

## Executive summary

Michigan's future energy policy should consider those policies applicable to natural gas transmission and distribution infrastructure expansion. Expansion of the infrastructure can potentially provide significant customer energy savings.

1. Approval of expansion of gas transmission infrastructure is given primarily to the MPSC through 1929 PA 9. Oversight of infrastructure expansion in general occurs through rate case reviews.
2. Currently, natural gas is significantly less expensive than its energy equivalent in liquid propane and this favorable price differential is expected to remain in the long term.
3. The price differential between natural gas and liquid propane creates the opportunity for customers to greatly lower their heating energy costs by converting from propane to natural gas. The switching costs of such customers are low relative to the projected savings, and financing of major upfront costs is being provided through utilities to allow customers to see immediate cash flow benefits.
4. There is a large statewide potential for economically expanding the natural gas distribution system to enable customer conversion to natural gas. This represents a significant opportunity to reduce energy costs statewide, creating additional disposable income with projected annual impact of more than \$88 Million or \$1.76 Billion over 20 years.

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### **1. Approval of expansion of gas transmission infrastructure is given primarily to the MPSC through 1929 PA 9. Oversight of infrastructure expansion in general occurs through rate case reviews.**

An entity seeking to construct and operate gas transmission mains within the State of Michigan is required to comply with the provisions of 1929 PA 9. That Act requires, among other things, that the Michigan Public Service Commission approve the route and construction of such gas transmission facilities.

To the extent a natural gas utility seeks to expand its natural gas infrastructure, it must comply with 1929 PA 9. In addition, the ratemaking authority of the MPSC allows the Commission an opportunity to review the prudence of such investments before the utility may adjust its rates to recover the cost of those investments.

An entity seeking to expand natural gas infrastructure also must comply with all applicable local municipality ordinances and regulations, which vary across the state.

**2. Currently, natural gas is significantly less expensive than its energy equivalent in liquid propane and this favorable price differential is expected to remain in the long term.**

New production methods have recently caused large increases in the available supply of natural gas, which has lowered prices, and created a significant price differential between natural gas and propane which is expected to last for the long term. The weekly Michigan average residential propane price, as measured by the EIA, for the current heating season (Oct 1-Feb 18) has averaged \$2.03 per gallon. The lowest value in this time period was \$1.94 and the highest \$2.13. This price includes delivery charges and other expenses beyond the fuel itself, and represents the average end cost to Michigan residents for their residential propane.

Unlike propane, which is typically sold in gallons, Consumers Energy customers purchase natural gas that is typically measured in units of one thousand cubic feet, or Mcf. Using the EIA's energy content statistics, in order to generate the same amount of energy found in 1 gallon of liquid propane, as measured in Btu, it requires approximately 0.09 Mcf<sup>1</sup> of natural gas. The current price of this amount of natural gas for a Consumers Energy customer is \$0.85, which is \$1.18, or 58%, less than the propane Btu equivalent. Again, this price includes all distribution costs and other fees, representing the end price to the customer for the energy equivalent of 1gallon propane in natural gas. Additionally, Consumers Energy's natural gas rates will fall in April as a result of the company's annual gas cost recovery filing. Thus, the delivered price of an amount of natural gas that is equivalent to one gallon of propane will fall to \$0.80 in April.

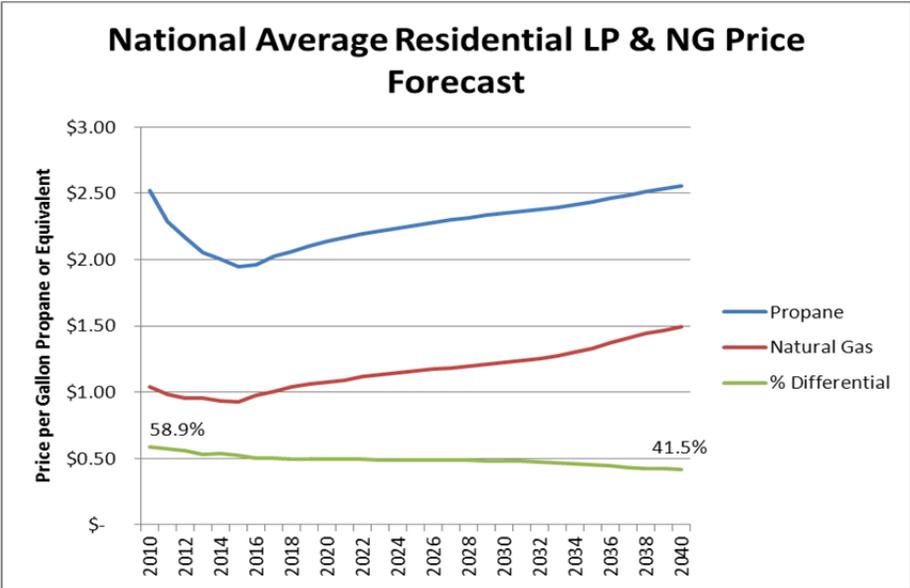
The EIA forecasts this substantial price gap between propane and natural gas to remain near constant through the end of their projections in 2040. In fact, throughout the entirety of this forecast period the national average price of residential natural gas is never expected to be less than 40% cheaper than the Btu equivalent amount of propane. The chart in Figure 1 shows the EIA's long-term national residential price forecast for natural gas and propane.

