

Tom Plant, Director



*Governor's*  
**Energy Office**

This document contains the sustainability policy of the Governor's Energy Office, and will be updated each year on July 31.

The Governor's Energy Office  
Sustainability Policy

July 31, 2008

## ENVIRONMENTAL POLICY STATEMENT

The mission of the Governor's Energy Office (GEO) is to lead Colorado to a New Energy Economy by advancing energy efficiency and renewable, clean energy resources.

The New Energy Economy embraces energy conservation as an important component in our energy future, yet requires a broader mission to meet the goals of expanding renewable and clean energy resources and opportunities for the state's economy, environment and energy independence.

To advance the New Energy Economy across the state, GEO partners with communities, utilities, private and public organizations, and individuals to promote renewable energy such as wind, solar, and geothermal, and energy efficiency technologies in commercial and residential buildings. The New Energy Economy will benefit Colorado by creating jobs and protecting our natural environment.

At the GEO, we live our mission. We are committed to environmental excellence, energy efficiency, the use of clean energy, and continual improvement in reaching our internal sustainability goals.

The hierarchy of actions taken and supported by the GEO is as follows: energy conservation first, then energy efficiency, followed by on-site and utility-scale renewable energy generation, and finally, the purchase of carbon offsets if necessary to reach carbon neutrality.

Energy conservation, sometimes referred to as the "negawatt" is the avoidance of energy consumption. Conservation is a no-cost, almost infinite return opportunity both from a financial and environmental impact.

Energy efficiency measures, such as replacing inefficient equipment with efficient units, generally comes with an initial cost premium. However, it can save both energy and money over the life of the investment. For example, a hybrid vehicle generally has a higher initial cost than a similar less efficient vehicle, but because it is more fuel efficient, it may have a significantly lower total cost of ownership.

Once conservation and efficiency efforts are in place, on-site or distributed renewable energy generation is the next step to reduce energy consumption and related environmental impacts. The return on investment is greater if plant, facility, vehicle, or equipment to be powered by the renewable source is energy efficient.

Finally, for individuals or organizations whose energy-conservation and efficiency practices are in place, who have invested in onsite renewable energy generation, but have not reached a goal of carbon-neutral operations, carbon offsets or renewable energy credits are available for purchase. These offsets

allow an individual or organization to contribute to the energy-efficiency and carbon-mitigation projects of others.

The GEO recognizes the importance of pollution prevention in our business and personal activities. As a business, we comply with applicable environmental regulations and requirements.

As Colorado state government's lead organization for energy efficiency and renewable energy, the GEO recognizes the importance of communication with the public and our employees.

Our specific sustainability goals mirror the Greening Government goals identified by Governor Bill Ritter, Jr. in his April 2007 Greening Government Executive Orders. By June 30, 2012 GEO intends to reduce energy consumption by 20%, water consumption by 10%, petroleum consumption by 25%, and paper consumption by 20% and to divert 75% of our waste from landfill. These sustainability goals are based on a baseline of SFY 2005-06.

#### ENERGY AND ENVIRONMENT ASPECTS AND IMPACT

##### Employee Commute

To encourage a GEO employee to reduce his or her vehicle miles traveled, GEO provides each full-time employee with a free RTD Eco Pass and encourages flex time (compressed work weeks) and telework.

	<i>Governor's Energy Office</i>	<i>Denver-area State Employees</i>
<i>Drive to work alone every day</i>	7 %	35 %
<i>Drive to work alone one or more days, but less than five days per week</i>	18 %	57 %
<i>Telework at least one day per week</i>	32 %	11 %
<i>Ride the bus or light rail one or more days per week</i>	71 %	38 %
<i>Personal vehicle fuel efficiency 1-25 mpg</i>	44 %	73 % (statewide)
<i>Personal vehicle fuel efficiency 25 mpg or greater</i>	56 %	27 % (statewide)
<i>Average round-trip commute</i>	32.18 miles	32.8 miles (statewide)
<i>Percent of employee group using Eco Pass when the employee group pays for the pass</i>	Not Applicable	58 %

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*Percent of employee group using Eco Pass when the employer pays for the pass*

89 %

71 %

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<sup>1</sup> October 2007 state employee survey, 4,486 respondents

### Business Travel

GEO staff traveled a total of 98,662 air miles for business in fiscal year 2007-08. At .45 pounds per mile, that equals 44,398 pounds of carbon (20.1 metric tons).

GEO employees often use personal vehicles for business travel. The mileage reimbursement under the first year of the Ritter administration was considerably less, especially for out-of-state travel.

In fiscal year 2007-08, GEO hired three regional representatives who represent GEO programs in local communities. These positions and emphasis on local government did not exist in fiscal year 2006-07.

The regional representatives live in Carbondale, Crook, and Lafayette Colorado. Their business travel is primarily in his or her personal vehicle.

