Climate Protection Strategies

Presentation to the
Gainesville City Commission
November 26, 2007

INTRODUCTION

- Update on the City of Gainesville Green House Gas (GHG) inventory
- Kyoto protocol standards and status
- Examples of the impacts of potential future policy decisions on GHGs

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Baseline Year 1605 (b) GHG Inventory

- Established in the Energy Policy Act of 1992
  - Voluntary reporting system under 1605 (b)
  - Report GHG emissions as well as mitigating actions
- 2002 workshops to identify improvements
- 2007 revised 1605 (b) guidelines adopted
  - Requires entities to establish a baseline inventory
  - Register emission reductions for future years
  - Inventory calculations drawn from EPA and IPCC

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Requirements of the 1605 (b) Program

- **Reporting entity:** A participant in the program must be an entity recognized under federal, state or local law. GHG emission reductions must be documented and maintained within organizational boundaries for accounting and reporting purposes. The entity may be composed of several sub-entities. In this case the entire City of Gainesville government is the reporting entity.

- **Baseline Year:** The establishment of a baseline year is a critical element in the 1605 (b) process. The baseline year must be 2002 or later. It is allowable to use an average of several years. Based on the emission inventory for 2002 to 2006, Gainesville has selected 2006 as its baseline year for 1605 (b) reporting. The first reporting year must immediately follow the baseline year and will be 2007. Emission reductions are based on the total net GHG emissions of the baseline year minus the reporting year.

- **Data Availability and Quality:** 1605 (b) reporting requires very high data quality for both establishing a baseline inventory and registering emission reductions. The DOE has established a weighted data quality matrix that reflects both the quality of the data method and the mass of GHG emissions from the source. Data quality is rated from A at 4 points, B at 3 points, C at 2 points and D at 1 point. A quality is rated best and declines through D. Data must have a mass weighted average of 3.0 or better for registering GHG reductions or GHG intensity improvements. This method is similar to college grade averaging in which a 5 credit hour A at 4 points can more than offset a 1 credit hour C at 2 points to maintain a 3.67 average.

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Implemented Carbon Reduction Strategies – Included in Baseline

Reductions through 2006	Estimated CO_2 Reduction (tonnes)
DSM - RIM (1980 - 2006)	97,454
JRK CC1 Repowering	96,610
Energy Efficiency Transformers	17,234
Landfill Gas to Energy	3,731
GPD Upgrades	842
Solar PV (Exisiting)	15
Total	215,887

