

California Leadership Strategies to Reduce Global Warming Emissions

SUMMARY DISCUSSION DRAFT

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prepared for

California State Agencies

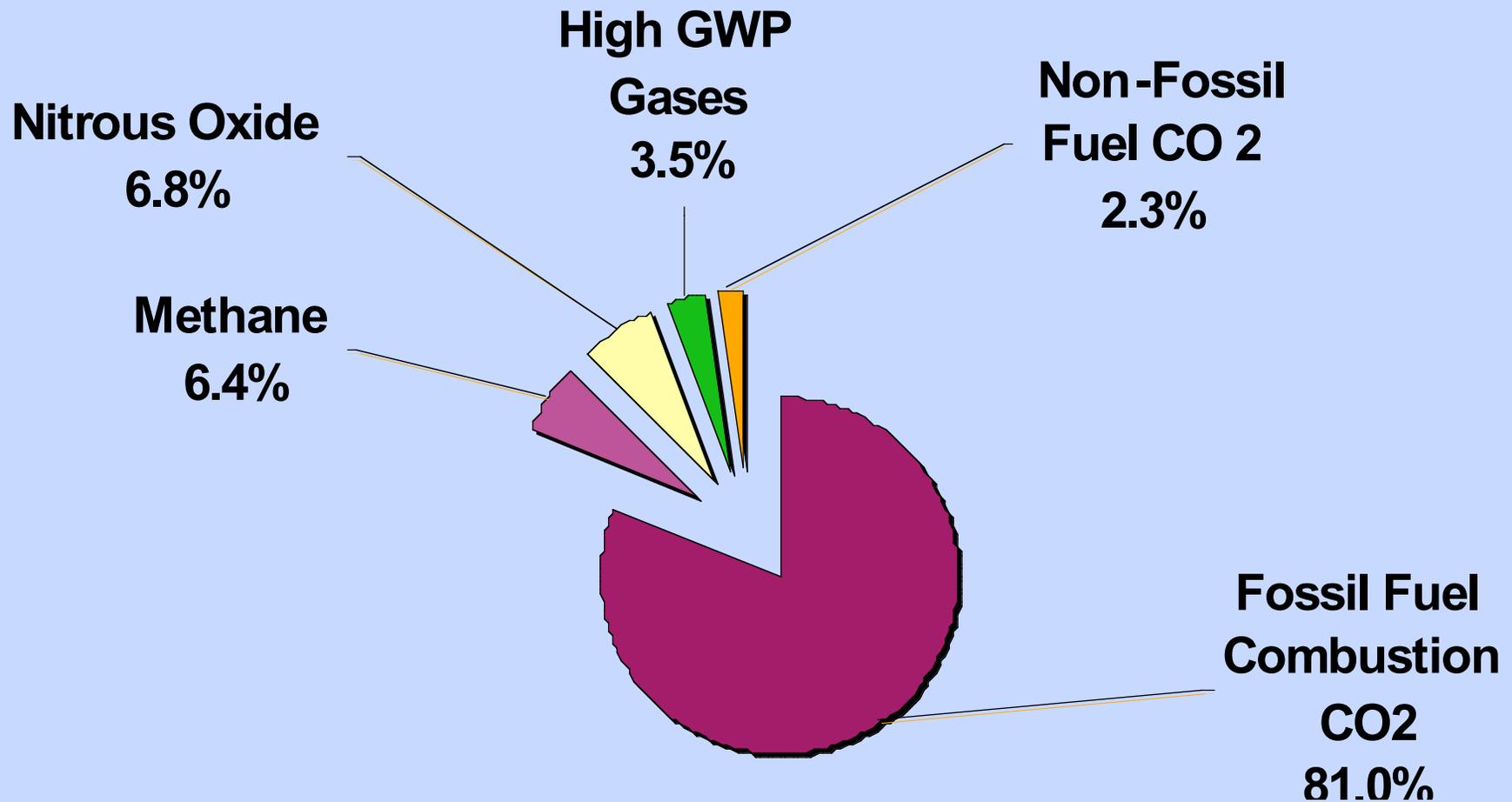
Methodology

- Analysis prepared in consultation with CEC, ARB, and other state agency staff
- State agency data used when available
 - ARB AB 1493, CEC/ARB Petroleum Reduction studies (AB 2076), CEC/PIER studies (ICF non-CO2 gases, Winrock forest/range/ag), CEC calculations (e.g. solar PV)
- CEC emissions accounting approach (from inventory)
- Major strategy interactions captured to avoid double counting
 - Emission reduction estimates would vary if each strategy were assessed in isolation
- Includes carbon emissions associated with imported electricity

