



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



EmPower TN: The Opportunity

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.

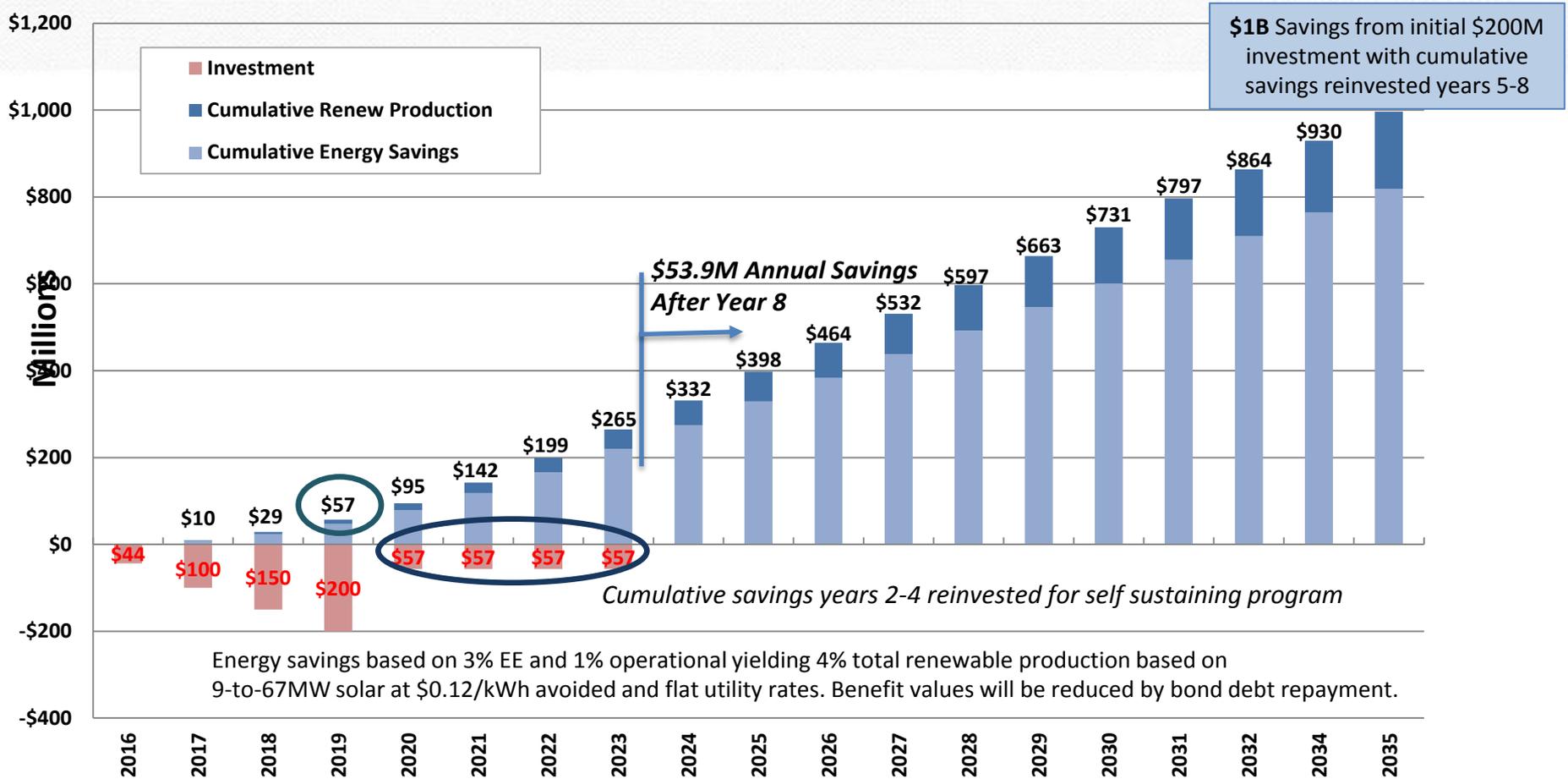
The state has the opportunity to **reduce utility spending by 28% or more over the next 8 years.**

What is EmPower TN?

