

Metrus Energy

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SECTOR	COUNTRY/REGION	THEME	TOPIC
Cross-sectoral	United States	Finance	Delivery Vehicles for Financing Energy Efficiency

Scene Setting

Introduction: Metrus Energy

Metrus Energy is a US-based company founded in 2009 that develops, finances, owns and operates large energy efficiency (EE) projects for commercial and industrial clients in the US.

The company is backed by Gogreen Capital, a European venture capital firm, and has developed banking partnerships with Citibank, Siemens Financial Services and Bank of America, among many others, allowing the company to provide both equity capital and third-party debt to large-scale EE projects.

Metrus Energy has also developed relationships with Energy Service Company (ESCO) partners such as Siemens, Johnson Controls, Ameresco and McKinstry to design, construct, maintain and guarantee EE project performance.

Country Context

Despite the fact that China has recently overtaken the US in terms of total energy consumption and carbon emissions¹, the US remain one the highest energy consumers and carbon emitters per capita². The industry sector represents the highest but declining share of primary energy consumption with 20% in 2010, down from 35% in 2000³.

The US does not presently mandate energy intensity or carbon emission targets at the national level. The majority of the industrial

EE activity in the US is therefore driven by utilities, state level entities and the private sector⁴.

A key national policy is the American Recovery and Reinvestment Act of 2009 (ARRA) that authorized USD 3.2 billion for Energy Efficiency and Conservation Block Grants (EECBG – see below), USD 3.1 billion for the State Energy Program (SEP – see below) and other grants for worker training and career development in EE⁵. Other relevant policies include the Executive Order (EO) 13423 signed in 2007⁶, the Energy Policy Act of 2005⁷, the Energy Independence and Security Act of 2007⁸, the Emergency Economic Stabilization Act of 2008.

Each policy promotes the development of EE, mainly through financial support such as tax reductions / exemptions, rebates, loans or other funding (in particular for Research & Development). More recent attempts to pass additional legislation have not been successful⁹.

Key EE programs include:

- The Energy Efficiency & Conservation Block Grant (EECBG) Program that provides USD 3.2 billion of federal grants to EE programs for local governments and states. The program is managed by the Office of Energy Efficiency and Renewable

1 World Bank Database, US = 5.5 billion of tonnes of CO2 vs. China = 7.0 billion (2008 figures).

2 World Bank Database, US = 18 tonnes of CO2 per capita vs. China = 5.3 tonnes (2008 figures).

3 US Energy Information Administration, Annual Energy Review 2011 (2010 total energy consumption including primary energy and electricity).

4 Chittum, A. 2012, Leading Locally: How the US Funds Industrial Energy Efficiency. American Council for an Energy-Efficient Economy (unpublished).

5 American Recovery and Reinvestment Act of 2009, Title IV, page 24.

6 EO 13423 requires federal agencies to reduce energy intensity by 3% per annum up to 2015 compared to 2003 baseline.

7 Enhanced by the American Recovery and Reinvestment Act of 2009 and the EO 13423.

8 The EISA 2007 also ratified the EO 13423.

9 Such as the American Clean Energy Security Act of 2009 that set a 5% EE target by 2020. Although it did not become law, it is used as guidance for state EE incentives / targets.

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Energy (EERE) of the DOE¹⁰ and funded through the ARRA.

- State Energy Program (SEP) with a budget of USD3.1 billion in grants, mainly targets state and local government buildings and domestic consumers.

Other key national initiatives include:

- The National Action Plan for Energy Efficiency (NAPEE), a private-public initiative that was released by the DOE and the EPA in 2008 and that includes a vision for 2025 targeting a reduction of energy demand by 50%¹¹.
- The State and Local Energy Efficiency Action Network (SEE Action) is an initiative led by the federal government to facilitate state and local EE projects / programs. The Industrial Energy Efficiency and Combined Heat and Power Working Group within the SEE Action has set a target of 2.5% average annual reduction in industrial energy intensity by 2020¹².

