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Michigan's Current Energy Plan:

Research-based, Comprehensive, Flexible, Certain, Accountable, Reliable and Affordable

BACKGROUND—Michigan's Current Energy Plan and 25x25

The 25% by 2025 (25x25) ballot initiative, if approved by voters in November 2012, would amend the state's constitution by requiring electricity providers to obtain by 2025 at least 25% of their electricity from renewable energy sources.

The 25x25 initiative represents a significant departure from the state's current energy reform plan enacted into law in 2008 as Public Acts 286 and 295. The process that led to Michigan's current plan—the in-depth research, system modeling, public vetting, implementation strategy, and thorough legislative review—resulted in a comprehensive set of interrelated reforms designed to spur investment in clean energy and other technologies, create jobs, maintain reliability, and provide affordable rates for consumers. In contrast to the 2008 plan, the 25x25 initiative has a singular focus on a subset of renewable energy technologies over energy efficiency and other forms of clean energy.

Information to date suggests that the 2008 plan is working. The plan, which is still being implemented, has the essential elements of a sound energy policy—that is, it is research-based, comprehensive, flexible, certain, accountable, reliable, and affordable.

RESEARCH-BASED

Several years of extensive research, analysis, technical modeling, and stakeholder input went into the development of the 2008 plan. Given that generation facilities last between 20 and 50 years and that policy and market uncertainties exist, and given the importance of electric reliability, economic growth, and environmental protection to the state, careful attention was given to a host of factors prior to the adoption of the 2008 plan. These include, but are not limited to:

- Forecasting of electric demand and supply in the short, medium and long term, as well as identification of gaps in meeting electricity needs
- Modeling and analysis of the costs, feasibility, and other characteristics of various options to maintain reliable and affordable supply of electricity, including renewable energy technologies, various types of conventional generation sources, programs to manage demand, as well as transmission upgrades
- Identification of strategies that maintain reliable and affordable supply of electricity
- Research and analysis of fuel prices, federal policies, market structures, ratemaking provisions, and other factors and contingencies that may influence the affordability and reliability of electricity in the state

During the course of this research, there was extensive stakeholder involvement and input on assumptions, methodologies, and results. See the Appendix for more information on the impetus, scope, process and findings of major studies and research that went into creating Michigan's current energy plan.

COMPREHENSIVE

The 2008 plan is comprehensive and is responsible for changing many features of Michigan's energy policy. The features were designed to fit together based on the best data, analysis, and input at that time:

- **Renewable Portfolio Standard (RPS)—**Requires all types of electricity providers, including alternative energy suppliers, municipal utilities, electric cooperatives, and investor-owned utilities, to obtain by 2015 at least 10% of their electric sales from renewable energy sources; as discussed below in the Flexible section, the definition of renewable energy sources is fairly flexible and includes biomass, solar and thermal energy, wind, hydroelectric, geothermal, municipal solid waste, landfill gas, and substitution of energy optimization credits and advanced cleaner energy credits for renewable energy credits. Existing renewable energy sources count toward the 10%.
- **Energy Optimization (EO)—**Requires municipally-owned, electric cooperatives, and investor-owned electric and natural gas utilities to achieve annual energy savings targets based on a percentage of retail sales for each utility. The targets ratchet up to 1% of sales for electric utilities in 2012 and thereafter and 0.75% for natural gas utilities.
- **10% cap on customer choice—**Limits the percentage of electricity sales that can be served by alternative energy suppliers to 10% of the utility's load.
- **De-skewing/cost of service rates—**Prior to the 2008 law, large users of electricity subsidized the rates of residential customers; the legislation phased in cost-based rates so that costs are allocated among types of customers (residential, commercial, and industrial) based on the actual costs to serve them.
- **Certificate of need and integrated resource planning—**Provides planning and upfront approval process to examine the need for new generation sources.
- **Construction work in progress—**Allows utilities to begin recovering financing costs for new generation plants during the construction period, prior to plants being placed in service.
- **De-coupling—**Allows for utility revenue and sales to be decoupled so that the utility's costs are recovered even as sales fluctuate due to energy efficiency and other factors (e.g., weather, economic conditions).
- **Interim rates, forecasted test year, and other reforms—**Intended to reduce regulatory delays, the 2008 law allows utility rate increases to go into effect 180 days after filing, subject to refunds (with interest) based on the MSPC's final decision; utilities are also permitted to use projections of future costs and revenues as the basis for rate case applications (i.e., forecasted test year instead of historical test year).
- **Merger review—**Gives the MPSC jurisdiction to pre-approve mergers and sales of public utilities.
- **Wind energy zones—**Creates wind zone board and provides for establishment of wind energy zones and expedited certification of transmission facilities necessary to deliver wind power from zones; requires the MPSC to provide report to legislature on effect of local setback and noise ordinances on wind power development.
- **Net metering—**Requires the MPSC to establish statewide net metering program to facilitate the connection of small-scale renewable energy systems; applies to electric utilities under MPSC rate regulation and alternative energy suppliers.

