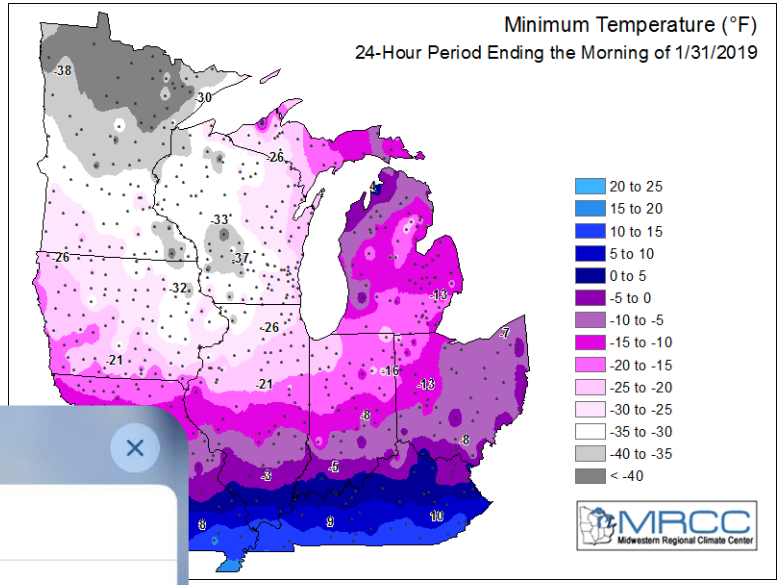
Michigan Public Service Commission
2019 Statewide Energy Assessment

MPSC
Michigan Public Service Commission

Statewide Energy Assessment Impetus



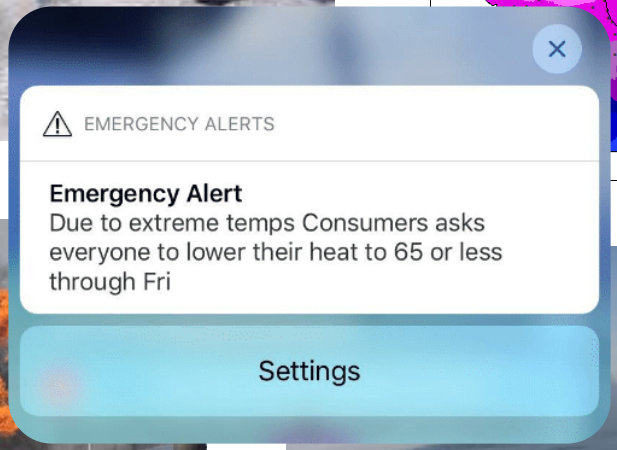


Photo Credit: Todd McInturf/Detroit News via AP

Photo Credit: Blake Clark/UPI

Charge from the Governor

Governor Whitmer requested that the Commission review the supply, engineering, and deliverability of Michigan's natural gas, electricity, and propane. The Governor requested that the Commission's review include the following:

- Commission's infrastructure planning criteria and methodologies for distribution, transmission, and generation
- Existing planning processes for electric and natural gas utilities and best practices for integration
- Linkages and gaps between real-time operational reliability and infrastructure planning for long-term reliability
- Demand response and mutual assurance protocols by natural gas utilities and opportunities for enhancement
- Contingency risks, interdependencies, and vulnerabilities of supply and/or delivery disruptions from physical or cyber security threats and rough cost estimates of potential enhancements
- Adequacy of Commission rules addressing customer safety, reliability and resiliency, and utility notifications
- Evaluation of existing gas efficiency programs
- Identification of area or types of systems most at risk

