Why Heating Oil Dependence is a Major Risk to the Maine Economy

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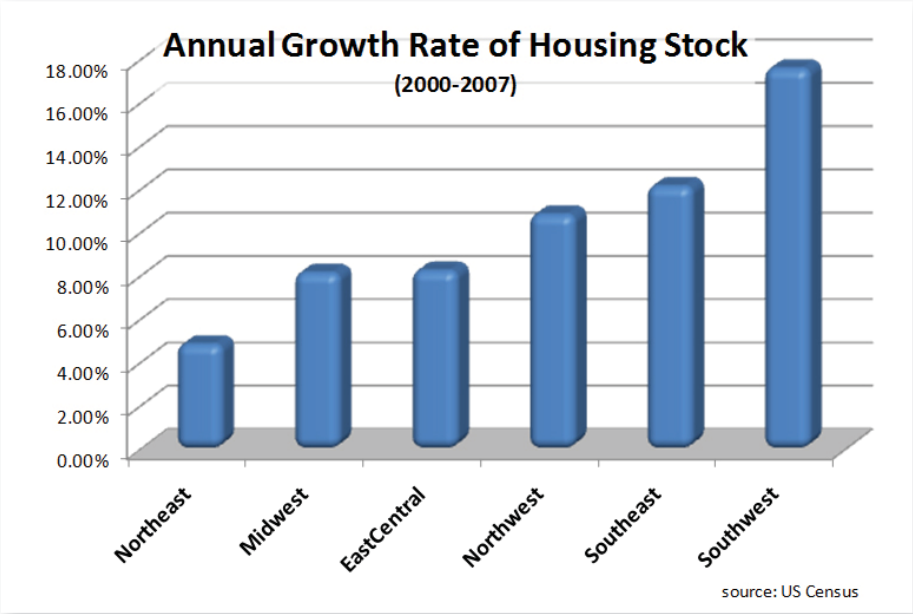
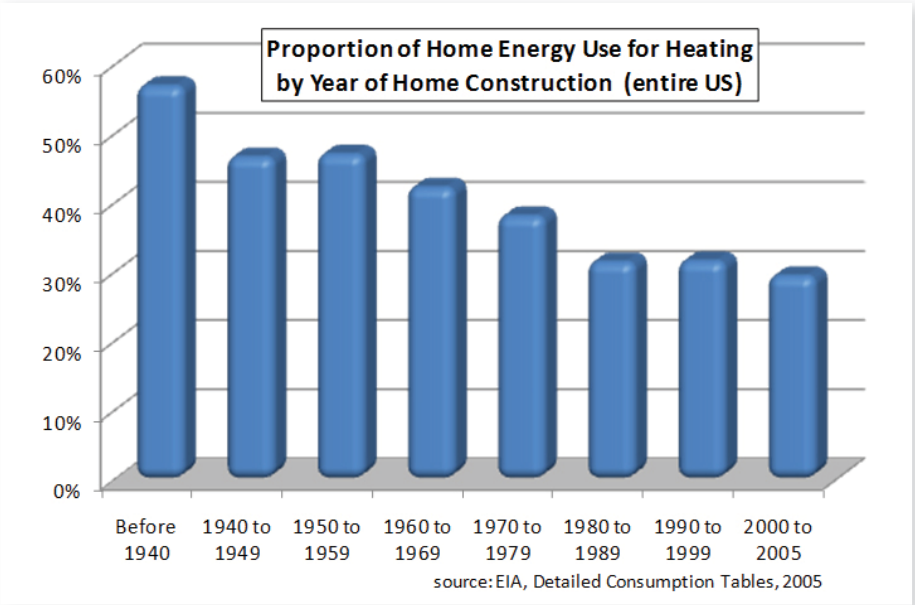
New England homes are older and less energy eff cient than homes elsewhere.





The average new US home uses under 30% of home energy for heating.

New England is way above average due to both the older housing stock and cold winters.

