

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter of the application of	)	
DTE ELECTRIC COMPANY and	)	
DTE GAS COMPANY for approval of an	)	Case No. U-21653
Expedited Pilot Review Workplan.	)	
_____	)	

In the matter, on the Commission’s own motion,	)	
to commence a collaborative to consider issues	)	
related to implementation of effective new	)	Case No. U-20898
technologies and business models.	)	
_____	)	

At the August 22, 2024 meeting of the Michigan Public Service Commission in Lansing,
Michigan.

PRESENT: Hon. Daniel C. Scripps, Chair
Hon. Katherine L. Peretick, Commissioner
Hon. Alessandra R. Carreon, Commissioner

ORDER

On October 29, 2020, the Commission issued an order in Case No. U-20898 (October 29 order) launching the New Technologies and Business Models workgroup as part of the MI Power Grid effort. The objective of the workgroup was to prepare for “opportunities and challenges associated with the commercialization of new technologies and business models such as electric vehicles, electric storage, and other technologies still under development, both at customer and utility scale.” October 29 order, p. 2 (quoting the October 17, 2019 order in Case No. U-20645, p. 7). Among other things, the October 29 order directed the Commission Staff (Staff) to submit a

report in the Case No. U-20898 docket detailing the efforts of the workgroup and providing recommendations for the Commission's consideration by September 1, 2021 (later extended to December 1, 2021). *See*, July 27, 2021 order in Case No. U-20898.

As a result, the Staff filed its report in Case No. U-20898 on December 1, 2021 (Staff's report) which recommended implementation of an expedited pilot review process to: (1) explore the applicability of new technologies and business models in Michigan, (2) allow for testing and refinement of new models through the use of pilots, and (3) provide support for the rapid transformation of the energy system required to meet Michigan's energy goals. *See*, Staff's report (Case No. U-20898, filing #U-20898-0003, p. 112). In the report, the Staff cited programs from other states (in particular, Vermont and Hawaii) that have adopted expedited review processes for pilots and recommended that the Commission adopt a similar expedited pilot review process to promote innovation in energy delivery. *Id.* After considering the comments filed by interested persons in response to the Staff's report and this proposal, the Commission adopted a voluntary expedited pilot review process in the February 23, 2023 order in Case No. U-20898 (February 23 order).

Per the February 23 order, the first step in the expedited pilot review process is submission of a pilot workplan by each utility choosing to make use of the expedited process, in a new docket opened specifically for consideration of the utility's workplan and later pilot proposals. The Commission directed that the workplan should "attempt to address up to five areas of exploration" and utilities should encourage robust engagement of interested persons in the workplan development process. February 23 order, p. 14. Further, the Commission stated that "[i]nformation regarding the proposed workplan and how [interested persons] may become involved must be made publicly available to interested [persons], via the utility's webpage or in

another accessible manner.” *Id.*, pp. 14-15. And, the workplan must “include metrics that provide a measurement of the current state within each identified workplan area.” *Id.*, p. 15.

On June 14, 2024, DTE Electric Company (DTE Electric) and DTE Gas Company (DTE Gas) (collectively, DTE) filed an application in Case No. U-21653 requesting *ex parte* approval of its Expedited Pilot Review Workplan (workplan) pursuant to the February 23 order.

In the application, DTE states that the workplan was developed in compliance with the February 23 order, and is rooted in a robust engagement process for interested persons, which consisted of directed conversations, electronic feedback opportunities, and public open houses. Application, p. 2. DTE further states that the workplan details five broad focus areas, including potential pilots related to: (1) grid reliability and resiliency, (2) distributed energy resource (DER) integration, (3) decarbonization, (4) beneficial electrification, and (5) equity, access, and affordability. DTE contends that each focus area identifies problem statements and metrics to measure the current state in each identified focus area at a high level. DTE indicates that it reserves the right to include additional metrics or modified metrics as appropriate to the design of specific pilot proposals in future filings.

On August 7, 2024, the Michigan Energy Innovation Business Council, the Institute for Energy Innovation, and Advanced Energy United (collectively MEIU) filed objections to DTE’s application. Specifically, MEIU raises concerns with the workplan’s Pilot Problem Statements, noting that many are not new problems or issues that contemplate innovative solutions. Further, MEIU argues that many of the Pilot Problem Statements:

present administrative and/or operational issues that may need to be worked through as part of DER [distributed energy resource] integration, but each appears to require rather ordinary and incremental system design updates that should be carried out in the ordinary course of business rather than through a specific pilot process.

MEIU's objections, pp. 2-3. MEIU further indicates that "DTE's Workplan contains no mechanism for receiving third-party ideas when it develops particular expedited pilots under the Workplan," which MEIU states is contrary to the Commission's directives in the February 23 order. MEIU's objections, p. 4. Similarly, MEIU notes that it provided feedback on DTE's proposed workplan including providing written comments, which MEIU alleges "appear to have been completely ignored in the Company's Application." *Id.*, p. 5. MEIU further claims that *ex parte* approval of DTE's proposed workplan would be contrary to the Commission's goals as set forth in the February 23 order and that MEIU's "rights to examine and contest certain pilots would be directly affected by the scope of DTE's workplan." MEIU's objections, p. 5. In conclusion, MEIU avers that DTE's proposed workplan should not be approved as proposed and that, rather, the Commission should provide an opportunity for interested persons to submit comments from those:

whose participation in the development of DTE's Workplan is reflected in Appendix 1 to Attachment A of DTE's Application to ensure that the Commission is made aware of where there is broad agreement and where there is not, which can inform the Commission's determination of whether modifications ought to be made before the Workplan should be approved.

Id., p. 6.

