

# GHG Reduction Plan Kick-Off Meeting

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Carrboro, Chapel Hill and Orange County

March 22, 2006

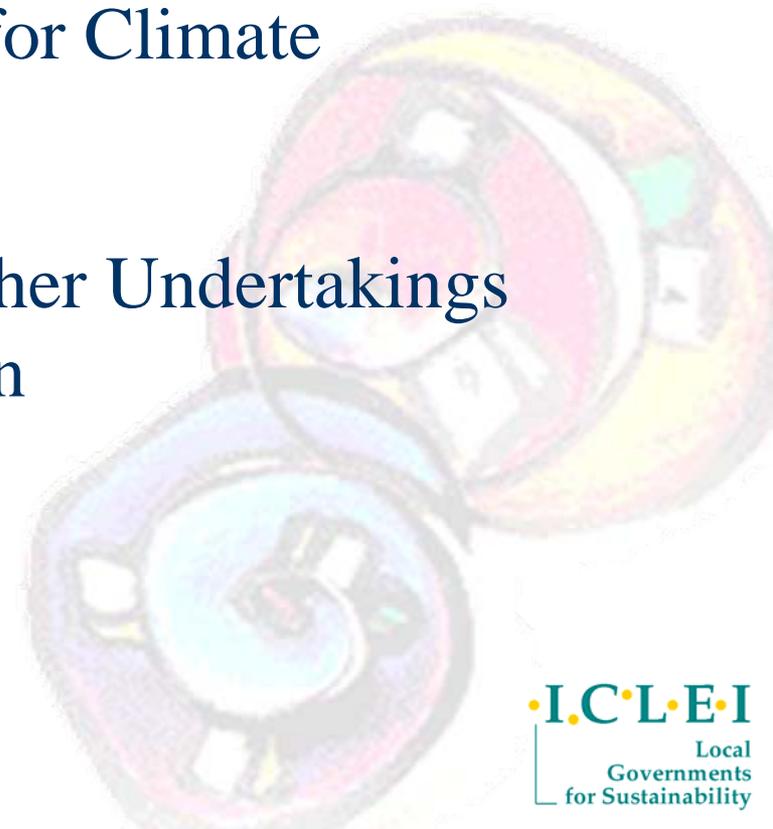


**I.C.L.E.I**  
Local  
Governments  
for Sustainability



# Overview

- Welcome & Introductions
- Introduction to Climate Change
- Introduction to the Cities for Climate Protection (CCP)
- Project Description
- Relationship of Plan to Other Undertakings
- Implementation of the Plan
- Next Steps
- Questions





# ICLEI's Mission

**To build and serve a worldwide movement of local governments to achieve tangible improvements in global environmental and sustainable development conditions through cumulative local actions. (As adopted by the ICLEI Council, June 30, 2000)**



# ICLEI Offices





# ICLEI's Functions

Democratic  
Association  
of Local  
Governments

Movement  
of Cities

International  
Environmental  
Agency for  
Local  
Government

## ICLEI – Local Governments for Sustainability

- Membership services
- Strategy, advocacy
- Partnerships

- Local Agenda 21
- Cities for Climate Protection
- Water Campaign
- Green Purchasing

- Information
- Training
- Research
- **Technical services**
- Sustainability Management



# Consultant

• I • C • L • E • I  
*ENERGY SERVICES*

## **Team Members:**

- **Megan Jamieson, Manager – Climate, Air & Energy**
- **Ryan Bell, Program Manager**
- **Garrett Fitzgerald, Program Officer**
- **Katherine Sparkes, Project Officer**

CHECK US OUT!