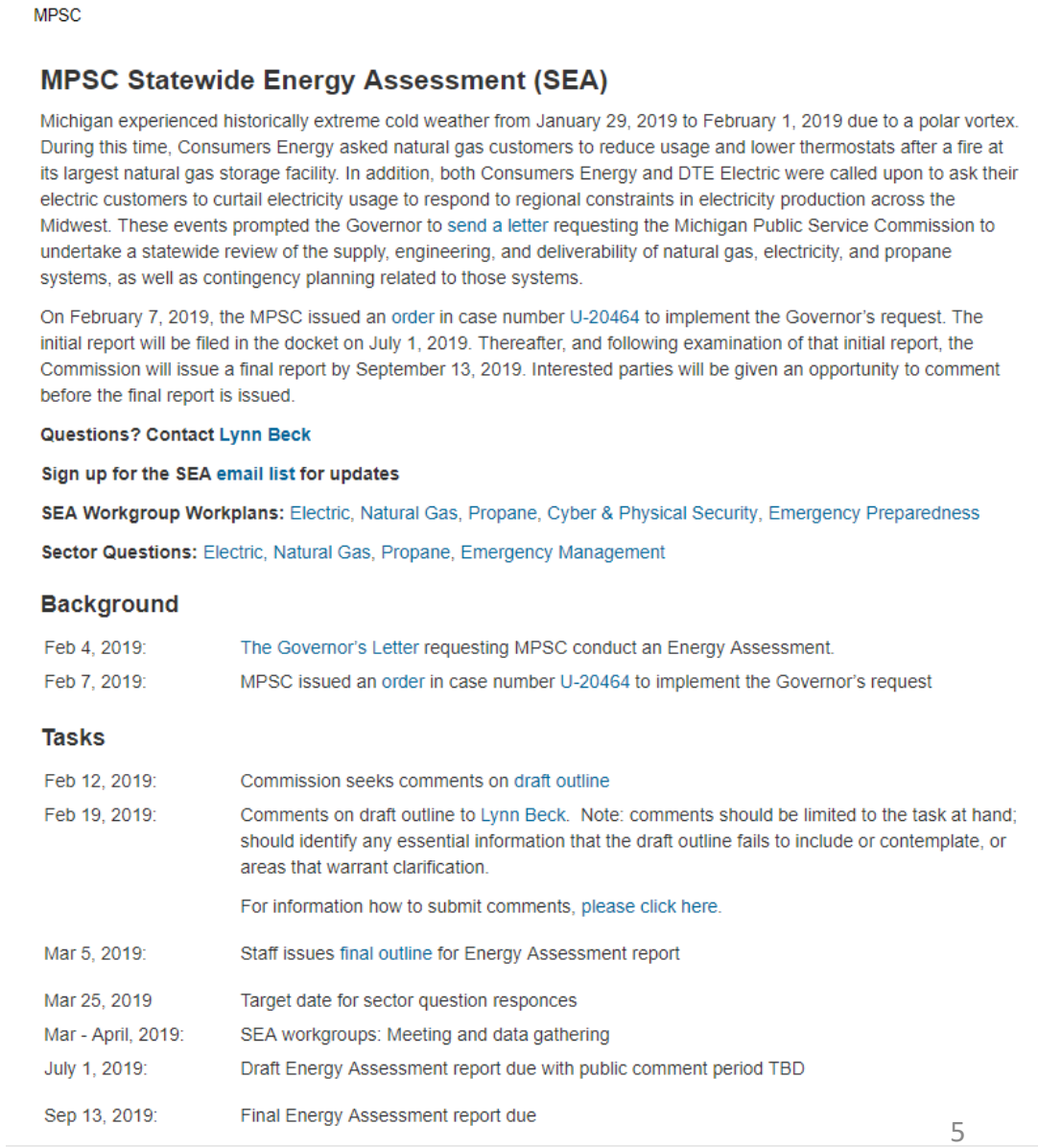
SEA Scope

The Statewide Energy Assessment investigated six separate sectors:

- Electric
- Natural Gas
- Propane
- Cybersecurity
- Physical Security
- Emergency Preparedness

SEA Process

- 1 Webpage
- 5 Work teams
- 36 Staff
- 40+ Stakeholders
- 40+ Stakeholder interviews/ meetings/calls



MPSC

MPSC Statewide Energy Assessment (SEA)

Michigan experienced historically extreme cold weather from January 29, 2019 to February 1, 2019 due to a polar vortex. During this time, Consumers Energy asked natural gas customers to reduce usage and lower thermostats after a fire at its largest natural gas storage facility. In addition, both Consumers Energy and DTE Electric were called upon to ask their electric customers to curtail electricity usage to respond to regional constraints in electricity production across the Midwest. These events prompted the Governor to send a letter requesting the Michigan Public Service Commission to undertake a statewide review of the supply, engineering, and deliverability of natural gas, electricity, and propane systems, as well as contingency planning related to those systems.

On February 7, 2019, the MPSC issued an order in case number U-20464 to implement the Governor's request. The initial report will be filed in the docket on July 1, 2019. Thereafter, and following examination of that initial report, the Commission will issue a final report by September 13, 2019. Interested parties will be given an opportunity to comment before the final report is issued.

Questions? Contact Lynn Beck

Sign up for the SEA email list for updates

SEA Workgroup Workplans: Electric, Natural Gas, Propane, Cyber & Physical Security, Emergency Preparedness

Sector Questions: Electric, Natural Gas, Propane, Emergency Management

Background

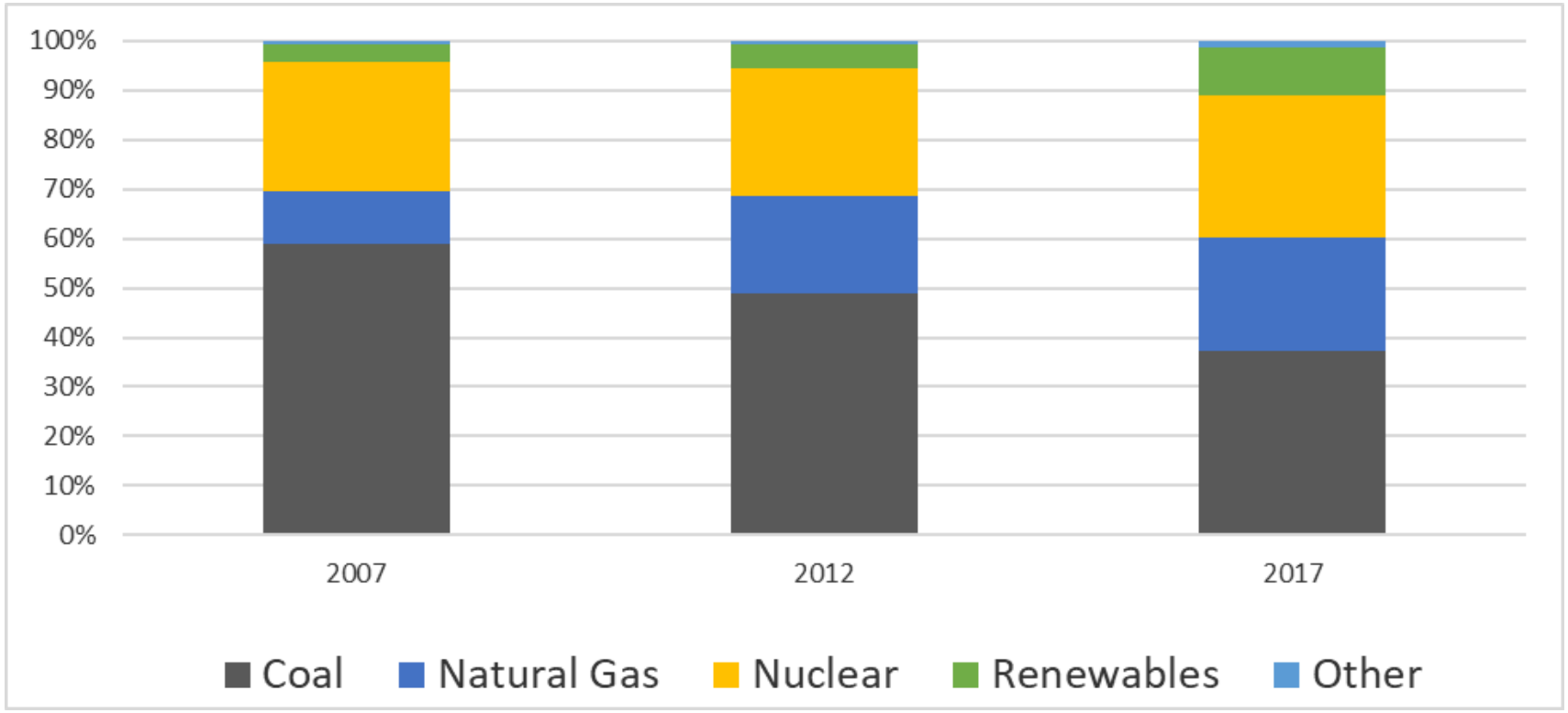
Feb 4, 2019:	The Governor's Letter requesting MPSC conduct an Energy Assessment.
Feb 7, 2019:	MPSC issued an order in case number U-20464 to implement the Governor's request

