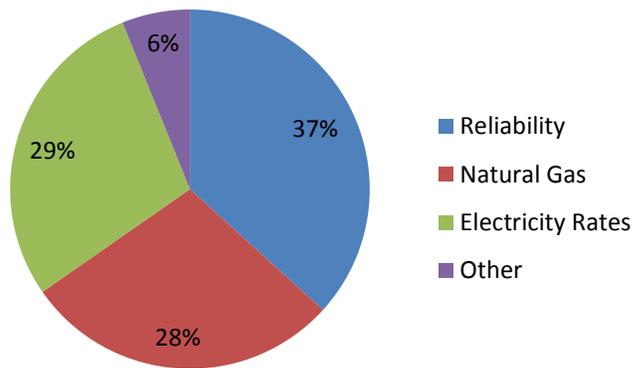


Readying Michigan to Make Good Energy Decisions – Additional Areas Executive Summary

The Additional Areas report covers miscellaneous energy questions that were not classified as pertaining specifically to renewable energy, energy efficiency or electric choice. The 15 renewable energy questions posted on the Ensuring Michigan’s Energy Future website garnered 49 responses. The comment summary pie chart presents an overview of comments received in response to the questions through the website. Many additional comments covering these topics were given at the public energy forums.



Where Michigan Is Today:

Electric reliability is regulated at both the federal (FERC and NERC) and the state (Michigan Public Service Commission or MPSC) levels. The current status of electric reliability in Michigan is considered to be “more than adequate” by respondents. In recent years, Michigan’s electricity rates have risen to levels that are higher than the national average, and also higher than surrounding Midwest states. The current law

requires rates to be set at the cost of service and allows utilities to self-implement rate increases in as little as six months after application and requires that utility rate cases be completed within one year. Michigan has access to natural gas from multiple basins via pipeline infrastructure as well as access to stored gas via underground storage located within the state.

Electric Reliability

- Electric reliability is about keeping the lights on. The North American Electric Reliability Corporation’s (NERC) definition of reliability includes both adequacy and security.
 - NERC is the electric reliability organization (ERO) delegated by the Federal Energy Regulatory Commission (FERC) as provided for in the Energy Policy Act of 2005, which made reliability standards for the bulk power system (generally consisting of power plants and higher voltage electric lines) mandatory and enforceable.
 - Adequacy refers to having adequate resources such as generation or demand response resources to meet peak electric demand.
 - Security refers to reducing the system’s vulnerability to interruptions to keep both the transmission system and distribution system running smoothly. Electric transmission reliability and electric distribution reliability are both components of security.

- Regional reliability: The majority of Michigan is within the Midcontinent ISO's (MISO) footprint, while a small portion of Southwest Michigan is within the PJM footprint. MISO and PJM are regional transmission operators approved by the FERC.
 - MISO and PJM both calculate the amount of electric generation and demand side resources required to provide an adequate supply of electricity within each region.
 - MISO and PJM each dispatch electric generation that resides within its footprint.
 - MISO and PJM are continuously monitoring the reliability of the transmission system.
 - MISO and PJM facilitate transmission planning for each region in accordance with NERC standards.
 - MISO and PJM approve transmission plans for each region, including transmission to interconnect new generation; however, MISO and PJM do not plan or approve new generation resources.
- Regulating electric reliability in Michigan at the MPSC:
 - MPSC staff participates in regional workgroups addressing adequacy and transmission planning.
 - The MPSC has distribution reliability rules for regulated entities within the state that are in addition to traditional distribution reliability indices.
 - The MPSC annually requests load-serving entities to make a showing that they have secured adequate resources to meet the upcoming summer peak.
 - Public Act 286 provides the MPSC with the authority to grant a certificate of need for generation within the state.
 - Public Act 30 provides the MPSC with the authority to grant a certificate of necessity for transmission within the state.
- ITC, the largest transmission company in Michigan, commented that it has made more than \$2 billion in capital investments in transmission infrastructure in the Lower Peninsula of Michigan, and its region in the Lower Peninsula is ranked in the top decile in the industry for reliability.
- Over the last six years the American Transmission Company (ATC), that is responsible for the transmission system in the Upper Peninsula (UP), has built a series of 138 kV and 345 kV transmission lines to foster more reliable service in the UP. In order to improve on the ability to move energy efficiently from Lower to Upper Peninsula, ATC recently installed phase angle regulators (PARS) at the Straits of Mackinac to improve control of electric flows between the peninsulas, which in turn increases reliability.