U.S. \$1.59 (Canada \$1.99) July 25, 2000

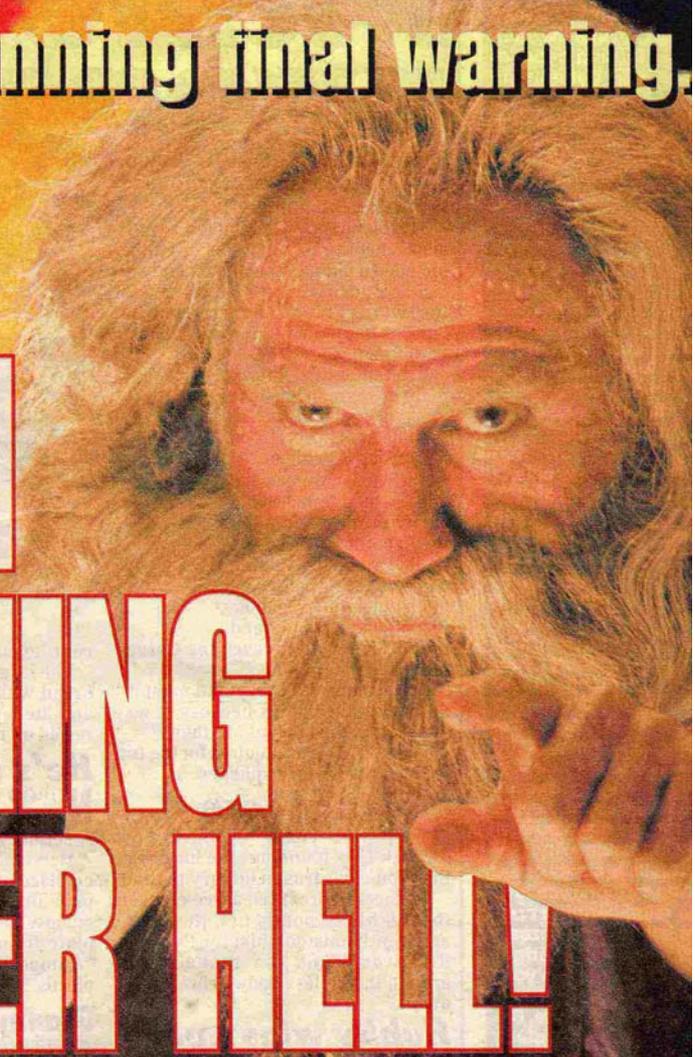
# SUN

AMERICA'S BEST-LOVED WEEKLY

**Bush & Gore secret pact**  
**\$500-A-MONTH HIKE**  
**IN SOCIAL SECURITY!**

**Nostradamus stunning final warning.**

**YOU'LL  
BURN IN  
SCORCHING  
WEATHER HELL!**

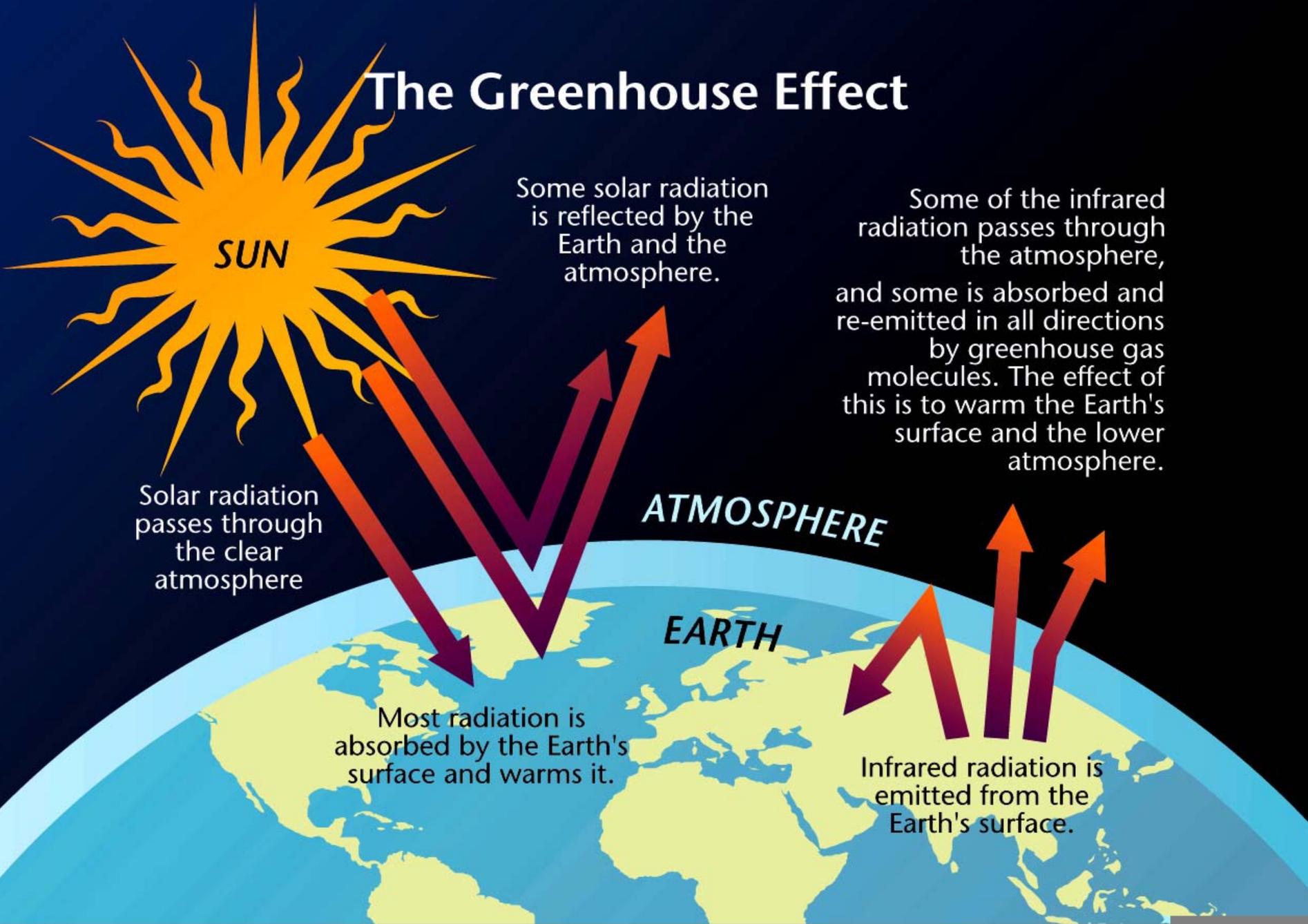


30 >

**GLOBAL WARMING HORROR AS**

**Sun**

# The Greenhouse Effect



SUN

Solar radiation passes through the clear atmosphere

Some solar radiation is reflected by the Earth and the atmosphere.

ATMOSPHERE

EARTH

Most radiation is absorbed by the Earth's surface and warms it.

Some of the infrared radiation passes through the atmosphere, and some is absorbed and re-emitted in all directions by greenhouse gas molecules. The effect of this is to warm the Earth's surface and the lower atmosphere.

Infrared radiation is emitted from the Earth's surface.

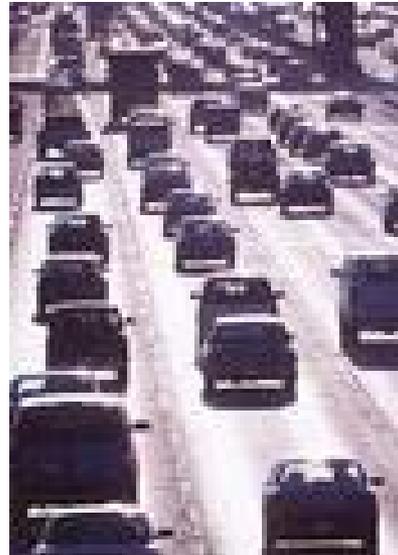


# Sources of Greenhouse Gas Emissions

*Local government policies affect all major sources of global warming pollution*



Energy Use



Transportation and Land Use



Solid Waste



# ICLEI's Cities for Climate Protection (CCP) Campaign

- Largest ICLEI program
- Over 700 participants worldwide
- 160 participants in U.S. = 19% of U.S. GHG emissions





# Results from US CCP Participants

*Cumulative local actions have a positive impact on global climate change.*

- 23 million tons of eCO<sub>2</sub> reduced
- \$535 million saved in fuel costs
- 4 million MWh of electricity savings
- 74 million gallons of gasoline savings



# Project Approach

- Step 1 – Project Start-Up
- Step 2 – Inventory Data Collection
- Step 3 – Determine and Quantify Historic and Existing Measures
- Step 4 – Identify Potential New Measures