The majority of these policies and programs focus on residential and commercial sector type of projects but could nonetheless encompass industrial processes (e.g. industrial building refurbishment, HVAC¹³ improvement). The industry sector, especially large enterprises, mainly relies on economically viable private initiatives such as Energy Service Companies (ESCOs)¹⁴, with some support from state government policies such as:

- Industrial Assessment Centers (IAC) created by the DOE around the US that provide free EE audits to small- and medium-sized manufacturers.
- Energy Efficiency Resource Standard (EERS) that are mechanisms developed in 26 states¹⁵ under which annual EE targets are set for electricity and gas service providers (percentage reduction of energy use). Design and implementation details vary by state based on legislation (mandatory or voluntary) and state utility regulators (for example Vermont has an annual target of 2.5% savings).

In 2010, states and utilities invested over USD 811 million in industrial EE programs out of nationwide spending of USD 1.1 billion. It is estimated that the ARRA funding accounted for 20%

of the total (USD 228 million)¹⁶.

Barriers

Key barriers to the development of large-scale industrial EE programs in the US include:

1. Access to funding allowing project finance / off-balance sheet procurement¹⁷
2. Knowledge of which technologies, products, solutions are available and key partners that could provide them – this is especially relevant to complex EE projects in the industry sector
3. Industrial players often undervaluing efficiency as a resource
4. Lack of clear legislation / policy obligations supporting EE programs (see below)
5. Public awareness and competitors (dash-for-green / CSR effect)¹⁸

Also, renewable energy (RE) and EE policies and incentives are often combined in US legislation making specific EE targets unclear and difficult to monitor. Targets are often set as investment amounts to be spent without a clear link to energy savings. Finally, the proliferation of legislation at different levels (federal, state and local), including the recently failed legislative initiatives, do not help to clarify best practices, methodologies and means for exploiting EE opportunities.

Financial Mechanism

Objectives

Metrus Energy's key objective is to promote, finance and develop EE retrofit projects through provision of a procurement vehicle (partners, expertise) and funding (equity and debt) to commercial and industrial customers that can then finance EE projects off-balance sheet and effectively invest in energy savings below their energy costs.

10 US DOE, EERE Network News, March 2009.

11 US DOE, EERE Network News, November 2008.

12 SEE Action website (www.eere.energy.gov).

13 Heating, Ventilation and Air Conditioning.

14 The ESCO market for EE projects and services exceeded USD5.1 billion in 2011, of which 73% were conducted for municipal, universities, schools and hospital (MUSH) market. The total market is expected to reach USD16 billion in sales by 2020 (Pike Research, 2012).