State Fiscal Year	GEO In-state miles reimbursed	GEO out-of-state miles reimbursed
2005-06	17,900	28,945
2006-07	15,520	1,816
2007-08	Not available	Not available

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### Built Environment

Working with the Logan Tower building owner, GEO improved the energy efficiency and reduced the carbon footprint of the office space. Energy efficiency improvements include new lighting, lighting controls and heating and air conditioning distribution and controls.

Previous to GEO's involvement, office level one of Logan Tower suffered from inefficient lighting, comfort issues (hot/cold complaints), and dueling heating and cooling systems.

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With the help of GEO staff and consultants, Jordan Perlmutter Co was able to turn dated mechanical systems on office level one into a model energy retrofit project.

### Insulation

Historically, office level one in Logan Tower had been a cold place to work in the wintertime. To correct this design flaw, the GEO worked with Johns Manville to retrofit the exterior walls with increased insulation levels and to mitigate thermal bridging of metal window frames. In addition, an insulated carpet tile provides a thermal break between the concrete floor and occupant's feet.

### Lighting

A floor-wide lighting retrofit including the measures below was completed. In total, this lighting retrofit package will save over 40,000kWh annually and will recover the cost of the retrofit in approximately five years through energy savings. The new lighting design was reconfigured according to the remodeled floor plan to deliver light more effectively to the space.

- Replaced 124 existing 4 lamp T-12 lighting fixtures and magnetic ballasts with 92 new 2 lamp T-8 (28W) and electronic ballasts
- Replaced incandescent exit signs with LED exit signs
- Installed recessed compact fluorescent down lights
- Installed dual level switching and occupancy sensors in each private office. This measure allows occupants the capability to turn one or two (of two) lights on in their private office. One of the two lights is tied to an occupancy sensor, which turns the remaining light off when the room is unoccupied.
- Installed occupancy sensors in hallways. This turns common area lights off when unoccupied.

### Heating Ventilation and Air Conditioning System

The GEO conservatively estimates that by locking out the heating system during the summertime, 20 kW of summertime peak demand will be saved which will result in a simple payback period of four yrs.

- Retrofitted HVAC system to provide better efficiency and comfort
- Full duct test and balance completed

- Updated control sequence to eliminate simultaneous heating and cooling on the floor

### Daylighting

Incorporated daylighting techniques into the design of the new space:

- Placement of private office walls was dictated by location of perimeter windows to maximize the amount of natural light coming into the space. Spaces with no windows were assigned as storage.
- All private offices have a window looking out into the interior hallway to allow natural light to make it through.
- One corner of the office floor plan was left open for workstations (as opposed to up private offices) to allow for more light in the interior.

### Summary of other green building measures:

The State has over 500 active real estate leases. This project demonstrates that the State can influence energy and water efficiency measures and the development of sustainable built environments in both leased and owned space.

Additional sustainable features in the GEO lease:

- Traded parking spaces for bicycle storage
- Revised the original floor plan to replace some private offices with open office for enhanced daylighting
- Low VOC paints, sealants, caulking
- Water efficient toilets and urinals provided by Denver Water
- Sustainable carpet and vinyl floor covering
- Reused furniture panels, office furniture
- Energy Star appliances
- Commingled recycling

### Fleet

Three vehicles are assigned to the Governor's Energy Office, a 2006 Toyota Prius, a 1998 Jeep Cherokee, and a 2008 F350 pick-up. While our trucks are designated to the Weatherization program, the Prius is available to all staff

members. In this way, if an individual has an offsite meeting during the day, they do not need to bring their car to work; they can simply use their standard commuting method and reserve the Prius. If there are competing demands for the Prius, we look at distance travelled and the individual who is going to be going the greatest distance uses the Prius.

Between baseline state fiscal year (SFY) 2005-06 and year one measurement SFY 2006-07, GEO reduced fuel consumption by approximately 50 percent and vehicle miles traveled by 27 percent.

The fuel economy results for the GEO Toyota Prius reflect approximately six months as a plug-in hybrid electric (PHEV) vehicle. The PHEV conversion was unsuccessful; however GEO is committed to testing this technology and helping to bring it to market. Therefore, the GEO plans to invest in a 2008 Prius, and test the conversion again.