Base Case Projections

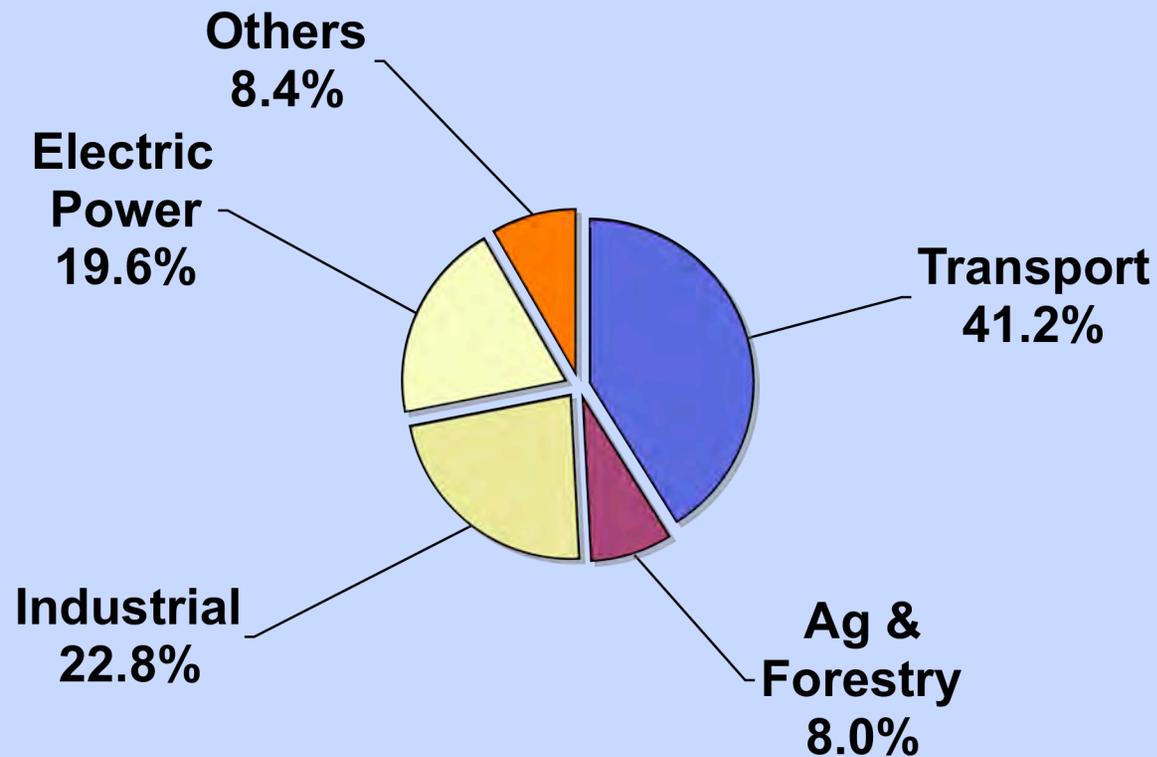
- CA generates 500 MMt CO₂e annually
7% of U.S. emissions
- 610 MMt CO₂e by 2020
26% increase over 2000 levels
37% increase over 1990 levels
- Base Case assumes 18MMt/year reduction in 2020 from full implementation of recent state policies (e.g. 20% RPS, building standards, etc.)