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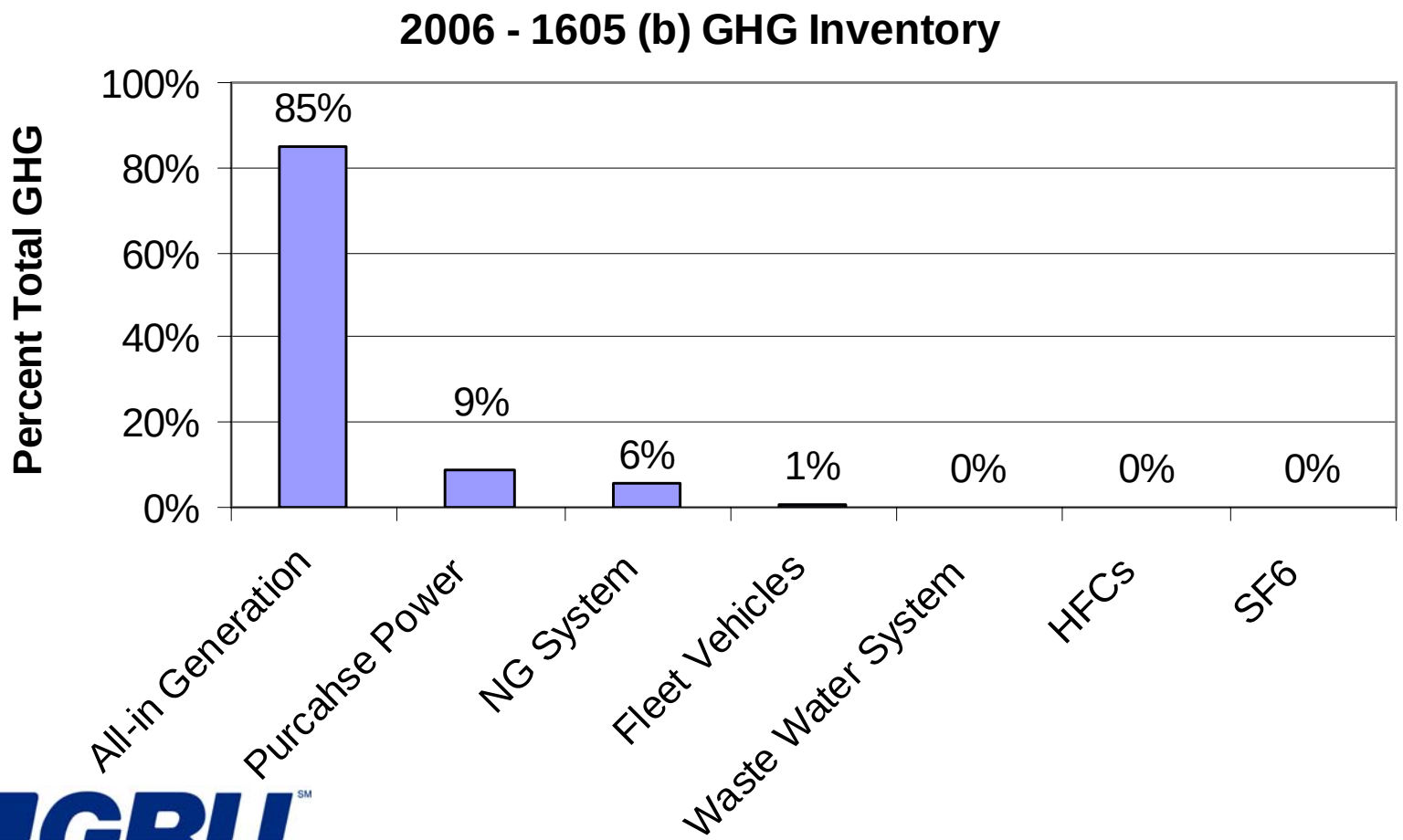
1605 (b) GHG Inventory



