

UP Energy Task Force: Utility Planning Overview

November 6, 2020

*Dan Scripps, Chair
Michigan Public Service Commission*



Integrated Resource Planning

- PA 341 of 2016 added requirement that regulated utilities file “integrated resource plans” based on 5, 10, and 15 year energy and capacity outlooks
- Integrated resource plans (IRPs) are required to include the following:
 - Long-term forecasts of utility sales and peak demand
 - Generation technologies, as well as proposed capacities and fuel costs
 - Projections on energy purchased or produced by renewable resources and cogeneration
 - Details on plans to reduce energy waste, including annual EWR projections
 - Projected load management and demand response savings, and associated costs
 - Analysis of potential new or upgraded transmission options
- In evaluating IRPs, the MPSC must find that the plan represents “the most reasonable and prudent” means of meeting the utility’s energy and capacity needs and considers the following seven factors:
 - Ability to serve peak loads, including planning reserve margin and local clearing requirements
 - Compliance with state and federal environmental regulations
 - Competitive pricing
 - Reliability
 - Commodity price risks
 - Diversity of generation supply
 - Cost-effectiveness of proposed EWR and peak load programs
 - Exceedance of renewable energy and EWR goals not evidence of unreasonableness

Planning parameters/ requirements

- Following enactment of PA 341, MPSC developed the MI Integrated Resource Planning Parameters (MIRPPs) outlining 3 IRP modeling scenarios (w/ multiple sensitivities)
 - Requirements included modeling parameters and assumptions for utilities to use in filing IRPs
 - Separated into UP and Lower Peninsula scenarios
 - Included public hearings in Livonia, Grand Rapids, and Marquette
- PA 341 also required MPSC to establish IRP filing requirement, as well as the following filing deadlines:
 - UPPCO: Feb. 12, 2019
 - UMERC: April 19, 2019
 - Northern States Power: July 31, 2019
- PA 341 also required the MPSC to conduct ERW and demand response potential studies



MICHIGAN INTEGRATED RESOURCE PLANNING PARAMETERS

Pursuant to Public Act 341 of 2016, Section 6t

November 21, 2017

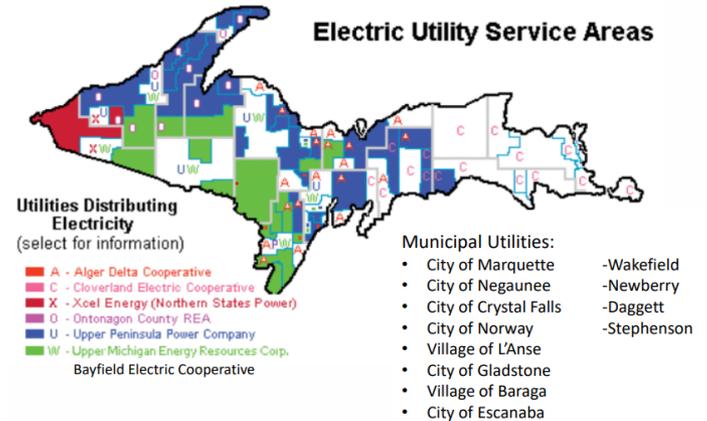
First round of UP IRPs

- MPSC finished first round of IRPs in 2019-20
- UMERC (Case No. U-20470):
 - In March 2019, UMERC placed into service 10 reciprocating internal combustion (RICE) units, ensuring sufficient capacity to meet customer needs
 - MPSC approved settlement in Oct. 2019, but indicated it hoped to see more consideration of various factors in UMERC's next IRP, set to be filed in Oct. 2021
- UPPCO (Case No. U-20350):
 - Settlement approved in Feb. 2020 includes commitments to increase renewable generation and EWR and allows two existing hydro assets to operate directly in MISO market (increasing their capacity credits); also removed a proposed 20MW RICE unit in Eastern UP
 - UPPCO will file next IRP by Dec. 2024
- Northern States Power Co. (Case No. U-20599):
 - Settlement approved in Feb. 2020 includes commitments to not object to increase in EWR to 1.5% by 2021, more consideration of demand response, and to work to align IRP with distribution planning, among other elements
 - Next IRP to be filed in coordination with IRP filing in Minnesota, within 5 years