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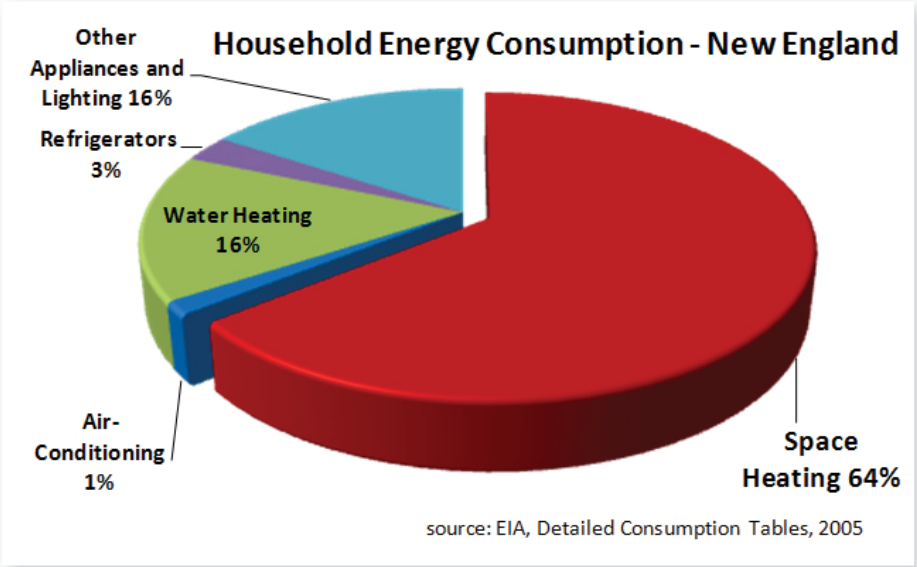
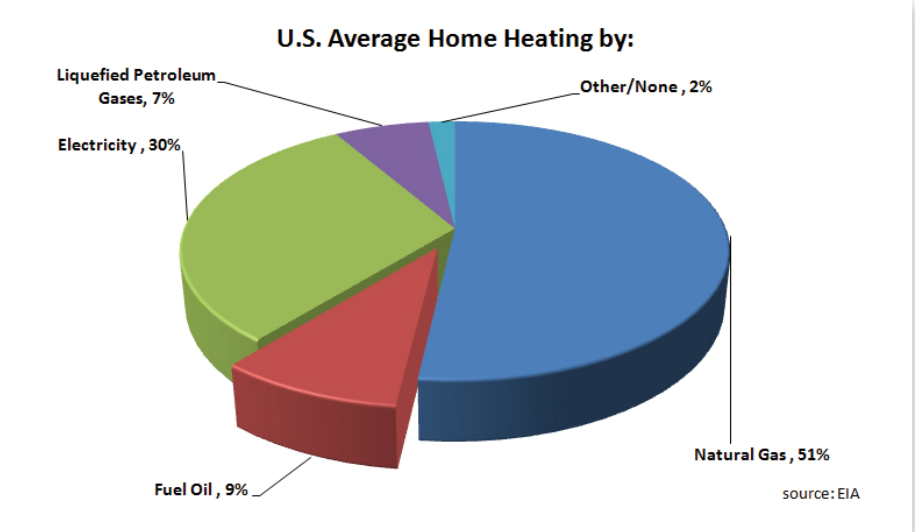
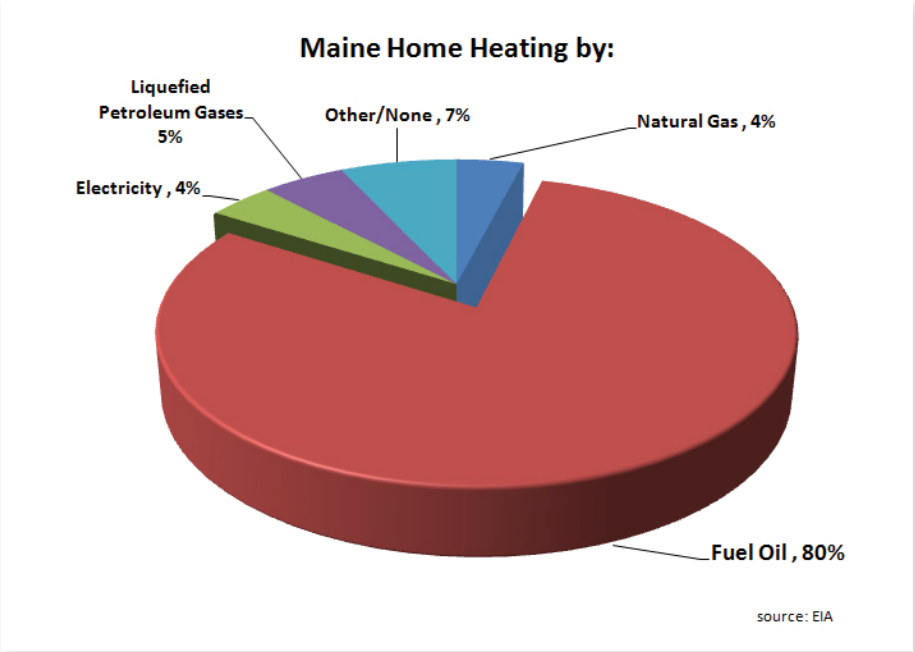
In New England 64% of home energy is used for heating. Adding hot water demand, about **80% of the home energy used in New England is for thermal needs.**



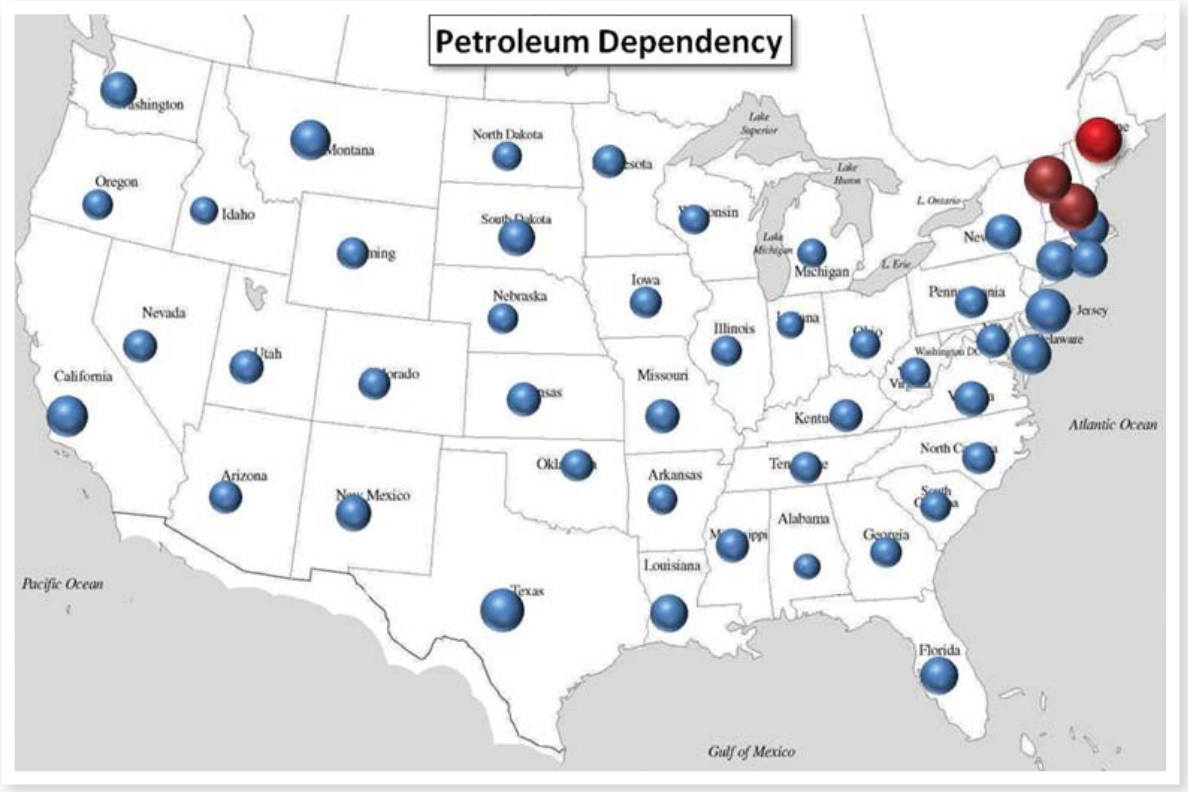
Energy Efficiency is Important,
but exposure to the risk of high fossil fuel prices should not be ignored.



Home thermal needs are largely met in Maine with #2 heating oil.