Tasks

Feb 12, 2019:	Commission seeks comments on draft outline
Feb 19, 2019:	Comments on draft outline to Lynn Beck. Note: comments should be limited to the task at hand; should identify any essential information that the draft outline fails to include or contemplate, or areas that warrant clarification.
	For information how to submit comments, please click here.
Mar 5, 2019:	Staff issues final outline for Energy Assessment report
Mar 25, 2019	Target date for sector question responces
Mar - April, 2019:	SEA workgroups: Meeting and data gathering
July 1, 2019:	Draft Energy Assessment report due with public comment period TBD
Sep 13, 2019:	Final Energy Assessment report due

MI Energy Landscape - Electricity

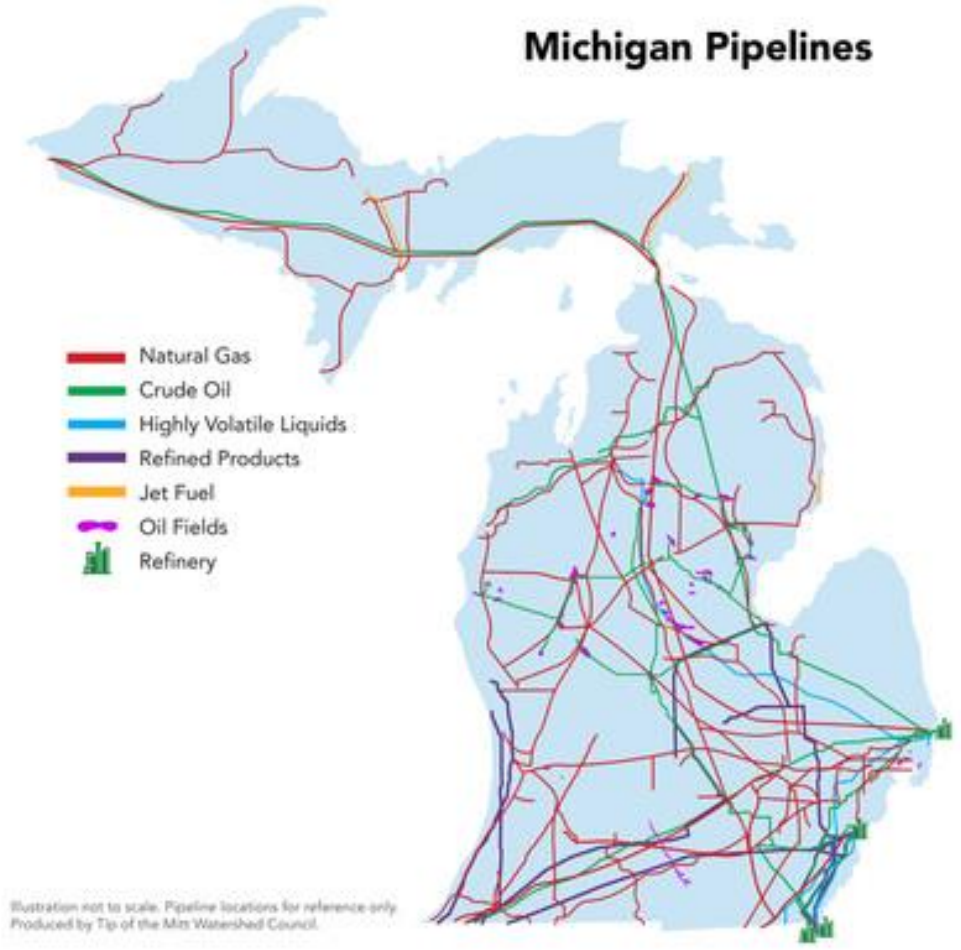
Michigan's Evolving Net Generation Mix from 2007 - 2017