Limits of planning framework

- IRP process seeks to optimize resource planning for individual utilities
 - Goal is “most reasonable and prudent” means of meeting individual utility’s energy and capacity needs
 - Less consideration on how to optimize across utility service territories, at zonal or peninsular level
 - Challenge exacerbated by other factors, including multi-state utility planning processes and large number of utilities serving UP (including those not regulated by MPSC)
- Business model and jurisdictional issues create barriers to comparing generation and transmission alternatives on equal footing
- Increasing overlap between resource planning, transmission planning, and distribution system planning



Example: Eastern UP grid reliability

- UPPCO’s initial IRP included 20MW RICE unit to be located in Schoolcraft Co.
- Cloverland also investigating 50MW RICE unit in Chippewa Co.
- Both proposals driven as much by transmission reliability concerns as by energy needs

Distribution System Planning

- Distribution planning, like resource planning, seeks to optimize utility investment decisions
 - Increasingly important as utility distribution spending now exceeds generation investments
 - Distribution spending is also increasing, driven by need to replace aging infrastructure
- Distribution planning also adds transparency, and allows for consideration of alternatives, as well as providing opportunities for customer preferences and new technologies to be considered
- In 2018, MPSC required DTE and Consumers to file distribution plans, held a technical conference, and Staff filed Distribution Planning Framework report
 - I&M directed to file distribution plan in 2019
 - Not currently required for UP utilities
- Distribution plans allow greater understanding of how specific proposed investments are tied to longer-term (5 year) strategies
 - Stakeholders allowed opportunity to comment on utility plans, though unlike IRPs not currently conducted as contested cases
 - Also, unlike IRPs, distribution plans are not ultimately subject to Commission approval
 - Instead, specific investments are reviewed in utility rate cases



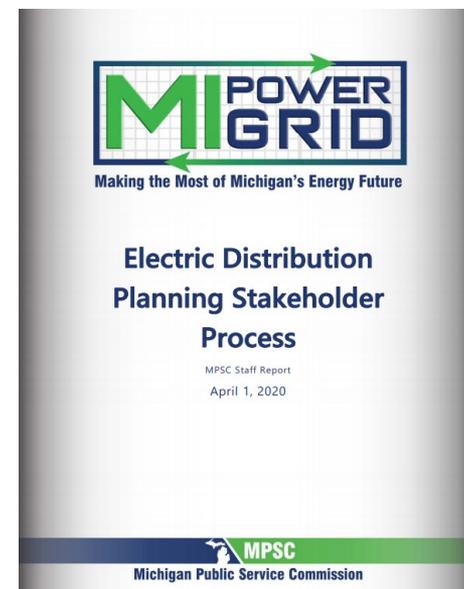
Michigan Distribution Planning Framework

MPSC STAFF REPORT
September 1, 2018

Sally A. Talberg, Chairman
Norman J. Saari, Commissioner
Rachael A. Eubanks, Commissioner

Distribution System Planning

- In 2019, MPSC launched MI Power Grid, a multi-year stakeholder initiative to maximize the benefits of the transition to clean, distributed energy resources for Michigan residents and businesses
- Initial focus included updating framework for utility distribution plans, as well as on other foundational issues such as updating interconnection rules and service quality rules and technical standards, improving the demand response framework, and better ways of evaluating utility pilot programs
 - Phase II includes focus on competitive procurement, new technologies and business models, and advanced planning
- Second round of distribution plans for Consumers Energy, DTE, and Indiana Michigan due in Aug. 2021
 - Still not required for UP utilities
- Additionally, greater focus on integrating resource and distribution planning processes
 - Consumers Energy to align IRP and distribution plans in 2021
 - NSP agreed to do the same as part of its next IRP
 - Important as distribution elements included in IRPs



