

Small Business GHG Emission Reductions Toolkit

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Toolkit Components

- Cost-saving action areas to reduce GHG emissions
- California case studies
- Financial resources
- Business-specific carbon calculator with decision-support
- Award program
- Peer-networking forum



Defining a Carbon Footprint (1 of 6)

- What is a business carbon footprint?
 - Total amount of greenhouse gases produced directly and indirectly to support a business, usually expressed in equivalent tons of carbon dioxide (CO₂)
- “If you can’t measure it, you can’t change it”

Business Carbon Footprint Calculator

Existing Calculators (2 of 6)

- Existing Business Carbon Footprint Calculators
 - California Climate Action Registry (reporting purposes)
 - <http://www.climateregistry.org/tools/carrot.html>
 - Terra Pass (simple, online tool)
 - <http://www.terrapass.com/business/>
 - Detailed spreadsheet versions
 - US EPA Climate Leaders
<http://www.epa.gov/stateply/resources/lowemitters.html>
 - Clean Air-Cool Planet
<http://www.cleanair-coolplanet.org/OfficeFootprint.php#Calc>
 - Ratcliff Greenhouse Gas Calculator for Facility Operations
http://www.ratcliffarch.com/assets/xls/ratcliff_ghgcalc.xls
 - Climate Earth's Online Snapshot of Supply Chain Emissions
<http://climateearth.com/snapshot/>

Business Carbon Footprint Calculator

Introducing a Calculator with Decision-Support Capacity (3 of 6)

- Simple tool designed for small to medium sized business
 - Uses California-specific emission factors
- Allows for quick estimation of carbon footprint
 - “Snapshot” (30 seconds)
 - Enter sector, annual revenue, location
 - More detailed analysis (up to 30 minutes)
 - Include information on Scope 1, 2 and 3 emissions
- Provides decision-support (ranked recommendations for action)
 - Including link to EnergyIQ
- Under development by UC Berkeley



Business Carbon Footprint Calculator

Link to EnergyIQ (4 of 6)

- What is EnergyIQ?
 - Tool used to identify and prioritize non-residential energy-saving opportunities
 - Data from the California Commercial End-Use Survey (CEUS)
- EnergyIQ Goals and Premises
 - Pairs “you-are-here” benchmarking with pointers to actions to reduce energy use
 - Serves as bridge between conventional benchmarking and full audit or simulation study
 - Enable users to select peer group, metrics and views
 - Offers benchmarking on the fly
 - Available online
 - Complements existing methods (e.g. Energy Star Portfolio Manager)
 - <http://energyiq.lbl.gov/>

- Under development by LBNL



Business Carbon Footprint Calculator EnergyIQ Screenshot (5 of 6)

DEMO VERSION: This tool is still under development and intended for demonstration purposes only. Options set in grey font are not yet functional. [User Survey](#)



About EnergyIQ How to Use HELP

ACTION-ORIENTED ENERGY BENCHMARKING FOR NON-RESIDENTIAL BUILDINGS



[Reading Room](#) [Decision Support](#) [Developers](#) [What's New & Next](#) [Glossary](#) [MyIQ](#)

Select "Click to Plot" button to show results for current selection. Change Filters, Energy, Features, Indicators, and/or Views settings to re-plot.

FILTERS

Active Project: None

Building Type (all)

- Office
- Data Center
- Laboratory
- Restaurant
- Food Store
- Retail
- Warehouse (Refrig)
- Warehouse (Non-Refrig)
- Healthcare
- School
- College
- Lodging
- Public Assembly
- Miscellaneous
- Cleanroom

Vintage (all)

Location

Floor Area (all)

Peer Group

ENERGY

- Total Energy
- Total Electricity
- Total Fuel
- End Use Breakout
- End Uses
- Peak Electricity Demand

FEATURES

- Lighting
- Envelope
- Single-zone Air Handlers
- Multi-zone Air Handlers
- Chilled Water
- Hot Water / Steam
- Service Hot Water
- Plug & Process Loads