The scope of PA 295 under the 2008 plan is comprehensive, and includes, but is not limited to, the promotion and development of clean energy, renewable energy, and energy optimization through cost-effective standards that diversify energy resources, provide greater energy security, encourage private investment, and provide air quality and other environmental benefits. In addition, the customer choice provisions under PA 286 were expanded to maintain and encourage robust, reliable, and economic generation, distribution, and transmission systems and to ensure a reliable supply of electricity. Other changes under PA 286 were intended to create greater stability in the market and reform ratemaking processes to encourage infrastructure investments and affordable, cost-based rates.

FLEXIBLE

The 2008 plan's goal of 10% of electric sales from renewable energy by 2015 contains a definition of renewable energy that is flexible. It includes:

- Biomass (organic matter that is not derived from fossil fuels, that can be converted to usable fuels for the production of energy, and that replenishes over a human, not geological, timeframe including, but not limited to: agricultural crops and crop wastes; short-rotation energy crops; herbaceous plants; trees and wood only if derived from sustainably managed forests or procurement systems; pulp and paper products; pre-commercial wood thinning waste; brush or yard waste; wood wastes and residues from processing of wood products and paper; animal wastes; wastewater sludge or sewage; aquatic plants; food production and processing waste; and organic byproducts from the production of biofuels)
- Solar and solar thermal energy
- Wind energy
- Hydrokinetic energy of moving water, including waves, tidal, or currents; and water released through a dam[1]
- Geothermal energy (heat energy from the earth)
- Municipal solid waste (electricity produced from incineration of municipal solid waste)[2]
- Landfill gas produced by municipal solid waste (methane gases that are captured and burned to produce electricity)

Existing renewable energy resources count toward compliance with the standard. Renewable energy credits, representing one megawatt of electricity generated from a qualifying renewable energy system, are used to track compliance. Electricity providers are allowed to substitute energy optimization credits and advanced cleaner energy credits for renewable energy credits. Additional credits are provided for certain technologies and characteristics, such as solar power, electricity generated at peak times, and equipment installed by Michigan labor or manufactured in Michigan.

[1] Note that a hydroelectric pumped storage facility (e.g., Ludington pumped storage) is excluded from the definition of a renewable energy system in PA 295 of 2008, as well as new hydroelectric dams constructed after the effective date of the law (existing dams that are repaired, replaced, or upgraded to increase efficiency would count toward the renewable energy requirements).

[2] This applies only to the existing or increased output of a municipal solid waste incinerator that was in service before the effective date of the law.

The 2008 law includes detailed implementation provisions, including a requirement that utilities submit compliance plans to be approved by the MPSC and built-in "reconciliation" proceedings to review compliance and the associated costs and surcharge level.

CERTAIN

After numerous years of debate and analysis over the market structure, future infrastructure needs, and other planning considerations, the 2008 plan provides regulators, utilities, investors, and other stakeholders with much-needed certainty to move ahead with implementation and infrastructure development in Michigan. Considering the risks and uncertainties inherent in the industry (e.g., federal policies, commodity and wholesale market prices), this level of certainty on a comprehensive set of policy reforms is critical and is expected to benefit ratepayers over the long run.