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**GOVERNOR'S ENERGY OFFICE PETROLEUM CONSUMPTION**

Year	Make	Model	Body Type Desc	Gallons	Mileage	MPG	Avg Mthly Miles
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**STATE FISCAL YEAR 2005-2006 BASELINE**

2006	TOYOTA	PRIUS	SEDAN HYBRID (GAS/ELECTRIC)	24.51	1940	79	646
1999	JEEP	CHEROKEE	PASS UTIL SMALL, 4X4	595.36	10914	18	909
1998	GMC	SIERRA SL	PU 3/4 TON, 4X4	1314.34	15177	12	948
1998	JEEP	CHEROKEE	PASS UTIL SMALL, 4X4	511.25	9573	19	797
1996	GMC	SUBURBAN	PASS UTIL LARGE, 4X4 (9 PASS)	607.56	10325	17	794
			SUM	<b>3053.02</b>	<b>47929</b>	29	819

**STATE FISCAL YEAR 2006-2007**

2006	TOYOTA	PRIUS	SEDAN HYBRID (GAS/ELECTRIC)	104.42	7,083	67.83	590
1999	JEEP	CHEROKEE	PASS UTIL SMALL, 4X4	505.59	9,613	19.01	739
1998	JEEP	CHEROKEE	PASS UTIL SMALL, 4X4	811.64	16,228	19.99	1,352
2008	FORD	F350 PU	PU CW CAB 3/4 TON, 4X4 (6 PASS)	99.76	2,187	21.92	1,093
			SUM	<b>1,521.41</b>	<b>35,111</b>	32.19	944
			Baseline v. Year 1	<b>0.498</b>	<b>0.733</b>	32.19	944

**STATE FISCAL YEAR 2007-2008 (as of June 24, 2008)**

2006	TOYOTA	PRIUS	SEDAN HYBRID (GAS/ELECTRIC)	195.84			
1998	JEEP	CHEROKEE	PASS UTIL SMALL, 4X4	267.75			
2008	FORD	F350 PU	PU CW CAB 3/4 TON, 4X4 (6 PASS)	1093.04			
			SUM	<b>1556.63</b>			

## Materials Management

### **Source Reductions**

#### *Office Supplies*

It is important for office staff to have the materials they need in order to be successful. GEO has created a supply ordering method that allows for success, but avoids excess and waste. Each staff member is comfortable with the rule of "order only what you need".

GEO is equipped with one common supply room to avoid ordering duplicate supplies. When supply ordering is needed, it is handled by one person, a simple method that also allows staff to avoid duplicate ordering. Orders are placed once every two weeks, and staff are encouraged to avoid ordering supplies outside of that schedule. This avoids having supplies transported unnecessarily.

GEO also chooses products and furniture with recycled content whenever possible and recycles products at the end of their life. When GEO does find itself with excess supplies or furniture, that material is given to reuse organizations, such as State Surplus, so that they can be used by someone else.

#### *Printing*

When printing is necessary, GEO minimizes its paper use through duplex printing. In addition to paper use, printing also uses toner, ink, and electricity. Three of our staff members gave up desktop printers to reduce the use of these commodities. Instead, when needed, they print to a network, shared printer.

The toner and ink cartridges purchased by the GEO are remanufactured by a Colorado company, Green Cartridge Company. Many cartridge providers provide a "take back" envelope, which allows a customer to easily return an empty cartridge for recycling. The problem with some of these programs is that the empty cartridges are shipped thousands of miles, often overseas, and ground into small pieces of plastic as a source for new plastic products.

GEO uses the state's Integrated Document Services (IDS) group for commercial printing needs. IDS uses 30% recycled-content paper, and prefers [Forestry Stewardship Council](#) (FSC) and [Sustainable Forestry Initiative](#) (SFI) certified papers and sub-contracted commercial printers, when available.

#### *Events and Meetings*

GEO is accustomed to daily meetings and events at its office and strives to set a standard of accommodation through sustainable efforts. GEO's conference

room is equipped with reusable meeting products such as kitchenware that can be washed and reused rather than thrown away. Outside catering is also a prominent need for meetings, so GEO works with its catering vendors to guarantee that all catering products brought into the office are either recyclable or compostable and since GEO provides most necessary items for meals, the caterer doesn't need to bring in any disposable plates or utensils. GEO also provides the laptops and projectors to meeting presenters to cut down on the need for handouts.

The GEO hosts an annual New Energy Economy conference. To reduce waste at that event, we will have all conference materials for the participants on jump drives.

### **Recycling and Composting**

GEO recycles all paper and cardboard, and plastic, glass, and aluminum containers. GEO is also working with its building owner to add composting services to the building. When GEO moved into the Logan Tower, the building managers recycled paper only. As a result of GEO's request to add comingled recycling to the GEO suite, all tenants now have an opportunity to use comingled recycling services.

### **Cleaning Products**

GEO requested that the cleaning products used in the office suite contain low or no volatile organic compounds (VOC). Logan Tower management complied with this request, and now uses green cleaning products throughout the building.

### **Environmentally Preferable Purchasing**

GEO's policy is to give preference to products that minimize environmental impacts over the lifetime of the product. At a minimum, GEO considers a product's energy profile and recycled material content, toxicity, and impact on air and water resources. GEO purchases Energy-Star® certified products when available.

