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Quarterly Economic Report: Energy in Maine

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QUARTERLY ECONOMIC REPORT

ENERGY IN MAINE

FEBRUARY 2015



MAINE
DEVELOPMENT
FOUNDATION

 **MEGC**
Maine Economic
Growth Council

1865 THE UNIVERSITY OF
MAINE

Introduction

The Maine Development Foundation (MDF) staffs the Maine Economic Growth Council, an independent body created in statute to develop a long-term vision for Maine's economic growth and assess our progress toward that vision. The Council's vision is a high quality of life for all Maine people, supported by a vibrant and sustainable economy, vital communities, and a healthy environment. The Council's annual *Measures of Growth In Focus* is a reliable and trusted report tracking our performance on a number of critical indicators that collectively assess Maine's economy. This series of quarterly newsletters, produced in partnership with the University of Maine's School of Economics (SOE), explores these topics further and provides a timely look at the various elements of Maine's economy.

Energy in Maine

Energy is a critical cost factor to Maine people and businesses and to others who may consider relocating here. The *Measures of Growth* report's Cost of Energy indicator tracks retail and industrial electricity prices for Maine, both of which have declined in recent years. Nevertheless, Maine's costs of energy remain high relative to the nation. Further understanding of the issues related to costs, consumption, and production can help inform our decisions as we look to grow Maine's economy.

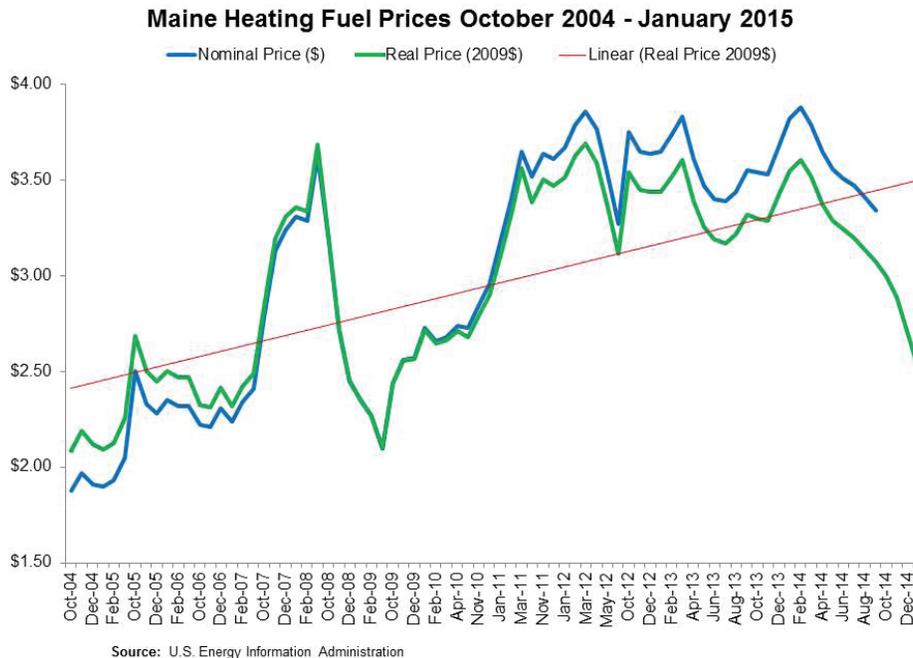
Maine and New England

The end-use energy sectors in Maine - transportation, industry, residential, and commercial - consumed 379 trillion combined British Thermal Units (BTUs) in 2012. Transportation and industrial use each accounted for 31%, followed by residential (21%) and commercial (16%) consumption (U.S. Energy Information Administration).

In June 2014, Maine's average retail price of electricity of 11.3 per kilowatt-hour (kWh) was the lowest among the New England states, which, on average, spent about 3.9 cents per kWh more on electricity than the rest of the country (14.4 compared to 10.5). More than 40% of Maine's net electricity generation comes from natural gas, and most of the rest is produced by renewable sources including approximately 29% from hydroelectricity, 25% from wood, and 7% from wind (U.S. Energy Information Administration). Maine is the largest renewable energy producer in New England.