- Step 5 – Identify a GHG Emission Target
- Step 6 – Formulate and Approve Local Action Plan



# Step 1 – Project Start-Up

- Identification of project team participants
  - Technical team
  - Advisory committee
- Review of background information
- Kick-off meeting





## Step 2 – Inventory Data Collection

Information required for municipal (corporate) and community inventory and forecast:

- 2000\* Energy Consumption
- 2000\* Energy Costs
- Indicators (e.g. number of streetlights, area of buildings, gallons of water treated)
- Growth indicators (e.g. new buildings constructed each year until 2025)



# Step 3 – Determine and Quantify Existing and Historic Measures

- Details of emission reduction/energy saving measures initiated after 2000 will be collected
- Impacts of measures will be calculated using CACP software and Protocol

## Historic & Current

| Current Measure                      | Description                            | GHGs Avoided (t) / year |
|--------------------------------------|--|-------------------------|
| Building Retrofits                   | Lighting upgrades                      | 1,500                   |
| Streetlighting Retrofits             | HPS to LED traffic lights              | 3,000                   |
| Alternative Fuels                    | Diesel fuel replaced with fish oil     | 500                     |
| Vehicle Downsizing                   | Parking control vehicles downsized     | 250                     |
| Waste reduction                      | Paper recycling in municipal buildings | 200                     |
| Low flow toilets                     | Water pumping energy use reduced       | 25                      |
| <i>Total Annual Avoided GHGs (t)</i> |  | <i>5,475</i>            |

