



Energy Efficiency Program Management

HW&Co. Whitepaper

Summer 2017



www.harriswilliams.com

Investment banking services are provided by Harris Williams LLC, a registered broker-dealer and member of FINRA and SIPC, and Harris Williams & Co. Ltd, which is a private limited company incorporated under English law with its registered office at 5th Floor, 6 St. Andrew Street, London EC4A 3AE, UK, registered with the Registrar of Companies for England and Wales (registration number 7078852). Harris Williams & Co. Ltd is authorized and regulated by the Financial Conduct Authority. Harris Williams & Co. is a trade name under which Harris Williams LLC and Harris Williams & Co. Ltd conduct business.

Harris Williams & Co.
middle market®

Energy Management & Distributed Energy Energy Efficiency Program Management

Harris Williams & Co. Whitepaper

Summer 2017

Our mission with this paper is to provide an update to our prior report on the Energy Efficiency Program Management sector, which has continued its impressive growth. In 2015, annual spending reached \$8.7 billion, and 2016 budgets are expected to expand to more than \$9.2 billion.

While the growth rate for program spending has declined in recent years, energy efficiency has established itself as an important resource for utilities and programs are expected to exhibit continued growth for the next decade. This paper provides an overview of the sector, program types, services provided by outsourced program management, key drivers, and the competitive landscape for service providers.

CONTENTS

[Abstract](#)

[HW&Co. Experience](#)

[Energy Efficiency Program Management Overview](#)

[Market Growth](#)

[Overview of Outsourced Programs](#)

[Overview of Energy Efficiency Program Categories](#)

[Energy Savings by Program Type](#)

[Greater Reliance on Energy Efficiency Resources](#)

[State and Federal Initiatives and Incentives](#)

[Alignment of Utility Incentives](#)

[M&A Activity](#)

[Competitive Landscape](#)