On August 9, 2024, DTE filed a revised workplan reflecting only DTE Electric, thereby removing DTE Gas from the workplan. In addition, DTE Electric filed responses to MEIU's objections on August 16, 2024.

Discussion

The Commission first clarifies the February 23 order. Specifically, the approved amounts contained in Exhibit A, p. 1, attached to the February 23 order pertain to electric utility pilots only (the attachment refers to "DTE Electric Company"). *See*, February 23 order, Exhibit A. Thus, the

issue pending before the Commission in Case No. U-21653 concerns DTE Electric only, and DTE appropriately filed a revised workplan reflecting only DTE Electric.¹

Notwithstanding this, the Commission finds that approval of DTE Electric's revised workplan is premature at this time. The Commission reiterates the goal of conducting robust engagement from interested persons in the development of workplans. *See*, February 23 order, p. 14. While DTE indicates that interested persons were given an opportunity to engage in the development of the workplan, the record does not demonstrate that the workplan reflects such engagement. Thus, the Commission finds that interested persons should be provided an opportunity to file comments regarding DTE Electric's proposed workplan.

The Commission will accept comments regarding DTE Electric's proposed workplan until 5:00 p.m. (Eastern time) on September 12, 2024. Written comments should be mailed to: Executive Secretary, Michigan Public Service Commission, P.O. Box 30221, Lansing, Michigan 48909. Comments submitted in electronic format may be filed via the Commission's E-Dockets website, or for those persons without an E-Dockets account, via e-mail to LARA-MPSC-Edockets@michigan.gov. Any person requiring assistance prior to filing comments may contact the Staff at (517) 284-8090. All comments should be paginated and reference Case No. U-21653. All filed comments will become public information available on the Commission's website and subject to disclosure.

¹ The Commission notes, however, that while the February 23 order pertains to electric utility pilots only, utilities are not precluded from submitting proposed workplans or pilots that may involve their gas business units for consideration by the Commission.

THEREFORE, IT IS ORDERED that any interested persons may file comments regarding DTE Electric Company's proposed workplan, attached to this order as Exhibit A, in this docket. Comments shall be filed no later than 5:00 p.m. (Eastern time) on September 12, 2024.

The Commission reserves jurisdiction and may issue further orders as necessary.

MICHIGAN PUBLIC SERVICE COMMISSION

Daniel C. Scripps, Chair

Katherine L. Peretick, Commissioner

Alessandra R. Carreon, Commissioner

By its action of August 22, 2024.

Lisa Felice, Executive Secretary

DTE Electric's Expedited Pilot Process Workplan

Overview

The United States is undergoing a transformation within the energy sector. For the first time in several decades, utilities are transforming generation fleets, rebuilding infrastructure, and adopting new technologies, programs, and processes to address a changing energy system. As this transformation moves forward, there is a need to support rapid learning about energy innovation, new technologies, and business processes. In Order U-20898, the Michigan Public Service Commission (MPSC or Commission) describes a voluntary expedited pilot process that is intended to facilitate robust stakeholder participation with utility offered pilots. The first step in this expedited process is the development of a workplan to identify up to five areas to be explored in the near-term to ensure proposed pilots under this workplan are pertinent to current and future needs and focus areas. This workplan will not identify specific pilots but will serve to provide a roadmap for the areas pilots may explore. As described in Order U-20898¹, each workplan must:

1. Detail up to five areas of focus and the desired goals, improvements, or learnings for each area;
2. Provide metrics measuring the current state in each identified workplan area; and
3. Be developed with robust documented stakeholder engagement and consultation. Information regarding the stakeholders included in the workplan development, the stakeholder process, and stakeholder consultation for the submitted workplan must be included in the workplan submission.

DTE Electric (DTE Electric or the Company) aims to focus its expedited pilot proposals on work that has the potential to create innovative programs / solutions.² Given the nature of these pilots, not all projects pursued through this process will be brought to full-scale implementation. The Company will evaluate the pilot performance, in consideration with other factors, and ultimately determine its value to customers. Additionally, some technologies or business practices may not be well-suited to the expedited review process. In those instances, the Company reserves the right to pursue other approaches to improve service to its customers and advance energy innovation. Lastly, while the problem statements included in the workplan serve to identify the focus of potential future pilots, not all problem statements will result in a pilot.

DTE Electric is pleased to submit its workplan and looks forward to working with the Commission and other stakeholders to ensure that this process is a successful mechanism to review and approve meaningful pilots for its customers.

Development and Stakeholder Engagement

The development of the workplan was rooted in a robust stakeholder engagement process, which consisted of directed conversations, electronic feedback opportunities, and public open houses.

¹ The expedited pilot process and workplan requirements are described in detail in Exhibit A of Order U-20898 ([link](#)).

² Pilots that have their own separate approval processes (i.e., Energy Waste Reduction), are considered outside the scope of the expedited pilot process (MPSC Order U-20898, October 12, 2023 (p. 58))

Directed Conversations

The process of engaging stakeholders began in February 2024. The Company hosted nine directed conversations that included representatives from 14 different stakeholder groups. In these meetings, the Company asked a set of standardized questions to better understand each organization's thoughts on areas of focus and specific pilot ideas. The standardized questions are:

1. What do you believe should be the objectives/areas of focus for pilots?
2. What problem statements/challenges do you feel could be addressed through a pilot?
3. Do you have any specific pilot ideas that you would like to share?
4. What other comments would you like to share?

Feedback from the nine directed conversations was collected and presented at the Company's first open house on March 21, 2024.

Electronic Feedback Opportunities

The Company created an E-form questionnaire that included the same standardized questions noted above and distributed the link at the first open house. The intent of this E-form was to offer any interested party the opportunity to submit feedback directly to DTE Electric in a format consistent with feedback sought in directed discussions and in public engagements. The Company received nine E-form questionnaire responses.