MI Energy Landscape – Natural Gas

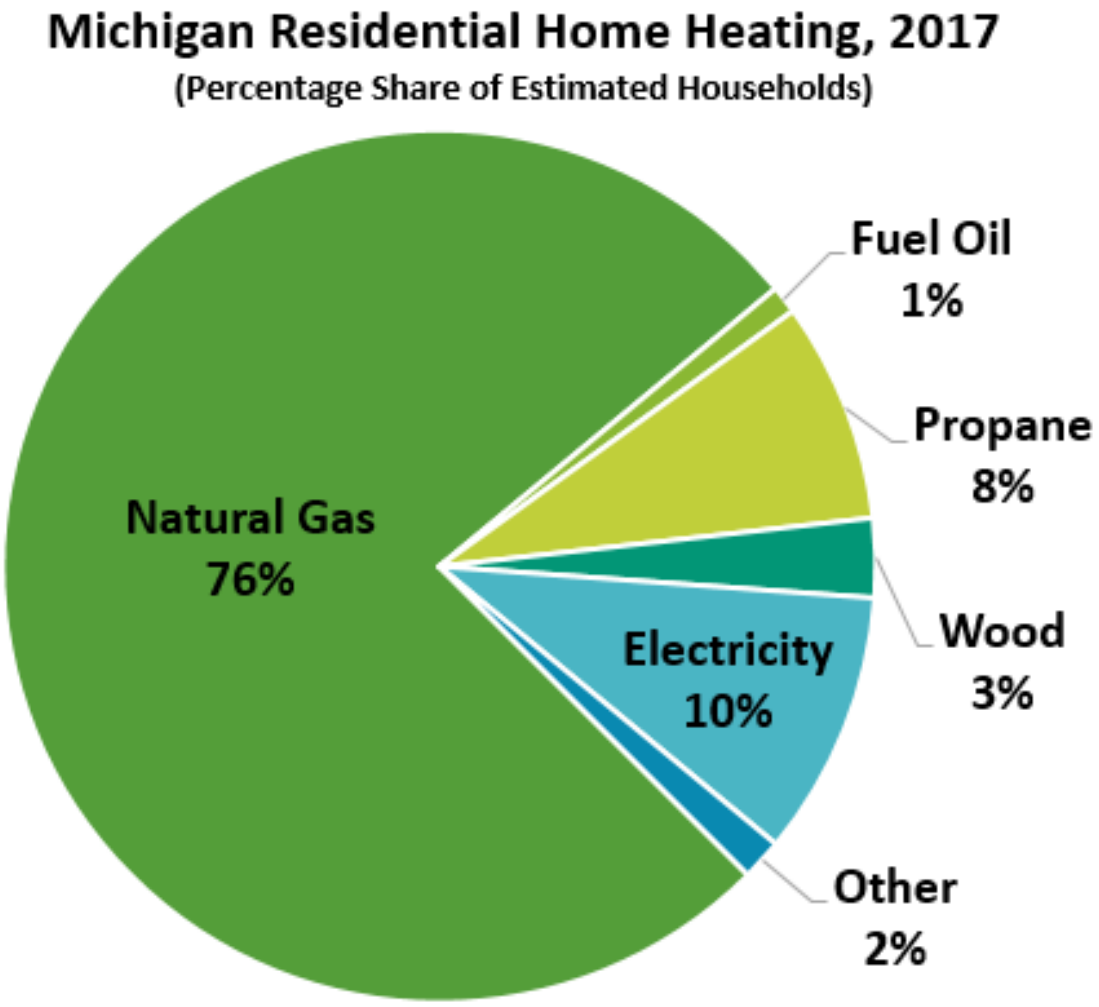
Michigan's Natural Gas Infrastructure and Resources

- MI is #1 in the country for working gas storage capacity due to our unique geology
  - Michigan natural gas utilities operate 32 storage facilities with a gas capacity of 294.92 Bcf
- 9,215 miles of transmission main and regulated gathering lines
- 114,865 miles of distribution lines
- Access to diverse supplies through various pipelines including Canada, Rockies, Gulf Coast, and Eastern (Marcellus/Utica) production