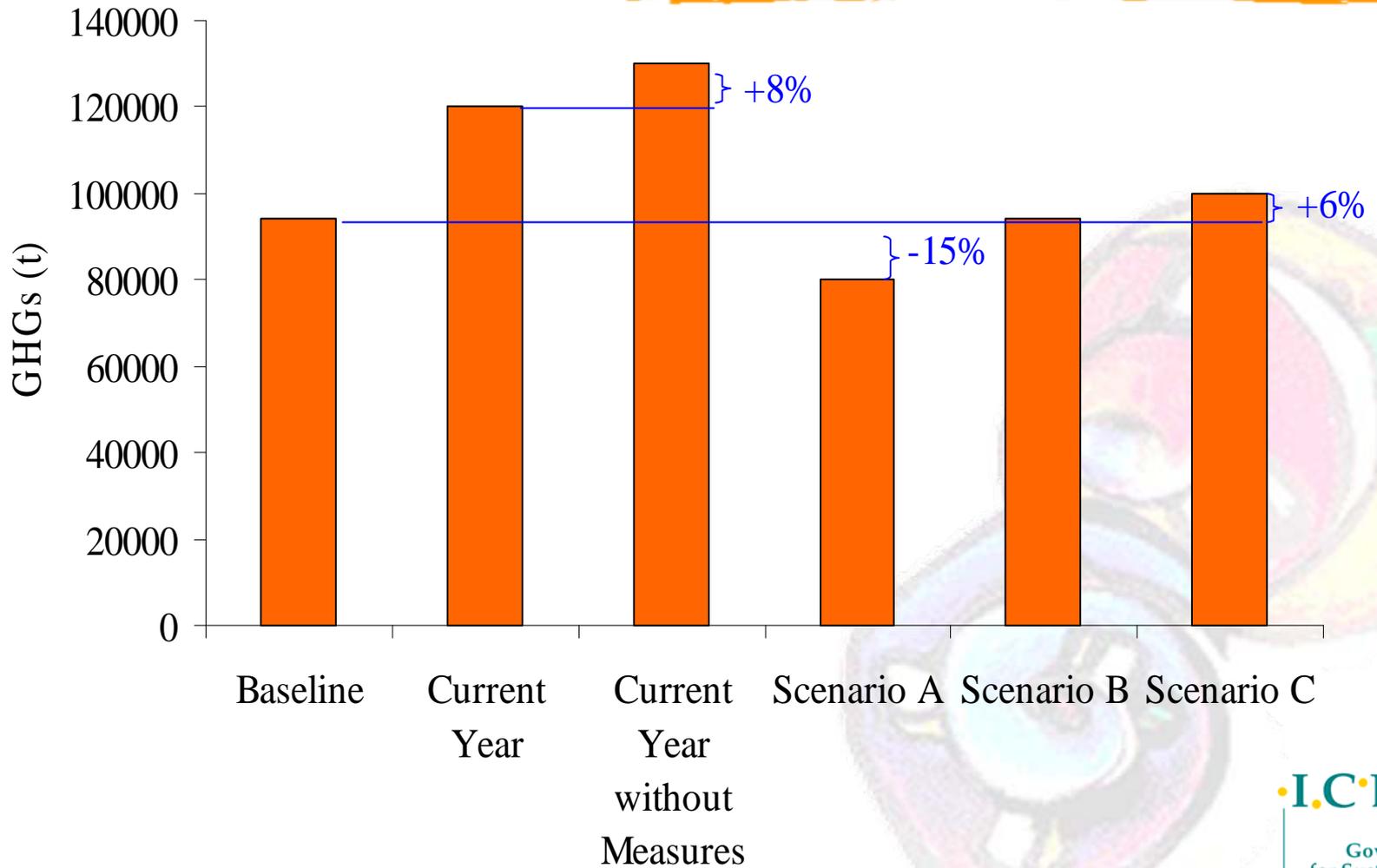


## Step 4 – Identify Potential New Measures

- Analysis of existing measures will reveal sectors in which reduction opportunities remain
- Technical team will brainstorm new measures
- ICLEI will highlight best practices in other CCP communities
- ICLEI will review list of potential measures and identify related opportunities and challenges of implementation