DTE Electric also established a dedicated email address where interested parties who had questions specific to this expedited pilot process could directly contact the Company. The email address is dte_expedited_pilots@dteenergy.com.

Feedback submitted via email included a mix of general commentary, requests for open house materials, and specific pilot ideas. All feedback was reviewed and specific ideas that fell within the scope of the expedited process were incorporated in the workplan.

Public Open Houses

DTE Electric hosted two public open houses, the first on March 21, 2024, and the second on May 9, 2024.

The Company leveraged several channels to raise awareness of the open houses, including:

- Notifying participants in the directed conversations
- Notifying participants who participated in prior DTE Electric open house events (Integrated Resource Plan, Distribution Grid Plan, etc.)
- Disseminating information through the MPSC listserv
- Sending a notification to community representatives, elected officials, and special interest groups (1,197 in total)

The first open house on March 21, 2024, had 75 individuals in attendance. The Company shared an overview of the expedited pilot process, discussed benchmarking from other utility pilot workplans, shared potential topic areas based on feedback received during directed conversations and concluded with a question and answer (Q&A) session. Following the open house, DTE Electric distributed the presentation material to participants who were on the original invitation list and/or requested a copy via email after the open house.

A second open house was held on May 9, 2024, with 42 people in attendance. The Company discussed how the feedback received to date was organized into five focus areas with associated problem statements and example metrics. Attendees were given the opportunity to provide feedback during the meeting or through the expedited process email account. DTE Electric has appreciated the engagement from stakeholders throughout the development of the workplan and many of the problem statements were recommended directly by stakeholders.

Additional details on stakeholder engagement are presented in the appendices.

- Appendix 1: A complete list of stakeholders who attended 1:1 meetings with the Company
- Appendix 2: A list of stakeholder meetings/interactions, including the date, description, and attendees
- Appendix 3: Presentation materials from March 21, 2024 and May 9, 2024 public open houses

Workplan Layout

The workplan is organized by the following five focus areas: 1) Grid Reliability and Resiliency, 2) Distributed Energy Resources (DERs) Integration, 3) Decarbonization, 4) Beneficial Electrification, and 5) Equity, Access, and Affordability. When problem statements could be categorized under more than one focus area, an effort was made to place them under the most applicable area. In addition, Equity, Access, and Affordability are themes that will be considered across problem statements and pilot proposals. Within each focus area, subsections were created to provide a high-level background and to present the problem statements and metrics. A description of each subsection is provided below:

- **Background:** This is a high-level narrative on the focus area to explain its importance and to set the context for the problem statements that follow.
- **Problem Statements:** These statements provide an overview of the issue to be addressed, followed by an example of how pilots could possibly address the statement. Lastly, it is anticipated that multiple pilots could address a problem statement in different ways. The examples provided are not meant to limit the scope of future potential pilots.
- **Metrics:** Metrics are meant to measure the current state in each identified workplan area at a high level. It is anticipated that metrics for specific pilots may be different than those provided in this workplan, although they will address similar areas of performance. Specific pilots will also include a Cost Benefit Analysis in accordance with MPSC requirements.

Focus Area #1: Grid Reliability and Resiliency

1) Background

This is a transformational time for Michigan's electrical infrastructure. Nearly a century ago, DTE Electric developed a grid that met customers' electricity needs when there was far less demand. Since then, the grid has expanded into developing suburbs and rural communities, although the fundamental drivers of grid changes, such as load growth, have remained relatively static. That is no longer the case.

Continued investment in the grid is critical to meet the changing needs of customers, including adoption of electric vehicles (EVs), distributed generation (DG) and the evolving ways in which customers are interacting with the grid. In addition, increasingly severe weather and aging infrastructure present challenges to reliability.

To meet customer needs into the future and to continue improving reliability, DTE Electric must strengthen, modernize, and transform the grid, while also considering new and novel approaches. For example, the use of non-wires alternatives and microgrids are increasingly seen as having potential to improve the reliability of the distribution system. Overall, the Company expects future pilots will be driven by three essential goals:

- Increasing reliability and resilience during extreme weather to ensure that the power stays on for customers during ice, snow, heat, and high wind events.
- Accelerating response to customer outages, driven by a smart grid that supports faster power restorations, identification and de-energization of downed wires and accurate customer restoration estimates.
- Increasing grid capacity that accommodates the changing current and future energy needs of all customers.

2) Pilot Problem Statements

1. Aging infrastructure and worsening weather patterns have diminished the performance of DTE Electric's distribution grid, resulting in more frequent outages for our customers. One option to reduce outages going forward is to pursue underground power lines. Pilots could focus on exploring and comparing the benefits of replacing overhead service lines with either new overhead or new underground services.
2. An important element in accelerating restoration times is the prompt identification of outages. Pilots could focus on technologies to improve company and/or customer notification of outages for faster restoration.
3. Certain areas of the grid may experience increased load under certain conditions. During these situations, the grid may become constrained to support additional load. This situation further limits operability during emergent conditions where load cannot be shifted to adjacent circuits to eliminate or reduce outages. Furthermore, more variable generation and load can lead to power quality and other system issues. Non-Wires Alternatives (NWAs), such as battery storage, could be piloted to defer or eliminate distribution investments to address these concerns, for example by peak shaving, providing voltage support, improving power quality, reducing outage duration.
4. There has been increasing interest in microgrids and behind-the-meter (BTM) solar and storage resources (utility and customer-owned), and their ability to improve system reliability and resiliency. A microgrid is a group of interconnected loads and Distributed Energy Resources (DERs) within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected or island mode. Pilots could focus on executing BTM resources and NWA projects that will expand future DER use (including aggregation) and test the use of adaptive networked microgrids. These pilots could also include a focus on critical community infrastructure.
5. Maintaining sufficient tree clearance from electrical equipment and lines is critical to ensuring safe and reliable power for customers. Historically, a substantial number of outages are attributable to trees. Pilots could include programs and tools to expand tree trimming effectiveness such as preventative tree trimming for customer service drop lines to reduce single service outages that result from tree interferences.