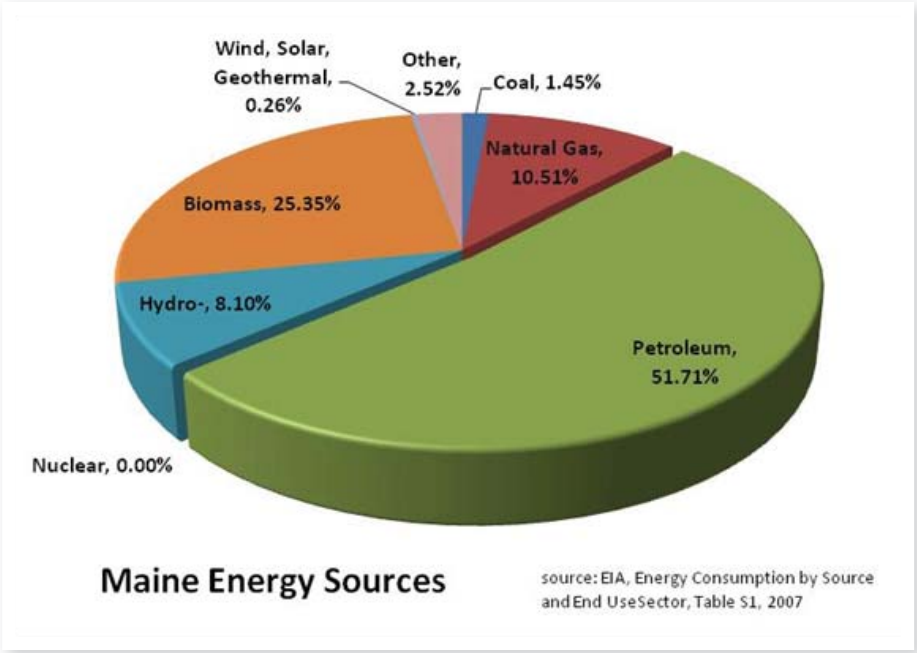
Maine is the third most petroleum dependent state (excluding Hawaii)



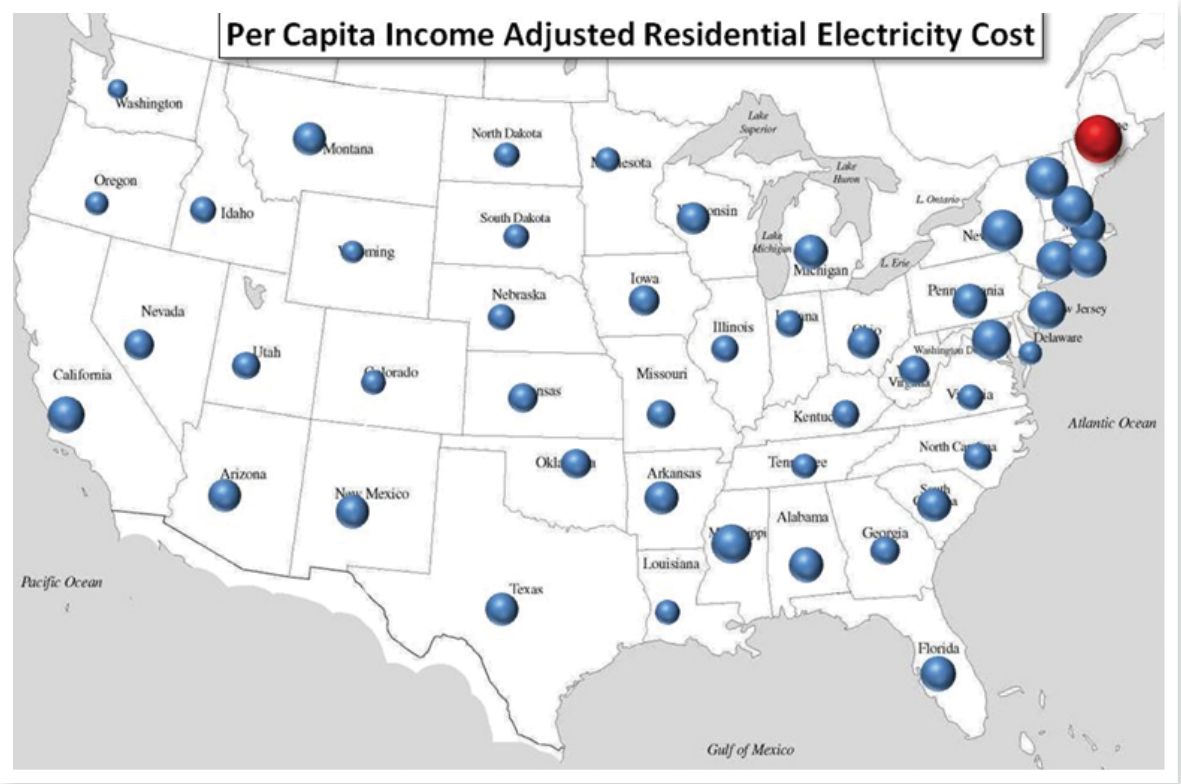
source: EIA, Energy Consumption by Source and End Use Sector, Table S1, 2007, Analysis by Future Metrics

(A measure of the role of petroleum as a proportion of total energy use.)

Maine's home heating needs make us highly dependent on oil.



On an income adjusted basis, Maine is already burdening its households with the highest electricity rates in the continental US.



source: data from Bureau of Economic Analysis and the Department of Energy, Analysis by Future Metrics

The per capita income adjusted residential electricity cost is derived by taking the average residential electricity rate in the states and adjusting them by an index that is created from the median income levels in the states. The index is created by f nding the median income for the country and then determining if the state's median income is above or below the country median. If below the country median, the "real" cost of electricity is adjusted upward based on how far the state's median is from the country median. If the state's median income is above the country median, the adjustment lowers the "real" cost of electricity."

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Maine needs to encourage households to stop heating with oil or Maine's economy will suffer as the drain of dollars out of households and out of the State increases.

State	Occupied households	Percent that use #2 heating oil	Average gallons used per year	Average total expenditure per year (at $2.80/gal)	**Amount that does not stay in the states ANNUALLY**
Maine	542,000	80%	390,240,000	$1,092,672,000	$852,284,000
Vermont	251,000	59%	133,281,000	$373,186,800	$291,086,000
New Hampshire	501,000	58%	261,522,000	$732,261,600	$571,164,000
Total			**785,043,000**	**$2,198,120,400**	**$1,714,534,000**

The amount that does not stay in the states is based on EIA estimates of the cost of the components of heating oil. In 2007 (the most recent data) 62% of the cost of a gallon was from the cost of crude and 16% of the cost was from ref ning. The remaining 22% is for regional and local distribution costs and prof ts.

In other words, 78% of every dollar spent by the northeast states on heating oil leaves those states forever.