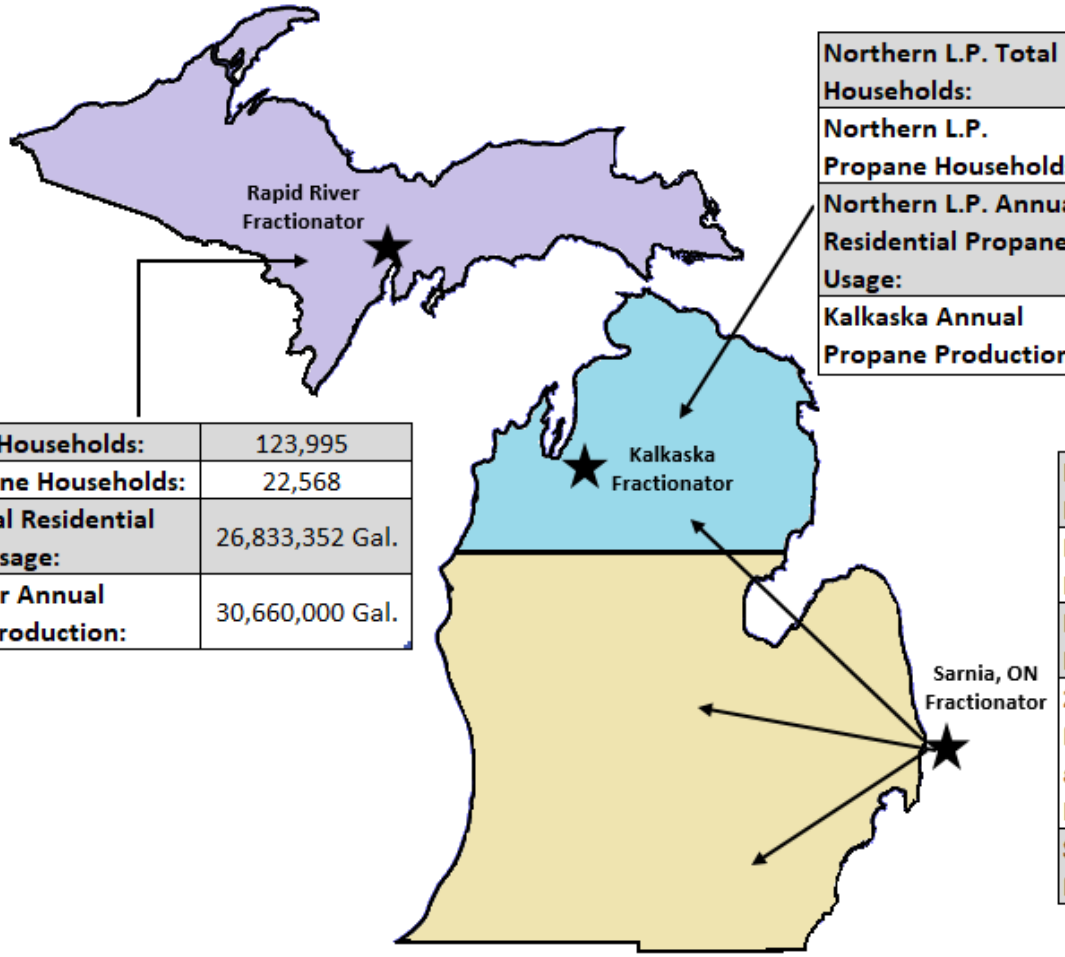
Map by Tip of the Mitt

MI Energy Landscape – Home Heating



Source: U.S. Census Bureau, 2017 American Community Survey.
Other Includes: Coal or coke, Solar Energy, Other Fuels, and No Fuels.

MI Energy Landscape - Propane



U.P. Total Households:	123,995
U.P. Propane Households:	22,568
U.P. Annual Residential Propane Usage:	26,833,352 Gal.
Rapid River Annual Propane Production:	30,660,000 Gal.

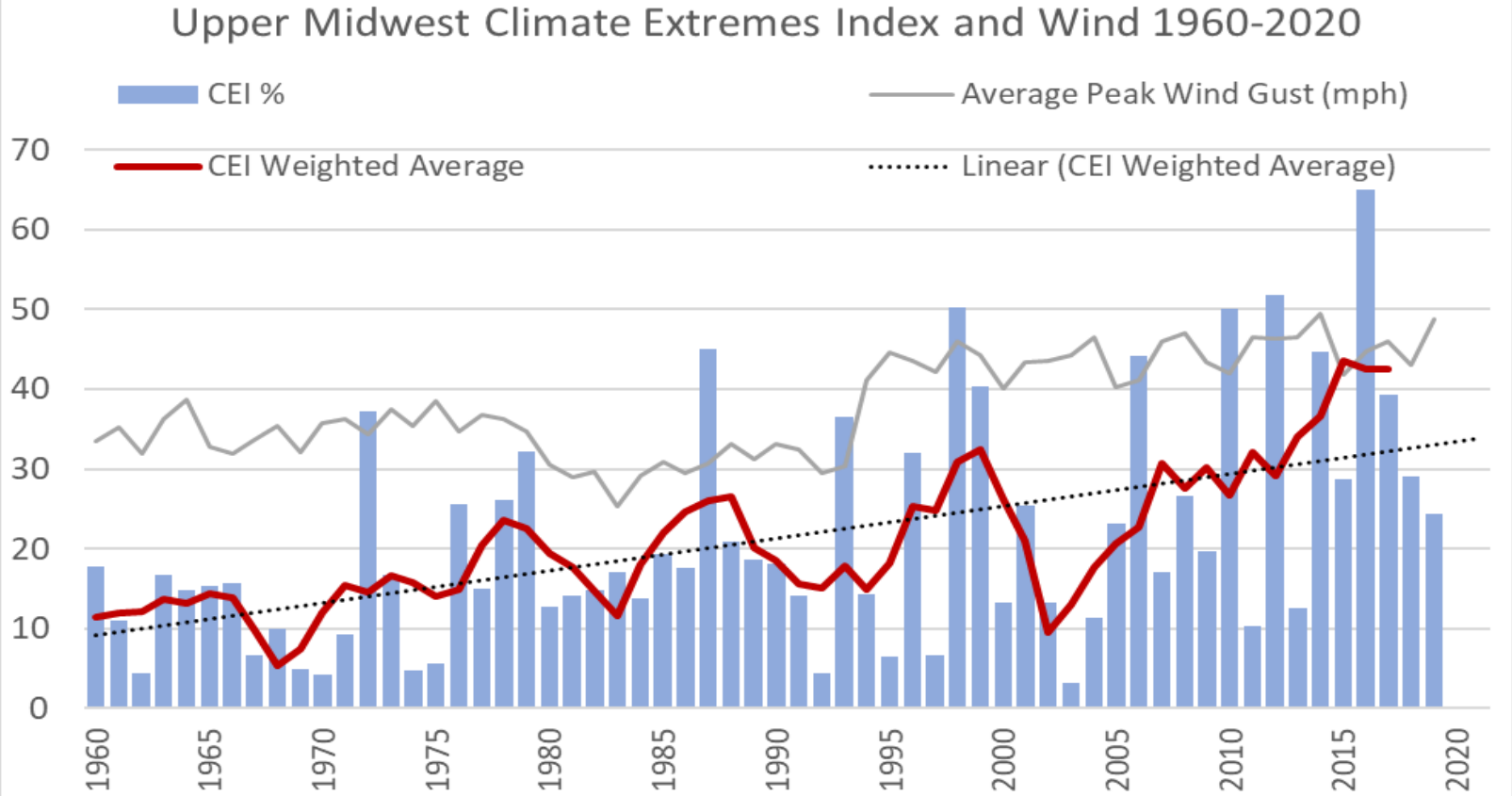
Northern L.P. Total Households:	203,220
Northern L.P. Propane Households:	47,972
Northern L.P. Annual Residential Propane Usage:	57,038,708 Gal.
Kalkaska Annual Propane Production:	16,096,000 Gal.

