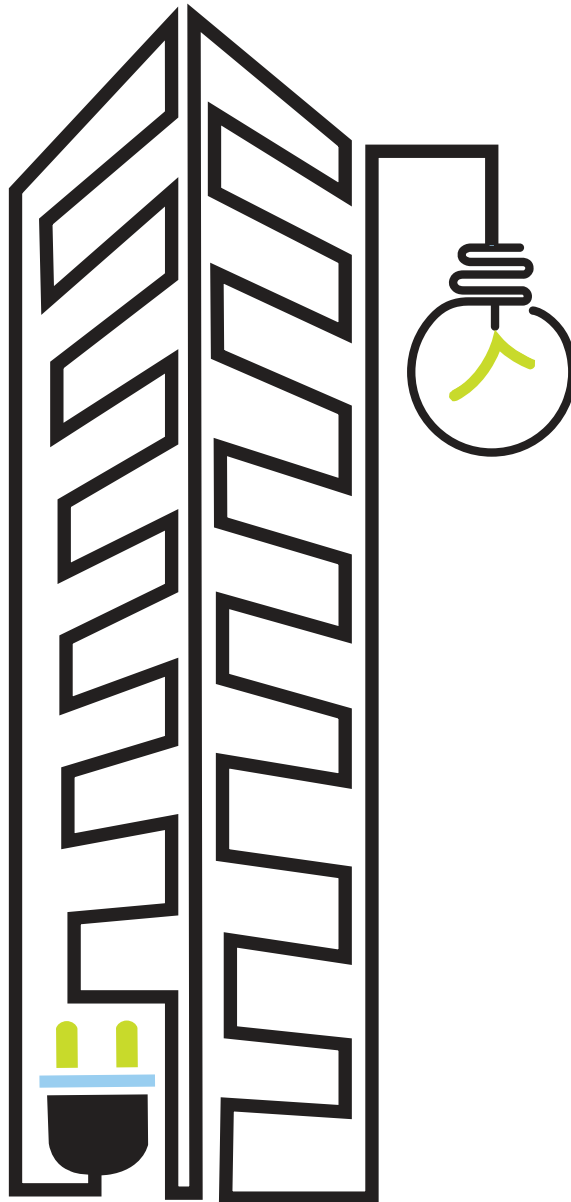


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# SWITCH TO RESULTS IN COMMERCIAL BUILDINGS

EcoEnergy's services for Commercial Buildings  
to monitor, manage & reduce energy consumption.



**E**nergy is one of the fastest growing operating costs in the Commercial Buildings space. Based on the Annual Energy Outlook 2014 report by U.S. Energy Information Administration (EIA), the second largest increase in total primary energy use projected from 2012 to 2014 was in the commercial sector, which meant an increase in cost of electricity. This translated to an increase in energy use by 0.6% per year as annual growth in commercial floor space averaged 1.0%. Lighting and cooling load constituted more than 50% of total energy consumption.

An energy management approach to control and streamline energy consumption has become imperative to keep the bottom line in check. Also, the benefits are not just limited to improving the bottom line and increasing competitiveness, but also enabling a building to capitalize on its efforts to build reputation as a green property.

