Reinventing “Energy Efficiency as a Service”: Lessons Learned and New Models

Wednesday, 2:00 – 3:15 PM
Efficiency as a Service

- Today’s speakers:
  - Angela Ferrante, SparkFund
  - Bob Hinkle, Metrus Energy
About SparkFund

1) Project financing - custom + integrated into a partner’s offering (ESCO, contractor, manufacturer)

2) Technology + financing to sell equipment “As a Service” and manage transaction complexity with this mode of sale.
The “As A Service” Opportunity
## Financed Project vs “As a Service”

### LED Project-Purchase
Sell lights with a cash or financed purchase. Optional add-ons may include M&V or maintenance.

<table>
<thead>
<tr>
<th>Products:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LEDs</td>
<td>$16,458</td>
</tr>
<tr>
<td>Lighting Controls</td>
<td>$2,204</td>
</tr>
<tr>
<td>Building Controls</td>
<td>$850</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Labor:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$6,573</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,200</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ongoing M&amp;V:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$800</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financing:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>9.2% -</td>
</tr>
<tr>
<td>Term ROI</td>
<td>3 Years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Project Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$34,569</td>
<td></td>
</tr>
</tbody>
</table>

### LEDs As a Service
Sell the use of LED lights over time, bundling in ongoing maintenance and M&V.

<table>
<thead>
<tr>
<th>Products:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>T8 LEDs</td>
<td></td>
</tr>
<tr>
<td>224 Lighting fixtures to be installed</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lighting Controls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Panel and monitoring system</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Building Controls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4 consoles and temperature monitoring equipment</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Services: 1</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing M&amp;V</td>
<td></td>
</tr>
<tr>
<td>Upkeep and monitoring every 3 months</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Upkeep and monitoring every 3 months</td>
<td></td>
</tr>
</tbody>
</table>

| Total Monthly Payment: 1 | $2,200 |
| Total Monthly Savings: 1 | $2,800 |
### Selling “As a Service” is Effective

#### 4.4X Increase In Conversions

SparkFund has seen a larger average project close rate compared to traditional lease & loan financing.

<table>
<thead>
<tr>
<th></th>
<th>Traditional Financing</th>
<th>As a Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12%</td>
<td>53%</td>
</tr>
</tbody>
</table>

#### 4.8X Faster Time to Close

Many As a Service projects take less than a month to close, making the sales cycle much shorter than that of traditional loans or leases.

<table>
<thead>
<tr>
<th></th>
<th>Traditional Financing</th>
<th>As a Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>130 Days</td>
<td>27 Days</td>
</tr>
</tbody>
</table>

#### 1.3X Larger Projects

As a Service projects are larger on average. With no cash upfront and no balance sheet impact, it’s easier for customers to choose to roll out equipment across multiple locations.

<table>
<thead>
<tr>
<th></th>
<th>As a Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$172,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Traditional Financing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>128,000</td>
</tr>
</tbody>
</table>
The Future of Energy Equipment Sales

Projected market growth with adoption of Service Model vs. status quo

- **$8 Billion**
  - Expected increase (+42%) in annual revenues for energy efficient products and services by 2020 considering “as a service” uptake.

- **$20 Billion**
  - New investment in commercial efficiency unlocked between 2016 and 2020 by “as a service” utilization.

- **$48 Billion**
  - By 2025, the service model may double the total annual energy efficiency market to $48 Billion.
Selling “As a Service” is complex
Why is mainstream “As a Service” hard?

Energy services businesses must adjust to three challenges to administer an “As a Service” solution:

**Larger Corporate Rollouts**

Without balance sheet constraint, corporates are choosing to consume energy saving technology at scale.

**C&I Fragmentation**

Falling cost of technology means smaller project sizes and more customers to service.

**Complex Transactions**

“As a Service” projects are more complicated, with more servicing tasks required each month.
SparkFund’s “As a Service” Structure

SparkFund automates everything in the green shaded area.
SparkFund’s “As a Service” Platform

We provide the necessary pieces to make selling “As a Service” successful and low-cost, from end to end.

**Customer Pricing Interface & Sales Support**
Web-tools to help make sure your team presents a simple, streamlined offer to customers each and every time.

