



Sustainability & Conservation Team

A Strategic Team to reach the sustainability & conservation goals for County of Santa Barbara operations.

Vision:

A complete plan that addresses...

- Reduced Greenhouse Gas Emissions
- Reduced Utility & Operating Costs
- Cost-Effective Implementation



Sustainability for County Operations is... “Managing Resources Today for Tomorrow”

- Energy Efficiency & Renewable Power
- Vehicle Operations & Fuel Use
- Water Conservation
- Solid Waste & Recycling
- Grounds Management, Water Quality & Sequestration
- Landfill Management



Sustainability Action Plan for County Operations (SAPCO) Objectives

- Greenhouse Gas Reduction
- Significant Cost-Effective Utility Savings
- Community Leadership

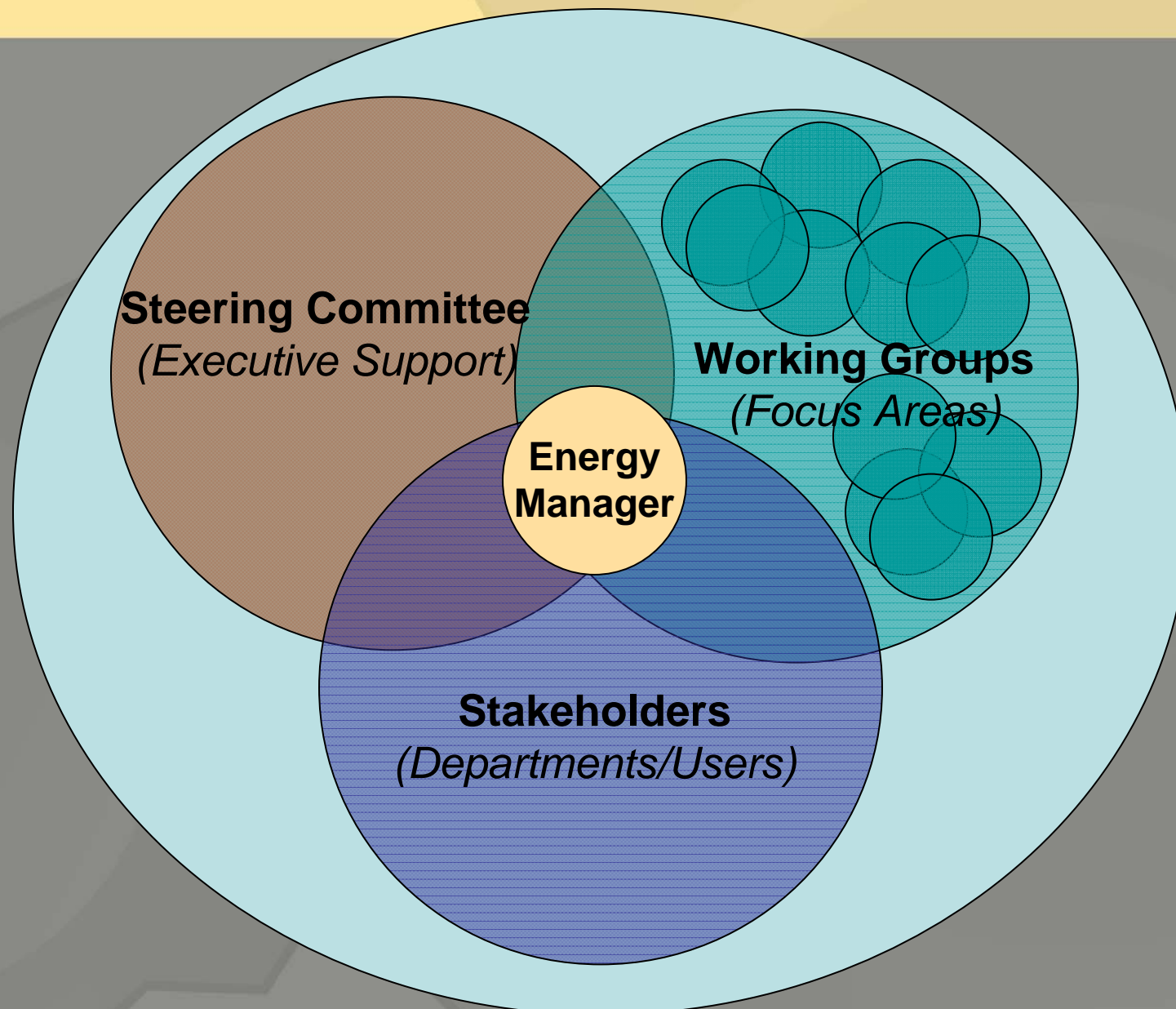


Plan Methodology

- Accountability
- Transparency
- Investment Financing



Broader Framework Moving Forward: *Sustainability & Conservation Team*



Focus Areas

Scope: County of Santa Barbara Operations

- Buildings
- Mobile Workforce
- County's Own Transportation
 - Vehicle Operations