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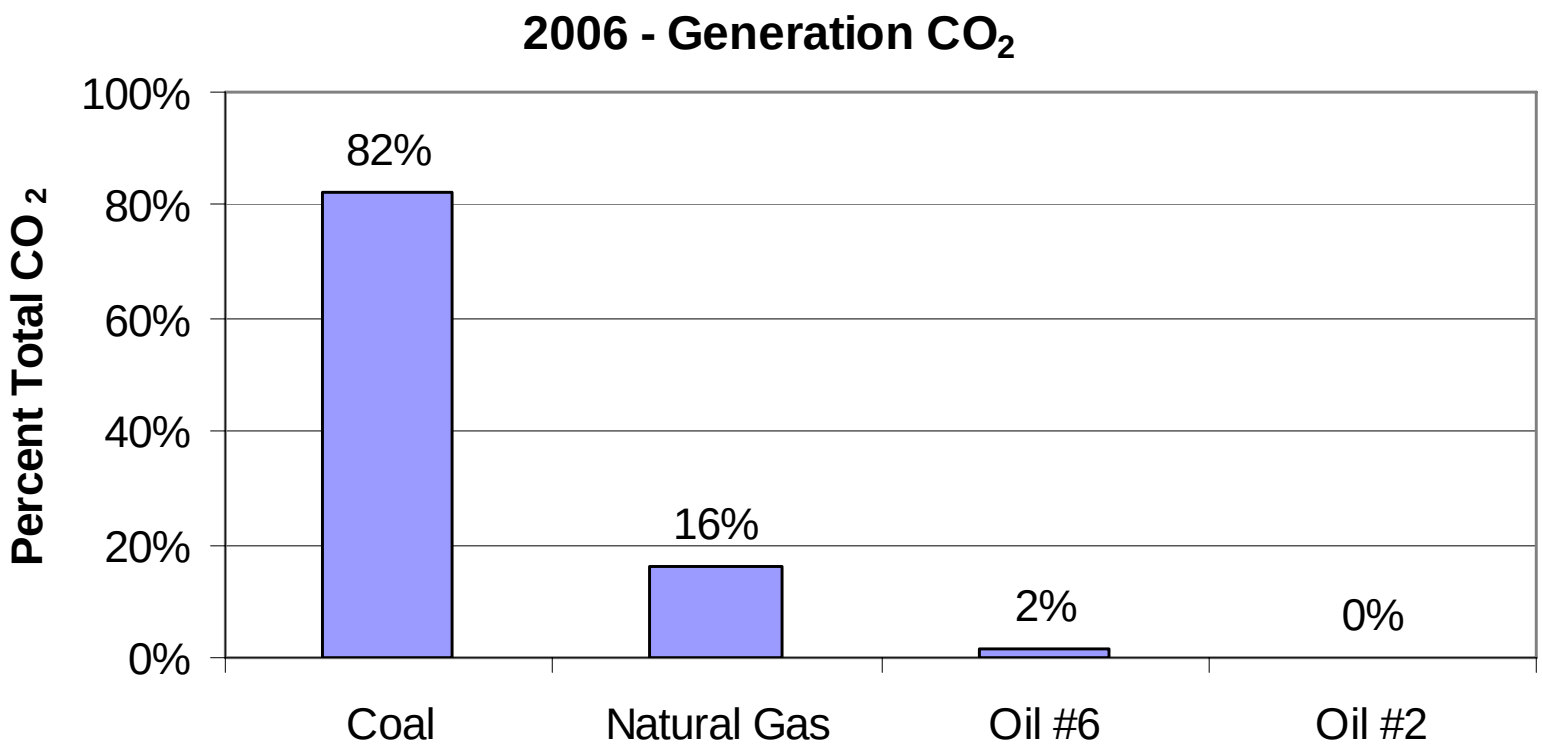
CO_2 by Generation Source



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Kyoto Protocol

- The Kyoto protocol standard requires that carbon emissions be 7 percent lower than 1990 levels by 2012.
- Using back casting of 2006 emissions, data for 1990 can be produced. Actual data from 1990 was not collected in suitable detail for the 1605 (b) protocol.
- Using forecast of energy the 2012 situation with the current generating fleet shows we will be at 36% above in 2012.

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Translating Baseline to Kyoto

Year	Sales (MWh) (Total TYSP)	Net Generation (MWh)	Svc. Area Pop.	"1605(b)" CO_2e (tonnes) (calculated)	All-in Generation CO_2e (tonnes) (Fuel Burn) (AP-42/CEMS)	Non-EGU CO_2e (tonnes) w/ww, fleet vehicles NG & Misc (calculated)
1990	1,302,474	1,867,036	129,432	**1,944,416**	1,721,754	222,662
1999	1,714,755	1,643,248	161,076	**1,696,756**	1,419,657	277,099
2000	1,775,330	1,930,879	164,584	**2,130,794**	1,847,660	283,134
2001	1,820,244	1,959,068	169,395	**2,103,775**	1,812,364	291,411
2002	1,915,977	2,003,635	172,755	**2,050,030**	1,752,839	297,191
2003	1,931,504	1,904,756	174,227	**2,049,478**	1,749,755	299,723
2004	1,979,042	1,842,672	179,459	**1,935,676**	1,626,952	308,724
2005	2,016,769	1,967,463	182,904	**2,059,324**	1,744,674	314,650
2006	2,023,124	1,878,615	185,382	**2,098,715**	1,779,802	318,913
Projected 2012	2,364,410		201,632	**2,426,909**	2,080,041	346,868

1990 & 2012 Non-EGU CO2 calculated using as a ratio of GRU service area population against measured 2006 Non-EGU. 1990 All-in Generation CO2 from measured emissions. 2012 All-in Generation calculated using 2006 average CO2 / Sales MWh against 2012 projected sales (without DSM).

