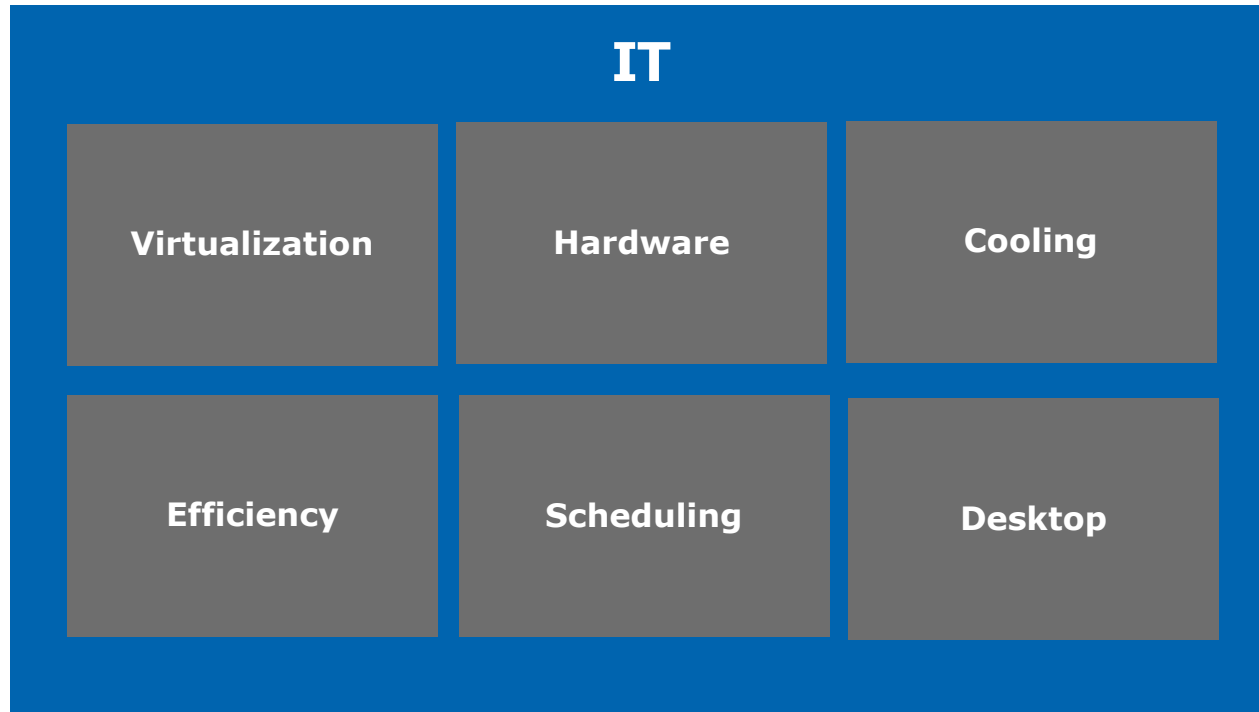


Carbon & IT in your Business

Terrence Clark

NI Energy & Environment Conf
October 14, 2009

Information Technology



