



# tbr

An Energy Savings Performance Contracting publication  
for the Tennessee Board of Regents System.

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# ESPC News

## Moving Forward with ESPC Delivery Orders

In quick succession, Energy Savings Performance Contracts (ESPCs) were advertised and awarded for MTSU and TSU followed by three system-wide awards to initiate energy projects representing investments totaling \$78 million. Through this approach, the common denominator is self-funded facilities improvement projects.

MTSU and TSU are the first TBR institutions to use this contracting method which blends traditional TBR process elements and standards with project components unique to an ESPC. As a result, each step taken has required a higher level of review to resolve the integration challenges, laying the groundwork to accomplish similar work for the other TBR institutions. From preliminary discussions to the initial proposal, numerous meetings were held between Siemens and the campuses to identify scope. This included investigating several energy cost saving measures (ECSMs) for each campus beyond the few incorporated in their first delivery orders. From the detailed energy study to the specific financial requirements in the final proposal, care was taken to adhere to the contracts. Following approval of the first delivery orders, the numerous 'next steps' are being completed with the same attention to detail, involving issues with construction documents, contracts, open book pricing, and financing, to ease the process for the TBR ESPCs that follow.

MTSU's first delivery order moves forward with absorption chiller optimization, steam valve and associated controls replacement, and lighting

improvements across the campus. Almost 15,300 light fixtures, 30,100 T-8 lamps, and 12,900 ballasts will be replaced or retrofitted in the 23 buildings addressed by the first delivery order. Some fluorescent light fixtures will be replaced by more efficient fixtures; others will be retrofitted by replacing the T-12 fluorescent lamps with energy-efficient T-8s and replacing the magnetic ballasts (containing PCBs) with more efficient electronic ballasts. Nearly 1,500 compact fluorescent screw-ins will replace existing incandescent bulbs, and about 490 incandescent exit signs will be replaced with more efficient LED exit signs. Lighting improvements alone will account for about \$201,000 in savings per year.

TSU's first delivery order includes lighting improvements, steam line improvements, and water conservation. In the Gentry Center, there will be an appreciable savings of over \$1,600 annually after 64 toilets are retrofitted with water limiting devices. Replacement of electric condensate pumps with steam driven pumps along with replacement of 283 steam traps on campus, both in mechanical rooms and in distribution tunnels, will account for annual savings of about \$101,400. This will also reset the service life of all traps and standardize the trap manufacturer for replacement parts and support. A full complement of steam trap replacement kits will go with the project to ensure that the service life of the traps exceeds the length of the performance

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## System-wide updates



### Region 1 - West

The University of Memphis  
 Dyersburg State CC  
 Jackson State CC  
 Southwest Tenn. CC  
 TTC Covington  
 TTC Crump  
 TTC Dickson  
 TTC Jackson  
 TTC McKenzie  
 TTC Memphis  
 TTC Newbern  
 TTC Paris  
 TTC Ripley  
 TTC Whiteville

After many meetings with the university and community colleges and introductory meetings at two tech centers, the processes essential to assess and prioritize energy conservation opportunities are underway. Team members, including central plant and facility oversight, operations, and maintenance personnel and ESG energy engineers, are becoming familiar with one another and establishing a comfort level for a long-term, positive working relationship.

In mid-August, a team of ESG engineers will meet with Jim Hellums and his staff at the University of Memphis to review three major energy projects considered high-priority opportunities. During that same time frame, a second ESG team will begin an energy audit at Dyersburg State. In addition, requests for utility bills, consumption, rates, and supplementary data are underway for the other facilities, with site visits planned to decide the priority and schedule for energy audits to follow.

ESG has received a warm reception and excellent cooperation from each of the institutions and looks forward to working with them.

-Ray Hinson



### Region 2 - Middle

Austin Peay State University  
 Tennessee Tech University  
 Columbia State CC  
 Motlow State CC  
 Nashville State Tech CC  
 Volunteer State CC  
 TTC Hartsville  
 TTC Hohenwald  
 TTC Livingston  
 TTC McMinnville  
 TTC Murfreesboro  
 TTC Nashville  
 TTC Pulaski  
 TTC Shelbyville

Siemens has begun developing initial proposals at several campuses in the Middle Region. Presently, we are accumulating and evaluating pertinent utility and facility information at Austin Peay and the following community colleges: Nashville State, Motlow State, Columbia State, and Volunteer State. The Siemens Performance Solutions Team hopes to begin site surveys on these campuses within the next few weeks. We have also taken a cursory look and are making progress towards initial proposals at the tech centers in Murfreesboro and Shelbyville.

At Tennessee Tech we have quickly moved forward with the assistance of Larry Wheaton and his staff and will be submitting an initial proposal focusing on improvements to the central chilled water system in August 2003.