**Customer Risk Assessment**
We’ll underwrite each customer, even if they don’t have a public rating.

**Upfront Financing**
So you get paid for your project right away and can recognize revenue upfront.

**Contracts**
Including all the legal documents needed to sell “as a service”.

**Transaction Management**
We handle the back-end flow of funds with no fixed cost.
As a Service Technologies

- Lighting (Bulbs In Ceiling)
- Lighting (Troffers/Ballasts)
- Building Controls
- VFD & HVAC
- EV Charging Stations
- Refrigerator Units
- Refrigerator Fans & Monitoring
As a Service Case Study: Midas Auto

Midas Auto Service Experts

South Carolina auto repair shop upgrades to LEDs for performance and energy savings

- **Industry:** Automotive
- **Equipment:** Alumen8E RKS and GE T8 LEDs
- **Financing Term:** 68 Months
- **Expected Savings:** $2,118 per year
- **CO₂ Reduction:** 178,950 lbs (over project lifetime; based on eGrid)
- **Location:** Columbia, SC
As a Service Case Study: Essex Condo

Essex Condo Association

Washington, D.C. condo upgrades lighting with LED "pay as you save" program

- **Industry:** Multifamily Housing
- **Equipment:** Commercial Grade LED Lighting
- **Services Agreement Term:** 60 months
- **Expected Savings:** $13,900 per year
- **CO₂ Reduction:** 2,437,000 lbs
  (Over project lifetime; based on eGrid)

- **Location:** Washington, DC
Metrus – Paying the Way for Energy Efficiency
Metrus – What We Do

• Metrus develops, owns and operates large-scale EE projects for C&I clients nationwide

• Metrus partners with leading ESCOs/contractors to design, construct, maintain projects

• Metrus is an energy efficiency “independent power producer” selling efficiency as a service

• Metrus operates projects with Fortune 500 companies and major institutional customers
Origins of the Metrus ESA

Power Purchase Agreement

- Wind turbine/farm
- Utility power plant
- Solar PV System

Traditional Performance Contract

- Federal/Municipal
- Institutional
- K-12, Public Universities

Efficiency Services Agreement

- Funds 100% of project costs
- Third-party ownership of EE assets
- Pay-for-performance structure
- Covers Construction, O&M and M&V
- Private sector focus – C&I, Institutional
ESA Defines the Relationships

Two key contracts govern each project:

1. Efficiency Services Agreement ("ESA") with the Customer;
2. Efficiency Services Performance Contract ("ESPC") with the ESCO/contractor

**Project Installation**
ESCO designs and installs the project, provides long-term maintenance and guarantees performance

**ESA**
- Metrus funds 100% of project cost
- Repayment based on savings
- Metrus takes title to EE equipment
- Metrus pays for maintenance costs

**ESPC**
Turnkey project installation and maintenance contract
Financial Benefits

• No capital outlay (cap-ex dollars can be invested in core business)

• Preservation of debt capacity

• Immediate positive cash flow = bottom line improvement

• Pay-for-performance structure de-risks the transaction
Operational Benefits

- Resiliency (added reliability) via new equipment + O&M services
- Increased visibility through M&V
- Portfolio (multi-site) solution; ability to include water efficiency
- Flexible structure, add new EE measures over time
- Healthy buildings; improved working environment
**ESA – Service Charge**

Service Charge = (physical units of savings) * (Service Rate, $/unit) + Non-Energy Savings

**Billing Period**  
Quarterly

** Basis  
Quantity of energy units saved (e.g., kWh of electricity)

** Service Charge  
$ per unit of energy units saved

** Non-Energy Savings  
% of project savings attributed to operational (non-energy) benefits

** Annual Escalation  
Service charge escalates at a fixed annual rate

Savings created by:
(1) Year 1 service charge is ≤ avoided utility cost
(2) Fixed annual escalation is ≤ expected utility rate increase

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Cost per Unit of Energy

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost per Unit of Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$0.00</td>
</tr>
<tr>
<td>2</td>
<td>$0.05</td>
</tr>
<tr>
<td>3</td>
<td>$0.10</td>
</tr>
<tr>
<td>4</td>
<td>$0.15</td>
</tr>
<tr>
<td>5</td>
<td>$0.20</td>
</tr>
</tbody>
</table>

