EmPower TN
An Energy Savings Initiative
Application Workshop
June 8-11, 2015
Agenda

• What is EmPower TN
• Guest Speakers: Similar Projects and Demonstrated Success
• Application Process
• Application 1x1 assistance
The State of Tennessee pays an estimated $192.5M annually in utility bills. Significant savings could be achieved with a disciplined focus on energy management, energy efficiency and conservation across all state energy users.

The state has the opportunity to reduce utility spending by 28% or more over the next 8 years.
EmPower TN is Gov. Haslam’s enterprise-wide initiative that will:

• Reduce energy costs and consumption across state owned and managed buildings by:
  – measuring and controlling energy use,
  – investing in increasing energy efficiency and renewable energy generation, and
  – creating an operational environment of excellence.

• Promote energy cost savings across the state through conservation and efficiency in local government and the private sector.
EmPower TN: Projected Cumulative Utility Cost Avoidance

$1B Savings from initial $200M investment with cumulative savings reinvested years 5-8

Cumulative savings years 2-4 reinvested for self sustaining program

Energy savings based on 3% EE and 1% operational yielding 4% total renewable production based on 9-to-67MW solar at $0.12/kWh avoided and flat utility rates. Benefit values will be reduced by bond debt repayment.
EmPower TN Management System

Bill Haslam
Governor

Steering Committee
- State Chief Operating Officer
- Customer Focused Government
- The University of Tennessee
- Tennessee Board of Regents
- Department of Finance & Administration
- Department of General Services
- Tennessee Department of Environment & Conservation

Advisory Council
To be made up of public and private sector experts.

Task Force
Includes members from: UT, TBR, DGS, TDEC, F&A, Corrections & Military
EmPower TN Task Force Members

- **Executive Director, Acting**: Robert Balzar
- **The University of Tennessee**: John Sealy and Robbi Stivers
- **Tennessee Board of Regents**: Dick Tracy and Keith King
- **Department of Environment and Conservation**: Molly Cripps, Tom Eck and Lori Munkeboe
- **Department of General Services**: Reen Baskin, Jay Harrison and John Hull
- **Department of Correction**: Roger Shaw, Chris Haley and Ken Scalf
- **Department of Military**: Col. Brad Bishop and Joe Simon
- **Financial and Administration**: Mike Morrow and John Webb
Utility costs lowered by 4% (about $8M) for next fiscal year

$5M Renewable Energy Program
Approx. 2,500 KW

$32.5M Energy Efficiency and Conservation Projects

$4.14M Utility Bills Automation and Collection

$2.07M Data to Automation System

Identify Energy Efficiency and Conservation Projects

Decision making protocol dashboard and metrics

Begin behind the meter renewable energy program

State Enterprise Wide Utility Data Mgmt. System

Note 1---may be limited to “Capital Maintenance” work due to budgeted category
FY 2016 Budget

2016 Budget

• $2.1M Data Management System
• $4.1M Data Acquisition support
• $32.5M Energy Efficiency Improvements
  o General Government – all agencies including UT and TBR
  o General Obligation Bonds
  o Capital Maintenance definitions apply¹
• $5M Energy Efficiency and Renewable Energy
  o Cash FRF projects only
  o Capital maintenance definitions apply¹

Note 1---may be limited to “Capital Maintenance” work due to budgeted category

¹Capital Maintenance definitions apply due to budgeted category.
Enterprise Data & Energy Management

1. Enterprise Utility Invoice Data Collection
   a. Enterprise Utility Invoice Data Collection
   b. Enterprise Utility Data Management Software
   c. Enterprise Energy Management Software
   d. Internal Dashboard
   e. Public Dashboard

2. ZigBee Control Network & Integration
   a. Building Utility Metering Data
   b. Lighting Control Infrastructure
   c. HVAC Unitary Equipment Control

3. Building Automation System Control Integration
   a. Utility Meter Data
   b. FDD Monitoring Infrastructure
   c. FDD Data Integration

4. Fault Detection & Diagnostics (FDD) Control Integration

5. Energy Conservation Training & Tenant Awareness

Note:
State owns all utility data and data management software throughout the process.
Tentative Implementation Schedule

- June - RFP to be finalized with CPO and OIR
- Mid July - SBC RFP review/approval
- Late July - RFP issued
- September - Bids due
- Fall - Award and Contracting
- Winter - Final recommendation and contract
- Early 2016 - Project discovery and implementation begins
Guest Speakers

