



California Energy Policy: Zero Net Energy Buildings

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AB 32: CA Global Warming Solutions Act (2006)

climate
CHANGE



CLIMATE CHANGE PROPOSED SCOPING PLAN

a framework for change

OCTOBER 2008

Pursuant to AB 32

The California Global Warming Solutions Act of 2006

*Prepared by
the California Air Resources Board
for the State of California*

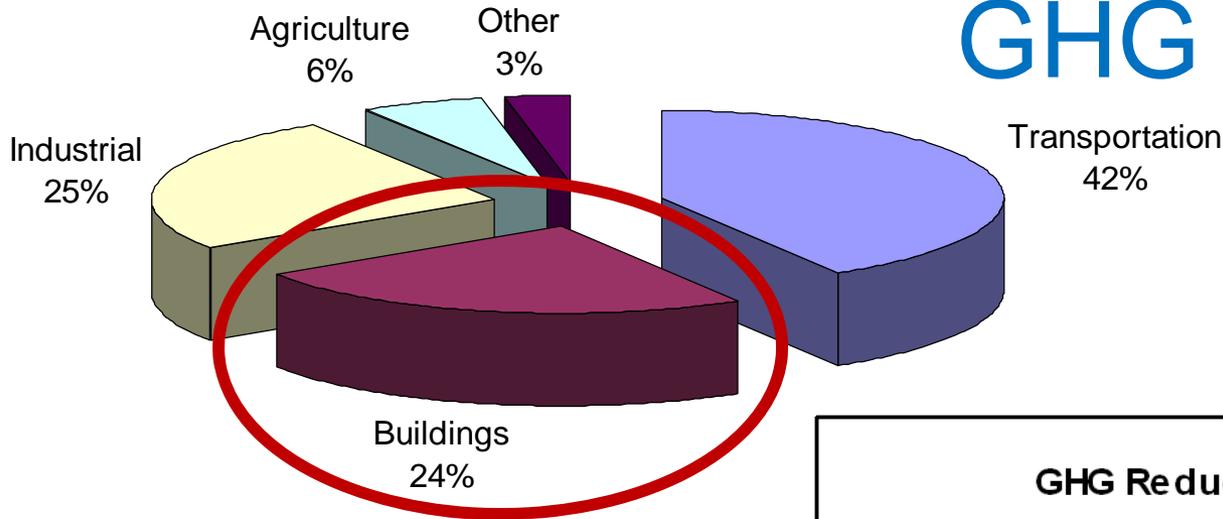


- Reduce to 1990 levels by 2020
- Reduce to 80% below 1990 levels by 2050

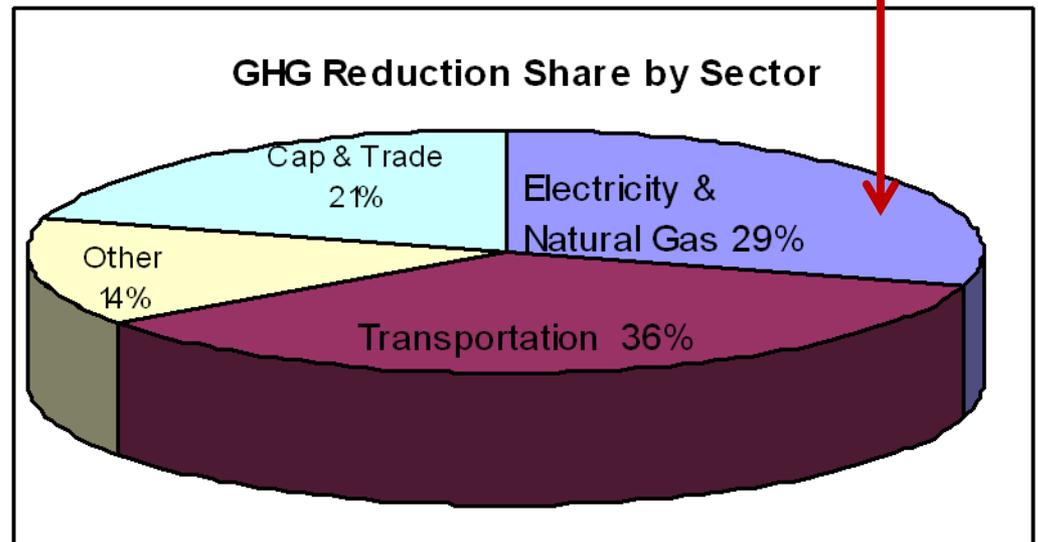


California GHG Emissions
546 Mtonne CO₂e (2004)

Importance of Building Sector in GHG solutions



70% of this is residential & commercial bldgs.