# Step 5 – Identify a GHG Reduction Target





# Step 6 – Formulate and Approve Local Action Plan

- Form, implement & monitor Local Action Plan
- Identify partners – internal & external
- Define roles & responsibilities
- Formulate timeline
- Establish budget
- Design reporting process
- Adoption by Advisory Group, the Transportation Advisory Committee of the DCHC MPO and the governing boards of Carrboro, Chapel Hill and Orange Country



# Implementation of the Plan

- Role of Public Sector
  - Adoption of LAPs by governing bodies
  - Implement measures
  - Provide leadership for and support to private sector
  - Monitor, report and follow-up on progress
- Role of Private Sector
  - Support Town Councils and Board of County Commissioners in adoption of LAPs
  - Implement measures
  - Cooperate with Town/County on monitoring, reporting and follow-up



# Role of Advisory Committee

- Provide information for inventory and forecast
- Share knowledge of existing mitigation measures
- Selection new community mitigation measures
- Determine community GHG reduction target
- Review draft local action plan
- Champion the implementation of the local action plan



# Relationship of Local Action Plan to Other Undertakings

- City of Durham and Durham County GHG Inventory and LAP
- DCHC 2030 Long Range Transportation Plan
- Raleigh-Durham North Carolina Ozone Attainment and Maintenance Plan
- North Carolina Carbon Monoxide Maintenance Plan
- Community Carbon Reduction Project at the University of North Carolina



# Project Approach - Timeline

| Task Category & Name                        | March |  |  |  |  |  |  |  |  |  |  |  | April |  |  |  |  |  |  |  |  |  |  |  | May |  |  |  |  |  |  |  |  |  |  |  | June |  |  |  |  |  |  |  |  |  |  |  | July |  |  |  |  |  |  |  |  |  |  |  |
|---|-------|--|--|--|--|--|--|--|--|--|--|--|-------|--|--|--|--|--|--|--|--|--|--|--|-----|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|
|   |       |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Project Start-Up</b>                     | █     |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Data &amp; Information Gathering</b>     |       |  |  |  |  |  |  |  |  |  |  |  | █     |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Receive &amp; Vet Data Information</b>   |       |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  | █   |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Identify &amp; Model Future Measures</b> |       |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  | █    |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Model Reduction Target</b>               |       |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  | █    |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  |
| <b>Report Preparation</b>                   |       |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  | █    |  |  |  |  |  |  |  |  |  |  |  | █    |  |  |  |  |  |  |  |  |  |  |  |
| <b>Project Completion</b>                   |       |  |  |  |  |  |  |  |  |  |  |  |       |  |  |  |  |  |  |  |  |  |  |  |     |  |  |  |  |  |  |  |  |  |  |  |      |  |  |  |  |  |  |  |  |  |  |  | █    |  |  |  |  |  |  |  |  |  |  |  |

Kick-Off Meeting

2<sup>nd</sup> Meeting

3<sup>rd</sup> Meeting



# Next Steps

- Data collection
- Identification of existing measures in your area of business
- Brainstorm potential new reduction measures for next meeting
- Schedule next team meeting



# Questions



Community Analysis

Community Measures

Government Analysis

Government Measures

STAPPA/ALAPCO and ICLEI's

# Clean Air and Climate Protection Software

State and Territorial Air Pollution Program Administrators and  
Association of Local Air Pollution Control Officials

International Council for Local Environmental Initiatives

Community Analysis for Year 2000

Residential Commercial Industrial Transportation Waste Other

of Residential Building or Group

Residential Accounts

and Controls

Insert Select Delete

Navigation arrows

Report

Help

Assistants Categories Indicators Coefficients

Forecast Builder

| Fuel Type                  | Units             | Energy Use |
|----------------------------|-------------------|------------|
| Electricity (Grid Average) | (kWh)             | 10,000,000 |
| Coal                       | (tons)            | 0          |
| Kerosene                   | (thousand US gal) | 0          |
| Light Fuel Oil             | (US gal)          | 0          |
| Natural Gas                | (therms)          | 0          |
| Propane                    | (US gal)          | 0          |
| Biomethane                 | (thousand cu ft)  | 0          |
| Fuelwood (Air Dry)         | (cords)           | 0          |
| Green Electricity          | (kWh)             | 0          |

Notes Regarding Residential Building or Group Data

Data provided by Sample Utility friendly staff person named Adam Brandt. Phone: 555-121-2121. Can provide data aggregated by customer class on monthly or annual basis. Needs 4 weeks lead time.

Energy Consumption (MMBtu) 34,130

Equivalent CO<sub>2</sub> Production (tons) 7,496

NOx Production (lbs) 29,617

SO<sub>2</sub> Production (lbs)