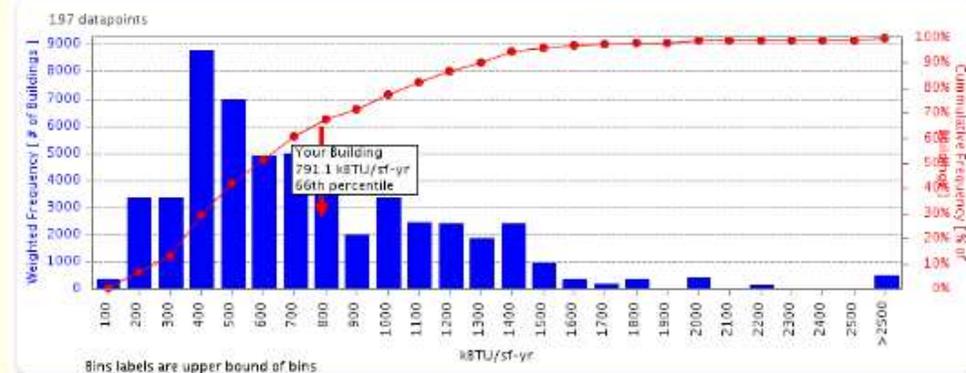
INDICATORS

- Site Energy
- Source Energy
- Cost
- Emissions

VIEWS

- Summary Only
- Range Bar
- Ranked Bar Chart
- Frequency Distribution

Summary:
157 datapoints
Your building consumes 791.1 kBTU/sf-yr, placing it at the 66th percentile in your peer group, with 0 being lowest and 100 being highest. The source energy consumed for typical buildings of the type(s) you've specified is 585.7 kBTU/sf-yr [median value], with a range of 187.1 to 1419.2 kBTU/sf-yr [5th to 95th percentiles] for the population. Try other Views for graphical and tabular detail. This analysis includes population weights for each building.



197 datapoints

Weighted Frequency [# of buildings]

Cumulative Frequency [% of population]

kBTU/sf-yr

bins labels are upper bound of bins

This View: ENERGY > Total_Energy > Source Energy kBTU/sf-yr > Freq Dist

Data Set: [Tabular](#) [Download](#)

Business Carbon Footprint Calculator EnergyIQ Screenshot (6 of 6)

This is a static mockup. Final version will display possible actions based on dynamic logic keyed to the user's description of the building being benchmarked.

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The screenshot shows the EnergyIQ logo on the left. To its right is a navigation bar with the following items: ACTION-ORIENTED, ENERGY, BENCHMARKING, FOR, NON-RESIDENTIAL. Below this is a row of images showing various building interiors. At the bottom of the navigation bar are links: About EnergyIQ, How to Use, HELP, Reading Room, Decision Support, Developers, What's New & Next, Glossary, MyIQ.

	● High	● Medium	● Low	⊗ Not Applicable
Action	Relevance	Impact	Cost Effectiveness	
Whole Building				
Reduce overall energy use	●	●	●	
Reduce electrical energy use	●	●	●	
Reduce peak demand	●	●	●	
Reduce fuel energy use	●	●	●	
Lighting Systems				
Reduce overall lighting energy intensity	●	●	●	
Install efficient lamps	●	●	●	
Install efficient ballasts	●	●	●	
Optimize lighting controls	●	●	●	
Reduce lighting operating hours	<i>Provide more info</i>	<i>Provide more info</i>		⊗
Envelope				
Increase roof insulation	<i>Provide more info</i>	<i>Provide more info</i>		⊗
Increase wall insulation	<i>Provide more info</i>	<i>Provide more info</i>		⊗
Replace windows	<i>Provide more info</i>	<i>Provide more info</i>		⊗
Add exterior shading	<i>Provide more info</i>	<i>Provide more info</i>		⊗

***draft* CoolCalifornia.org Business Award**

- Purpose
 - Recognize leadership and achievement in GHG reduction efforts among small California businesses

- Proposed Award Categories
 - GHG Emissions Reductions
 - Achieves documented GHG reductions annually
 - Education and Leadership
 - Makes significant efforts to educate employees and/or the general public about strategies to reduce GHG emissions

- Recognition
 - Board Resolution
 - Ceremony/Press Release
 - Authorization to use CoolCalifornia winner logo with their products, advertising, and business websites to publicize their achievements

Peer-Networking Forum Blogs, etc!

CoolCalifornia.org will:

- Provide a space for posts by California small businesses
- Connect business owners to existing green blogs
- Promote networking with similar businesses
- Allow site sharing with others using social bookmarking



Timeline

Action	Date
Develop Small Business Carbon Footprint Calculator with Decision-Support	Ongoing
Link Calculator with EnergyIQ	Spring 2009
Develop Award Program	Ongoing
Develop Peer-Networking Forum	Ongoing
Finalize Toolkit	March 2009
Board Hearing	April 23-24, 2009

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Public Comment Period

- What additional Toolkit components should be included?
- What are the current barriers that prevent implementation of cost-saving actions to reduce GHG emissions?
- What strategies should be employed to promote Toolkit use?
- What would incentivize participation in an awards program? In an online peer-networking forum?