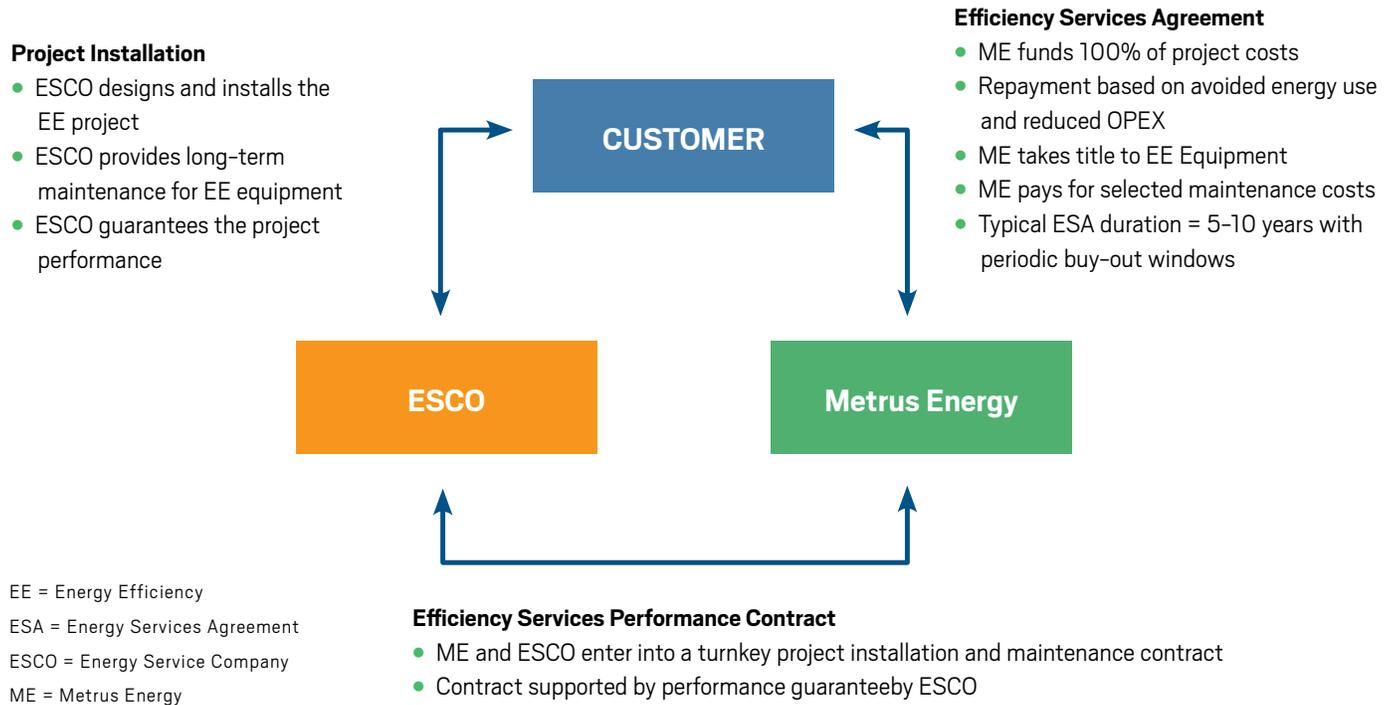
15 As at May 2011.

16 American Council for an Energy-Efficient Economy (ACEEE), Press release, April 2012.

17 Off-balance sheet financing had long been a standard financing mechanism for IEE, allowing ESCOs and other third parties to finance industrial EE at host sites without the financing being reported on the hosts' balance sheets and thus affecting asset/liability ratios and borrowing capacity. The rationale, that the host paid only for energy savings and, in fact, had no contingent liability for the equipment financing, was swept away by Sarbanes-Oxley, the legislation passed to promote transparency in corporate finance in the wake of ENRON's abuse of off-balance sheet financing to mislead investors and regulators.

18 Corporate Social Responsibility.

FIGURE 1: Metrus Energy’s Efficiency Service Agreement mechanism. Source: Metrus Energy



Participants

Metrus Energy works in partnership with ESCOs to design, construct, maintain and guarantee project performance. ESCO partners include Siemens, Johnson Controls, Ameresco and McKinstry.

Metrus Energy also invests its own capital as equity participation in projects and partners with third party debt providers to raise debt finance, including Citibank, Siemens Financial Services, and Bank of America.

Key targeted customers are from the private sector and include:

- Offices of big corporates / owner-occupiers (e.g. Fortune 500 companies)
- Industrial companies (e.g. manufacturing, food, energy intensive industries)
- Private higher education and health care (non tax exempt entities)
- Commercial real estate.

Typical contracting / ESCO partner expertise includes:

- Building automation and controls
- Lighting retrofits and controls
- Compressed air (leak detection & repair)
- Utility tariff rate optimization
- Heating, ventilation, and air conditioning (HVAC)
- Chiller replacement and system improvements
- Boiler replacement and system improvements
- Pumps, fans, motors, drives
- Cogeneration (onsite generation).

Mechanism

Metrus Energy signs an Efficiency Services Agreement (ESA) with clients, eliminating upfront investment cost barriers by using private sector finance and EE partners. The mechanism is described in the Figure 1 above.

The ESA contractual arrangement between Metrus Energy and its

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FIGURE 2: Metrus Energy's Key Process Steps. Source: Metrus Energy



customers is similar to PPA¹⁹ principles in the electricity generation industry whereby the parties agree start date, duration, price level, penalties / adjustments, payment terms, termination terms for selling and buying electricity.