Residential Energy in Maine

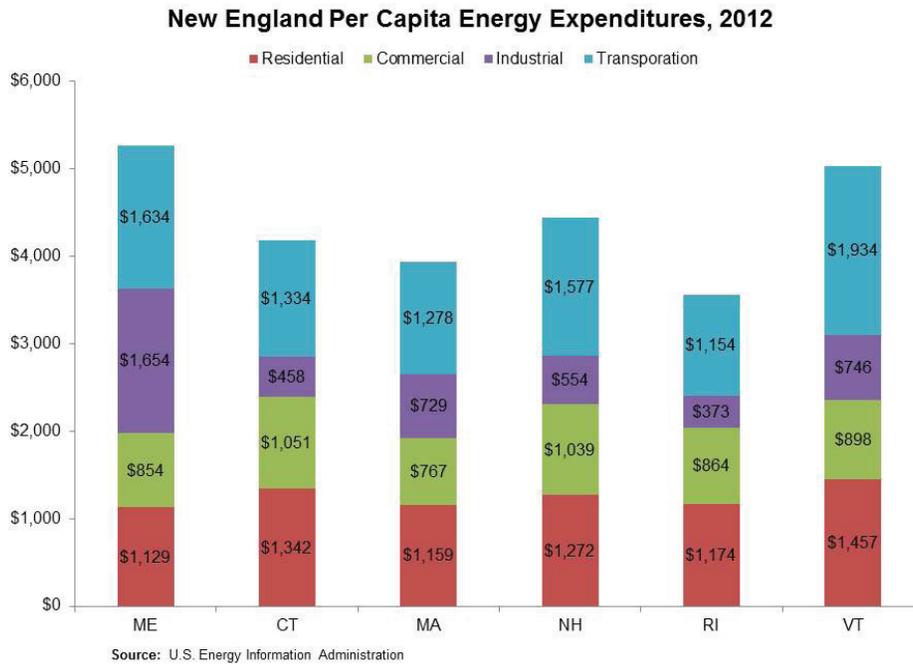
For most Maine residents, the most significant energy cost is the purchase of heating oil for their homes. The cost of heating oil nearly doubled from 2004 to 2014 (from an average of \$1.94 per gallon during the 2003-04 heating season to an average of \$3.71 per gallon in the 2013-14 heating season, according to the Governor's Energy Office), creating financial challenges for many Mainers. As shown by the chart on the next page, the average price for residential heating oil in Maine has recently fallen to lows not seen since the financial crisis of 2008 and is currently about \$2.60 per gallon (U.S. Energy Information Administration).



While the trend is only starting, Maine’s transition from traditional residential heating oil to natural gas has brought the percentage of homes using heating oil from 78% in 2005 to 70.5% in 2012 (U.S. Energy Information Administration and U.S. Census Bureau). As a result, many Maine families have been able to take advantage of natural gas prices that were lower than the cost of heating oil in previous heating seasons. The current drop in oil prices for the 2014-2015 heating season has made for a much smaller price difference between heating oil and natural gas, which may lower the demand in natural gas conversion for the short-term.

Energy Expenditures

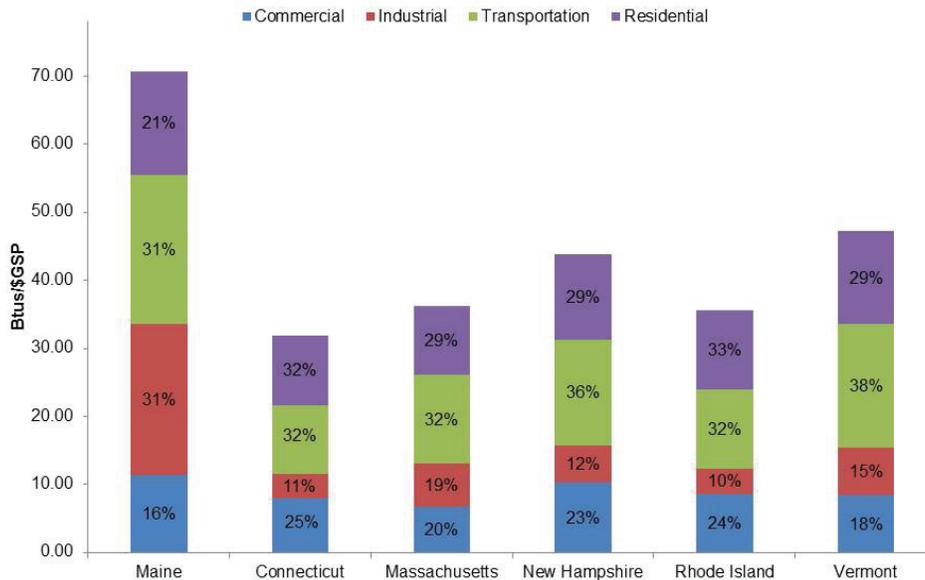
Maine, like the rest of New England, has high per capita energy costs compared to the rest of the United States. Maine’s large size (almost equal to the rest of New England combined) and predominately rural population encourages significant driving. In 2012, transportation accounted for the use of 88.5 million BTUs per capita annually in Maine, compared to a New England average of 72.7 million BTUs per capita. As the chart on the next page shows, Maine’s \$1,634 per capita transportation expenditures in 2012 were second behind Vermont’s \$1,934 among the New England states. Our cold climate also drives significant energy use. Maine’s total per capita energy expenditure of \$5,270 was the highest in New England and among the highest in the nation (U.S. Energy Information Administration, United States Census Bureau, and Woodruff & Wang).