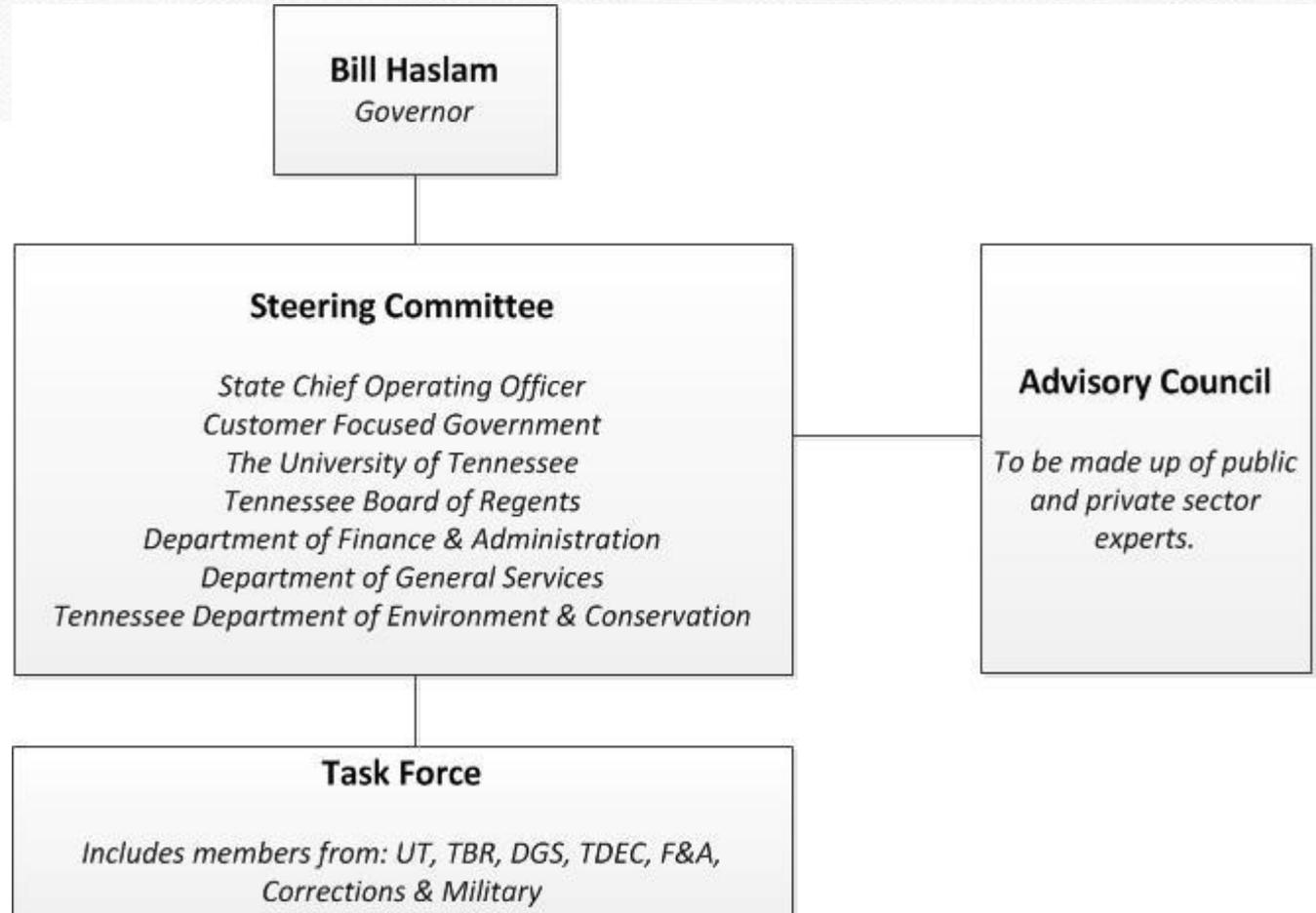
- EmPower TN is Gov. Haslam's enterprise-wide initiative that will:
- Reduce energy costs and consumption across state owned and managed buildings by:
 - measuring and controlling energy use,
 - investing in increasing energy efficiency and renewable energy generation, and
 - creating an operational 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