Metrus Energy provides 100% financing using a mix of equity and debt. Credit enhancement products are used when available, and the creditworthiness of the customer is taken into account. Collateral is limited to the residual value of the installed equipment.

Projects are identified through Metrus Energy's own relationships and through its partners (e.g. ESCOs and contractors). Metrus Energy provides 100% of the funding requirement (own equity and private sector bank debt) and enters into an EPC / turn-key construction contract with ESCOs and/or contractors, which sign a long-term maintenance contract with the customer. ESCO / contractors guarantee the performance of the installation to the client and to Metrus Energy through an Efficiency Services Performance Contract (ESPC) agreement.

The equipment is owned by Metrus Energy. Metrus Energy is also typically responsible to pay for some of the maintenance costs based on the ESA signed with the client.

Process

A baseline is agreed at the beginning of the contract (base outdoor temperature, average energy consumption over the past years, current industrial process energy performance, etc.). Measurement and verification (M&V) are based on protocols such as the International Performance Measurement & Verification Protocol (IPMVP), which has been adopted by North America's energy service companies as the industry standard approach to M&V.

The typical ESA duration is between 5 to 10 years (with periodic buy-out windows), during which the customer pays a service charge to Metrus Energy based on actual project performance and energy savings (typically below the standard utility rate originally paid by the client) that are quantified in a report prepared by Metrus Energy at the end of each billing period.

There are two methods of assessing actual performance / energy savings used:

1. Fixed savings: agreed energy savings approved prior to signing the contract. The savings are fixed for the duration of the contract and can be defined by engineering analysis (stipulated) or by measurement before and after installation (one-time measurement).
2. Ongoing monitoring: Energy savings are measured at each billing period based on actual performance and can vary over time.

Metrus Energy' key process steps are set out in Figure 2 above.

Budget

Metrus Energy's funding objective is USD75 million by end of 2013 and has developed a pipeline to hit that target and beyond. Its targeted project size is above USD 750,000.

Achievements

Energy saving target is typically 20+%, but can vary widely based upon specific installation / building needs and opportunity. Typical pay-back period are between 3 and 7 years.

A typical case may be illustrated by the Energy Service Agreement signed in 2010 with BAE Systems, an UK aerospace and defense contractor. Metrus Energy and BAE implemented EE

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measures at several BAE US facilities including equipment replacement, building automation, lighting retrofits, and operational improvements. The program produced the following outcome:

- USD 200,000 in annual utility savings
- 1 M kWh avoided
- 30 k therms of natural gas avoided
- 400 tons of CO2 avoided
- Various non-energy savings (e.g. reduced maintenance expense).

Lessons

Metrus Energy is a young company (founded in 2009) but based on substantial work already carried out; the following lessons can be drawn:

- Knowledge diffusion is key as many opportunities to save energy are missed due to lack of access to the right technologies, partners or solutions required to address the full range of savings opportunities. Metrus Energy provides a combined financial and technical solution with performance guarantee on the equipment as a one-stop shop for EE solutions. Metrus Energy makes use of its partnership network (e.g., ESCOs) to access new customers.
- The lack of clarity in regulation, incentives and targets for EE

programs / projects and the emphasis by policymakers on RE solutions (e.g., solar) undermines the realization of EE opportunities. Specific EE targets and regulation should be made clearer.

- Access to credit can be an issue especially with non-recourse finance and the limited collateral level. A strong network of expertise and lending partners help to get access to debt financing. Nevertheless, the smaller and lower credit quality customers struggle to get access to EE project financing. Some of the incentives at federal, state or local level could be used to provide guarantees or to raise the priority of payments for EE initiatives (e.g., PACE, OBR) in order to broaden the access to EE financing.
- The Metrus Efficiency Service Agreement allows hosts to pay for energy savings as an operating cost, without incurring any liability for equipment financing.
- Metrus Energy concept allows a sensible risk allocation among industrial clients, funders and installers and operators where each project participant is allocated the risk he is most suited to bear. The combination of ESCOs, ESPC and access to non-recourse debt financing allows the emergence of such a solution. In less developed markets, incremental supports may be required such as third-party guarantees and/or risk-sharing facilities.