

# The Path to Green Energy: Fort Collins' efforts to help businesses lower energy costs and greenhouse gas emissions

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## Overview

- In recent years, partaking in environmentally sound practices and lowering greenhouse gas emissions has become a sizable focus of businesses across the United States.
- Many programs have been established that help businesses accomplish this through assessments and recommendations to aid businesses in improving waste reduction, energy saving, water conservation and transportation emissions.
- Despite receiving an abundant list of recommendations, many businesses do not implement all of them. Some recommendations take years to implement, whereas others take a much shorter time period.
- Through research and analysis of a program in the City of Fort Collins called ClimateWise I am attempting to answer the overarching questions, "Which recommendations are most frequently given out and implemented?" and "What are the "implementation rates" for these recommendations?"

## Database Construction

- A set of assessments by the ClimateWise program was analyzed. This set of assessments is comprised of those given during the years 2008-2010 to all business partners, forming a data set of 101 companies.
- In these assessments, the energy recommendations that businesses received (as opposed to water, solid waste and transportation recommendations) were examined and recorded in Table 1 below.
- The yearly reports from the selected businesses were then examined, and the projects reported were compared to the recommendations given to each business.
- Table 1 is a sample of the compiled database, tracking all businesses, their total number of recommendations and projects, and a breakdown of every recommendation with projects for each that have been completed.

Business Partners	Location	Year	Energy	Energy Projects	INLIGHT				OUTLIGHT				COMPARE		ROOFUN		HVAC		Year of Project Implementation Time		
			Recommendations	(# of projects reported)	Project	Year of Project 1	Implementation Time 1	Year of Project 2	Implementation Time 2	Project	Year of Project 1	Implementation Time 1	Project	Project	Project	Year of Project 1	Implementation Time 1	Year of Project 2	Implementation Time 2		
Business A		2008	12	5	1	1	2009	1	2009	1	0	0		1	0	1	0	0			
Business B		2008	13	4	1	1	2009	1			0	0		0	0	0	0	0	1	2010	2
Business C	Location 1	2008	9	2	1	0					0	0		0	0	0	0	0	1	2011	3
Business D		2008	1	5	0	1	2010	2	2011	3	1	1	2009	1	0	0	0	0	0		

Table 1: Sample of the Database compiled with all businesses and their recommendations and projects. Please note that due to confidentiality, business names, locations and years have been edited or removed from this sample.

## The ClimateWise Program

- A free, voluntary program offered to all companies and businesses within the Fort Collins Growth Management Area.
- Helps the City of Fort Collins' Climate Action Plan goal to reduce city-wide greenhouse gas emissions by 20% from the 2005 levels by the year 2020.
- Customized recommendations are provided for local businesses to reduce waste, conserve energy, save water, and lower transportation emissions.
- For more information on the ClimateWise Program, please visit <http://www.fcgov.com/climatewise/>.

### Assessment Process and Project Tracking

- Once joining ClimateWise, a business will receive a building assessment from ClimateWise employee. ClimateWise will then do an assessment write-up for the business partner, detailing the businesses' practices and giving various recommendations it can do implement to lower costs and emissions.
- Businesses are required to submit yearly reports online through "myClimateWise", a reporting system used by the program. In these reports, businesses describe projects they have completed throughout the past year.