Other ongoing processes

- Under PA 341, MPSC must update the IRP planning parameters and filing requirements every five years
 - Currently ongoing, with the MI Power Grid advanced planning workgroup expected to develop the inputs for this effort, which will be concluded in 2022
 - In addition, following Governor Whitmer's announcement last month of the MI Healthy Climate Plan, advanced planning workgroup charged with evaluating how to consider greenhouse gas reduction goals within planning process
 - Staff to file straw proposal by Dec. 15, with opportunity for comment
- MPSC also working to update EWR and demand response potential studies, as required by statute
 - Will include separate data for UP and Lower Peninsula
 - Project expected to be completed by Aug. 30, 2021
 - Initial stakeholder meeting scheduled for Dec. 2, 2020
- Michigan Senate has also requested MPSC to conduct a study to consider various rate design options to account for changing customer use of the grid
 - MPSC intends to complete this study by Oct. 31, 2021

AS ADOPTED BY SENATE, SEPTEMBER 29, 2020

SENATE RESOLUTION NO. 142

Senator Lauwers offered the following resolution:

1 A resolution to encourage the Michigan Public Service
2 Commission to undertake a study into alternative and innovative
3 rate design options for Michigan's electric customers.
4 Whereas, Energy customers are adopting new and evolving
5 technologies including customer-owned generation, energy storage,
6 electric vehicles, and customer energy management capabilities; and
7 Whereas, The adoption of these technologies changes the way an
8 energy customer utilizes the grid; and
9 Whereas, The increasing adoption of these technologies can be
10 expected to result in widespread changes to the use of the grid by
11 utility customers; and
12 Whereas, Changes in customer utilization of the grid may
13 result in cost shifts relative to a customer's use of the grid



UP Energy Task Force: Energy Finance Overview

November 6, 2020

*Dan Scripps, Chair
Michigan Public Service Commission*



Energy finance overview

- Financing options for residents and businesses can play an important role in helping customers overcome upfront costs and cash flow and balance sheet considerations and help to accelerate adoption of lower cost energy options
- Programs can include loans and other financing options, with capital provided through private sector lenders, state and federal funds, energy service companies, or utilities
- Over the past several years, Michigan has taken a number of steps to increase the number and range of financing options, including:
 - Michigan Saves, a nonprofit “green bank” formed by the State of Michigan
 - Michigan Renewable Energy and Energy Efficiency Revolving Loan Fund
 - Property Assessed Clean Energy (PACE) loans
 - Utility on-bill finance programs for municipal and investor-owned utilities
 - Performance contracting and tax-exempt lease purchase options
 - Leveraging federal and state grant funding for energy upgrades and projects
- Many of these programs are actively supporting energy efficiency and renewable energy installations, while others have not yet been fully utilized, and some may need legislative authorization