Entire L.P. Total Households:	3,764,651
Entire L.P. Propane Households:	298,112
Entire L.P. Annual Residential Propane Usage:	354,455,168 Gal.
2018 Propane imports by Plains Midstream Canada and Pembina Midstream/Resources	273,546,000 Gal.
Sarnia, ON Annual Propane Production:	1,205,857,800 Gal.

Assumptions include: An annual household usage of 1,189 gallons, Kalkaska production rate of 1,050 bpd, Rapid River production rate of 2,000 bpd, and Sarnia production rate of 114,000 bpd (95% of maximum capacity and 69% of output consisting of propane(See footnote 117)).
Sources: Energy Information Administration and American Community Survey.
Notes: Sarnia fractionator is jointly owned and operated by Plains Midstream and Pembina. Propane imports into Michigan may ultimately be consumed elsewhere.

The Changing Landscape
Factors Driving Change

Weather and Emergency Events



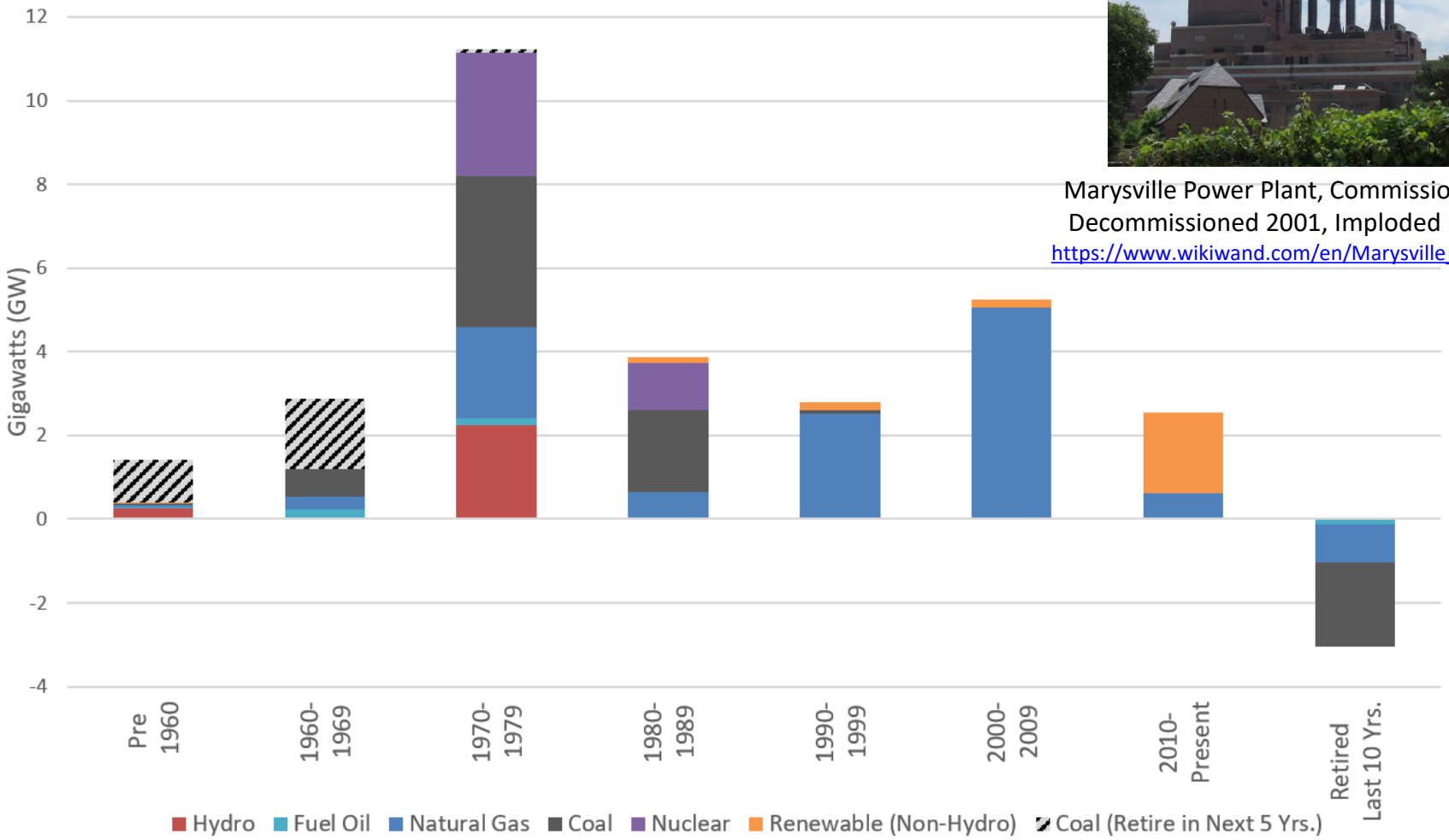
Source: National Oceanic and Atmospheric Administration reports
Note: Wind data gathered from several locations near Detroit (Detroit Metro and Willow Run airports) at various methods of measurement since 1960 including fastest 1 minute, peak wind, maximum 5 second and maximum 3 second