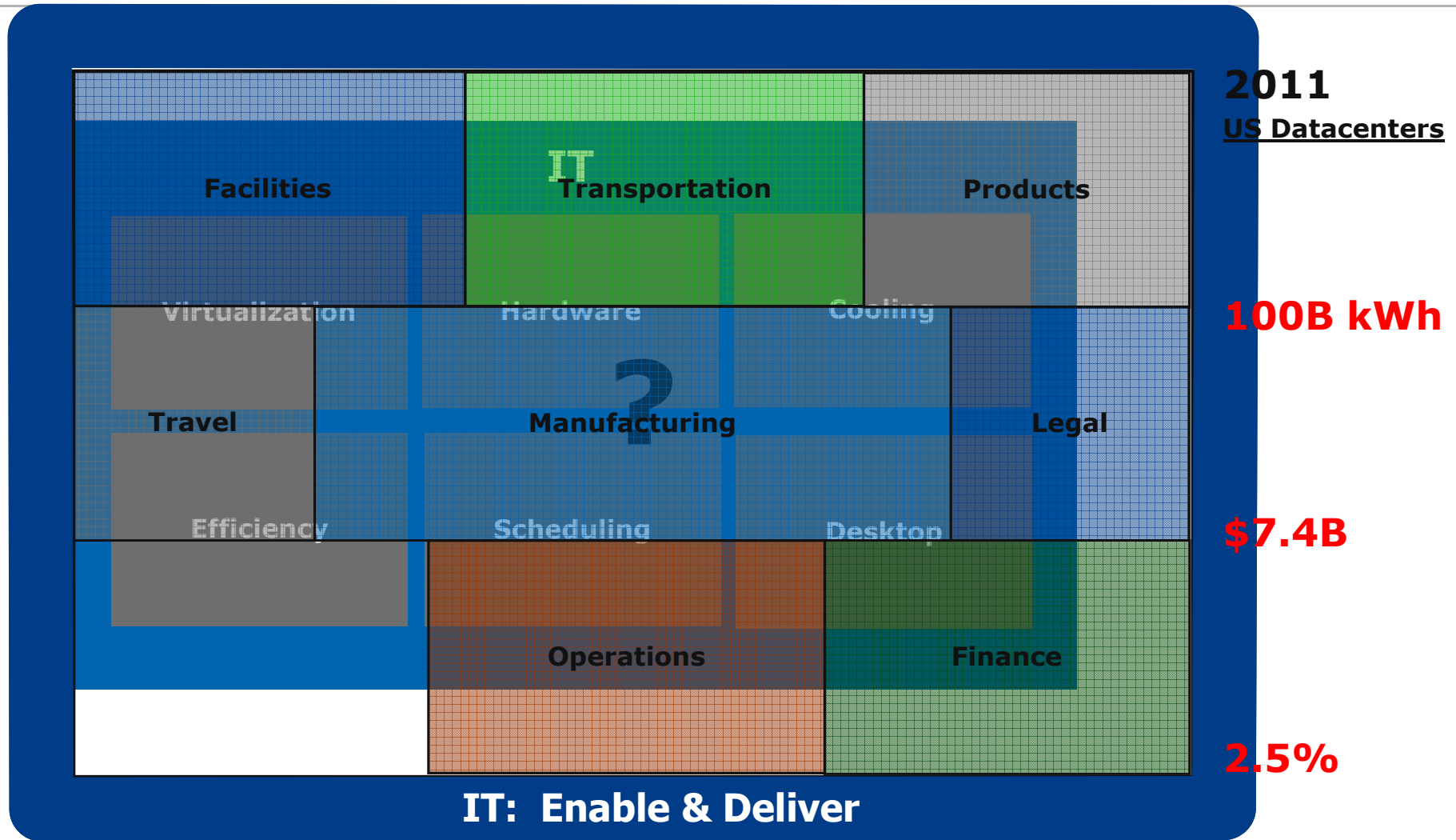
2011
US Datacenters

100B kWh

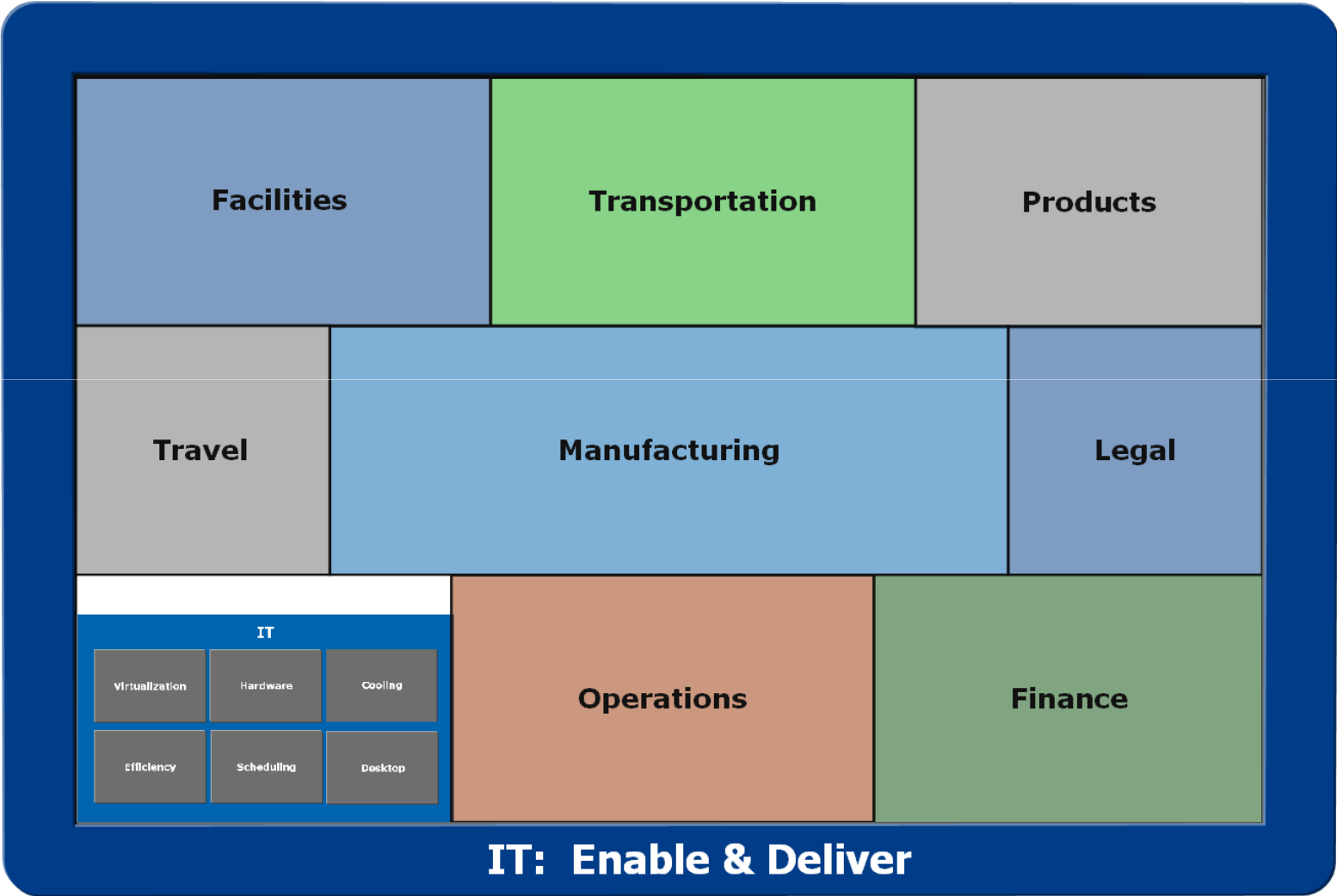
\$7.4B

2.5%

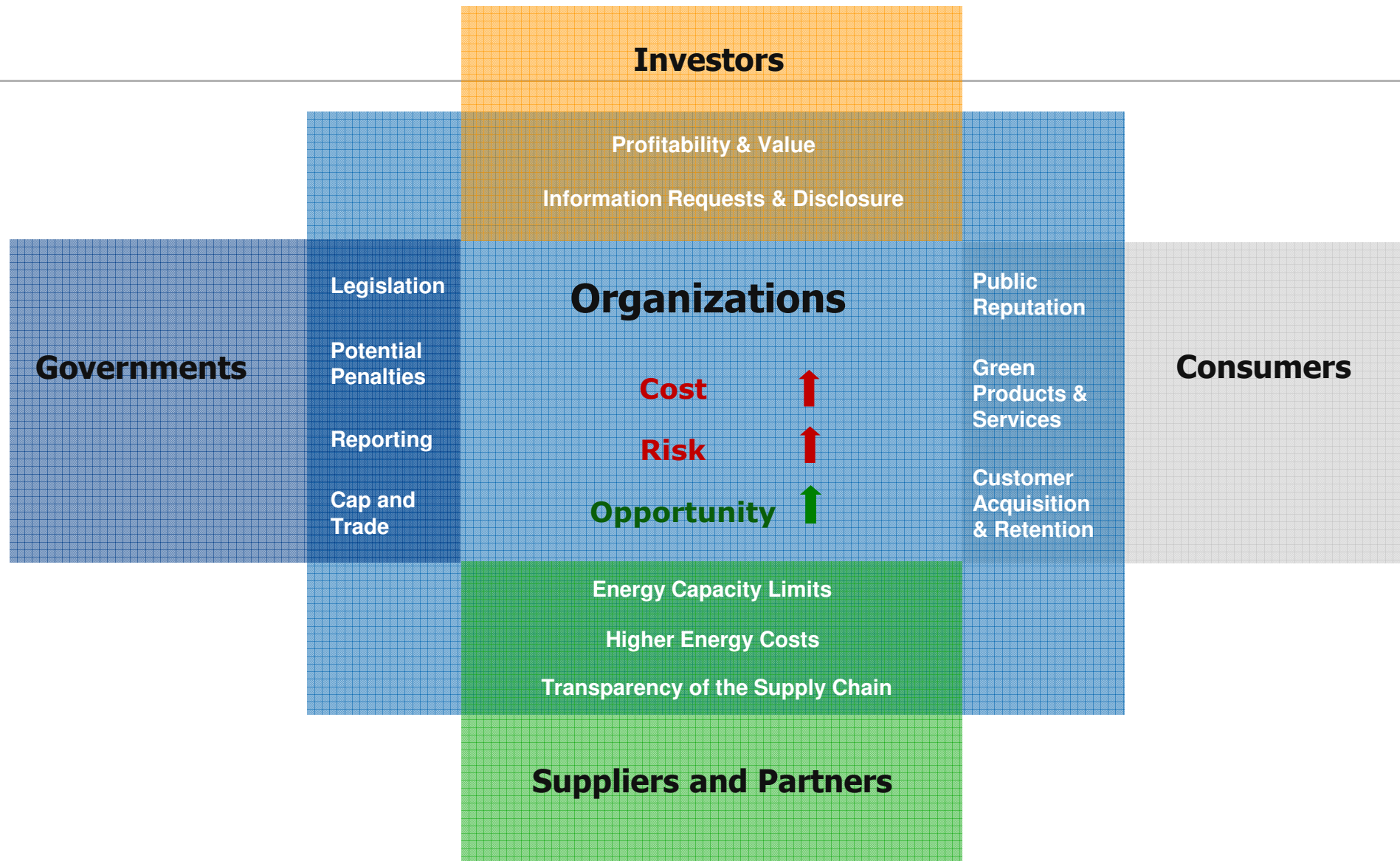
Enterprise Technology IT



