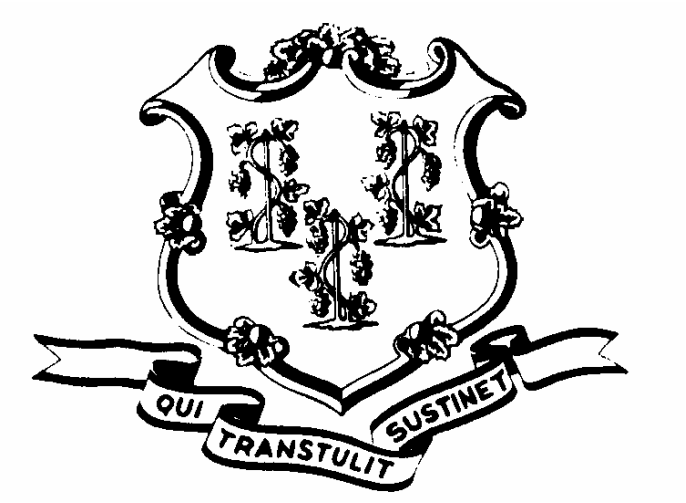
Analysis of the Impact of Energy Price Increases on State Agency Operations and Programs, and Conservation Efforts



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Prepared by the Office of Policy and Management

I Background

This year has seen the rapid escalation in petroleum based energy prices. Driven by a 71% increase in the price of a barrel of oil since January, gasoline and home heating costs have followed suit. Among the factors that have conspired to drive energy costs higher include:

1. An expanding world economy
2. Rapid economic growth in both China and India
3. Instability in the Middle East
4. Declining value of the U.S. dollar
5. Speculation
6. Refining capacity limitations

The national economy has been able to handle the ill effects of higher energy prices thus far. This is due to America's strong GDP growth over the past year and the fact that our economy is far more efficient in its energy consumption than it was in the 1970's. However, many analysts are concerned that should prices be sustained at this level, or higher, combined with the fallout from the sub-prime mortgage crisis; it is likely that economic growth will weaken next year. Economy.com, an economic consulting firm, previously noted "that every recession since World War II except for, the steel-strike induced 1960 recession, has been preceded if not precipitated by a spike in energy prices."

Higher energy prices act on the economy similar to a tax increase. However with a tax increase those additional governmental funds are presumed to be spent in the domestic economy. Given America's dependence upon imported oil, higher energy prices extract wealth from America and transfer it to foreign oil producers, to the detriment of our domestic economy.

Connecticut's economy is heavily dependent upon petroleum, providing over 51% of our energy requirements compared to 40% nationally. Of this amount, transportation accounts for 60% of petroleum consumption followed by the residential sector at 22%. Although Connecticut is heavily dependent upon petroleum, the state is ranked very high in the efficient consumption of energy supplies. Even with that good news, the Office of Policy and Management estimates that higher energy prices this year will extract approximately $900 million more from the State's economy compared to last year.

II Impact on Expenditures

The FY2008 Estimated General Fund energy and fuel expenditure level for state agencies, excluding anticipated savings from the electricity auction and the natural gas contract, is $93.6 million. This number excludes the constituent units of higher education since the funding that these units receive from the General Fund primarily is used to pay personal services costs, which then leverages additional support through the payment of fringe benefits on these positions. General Fund energy-related expenditures have more than doubled since FY 2000 when approximately $43.2 million was spent. These increases are all-inclusive; they include changes in price, rebates if any, as well as consumption.

The FY 2008 Special Transportation Fund (STF) energy and fuel expenditure level before savings is $11.1 million. STF energy-related expenditures have increased 3.4% per year on average since FY 2000 when approximately $8.5 million was spent. These increases are all-inclusive; they include changes in price, rebates if any, as well as consumption.

The State purchases four major types of energy: electricity, natural gas, motor vehicle fuels and heating oil. The estimated expenditure amount for each in FY 2008 in the General Fund and Special Transportation Fund is shown in Table A. The estimated price for each of these commodities is the result of projections that are influenced by different variables. We have reviewed the data available from a number of sources and have constructed an estimate of the range of price change that we can reasonably expect to experience in this fiscal year. This information is shown in Table B. Estimated savings for electricity are based on auction results for service beginning November 1, 2007; estimated savings for natural gas are based on State's contract for natural gas, with prices fixed under this contract through the end of the current fiscal year.

