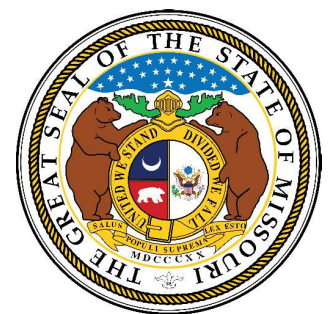# Enterprise Smart Energy Management Platform for State Portfolio

Smarter, Efficient and Sustainable
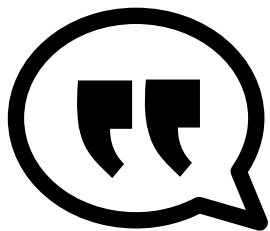
Executive Summary

In 2007, the State realized that there was an opportunity to consolidate the management of a large number of facilities under the Office of Administration Facilities Management, Design & Construction (OA-FMDC). At the time, there wasn't a system that could collect this information under a single pane of glass.

Talisen teamed up with multiple companies to provide its Enterprise Sustainability Platform (ESP) to aggregate the information needed to advise the Office of Administration's director facing this new challenge. Talisen provided a framework to diagnose the problem, create a plan, and measure and verify improvements. As a result, the State's total energy consumption has decreased by 31% since 2008.

Challenge

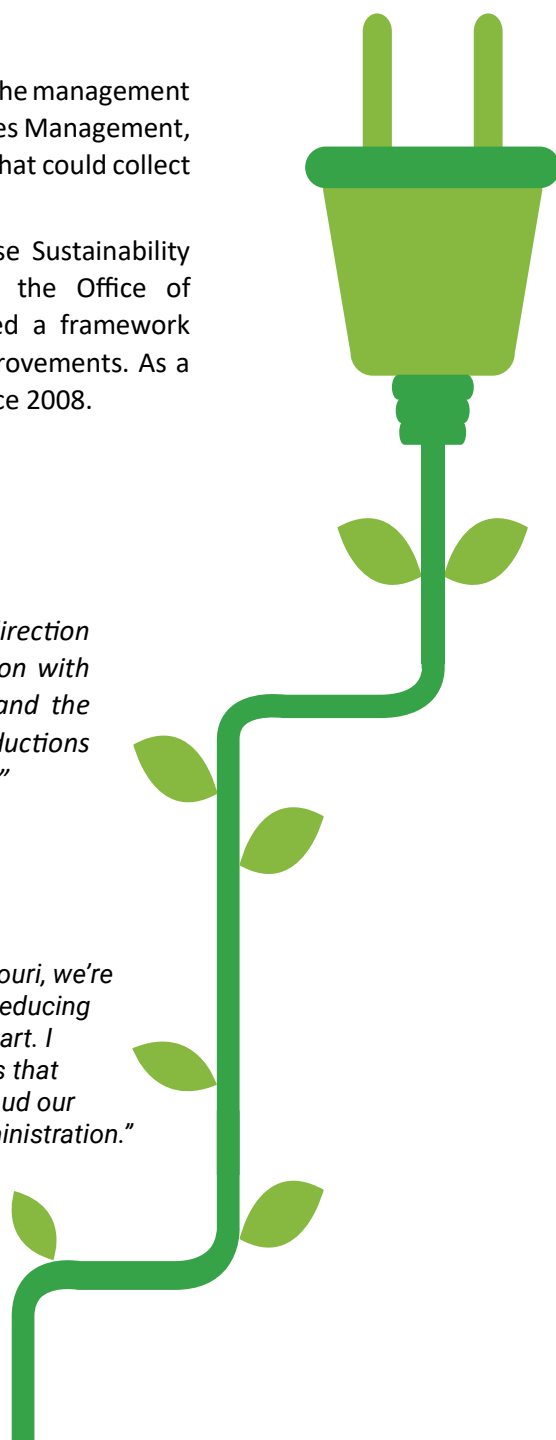Comply with Missouri Governor Jay Nixon's Executive Order 09-18:

"All state agencies whose building management falls under the direction of the Office of Administration shall institute policies in consultation with the Division of Facilities Management, Design and Construction and the Department of Natural Resources' Energy Center that will result in reductions of energy consumption by 2% per year for each of the next 10 years."

Client Testimonial

"Just like families and businesses across Missouri, we're finding innovative ways to stretch dollars, and reducing our energy consumption is a natural place to start. I appreciate the hard work of all the departments that contributed to this effort, and I especially applaud our energy-efficiency team within the Office of Administration."

