EEMS HIGH LEVEL MARKET ASSESSMENT

PRESENTATION TO LEADERSHIP TEAM

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Introduction

Enterprise Energy Management Systems (EEMS) software use focuses on three main use patterns:

1. **Analyze and report**
   - Monitoring, analyzing, and reporting energy consumption and carbon emissions.

2. **Govern and act**
   - Incorporates “analyze and report” and extends to the additional tracking of waste and water, expanded interfaces with purchasing analysis
   - Map enterprise-wide energy and sustainability solution.

3. **Anticipate and align**
   - Convergence of business performance management and sustainability management capabilities
   - Solutions provide integrated management and reporting of financial and sustainability key performance indicators (KPIs)
   - Integrated product portfolio management capabilities in order to align strategy and investment priorities from a dual financial and sustainability perspective.

Note: Sustainability management includes tracking of non-energy based emissions of refrigerants, solid waste, waste water, vehicle fleets.
Key Market Targets

**Enterprise Energy Management Systems**
- C3, Enablon, Enviance, ENXSuite, Global Carbon Systems, Hara, Infor, IHS, Pace, SAP, SAS, Verisae

**Building Management and Operational Systems (BMS)**
- GE, Honeywell, Johnson Controls, IBM Tririga

**Green IT Energy Management**
- IBM Tivoli, JouleX, Cisco, Verdiem

**CA Tech**

**Enernoc**
## Evolution of EEMS Market Place

<table>
<thead>
<tr>
<th>Vendor</th>
<th>2008 to 2010</th>
<th>2011 to 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominant supplier type</td>
<td>GRC/EHS Startups</td>
<td>Enterprise software companies</td>
</tr>
<tr>
<td>Number of enterprise implementations</td>
<td>100s</td>
<td>1,000s</td>
</tr>
<tr>
<td>IT supplier value proposition</td>
<td>Operating cost reduction</td>
<td>Company and product differentiation</td>
</tr>
<tr>
<td>Principal buyer</td>
<td>Facilities GRC and CSR</td>
<td>IT</td>
</tr>
<tr>
<td>Functionality requirement</td>
<td>Aggregation</td>
<td>Analysis</td>
</tr>
<tr>
<td>Scope</td>
<td>Single facility</td>
<td>Enterprisewide</td>
</tr>
<tr>
<td>Data source</td>
<td>Spreadsheets</td>
<td>Asset instrumentation</td>
</tr>
<tr>
<td>Leading industries</td>
<td>Energy Public sector</td>
<td>Retail Consumer packaged goods</td>
</tr>
</tbody>
</table>

Source: Forrester Research, Inc.
Four Key Trends in EEMS Development

Expansion of consumption tracking
• From carbon reporting to energy spend and a broader scope of pollution and natural resources management.

Expansion of viewpoint
• Software is moving from individual facilities to encompass the entire enterprise and the entire purchasing value chain measurement.

From descriptive to predictive analyses.
• Sophisticated capabilities for automatically identifying anomalies in the data and initiating alerts for faster response to incidents resulting in financial savings and the avoidance of associated risks.

Service and Software-as-a-Service.
• Software and services are becoming much more integrated as customers seek out the most cost effective approaches to implementation and on-going energy management.
Integration of Systems Key to Strategic Value
Roles Involved in Purchasing and Implementing EEMS

• CFO, Budget and Audit Departments
  ✓ Manage CAPEX and OPEX, verification of results, impact on General Fund expenditures

• Sustainability and Environment Staff
  ✓ Drive policy, reporting and energy efficiency goals

• Facilities and Public Works
  ✓ Operate facilities and vehicles, implement efficiency projects

• Information Technology (IT)
  ✓ Manage data flow, oversee Data Centers
Review of EEMS Vendors

- Review of 26 vendors
- Revenue, employees and venture funding
- Basic capabilities
- Primary clients and verticals
- Business model
Global Carbon Systems

Australian-based Global Carbon Systems focuses on energy and sustainability solutions with a strong base of municipalities, education and property management clients. Well established in Australian market but new to US Market. Recent big win at Microsoft highlighted the firm’s capabilities.

Software Summary

Global Carbon Systems Enterprise Sustainability Platform (ESP) is a web-based platform providing real-time tracking and reporting of carbon, water, gas and electricity use based on data sourced from utility providers, supplier reports and internal business systems. City governments are able to benchmark performance on standard asset categories such as offices, data centers, libraries, pools, schools, sports fields and community centers. ESP focuses on automated Metered Energy Monitoring, Energy Management Tools, Building Energy Ratings, Bill & Tariff Analysis, and Measurement & Verification.
Third Party Evaluations

Sources: Gardner, Forrester, Verdantix, and Groom Energy
Each system evaluated on 9 dimensions:

- Commercial building energy data capture
- IT and Data Center energy data capture
- Manufacturing plant energy data capture
- Primary energy data capture
- On-site energy generation data capture
- IT system integration (ability to interface with other IT systems)
- Energy market data capture
- Master enterprise data management
- Workflow and task management
System Evaluation

Ranked on 0-3 scale
0= capability not present
1= some basic functionality
2= strong functionality
3= industry leading functionality
Example of Analysis

Global Carbon Systems

- Commercial buildings energy
- IT, data center energy
- Manufacturing plant energy
- Primary energy
- On-site energy generation
- Market data capture
- Master data Management
- Workflow and task management
- IT systems integration and manual input

HP Confidential
QUESTIONS?
NEXT STEPS
# Project Activities and Schedule

## 6 Project Components

<table>
<thead>
<tr>
<th>Project Activity</th>
<th>Due Date</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Consumption Analysis</td>
<td>June 13, 2012</td>
<td>April  6</td>
</tr>
<tr>
<td>Benchmarking Analysis</td>
<td>Completed May 16, 2012</td>
<td>May 4, June</td>
</tr>
<tr>
<td>Market Assessment</td>
<td>June 1, 2012</td>
<td>June 5, July</td>
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<tr>
<td>Business Case</td>
<td>June 22, 2012</td>
<td>July 6, Aug</td>
</tr>
<tr>
<td>Energy Forum</td>
<td>August 24, 2012</td>
<td>Aug 19, 24</td>
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THANK YOU