Maine’s overall annual energy consumption of 397.1 trillion BTUs is in the midrange for the New England region, but our per capita consumption of 285 million BTUs is well above the other New England states. In addition, as the chart above shows, Maine’s per capita industrial sector expenditures are more than double those of any other New England state.

The chart on the top of the next page shows the various components of Maine’s total energy costs relative to gross state product. Maine’s commercial sector contribution of 15% is the lowest among the New England states. Industrial costs account for 31% of Maine’s total, while the next highest amount among the New England states is Massachusetts at 19%. High industrial expenditures are a primary reason why Maine’s overall energy costs are the highest in New England (70.65 compared to a New England average of 43.93) as a measure of BTUs of energy per dollar of gross state product. This is an important factor in growing Maine’s economy in the years ahead.

New England Cost of Energy Consumption by Sector, 2012



Source: U.S. Energy Information Administration

As shown in the table below, relative to the other New England states, Maine is highly reliant on petroleum products, which account for 61% of our total energy consumption. The percentage of natural gas consumption in Maine is the second lowest in New England, ahead of only Vermont.

Energy Consumption by Source (Trillion Btu)								
State	Coal	Coal (%)	Natural Gas	Natural Gas (%)	Petroleum	Petroleum (%)	Retail Electricity Sales	Electricity (%)
Maine	1.3	0%	70.5	24%	177.4	61%	39.4	14%
Connecticut	9.3	1%	236.3	36%	315.5	48%	100.8	15%
Massachusetts	24.0	2%	430.9	36%	555.5	46%	188.7	16%
New Hampshire	14.2	5%	74.4	28%	142.9	53%	37.1	14%
Rhode Island	0.0	0%	98.4	48%	80.3	39%	26.3	13%
Vermont	0.0	0%	8.3	8%	76.0	74%	18.8	18%

Source: U.S. Energy Information Administration

Conclusion

Energy costs affect Maine's quality of living and are a significant cost for both businesses and people. In the Maine Development Foundation's 2010 Making Maine Work survey (www.mdf.org), 78% of Maine's business leaders surveyed listed the cost of energy as the second strongest negative impact on businesses and organizations. Continuing improvements in efficiency and further diversification can give Maine people and businesses more options and greater flexibility to adjust to changing energy markets.

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About the Maine Development Foundation

The Maine Development Foundation (MDF) is a private, non-partisan membership organization that drives sustainable, long-term economic growth for the state of Maine. MDF's strategic focus is a productive workforce that is educated, healthy, innovative, and engaged in their community and the economy. MDF stimulates new ideas, develops leaders, and provides common ground for solving problems and advancing issues by empowering leaders, strengthening communities, and guiding public policy with trusted economic research. Created in statute in 1978, MDF is a unique and trusted non-profit 501(c)(3) corporation that works statewide across all sectors. Visit MDF's website at www.mdf.org for more information.

About the University of Maine's School of Economics (SOE)

The SOE serves as the University's hub of economics research and teaching while also embracing broader social science perspectives through its primary and affiliated faculty in law, social psychology and human-ecology. The faculty works closely with stakeholder groups to generate information and policy recommendations to help solve Maine and national needs. SOE offers both undergraduate and graduate programs (such as resource economics and policy, financial economics, and international economics) that train students to think analytically and critically about social, environmental, and economic issues, and lead to careers in economics, law, public service, business, and other applied policy fields. Explore SOE's website (<http://www.umaine.edu/soe/>) to learn more about their academic and research programs, and their faculty, staff, and students.

Acknowledgements

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