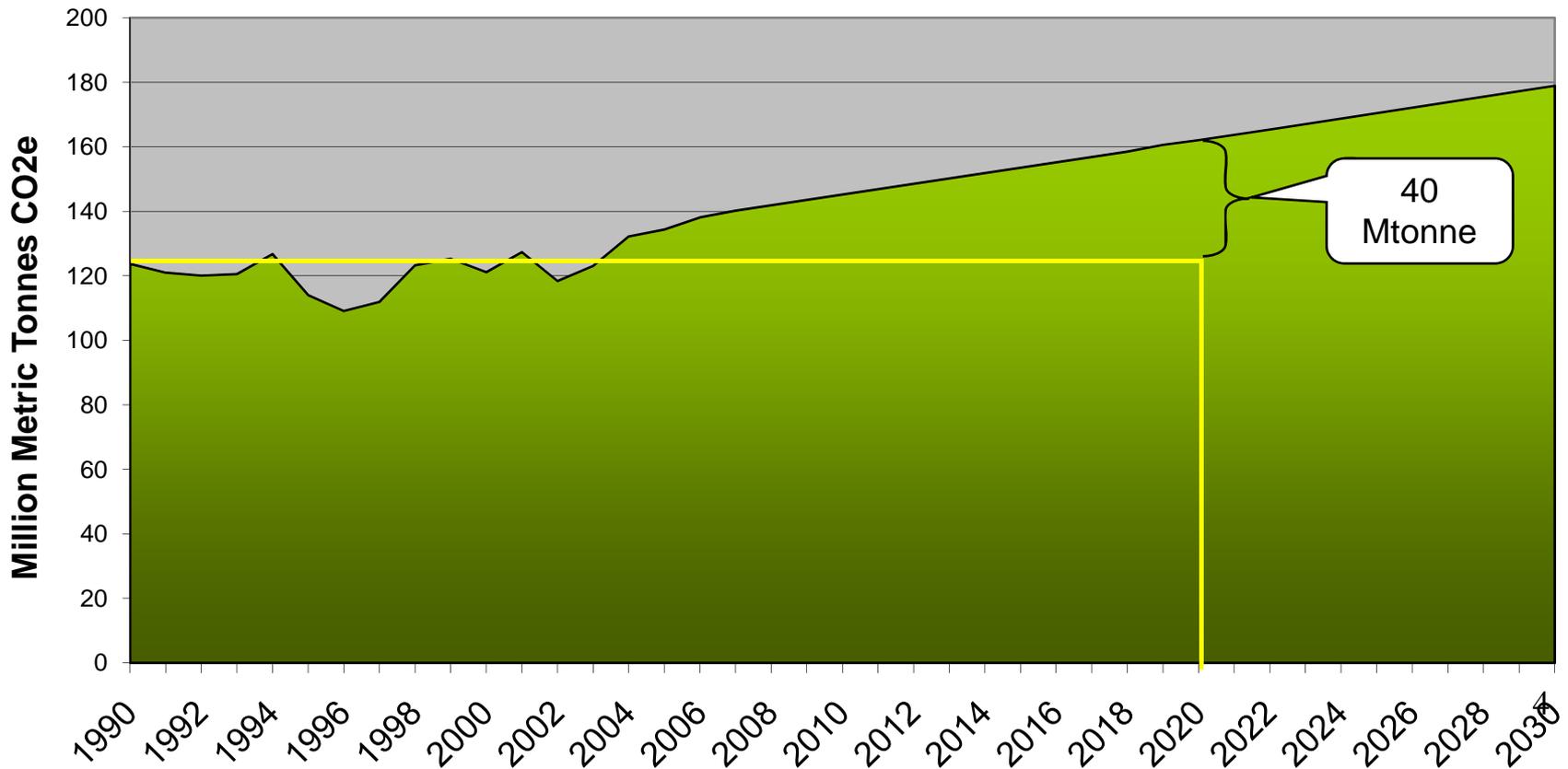




Why ZNE?

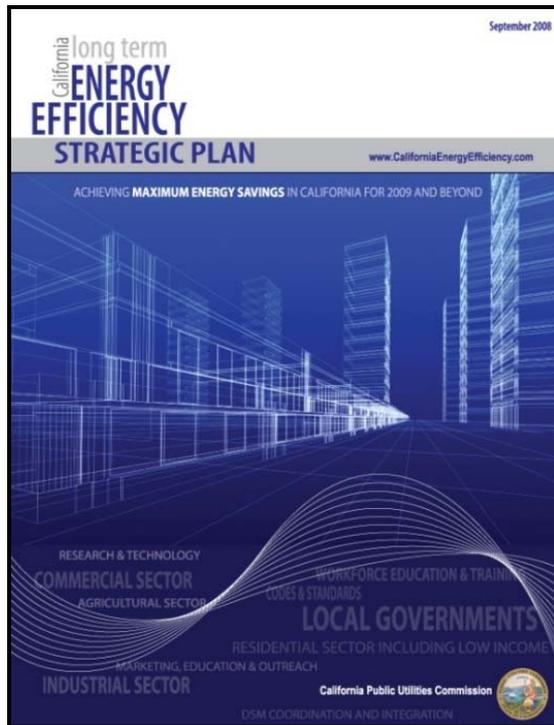
A paradigm shift is needed.