EmPower TN Management System





EmPower TN Task Force Members

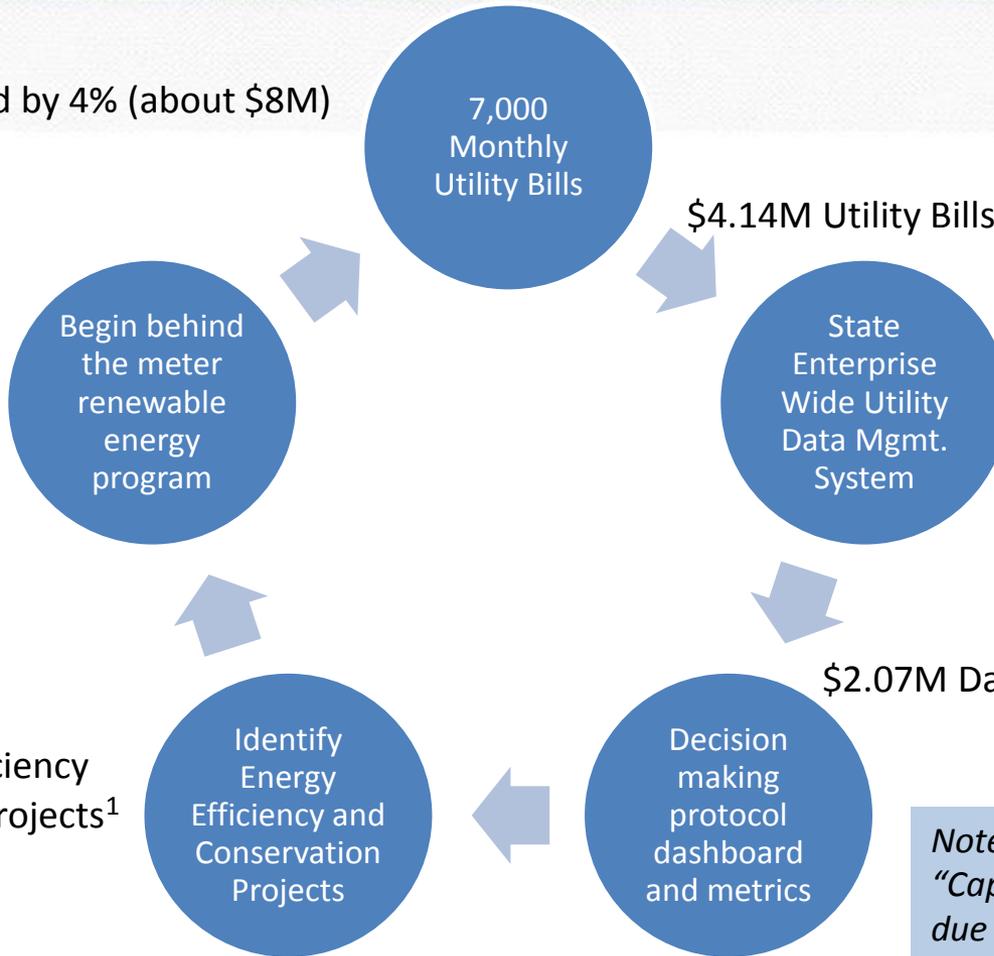
- **Executive Director, Acting:** Robert Balzar
- **The University of Tennessee:** John Sealy and Robbi Stivers
- **Tennessee Board of Regents:** Dick Tracy and Keith King
- **Department of Environment and Conservation:** Molly Cripps, Tom Eck and Lori Munkeboe
- **Department of General Services:** Reen 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