 - Aircraft Operations
 - Heavy Equipment—Road Const/Main.
- Landfills & Transfer Stations
- Water & Wastewater
- Grounds Management & Sequestration



Development Process of SAPCO

Executive Support Committee

Advisory Committees*

Advisory/Working Committees Meet As Needed

BE

MW

GHG

GM

W&SW

CVC

Reporting to Board

SAPCO

Stakeholders Committee
(User Departments)

**Footnote: Individual Working Groups to draft their section of the SAPCO Document*



Switching Gears—Plan Examples...

- Energy Projects
- HR – Workforce Mobility
- ITD – Virtualization
- Greenhouse Gas Emissions/Carbon Footprint

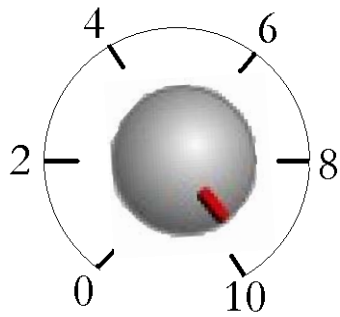


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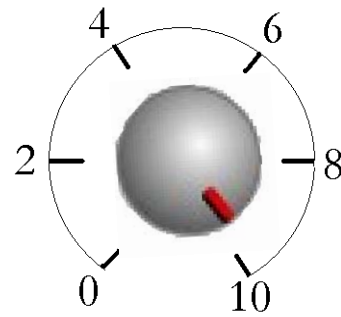
A plan that recognizes that savings are more than just installing technology...



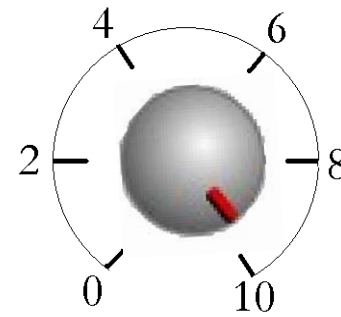
Building Technology



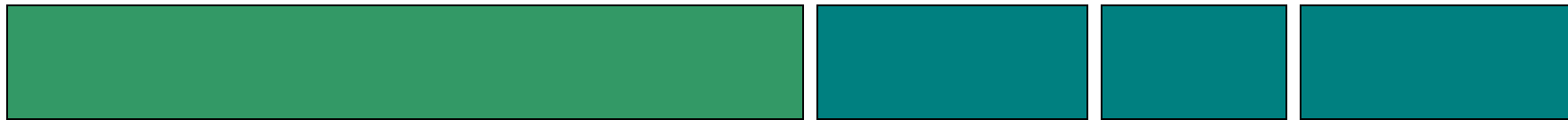
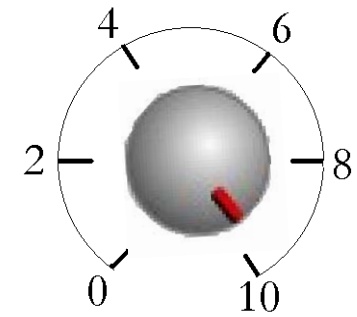
Operations



Training



Leadership



Min. Savings



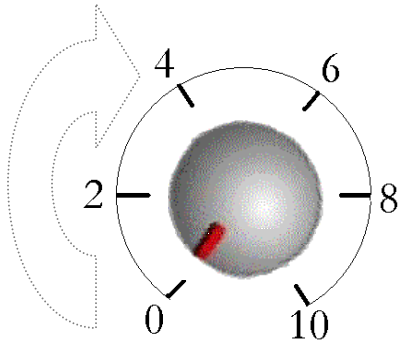
Max. Savings

Vision:

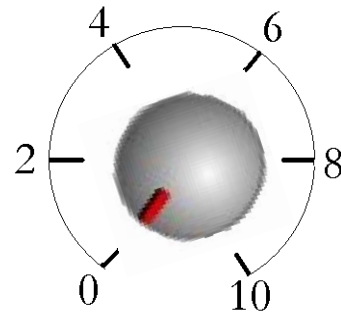
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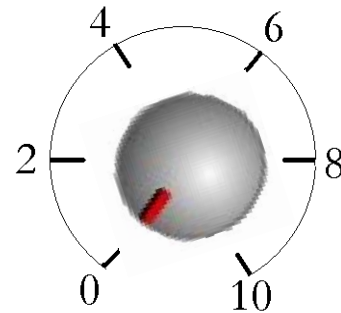
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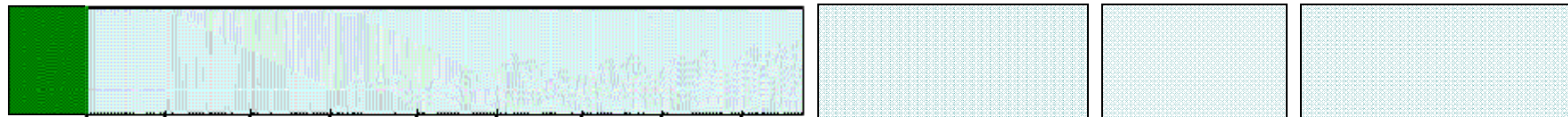
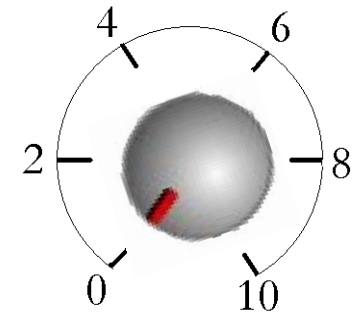
Operations



Training



Leadership



Min. Savings



Max. Savings

Building Technology

- Lighting & Controls
- HVAC & Controls
- Building & System Design
 - New Construction
- Renewable Power

Operations

- HR – Workforce Mobility
- ITD – Virtualization
- ITD – PC Power Management
- GS – Facility Operation & Maintenance
- GS – Performance Ratings

Training

- Occupant Awareness
- Maintenance Training
- Maintenance Certification

Leadership

- Community Example
- Departmental Direction
- Promotional Campaigns
- Web Site
- List Serves

Energy Projects-- Courthouse - Fan & Pump Control

- Three systems - 22.5 HP
- Continuous Operation (8,760 hours)
- Required Operation (2,500 hours)
- Solution - Energy Management Controls
- Cost - \$7,500
- Annual Savings - \$16,000
- ROI - 6 months



Energy Projects-- McDonald Bldg – Lighting Upgrade*

- Existing System – T12 Lamps & Magnetic Ballasts
- Solution – T8 Lamps, Electronic Ballasts, Lighting Controls
- Cost - \$2,300**
- Annual Savings - \$1,700
- ROI - 16 months

* Ground Floor Only (2nd Floor already converted)

** Including utility incentives & excluding County labor



HR—Mobile Workforce Program

- In 2008, CEO conducted a surveys with managers, supervisors, and employees to assess readiness for a Mobile Workforce policy – results showed a readiness for this type of a program
- An effective Mobile Workforce Program builds on a “work anywhere” strategy for suitable jobs using:
 - Telecommuting plans – one or more days a week, employees may provide seamless service by working from...
 - Home
 - The field
 - Alternate locations
 - Satellite offices
 - Drop-in work centers
 - Expanded use of technology:
 - Virtual offices (even from another State)
 - Web meetings
 - Employee interaction via web cameras
 - Training and development via webinars
 - Using on-line work tools to coordinate work