3) Metrics:

DTE Electric plans to track the metrics set forth below to measure the incremental progress in the area of grid reliability and resiliency. The Company expects that metrics for each specific pilot may vary from the example metrics provided but that they will be similar in the areas that they are measuring.

Metric	Units
System or circuit level All-weather SAIDI and/or SAIDI excluding major event days (MEDs)	Minutes
Restoration time	Minutes
Number of single or total customers who experience an outage in pilot	# of accounts
Incidence of >48-hour restoration time	# of outage incidents

Focus Area #2: Distributed Energy Resources (DER) Integration

1) Background

In Federal Energy Regulatory Commission (FERC) Order 2222 (Order 2222), the FERC found that the definition of DERs should be broad and inclusive, encompassing a variety of resources located on the distribution system, subsystems, or behind customer meters. These resources may include electric storage resources, intermittent generation, distributed generation, demand response, energy efficiency, thermal storage, electric vehicles, and their supply equipment. As the penetration of DERs grows and regulators increase opportunities for aggregation, utilities face a growing challenge in managing DERs of owners who have not developed their systems with the coordination and control needs of the distribution system in mind. To help bridge this gap, utilities will likely need to consider software tools such as Distributed Energy Resource Management Systems (DERMS) to provide visibility into the dynamic impacts of DERs on the system. Increasing visibility and controllability of DERs will also allow the utility or third-party aggregators to maximize the ability of these resources to provide grid support and contribute to capacity planning. Further analysis will likely also be needed to ensure that controls are in place to ensure aggregator participation is tracked and appropriately compensated for services offered to the retail and wholesale markets.

2) Pilot Problem Statements

1. There is interest in understanding how BTM customer-owned residential solar + storage or stand-alone storage systems providing grid services will function in terms of grid and reliability management. Pilots could focus on issues such as methods to interface and manage BTM DERs in conjunction with the rest of the system or better understand the benefits that DERs may provide.
2. As a result of Order 2222, the possibilities for DER aggregation have been expanded. Therefore, there is a greater need to understand the impact of larger scale resource aggregation on reliability and cybersecurity, and the platforms that enable the process. An example of a pilot could be the aggregation of existing demand response (DR) and DER assets into a virtual power plant (VPP). A VPP describes the aggregation of a specific collection of DERs to provide unique generation and distribution benefits.
3. Smart inverters are an emerging technology that can help integrate solar energy and other DERs into the electric grid. They can go beyond the typical inverter function to

provide grid support functions, such as voltage regulation, frequency support, and ride-through capabilities. Pilots could focus on understanding and/or demonstrating distributed smart inverter management for grid support in the field.

4. As the penetration of DERs increases, it will be important to have systems/platforms to support their integration on the grid with the Transmission Operator and MISO including communication between parties. DERs on the distribution system that desire to participate in the market through Order 2222 will also require pricing nodes that can be mapped (individually or aggregated) for use in the RTO's market dispatch models. Pilot programs can help test the capabilities and effectiveness of these systems/platforms prior to full scale implementation.
5. Current processes for validating and tracking DER customer information, including tariff eligibility, billing and communicating secure information, are based on primarily manual processes and will be inadequate at higher DER penetration levels. In addition, MISO compliance with FERC Order 2222 will require coordination between DTE Electric and the MPSC while performing reliability and eligibility reviews. Pilots could focus on coordinating such reviews to achieve maximum process efficiency as well as automated solutions.
6. MISO compliance with FERC Order 2222 will enable DTE Electric customers to participate directly in the wholesale market. For BTM resources, such participation may require upgrades to the Company's billing system to enable DTE Electric customers at all rates to be able to participate in the wholesale market and continue receiving accurate retail bills. A pilot could assess the impacts to the billing system from such BTM DERs, including issues such as establishing bi-directional meters, accounting for dual retail and wholesale participation, and customer bill statement template updates and billing system calculation engine upgrades.
7. At higher volumes of DERs, distribution utility Distributed Energy Resource Management Systems (DERMS) will be essential to ensure grid reliability. Pilots could explore the implementation of DERMS to address issues such as improving visibility of DERs for active management of the distribution system, integrating smart inverter data, MISO market results and dispatch instructions, conducting next day and real-time distribution system reliability analysis, and supporting day-ahead plan and load forecast and issue manual reliability actions (stops, generation limits, dispatch overrides).
8. MISO possesses minimal knowledge of DTE Electric's distribution system and its state in real-time operations, potentially creating risks to the distribution system via dispatch of DERs. A Distribution System Operator (DSO) model, where the utility acts as an aggregator, has been identified as an option to minimize these risks and increase overall efficiencies. Pilots could examine the DSO model and its potential to maximize DER value for DTE Electric customers and optimize the distribution system.
9. Maintaining an efficient interconnection process will become increasingly important as demand for DERs grows. Pilots could identify ways to streamline/improve interconnection processes on the distribution and sub-transmission systems, including automated systems, and standards-based installer training.

3) Metrics:

DTE Electric plans to track the metrics set forth below to measure the incremental progress in the area of DER Integration. The Company expects that metrics for each specific pilot may

vary from the example metrics provided but that they will be similar in the areas that they are measuring.