*SAVINGS*
Customer Profile

**Market – Private Sector**
- Industrial
- Commercial
- Hospitals
- Universities & Colleges

**Total Energy Spend**
- Electricity + Natural Gas
- + Fuel Oil + Water $> 1 million

**Location**

**Credit Quality**
Introduction to Metrus

Metrus ESA

Results

Next Steps

Project Profile

Typical Efficiency Measures

• Building automation & controls
• Lighting retrofits & controls
• Heating, ventilation & air conditioning (HVAC)
• Central plant systems
• Boiler replacement & system improvements
• Pumps, fans, motors & drives
• Cogeneration (onsite generation of electricity)
• Water efficiency measures

Typical Project Profile

• Integrated energy efficiency retrofit projects
• Project size is generally $1-10 million
• ESA (project) term is generally 10 years
If the ESA is a services agreement…

...how do we compare it to other financing options?
## ESA Compared to Alternative Financing Options

<table>
<thead>
<tr>
<th>Attribute</th>
<th>ESA</th>
<th>Lease</th>
<th>PACE</th>
<th>Cash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Down Payment</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Origination Fees</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>On Balance Sheet</td>
<td>No</td>
<td>Yes</td>
<td>??</td>
<td>Yes</td>
</tr>
<tr>
<td>Pay-for-Performance</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>M&amp;V</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Funding Amount</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Tenor or Term</td>
<td>5-15 years</td>
<td>5-15 years</td>
<td>20 years</td>
<td>N/A</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>No – service agreement</td>
<td>Yes – lease payments</td>
<td>No – tax assessment</td>
<td>N/A</td>
</tr>
<tr>
<td>Liens</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>N/A</td>
</tr>
</tbody>
</table>
**CASE STUDY:** BAE Systems Multi-site Program

<table>
<thead>
<tr>
<th>NO. OF SITES</th>
<th>TOTAL INVESTMENT</th>
<th>TOTAL SAVINGS</th>
<th>TOTAL CO₂ SAVINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>$10 MILLION</td>
<td>$4.1 MILLION</td>
<td>15,000 TONS</td>
</tr>
</tbody>
</table>

- Lighting retrofits (interior and exterior)
- Building automation and controls
- Air compressor, boiler & chiller replacement
- Transformer replacement
- Demand control ventilation
- Building envelope improvements
- Operational best practices

TOTAL IMPACT (AS OF FEBRUARY 2016)

- NO. OF SITES: 5
- TOTAL INVESTMENT: $10 MILLION
- TOTAL SAVINGS: $4.1 MILLION
- TOTAL CO₂ SAVINGS: 15,000 TONS
CASE STUDY: Kuakini Medical Center

TOTAL IMPACT (AS OF FEBRUARY 2016)

- **$5.8 MILLION TOTAL INVESTMENT**
- **$1.76 MILLION TOTAL SAVINGS**
- **4,730 TONS TOTAL CO₂ SAVINGS**

- New chiller plant
- Lighting upgrades
- Energy management system (EMS)
- New steam boilers
- Air-handling unit VFDs
- New booster pumps and fire pumps
CASE STUDY: Fortune 50 Industrial EE Retrofit

TOTAL IMPACT (AS OF FEBRUARY 2016)

TOTAL INVESTMENT $3.1 MILLION
TOTAL SAVINGS $500,000
TOTAL CO₂ SAVINGS 3,615 TONS

- Lighting retrofits (including new LEDs)
- Demand control ventilation
- Building automation system and controls
- Chiller replacement
CASE STUDY: **Fortune 500 Efficiency Upgrade**

- **TOTAL IMPACT**: $4.2 million
- **TOTAL SAVINGS**: $550,000
- **TOTAL CO2 SAVINGS**: 7,300 tons

- Lighting retrofits
- Variable frequency drives and controls
To get started with Metrus, please contact us at:

Bob Hinkle
(415) 284-5000
Bob.Hinkle@metrusenergy.com

www.metrusenergy.com