ENERGY MANAGEMENT AND DISTRIBUTED ENERGY CONTACTS

Andrew Spitzer | Managing Director

aspitzer@harriswilliams.com

+1(804) 915-0174

Luke Semple | Director

lsemple@harriswilliams.com

+1(804) 915-0158

Tyler Dewing | Director

tdewing@harriswilliams.com

+1(617) 654-2133

ENERGY POWER AND INFRASTRUCTURE CONTACTS

United States

Andrew Spitzer | Managing Director

aspitzer@harriswilliams.com

+1(804) 915-0174

Matt White | Managing Director

mwhite@harriswilliams.com

+1(804) 915-0131

Luke Semple | Director

lsemple@harriswilliams.com

+1(804) 915-0158

Ian Thomas | Vice President

ithomas@harriswilliams.com

+1(804) 932-1384

Neha Shah | Vice President

nshah@harriswilliams.com

+1(804) 887-6036

Europe

Jeffery Perkins | Managing Director

jperkins@harriswilliams.com

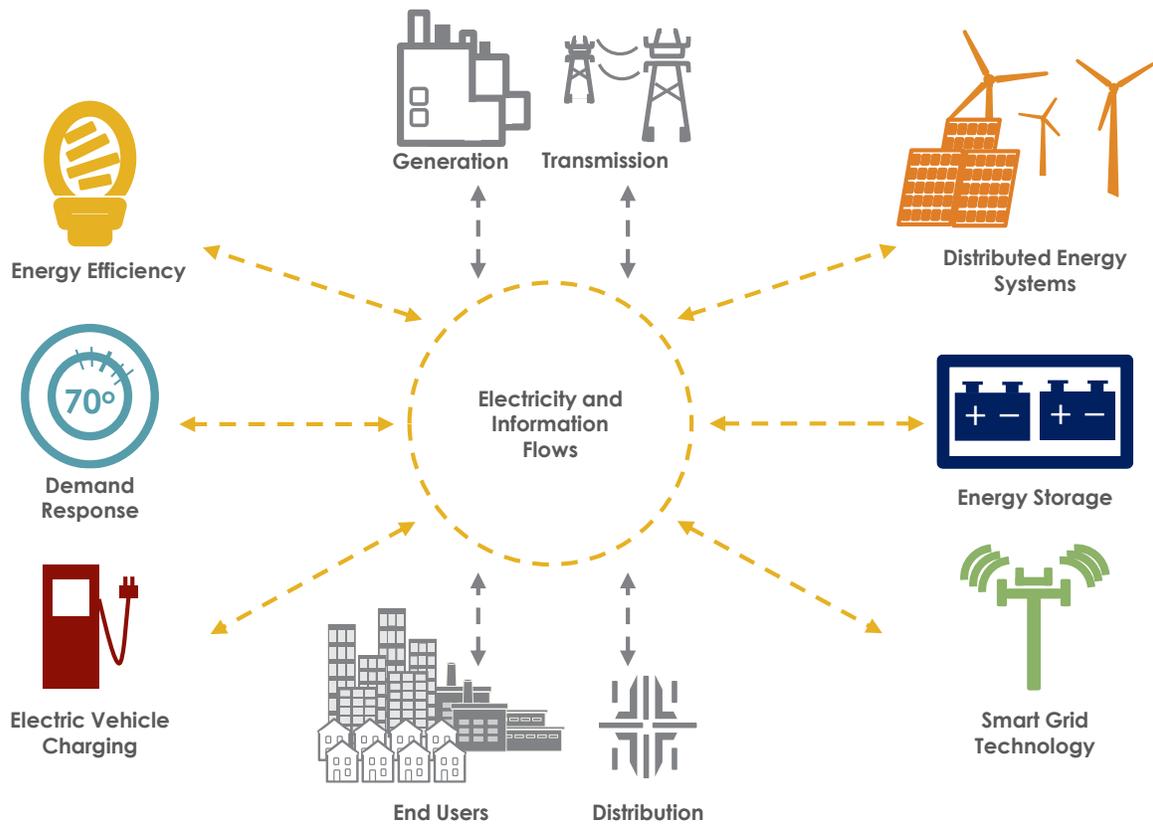
+49 69 7593 7166

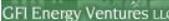
Harris Williams & Co. Experience

With more than 25 closed transactions across the sector, Harris Williams & Co. has provided M&A advisory services to some of the market's premier service, equipment, and technology providers.

Select Transactions

 energy made better a portfolio company of  CAPITAL has been acquired by 	 a portfolio company of  has acquired  a portfolio company of 	 a division of  has been acquired by 	 has been acquired by 	 has received a minority investment from 	 has been acquired by 
---	--	--	---	---	--



 has been acquired by 	 Experience. Delivery. Results. a portfolio company of  has been acquired by 	 has been acquired by 	 has been acquired by 	 Energy Monitoring Products a portfolio company of  has been acquired by 	 a portfolio company of  has been acquired by 
--	---	--	--	---	---

Overview

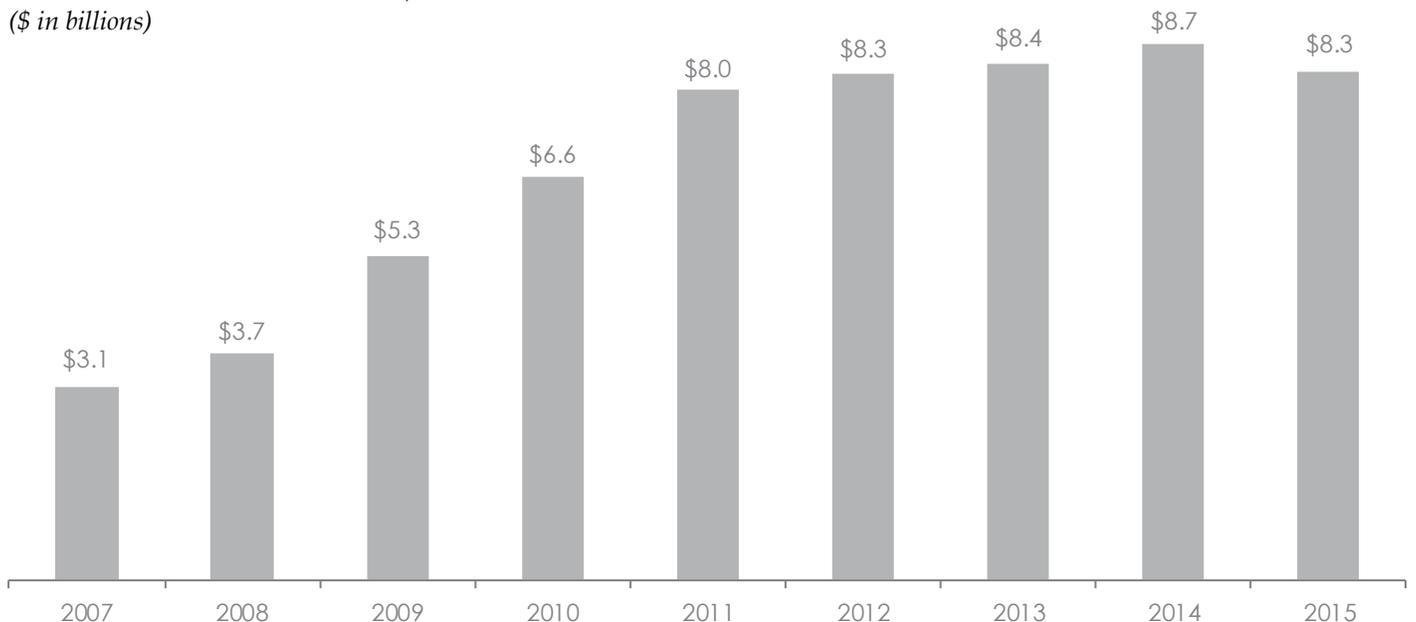
Utilities implement energy efficiency programs, also known as demand side management (“DSM”) programs, to manage long-term demand growth economically and comply with legislative and regulatory policies that mandate reduced consumption of electricity and natural gas. Regulatory and legislative bodies create funding mechanisms to support multi-year and multi-jurisdictional efficiency programs. These programs are typically funded by ratepayers (residential, commercial, and industrial utility customers) through utility bills as a nominal fee or as a component of the rate for each unit of energy consumed. In most cases, utilities utilize (and in some states are required to use) non-affiliated independent third-party energy efficiency and demand response program management companies to execute the programs. In the case of energy efficiency, program managers creative incentives for end users to use less energy while demand response programs aims to shift load away from peak hours. Both types of programs are utilized by utilities to achieve energy savings requirements.