The Changing Landscape

Factors Driving Change: Aging Infrastructure

Electric Infrastructure

Aging electric generation assets: Year built

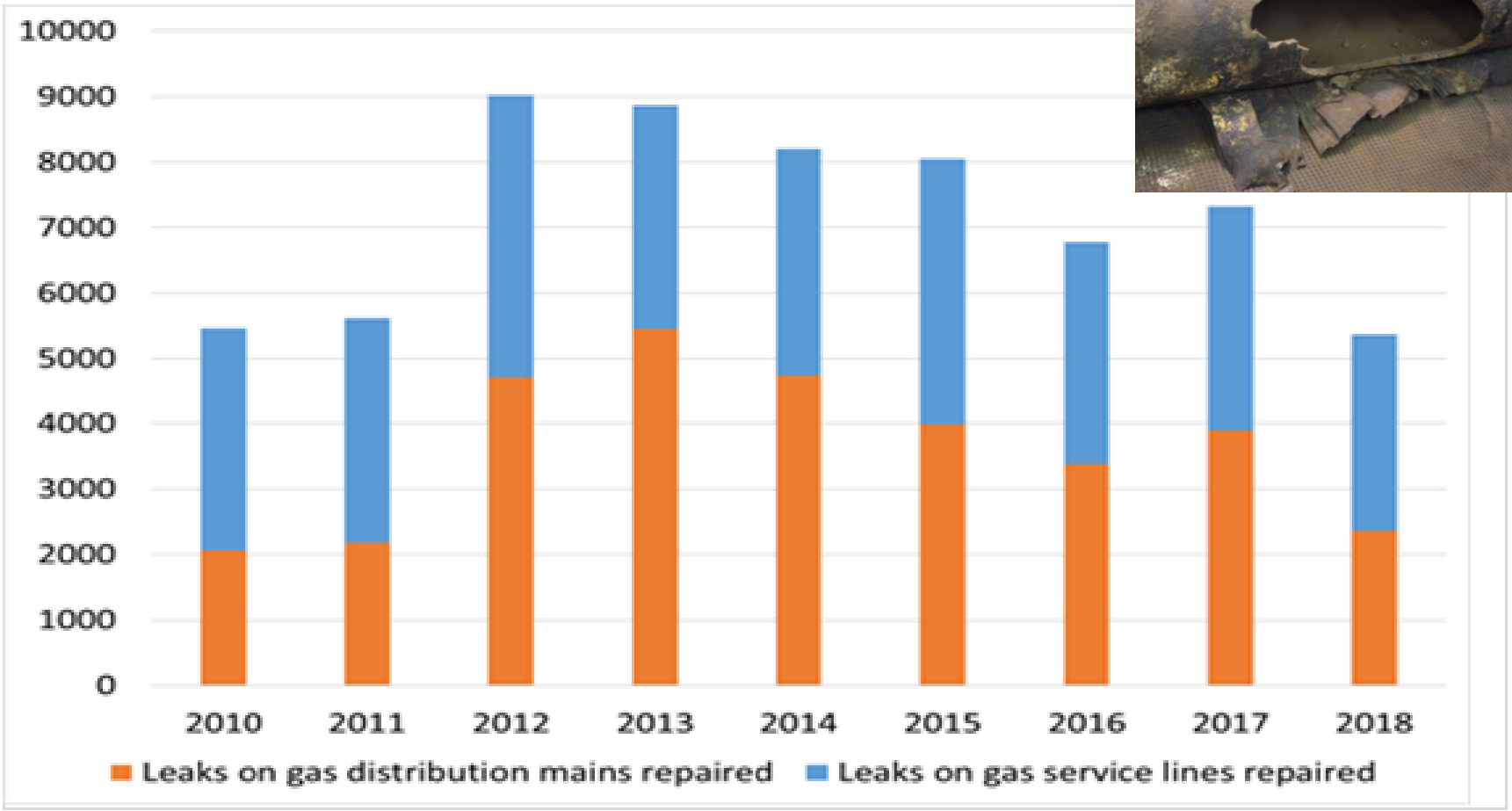


Marysville Power Plant, Commissioned 1922, Decommissioned 2001, Imploded Nov. 2015
https://www.wikiwand.com/en/Marysville_Power_Plant

The Changing Landscape

Factors Driving Change: Aging Infrastructure

Natural Gas Infrastructure



Natural Gas lines, corrosion related repairs: 2010 - 2018

The Changing Landscape
Factors Driving Change

Increasing Number and Severity of Cyber and Physical Attacks

https://www.fireeye.com/cyber-map/threat-map.html, June 25, 2019

SEA – Initial Assessment

- Systems are adequate to meet customer needs
- Unique assets help ensure reliable supply and delivery of energy
- Infrastructure is designed and operated to maintain energy supplies and deliver during emergency conditions
- Emergency events could have a high impact on the economy and well being of residents

