

Greenhouse Gas CEQA  
Significance Threshold  
Stakeholder Working Group #12

July 29, 2009

SCAQMD

Diamond Bar, California

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey

- June 15, 2009, SCAQMD staff received OPR CEQA document survey results
  - ✓ Survey performed for years 2007 & 2008
  - ✓ Survey contained a database of 798 projects
  - ✓ EIRs & M/NDs represented in database
- SCAQMD staff evaluated data to:
  - ✓ Eliminate projects without sufficient information
  - ✓ Eliminate duplicate projects (projects where subsequent CEQA documents prepared)
  - ✓ Total remaining projects = 738

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Direct annual CO<sub>2</sub> emission rates calculated using URBEMIS (construction emissions amortized over 30 years) – no project design or mitigation measure reductions assumed
- Indirect CO<sub>2</sub> emissions calculated for electricity usage per unit for residential & per square foot for commercial
- Indirect CO<sub>2</sub> emissions calculated for water-related electricity usage per unit for residential & per square foot for commercial



# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Annual residential electricity use derived as follows:
  - ✓ 1. Identified # of households in 4 district counties from U.S. census data (2005-2007) = 5,375,532
  - ✓ 2. According to ECDMS, residential electricity in SoCal for 2007 = 39,129 million kWh
  - ✓ Divide #2 by #1 = 7,300 kWh/yr/household

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Annual water-related residential electricity use derived as follows:
  - ✓ 1. Identify # of households in 4 district counties from U.S. census data (2005-2007) = 5,375,532
  - ✓ 2. Identify total SoCal indoor/outdoor residential water usage = 586,533 MG/yr
  - ✓ 3. Divide #2 by #1 = 110,000 gal/yr/household
  - ✓ 4. Identify kWh/MG electricity factor (CEC)
  - ✓ 5. Calculate indoor/outdoor water related energy usage = 1,280 kWh/yr/household

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Total annual residential electricity use = 7,300 kWh/yr + 1,280 kWh/yr = 8,580 kWh/yr
- Annual statewide commercial electricity usage = 13.63kWh/ft<sup>2</sup> (CEC, 2006)
- Annual water-related commercial electricity usage:
  - ✓ 1. Commercial ft<sup>2</sup> for SoCal (2006) = 4,920,114 kft<sup>2</sup>
  - ✓ 2. Identify total SoCal commercial water usage = 602,915,000 MG/yr
  - ✓ 3. Divide #2 by #1 = 123 gal/yr/ft<sup>2</sup>
  - ✓ 4. Identify kWh/MG electricity factor (CEC)
  - ✓ 5. Calculate indoor/outdoor water related energy usage = 1.56 kWh/yr/ft<sup>2</sup>



## Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Total annual commercial electricity usage =  $13.63 \text{ kWh/ft}^2 + 1.56 \text{ kWh/yr/ft}^2 = 15.19 \text{ kWh/ft}^2$
- Residential 90% emissions capture rate = 8,580 - 9,151 MTCO<sub>2</sub>e/yr
- Commercial 90% capture rate = 2,427 – 3,041 MTCO<sub>2</sub>e/yr

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- SCAQMD database analysis
- 282 projects in the data set, surveyed & categorized according to land use type
- GHG analysis prepared for the following:
  - ✓ 23 residential
  - ✓ 61 commercial
  - ✓ Remaining 198 projects were surveyed, not analyzed because they were mixed use or general/specific plans or had insufficient data to quantify GHG emissions
  - ✓ At the request of the working group, NOE projects excluded



# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- SCAQMD residential database results:
  - ✓ Maximum GHG emissions 21,117.3 MTCO<sub>2</sub>/yr
  - ✓ Minimum GHG emissions 338.8 MTCO<sub>2</sub>/yr
  - ✓ Average GHG emissions 3,424.1 MTCO<sub>2</sub>/yr
  - ✓ 90<sup>th</sup> percentile 6,241 MTCO<sub>2</sub>/yr
  - ✓ 90<sup>th</sup> percentile excluding max value 4,866.7 MTCO<sub>2</sub>/yr

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- SCAQMD commercial database results:
  - ✓ Maximum GHG emissions 121,037.0 MTCO<sub>2</sub>/yr
  - ✓ Minimum GHG emissions 0.0
  - ✓ Average GHG emissions 10,045.9 MTCO<sub>2</sub>/yr
  - ✓ 90<sup>th</sup> percentile 26,909.1
  - ✓ 90<sup>th</sup> percentile excluding max value 25,816.2 MTCO<sub>2</sub>/yr

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

Comparison of the OPR & SCAQMD Results  
(MTCO<sub>2</sub>/Yr)

	Residential	Commercial
OPR Database	8,580 - 9,151	2,427 – 3,041
SCAQMD Database	6,241 (5,816.2)	26,909.1 (25,816.2)



# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Database considerations
  - ✓ SCAQMD database is a small subset of the OPR database
  - ✓ Because of the small sample size, SCAQMD database may not be representative
- SCAQMD staff recommends using OPR database only

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Other considerations
  - ✓ Further refinement is underway to derive region-specific GHG emission rates
  - ✓ GHG emission factors based on current energy generation portfolio
  - ✓ Doesn't reflect future Renewable Portfolio Standard
  - ✓ Doesn't reflect current Title 24 energy efficiency standards that will be applied to future projects

# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Other considerations
  - ✓ To address Title 24 energy efficiency standards, options include:
    - Use >90<sup>th</sup> percentile GHG emissions to establish the GHG significance threshold
    - Identify the average age of the housing stock, identify the Title 24 standards in effect at that time (baseline), calculate the increase in energy efficiency from the baseline to the 2009 Title 24 efficiency standards, & apply that increased efficiency standard to the annual energy usage for residential projects
    - Use this approach for commercial?
    - Other approaches



# Agenda Item #2 – Status of the Residential/ Commercial GHG ST Survey *(continued)*

- Other considerations
  - ✓ How to address GHG significance for mixed use projects?
    - Use either residential or commercial GHG significance threshold to apply to mixed use projects
    - Derive a weighted average GHG significance threshold of residential-commercial based on relative CA. inventories
    - Allow lead agencies to derive a weighted average GHG significance threshold based on their projects' residential commercial mixes
    - Other approaches?

# Agenda Item #3 – Recent AG Comments on GHGs for General Plans

- 07/13/09 AG comment letter on Sacramento Co. GP
  - ✓ CEQA document acknowledges impacts of future growth double what is necessary to meet projected demand
  - ✓ County needs to more aggressively mitigate impacts through
    - Feasible alternatives
    - Adopt a phased development approach
    - City-County coordination to optimize growth & reduce GHG emissions

# Agenda Item #3 – Recent AG Comments on GHGs for General Plans *(continued)*

- 07/13/09 AG comment letter on Sacramento Co. GP
  - ✓ Mitigation measures
    - Efficiency-based performance standards (PFs) acceptable as long as the lead agency is able to show that those PFs , together with all other measures & strategies, are likely to achieve the emission reduction targets
    - GHG mitigation measures in Climate Action Plan (to be adopted at a later date) should be included in the GP itself
    - GHG mitigation should also include VMT reduction



# Agenda Items #4, #5, & #6

- Other topics?
- Closing remarks
- Other business
- Next working group meeting scheduled for 8/26/09, 10:00 a.m.