Market Growth

The ratepayer-funded energy efficiency program management industry has continued its steady expansion in the United States. From 2007 through 2011, ratepayer-funded energy efficiency budgets increased from \$3.1 billion to \$8.0 billion, representing a CAGR of 26.4%. The recent decrease in ratepayer funded budgets is attributable to changes in program plans for a few large program administrators in the U.S., which is not indicative of the forecasted budget trends. In fact, energy efficiency programs have shifted from regulatory compliance programs to increasingly valuable operational resources for utilities. As a result, utility energy efficiency programs are expected to demonstrate sustained spending levels and growth over the next decade.

Exhibit 1

U.S. Electric and Gas Efficiency Program Budgets
 For the Years Ended December 31, 2007 - 2015
 (\$ in billions)



Overview of Outsourced Program Services

The outsourced program services segment of the industry is stratified into the sub-categories/service offerings described below. Utilities typically require that different parties perform each distinct service to avoid conflicts of interest. For example, a utility will rarely want the same service provider designing, implementing, and then measuring and verifying savings for a single energy efficiency program.

Exhibit 2

**Energy Efficiency and Demand Response Outsourced Program Services
Key Services Descriptions**

Program Consulting and Design

- Defines the key elements, policies, and procedures that will govern the program, including eligibility for participation, the magnitude of incentive payments, and the requirements related to measurement and verification.
- Estimates the program’s expenditures and establishes savings targets.
- Develops a written plan that serves as a guide for program implementation.

Program Implementation

- Implement efficiency measures to deliver the required savings within a specified budget and timeline.
- Market the utility program(s) to end users to raise awareness and drive participation.
- Perform engineering assessments and facility studies to generate energy savings for utility customers.
- Self-perform or sub-contract installation of energy efficiency projects.
- Execute the day-to-day administrative functions of the efficiency program, including processing and documenting the payment of program incentives, tracking the program’s total estimated energy savings, and answering questions utility customers may have about the program.

Evaluation, Measurement, and Verification

- Utilities typically hire third parties to measure the energy savings related to a particular program to verify that requisite savings were in fact achieved.
- Provides information that allows utilities to assess program results and improve the credibility of data used in future planning and program design processes.
- Most program implementation providers do not perform evaluation, measurement, and verification services due to the small relative size of the market and the inherent conflicts of interest with its core design and implementation business.

Key Players

CLEAResult

The **FRANKLIN ENERGY GROUP**

Honeywell

Itron | **comverge**
energy made better

ORACLE | **OPower**

ICF

Nexant
Reimagine tomorrow.

