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ENERNOC

Get More From Energy



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Managing Carbon
To Drive Energy Savings

Example: EO 13514 – accounting and reductions

- Create agency-wide inventory
- Percentage targets for Scope 1 & 2 reductions
- Percentage targets for Scope 3 reductions
- Manage buildings more efficiently



Successful Energy Management is critical for reaching these goals

But there can be organizational problems

When the Pew Center surveyed leading companies on carbon accounting and energy efficiency, here's why companies could not make progress.



Do these sound familiar?

Spreadsheets can only take you so far

Company Footp

 **Poor Security**

Company Foo

 **Tough to maintain**

5.xls

Company Footp

 **Expensive to verify**

Company F

te.xls

Footprint Fir

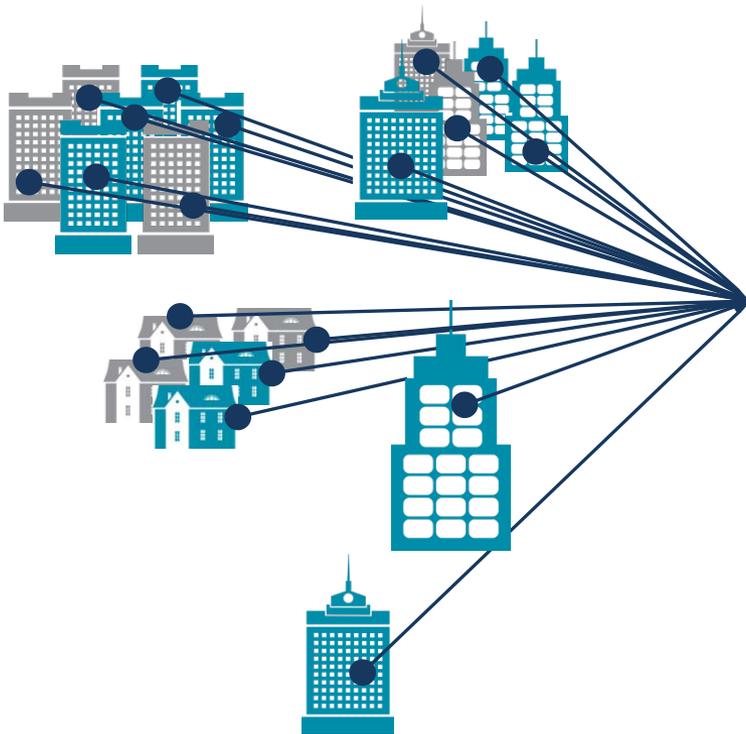
 **No tools for reduction**

anges.xls

Footprint Fir

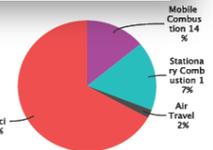
Use the Web to Gather Data Efficiently

Connect your facilities, improve data quality and manage energy to meet your targets



Location	Emission Source
ACME-005	Mobile Fuels
	Natural Gas
	Other Onsite Fuels (e.g. diesel, gas)
	Purchased Electricity
	Refrigerants

	FY2008	FY2009	% Change
Grid Electricity	122,171,522	123,029,808	1%
Stationary Combustion	28,925,484	33,074,839	10%
Mobile Combustion	26,942,923	26,889,550	0%
Air Travel	12,097,935	4,511,480	-62%
Steam	351,383	379,420	7%
Refrigerant	-	-	100%
Totals	191,189,247	188,784,895	-1%



Location	FY2008	FY2009	% Change
SCMB-007	393.1	393.1	0%
SCMB-040	388.8	388.8	-3%
SCMB-040	168.1	168.1	-
SCMB-040	168.4	168.4	-3%
SCMB-040	142.2	142.2	-
SCMB-129	168.1	168.1	16%
SCMB-129	142.4	142.4	-
SCMB-046	188.1	188.1	8%
SCMB-046	142.8	142.8	-
SCMB-143	144.1	144.1	1%
SCMB-143	129.2	129.2	-
SCMB-006	126.8	126.8	-3%
SCMB-006	118.8	118.8	-
SCMB-006	121.8	121.8	8%