EmPower TN Budget & Value Flow

Utility costs lowered by 4% (about \$8M) for next fiscal year

\$5M Renewable Energy Program
Approx. 2,500 KW¹

\$32.5M Energy Efficiency and Conservation Projects¹



\$4.14M Utility Bills Automation and Collection

\$2.07M Data to Automation System

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

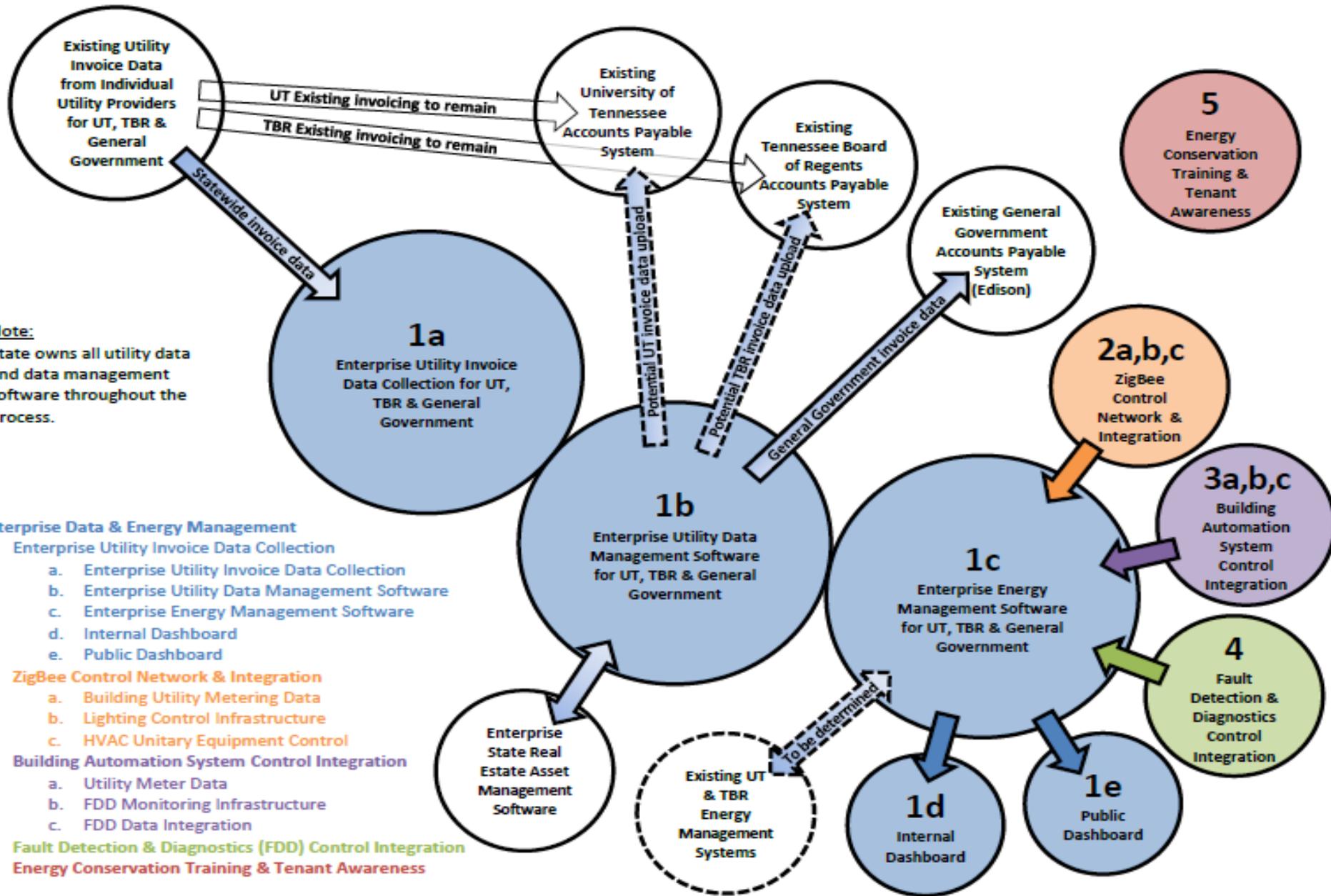


FY 2016 Budget

2016 Budget

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

*Note 1---may be limited to
"Capital Maintenance" work
due to budgeted category*



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

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



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



Department of
**Environment &
Conservation**

State of North Carolina Public Buildings Energy Efficiency Program



State of North Carolina Public Buildings Energy Efficiency Program

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



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State of North Carolina Public Buildings Energy Efficiency Program

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



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State of North Carolina Public Buildings Energy Efficiency Program

The Solution -- General Statute § 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



State of North Carolina Public Buildings Energy Efficiency Program

The Solution:

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



State of North Carolina Public Buildings Energy Efficiency Program

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



State of North Carolina Public Buildings Energy Efficiency Program

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.



Where is NC now?