TE-DRIL

leidos

DNV·GL

accenture

Overview of Energy Efficiency Program Categories

Utilities implement a wide range of individual efficiency programs for residential and commercial and industrial (“C&I”) end users. The exhibit below provides an overview of representative program types by category.

Exhibit 3

Energy Efficiency Program Categories Representative Programs by Type

Residential Programs

- **Behavioral efficiency.** These programs utilize online engagement, benchmarking, and audit tools to provide greater end user visibility into energy use and potential savings and ultimately influence energy consumption behavior.
- **Rebate.** Individual programs across product categories such as appliances, electronics, and lighting incentivize the adoption of newer, more energy efficient technologies.
- **Prescriptive.** Programs designed to encourage the sale, purchase, and installation of specific equipment to enhance residential energy efficiency. Equipment categories include HVAC, insulation, pool pumps, water heaters, and windows.
- **Whole home audits.** Designed to provide a comprehensive assessment of a home’s energy consumption and potential for energy savings.
- **Whole home direct install.** Pre-approved measures, often a kit, installed at time of audit or directly by the customer. Measures typically include lighting, low-flow showerheads, weather stripping, etc.
- **Whole home retrofit.** Implementation of energy efficiency projects or upgrades identified in a comprehensive whole home audit, such as HVAC systems upgrades.
- **Low income.** Programs, such as affordable housing weatherization, aimed at lower income households often through pre-determined eligibility requirements.

Commercial & Industrial Programs

- **Audit.** Energy assessment performed at end user facility to identify opportunities for energy savings.
- **Custom.** Delivery of site-specific energy savings projects identified through detailed energy assessment and review.
- **Prescriptive.** Designed to encourage the purchase and installation of pre-approved C&I measures (e.g., CFL or LED bulbs). These programs are not customized or differentiated by sector.
- **Self direct.** Efficiency programs designed and executed by the end user (often a third-party) for large C&I customers that utilize DSM program funding.
- **Other.** Other programs include incentive programs for performance contract, retro-commissioning of existing commercial facilities, commissioning of new construction, and programs focused on the government, non-profit and MUSH (municipalities, universities, schools, and hospitals) markets.

Cross-Sector Programs

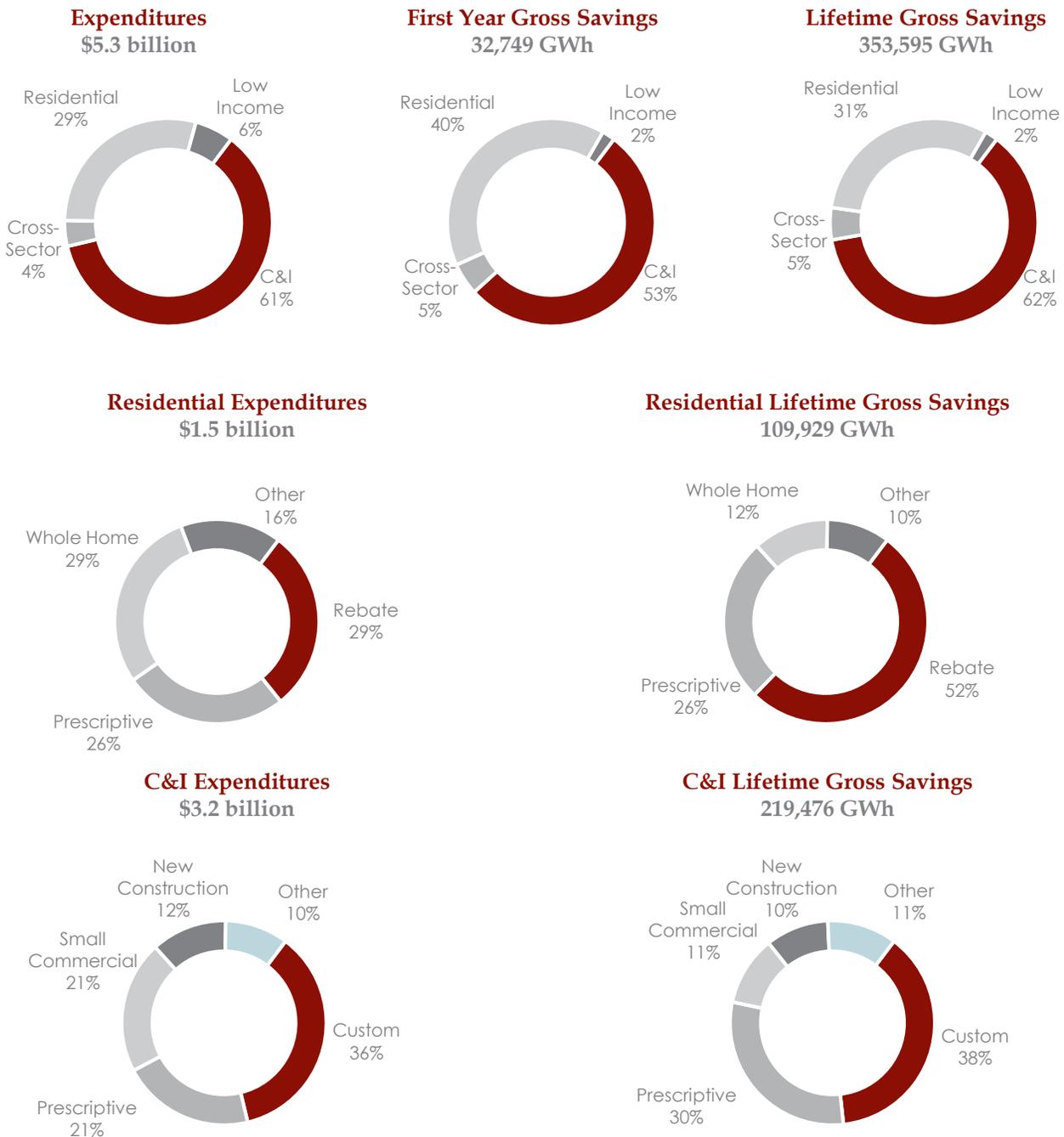
- **Codes and standards.** Administrator may engage in activities designed to advance the adoption, application, or compliance level of building codes and end use energy performance standards.
- **Market transformation.** Programs aimed at broadening the market for energy efficient technologies and products, such as manufacturer incentives for more efficient products or time-of-purchase incentives to increase the cost-competitiveness of new technologies.
- **Marketing, education, and outreach.** Stand-alone programs to increase the awareness of energy efficiency, such as in-school water and energy efficiency programs with prescriptive kits.