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<sup>1</sup> U.S. Energy Information Administration. (2012). *Btu Conversion Factors*. Retrieved from [www.eia.gov](http://www.eia.gov)

Overall Question 1: What information do energy policy makers need to consider in order to make good energy decisions?

FIGURE 1



Source: U.S. Energy Information Administration. (2012). *Annual Energy Outlook 2013 Early Release* (Report No. DOE/EIA-0383ER(2013)). Retrieved from [www.eia.gov](http://www.eia.gov)

**3. The price differential between natural gas and liquid propane creates the opportunity for customers to greatly lower their heating energy costs by converting from propane to natural gas. The switching costs of such customers are low relative to the projected savings, and financing of major upfront costs is being provided through utilities to allow customers to see immediate cash flow benefits.**

Based on historic actual natural gas usage rates of customers who have connected through a main expansion project, a typical conversion customer uses the equivalent energy of ~1,600 gallons of propane annually. Given the current price differential, a customer at this usage rate would save \$1,840 a year by converting to natural gas, or \$1,920 using the forecasted upcoming natural gas rates.

In the current natural gas Customer Attachment Program (CAP) model, the average main expansion project requires a contribution from each customer of about \$4,000 and a \$200 connection fee. Additionally, a customer will need to convert their appliances from propane to natural gas. This cost varies based on the number of appliances to be converted and whether the customer’s water heater can be converted or must be replaced. Typical costs to have an appliance contractor convert a home full of appliances range from \$600-\$900. This brings the total cost for a customer to connect to a main

*Response from Consumers Energy*

*Overall Question 1: What information do energy policy makers need to consider in order to make good energy decisions?*

expansion project to ~\$5,000. There would be a payback of less than 3 years of this investment, using current natural gas rates.

However, financing is currently available for the main contribution costs (\$4,000 in example above). This financing option removes a majority of the up-front costs, allowing customers to experience the savings benefits immediately without making a large investment immediately. For example, a customer financing a \$4,000 main expansion contribution with a 10 year loan at the current discount rate of 7.98% will have a monthly loan payment of ~\$48. As mentioned above, the typical conversion customer has historically used ~1,600 gallons of propane, which creates a monthly average savings of \$153 after conversion to natural gas. Since they are saving more than the loan payment, this average customer has effectively reduced their monthly average fuel bill by ~\$105, with only a ~\$1,000 initial investment. A table has been provided below to illustrate customer savings at different usage rates and loan amounts.

FIGURE 2

		Propane Price		
		\$ 2.00	\$ 2.00	\$ 2.00
		1200	1400	1600
Total contribution costs	annual usage (gallons)			
	Monthly loan payment (7.98%, 10 yr)	Average monthly savings after loan repayment		
2000	(\$24.24)	\$ 90.76	\$ 109.92	\$ 129.09
3000	(\$36.37)	\$ 78.63	\$ 97.80	\$ 116.97
4000	(\$48.49)	\$ 66.51	\$ 85.68	\$ 104.84
5000	(\$60.61)	\$ 54.39	\$ 73.56	\$ 92.72
6000	(\$72.73)	\$ 42.27	\$ 61.43	\$ 80.60
7000	(\$84.86)	\$ 30.14	\$ 49.31	\$ 68.48
8000	(\$96.98)	\$ 18.02	\$ 37.19	\$ 56.36
9000	(\$109.10)	\$ 5.90	\$ 25.07	\$ 44.23
10000	(\$121.22)	\$ (6.22)	\$ 12.94	\$ 32.11

Average historically experienced customer

**4. There is a large statewide potential for economically expanding the natural gas distribution system to enable customer conversion to natural gas. This represents a significant opportunity to reduce energy costs statewide, creating additional disposable income.**

Internal estimates performed at Consumers Energy estimate there are approximately 70,000 residences which could be connected to the natural gas distribution system through a main expansion project requiring a customer contribution of less than \$5,000. Also, there are estimates of about 15,000 residences along existing gas mains that have not connected to natural gas, primarily due to long service lengths requiring which would require a significant customer contribution to install. Given the current average annual savings from switching fuels, converting a population of this size to natural gas could generate over \$150 million in energy savings per year as well as benefits from the large capital investment in the states infrastructure and construction jobs required to expand the distribution system.

In 2012, the proactive Natural Gas Customer Attachment Program at Consumers Energy connected 1,345 new customers, generating an annual energy savings of almost \$2.5 million for these customers through only a \$17 million capital investment, a 17% return to customers over a 20 year period for each capital dollar invested. As seen in this example, expansion of the natural gas distribution system offers a significant opportunity to sensibly invest in Michigan's infrastructure to reduce our residents' energy costs, increase their disposable income, and keep them safe and warm each winter.