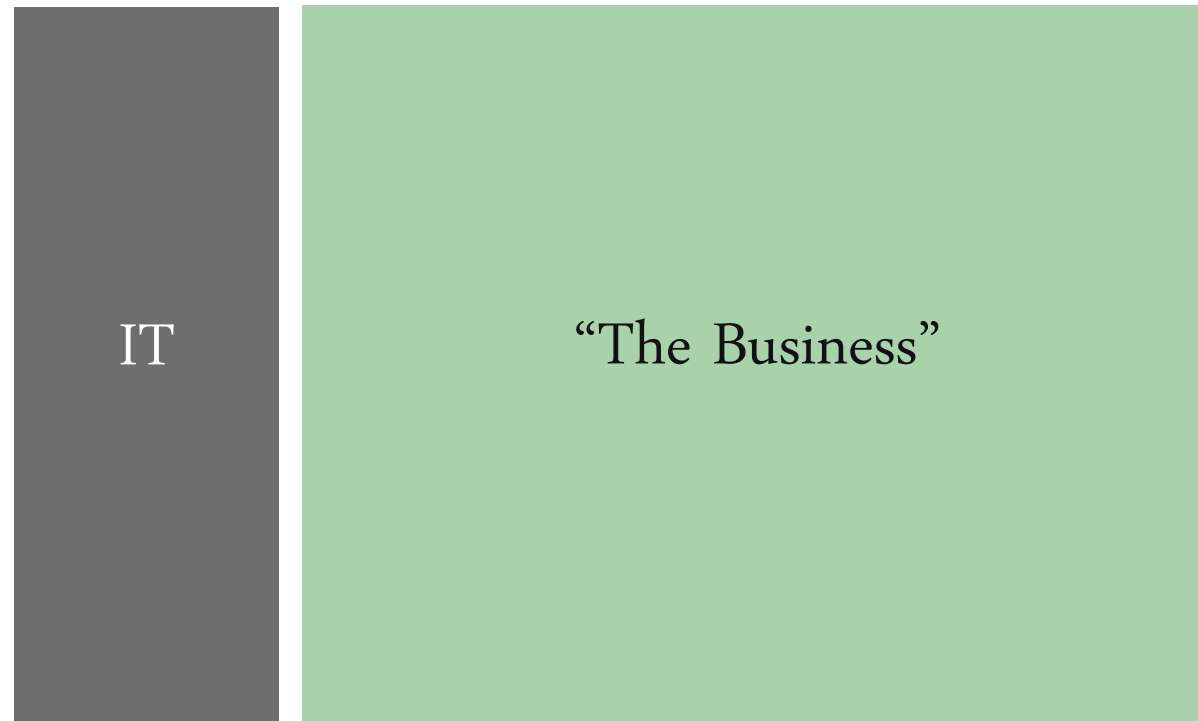
Enterprise-wide role for IT



The Impacts



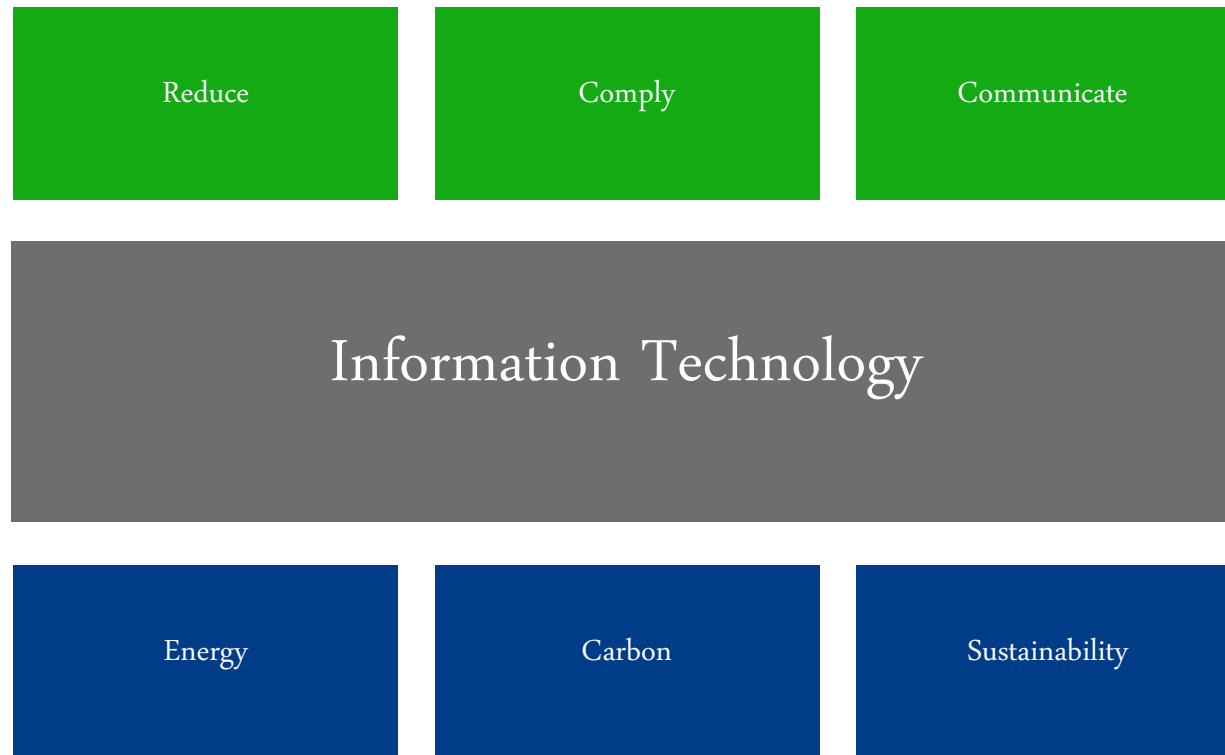
The Role of IT



The Role of IT