Energy Savings by Program Type

In 2014, LBNL released a study on the cost of energy savings for utility funded efficiency programs based on an analysis of their DSM Program Impacts Database. The study analyzed cumulative program spending from 2009 through 2011 from more than 1,700 utility programs across 31 states and more than 100 program administrators. A summary of spending and energy savings data by program type and category is provided below.

Exhibit 4

Analysis of Spending and Energy Savings for Electric Energy Efficiency Programs
Cumulative for the Years Ended December 31, 2009 - 2011



Greater Reliance on Energy Efficiency Resources

In recent years, energy efficiency programs have evolved from regulatory compliance initiatives to demand side management resources for utilities. Energy efficiency has a stable price profile, is the lowest cost energy resource, and mitigates fuel price volatility risk. A study by the ACEEE noted that energy efficiency programs were able to achieve energy savings at an average cost of \$0.028 per kilowatt hour for electricity programs, which is significantly lower than the costs associated with new power generation resources.

Additionally, energy efficiency programs reduce the strain on generation and transmission and distribution (“T&D”) capacity in a manner that is easy to implement, highly cost-effective, and environmentally sensitive (efficiency is a zero emissions resource). As an alternative to new power plant construction, the reduction of electricity consumption through demand response initiatives also has the potential for significant cost-avoidance. The Brattle Group estimates that a 5% reduction in peak demand may eliminate the need for more than 600 peaking plants, representing potential savings of \$30 billion.

