

CAN WE USE LESS ENERGY?

The Challenge

Growing cleaner through efficiency and innovation

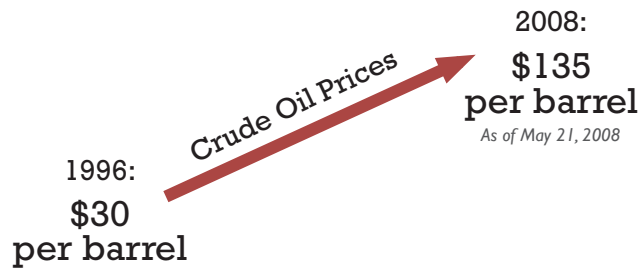


STATE MANDATES FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY.

California is mandating higher efficiency homes, businesses, and communities, and is also requiring that a higher proportion of energy come from renewable sources like solar, wind, biomass, and geothermal. State agencies are looking to smarter land use patterns, building efficiency standards, and innovative new power generation technologies to make better use of our energy resources.



Energy costs are rising and state laws are requiring greater efficiency and more clean energy production.



Source: Energy Information Administration (EIA), 2008.



DEPENDENCE ON FOREIGN SOURCES.

Our economy is highly dependent on foreign sources of energy, some in politically unstable portions of the world. International competition for oil is pushing up demand. Can we produce more clean energy at home and reduce our reliance on foreign sources?

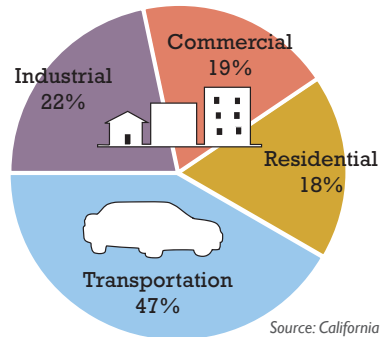
ENERGY COSTS ARE RISING.

The cost of fuel for our cars, homes, and businesses is steadily rising. People are feeling the impacts of these higher costs in their utility bills, gas receipts, and even in the cost of food and other staples. Can we build more efficiently and reduce transportation and utility costs?

More on Energy Use

Californians are spending over 12% of their income on energy...more than at any other time.

Source: Consumer Expenditures Survey, 2006



Source: California Energy Commission (CEC), 2008

HOW DO WE USE ENERGY?

BUILDINGS. Utility costs are rising. The electricity and gas we use to power our homes releases greenhouse gases on site and at the power plants that produce our energy.

TRANSPORTATION. With rising fuel costs, we are spending more and more money on driving. Communities that reduce reliance on the automobile reduce energy consumption and household transportation costs.

HOW CAN WE REDUCE ENERGY CONSUMPTION?

Energy Consumption

SMARTER LAND USE

Compact development reduces the energy—and costs—needed for transportation and household use.

MORE EFFICIENT BUILDINGS

More efficient buildings use less energy and cost less to heat and cool.

CLEAN ENERGY PRODUCTION

Generating power on-site from renewable sources offsets demands on the power grid.

What is Zero Net Energy?
State Energy Standards are moving towards a requirement that new development have "zero net energy" impacts. That means more efficient buildings and a variety of clean energy production options.

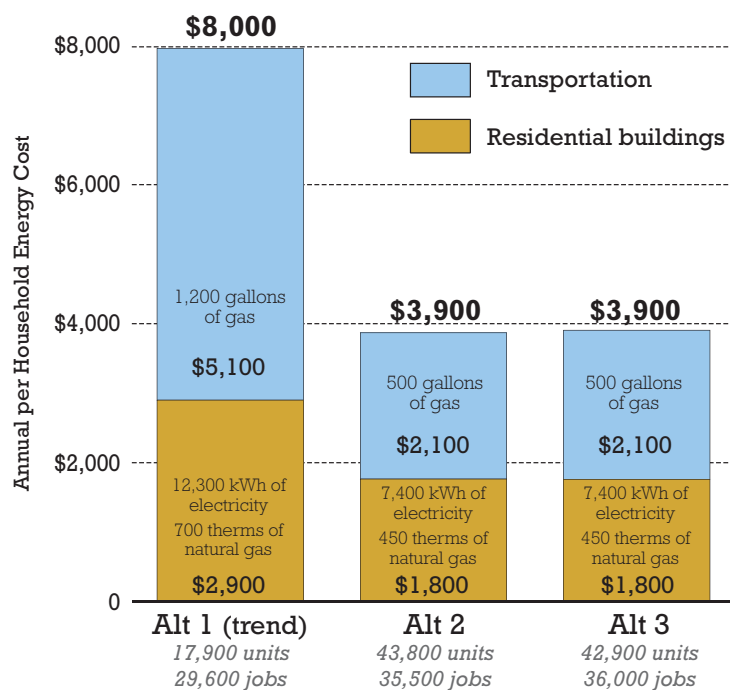
Annual Energy Use and Greenhouse Emissions per Household by Housing Type in the Fresno Area

	Single Family Home (~1,600 sf)	Townhome (~950 sf)	Multifamily Home (~850 sf)
Electricity	8,600 kWh	4,500 kWh	5,100 kWh
Natural Gas	510 therms	340 therms	300 therms
GHG (lbs CO ₂)	11,400	6,900	6,700

Source: CEC Residential Appliance Saturation Survey, 2004

How can SEGA help?

Cleaner and More Efficient Alternatives



Energy Use and Cost per Household

This chart shows annual per household energy use and costs for residential buildings and transportation (auto fuel).

It does not include the application of building efficiency standards.

SEGA Alternatives 2 and 3 require significantly less energy per household than Alternative 1, lowering annual household costs by 54%.

LESS DRIVING:

The mix of land uses in Alternatives 2 and 3 are organized to reduce reliance on the automobile. More everyday needs are within walking or biking distance, or a short drive or transit trip away. Less driving means people use and spend less on fuel.

MORE EFFICIENT BUILDING OPTIONS:

Alternatives 2 and 3 include a broader mix of multifamily and smaller-lot single family homes, which use less energy than their larger counterparts. Building efficiency standards can also reduce the energy used by homes and businesses in SEGA.

CLEAN ONSITE ENERGY:

Renewable energy production on buildings, in districts, and in employment zones can produce much of the energy needed by development in the SEGA. Fresno and the Central Valley enjoy rich solar and agricultural biomass power resources.