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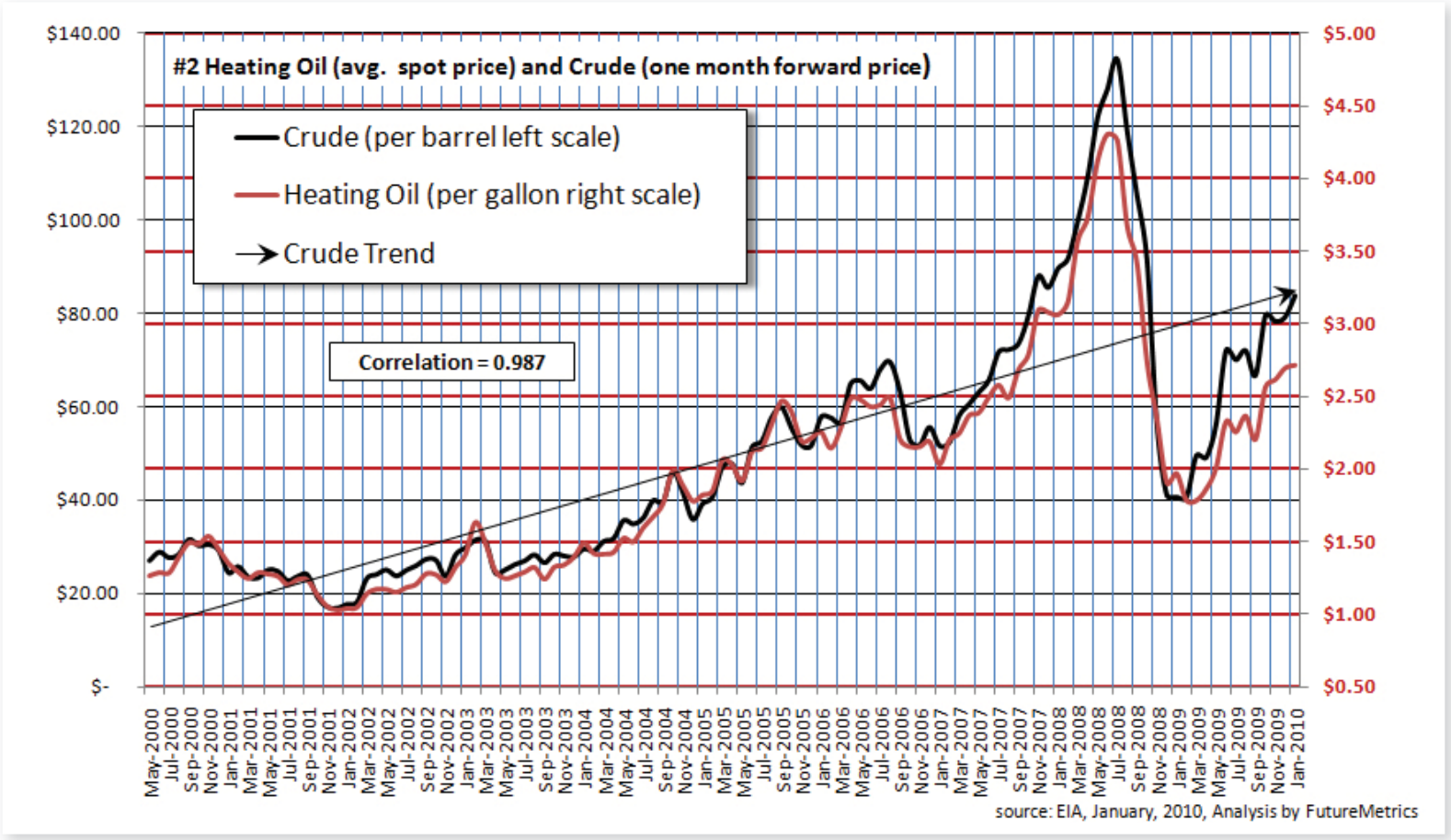
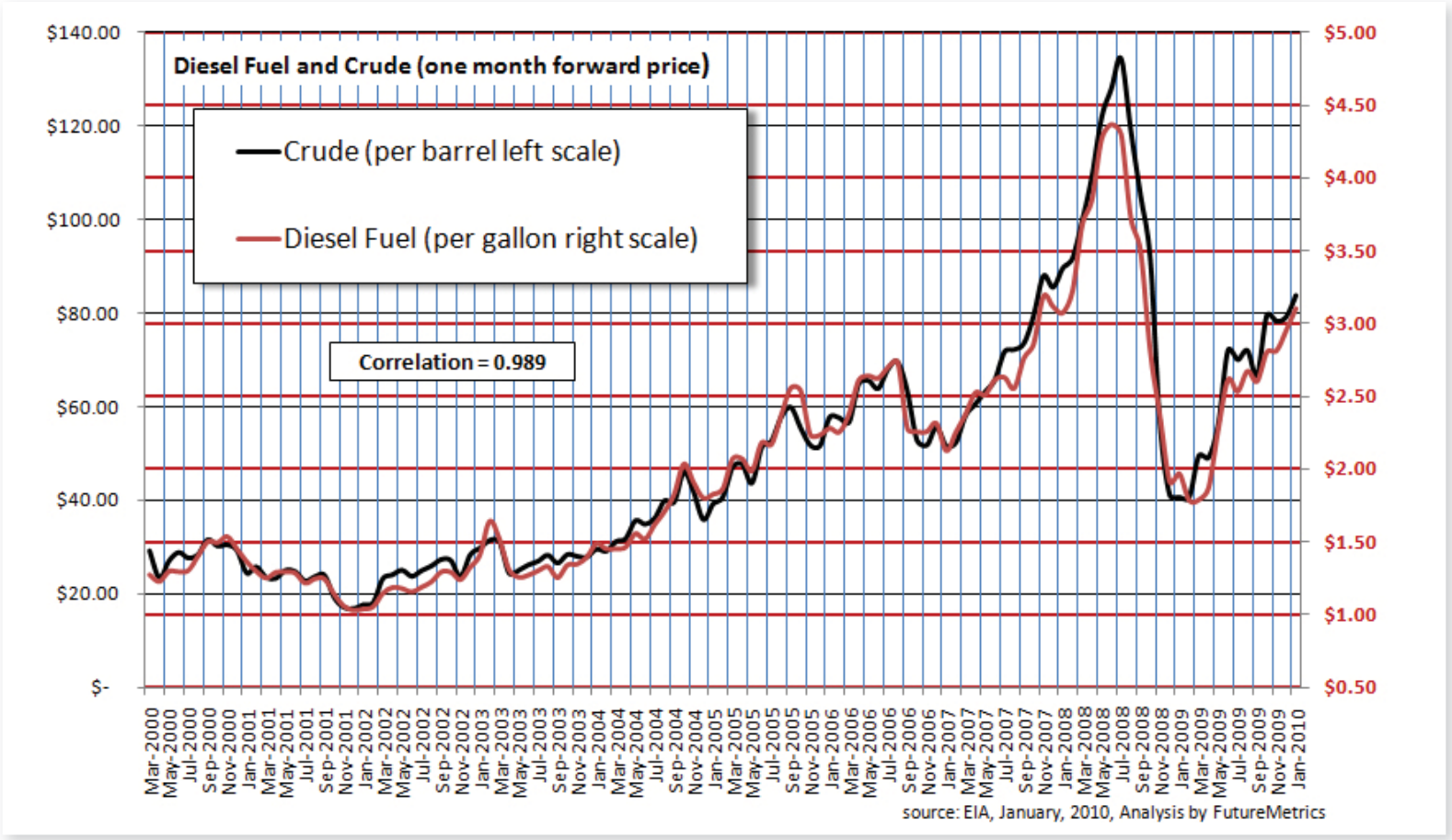
Oil prices will rise.