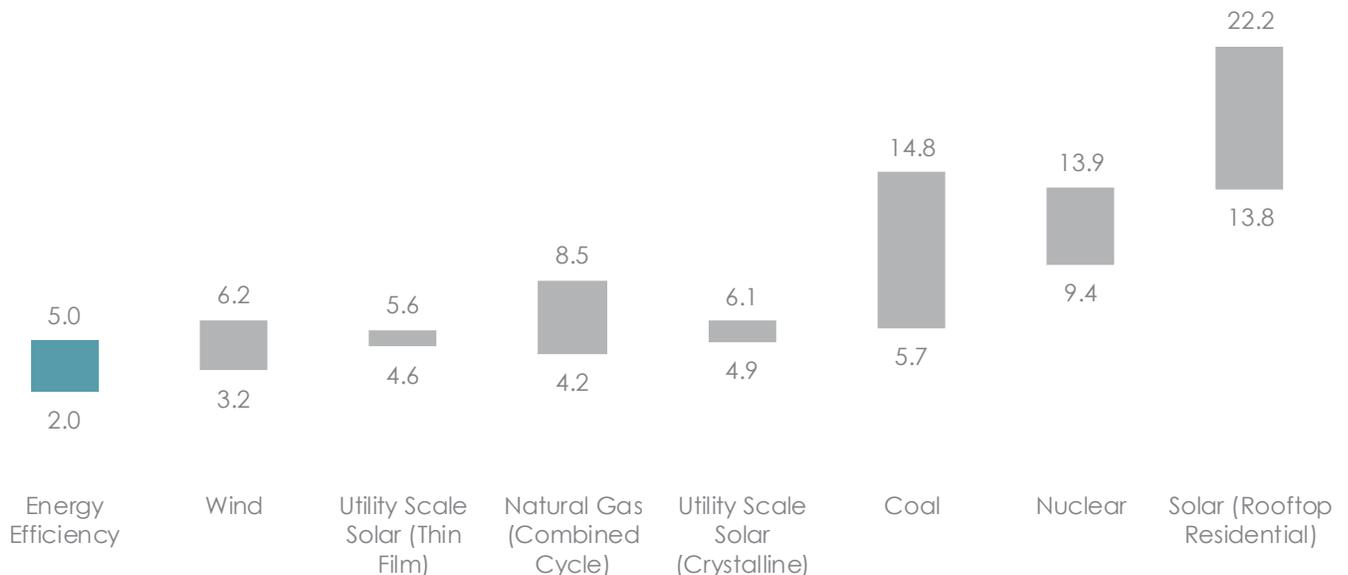
Exhibit 5

Unsubsidized Levelized Cost of Energy

As of December 2016

(Cents per kwh)

Energy efficiency represents the lowest cost energy resource with a stable price profile and its “invisibility” to eliminate the extensive siting, permitting, and compliance processes required for other resources.



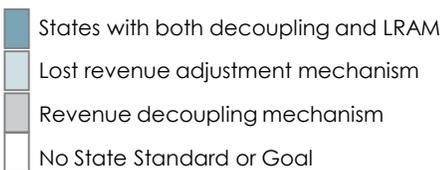
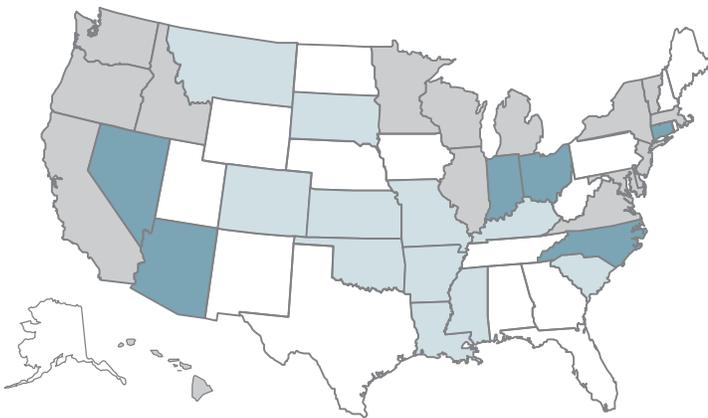
Alignment of Utility Incentives

In return for their quasi-monopolistic franchises, state-regulated utilities are obligated to provide energy to consumers at a fixed per unit rate. The underlying concept of utility ratemaking is to set rates at a level that allows the utility the opportunity to collect from customers total revenues (revenue requirements) equal to its cost of providing service, including a reasonable rate of return on invested capital. With rates set by the formula above, a utility’s income has historically been highly correlated with sales volume. Given that energy efficiency programs are focused on reducing energy consumption (e.g. utility volume), investor-owned utilities face financial challenges when implementing mandated programs. Utility incentives are aligned with energy efficiency investments through three primary mechanisms, as noted below. Within the past five years, regulators around the country have increasingly adopted decoupling policies to further support investment in energy efficiency.

- **Direct cost recovery.** Regulator-approved cost recovery through rate cases, system benefit changes, and tariff rider / surcharges.
- **Fixed cost recovery.** Decoupling and lost revenue adjustment mechanisms (“LRAM”) to assist in the recovery of the marginal revenue associated with fixed operating costs.
- **Performance incentives.** Provide utilities with the ability to earn a rate of return on efficiency investments that achieve energy savings goals though also subject utility to potential penalties for unachieved goals.