CA Greenhouse Gas Emissions



Source: 2005 CEC Inventory Update

Emissions by Sector



Source: 2005 CEC Inventory Update

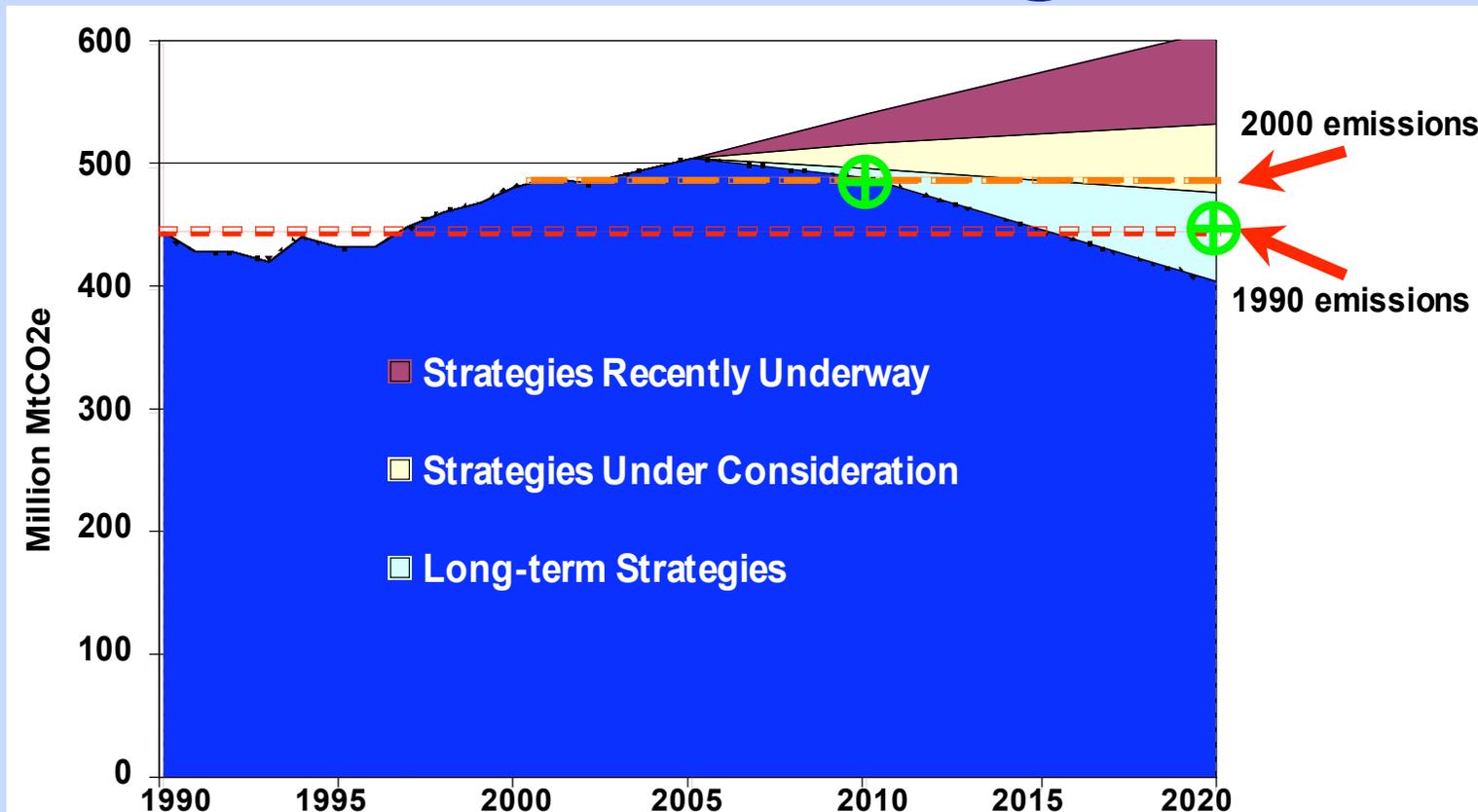
Key Variables

- Population and economic growth
- Fuel prices and development of alternative fuels
- Marginal electricity sources
- Full potential of forest, range, and land use change
- Historical and projected oil use (bunker and other fuel uses)

Emission Reduction Strategies

- Strategies Recently Underway
 - Adopted policies in early implementation stages (e.g. recent CPUC Efficiency Goals through 2013)
- Strategies Under Consideration
 - Expanded or new policies having good estimates of reduction potential (e.g. CPUC annual efficiency saving targets extended through 2020)
- Long Term Strategies
 - General areas for further exploration - reduction estimates or policy paths are not as clear

Reduction Strategies, Baseline & Targets



California GHG Emissions (Including Electricity Imports)

(MMt CO ₂ e)	1990	2000	2010	2020
Base Case Projections	446	483	542	610
<i>Increase relative to 1990 levels</i>		8%	22%	37%
Impact of Strategies				
Strategies Recently Underway			(22)	(69)
Strategies Under Consideration			(21)	(61)
Long-Term Strategies			(7)	(74)
Resulting Emissions	446	483	492	406
<i>Increase relative to 1990 levels</i>		8%	10%	-9%

Estimated GHG Savings: Strategies Recently Underway

Strategy	2010 Savings (MMtCO ₂ e)	2020 Savings (MMtCO ₂ e)
Vehicle Stds (AB 1493)	1	30
CPUC Goals 2006-2013	4	8
Accelerated RPS	1	11
Landfill Methane Capture	6	6
Appliance Efficiency Stds	3	5
Replacement Tires/Inflation	3	3
Solar PV Buildings Initiative	0.4	2
Diesel Anti-Idling	1	2
50% Statewide Recycling	3	3
Green Buildings Initiative	not yet estimated	
Total	22	69

Estimated GHG Savings: Strategies Under Consideration

Strategy Sector	2010 Savings (MMtCO ₂ e)	2020 Savings (MMtCO ₂ e)
Electricity & Industrial Carbon Policies	7	20
Buildings and Facility Efficiency (e.g. CHP, 2014-2020 CPUC EE Goals)	2	18
Non-CO2 Gases, Recycling and Other Sources (HFC, PFC)	6.1	11.3
Alternative Vehicle Fuels	1.4	6
Farms and Forests	3	5.4
Green buildings Initiated, Freight Transport, Air Travel, and Off-Road	not yet estimated	
Total	21	61

Conclusions

- There are a number of strategies that are already underway in CA that provide significant emission reductions
- Still others have been partially initiated, e.g. Landfill gas emission reduction and use
- Some reductions needed from yet to be identified strategies
 - Particularly for 2020 period
- Tellus work is based on best available information
- Governor's targets are achievable