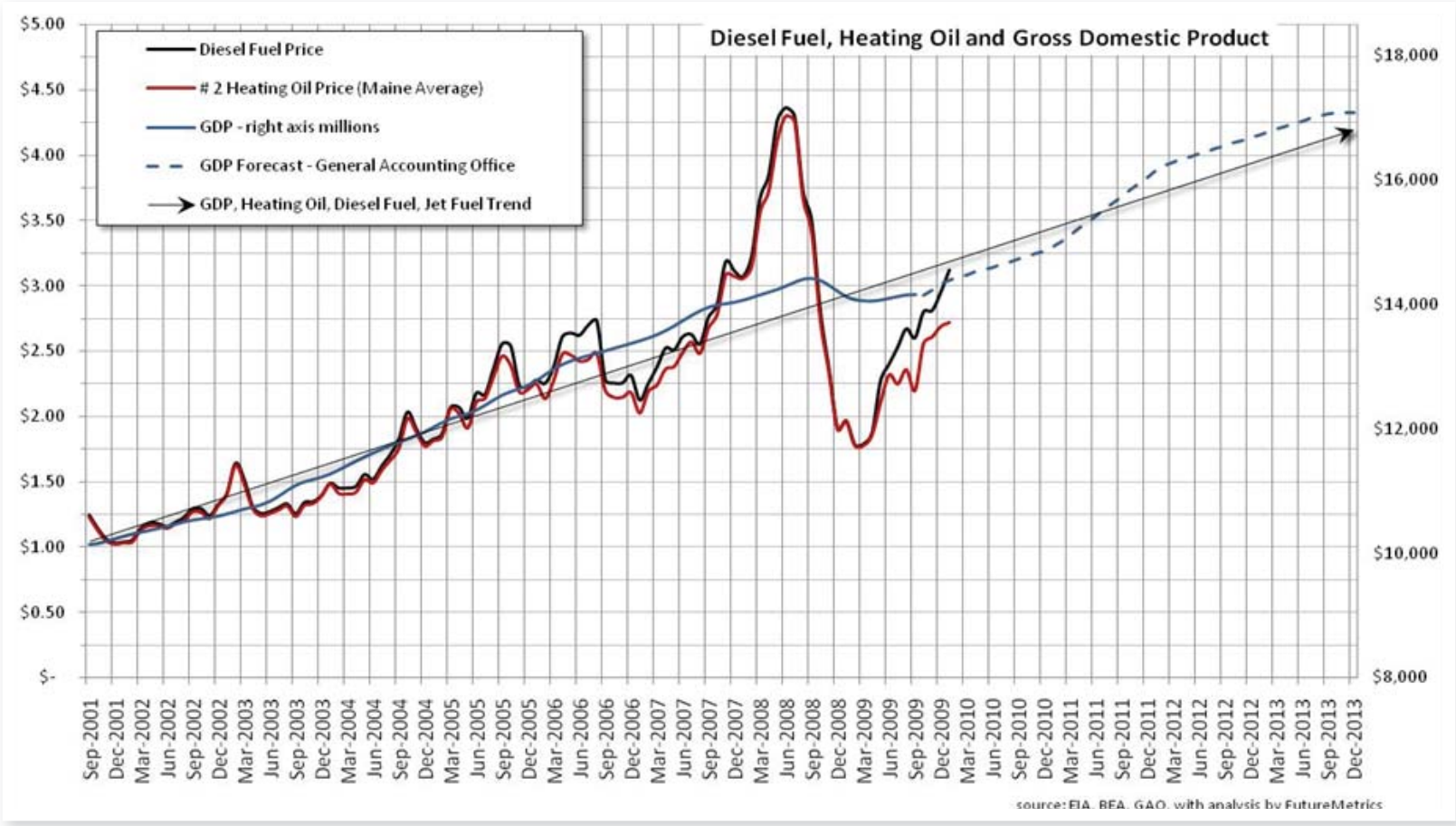


Over the last 10 years crude and heating oil have a .987 price correlation. At crude's price when this chart was placed in this presentation ($83.77 at 7 am on January 11, 2010), heating oil prices are expected to rise to above $3.00.

Diesel fuel has already hit $3.00/gallon.