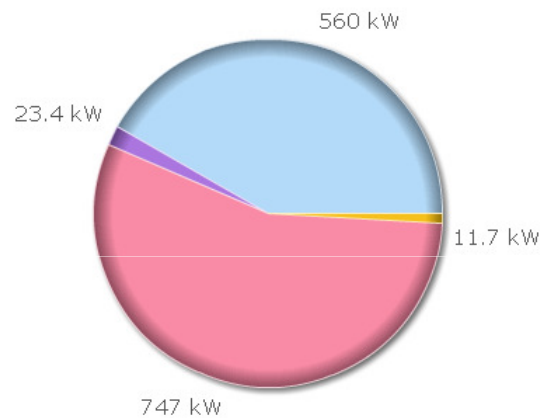
Energy, Carbon & Sustainability



Operational Energy Management

Metrics

Data Center Efficiency

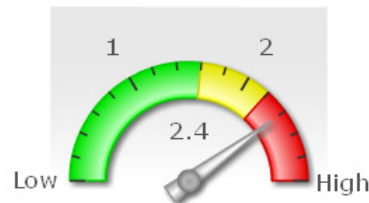


Total Data Center Power 1.3 MW

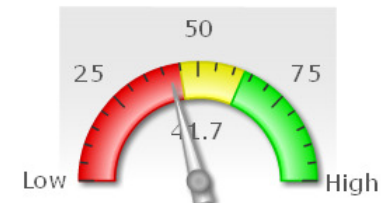
Total IT Equipment Power	560.0 kW
Total Lighting Power	11.7 kW
CRAC BTU	23.4 kW
CRAC Units	747.0 kW