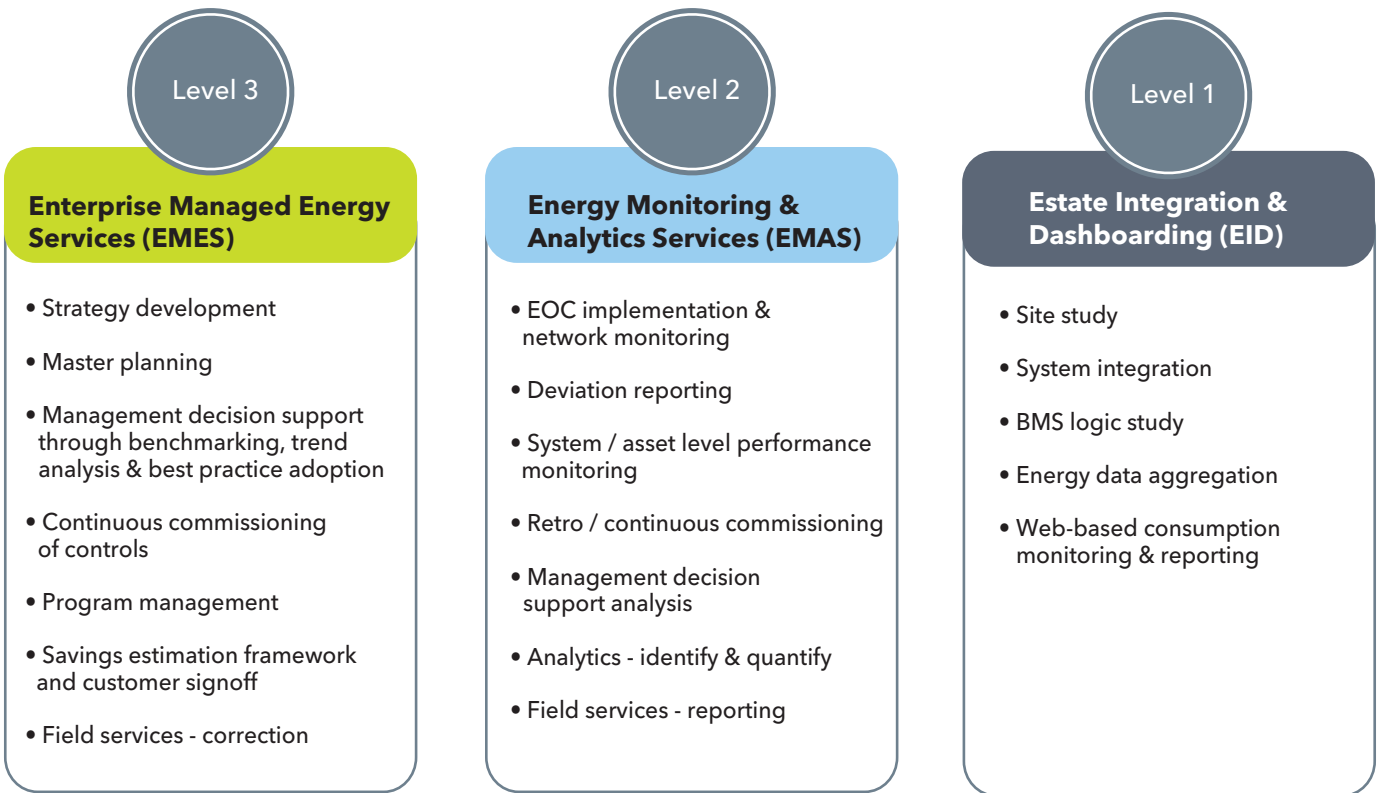
EcoEnergy's Energy Management Services (EMS) for the commercial sector has been designed to help address these challenges and continuously deliver sustained savings during the engagement period - normally 5 to 7 years.

The savings are generated primarily through operational control - Policy and Control Strategies, Deviation Management, Benchmarking, Long Range Analytics, etc. The program is anchored on deep domain understanding and the constraints of building operations such as 5 to 7 days per week operations, the need to cater to comfort requirements of occupants (lighting, temperature levels, ventilation, etc.) throughout the operating hours, running energy systems irrespective of demand, etc.

We understand that the success of an energy efficiency program is dependent on close cooperation between all stakeholders. EcoEnergy brings together its best practices in governance, program management and delivery assurance to ensure seamless execution of the overall program.

# Service Offering for Commercial Buildings

Based on the needs of our clients and their existing maturity levels of metering and BMS, we offer services for commercial buildings at 3 different levels.



## Level 1: Estate Integration & Dashboarding (EID)

As part of Level 1 services, integration of Building Management System (BMS), meters and sub-meters, and other business systems is done to collect site data on our Energy Management Platform - a centralized technology suite that receives, manages and mines the data collected from the individual sites. The platform runs rules / algorithms to identify multiple Service Consumption Areas (SCA) levels. Schedules and policies are defined for every SCA as per building codes and operational demands based on the unique Service Window™ framework. It provides standard as well as customized reports at property, group and corporate levels on a near real-time basis. Reports are classified as Engineering, Management & Enterprise level reports.

The platform is scalable in terms of number of facilities. It generates site-level and enterprise-level reports for MIS and analytics and is accessible to users through an intuitive interface.