ACCOUNTABLE

A basic assumption of the 2008 plan is that it would need to be evaluated over a reasonable period of time to determine if changes are necessary, with a target date of 2015. Recognizing the uncertainty associated with forecasts for power prices, new technologies, demand, and other factors, the 2008 law built in numerous opportunities to document and evaluate the results of the various provisions. These include:

- Electric and natural gas providers must file energy optimization plans.
- Electric providers must file a renewable energy plan with the MPSC in order to meet the standard—the plan is reviewed every two years by the MPSC.
- Within one year after the 2008 plan went into effect, the MPSC was required to report to the legislature on the potential impact of decoupling regulated rates on all customer classes.
- The MPSC must submit to the legislature and governor reports on electricity quality and efficiency, the possibility of separating generation and distribution, and the potential benefit of creating an electric generation purchasing pool.
- Each regulated utility must file a plan with the MPSC for using dispatchable customer-owned distributed generation within the context of its integrated planning resource process.

- Each electric provider must submit a comprehensive annual report to the MPSC related to complying with the renewable energy standard.
- Within the first year of the 2008 law going into effect and each year thereafter, the MPSC must submit a report to the legislature regarding the implementation of the renewable energy standard and the cost-effectiveness of the renewable energy and energy optimization standards.
- The MPSC is required to submit to the legislature a report on the effect that setback and noise limitations under local zoning or other ordinances may have on wind energy development in wind energy zones; the MPSC is also required to make an annual report on the wind energy zones to the governor and legislature.
- Within a specified time of the law taking effect, the MPSC was required to file with the legislature a report on the effort to reduce peak demand.

RELIABLE

A major impetus for the significant planning efforts that preceded the 2008 plan was the goal of securing the reliability of the state's electric system.[3] The MPSC and stakeholders spent two years developing and assessing scenarios involving a broad set of electricity resource options in order to ensure that reliability could be maintained (21st Century Energy Plan). The electricity resource needs over a 20-year period were identified for the state as a whole and its subregions based on applicable reliability standards. It was determined that, without action, reliability would be compromised with costly implications for the state. Thus, options for maintaining the reliability and adequacy of the state's electric system were examined in depth and compared based on affordability/cost, construction lead time, resource availability (e.g., for renewable energy technologies), environmental impact, and other factors. The analysis considered the impacts of various contingencies such as forecasts of electricity usage, plant retirements, fuel prices, greenhouse gas emission legislation, and transmission capability.

The plan includes policies that encourage the necessary electrical infrastructure development to maintain reliability over the long term, despite fluctuations in electricity demand, environmental regulations, wholesale power prices, and other factors. It is noteworthy that the 10% RPS, combined with the regional transmission planning framework, is not expected to compromise electric reliability even with increased intermittent resources, such as wind energy. The plan's ratemaking provisions and choice reforms also provide a more stable revenue source and customer base for utilities planning long-term infrastructure developments to meet the state's energy needs in a reliable and affordable manner.

AFFORDABLE

Because of the key role electricity plays in the Michigan economy, the 2008 plan is deliberately cautious about the level of its requirements for renewable energy, energy efficiency, and other mandates. And as noted above, various plans, studies, and reports are required to implement the law and to measure the impacts over a reasonable period of time with a focus on "cost effectiveness." The underlying premise is that "getting it wrong" would have a serious impact on ratepayers and the overall economy.

The 2008 plan is not only careful to limit the negative impact of its various provisions on ratepayers, but it also provides a detailed process outlining how rates are determined, when they are determined, what factors go into the determination, and who determines the rates. For example, the law contains considerable substantive and procedural detail to govern the calculation of the renewable energy surcharge and related rate provisions.

CONCLUSION

Michigan's current energy policy is a set of reforms designed to work together to achieve several goals stated in the enacting legislation, including the following: (1) the development of clean and renewable energy, as well as energy efficiency; (2) the diversification of energy resources in a way that is compatible with reliable supply; (3) economic growth and the encouragement of private investment; (4) environmental protection; (5) affordable rates for residential and business consumers, and (6) efficient and accountable regulation.

The renewable energy standard of 10%, along with other aspects of the plan, is monitored annually, with a comprehensive review scheduled in 2015 to prepare for any necessary changes or adjustments. This requirement for monitoring and review reflects the need to adjust energy policy to changing fuel costs, technology, federal policy, and other factors.

[3] See Appendix.