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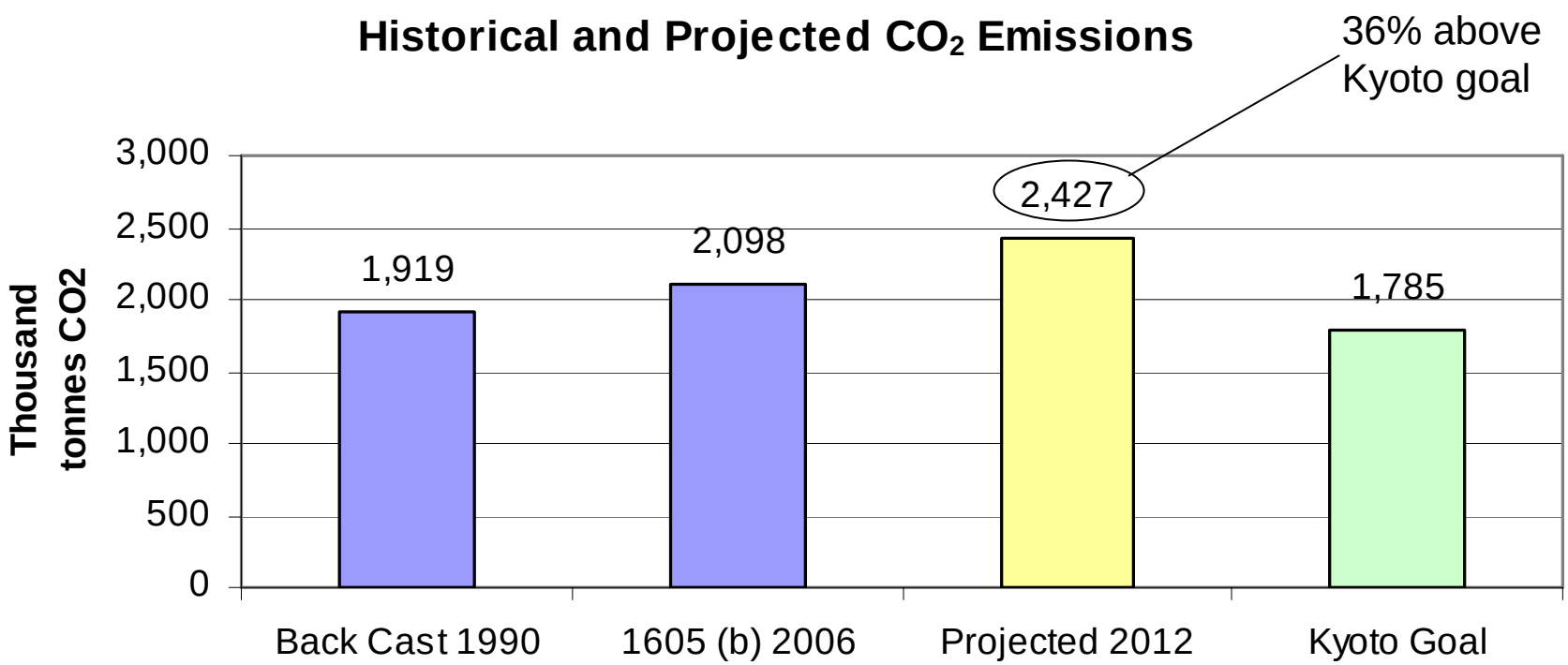
Establishing the Gap