The best available information at this time indicates that the General Fund and Special Transportation Fund may experience small decreases or larger increases in agency energy related expenditures. The estimated ranges of savings/additional costs are shown below:

	Estimated Savings at Low Forecast	Estimated Additional Costs at High Forecast
General Fund	($675,418)	$3,056,494
Special Transportation Fund	($176,186)	$900,544

Additionally, it can be assumed that inflationary pressures will be felt on all petrochemical based products that the State purchases. The Department of Transportation may be particularly impacted by the costs of materials in their road construction and repaving projects.

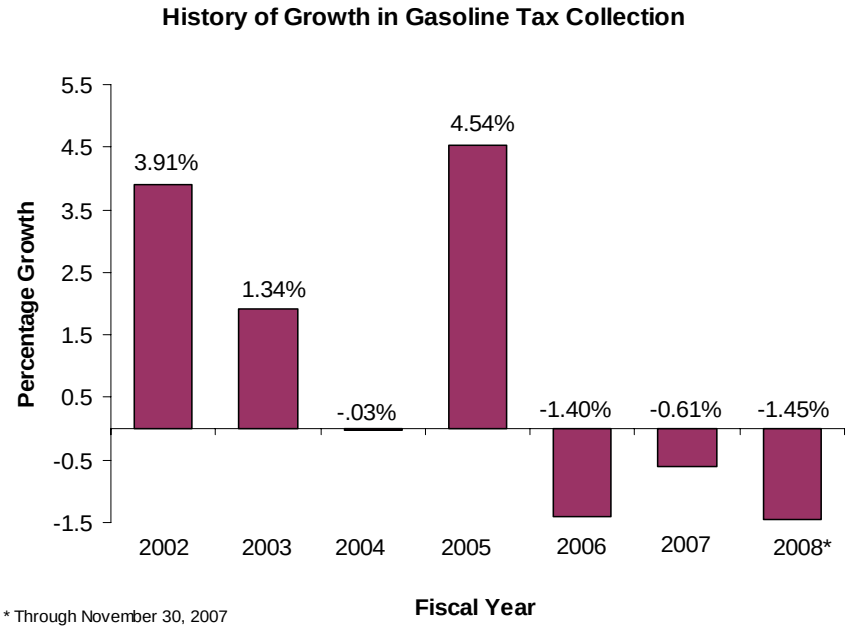
III Impact on Revenue

Higher energy prices have and will continue to affect the State of Connecticut's revenue stream. Certain tax types benefit from higher energy prices. This would include the oil companies' tax and the public utilities tax, as the tax on these sources is based upon gross receipts of the industry, not volume sold. Offsetting these increases will be lower sales tax collections as consumers spend more of their household budgets on energy and less on sales taxable items. The Office of Policy and Management estimates the impact to the state's revenue stream in the short-run as follows:

	Fiscal 2007-08	
Tax	Potential Revenue Gain / (Loss) In Millions	Already Reflected in 12/20 Comptroller's Letter In Millions
Sales Tax	$(30.0)	-
Public Utilities Tax	8.0	-
Oil Companies Tax	25.0	23.7
Motor Fuels Tax	(8.0)	(4.0)
Total – All Funds	$ (5.0)	$ 19.7

OPM has reflected the additional Oil Companies revenue and the reduction in Motor Fuels Tax revenue in the December 20, 2007 letter to the Comptroller. However, the reduction in Motor Fuels Tax revenue does not fully reflect the trend to date, which as shown in the graphic below, is falling by 1.45% fiscal year to date. It would appear consumers are making long-term adjustments to their gasoline consumption habits which make financing the transportation program more of a challenge.

Fortunately, the adopted budget assumed a low growth rate for the sales tax of 2.9% and to date collections have been on target. Were it not for the conservative growth rate on the sales tax, it would have been necessary to revise the estimate downward. Regardless, high energy prices reduce consumers' discretionary spending on taxable items, resulting in a potential significant state sales tax revenue loss.



A much more significant impact can be expected should energy prices remain high for a sustained period. This would occur as consumers adapt to the higher prices and should result in lower overall consumption, thereby slowing the growth in both the oil companies' tax and the public utilities tax. Moreover, should the current run-up in energy prices slow economic growth dramatically, or even cause a recession, expect an erosion in revenue that would more than offset any of the short-term gains outlined above.

IV Potential Impact of Increased Energy Costs for Low-Income Households and Disadvantaged or Vulnerable Populations

Rising energy costs will affect programs designed to provide energy assistance to low-income households, as well as disadvantaged or vulnerable populations.