SEA Identified Vulnerabilities

- Electric system (SEA Ch. 3.4)
  - Aging assets and infrastructure; generation shift and operational considerations, natural gas and electric coordination; transmission connections
- Natural gas system (SEA Ch. 4.3)
  - System limitations; infrastructure failures; interconnections; system redundancy; single source supplies
- Propane (SEA Ch. 5.4)
  - Driver shortages; infrastructure availability; exports; propane market structure; extreme weather
- Cyber and physical security (SEA Ch. 6.4)
  - Security governance; implementation of cybersecurity controls; phishing; third-party risk; human capital
- Emergency Management
  - Lack of consistent reporting requirements, outdated curtailment procedures, tension between gas-fired generation and home heating

SEA Recommendations

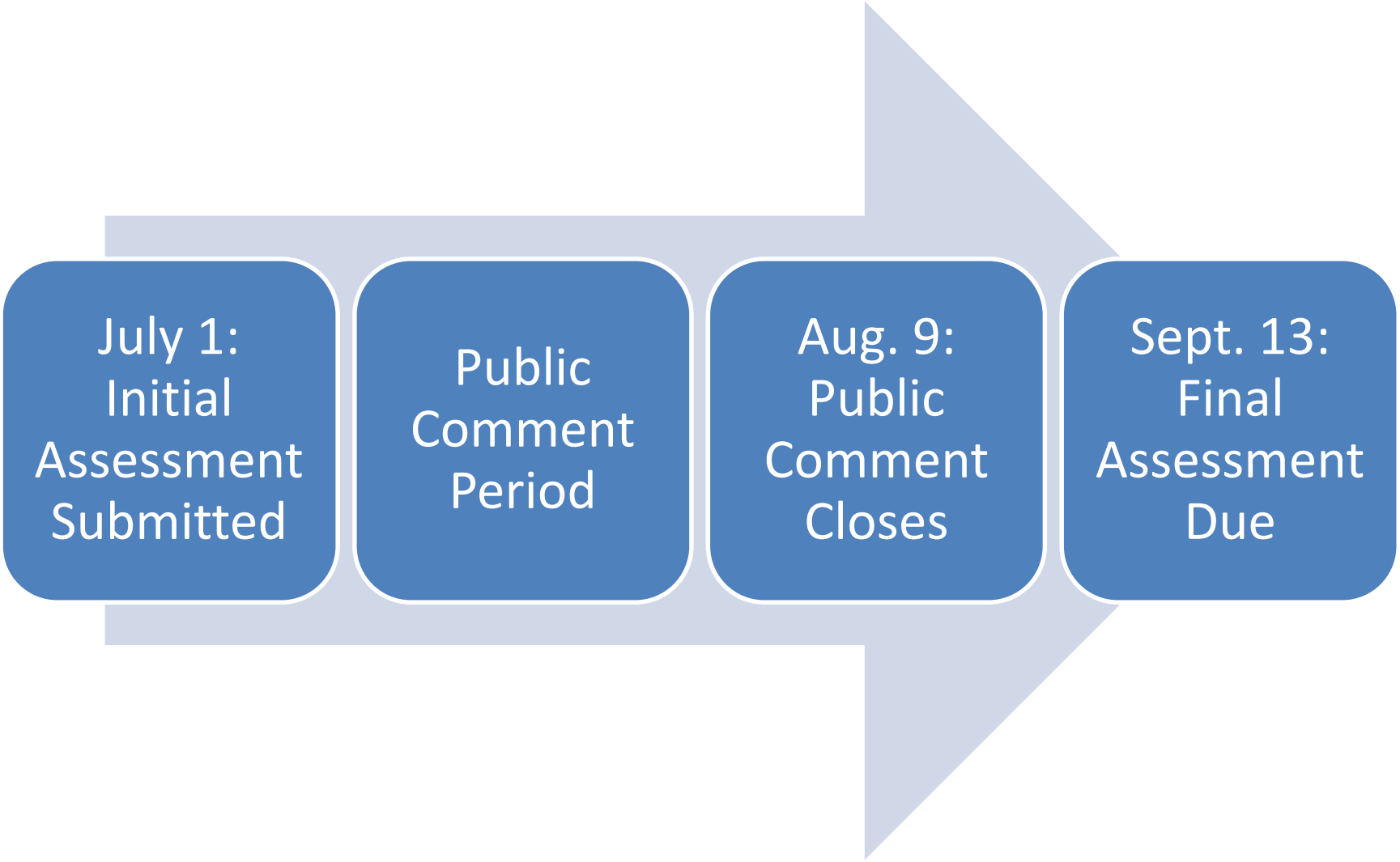
The SEA makes 36 Recommendations which include, among others, programmatic improvements, Commission rulemakings, updating modeling and utility tariffs, additional training, improved reporting parameters, and stakeholder engagement.

The SEA also makes 14 Observations which include enhancements at the RTOs/ISOs, interagency/departmental consultations, programmatic development, infrastructure build out, and legislative action.

SEA High-Level Recommendations

- Risk-based integrated natural gas planning
- Integrated electricity system planning
- Valuing resource diversity and resiliency
- Addressing gas-electric interdependencies
- Demand response improvements
- Emergency drills
- Cyber security standards for natural gas distribution utilities
- Propane contingency planning

SEA Next Steps



SEA Public Feedback

The initial assessment is available for review in Docket No. U-20464 and webpage: www.michigan.gov/energyassessment

Written Comments due by August 9:

- Email to mpscedockets@Michigan.gov
- Mail to MI Public Service Commission, PO Box 30221, Lansing, MI 48909

Oral Comments – two upcoming MPSC Commission meetings:

- July 18 @ 1:30 PM
- Aug. 8 @ 1:30 PM

Written Comments should reference the Statewide Energy Assessment, Docket No. U-20464.