Metric	Units
Capacity	MW
Total load reduced or shifted off-peak	kW/kWh
Increased process efficiency	Number of steps or handoffs, automation capabilities

Focus Area #3: Decarbonization

1) Background

Climate change is one of the defining issues of our era. The State of Michigan has a goal of reaching 100% carbon neutrality by 2050³. DTE Electric's generation plan proposes to achieve a 65% reduction in carbon in 2028, 85% in 2032, 90% by 2040, and net zero by 2050⁴.

The Company's carbon reduction goals will help support Michigan's economy-wide goals. Piloting will be valuable to help determine which technologies could further accelerate decarbonization and effective methods for influencing customer behavior to shift load.

2) Pilot Problem Statements

1. As traditional forms of generation are retired, it will be important to consider all technologies that might help fulfill the need for reliable energy. This includes emerging technologies that might not be commercially available. Pilots could focus on evaluating the performance, cost and siting of emerging technologies including long-duration and multi-day storage, hydrogen, carbon capture and sequestration (CCS), small modular reactors (SMRs), etc.
2. As the Company continues to decarbonize its resources, it is expected that DR will be increasingly utilized as a means to reduce or shift load at crucial times. However, there can be uncertainty as to customer interest and overall feasibility of new programs. Pilots could focus on testing new DR approaches such as price-based programs, managed charging of electric vehicles, BTM storage, and other customer-owned devices.
3. Time of Use (TOU) rates involve setting the electricity price to more closely reflect the cost of generation as a way to shift customer usage away from peak demand hours. While DTE Electric has already implemented TOU rates, application-specific uses for TOU rates could be explored in pilots. For example, this could include understanding how TOU rates can support renewable energy and storage development, customer bill impacts, and peak shaving through use scheduling.
4. Making use of thermal energy has the potential to increase efficiencies in homes/buildings and helping customers meet their sustainability goals. Pilots could focus on geothermal and capturing waste heat for district heating.

³ Executive Directive 2020 – 10, September 23, 2020

⁴ "Michigan Public Service Commission approves DTE's landmark clean energy plan", July 26, 2023 ([link](#))

5. Voluntary programs that support customers' sustainability goals and access to clean energy resources can be effective methods to achieve decarbonization. Pilots could focus on developing new and novel clean energy programs.

3) Metrics:

DTE Electric plans to track the metrics set forth below to measure the incremental progress in the area of decarbonization. The Company expects that metrics for each specific pilot may vary from the example metrics provided, but that they will be similar in the areas that they are measuring.

Metric	Units
Technology pilot cost	\$/MW
Cost per CO ₂ e reduction	\$/Tonne
Estimate of total reductions that this technology could achieve at scale	Tonnes
Total load reduced or shifted off-peak	kW/kWh

Focus Area #4: Beneficial Electrification

1) Background

Beneficial electrification is the process of converting an energy-consuming device, system, or sector from non-electric sources of energy to electricity⁴. It is an emerging economy-wide decarbonization strategy that is gaining momentum and beginning to impact the electric power industry.

According to the Department of Energy⁵, for electrification to be beneficial, the application of electricity to end-uses must satisfy at least one of the following conditions without adversely affecting the others:

- Saves consumers money over time
- Benefits the environment and reduces greenhouse gas emissions
- Improves product quality or consumer quality of life
- Fosters a more robust or resilient grid.

Pilots offered should be consistent with these criteria.

2) Pilot Problem Statements

1. The cost of propane and other delivered fuels can be volatile and put a strain on customer affordability. The electrification of HVAC and other systems, currently using propane or other delivered fuels, is one possible way to reduce this burden. Pilots could focus on examining the customer interest, feasibility, and cost efficiency of this approach.
2. Continued investment in the grid is critical to meet the changing needs of customers, including adoption of EVs. Some areas of the system may need upgrades to handle the increased interaction from EVs or other beneficial electrification. Pilots could focus on near-term approaches to enable greater EV penetration or other beneficial electrification on the grid while minimizing incremental grid investment.

⁵ Department of Energy – "What is Electrification" ([link](#))

3. While the cost of EVs has decreased, there is an opportunity to reduce the cost barriers and increase customer affordability. Incentives, such as rebates, or novel payment programs could be provided for residential or commercial/business customers in order to increase EV adoption. For example, pilots could be developed for Multi-Unit Dwellings (MUDs) in disadvantaged communities to reduce barriers for EV adoption.
4. As the penetration of EVs increases, it will be important to test and understand new or novel approaches to integrate EVs, utilize their potential benefits and increase their accessibility. For example, this could include integration technologies to enable Vehicle-to-Building and Vehicle-to-Grid power exchanges, wireless charging, active load management, infrastructure build out, engaging overburdened communities, testing second-life applications for used EV batteries, etc.

3) Metrics:

DTE Electric plans to track the metrics set forth below to measure the incremental progress in the area of beneficial electrification. The Company expects that metrics for each specific pilot may vary from the example metrics provided, but that they will be similar in the areas that they are measuring.

Metric	Units
Customer Opt-Out Rates	% or # of times customer selects to not participate in a pilot event
Estimate of total emissions reductions that this technology could achieve at scale	Tonnes
Total load reduced or shifted off-peak	kW/kWh
Evaluation of customer interest, customer participation, customer experience and/or program effectiveness	Varies by pilot

Focus Area #5: Equity, Access and Affordability

1) Background

The Company recognizes that there are barriers that may prevent customers from accessing or adopting programs and services. Such barriers may include but are not limited to: financial ability to purchase or finance clean technology resources, lack of awareness of programs and services and their impact, language accessibility, status as a renter or homeowner, and type of domestic residence. While the Company makes efforts to understand and address these barriers, pilots could aim to reduce or eliminate certain challenges.

In addition, pilots could target generation and distribution investments in overburdened communities to help address environmental justice concerns, improve access to clean energy resources and reduce the frequency and duration of outages.