The Connecticut Energy Assistance Program (CEAP) is designed to help offset the winter heating costs of Connecticut's lower income households, specifically those households whose incomes fall at or below 150 percent of the federal poverty guidelines ($25,755 for a household of three) as well as elderly and/or disabled households with incomes between 150 percent and 200 percent of the federal poverty guidelines ($20,535 - $27,380 for a household of two). Pursuant to Public Act 07-242, CEAP also serves households up to 60 percent of the state median income ($46,471 for a household of three) under the Contingency Heating Assistance Program (CHAP) for the 2007/2008 program year. Last year, CEAP provided Basic Benefits to 84,758 households, including 17,617 CHAP households. Approximately two-thirds of CEAP households heat with natural gas or electricity and are protected under the winter moratorium on utility shut-offs. The remaining one-third of CEAP households heat with deliverable fuels such as oil, kerosene and propane.

Section 65 of Public Act 07-242 established benefit amounts and income guidelines for the 2007/2008 CEAP. The level of Basic Benefits available to a household is determined by the household's income, the number of members, and whether there is a "vulnerable" household member, i.e., if a member of the household is elderly (age 60 or older) or has a disability, or is under the age of 6. Households with lower income levels are eligible for higher Basic Benefits.

CEAP is primarily funded through the federal Low Income Home Energy Assistance Program (LIHEAP) block grant. Depending on Connecticut's final LIHEAP allocation, there may be a need to supplement that funding with state General Fund dollars to ensure that we can serve the state's low income households. At the LIHEAP block grant allocation hearing on September 26, 2007, OPM Secretary Robert L. Genuario communicated the Administration's commitment to adding General Fund dollars if necessary to protect the health and safety of Connecticut's lower income households. While the U.S. House of Representatives has proposed additional LIHEAP funding, the new funding appears to be limited to emergency contingency funding, which is released at the President's discretion. As a result, even if the President signs the bill, the amount of emergency contingency dollars that may be released to Connecticut is not known. At this point, we are projecting a shortfall of $14.8 million, based on a block grant level of $40.9 million, consistent with the House bill and last year's block grant level. The shortfall will be higher if a lower block grant amount is ultimately approved and if caseloads are higher than anticipated. We are not proposing any state dollars at this time since there is the possibility that additional federal emergency contingency dollars could be made available to the state, which would reduce the amount the state might need to cover. Regardless, the Administration remains committed to maintaining benefit levels at last year's levels and will make up any funding shortfalls.

It should be noted that the projected $14.8 million shortfall is based on caseload levels reflected in the LIHEAP allocation plan, which assumed a 3% increase over FY 07 levels. If caseloads were to increase by 5% or 10% over FY 07 caseload levels, a shortfall of $15.9 million or $18.7 million, respectively, would result.

Because CEAP benefits are capped at a certain dollar amount, this year's higher energy costs have reduced the state's purchasing power. For example, at $3.00 a gallon, a $675 basic benefit would only allow for the purchase of 225 gallons of oil – approximately a third less than the 331

gallons of oil which could have been purchased with the same benefit at last year's average fixed margin price of $2.039 a gallon. Due to increased deliverable fuel costs, households are exhausting their benefits earlier than in the past.

Energy assistance is also available through Operation Fuel, which is a non-profit that provides energy assistance grants to households that either do not qualify for the CEAP benefits or have exhausted their CEAP benefits and are still in a dire financial situation. As part of the FY 08 budget, $5 million in new funding is being provided to Operation Fuel. Of the $5 million, $2.5 million is to be used to help utility customers who have high unpaid balances through the "Clean Slate" program. Although this program will not provide a benefit to households needing heating oil or other deliverable fuels, these households can receive assistance through $1.75 million in new funding, which is to be used to provide additional grants to households for meeting their winter energy needs. This additional funding will help offset some of the energy needs for households that have exhausted their CEAP benefits, as those households would be eligible for additional grants through Operation Fuel.

V Conservation / Cost Mitigation Strategies in State Facilities

OPM has implemented procurement strategies to reduce and stabilize costs associated with state agency electric and natural gas consumption. As a result supply for firm natural gas is locked in for fiscal year 2008 at prices that are 10% lower than fiscal year 2007. Supply for electricity is locked in through the end of June 2009 at prices that range from 4% - 13% lower than the average price agencies paid in fiscal year 2007.