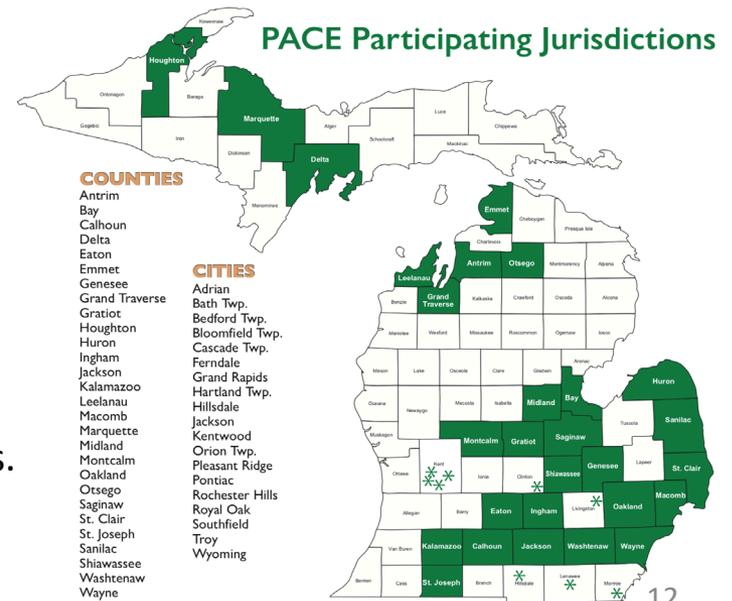
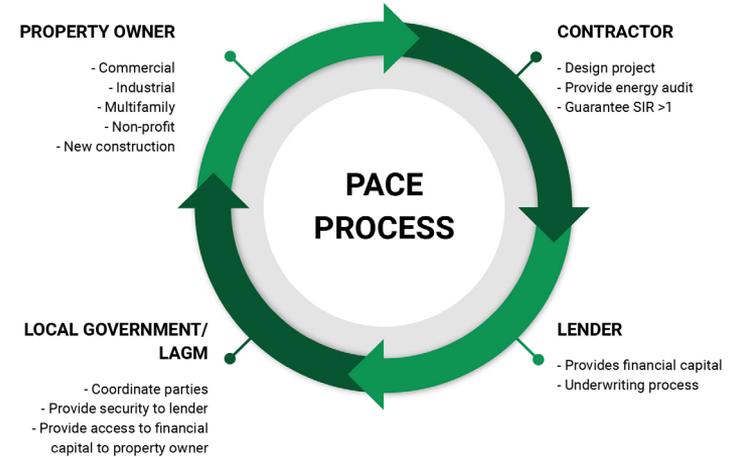
State Green Banks

- Green banks can be public or private, with public funding typically used to leverage private capital
 - Process started with public green banks, such as those in Connecticut and New York, which are housed within state government
 - Other states, such as Rhode Island and California, have adapted existing infrastructure banks to serve as green banks
 - Increasingly, green banks are being structured as private non-profit organizations, such as Inclusive Prosperity Capital, which was spun out of the Connecticut Green Bank
- In Michigan, Michigan Saves is a private non-profit operating as a green bank – the first in the nation
 - Michigan Saves was created in 2009 with a grant from the MPSC, and operates as an independent non-profit organization staffed by Public Sector Consultants
 - Michigan Saves works with a network of contractors and private lenders to support energy efficiency upgrades and geothermal and solar projects, and includes programs for residential, commercial, and municipal borrowers
 - Through 2019, Michigan Saves has supported nearly \$230M in financing, including upgrades 23,438 homes and 1508 commercial buildings, generating energy savings of more than 500M kWh and \$65 million in customer savings to date



PACE Financing

- Property Assessed Clean Energy (PACE) loans allow private building owners to fully finance energy upgrades – w/o need for upfront capital
 - PACE allows repayment to be spread over 25 years, typically allowing for immediate cashflow savings
 - Under Michigan law, savings must be guaranteed for projects of \$250,000 and above – adding additional certainty for borrowers
- Lean & Green Michigan administers PACE loans, working with property owners, units of local government, contractors and lenders to finance energy efficiency, water conservation and renewable energy projects
 - Has spurred more than \$50M for 28 projects
- PACE financing is authorized in Michigan for commercial borrowers under PA270 of 2010
 - Not currently available for residential properties
 - Nationally, despite being available in just 3 states (vs. 38 for commercial PACE), residential PACE accounts for more than 3x the level of investment as commercial PACE programs