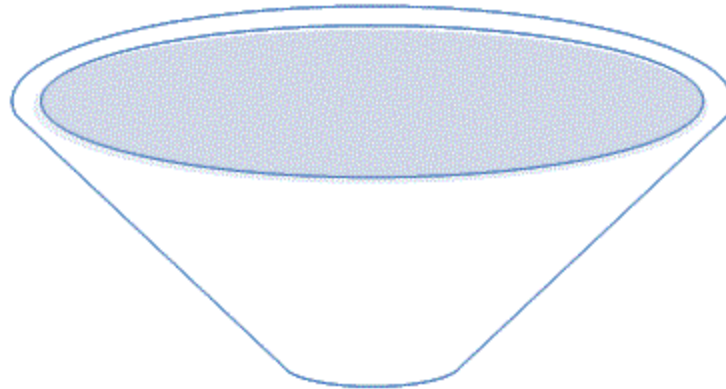
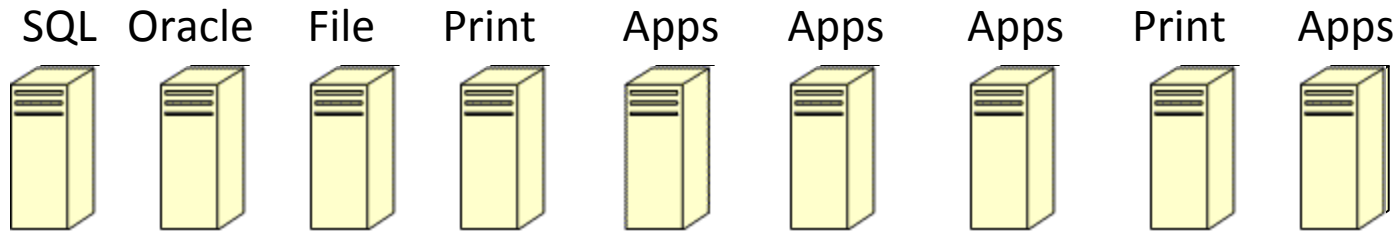
HR—Mobile Workforce Program

- Alternate and highly-flexible work schedules
- Studies on “Work Anywhere” programs show they result in:
 - Increased productivity for well-suited employees
 - Decreased employer costs (overhead, space, etc.)
 - Improved employee morale and job satisfaction
 - Reduced fuel consumption
 - Decreased carbon footprint for employees and employers
- Work will begin (collaboration between management and labor) following the completion of the budget
- Mobile Workforce policy will be brought to the Board and is expected to result in:
 - Reduction in office space requirements
 - Reduced energy consumption in County facilities
 - Decrease the number of days and/or distance employees commute or travel for the job
 - Create a “greener” workforce





Information Technology— Server Virtualization



Power Multiple
“Virtual” Machines on
One Server



Less Machines Means
Less Power and Less
Cooling.



Information Technology— Desktop Virtualization

Energy savings comparison: 1,000 PCs versus 1,000 thin clients

Today, thin clients, when coupled with modern servers are more ecologically friendly than PCs alone, and far better than PCs with servers. Consider this example: 1,000 PC users versus the same 1,000 thin client users connected to a centralized server environment over a one year period.



1,000 PCs
70.51
146,660.80
\$13,111.48

Number of devices
Kilowatts consumed per hour
Kilowatts consumed per year
Energy costs per year