In addition to these procurement strategies, OPM has coordinated state agency participation in Demand Response programs. The Demand Response program is a regional program managed by OPM on behalf of twelve state agencies. This program reduces peak electrical load during periods of high demand through individual electricity account action to remove load from the electrical grid. This is accomplished by activation of on-site emergency power generation or through turning off non-critical electrical loads. The Demand Response program is meant to eliminate the need for the grid operator to install additional power generation and distribution infrastructure (i.e., power plants and transmission lines) to meet unusual high demand periods. The revenue generated by payments from ISO New England for the value of the State's electric demand removed from the grid during these periods is being rolled back into agency conservation and efficiency projects for additional energy consumption and cost savings. To date these projects have realized $52,000 in annual energy savings. Additional projects are being implemented that are expected to save state agencies $400,000 annually, and projects currently under review are estimated to save an additional $140,000 annually. OPM is working to expand the Demand Response program to additional state agency sites and develop additional efficiency/conservation projects under this program.

As a demonstration project, OPM purchased and installed software on its own agency servers. This software recognizes when desktop computers and peripherals are not being used after some period of time and shuts off these devices. OPM approached the Department of Information Technology (DoIT) to expand this concept statewide. DoIT awarded a contract in June 2007 to make similar software available to all state agencies and municipalities. OPM and DoIT will

coordinate to make other agencies aware of this capability, install the software, and provide training to system administrators. Full program implementation, which may take several years, envisions installation on an estimated 20,000 PCs state-wide with annual savings of approximately $500,000.

Pursuant to Public Acts 06-187, Section 70, and 07-242, Section 10, all new building construction projected to cost $5 million or more and utilizing $2 million of State funds, or major renovations projected to cost $2 million or more and utilizing $2 million of State funds, must meet or exceed certain energy and environmental criteria equivalent to the LEED[1] Silver standards or the two Green Globes rating, and exceed energy standards set forth in the 2004 edition of the ASHRAE[2] Standard 90.1 by no less than 20%. OPM is required to promulgate regulations outlining the requirements under this legislation and is in the process of doing so. OPM, in conjunction with DPW, will be monitoring compliance.

The Energy Conservation Management Board (ECMB), through the use of Connecticut Energy Efficiency Funds (CEEF), in partnership with the State's public utilities, administers a number of efficiency/conservation programs. These programs are funded by utility ratepayers, including the State, via a charge on utility bills. State agencies have experienced difficulty accessing these programs due to fiscal and legal issues that have been raised. OPM, in conjunction with DAS and DPW, is working to develop a master conservation contract that all agencies will use when accessing these programs. Resolution of issues involving the use of these funds, allowing greater state agency participation in this important funding resource, is expected in the near future.

One long term aspect of energy conservation and stabilization of fuel supply is to develop the capacity to utilize alternative fuels. This will not only reduce dependence on fossil fuels, but will help mitigate demand for fossil fuels and price escalation.

Pursuant to Section 60 of Public Act 07-4 of the June 2007 Special Session, OPM has developed a plan for the use of Bioheat® in state facilities. Bioheat® is the industry accepted term for any blend of pure biodiesel (B100) with conventional low or high sulfur home heating oil. OPM, in conjunction with DAS will implement this plan. It is expected that the next DAS procurement for heating fuel, to secure supply beginning in May 2009, will include the requirement for a Bioheat® mix of a minimum 10% B100 and not more than 90% ultra low sulfur #2 heating oil in selected state government facilities.

In addition OPM has made up to $50,000 in Petroleum Violation Escrow funds available to convert two additional DOT fuel pumps to E85. While E85 has a great deal of support at the federal level, OPM has concerns about its long term viability and, therefore, feels a *limited* investment in E85 infrastructure is prudent at this time. In 2005, approximately 3.3 million gallons of gasoline was pumped from DOT fueling stations, while 25,000 gallons of E85 was pumped. The lack of E85 use was primarily due to the existence of only two state run E85 fueling stations. With over 1800 flex fuel state fleet cars operating, increasing the number of dispensers should result in an increase above the multiple of pumps installed. This is possible

[1] LEED = Leadership in Energy and Environmental Design, established by the U.S. Green Building Council.
[2] ASHRAE = American Society of Heating, Ventilating and Air Conditioning Engineers.

due to greater dispersion and ease of reaching a flex fuel pump in geographic areas where there are larger concentrations of state flex fuel vehicles in use.

OPM, in its role to test new technologies and lead by example, has undertaken a program to implement a unique solar thermal hot water heating technology. OPM is working with interested state agencies to identify appropriate sites for this technology. OPM expects to have four to six sites identified for installation of these units. This technology could have application wherever quantities of hot water are used for cooking, laundry, and showers, e.g., schools, prisons, group homes, etc., transferring these energy loads from traditional sources to solar power. Once installed in state facilities, the performance of these units will be monitored to determine their effectiveness and estimate cost savings for hot water heating. This information will be used to determine the cost effectiveness of this technology, return on investment, and the best application of this technology on a widespread basis.