- Jay Nixon, former Missouri Governor

SMART ENERGY SOLUTIONS

Talisen implemented its long-proven software and gateway ESP platform to power Missouri's Global Access Facilities Portal which provides secure, role-based, single-sign-on access to the Office of Administration's portfolio.

The platform provides a connection to a common facilities communications infrastructure, an enterprise energy management solution, a utility bill management platform and integration with a state-wide Computer-Aided Facilities Management system (CAFM). This enables web-based access to data from BAS, energy and utility data, internal back-office systems, meters, sensors, maintenance records and operational data.

1 ENERGY MANAGEMENT SYSTEM: Talisen's Enterprise Sustainability Platform (ESP) is an Internet-based technology that consolidates the data used to manage large portfolios of buildings. The capacity and scale of Missouri's ESP is currently unmatched by any other state.

- Securely merge facility's data from multiple sources into customizable dashboards.
- Minimize energy, maintenance and operational costs within the organization.
- Access, collect, normalize, analyze and verify data from a variety of facilities equipment makers and applications.

66,000,000+
Total avoided energy costs ($) cumulated since 2008

22,700,000+
Total square feet (480+ buildings) monitored by ESP

150,000+
Number of utility bills ESP is collecting and verifying from 1,300 utility accounts

103,400+
Number of data points ESP is collecting information from in 15-minute intervals

15
Number of different BAS vendors integrated into ESP

1
Single, data warehouse with visibility into the operations and processes across the Office of Administration's portfolio

2

FACILITY INFORMATION MANAGEMENT SYSTEM: Talisen consolidated Missouri's diverse facility management systems into a single maintenance management database – the ARCHIBUS CAFM system.

198,000

Major equipment assets and parts identified and loaded

1,000+

State employees and authorized workers trained across the state

146

Individual maintenance management systems converted into one database

24/7

Engineering support provided

3

BRIDGING IT AND OT: Talisen, Missouri's IT Services Division and the Division of Facilities Management, Design & Construction worked together to solve IT/Facilities Management convergence issues and to create a best-of-breed communication network.

- Flexible system using the State's current network, linking all facilities data together through **Talisen's Global Access Facilities Portal**.
- Enterprise network to manage massive amounts of data across departments and maintain necessary security and flexibility.
- Talisen's software engineering and network integration professionals ensured that real-time, accurate and secure data is delivered to the appropriate energy, utility and facilities software applications.
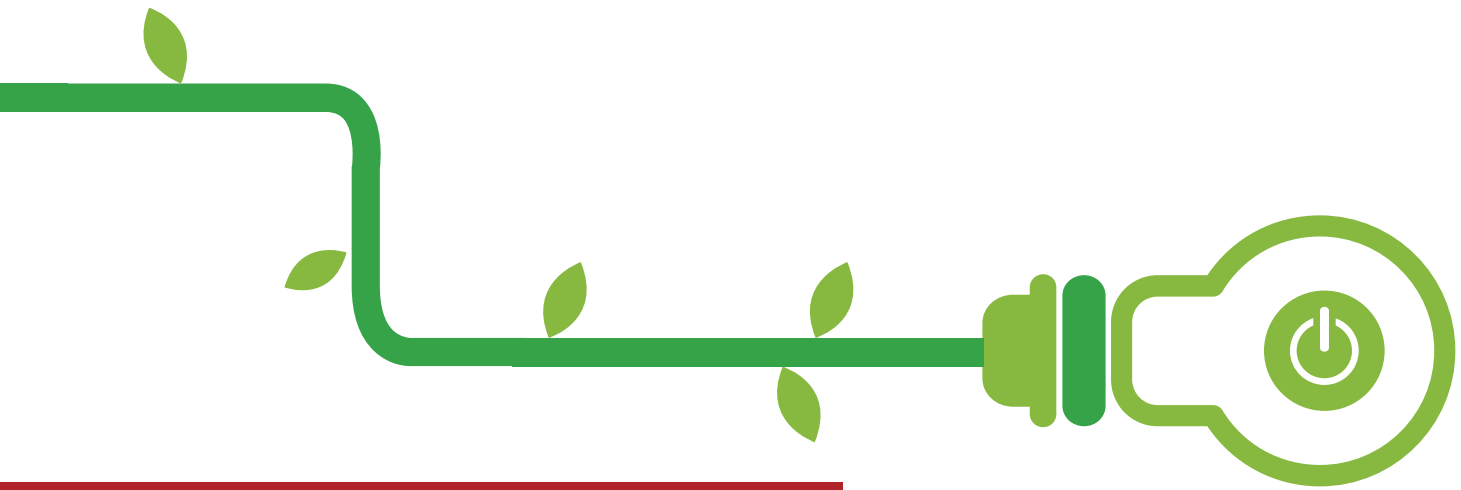
The Results

With the Global Access Facilities Portal, in just **2 years** the State exceeded the Governor's Executive Order (a 20% reduction in energy usage over a 10-year period).