**Figure 1: Snapshot of WEM Application Showing Energy Consumption by Type**



**Figure 2: Snapshot of WEM Application Showing Energy Consumption Profile**



## Level 2: Energy Monitoring & Analytics Services (EMAS)

This level builds on the integration done at Level 1 and focuses on driving energy efficiency in buildings by using a centralized Energy Operations Center (EOC) and real-time monitoring & control of infrastructure through the platform. As a part of this framework, we deliver energy monitoring & management by ensuring your major assets are run as per the most optimized schedule & set-points, detecting & reducing energy leaks. The EOC helps sustain the identified savings and commission new saving strategies remotely, by working closely with facility management teams / site engineering teams by way of the following interventions:

- Identifying energy savings opportunities
- Tracking performance of the implemented saving strategies
- Analyzing control malfunctioning alerts
- Analyzing energy consumption patterns and performance data
- Analyzing policies deployed across sites

## Level 3: Enterprise Managed Energy Services (EMES)

At this level, we take complete ownership of continuously delivering sustained savings during the engagement period which is over 5-7 years, which involves working closely at a strategic level with the client-side sponsors. Some of the key aspects are:

- An end-to-end multi-year approach to ensure savings sustenance
- Advanced, analytics-driven Energy Management Platform & Centralized Energy Operations Center
- Prioritizing type of saving strategies (operational, retrofits, capital asset replacements) based on client budget and resources

## Success Stories

A global IT Services company implemented EcoEnergy's Managed Energy Services for its office buildings / facilities covering an area of ~15 million sq ft across the country. The program delivered a reduction in energy consumption of ~5 million units, translating to 8.98% reduction in energy consumption per employee, for the year 2012.

A tier-1, Fortune 500 member, financial services organization, having 963 branches and 2000 ATMs, with businesses in the USA, Canada and the UK, engaged with EcoEnergy to realize the following benefits:

- Central visibility of energy consumption, asset performance and operational deviations across buildings in the form of web-based dashboards
- Platform-based monitoring & analysis of building's schedules, operational policies & exceptions
- Energy Operations Center based tracking of schedule compliance through consumption and reporting deviations
- Energy savings strategies identification, deployment feasibility assessment and quantification up to 10%
- Energy data reports of operational and strategic relevance

# Engagement Benefits



## Visibility

Comparative Analysis / Reports



## Model-based Analytics

Design & Capacity Optimization



## Energy Efficiency Rules

Design & Capacity Optimization



## Service & Asset Management

Workflow Management



## Supply Side Optimization

Demand Analysis



- Benchmarking & baselining
- Dashboards, single version of truth



- Demand vs capacity matching
- Scenario planning



- Correct control logic, configuration, parameter tuning, process improvement, dynamic correction



- Track end-to-end resolution



- Demand management
- Contract demand optimization

# Case in Point - A Fortune 500 Financial Services Giant

## Engagement Overview

- Leverage the power of analytics for “low cost-high impact” operational energy-saving measures
- Centralize technology platform for better visibility of building energy and operational performance data for business intelligence
- Commercial mixed-use building managed by a leading facility management firm
- Average Occupancy of 1000, 5 RTUs, 150 VAVs, 1500 data points for analytics

## Value Delivered To Client

- Advanced analytics to correlate data from BMS, EMS, Occupancy & Weather systems
- Unique Managed Energy Services engagement model for 100% multi-year focus to meet savings targets
- Swift reduction in energy consumption
- Improved working environment for occupants
- Improved asset operational performance

Savings of 12% achieved over 6 months, along with other ROI benefits realized within 10 months

## The Future

- Establish Energy Operations Center (EOC)
- Cover 1000+ branches and 50+ mixed use buildings across the USA
- Total area under management: 12 Mn sq ft
- Annual energy spend: \$30 Mn

## Highlights



**25% reduction**  
in scope 1&2  
emission by 2020  
from baseline  
year 2013



**10+**  
distinct  
operational  
savings  
measures



**12%**  
energy  
savings



## About EcoEnergy

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EcoEnergy's award-winning connected services combine the power of its Technology Platform & the agility of its Command Center with the expertise of its industry experts and analysts to deliver desired business outcomes - such as energy efficiency and occupancy comfort. Forever pushing the edge of the learning curve, EcoEnergy has built strong expertise across industries and employs only the latest technologies to deliver transformative results.

EcoEnergy is a part of UTC Climate, Controls & Security, a unit of United Technologies Corp., a leading provider to the aerospace and building systems industries worldwide.