Electricity Rates and Utility Ratemaking

- Michigan's electricity rates were above the national average during the 1990s, below the national average during the 2000s, and today are higher than the national average. The utilities report that rate comparisons across states are largely explained by different states' relative exposure to fluctuating natural gas prices.

- When comparing electricity rates over time, the utilities report that load loss appears to have had the largest impact on rates. As load decreases, whether due to customers leaving utility service to switch to an alternative electric supplier (choice) or leaving the system entirely, there are fewer customers and lower sales over which to spread the fixed costs of a utility. This leads to higher rates for those customers who remain with utility service.
- The utilities also report that fuel costs have had the second largest impact on rates since 2008. Fuel prices impact the electricity prices that are ultimately paid by customers.
 - Michigan’s total coal costs increased 96% from 2004 to 2012, yet were in line with neighboring Great Lakes states during this time.
 - Several reasons for the increases in Michigan’s delivered costs of coal were reported, including transportation costs, production costs and increased coal exports.
- The utilities also report that the elimination of cross-class subsidies, environmental upgrades, base system investment, renewable energy investment, and energy efficiency investment have all had upward pressure on residential rates. The cross-class subsidy elimination helped to offset the rate impact to industrial and commercial customers, and reductions in operating costs and the cost of the capital also lessened the rate impact for all customer classes.
- While Michigan’s electricity rates are higher than many other states, Michigan residential customers generally use less electricity, which results in lower bills.
- The utilities identify three other factors that, combined, explain an additional 25% of the variation in average rates between states; proximity to low-cost coal, access to inexpensive hydroelectric generation, and lack of coal-fired generation.
- Dow and the Association of Businesses Advocating Tariff Equity claim that self-implementation has had a negative effect on rates.
- Dow also points out that Michigan’s electric rates are the highest in the Midwest, making the state less attractive to manufacturers, and inhibiting the jobs and economic multiplier effect manufacturers could provide.
- “Economic development rates” are available in other states. The utilities state they should have the discretionary ability to offer economic development rates, appropriately designed, with MPSC oversight. Traditionally, the objection to these rates is that they often represent a subsidy by other customers and violate “cost of service” principles.

Natural Gas Infrastructure

- Michigan producers supply 15 – 20% of the natural gas that is used in Michigan.
- Michigan also receives gas from the Texas-Oklahoma panhandle, Louisiana and Canada. Michigan also has the capability to receive gas from the Rockies and the Marcellus regions.

- In order to affordably access Michigan's gas potential, hydraulic fracturing is necessary. Many oral and written comments and concerns regarding the safety and environmental impact of hydraulic fracturing were received in this process. The Graham Sustainability Institute at the University of Michigan has released technical reports for comment regarding hydraulic fracturing in Michigan.¹
- With about 649 billion cubic feet of storage capacity, Michigan has more than any other state. Because natural gas can be put into storage during the summer months when there is less demand, it allows for more efficient use of transmission pipelines and helps stabilize prices.
- Theoretically there is room for gas storage expansion in Michigan because there are depleted gas reservoirs that could be converted to storage if it is economically feasible to do so. The economic feasibility usually depends on the location of the reservoir and its geologic characteristics. In many cases, there would need to be more infrastructure and pipeline capacity added in order to convert and utilize these reservoirs.
- Currently, there is sufficient in-state pipeline capacity to move natural gas around the state and to satisfy Michigan's demand as a whole.
- Currently, the relatively low price of gas and the increase in shale production provides increased incentive to use gas for applications other than heating. Specifically, Michigan is currently experiencing a compliance push to retire and replace coal fired electric generation with natural gas fired generation, mainly due to environmental regulations and the price of natural gas.
- Natural gas-fired electric generating plants are considered to be economically and operationally viable.

Summary

- This report outlines some additional areas within the energy policy space that could be considered when reviewing future energy policy, including reliability, electricity rates and prices, and natural gas infrastructure.
- While developing a cohesive future energy policy for Michigan in the areas of renewable energy policy, energy efficiency policy, and electric choice policy, the additional areas outlined in this report should be taken into consideration.

¹ <http://graham.umich.edu/knowledge/ia/hydraulic-fracturing>.