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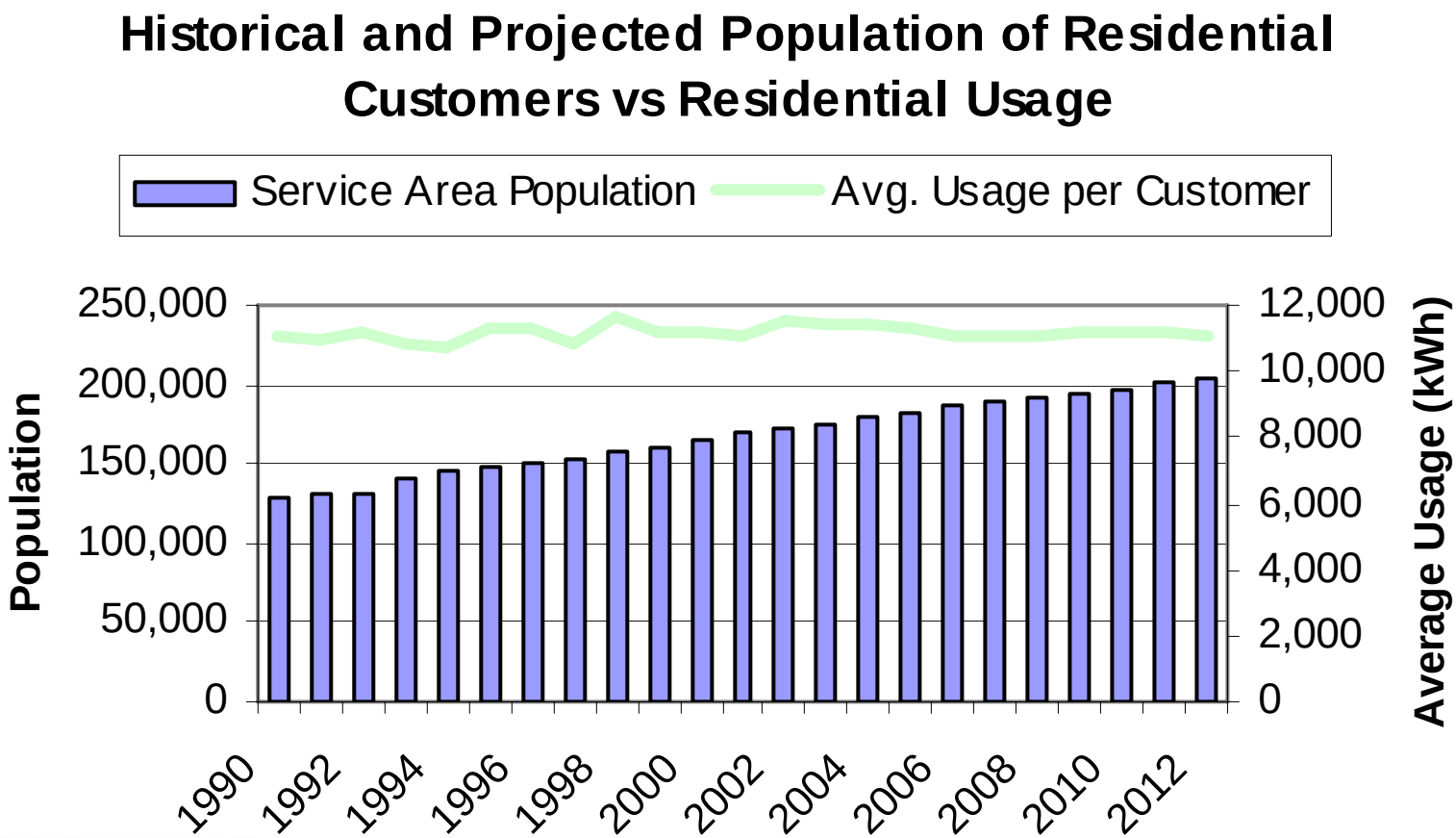
Increasing Population Driving Carbon Increase



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Current Carbon Reduction Strategies – 2007 through 2012

	Current Strategies	Estimated CO_2 Reduction (2012) (tonnes)	Cummulative Impacts on 2012 Baseline (tonnes)	Cummulative Percent CO_2 Emissions Above Kyoto
1	2012 Baseline	-	2,426,909	36%
2	10,000 Acre Forest Preservation	30,283	2,396,626	34%
3	Maximum Energy Efficiency	101,176	2,295,450	29%
4	GRU South Energy Center - Shands CHP	34,949	2,260,501	27%
5	DH Unit #2 Retrofit	-11,840	2,272,341	27%
6	Traffic Light Synchronization	81,867	2,190,474	23%
7	Minimum Housing Code (R-19)	25,086	2,165,388	21%
8	LED Traffic Lights	2,725	2,162,663	21%
9	Solar PV 250 kW Parking Structure	274	2,162,389	21%
	Total	264,520	2,162,389	21%