On-bill financing and repayment

- On-bill financing and on-bill repayment programs provide options to finance energy upgrades through their utility
 - Under on-bill financing (OBF), the utility provides the capital for the upgrades, with the loans repaid through the utility bill
 - Under on-bill repayment (OBR), capital is provided by a third-party, with the utility serving as a conduit for repayment
- Michigan law authorizes both OBF and OBR programs for municipal electric utilities, and OBR programs for investor-owned utilities
 - PA 408 of 2014 authorizes municipalities whose residents are served by a municipal electric utility to establish a residential clean energy program and provide financing for energy efficiency improvements and renewable energy systems
 - PA 342 of 2016 authorizes utilities whose rates are regulated by the MPSC to offer OBR programs, with the capital provided by a third-party lender (which can include an independent subsidiary of the utility)
- Municipal programs:
 - The City of Holland launched the Holland On-Bill Loan Program in Nov. 2016, including the Holland Energy Fund, a non-profit organization that provides funding
 - The Michigan Municipal Electric Association has partnered with Michigan Saves to offer a “plug-and-play” on-bill financing program administered by Michigan Saves
- No Michigan investor-owned utilities have yet established OBR programs
 - The MPSC held workshops with utilities and stakeholders in 2017, but there hasn’t been additional action since that time

Energy performance contracting

- Performance contracts are agreements, typically involving larger institutions, where the energy contractor is paid back through achieved energy savings
 - In the event that the savings fail to materialize, it is typically the energy service company – rather than the energy user – that covers the difference under a performance guarantee
- Tax-exempt lease purchase (TELP) agreements are agreements for long-term projects that are repaid on an annual basis
 - TELP agreements function similar to debt, but are not treated as such for balance sheet purposes as the repayments through annual appropriations can be suspended if not satisfied
 - 47 states allow for TELP agreements for various purposes, including energy upgrades
- Beginning in 2012, Michigan took a number of steps to update its statutory authorization of performance contracting and TELPs
 - PA 625 of 2012 encourages state agencies, departments, and authorities to enter into energy performance contracts, subject to specific parameters; builds on PA 122 of 1987
 - PA 485 of 2014, applies to community colleges, and extends the repayment term for performance contracts from 10 to 25 years
 - PA 119-123 of 2016 authorized TELPs for energy improvements for units of local government
 - PA 23 of 2017 added TELP authorization for local and intermediate school districts
- Since 2011 (through 2019), Michigan governments, schools, colleges, universities, hospitals, and other institutions have invested more than \$240M in performance contracts, with projected annual savings of \$16+M

Performance contracting in the UP

- A number of UP communities have used performance contracting and TELPs for energy projects:
 - Dickinson County financed a \$905,000 energy upgrade to its courthouse through a performance contract with Trane, Inc.
 - St. Ignace Area Schools worked with Johnson Controls on a \$1.125M project, inc:
 - replacement of most of the existing heating system,
 - adding a new energy management system, and
 - weatherproofing the building envelope
 - Project will produce \$33,808 in guaranteed annual savings and a 15 year payback.
 - Lake Superior State University also worked with Johnson Controls on a \$23.6M roofing, lighting, and HVAC upgrade
 - Projected to result in \$71M over the 30 year agreement
 - City of Marquette used a TELP agreement with Johnson Controls for a \$28M performance contract that will result in \$42M savings over 20 years. The project includes:
 - Traffic lighting upgrades at 22 intersections,
 - “Smart city” automated metering infrastructure,
 - 2500 LED streetlights and 125 LED bike path lights,
 - Cogeneration plant at the wastewater treatments plant,
 - Ice replacement project at Lakeview Arena.
 - Upgrades cut annual energy bill from \$1.1M to \$593k



Lakeview Arena in Marquette
Photo credit: uppermichigansource.com



Groundbreaking for the LSSU project
Photo credit: LSSU



Dickinson County Courthouse
Photo credit: Michmarkers.com

Other funding opportunities

- There are a number of other potential sources for energy financing
- The federal government has a number of energy programs, including the U.S. Department of Agriculture's Rural Energy for America Program (REAP), which provides funding for energy audits, provide renewable energy development assistance, make energy efficiency improvements, and install renewable energy systems
- EGLE Energy Services within EGLE also has a range of programs, including:
 - Michigan K-12 Public School HVAC Assistance Program
 - Agricultural & Rural Businesses Program
 - Charge Up Michigan Program
 - Community Energy Management Program
 - Small Manufacturers Energy Waste Reduction Program
- Michigan also created the Renewable Energy and Energy Efficiency Revolving Loan Fund program under PA 242 of 2009