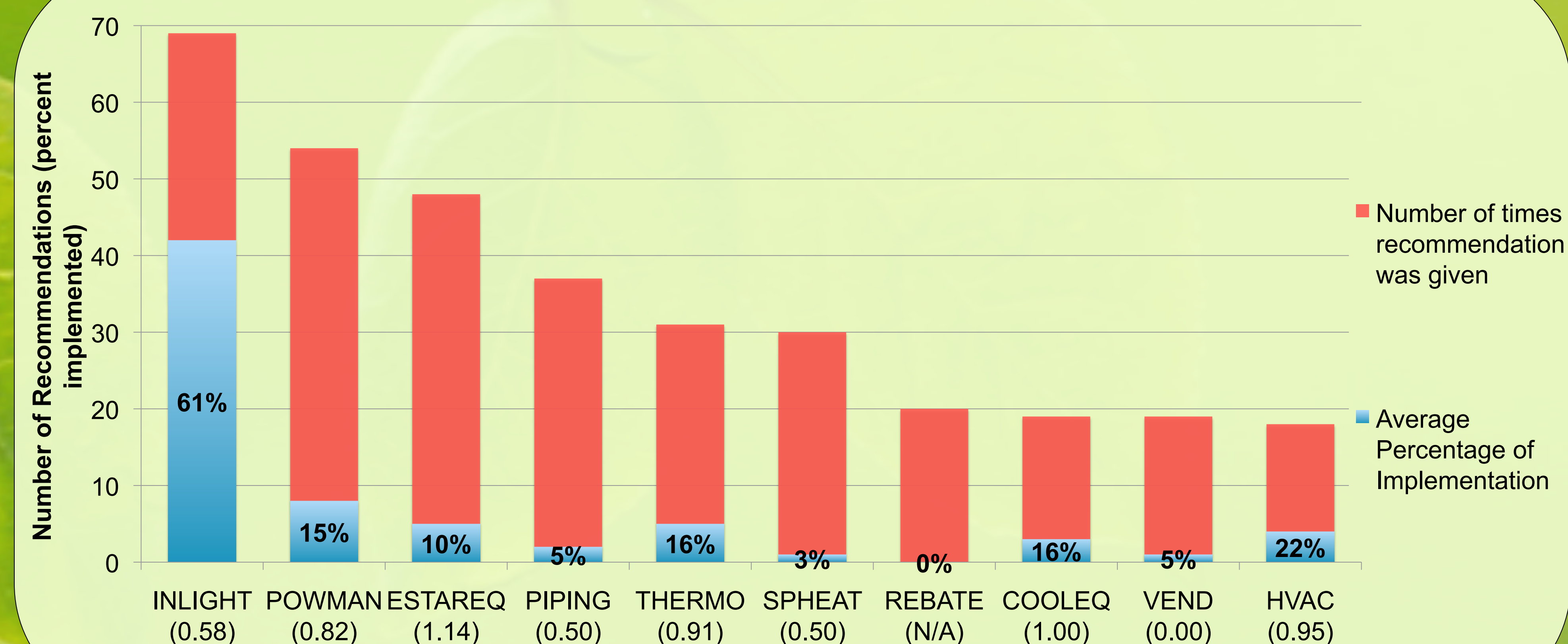


Figure 1: Top 10 Energy Recommendations & Average Time in years of Implementation

## Project Activity of Top 2 Recommendations

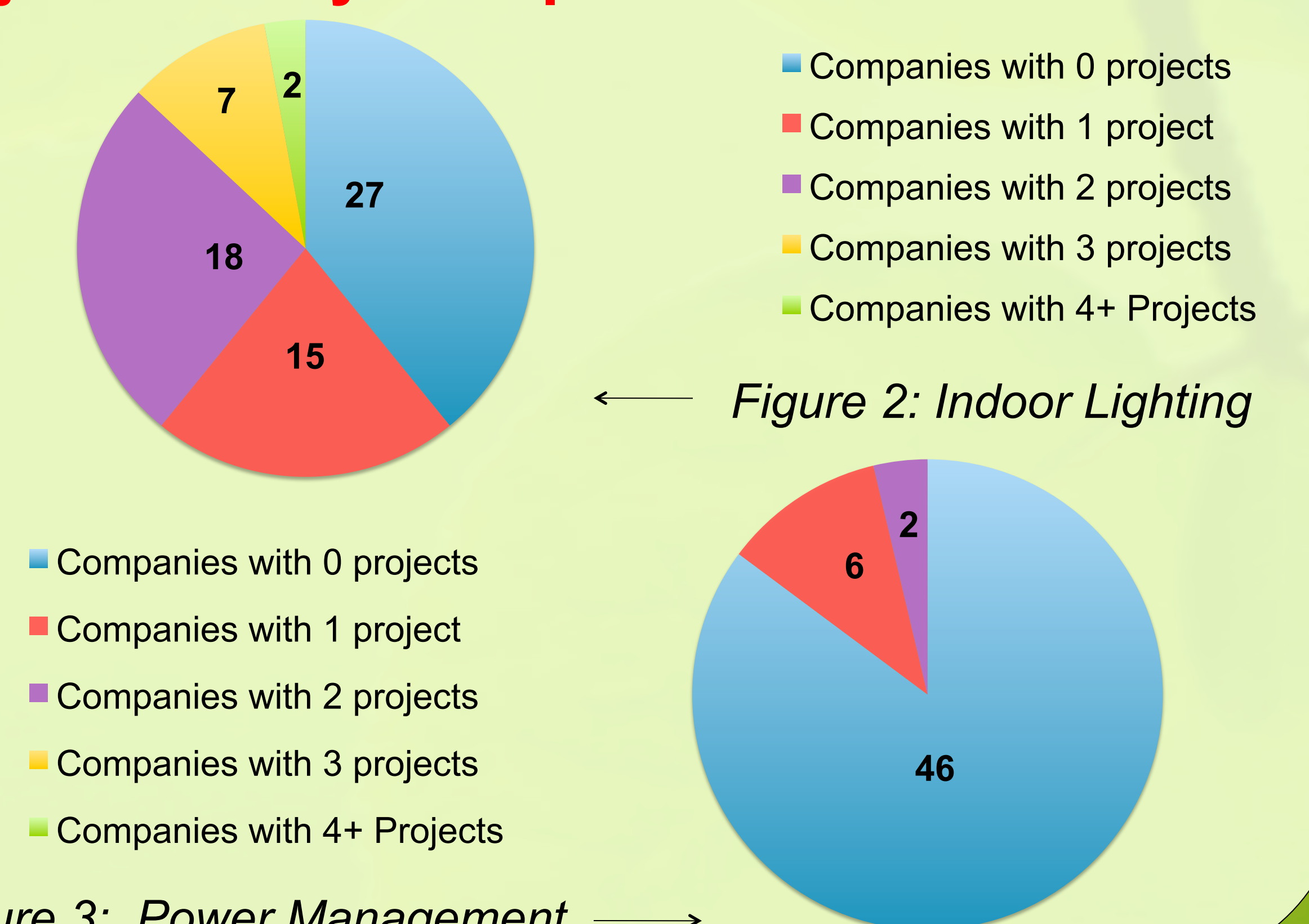


Figure 3: Power Management

## Conclusions

- Out of all the recommendations given by ClimateWise, Indoor Lighting is the most frequently implemented recommendation, with an implementation frequency of over 60%.
- For Indoor Lighting, a majority of businesses implement more than one project (over 39%), while for Power Management the most businesses do not implement projects, and 75% of those businesses that do implement this recommendation only do one project.
- Some recommendations given, such as REBATE and SPHEAT, are rarely implemented, and it is proposed future research investigates reasons for this.

## Future Work

- This data compilation and preliminary results allow Climate Wise to see which recommendations are not being implemented, and giving them the ability to construct ways to help businesses do so.
- Given time and resource constraints, future work should incorporate all types of recommendations from all assessment years for every ClimateWise business partner to further help ClimateWise improve the implementation of its recommendations.

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