APPENDIX:
Summary of Research Supporting 2008 Energy Plan

Major research and planning studies supported the policies embodied in the state's 2008 energy plan. The basis for and scope of these studies, the process, and key findings of this research are summarized below.

REVIEW OF PA 141 OF 2000
(November 2006)

Basis: Spurred by failed attempts to restructure the electric industry in other states and the challenges facing Michigan, including barriers to infrastructure development resulting from unpredictable revenue sources, the Michigan Municipal Electric Association and Protect Michigan retained Public Sector Consultants to examine the results of Michigan's electric restructuring laws and its implementation.

Scope: Study examined successes and failures of the electric restructuring, lessons learned from implementation by the MPSC, and emerging and significant challenges facing Michigan's electric market over the next decade.

Process: The study contained policy analysis by subject matter experts and review of secondary data to examine the impacts of PA 141 of 2000.

Key Findings/Results: Study found that Michigan's electric restructuring laws were a flawed attempt at restructuring Michigan's electric market. It found that the law and its implementation created an unsustainable system for both producers and consumers and that artificial incentives combined with continued price distortions (large electricity users subsidizing residential customers) exacerbated the situation. The study determined that residential rates were lowered as a result of PA 141 but that the lower rates did not come about as a result of competitive markets but rather a price cap, which expired in 2005. This study, combined with subsequent analysis on electric restructuring and infrastructure development, influenced reforms to PA 141 of 2000.

Reference: *Electricity Restructuring in Michigan: The Effects to Date of Public Act 141 and Potential Future Challenges* (Public Sector Consultants, November 2006).

CAPACITY NEED FORUM
(October 2004–January 2006)

Basis: Following recent summers with a tightly constrained power supply market and the August 2003 blackout, among other factors, the Michigan Public Service Commission (MPSC) initiated an investigation in late 2004 to examine future electric generation capacity requirements and, specifically, "the need for additional generation capacity, transmission upgrades, and other supply- and demand-side resources to supplement current Michigan-based generating facilities and out-of-state power sources" (Oct. 14, 2004 Order, U-14231, p. 2). The MPSC stated it was particularly concerned about the inventory of Michigan baseload generating capability given its age and the volatility of natural gas prices. Other factors cited by the MPSC included the availability of transmission capacity, the effect of retail open access, and changes to wholesale market structure in the Midwest. The MPSC recognized that "a reliable and abundant supply of reasonably priced electric power is essential to the economy of the state and to the welfare of its citizens" (Oct. 14, 2004 Order, U-14231, p. 2).

Scope: The MPSC charged staff, utilities, and other interested parties with "…working in unison to accumulate, assess, and evaluate data concerning the construction of new generation capacity and to recommend policies tailored to facilitate the development of new baseload generation facilities in this state" (Oct. 14, 2004 Order, U-14231, p. 6). The resulting Capacity Need Forum (CNF) was created as a collaborative, industry-wide process to assess the projected need for electrical generating capacity in Michigan over a 20-year period. The CNF encompassed a major modeling effort with cooperation among and input from the MPSC, utilities, transmission companies, the Midwest Independent Transmission System Operator, Inc. (MISO), and other parties.

The scope of the CNF included:

- Forecasting the short-, medium-, and long-term demand for power.
- Analysis of the ability to meet projected demands using existing resources.
- Analysis of potential resource and technology options, including central station baseload, renewable energy, energy efficiency, transmission expansion, and out-of-state power purchases. Various considerations were explored, including timing, technical feasibility, capital and operating costs, financing and considerations, risks, and the synergistic effects of various options.

Process: Led by MPSC staff, the CNF included in-depth technical analysis and modeling, along with stakeholder meetings and input from 160 individuals representing 60 organizations and five workgroups during 2005. The MPSC staff report was issued in January 2006 to present the findings of this investigation.

Key Findings/Results: The CNF presented a comprehensive assessment of Michigan's electric generating capacity needs. The CNF report found that Michigan will need additional electric supply to meet its needs beginning in 2009, and recognized institutional barriers that may impede the development of reliable, safe, clean, and affordable electric supplies.