CarbonSMART - reach your targets with efficient programs

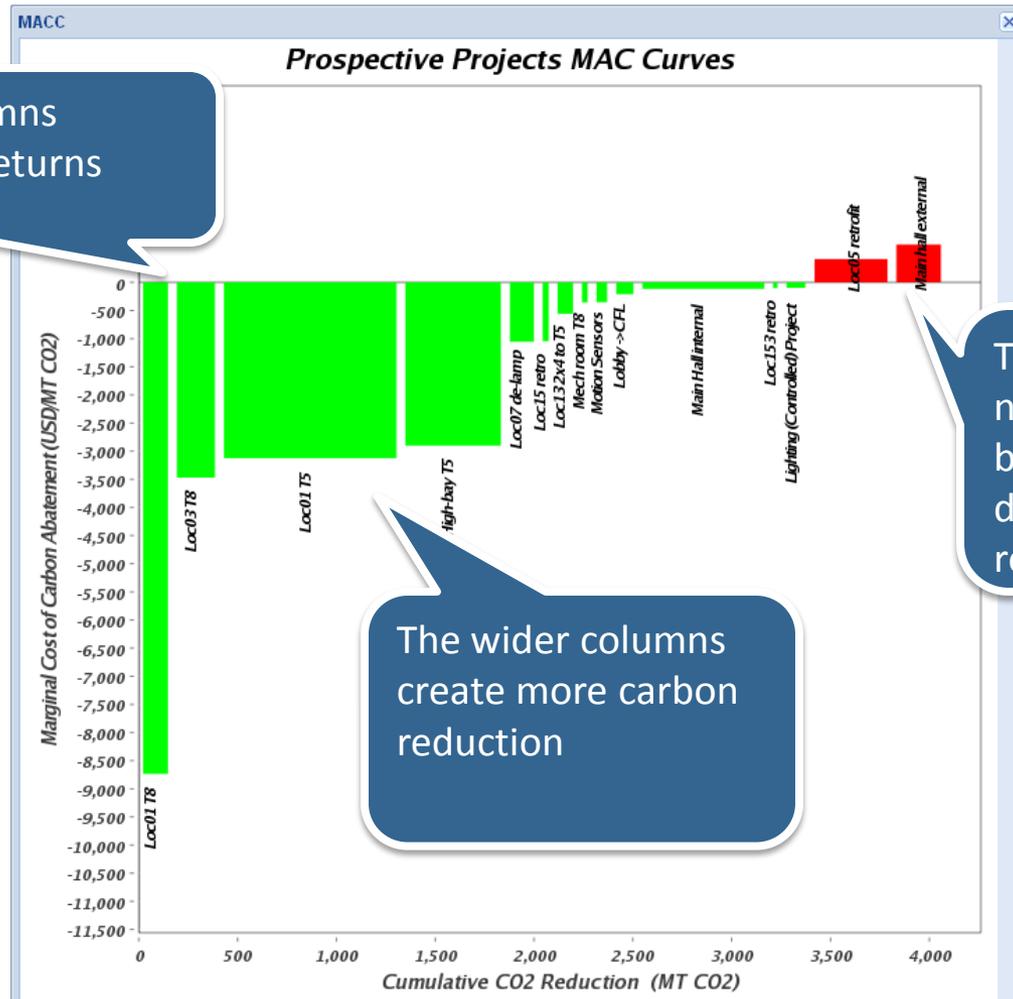
Type	Name	Locations	Energy Savings ...	NPV	MAC	CO2 Reduction (metric-tonne)	NPV w/o CO2
Lighting (Fixt)	High-bay T5	ACME-001	677,586	14,013,607 USD	-2,899.67 USD	483.28	14,013,607 USD
Lighting (Con)	Lighting (Controlled) Project	ACME-011	141,300	73,258.77 USD	-95.37 USD	96.02	73,258.77 USD
Lighting (Fixt)	Lobby ->CFL	ACME-049	265,329	221,737.26 USD	-211.09 USD	87.54	221,737.26 USD
Lighting (Fixt)	Loc01 T5	ACME-001	1,223,712	27,273,832 USD	-3,124.85 USD	872.8	27,273,832 USD
Lighting (Fixt)	Loc01 T8	ACME-001	175,024.8	10,904,942 USD	-2,725.46 USD	121.04	10,904,942 USD
Lighting (Fixt)	Loc03 T8	ACME-003	274,818.72	6,684,865 USD	-1,121.12 USD	101.04	6,684,865 USD
Lighting (Fixt)	Loc05 retrofit	ACME-005	870,000	-764,526.64 USD	-1,121.12 USD	101.04	-764,526.64 USD
Lighting (Fixt)	Loc07 de-lamp	ACME-007	170,240	1,280,222.5 USD	-1,121.12 USD	101.04	1,280,222.5 USD
Lighting (Fixt)	Loc13 2x4 to T5	ACME-013	109,527.04	436,159.34 USD	-1,121.12 USD	101.04	436,159.34 USD
Lighting (Fixt)	Loc15 retro	ACME-015	56,160	91,433.26 USD	-1,121.12 USD	101.04	91,433.26 USD
Lighting (Fixt)	Loc153 retro	ACME-153	68,310	9,130.93 USD	-1,121.12 USD	101.04	9,130.93 USD
Lighting (Fixt)	Main hall external	ACME-114	433,620	-1,213,456.5 USD	-675.19 USD	229.32	-1,213,456.5 USD
Lighting (Fixt)	Main Hall internal	ACME-114	1,185,600	531,120.56 AUD	-172.42 AUD	616.06	531,120.56 AUD
Lighting (Fixt)	Mech room T8	ACME-017	39,773.44	50,608.71 USD	-356.8 USD	28.37	50,608.71 USD
Lighting (Fixt)	Motion Sensors	ACME-001	75,600	190,581.2 USD	-353.44 USD	53.92	190,581.2 USD