1,000 thin clients + servers
7.14
14,851.20
\$1,327.70

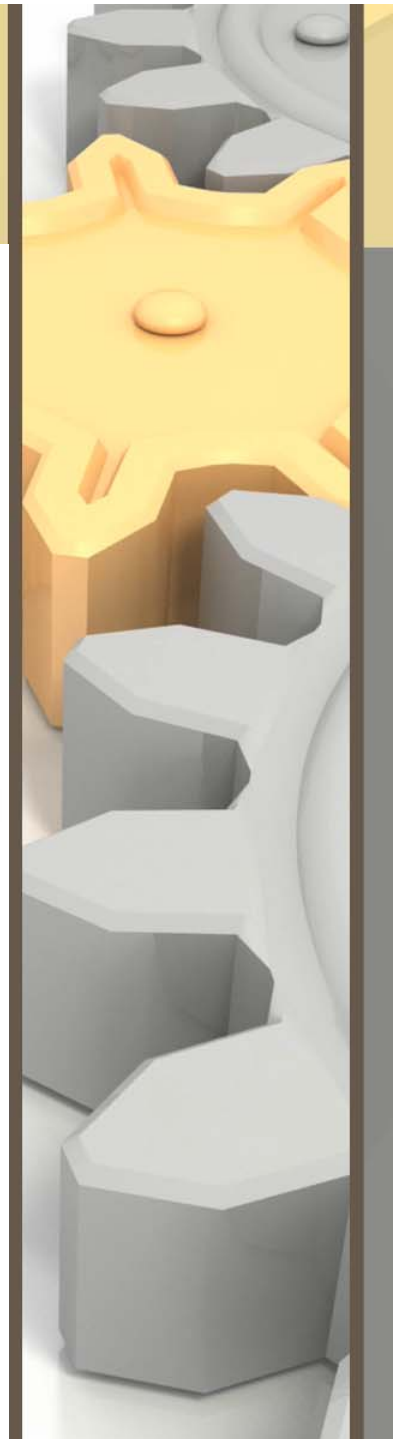


Taking into account the thin clients and servers, the thin client installation delivers the following benefits:

- **90 percent less energy used each year**
- **131,810 fewer Kw/H used each year**
- **\$11,784 (U.S.) saved in energy costs per-year**
- **102 fewer tons of CO2 put into the environment each year**
- **27 fewer tons of e-waste after six years of use**
- **Substantially less air conditioning needed**
- **Less "noise" pollution in user areas**

Calculations based on:

- S10 Thin Client at 6.6 watts per hour
- 3 Dell PowerEdge 2950 servers and Citrix Presentation Server 64-bit at 206 watts per hour per server
- Dell Optiplex 620 at 70.51 watt per hour
- Energy cost at \$0.0894 Kw/H as of Dec 2006
- 40 hour work week, 52 weeks



County of Santa Barbara Operations Greenhouse Gas Emissions & Carbon Footprint

- Guiding Reporting Protocol
 - California Air Resources Board
 - The Climate Registry
- Methodology of calculations
- Reporting Boundary
- Scope of Reporting
 - What is counted and what is not
- Baseline Year
- Verification/Certification
- Annual Reporting



Basis of Methodology

Local Government Operations Protocol
*For the quantification and reporting of greenhouse
gas emissions inventories*

Version 1.0

September 2008

Developed in partnership by:
California Air Resources Board
California Climate Action Registry
ICLEI - Local Governments for Sustainability
The Climate Registry