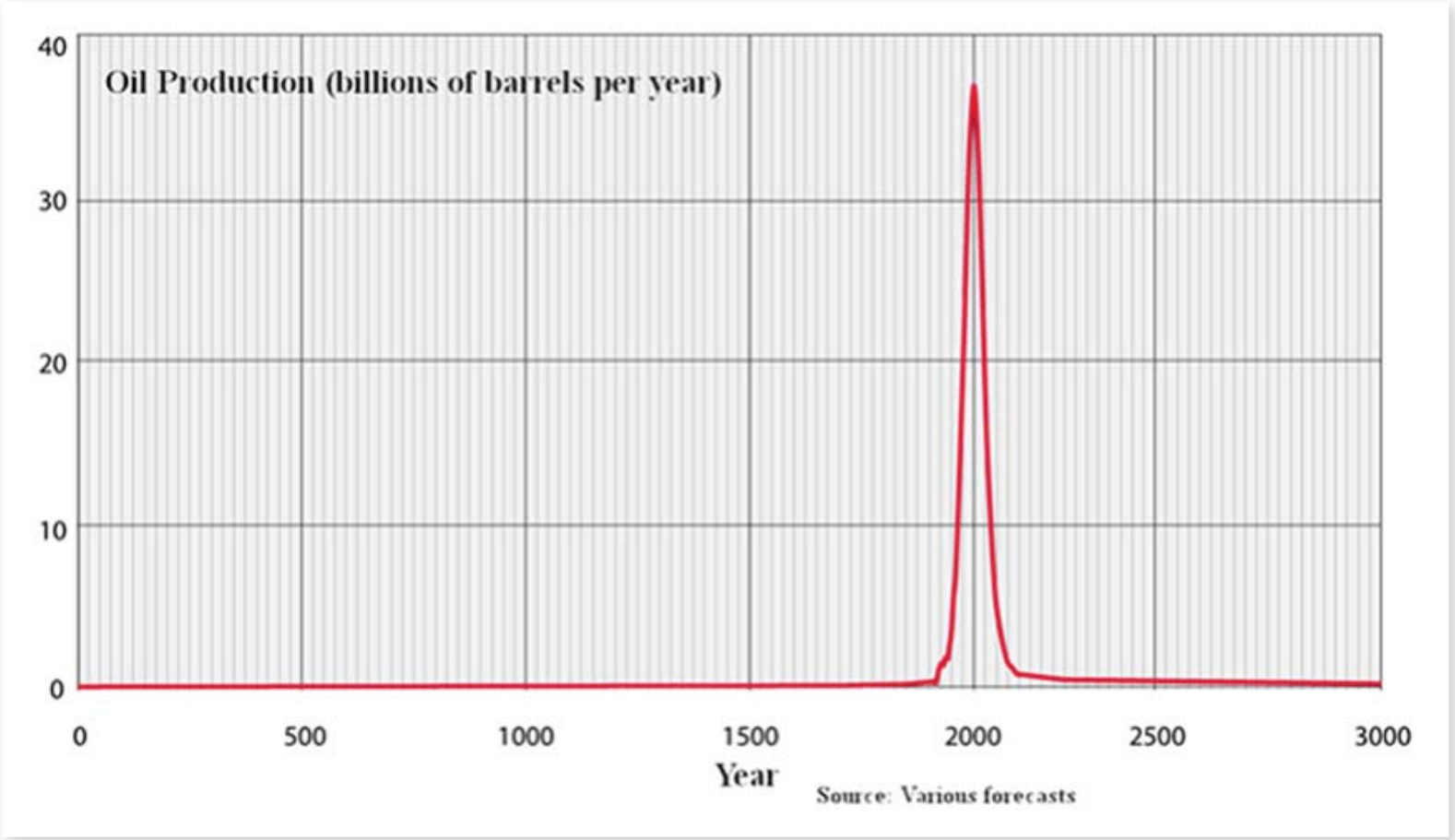


Is this rise in prices an anomaly or part of a long term trend?

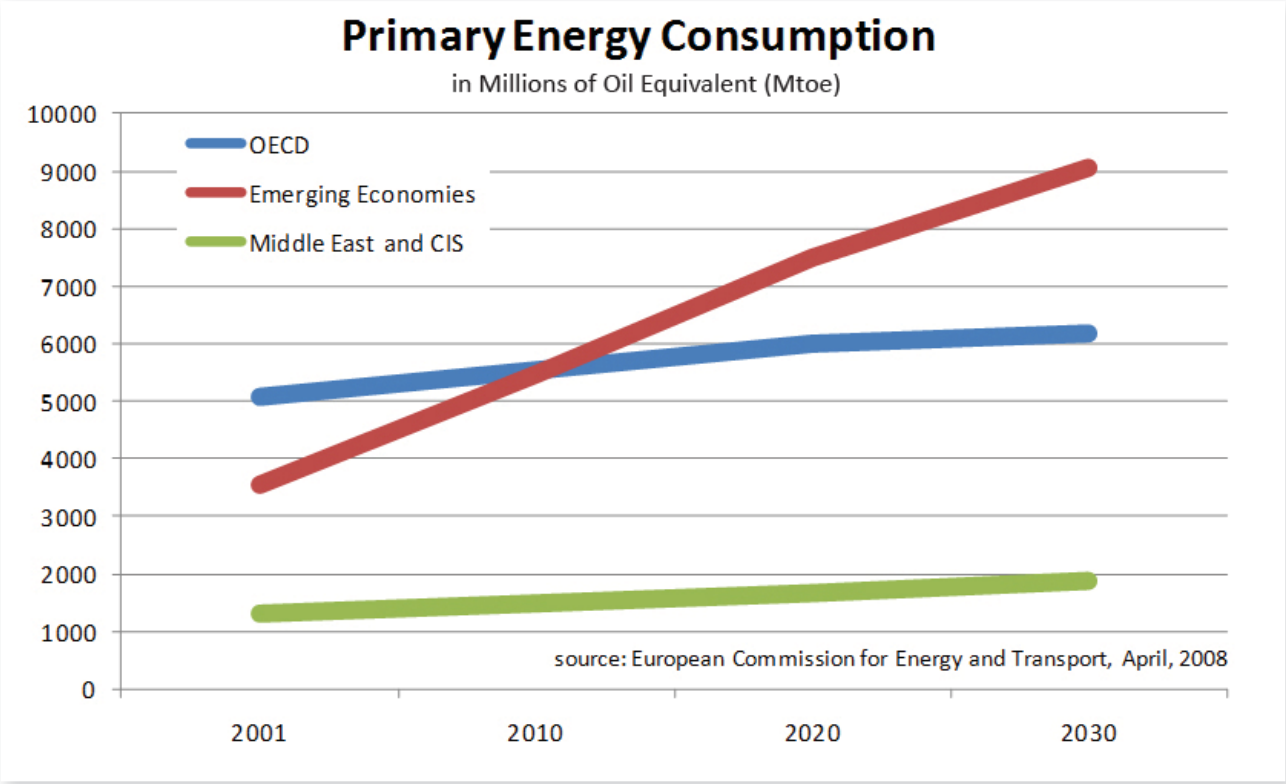


This chart shows that US GDP has been a very good predictor of heating oil and diesel fuel prices (as has gross world product which is not shown) except during the over- and undershoots of 2008. The dotted line is the General Accounting Off ce's forecast for US GDP.

Peak oil will happen in our lifetimes and may have already occurred.