Build a financial model using best practice templates

Bring together projects in programs: top-down and bottom-up

Flex your model to include carbon pricing in alternative scenarios

CarbonSMART – use rich graphics to support decision-making



The longer columns provide better returns

The wider columns create more carbon reduction

The red columns do not provide a return, but you may want to do them for strategic reasons

CarbonSMART – Manage the organization

- Slice and dice the data – energy, emissions, cost
- Display data in graphs, charts and tables

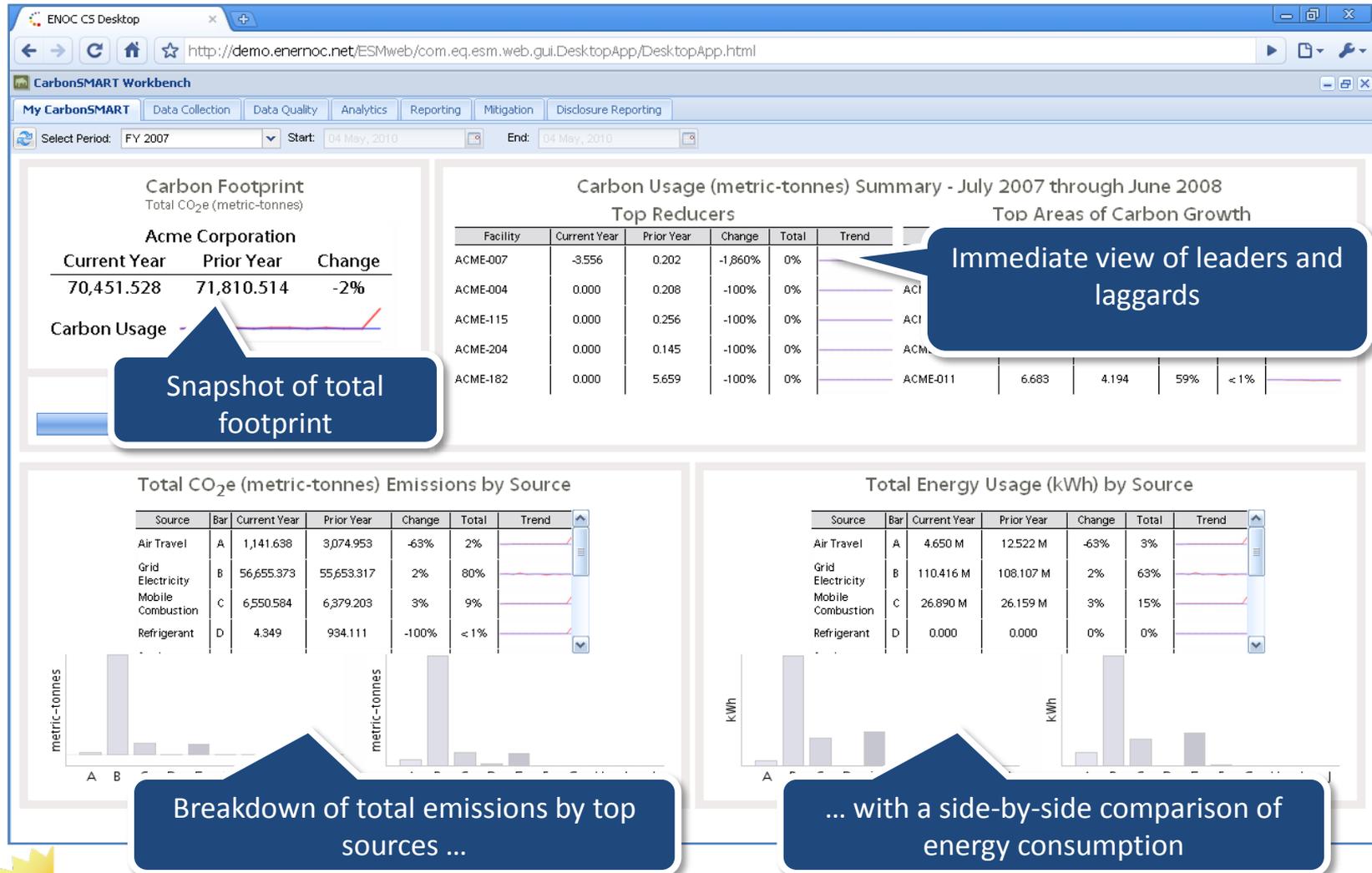
The screenshot shows the CarbonSMART interface with the following settings:

- Build Row Data (X-axis):**
 - Select Grouping of Row Data: Location
 - Select Fiscal Years: FY 2006 (Base Year), FY 2007, FY 2008, FY 2009, FY 2010
 - Select Entities/Locations: ACME-001, ACME-003, ACME-004, ACME-005
- Output Type:** XLS (selected), HTML, PDF, RTF, XLS
- Include Equity Interest:**
- Type of Analytic Output:** Table

Two blue arrows indicate the flow from the configuration panel to the output options, and then to the resulting table.

		Scope 2	Total	% Change from FY06
		Grid Electricity		
ACME-018	FY06 (Base Year)	624.4	624.4	-
	FY08	667.5	667.5	7%

Bring it all together in dashboards



Immediate view of leaders and laggards

Snapshot of total footprint

Breakdown of total emissions by top sources ...

... with a side-by-side comparison of energy consumption

Straightforward Deployment

Set Up

- Set organizational boundaries
- Define operational boundaries

Gather

- Identify emission sources
- Collect usage data for all emission sources

Upload

- Enter and/or upload data
- Validate quality

Report

- Run internal analytics
- Generate external GHG reports

Case Study – MA Dept. of Energy Resources



Massachusetts deploys largest SaaS Carbon Accounting project in the U.S.

Combines energy efficiency and carbon accounting across more than 450 facilities



“Saving energy means saving money. The system will keep Massachusetts ahead of the curve as a state leader mitigating climate change.”

Senator John Kerry

Industry
Government (University, Healthcare, Prisons, Office)

Location
Massachusetts

Applications
CarbonSMART, SiteSMART, SupplySMART

Goals

- Reduce state government's greenhouse gas emissions by 40 percent in 2020 using a 2002 baseline;

Success
Link carbon accounting tightly with energy management to meet goals faster.



What will Carbon Management bring to your agency?

Factor carbon cost into energy efficiency projects

- Create what-if scenarios of carbon price impact of projects
- Analyze energy and non-energy projects (e.g. water, waste for EO 13514)

Communicate a consolidated view of energy and carbon projects

- Enable decision-making on carbon cost and abatement potential, in addition to traditional payback metrics

Benchmark carbon footprint

- Manage at multiple levels (business units, facilities, processes)
- Share best practices from analysis of leaders and laggards