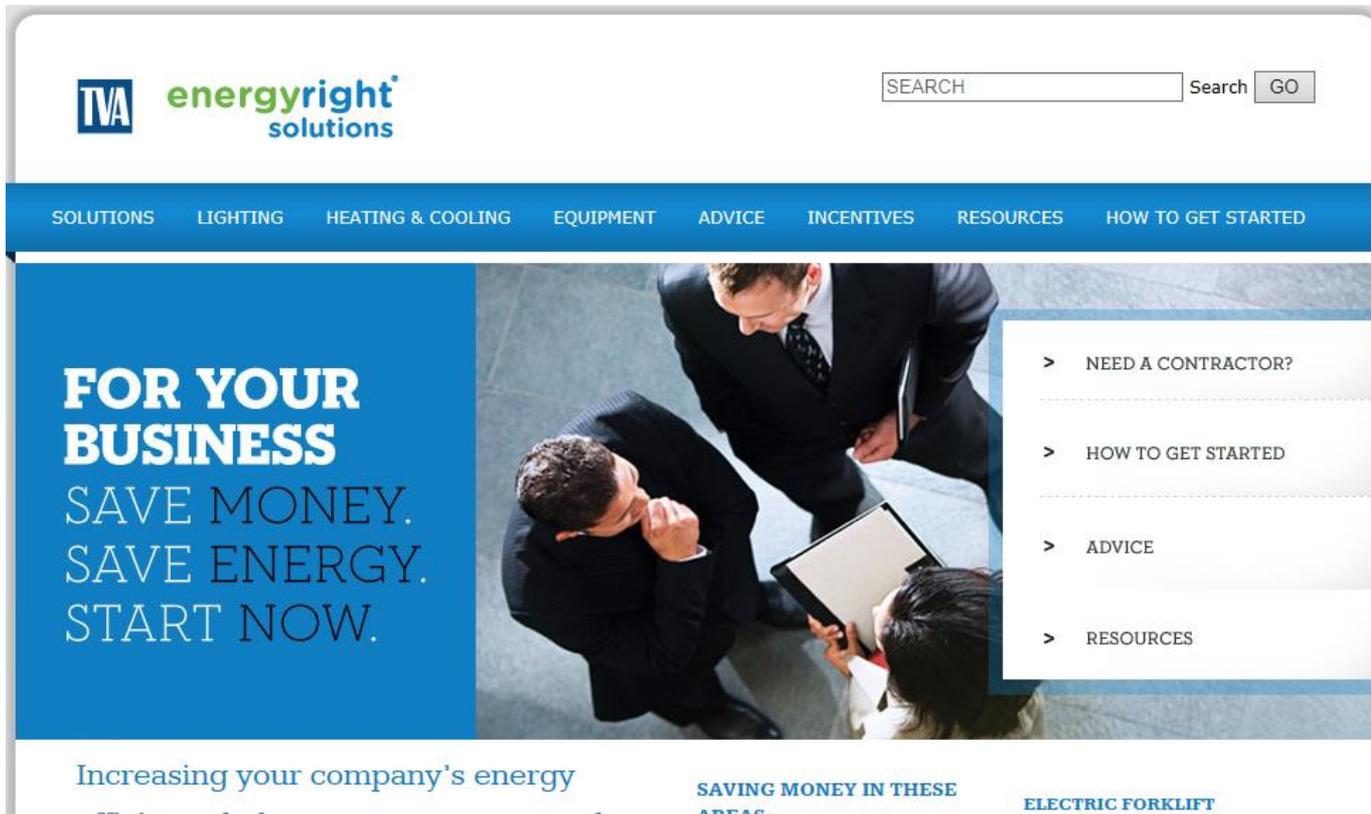
- NC has **avoided** over **\$900 million dollars** in additional utility costs
- NC has reduced BTUs/sqft by **29%**
- Square footage has increased **89%** to 135,000,000 from 71,500,000
- Cost of energy is up **51%** water is up **212%**
- NC spent \$371,000,000 on utilities 2013-2014



State of North Carolina Public Buildings Energy Efficiency Program

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TVA's EnergyRight Solutions for Business---



The screenshot shows the TVA EnergyRight Solutions website interface. At the top left is the TVA logo and the text "energyright solutions". To the right is a search bar with the text "SEARCH" and a "GO" button. Below this is a blue navigation bar with the following menu items: SOLUTIONS, LIGHTING, HEATING & COOLING, EQUIPMENT, ADVICE, INCENTIVES, RESOURCES, and HOW TO GET STARTED. The main content area features a large blue box on the left with the text "FOR YOUR BUSINESS SAVE MONEY. SAVE ENERGY. START NOW." To the right of this box is a photograph of three business professionals in a meeting, looking at a tablet. Further right is a white sidebar with a list of links: > NEED A CONTRACTOR?, > HOW TO GET STARTED, > ADVICE, and > RESOURCES. At the bottom of the page, there are three columns of text: "Increasing your company's energy", "SAVING MONEY IN THESE AREAS.", and "ELECTRIC FORKLIFT".



Energy Efficiency Schools Initiative

Paul Cross--- Executive Director

State of Tennessee

Energy Efficiency Schools Initiative



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EmPower TN Application Process



Project Application Schedule/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

Project Applications

- 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



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Questions?