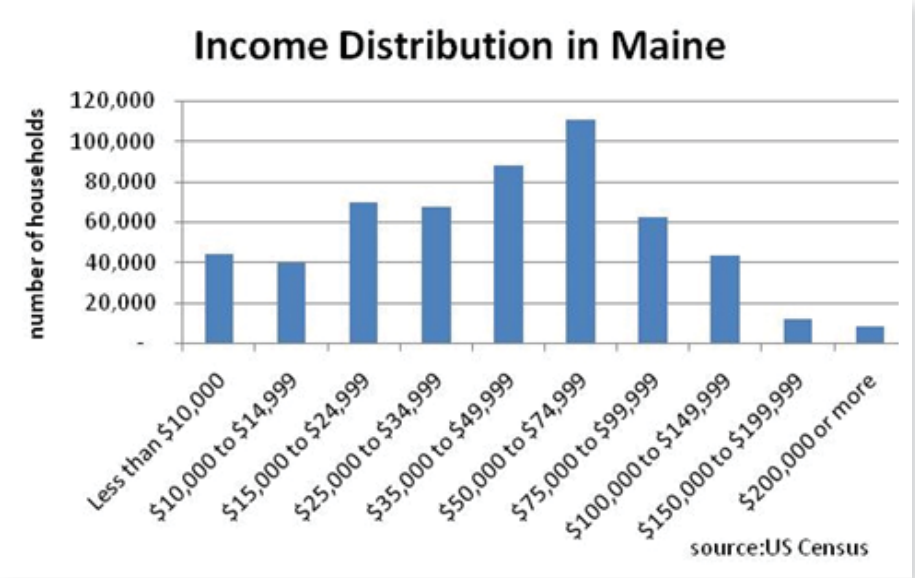
Global demand will put strong upward pressure on prices.

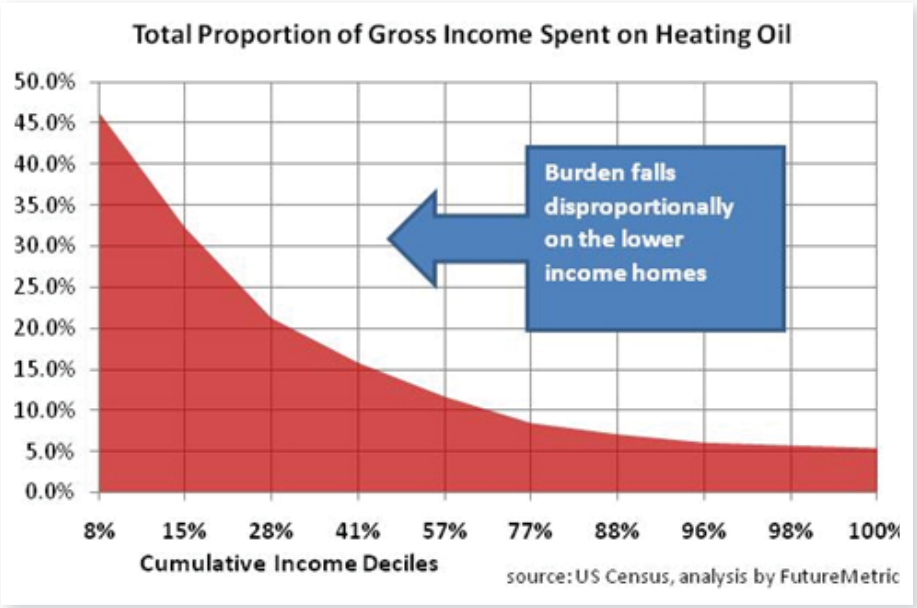


The Emerging Economies are Asia (excluding the CIS nations), Latin America, and Africa. The CIS nations are the Community of Independent States and Eastern Europe: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Eastern Europe contains Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and the countries resulting from the breakup of former Yugoslavia.

What happens if oil goes to $4.00/gallon?

The lower deciles in the income distribution literally face the choice of staying warm or going hungry.





At $4.00/gallon, 57% of Maine households (median income of $50,000/year or less) would spend an average of almost 12% of their gross income on heating oil.

The poorest 8% would spend more than 46% of their gross income on heat.

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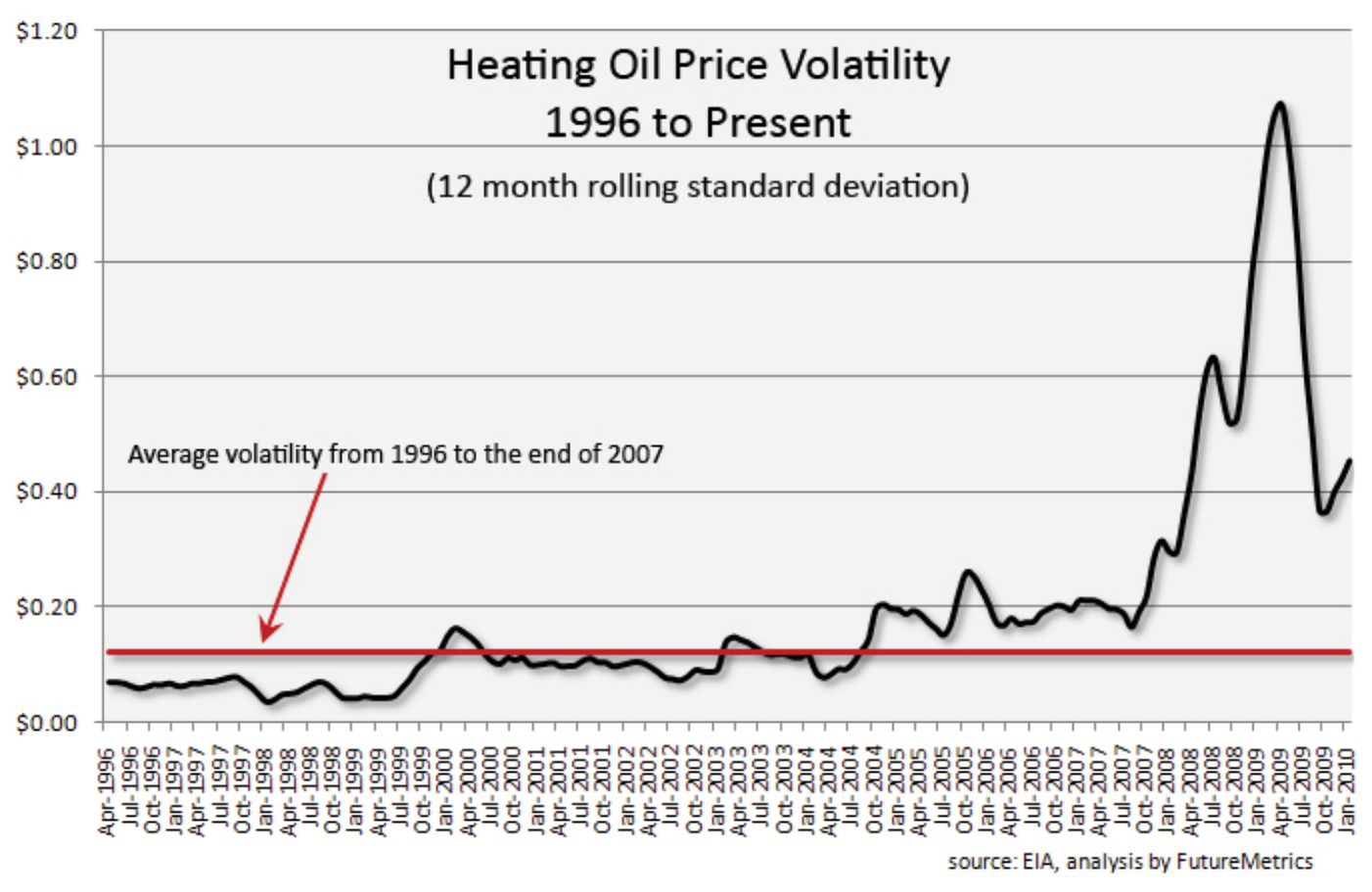
Suppose every home in Maine became 25% more energy efficient due to weatherization but heating oil goes to $4.00/gallon.