• Murfreesboro--
  • Reid Conway—Sr. Energy Services Advisor, TDEC
  • Joe Whitefield—Assistant Vice President of Facilities--MTSU

• Jackson----
  • Reid Conway—Sr. Energy Services Advisor, TDEC
  • Paul Cross—Executive Director Energy Efficiency School Initiative

• Memphis
  • Reid Conway—Sr. Energy Services Advisor, TDEC
  • Paul Cross—Executive Director Energy Efficiency School Initiative
The Situation:

- Agencies paid their utility bills with no questions asked.
- Energy was not viewed as a Manageable Expense.
- Usage was rising and so were costs and NC was in a budget crunch.
- In 2002 NC spent $213 million on energy and water.
The Solution:

• Then Governor Michael F. Easley sent a memorandum to the Council of State
• With a commission to promote Government Efficiency and Savings on State Spending, including energy, was created
• NC State Energy Office was tapped to guide agencies and administer the program
State of North Carolina Public Buildings
Energy Efficiency Program

The Solution -- General Statue § 143-64.10-17 2007

• **All State Buildings**
  - 20% reduction in BTU/sqft by 2010 from 2002-03 baseline
  - 30% reduction in BTU/sqft by 2015 from 2002-03 baseline

• **New State Buildings**
  - 30% better than ASHRAE 90.1 2004 edition
  - Major renovations 20% better
  - Commissioning required
  - Life cycle cost analysis required
  - Meter each utility in each building

• **All State Agencies and UNC System Institutions Annually**
  - Report utility consumption and cost
  - Submit updated Strategic Energy Plan

• **All 58 Community Colleges**
  - Report annual utility consumption and cost
The Solution:

- NC created a lead by example program for state agencies and universities
- Program encompasses
  - Facilities staff
  - Operations staff
  - Employees
  - Faculty and students
The Solution:

- Program is comprehensive and focuses on
  - Utility accounting
  - Reviewing and tracking monthly utility bills
  - Resolution of billing errors
  - Negotiation and optimization of rates
  - Operations and maintenance
  - Facility assessments and audits
  - Identification of possible projects
  - Education, outreach, and training
The Solution:

• Creation of a technical assistance team to educate staff and assist with the management of utility consumption and costs
• The team must to be able to go to the participant to provide assistance
• Performance Contracting and a $500,000,000 revolving cap.
State of North Carolina Public Buildings
Energy Efficiency Program

Where is NC now?

• NC has **avoided** over **$900 million dollars** in additional utility costs
• NC has reduced BTUs/sqft by **29%**
• Square footage has increased **89%** to 135,000,000 from 71,500,000
• Cost of energy is up **51%** water is up **212%**
• NC spent $371,000,000 on utilities 2013-2014
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TVA’s EnergyRight Solutions for Business---
Energy Efficiency Schools Initiative

Paul Cross--- Executive Director

State of Tennessee
Energy Efficiency Schools Initiative
EmPower TN Application Process
• Week of June 8-11: 5 Application Workshops; website launch; applications available
• July 24: Application deadline
• July 27- Aug 31: Applications scored, Task Force review
• Fall 2015: Project selection; Steering Committee review; and project awards
• Applications packets now available: www.tn.gov/empowertn

• Application forms must be signed by agency officer

• Submit to: empower.applications@tn.gov
  – Describe project, costs, energy savings, avoided utility costs and schedule - follow application manual
  – Complete Facility Assessment Form - more detail is better
  – Know your assigned point of contact
Project Prioritization Criteria

• Initial Criteria (“Go/No Go Gates”)
  – Building/facility life expectancy
  – Completion of a facility assessment
  – Trained staff or employee base for the measures installed

• Primary (100 points with potential bonus scoring up to total 120)
  – Cost effectiveness (Year Payback/ROI - up to 30 points)
  – Total energy saved over lifetime (up to 25 points)
  – Solve deferred maintenance backlog (up to 15 points)
  – Technology advancement (up to 15 points)
  – Additional sources of funding (match or leveraged—up to 15 points)

• Scorers Bonus (up to 20 points based on “scorers” discretion)
Summary

• Molly Cripps, Director Office of Energy Projects, TDEC

• Visit www.tn.gov/empowertn
• Download the application today
• Submit completed application and supporting documents to: empower.applications@tn.gov by July 24th
• Contact Bob Balzar, Acting Executive Director with program inquiries: Bob.Balzar@tn.gov
  615.253.7816
Questions?