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Current Carbon Reduction Strategies – 2007 through 2012

	Current Strategies	Estimated CO_2 Reduction (2012) (tonnes)	Cummulative Impacts on 2012 Baseline (tonnes)	Percent CO_2 Emissions Above Kyoto
	2012 Baseline - Current Strategies 2-9	264,520	2,162,389	21%
10	50 MW Biomass Power Plant	345,707	1,816,682	2%
11	50 MW PPA (35% Nuclear)	120,998	2,041,391	14%
	Total	466,705	1,695,684	-5%

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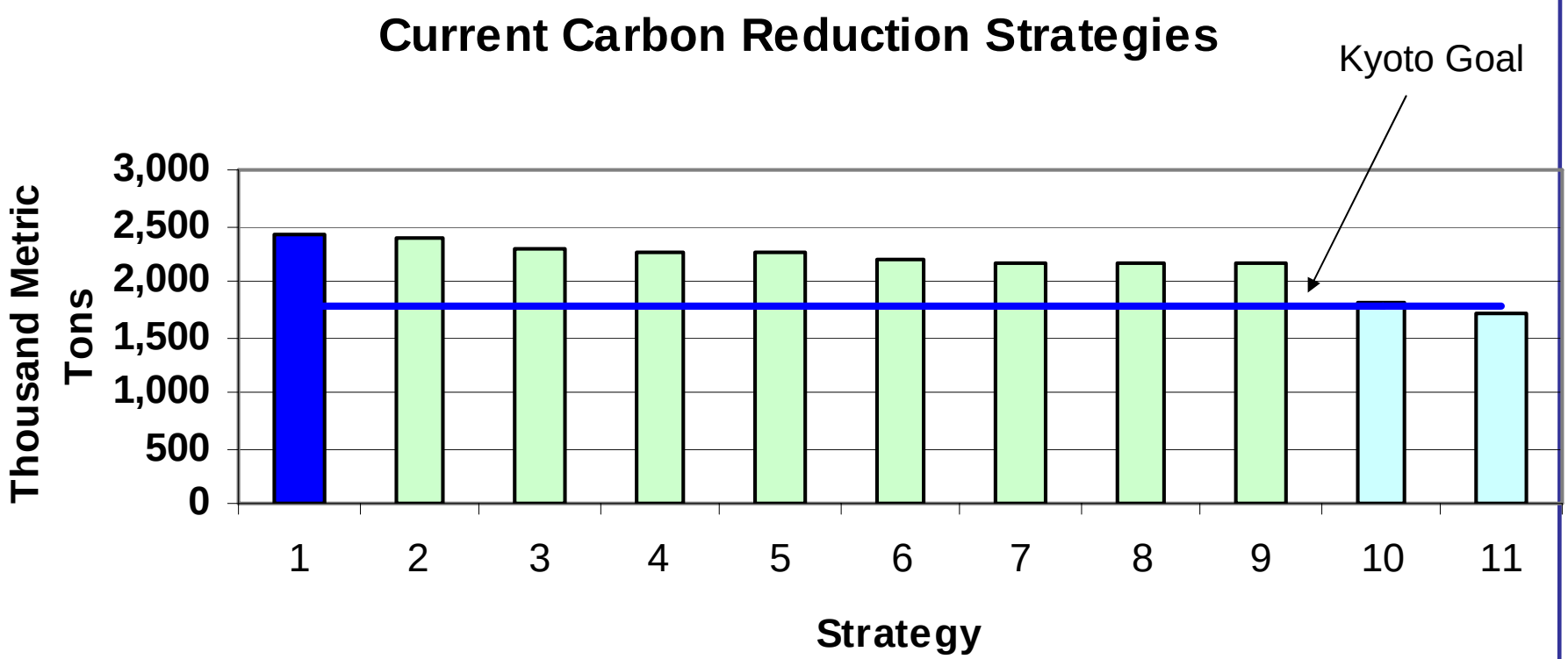
Current Carbon Reduction Strategies – 2007 through 2012



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Questions

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