Building Greenhouse Gas Emissions
1990-2004 from the CARB GHG Emissions Inventory
future estimates based on CEC Electricity Demand Forecast





CA ZNE Policy Vision



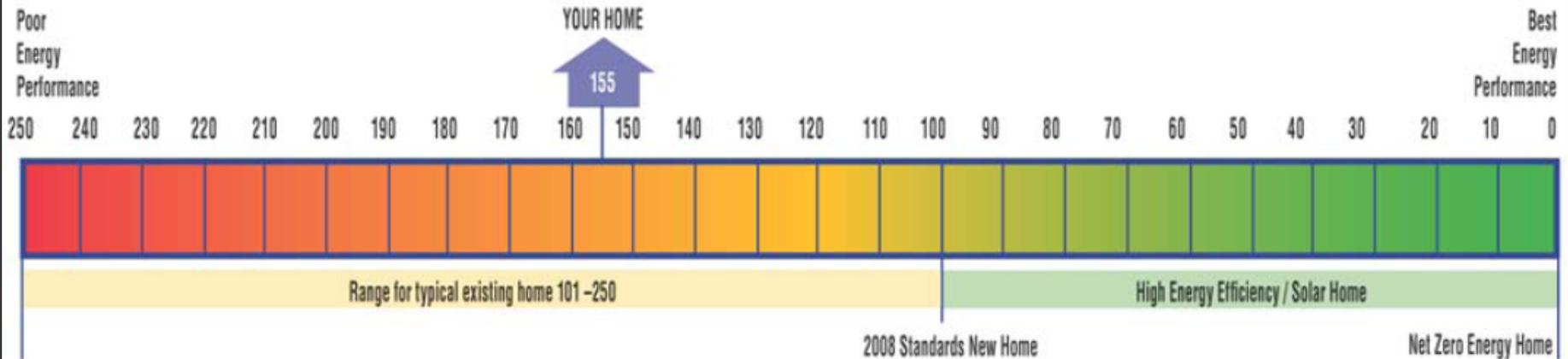
- ZNE new homes by 2020
- ZNE new commercial buildings by 2030
- Reduce consumption by 40% in existing homes by 2020
- 50% of existing commercial buildings will be ZNE by 2030



ZNE Definition

For a house, ZNE is achieved by a CA Whole House Home Energy Rating (HERS) of zero (or less)

California Home Energy Rating Certificate





ZNE Pilots





ZNE Standards

CERTIFICATE OF COMPLIANCE: RESIDENTIAL (Page 1 of 5)		CF-1R
Project Title	Date	Building Permit #
Project Address		
Documentation Author	Telephone	Plan Check / Date
Compliance Method (Prescriptive)	Climate Zone	Field Check / Date
Enforcement Agency Use Only		

Alternative Component Method (check one) C D Alternative
 Package C and Package D require HERS rater field verification and/or documentation (see CF-1R page 3)
 For Package D Alternative Method B Table 151-C Footnotes 7-14

GENERAL INFORMATION

Total Conditioned Floor Area: _____ ft²
 Average Ceiling Height: _____ ft
 Maximum Allowed Window Area: _____ ft² (5% of conditioned floor area)
 Maximum Allowed Total Glazing Area: _____ ft² (20% X CFA)
 Building Type: (circle one) _____ Single Family _____ Multifamily _____ Alteration
 (If adding fenestration, see Section S-4R, Fenestration Maximum Allowed Area Worksheet, Section 8.3.2 for Additions and Alterations.)
 Number of Stories: _____ of Dwelling Units: _____
 Floor Construction Type: _____ Slab/Raised Floor (circle one or both)
 Front Orientation: _____ South / East / West / All Orientations (input front orientation in degrees from True North and circle one).
 RADIANT BARRIER (required in climate zones 2, 4, 8-15)

OPAQUE SURFACES INCLUDING OPAQUE DOORS

Component Type (Wall, Roof, Floor, Slab Edge, Doors)	Frame Type (Wood or Metal)	Cavity Insulation R-Value	Continuous Insulation R-Value	U-factor (for wood, metal frame and mass assemblies) ¹	Joint Appendix IV Reference	Roof Radiant Barrier Installed Yes or No	Location Comments (attic, garage, typical, etc.)
ENERGY BUDGET							

1) See Joint Appendix IV in Section IV.2, IV.3 and IV.4, which is the basis for the U-factor criterion. U-factors can not exceed prescriptive value to show equivalence to R-values.