OPM recognizes that it cannot have a complete understanding of all agency energy conservation issues and possible barriers without input and coordination with other state agencies. As such, OPM has recently established an interagency working group to facilitate open dialog among agencies. The goal of this working group will be to identify barriers to effective energy efficiency and conservation in state agencies and develop recommendations to address them. In addition, this working group will identify what data currently exists and what agency data needs are, to assist with the effective energy management of state facilities.

Understanding that effective energy management is informed through good energy data, OPM has undertaken a process to data enter a backlog of agency energy invoices, develop a data structure that will allow energy consumption analysis on a building by building basis, determine underperforming buildings and opportunities for corrective action.

In addition, Governor Rell, as part of the "One Thing" campaign and per her recent communication to state agency heads has asked all agencies to put together conservation plans. It is envisioned that these plans will incorporate both facilities/transportation management approaches to conservation as well as "One Thing" employee behavioral changes that will conserve energy.

VI Summary

Although the projections of near term energy costs vary widely, one can reasonably determine from the data provided that a significant impact has already been experienced and energy prices have the potential to strain our fiscal resources. The systems for delivery of services, which the citizens of this state have come to rely upon, will require careful planning to avoid any cutback in areas of public need.

Further analysis will be required as the year progresses which may result in a recommendation for a centralized General Fund energy contingency account to offset the impact on individual agency accounts. The flexibility offered through a centralized account allows the application of resources to critical demands while allowing agencies to simultaneously continue implementation of conservation measures.

While the energy usage and cost estimates included within this report are exclusive of the constituent units of higher education (universities are appropriated as block grants), their energy expenses would be expected to follow a similar trend.

The CEAP impact is controlled by both the level of sustained energy price increases and the availability of federal contingency resources released to the state. Therefore, assuming even a modest growth of caseload, the potential shortfall would be estimated at $14.8 million absent additional federal assistance. No action is recommended at this time pending the decision of the federal government.

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Table A

	2008 Estimated [1]	Estimated Savings [2]	Estimated Additional Costs		Revised Estimated	
			Low	High	Low	High
General Fund						
Electricity and District Cooling	$44,477,636	($1,773,045)			$42,704,591	$42,704,591
Natural Gas and District Heating	$30,768,943	($1,386,219)			$29,382,724	$29,382,724
Motor Vehicle Fuel (gasoline)	$12,157,576		$1,726,376	$3,610,800	$13,883,952	$15,768,376
Fuel Oil	$6,158,294		$757,470	$2,604,958	$6,915,764	$8,763,252
Total	$93,562,449	($3,159,264)	$2,483,846	$6,215,758	$92,887,031	$96,618,943
Special Transportation Fund						
Electricity	$8,054,494	($481,569)			$7,572,925	$7,572,925
Natural Gas	$581,142	($30,318)			$550,824	$550,824
Motor Vehicle Fuel (gasoline)	$1,535,732		$218,074	$456,112	$1,753,806	$1,991,844
Fuel Oil	$956,318		$117,627	$956,318	$1,073,945	$1,912,636
Total	$11,127,686	($511,887)	$335,701	$1,412,431	$10,951,500	$12,028,230
Total GF and STF Expenditures	$104,690,135	($3,671,152)	$2,819,547	$7,628,189	$103,838,530	$108,647,173

[1] does not include $7,605,000 in OPM Energy Contingency account to meet agency needs

[2] from the electricity reverse auction and the firm natural gas contract

Table B

Connecticut Fuel Energy Forecast

Growth Fiscal Year 2008 Over Fiscal Year 2007

Fuels	Economy.com	Energy Information Administration	12/12/07 ** Futures	OPM Consensus Low	Mid	High
Electricity	4.9%	1.4%	NA	set by auction		
Natural Gas	1.8%	3.0%	-2.9%	set by contract		
Gasoline	14.2%	16.2%	29.7%	14.2%	22.0%	29.7%
Crude Oil	38.3%	33.9%	45.1%	33.9%	39.5%	45.1%
Heating Oil	12.3%	21.0%	42.3%	12.3%	27.3%	42.3%

* Note: Economy.com as of 12/12/07, and Energy Information Administration as of 12/11/07.
** Source: Tradingcharts.com