UPS Load for DC 560.0 kW
UPS Load for Labs 462.0 kW

PUE
2.4



DCiE
41.7%



Efficiency
Metrics

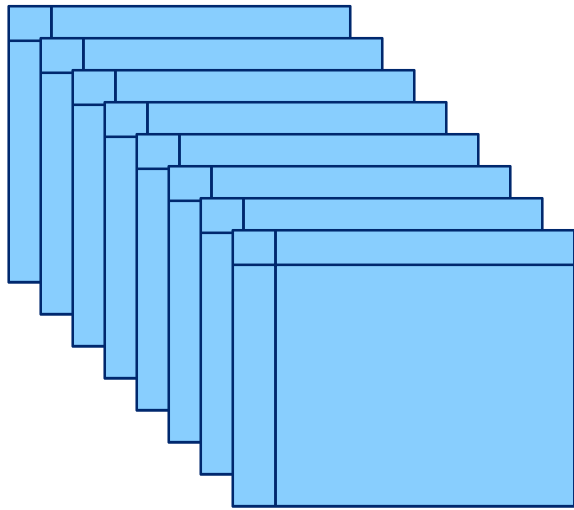
Service
Panels

Lighting
Load

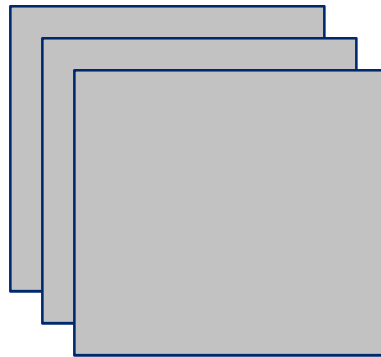
Generator
Summary

PDU
Summary

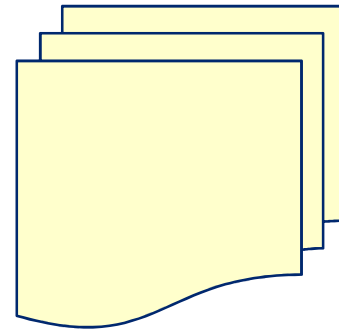
Current State



Spreadsheets



Emails



Reports

Energy & Activity Measurement

Consumption by Facility | Spend by Facility | Emissions by Facility | **Facility Trends** | ecoActivity Summary | Facility Meter Readings | Facility Scorecard

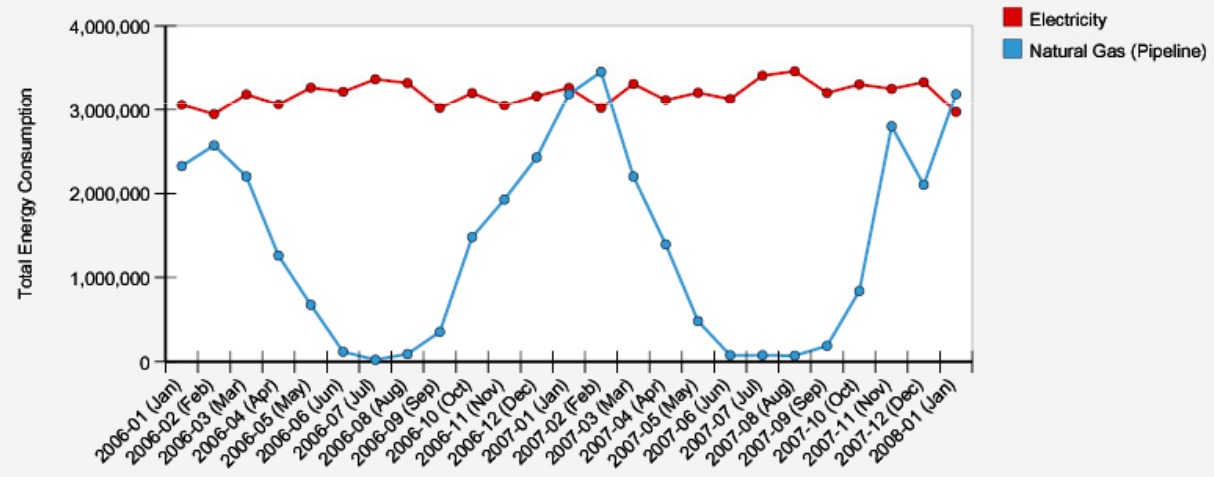
Source: Anthracite, Aviation Gasoline, Bituminous Coal, Distillate Fuel & Diesel, Electricity