Exhibit 7
State Energy Efficiency Initiatives
 As of November 2016

Utility Decoupling and LRAM Policies



Summary of State Regulatory Frameworks

Incentive Mechanism	# of States
Lost Revenue Recovery	17
Revenue Decoupling	23
Performance Incentives	27

9 states have added revenue decoupling policies since December 2014

M&A Activity

Mergers and acquisitions in 2016 and 2017 have altered the competitive landscape, bringing some new entrants to the market while strengthening the competitive position of others. Notable transactions include:

Exhibit 8

Notable Transactions



Enel agreed to acquire EnerNOC

- EnerNOC is a developer of energy intelligence software and demand response solutions for commercial and industrial customers
- Upon closing of the transaction, Enel will incorporate EnerNOC's more than 8,000 customers, 14,000 sites under management, and 6 GW of DR capacity



Itron acquired Comverge

- Comverge is an industry-leading provider of integrated cloud-based demand response, energy efficiency, and customer engagement solutions for utility customers
- Acquisition will create an enhanced cloud-based solution through the combination of Comverge's offering with Itron's OpenWay Riva's intelligence and processing capabilities
- HW&Co. served as the exclusive advisor to Comverge



TRC merged with affiliates of New Mountain Capital

- TRC Companies provides environmental engineering and consulting services in addition to energy efficiency services, which include evaluation, program design, and implementation
- TRC supports a spectrum of energy services from comprehensive energy plans to building upgrades, total retrofits, and new designs for the C&I, education, government, and healthcare industries



Veolia acquired Enovity

- Enovity provides energy efficiency, commissioning, and facilities engineering services designed to optimize facilities to deliver sustainable environments
- The acquisition enabled Veolia to expand its already strong footprint in the building energy services sector and brought Enovity's capabilities together with Veolia's SourceOne energy services division



AM Conservation Group merged with Franklin Energy

- Franklin Energy is a leading implementer and administrator of energy efficiency programs, offering comprehensive utility-focused services across the U.S. and Canada
- The merger strengthens the combined company's leading position within the energy efficiency market and expands the combined offering for utility, state, and municipal clients
- HW&Co. served as the exclusive advisor to AM Conservation Group



Oracle acquired OPower

- OPower is a leading provider of customer engagement and energy efficiency cloud services to utilities
- OPower's solutions enable global utilities to deliver a modern digital customer experience, and the acquisition creates a broad suite of cloud-based applications for utilities

Competitive Landscape

The competitive landscape for outsourced energy efficiency program services providers remains diverse and highly fragmented. Companies in the sector include large, independent program managers; divisions of multinational corporations; software and technology companies; and small, regional service providers.

Exhibit 9
Industry Participants

Company	Ownership	Implementation						End Market	
		Design	Market Segmentation	Customer Acquisition	Service Delivery	M&V	Reporting	Residential	C&I
Accenture	Public	✓				✓			✓
Ameresco	Public	✓	✓	✓	✓	✓	✓	✓	✓
A-Tec Energy	Private		✓	✓	✓	✓	✓	✓	✓
Chicago Bridge & Iron	Public		✓	✓	✓		✓		✓
CLEAResult	Private	✓	✓	✓	✓		✓	✓	✓
DNV Kema	Private	✓				✓	✓	✓	✓
E Source	Private						✓	✓	✓
Energy Solutions	Private		✓	✓	✓		✓		✓
EnergySavvy	Private			✓			✓	✓	
Enemoc ⁽¹⁾	Public								✓
Engie (Ecova)	Public		✓	✓	✓		✓	✓	✓
Franklin Energy / AM Conservation	Private		✓	✓	✓		✓	✓	✓
GDS Associates	Private	✓	✓	✓	✓	✓	✓	✓	✓
Honeywell	Public		✓	✓	✓		✓	✓	
ICF International	Public	✓	✓	✓	✓	✓	✓	✓	✓
Itron (Comverge)	Public		✓	✓	✓		✓	✓	
kW Engineering	Private	✓	✓	✓	✓	✓	✓		✓
Leidos	Public	✓	✓	✓	✓	✓	✓	✓	✓
LIME Energy	Public		✓	✓	✓		✓		
Lockheed Martin	Public		✓	✓	✓		✓	✓	✓
Mad Dash Field Services	Private				✓		✓		✓
Matrix Energy Services	Private		✓	✓	✓		✓		
Michaels Energy	Private	✓	✓	✓	✓	✓	✓	✓	✓
Nexant	Private	✓	✓	✓	✓	✓	✓	✓	✓
Opinion Dynamics	Private					✓		✓	✓
Oracle (Opower)	Public		✓	✓			✓	✓	✓
Performance Systems Development	Private	✓	✓	✓	✓	✓	✓	✓	
Silver Spring Networks	Public		✓	✓			✓	✓	
SmartWatt	Private				✓	✓			✓
Tendril	Private		✓	✓			✓	✓	
The Cadmus Group	Private	✓				✓		✓	✓
The Weidt Group	Private	✓				✓	✓		✓
TRC	Public	✓	✓	✓	✓		✓		✓
Veolia (Enovity)	Public	✓	✓	✓	✓	✓	✓		✓
Willdan	Public		✓	✓	✓				✓