Buildings

Street Lights & Traffic Signals

Water Delivery Facilities

Wastewater Facilities

Port Facilities

Airport Facilities

Vehicle Fleet Operations

Transit Fleet Operation

Power Generation Facilities

Solid Waste Facilities

Other Process & Fugitive
Measures



County of Santa Barbara Reporting Boundary

Santa Barbara County

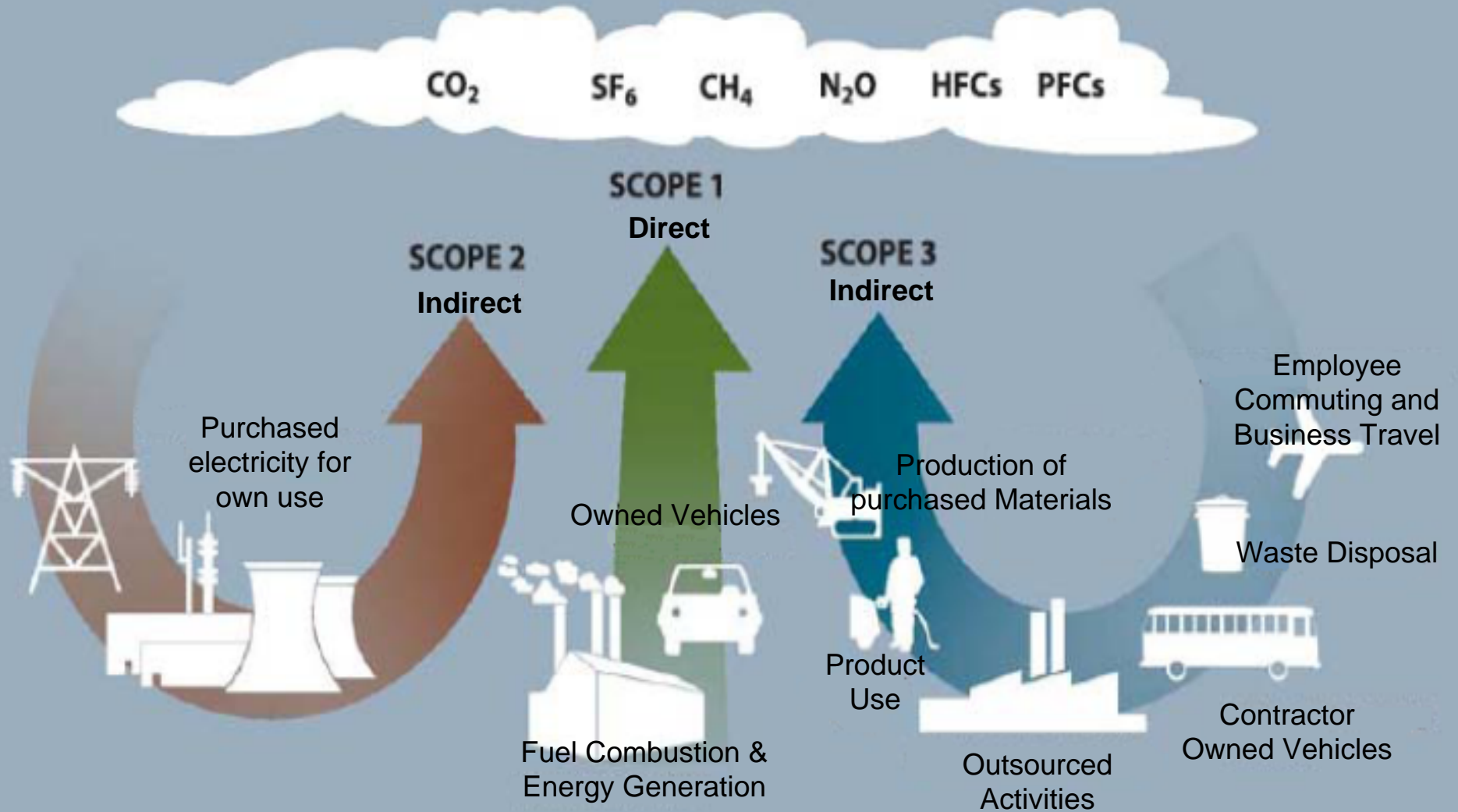


- It's not Geographic
- Financial Control or
- Operational Control

Level of Control of Facility	Financial	Operational
Wholly owned	100%	100%
Partially owned with financial and operational control	100%	100%
Partially owned with financial control; no operational control	100%	0%
Partially owned with operational control; no financial control	0%	100%
Joint financial control with operational control	Based on % ownership	100%
Joint financial control; no operational control	Based on % ownership	0%
Associated entity (not consolidated in financial accounts) with operational control	0%	100%
Associated entity (not consolidated in financial accounts); no operational control	0%	0%
Fixed asset investments	0%	0%
Not owned but have a capital or financial lease	100%	100%
Not owned but have an operating lease	0%	100%

PACIFIC OCEAN
VANDENBL
A.F.B.
Santa Barbara
San Miguel Is. Santa Cr
Santa Rosa Is. San

County Operations: Emission Scopes



Local Government Protocol Reporting Table—*Buildings and Other Facilities*



The Climate Registry

Table 1: Buildings & Other Facilities		CO ₂ e	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Unit (Metric Tons-unless noted otherwise)
Scope 1									
	<i>Stationary Combustion</i>	-	-						0
	<i>Fugitive Emissions</i>	-	-						0
	Subtotal Scope 1	0	0	0	0	0	0	0	0
Scope 2									
	<i>Purchased Electricity</i>	15,826	15,758,935						15,775,101
	<i>Purchased Steam</i>	-	-						-
	<i>District Heating/Cooling</i>	-	-						-
	Subtotal Scope 2	15,826	15,758,935	124	215	-	-	-	15,775,101
Scope 3									
	<i>Estimated Scope 2 Transmission/Distribution Losses</i>	1559	1552156	12	21	0	0	0	1,553,748
	Subtotal Scope 3	1559	1552156						-
Total Buildings & Other Facilities		17,384	17,311,091						7,328,849
Indicators									

Natural Gas entered as (MMBtu)