2) Pilot Problem Statements

1. There is interest in understanding how to increase access to BTM (customer-owned or utility owned) residential solar + storage or stand-alone storage systems to low-to-moderate income (LMI) customers. Pilots could test or evaluate ways to accomplish this goal, including exploring new programs.

2. Solar projects with community ownership have been identified as a means to expand access to renewable energy to non-homeowners and LMI customers. Pilots could focus on exploring different implementation models.
3. While DTE Electric continues to upgrade its distribution system, there is an opportunity to overlay areas of the distribution system that are identified for upgrades in overburdened communities. Pilots could explore deploying NWAs or other new technologies to improve reliability.
4. DTE Electric is committed to reducing customer restoration times and reducing outages, especially in overburdened communities. Pilots could focus on programs such as portable power stations to support customers during outages.
5. With the passage of the Bipartisan Infrastructure Law and Inflation Reduction Act, there is a variety of financial resources available that can be leveraged by DTE Electric's customers. A pilot could develop a program or resource that helps coordinate and maximize the use of utility, local, state, and federal incentives for the installation of household energy waste reduction, solar, and storage, particularly for income-qualified or disabled/medically-vulnerable customers.
6. Voluntary programs can support customers' sustainability and affordability goals as well as access to clean energy resources. Pilots could focus on developing new and novel programs and methods to increase program awareness and adoption, with a focus on income-qualified or other vulnerable customers.
7. As technological advancements emerge, the utility should continually look for ways to improve service to its customers. In particular, artificial intelligence and data analytics offer possibilities to improve communication and better understand customer segments and their needs.

3) Metrics:

DTE Electric plans to track the metrics set forth below to measure the incremental progress in the area of equity, access and affordability. The Company expects that metrics for each specific pilot may vary from the example metrics provided, but that they will be similar in the areas that they are measuring.

Metric	Units
Community mapping score for localities involved in the pilot (E.g., MI EJ Screen, Climate and Economic Justice Screening Tool)	0-100 score
Quantifiable or Qualitative Benefits for income-qualified customer pilot participants	Varies by pilot
% pilot participants that are LMI customers vs % LMI customers systemwide	%
Overall positivity of customer experience through pilot experience	Varies by pilot

Conclusion

DTE Electric is pleased to submit its workplan and looks forward to working with the Commission and other stakeholders to ensure that this process is a successful mechanism to review and approve meaningful pilots for its customers.

As mentioned previously, not all projects pursued through this process will be brought to full-scale implementation. Nonetheless, the Company expects to offer pilots to address the focus area identified in this workplan and to further the energy transformation taking place in the State of Michigan.

Appendix 1: Stakeholder List for 1:1 Meetings with the Company

Organization	Name
MPSC	Paul Proudfoot Jesse Harlow Julie Baldwin Sarah Mulkoff Karen Gould Naomi Simpson Nick Revere Jessica Duell
Environmental Law and Policy Center (ELPC)	Daniel Abrams
Vote Solar	Boratha Tan Will Kenworthy
Union of Concerned Scientists (UCS)	Lee Shaver
Great Lakes Renewable Energy Association (GLREA)	Rob Rafson John Richter
Michigan Environmental Council (MEC)	Charlotte Jameson
Sierra Club	Elena Saxonhouse
Natural Resources Defense Council (NRDC)	Derrell Slaughter
Michigan Energy Innovation Business Council (MEIBC)	Laura Sherman
Attorney General	Joel King Michael Moody
City of Ann Arbor	Missy Stults
Ecology Center	Charles Griffith
Citizens Utility Board (CUB)	Keith Cooley Amy Bandyk
5 Lakes Energy	Matt Bandyk

Appendix 2: Stakeholder Meeting Log

Date	Meeting Description	Attendee(s)	Organization
2/22/2024	Video call to gain feedback on areas of focus and pilot ideas	Daniel Abrams Boratha Tan Lee Shaver	ELPC, Vote Solar, UCS
2/22/2024	Video call to gain feedback on areas of focus and pilot ideas	Rob Rafson John Richter	GLREA
2/23/2024	Video call to gain feedback on areas of focus and pilot ideas	Charlotte Jameson Elena Saxonhouse Derrell Slaughter	MEC, Sierra Club, NRDC
2/28/2024	Video call to gain feedback on areas of focus and pilot ideas	Laura Sherman	MEIBC
2/29/2024	Video call to gain feedback on areas of focus and pilot ideas	Paul Proudfoot Jesse Harlow Julie Baldwin Sarah Mulkoff Karen Gould Naomi Simpson Nick Revere Jessica Duell	Staff
2/29/2024	Video call to gain feedback on areas of focus and pilot ideas	Joel King Michael Moody	AG
3/1/2024	Video call to gain feedback on areas of focus and pilot ideas	Missy Stults	City of Ann Arbor
3/4/2024	Video call to gain feedback on areas of focus and pilot ideas	Will Kenworthy Charles Griffith	Vote Solar, Ecology Center
3/21/2024	Public Open House #1 Video call to review expedited pilot process, share feedback received to date and announce next steps	75 attendees	
3/25/2024	Video call to gain feedback on areas of focus and pilot ideas	Keith Cooley Amy Bandyk Matt Bandyk	CUB, 5 Lakes Energy
5/9/2024	Public Open House #2 Video call to discuss progress on the workplan	42 attendees	

Appendix 3: Presentation materials from March 21, 2024 and May 9, 2024 public open houses