Harris Williams & Co. (www.harriswilliams.com) is a preeminent middle market investment bank focused on the advisory needs of clients worldwide. The firm has deep industry knowledge, global transaction expertise, and an unwavering commitment to excellence. Harris Williams & Co. provides sell-side and acquisition advisory, restructuring advisory, board advisory, private placements, and capital markets advisory services.

Investment banking services are provided by Harris Williams LLC, a registered broker-dealer and member of FINRA and SIPC, and Harris Williams & Co. Ltd, which is a private limited company incorporated under English law with its registered office at 5th Floor, 6 St. Andrew Street, London EC4A 3AE, UK, registered with the Registrar of Companies for England and Wales (registration number 7078852). Harris Williams & Co. Ltd is authorized and regulated by the Financial Conduct Authority. Harris Williams & Co. is a trade name under which Harris Williams LLC and Harris Williams & Co. Ltd conduct business.

THIS REPORT MAY CONTAIN REFERENCES TO REGISTERED TRADEMARKS, SERVICE MARKS AND COPYRIGHTS OWNED BY THIRD-PARTY INFORMATION PROVIDERS. NONE OF THE THIRD-PARTY INFORMATION PROVIDERS IS ENDORSING THE OFFERING OF, AND SHALL NOT IN ANY WAY BE DEEMED AN ISSUER OR UNDERWRITER OF, THE SECURITIES, FINANCIAL INSTRUMENTS OR OTHER INVESTMENTS DISCUSSED IN THIS REPORT, AND SHALL NOT HAVE ANY LIABILITY OR RESPONSIBILITY FOR ANY STATEMENTS MADE IN THE REPORT OR FOR ANY FINANCIAL STATEMENTS, FINANCIAL PROJECTIONS OR OTHER FINANCIAL INFORMATION CONTAINED OR ATTACHED AS AN EXHIBIT TO THE REPORT. FOR MORE INFORMATION ABOUT THE MATERIALS PROVIDED BY SUCH THIRD PARTIES, PLEASE CONTACT US AT THE ABOVE ADDRESSES OR NUMBERS.

The information and views contained in this report were prepared by Harris Williams & Co. ("Harris Williams"). It is not a research report, as such term is defined by applicable law and regulations, and is provided for informational purposes only. It is not to be construed as an offer to buy or sell or a solicitation of an offer to buy or sell any financial instruments or to participate in any particular trading strategy. The information contained herein is believed by Harris Williams to be reliable, but Harris Williams makes no representation as to the accuracy or completeness of such information. Harris Williams and/or its affiliates may be market makers or specialists in, act as advisers or lenders to, have positions in and effect transactions in securities of companies mentioned herein and also may provide, may have provided, or may seek to provide investment banking services for those companies. In addition, Harris Williams and/or its affiliates or their respective officers, directors and employees may hold long or short positions in the securities, options thereon or other related financial products of companies discussed herein. Opinions, estimates and projections in this report constitute Harris Williams' judgment and are subject to change without notice. The financial instruments discussed in this report may not be suitable for all investors, and investors must make their own investment decisions using their own independent advisors as they believe necessary and based upon their specific financial situations and investment objectives. Also, past performance is not necessarily indicative of future results. No part of this material may be copied or duplicated in any form or by any means, or redistributed, without Harris Williams' prior written consent.

Copyright© 2017 Harris Williams & Co., all rights reserved.