The State has visibility into building performance for the Office of Administration's portfolio and has tracking capabilities for energy consumption and avoided costs. The 2017 total energy usage is **30.60% lower** than the 2008 baseline with an average annual reduction of 3.40%.

Along with these reductions in energy usage, comes a corresponding reduction carbon dioxide emissions of 241,852,478 lbs (120,926 U.S. tons)!
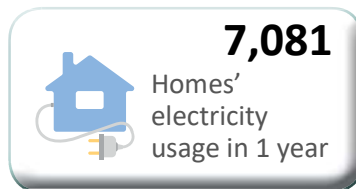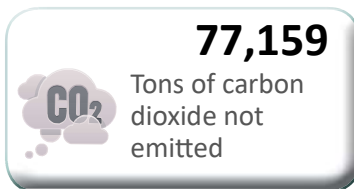
Energy Analysis

ELECTRICITY CONSUMPTION

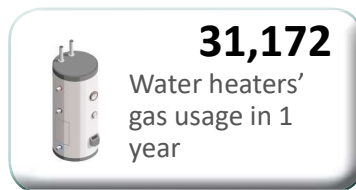Down **24.28%** (87,781,456 kWh) compared to 2008 baseline, which is equivalent to:

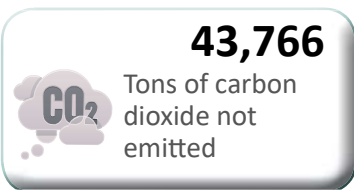| **77,159** Tons of carbon dioxide not emitted	**7,081** Homes' electricity usage in 1 year	**10,782** Tons of coal not burned in 1 year
	(Based on carbon dioxide emissions)	*(Based on carbon dioxide emissions)*

GAS CONSUMPTION

Down **40.66%** (748,134 MMBtu) compared to 2008 baseline, which is equivalent to:

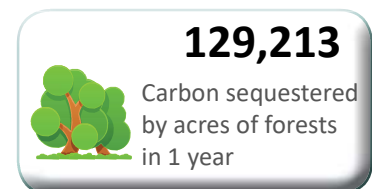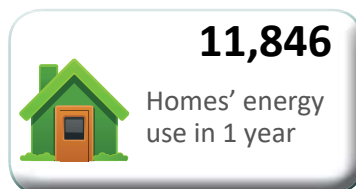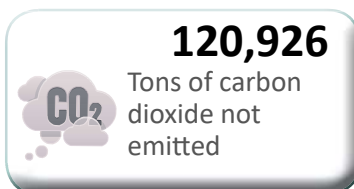| **43,766** Tons of carbon dioxide not emitted	**31,172** Water heaters' gas usage in 1 year	**91,923** Barrels of oil not consumed in 1 year
	(Based on carbon dioxide emissions)	*(Based on carbon dioxide emissions)*

TOTAL ENERGY CONSUMPTION

Down **30.60%** (946,926 MMBtu) compared to 2008 baseline, which is equivalent to:

"Total Energy" includes: electricity, natural gas, propane and other fuels.

120,926 Tons of carbon dioxide not emitted	**11,846** Homes' energy use in 1 year	**129,213** Carbon sequestered by acres of forests in 1 year
	(Based on carbon dioxide emissions)	*(Based on carbon dioxide emissions)*

Source: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator; http://eia.gov

CASE STUDY

Talisen Technologies, Inc. was founded in 1991 and is a privately owned business that empowers organizations to achieve their goals through strategic enterprise-wide solutions. Headquartered in St. Louis, Missouri, Talisen is a certified Minority Business Enterprise (MBE) and an SBA Small Disadvantaged Business (SDB) and houses a Class-A Network Operations Center. Talisen has been providing expertise in energy efficiency management, facility management and aerospace and defense supply chain integration for over a decade.

Talisen currently provides ESP software and services to seventeen (17) major clients across the United States and the United Arab Emirates. With its data analytic capabilities, utility bill management tools, and fault detection and diagnosis engine, ESP provides users the ability to: monitor utility usage and cost information, establish baseline facility performance, provide automated data analysis, and perform Measurement and Verification (M&V) for tracking energy conservation measures.

To learn more about Talisen, please visit our website at http://www.talisentech.com.

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CASE STUDY