Vehicles entered (in gallons) and converted to MMBtu's

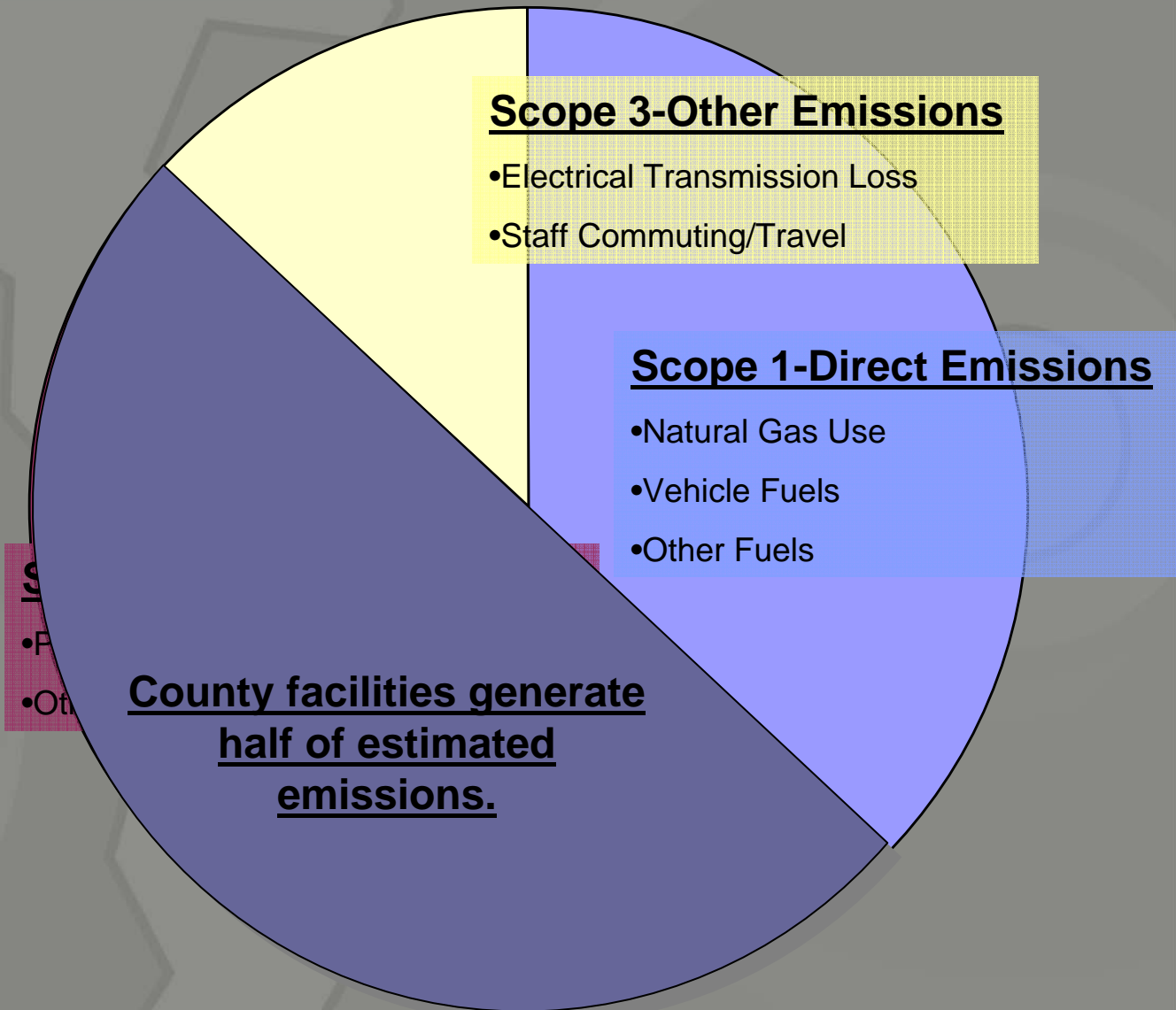
Electricity entered (in kWh) and converted to MMBtu's

Resulting Calculated eCO₂ and converted to Metric Tonnes

Distribution of Emissions*

County of Santa Barbara Operations Only

* Chart based upon un-certified County Operations emissions data





Plan Methodology: ***Accountability***

- Cost-Effective Test – Five-Year ROI
- Measurement and Verification
- Persistent Savings
- Regular Reporting (Transparency)
- Public Leadership