State	Occupied households	Percent that use #2 heating oil	Average gallons used per year *(assuming 25% efficiency improvement)*	Average total expenditure per year (at $4.00/gal)	**Amount that does not stay in the states ANNUALLY**
Maine	542,000	80%	292,680,000	$1,170,720,000	$913,162,000
Vermont	251,000	59%	99,960,750	$399,843,000	$311,878,000
New Hampshire	501,000	58%	196,141,500	$784,566,000	$611,961,000
Total			**588,782,250**	**$2,355,129,000**	**$1,837,001,000**

Almost ONE BILLION dollars per year would still be drained from the Maine economy and nearly TWO BILLION per year would be drained from the three most heating oil dependent states.

The risk exposure to Maine's economy from heating oil dependency is compounded by the high level of uncertainty over where prices will be in the future. Uncertainty causes households to forego consumption (and businesses to forego investment) which further harms the Maine economy.



The "good old days" had an average 12 month price volatility of about $0.12.
On January 11, 2010 it was $0.46, almost 4 times greater.

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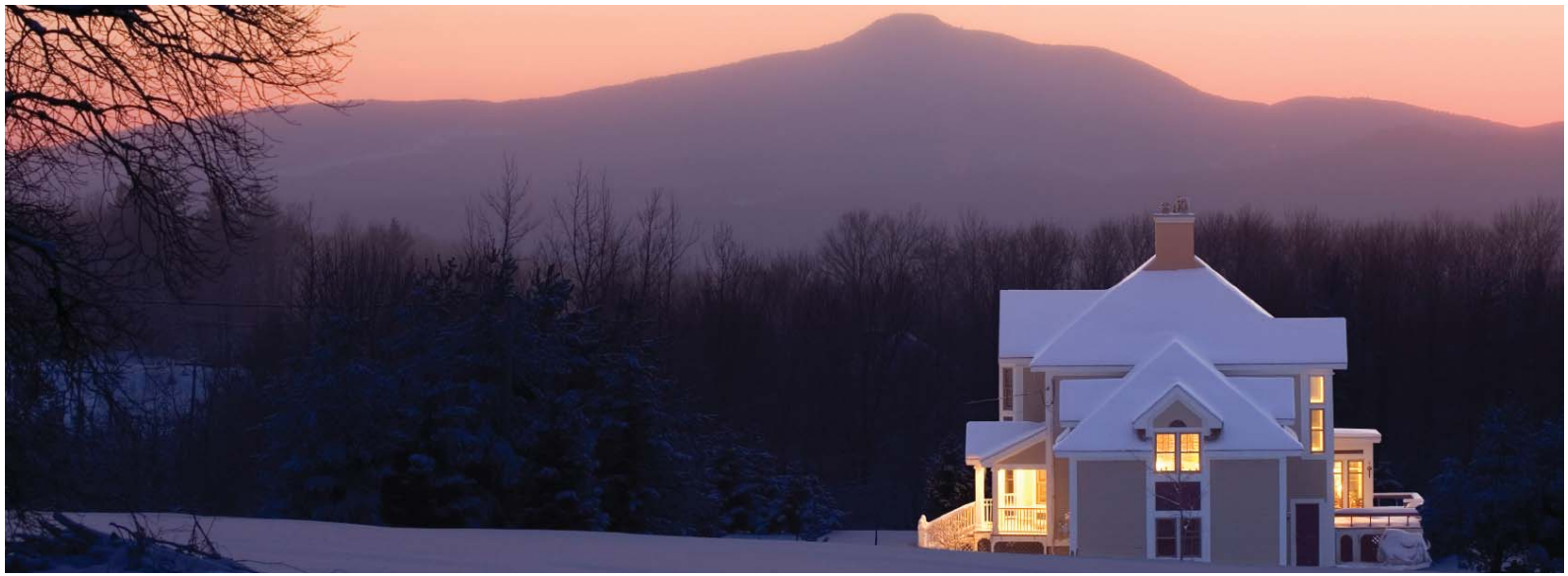
Maine Efficiency Trust MUST promote fuel switching away from heating oil



Imagine Maine being no longer exposed to the uncertainty and the risk of f uctuating and punishing oil prices.

Consider every alternative to heating oil but do not think that a strategy of only increasing eff ciency by 25% will make it all better.

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Finally, do not deceive yourselves into thinking that we have a decade or even 5 years to get Maine off oil. As soon as the global economy returns to robust growth, oil prices will rise rapidly. Any new discoveries will be harder to get to and more difficult to extract: that means more costly oil.

There are a number of technologies that should be in the portfolio of solutions. But only one technology keeps that BILLION dollars of oil drain money in Maine, supports the heavily challenged forest products industry, creates thousands of permanent Maine jobs, and is ready to deploy NOW.

That is the use of Maine-made pellet fuel in Maine-made European style ultra clean and ultra eff cient boilers.