Reference: Capacity Need Forum documents available online: *www.dleg.state.mi.us/mpsc/electric/capacity/cnf/*

21ST CENTURY ELECTRIC ENERGY PLAN
(April 2006–January 2007)

Basis: Citing the CNF findings and other factors, including recent price spikes in energy markets, Governor Granholm issued Executive Directive 2006-2, calling for a comprehensive plan for meeting the state's electric power needs. The directive asked for recommendations to ensure the state can both reliably meet its growing electric needs *and* keep electric costs competitive.

Scope: Six-month planning and research process that culminated in a comprehensive plan for meeting short- and long-term electricity needs in Michigan, including both the Upper and Lower Peninsulas, in "an optimum manner that assures a reliable, safe, clean, and affordable supply" of energy for Michigan's future (Executive Directive 2006-2, p. 2). It also contained a directive to protect and foster the state's economy, natural resources, and the environment while providing affordable rates for all customers (Executive Directive 2006-2, p. 2). The plan was designed to ensure the use and application of energy efficiency and renewable and alternative energy technologies was consistent with the goal of assuring reliable, safe, clean, and affordable energy (Executive Directive 2006-2, p. 2).

The technical research and analysis included updates to the forecasts and other assumptions of the CNF as part of the plan's modeling of various supply and demand options. Reliability standards, affordability/cost, environmental impacts, and other factors were considered in order to prioritize options and examine trade-offs. There was technical and stakeholder review of scenarios, assumptions, and outputs through the assistance of four workgroups focused on specific topics (capacity needs, energy efficiency, renewable energy, and alternative technologies).

Process: Under the direction of MPSC Chairman Peter Lark with support from MPSC staff, the process included technical analysis and modeling, stakeholder engagement, and additional research and policy analysis. Stakeholder engagement included over 360 individuals representing more than 150 organizations, over 40 meetings, and 4,000 pages of documents filed with or prepared by the MPSC. Stakeholders included representatives from customer groups, business groups, jurisdictional and non-jurisdictional utilities, independent transmission companies, environmental groups, energy efficiency advocates, independent power developers, and alternative and renewable

energy providers. MPSC staff with expertise in the fields of law, policy, economics, and engineering researched and examined various options, including market prices, forecasts, and modeling results, and conducted a survey of ratemaking and other provisions related to new generation facilities that occurred in other states.

Key Findings/Results: The plan's policy recommendations formed the basis for the comprehensive energy reform law enacted by the Michigan Legislature in late 2008. Based on the forecasted growth in electricity usage, the plan found the need for at least one new baseload power plant by 2015 in addition to the recommended investments in renewable energy and energy efficiency.

Reference: Executive Directive 2006-2 and Michigan's 21st Century Electric Energy Plan (January 31, 2007). Available online: *www.michigan.gov/mpsc*.

MARKET STRUCTURES AND THE 21st CENTURY ENERGY PLAN
(September 2007)

Basis: In 2007, Public Sector Consultants (PSC) was tasked by the Michigan Municipal Electric Association and Protect Michigan to examine whether Michigan's market structure as set forth under PA 141 of 2000 accommodates the goals and initiatives of the 21st Century Electric Energy Plan. PSC was also charged with analyzing whether Michigan would be better served by making the plan's proposed changes to PA 141 or returning to a more traditional regulatory model.

Scope: Study involved a policy analysis of the recommendations in the 21st Century Electric Energy Plan and assessed the feasibility of its implementation in light of Michigan's hybrid model for regulating the electric industry (i.e., allowing customers to choose electricity providers but continuing regulation and the obligation to serve for incumbent utilities). It also examined barriers to power plant construction and models for electricity regulation and market structures around the country. The study assessed policy options, including the status quo, as well as modifications to and the full repeal of PA 141.

Process: PSC conducted review using secondary research, interviews of key experts in the electric industry, and policy analysis by subject matter experts.

Key Findings/Results: The study called for a return to the regulated utility model in order to stabilize Michigan's electric market and diversify its electric supply portfolio. It also found that the recommendations in the 21st Century Energy Plan were not an *à la carte* set of options but were designed to be implemented in concert. This study, along with prior work, influenced the legislative debate on policy options.

Reference: *Market Structures and the 21st Century Energy Plan* (Public Sector Consultants, September 2007). Available online: *www.pscinc.com*

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