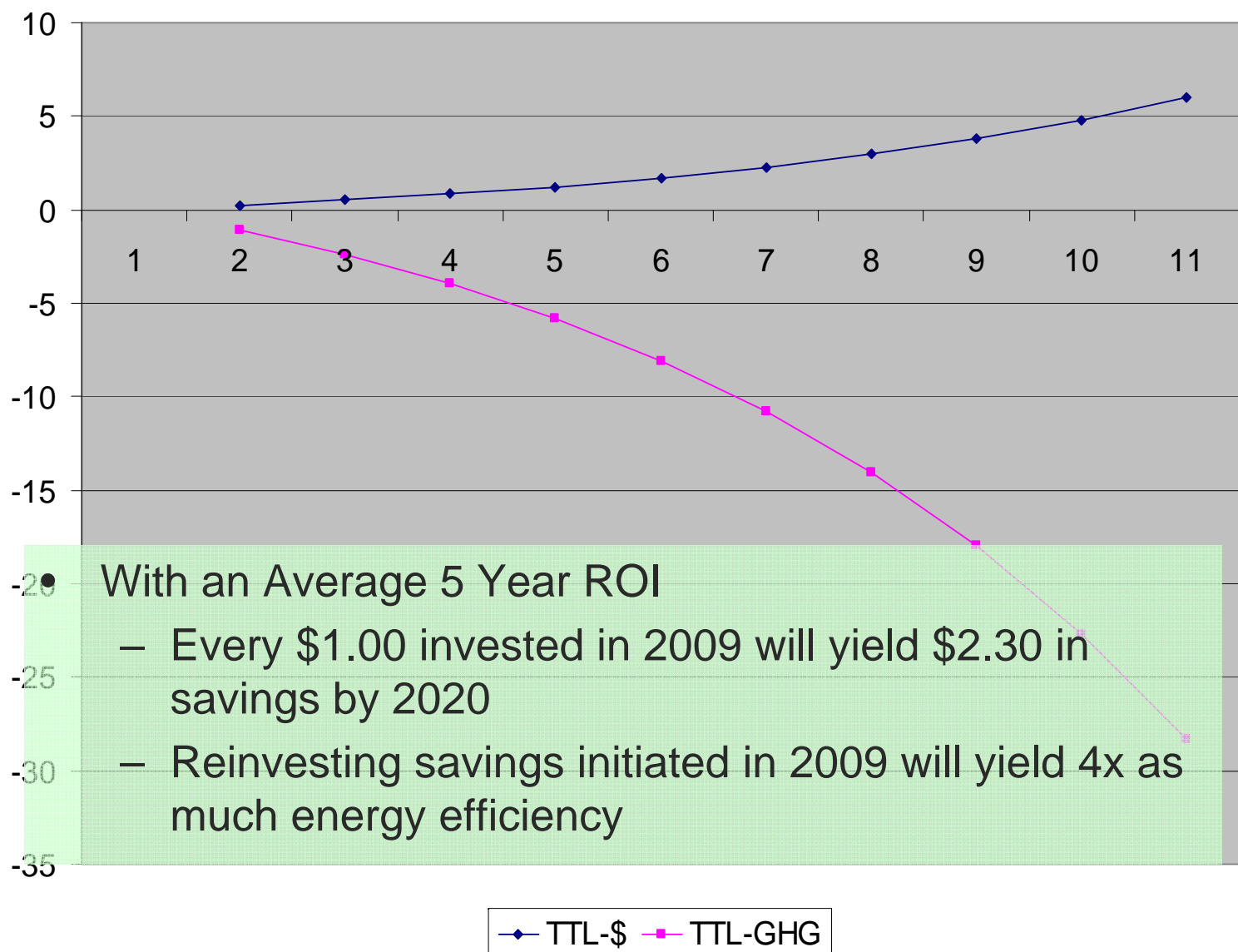


Plan Methodology: *Investment Financing*

- Power Purchase Agreements (PPA)
 - Large solar projects
- Utility Incentives
- Utility Programs, Services and Funding
- Funding Tools: Savings Off-Set Financing
- Direct Capital Investment



How the Money Works...



Thank You!

- Additional Details in Coming Months
- An Efficient Approach
- Flexible Framework
- Focus on:
 - Sustainability
 - Accountability
 - Cost Effectiveness