Siemens appreciates the cooperation from each campus and looks forward to continued involvement with campus personnel. Our goal is for each to receive the attention and detail necessary to gain optimal value from its ESPC.

-Kirk Whittington



### Region 3 - East

East Tenn. State University  
 Chattanooga State Tech CC  
 Cleveland State CC  
 Northeast State Tech CC  
 Pellissippi State Tech CC  
 Roane State CC  
 Walters State CC  
 TTC Athens  
 TTC Crossville  
 TTC Elizabethton  
 TTC Harriman  
 TTC Jacksboro  
 TTC Knoxville  
 TTC Morristown  
 TTC Oneida/Huntsville

Initial kick off meetings with the university, community colleges, and one tech center to introduce Ameresco Enertech, educate member institutions on the ESPC process, and get a 'feel' for the unique needs and the potential energy savings opportunities on each campus have been held. Each went well and enthusiasm for the ESPC project is high!

As a result, Ameresco Enertech has developed and recommended an approach sequence for the site survey process, starting in late June with ETSU, Pellissippi State, and Roane State and followed by Walters State, Chattanooga State, and Cleveland State in late fall.

The initial proposals for Pellissippi State and Roane State are planned for this fall with ETSU anticipated the first of next year. Currently, Ameresco Enertech team members are busy gathering data, walking facilities, and evaluating facility operations, seeking a variety of ways to help member institutions reduce energy consumption and improve facility operation. We want to thank everyone involved for their support and contribution.

- Stewart Shunk

# What's next? The Initial Proposal!

After initial kick-off meetings and site surveys to identify areas of potential savings, the next step specified in the RFP Delivery Order Process (DOP) under "Delivery Order Development Requirements" is the Initial Proposal or IP\*.

An IP provides the following elements that the ESCo must submit to the State of Tennessee for a project to move forward:

- A summary of the potential scope of work
- A list of energy cost saving measures (ECSMs)
- An estimate of cost saving
- An estimate of the project cost
- A subcontracting plan
- A preliminary project schedule

Potential improvements scoped in the IP must include a summary of their benefits: technologies, costs, savings, and impacts. Each may involve repair, replacement, or upgrades to existing equipment that afford better reliability and/or improve comfort for the occupants.

ECSMs can involve buildings or building systems, lighting upgrades, replacement of worn-out equipment, or other ideas to ease the sting of increasing energy costs.

From information presented in the IP, savings opportunities are identified; project priorities are evaluated and determined; and the ESPC, following approval and issuance of an acceptance letter from the State, can move on to the next step.

The next step? The DES—the detailed energy study. More about it later.

*\*Reference Tab 2, Delivery Order Performance Specifications, Section III of the System-wide RFP.*



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### √ MTSU Activity Report

On June 23, 2003, the SBC Executive Subcommittee approved the first delivery order (DO#1) for MTSU. The Tennessee State Bond Authority approved the bond fund request on August 21, 2003, and the design and construction documents phase for DO#1 has begun and includes:

- Lighting improvements in 23 buildings
  - Higher efficiency lamps
  - Electronic ballasts
  - Lighting controls
  - Delamping where appropriate
- Central Plant chiller optimization
- Heating System Retrofit – one building
  - Steam valve and associated controls

Siemens DO#1 Economics for MTSU

- Estimated project cost: \$1,630,000
- Annual savings: \$220,000

### √ TSU Activity Report

On July 21, 2003, the SBC Executive Subcommittee approved the first delivery order (DO#1) for TSU. With approval of the bond fund request for DO#1 on August 2, 2003, by the Tennessee State School Bond Authority, the design and construction documents phase for DO# has begun and includes:

- Lighting improvements in 23 buildings
  - Higher efficiency lamps
  - Electronic ballasts
  - Lighting controls
  - De-lamping where appropriate
- Water Conservation—Gentry Center
  - Water-saving insert kits in 95% of toilets
- Condensate Return Upgrades
  - Steam trap replacement across campus
  - Standardization of units and technology
  - Condensate pump replacement

Siemens DO#1 Economics for TSU

- Estimated project cost: \$2,400,000
- Annual savings: \$285,567

Continued from page 1

contract. Lighting improvements provide the remainder of the savings.

The development and processes used at MTSU and TSU in their first delivery orders have set a standard for the other TBR institutions, enhancing the ability of subsequent delivery orders to move forward quickly.

## Get plugged in to what's happening!



Find current and past issues of ESPC News online  
at [www.mtsu.edu/~cee/espc\\_news.htm](http://www.mtsu.edu/~cee/espc_news.htm)



Campus/ESCo kickoff meetings and site visits are ongoing.

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