In the coming year, GEO plans to add language to vendor solicitations and contracts, which will encourage those who do business with us to use sustainable business practices. Sample language is as follows:

*Pursuant to Colorado Governor's Executive Orders D011 07 and D012 07, the State is committed to taking a leadership position in energy conservation and efficiency. During the term of this Contract (or PO or Lease), the State encourages Contractor to consider environmental factors in all business and purchasing decisions and to consider giving preference to products and services*

*that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.*

## SOCIAL IMPACTS

The GEO has created a flexible work environment to promote a work-life balance in a very demanding, high-paced office. GEO staff is encouraged to flex schedules to accommodate dependent care, continuing education, and the like.

Professional development, employee health and safety are essential to maintaining a highly motivated and productive GEO workforce. GEO values and encourages staff diversity.

The RTD Eco pass is provided at the employer's cost to reduce the social impacts of traffic congestion.

Our Regional Representatives show our commitment to the myriad of needs in Colorado's diverse communities. They live and work in the communities they serve, and understand the nuisances of life outside of the state's capitol city.

The GEO is working with the Departments of Higher Education and Labor and Employment, and others to create a Green Collar Jobs report for Colorado. This report will provide employers, educators, and job seekers with data concerning jobs in the energy efficiency and renewable energy industries.

## ECONOMIC IMPACTS

The Clean Energy Fund, which was created in 2007 by Senate Bill 246, offers grants through GEO and the Office of Economic Development and International Trade. The purpose of these programs is to advance Colorado to a New Energy Economy through energy efficiency, and clean, renewable energy technologies.

The GEO estimates that the investment in clean and renewable energy is approximately seven million dollars in SFY 2007-08 of Clean Energy Funds. Combined with public funds from several other agencies including the Department of Local Affairs on the state level and federal Departments of Energy, Health and Human Services and the Environmental Protection Agency, the GEO managed over 20 million dollars of direct investments during SFY 2007-08.

All programs leverage matching funds and partner with organizations such as schools, communities, businesses, non-profits, institutions, and others. GEO

provides communities with expertise and support in the implementation of its programs to ensure success. GEO's programs currently include:

- Anaerobic Digestion Feasibility: GEO partners with facilities or farm owners to conduct anaerobic digester feasibility studies, which could allow for waste to be used for energy.
- Biofuels Funding: The Governor's Biofuels Coalition offers funding, marketing, and technical support for increasing the state's biofuels infrastructure.
- Clean Energy Fund - New Energy Economic Development: The Clean Energy Fund has grants, loans, and financial support to advance energy efficiency and renewable energy throughout Colorado.
- Energy Efficiency Services for Income-Eligible Residents: GEO is seeking cities and counties that are interested in participating in energy efficiency programs for income-eligible residents.
- ENERGY STAR® New Homes Program
- Event and General Organization Sponsorship: GEO supports Colorado renewable energy and energy efficiency events and non-profit organizations.
- Colorado Carbon Fund: GEO is accepting input on the development of a carbon offsets program that will develop quality, Colorado-based renewable and energy efficiency projects.
- High Performance Design Program: GEO offers support and expertise for commercial and public buildings using High Performance Design in new construction and existing buildings.
- Insulate & Seal Colorado Program
- K - 12 Schools Program: GEO partners with schools interested in making energy improvements, including energy efficiency, renewable energy projects and energy manager training.
- Performance Contracting Program: Performance contracting allows for buildings to make energy capital improvements without up-front costs and guarantees energy and cost savings. GEO is seeking partners in performance contracting for commercial, public and school buildings.
- Residential Solar Rebate Program

GEO partners with interested cities, municipalities, utilities, and non-profits by offering matching grants of up to \$25,000 to develop local solar electric and

solar domestic hot water rebate programs. In total, this created a \$1,000,000 fund from which to initiate a solar rebate incentive and training program.

GEO offered matching grants for wind turbine installations. GEO awarded eight matched grants of \$25,000. The program will facilitate 40 small wind energy installations throughout the state. Partners in this program will be responsible for providing match funding and staff support required to administer the rebate program.

In May 2008, the GEO announced the second round of "New Energy Economic Development" (NEED) grants to 13 awardees, totaling \$656,000 in funding. The NEED grants use Clean Energy Funds to advance energy efficiency and renewable energy throughout the state.

Combining the direct investment impact of GEO programs with the leveraged investments generated through specific program funding protocols increases the total pool of efficiency and renewable investments by a factor of five, approximately \$120 million dollars. While this figure is impressive in its own right, the GEO programs are also designed to maximize the return on invested monies. The annual estimated direct savings associated with program investments (primarily associated with resource and utility savings) is also \$120 million dollars, creating a 1:1 return ratio of year one saving, a figure that increases as savings accrue over time.