Facility: Islandia, NY

Assessment Plan: All | Category: All | Extrapolated: All | Aggregate: All | Date From: 1/1/06 to 1/1/08 | Filter

Energy Consumption by Time Period [Actions]

Filter: [Select]

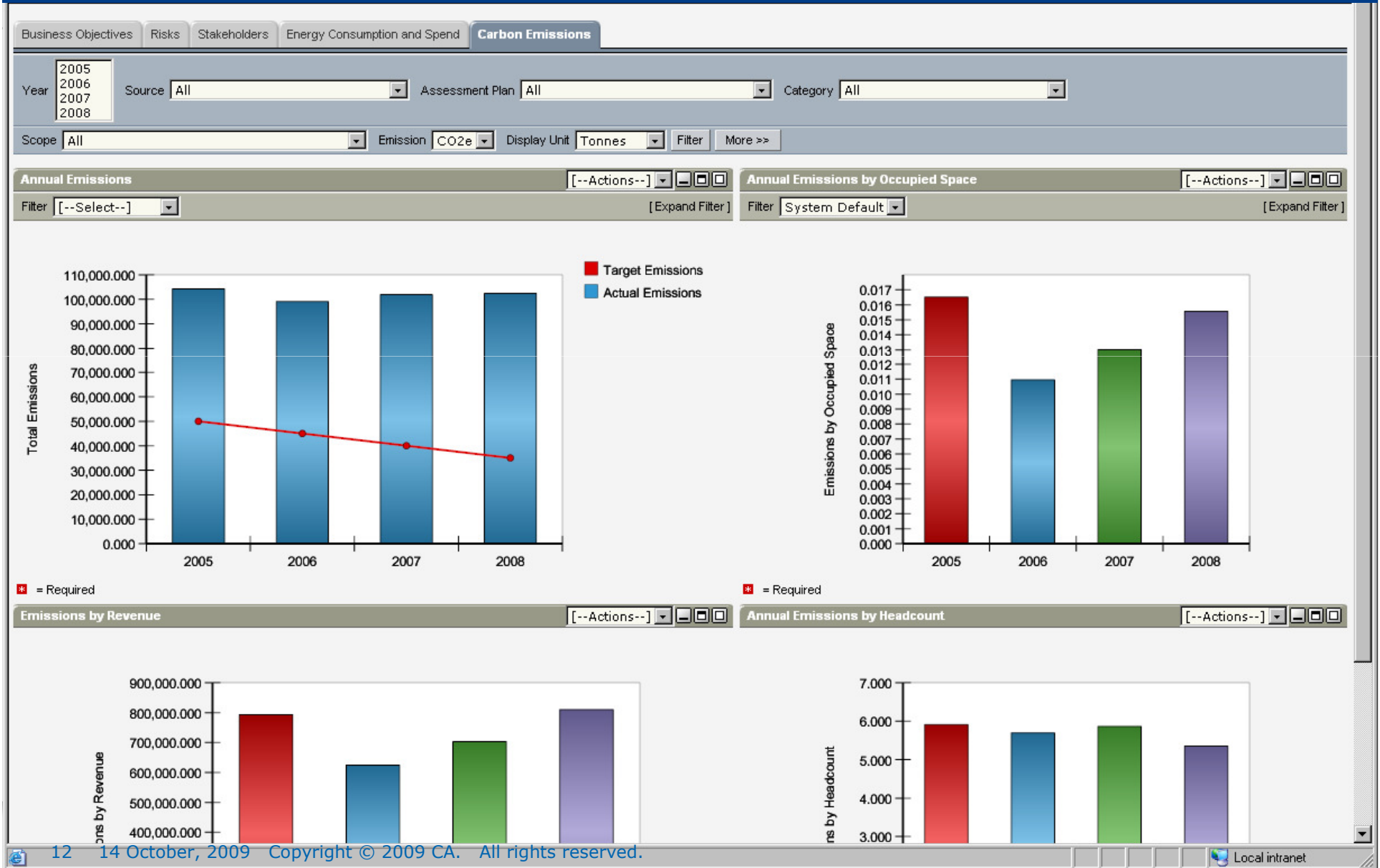


* = Required

Energy Spend by Time Period [Actions]



