically between 10 and 24 months. Perhaps the biggest advantage is the perpetual nature

of sewer credits. If managed properly, credits recur year after year.

Water cooled refrigeration and air conditioning systems are generally very efficient compared to air cooled equipment. There are hundreds of thousands of cooling towers and evaporative condensers in service around the world. In the United States, when cooling season begins or summer temperatures climb, water use and associated costs increase. And since most water and sewer utilities calculate sewer charges based on water consumption, sewer bills also increase dramatically.

THE BUSINESS CASE

Where allowed by local utilities, evaporative credits or sewer credits can dramatically reduce the impact of water cooled system operating costs and sewer charges. Sewer credits are often overlooked or misunderstood. Consider a business where profits are generally driven by sales. In many cases, sales volumes of \$24 to \$30 are required to produce a dollar in operating profit. So annual sewer credits of \$10,000 can create the same profit as \$240,000 to \$300,000 in sales. If sales are not growing by that amount in 10 to 24 months, sewer credits are a great option to boost operating profits.

One national retailer is realizing over \$460,000 in annual savings with sewer credits from less than 100 sites with cooling towers—equivalent to over \$11 million in sales. One cold storage warehouse reduced its sewer costs from 97 percent of water costs to just 51 percent. A grocery store in California has recovered 55



“Where allowed by local utilities, evaporative credits or sewer credits can dramatically reduce the impact of water cooled system operating costs and sewer charges.”

percent of its equipment investment in the first two months of operation.

Some cities or sewer districts allow credits, while others do not. Applications, procedures, equipment specifications, meter reading schedules and reporting requirements vary. Where credits are not currently allowed, a formal appeal may be helpful.

EQUIPMENT REQUIRED

Most utilities require from one to three sub-meters to qualify for credits—the most common configuration is two. City furnished sub-meters are common, allowing utilities to read the meters remotely with their equipment. Where customer meters are required, those should generally match

the requirements and billing units of the utility.

Some utilities will read sub-meters with an automatic meter reading (AMR) or radio-based system. Others require customers to read and report meter readings regularly. Most utilities accept email reports, some require readings be posted on their website, and a few require a special or faxed form be submitted each month.

Some customer sites have a staff member physically read and report their sub-meters. But due to the location of most sub-meters (equipment rooms, pent-houses, ceilings above other equipment), this method has become less attractive and very inefficient and can be unsafe. M2M (machine-to-machine) solutions are much more effective and reliable.

Sub-meters must generally record in the same units used by the utility, gallons or cubic feet. A conversion formula may be allowed, but the results can create confusion in the utility's billing department which often leads to billing errors.

TOTAL PROGRAM MANAGEMENT

Sewer credits produce great returns, but they may not be automatic. Most credits are calculated and posted to utility bills manually. Meter reading errors and billing errors can reduce savings from thousands of dollars per year to a trickle. One Rhode Island site received only \$401 last year until it was corrected to over \$4,000. The manager of a Florida site retired—the company lost over \$20,000 over the next 16 months.

Credits can reach further than the balance sheet. An effective evaporation credit program can also detect equipment or operational issues. In Florence, KY, makeup water volume soared during a cold spell in December 2013. The water line on the roof had frozen and burst. Early detection through daily sub-meter readings stopped the leak within three days—water savings were estimated at \$3,700. Unusually high winter volume in Arkansas uncovered a cooling tower leaking badly on the roof. Quick response stopped the



WHEN IT COMES TO
FIRE PROTECTION
...THERE'S NO ROOM FOR ERROR

- ✓ Emergency Lighting
- ✓ Fire Alarms
- ✓ Fire Extinguishers
- ✓ Fire Sprinklers
- ✓ Kitchen Fire Suppression

24/7 Fast, Reliable Service

Automated Custom Reporting

Client Web Portal

Dedicated Account Manager

Flat -Rate Price Plans

Inventory Management

Multi-Location Discounts

One Stop for All of Your Fire Protection Needs

Small and Large-Scale PM and Service Programs

Violation Abatement



(800) 773-4736 **www.academyfire.com**

2014 PRSM BEST PRACTICES—AND BEYOND



leak and prevented potential roof damage from pooling water and freezing conditions. No volume on a blow-down meter in Houston, TX uncovered blow-down filled with sand and dirt, blocking the line completely. Another zero blow-down reading in Fort Worth, uncovered a failed fill valve, putting the tower in overflow and wasting water by the hour.

LEED BENEFITS

If you're considering LEED certification for your existing buildings, metering your cooling towers can qualify for one or two LEED points. In LEED Recertification Guidance, continuous metering of water used for cooling towers with data logging can qualify for up to two LEED points.

ROADBLOCKS

Internal accounting rules can also create challenges. Sewer credits reduce operating

costs, and the savings could be applied to new energy projects or other equipment replacements. But some companies' accounting practices will not allow reductions in the utility bucket to flow into the capital equipment account. So a dollar of potential energy reductions may be locked away by internal procedures.

Network cables and equipment need not be an obstacle to starting an evaporation credit program. Wireless transmitters and encoded meter registers allow accurate, reliable data. Automatic reporting may also be possible for some utilities, but a hands-on approach is currently the best option for evaluation of the site's water volume and water flow.

SAVINGS SQUARED

If applied to other cost reduction projects, sewer credits can produce significant compound savings—call it *sewer credits*

squared. When reductions in water and sewer costs are redirected toward energy projects, savings can be realized in both categories. Couple that with additional LEED points, and compound savings are evident.

Are your profits truly evaporating? Maybe it's time to rethink your cooling tower operating costs. Check out evaporative credits—it could be much more than dollars down the drain. ●



Robert Mabry, CPM, is Vice President, Evaporation Credit Program, at Trident Network (www.trident-network.com). Trident designs equipment for commercial and industrial customers to sub-meter water, electric or gas consuming equipment frequently and remotely. For more info, please contact Robert at rmabry@trident-network.com.



Handyman
Plumbing
24/7 Emergency Service
General Maintenance
Exterior Building Services

Epoxy Coating System &
Diamond Polish
Floor Installation & Repairs
Sanding and Refinishing
and more



Consolidate your Facility Maintenance Services and **SAVE!**

Call us at: **(800) 978-0008**

WWW.ALLAMERICANMAINTENANCE.COM

Quality Maintenance Solutions since 1989

AAM is one of the first PRSM members

C15 Licensed for Flooring

2014 PRSM BEST PRACTICES—AND BEYOND