Carbon Accounting



Carbon & Sustainability Management



Environmental Assessments

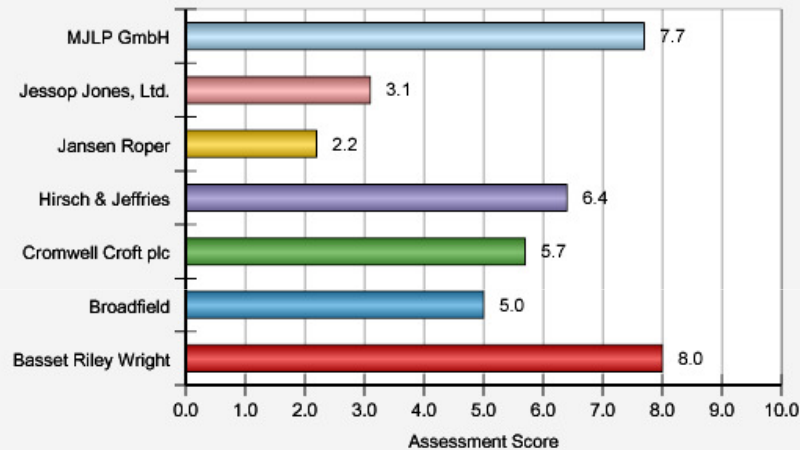
Properties Processes **Dashboard** Ideas & Issues

Supplier Sustainability Assessment

[--Actions--] [Icon] [Icon]

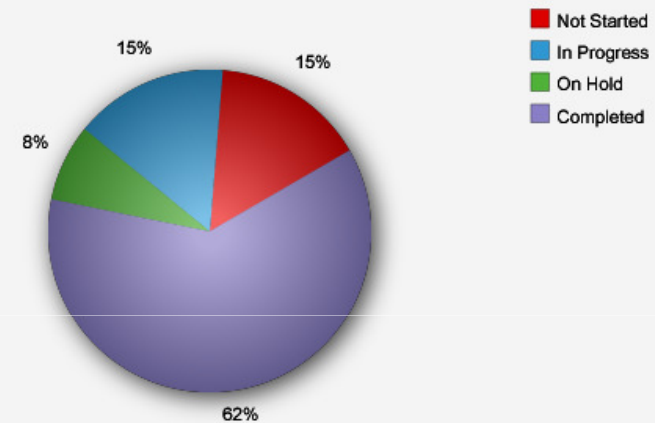
Filter **Completed Assessments**

[Expand Filter]



Supplier Assessment Progress

[--Actions--] [Icon] [Icon]



Supplier Assessment Summary

[--Actions--] [Icon] [Icon]

Filter [--Select--]

[Expand Filter]

Company [▲]	Company Type	Assessment Score	Number of Employees	Carbon Emissions	Energy Efficiency	Buildings & Facilities	Water Use	Waste & Recycling	Environmental Safety	Products & Services	Transportation & Travel	Supply Chain	Standards & Reporting	Assessment Status
Basset Riley Wright	Vendor	8.0	60,300	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed
Broadfield	Vendor	5.0	35,000	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed
Cromwell Croft plc	Vendor	5.7	30,000	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed
Hirsch & Jeffries	Vendor	6.4	55,500	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed
Jansen Roper	Vendor	2.2	65,000	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed
Jessop Jones, Ltd.	Project Partner	3.1	2,300	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed
MJLP GmbH	Vendor	7.7	13,200	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	✓ Completed

Total Results: 7

Deployment Approach



> Deployment Approach

- Selection of initial area
- Incremental, results-oriented approach
- Extend over time

What's Next?

- Evolving technology, business and regulatory context
- Stakeholder engagement and “people” dimensions for the business
- More efficient data capture
- Need for improved assurance and verification
- Program Management for carbon and sustainability
- Broader considerations of the extended value chain
- Risk management as a more integral component of carbon and sustainability planning
- Measurement —> Action —> Automation
- Expanded use of registries, standards for data exchange and cross-organizational collaboration
- Increased action on water and other environmental issues

Questions



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