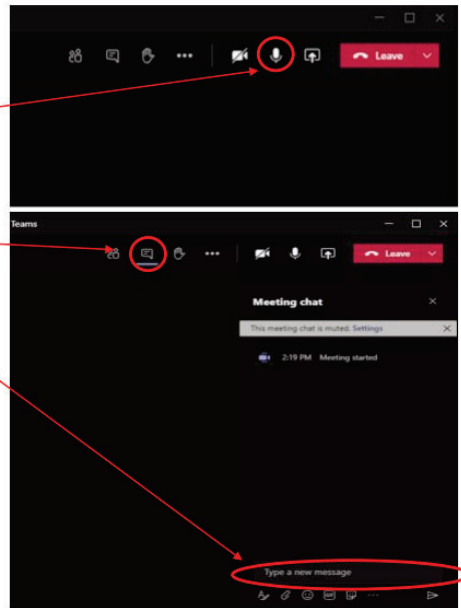


Logistics

- This meeting is being recorded for internal purposes
- The DTE overview presentation will be followed by audience questions and details on how to provide comments on the expedited pilot process; comments and recommendations are welcome as well
- Please feel free to submit questions through the chat at any time; we will answer them during the Q&A session
- During the Q&A/comment session, feel free to use the "raise your hand" function at the top of your screen
 - If you feel comfortable doing so, please turn on your camera when you are speaking
- Additional opportunities for stakeholder input will be available in the second open house tentatively scheduled for May 9th
- Feedback can also be provided through an e-form ([Link](#)). DTE will be taking e-form comments through April 5th
- General questions and/or comments can be submitted at any time to dte_expedited_pilots@dteenergy.com

Quick introduction to Teams

- Check that you are 'muted' upon entering the meeting to minimize background noise
- Please submit questions through the chat function
- Ensure chat window is open
- Type questions in message box
- Questions will be answered at the end of the presentation



DTE

3

Agenda and Upcoming Dates

Open House #1: March 21, 2024

Today's agenda

- Share background on expedited pilot process
- Share benchmarking of other workplans
- Share potential topic areas based on feedback so far
- Solicit additional input and discussion on topic areas
- Questions

Save the Date:

Upcoming Open House Date

May 9th, 1-2 PM

DTE

4

Introductions



David Binkley
**Senior Strategist,
Strategy and Special
Projects**
DTE



Nate Bennett
**Manager, Clean
Energy**
DTE



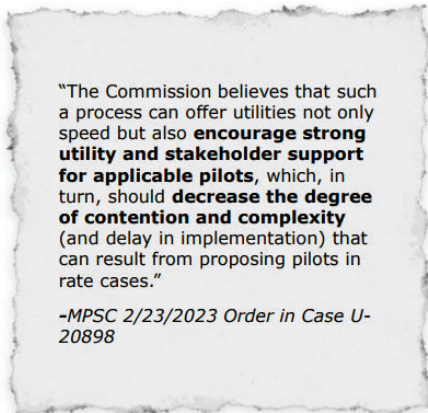
Joyce Leslie
**Director, Business
Planning &
Development**
DTE

Agenda

- **Background on the Expedited Pilot Process**
- Workplan Benchmarks and Inputs Received to Date
- Stakeholder Discussion

On February 23, 2023, the Michigan Public Service Commission (MPSC) issued an Order in Case U-20898 to create the Expedited Pilot Review Process

Overall Objective



Key Process Attributes



Pilot Workplan: Utility develops workplan with stakeholders to lay out up to five areas of exploration through piloting



Cost Cap: Annual costs for pilots approved through this process are not to exceed a total of \$10M (excluding funding from other sources)



Pilot Proposals: Pilots proposed through this framework must fall into one or more areas identified in the workplan and should include a robust stakeholder process prior to filing (pilots for EWR excluded from expedited process scope)



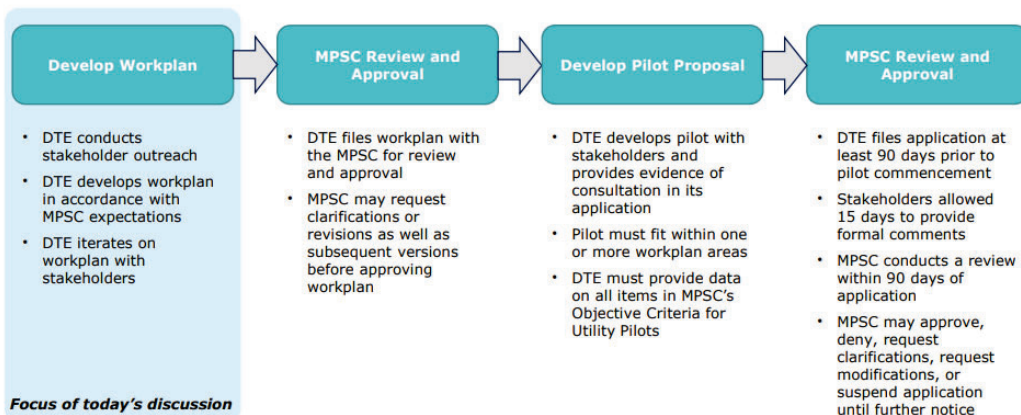
Expedited Review: The MPSC will conduct a review within 90 days of a utility filing a pilot proposal

DTE

7

DTE's first step in implementing this order is to develop a workplan that will set the stage for future pilots to be reviewed through this process

Key Steps in the Expedited Pilot Process



DTE

8

The Order establishing the expedited pilot review describes what should be in scope for the workplan

Included in Workplan

• Areas for Exploration:

- Workplan should address up to five areas of exploration, including desired goals, improvements, or learnings for each area
- Workplan will serve as a roadmap for pilots proposed through the expedited process
- Workplan must include metrics that provide a measurement of the current state within each identified workplan focus area

• Stakeholder Engagement:

- Workplan must be developed with robust documented stakeholder engagement and consultation
- Information on how stakeholders may become involved must be made publicly available to interested stakeholders
- Stakeholder engagement must be documented in the workplan submission

Excluded from Workplan

• Pilot Specifics:

- Workplan will not delve into pilot specifics
- Pilot specifics will be addressed through individual pilot applications

• Cost Recovery:

- Cost recovery will not be guaranteed as part of the expedited process
- Pilot costs shown to be reasonable and prudent in a rate case will be recovered

DTE

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Our timeline for collaborating on an expedited pilot workplan envisions filing with the MPSC in the second quarter of 2024

Tentative Timeline for Expedited Pilot Workplan Development

Activity	Jan	Feb	Mar	Apr	May	Jun
1:1 Stakeholder Listening Sessions						
Stakeholder Workshop #1			3/21/24			
Stakeholder Workshop #2				5/9/2024		
File Workplan for MPSC Review (tentative)						June

Today

Open House #1 Objectives:

- Share background on expedited pilot process
- Share benchmarking of other workplans
- Share potential topic areas based on feedback to date
- Solicit additional input and discussion from stakeholders on topic areas

Open House #2 Objectives:

- Provide an update on workplan development

DTE

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Agenda

- Background on the Expedited Pilot Process

• Workplan Benchmarks and Inputs Received to Date

- Stakeholder Discussion

Hawaii provides one example of the types of focus areas for consideration through the expedited pilot process



Decarbonization	Customer Resources & Services	Beneficial Electrification	
1. Grid management with more intermittent and DG resources 2. Better stakeholder engagement approaches to serve social equity and the public interest 3. CCS solutions 4. Hydrogen technologies	1. Reducing cost/timing for DER interconnection 2. Increase customer access to more cost - effective PV 3. Develop grid 2.0 workforce 4. Data collection to operationalize and value customer DERs 5. Use cases utility can achieve operating DERs	1. Identify communication protocol to assess and value V2X resources 2. Test managed charging to reduce distribution upgrades 3. Address barriers for lower income customers to adopt energy saving devices 4. Electrify other segments (off road diesel, etc.) 5. Develop EV infrastructure workforce	
Data Sharing Access & Analytics	Tech Innovation and Cybersecurity	Resilience and Innovative Reliability	Equity, Access, Affordability
1. Improve renewable energy production forecasting to inform grid operations 2. Verify compliance of DER systems with Company requirements 3. Develop data visualization tools to ensure DER tariff and interconnection requirements 4. Data sharing tools that address privacy/cybersecurity requirements	1. Sandbox to test cyber protocols and cyber performance of new tech prior to adoption 2. Shared telecommunication paths for grid operations, modernization and broadband access equity 3. Use of AI/machine learning to acquire and retain knowledge 4. Use of VR to reduce training costs	1. Technologies and business models aimed at achieving resilience and reliability for long-tail events 2. Testing microgrid control schemes to develop tariffs or other future offerings 3. Exploration of microgrids to offer reliability services while providing resilience to critical infrastructure	1. Assess the adoption of new technology solutions by LMI customers with reduced financial burden 2. Develop better communication avenues to reach LMI customers with more targeted offers

Consumers Energy recently filed a workplan that provides another example



Focus Areas	Representative Problem Statements	Success Metrics
Equity, Access, and Accessibility (8 problem statements)	- Explore ways for customers lacking upfront cash or credit to access energy offerings - Explore ways to make EV chargers or home electrification available to renters and MUDs - Assess differences in customer preferences to enable more effective communication for all communities	- MI EJ Score for pilot localities - Customer outreach conversion rate - Benefits for LMI and non-participating customers % LMI pilot participation - Positivity of customer pilot experience
Grid Reliability and Resiliency (8 problem statements)	- Evaluate performance of cost of longer duration storage - Explore reliability offerings for customers with high resiliency requirements (e.g., data centers, hospitals, homes with medical equipment) - Evaluate different methods of image and video capture for understanding the current state of the electric grid	- Circuit- and system-level SAIDI - Number of pilot customers experiencing an outage - Incidence of restoration time > 24 hours - CEMI-6
Distributed Energy Resource (DER) Integration (15 problem statements)	- Explore more efficient ways to assess impacts of new DERs towards processing interconnection requests more quickly - Explore models to share battery benefits (e.g., peak shaving, resiliency) across multiple participating accounts - Develop and test operational and cyber options for a centralized and/or portfolio-wide capability to manage many different types of DERs and use cases	- Use case performance as a % of technical max (load reduction, etc.) - Cost/kW to participating/non-participating customers - BCA for each pilot - Uptime - Load reduced or shifted off-peak - Customer opt-out rates
Decarbonization (5 problem statements)	- Pilot technologies to help understand hourly carbon footprint and identify operational changes to support a partial or complete 24/7 renewables offering - Develop data capabilities to unlock new strategies for decarbonization	- Cost per CO₂ equivalent reduction - Pilot total CO₂ equivalent reduction - Best guess of total reductions achievable at scale - Type of baseline energy the pilot offsets

DTE

Source: [Consumers Energy Expedited Pilot Review Workplan](#)

13

Our initial discussions with stakeholders have elicited a starting point in terms of areas of exploration and ideas (1st page of 3)

Areas of Exploration	Stakeholder Feedback
Grid Reliability and Resiliency	- Preventative tree trimming programs to improve reliability (e.g., trimming customer service drop lines) - Exploring the benefits of replacing overhead service lines with new underground services - Distribution improvements to handle more variable generation and load - Improved customer notification of outages - Improved company notification of outages for faster restoration - Behind-the-meter (BTM) residential solar + storage or stand-alone storage to provide grid services and other benefits - Non-Wires Alternatives (NWAs) to defer or eliminate distribution investments - Putting storage at overloaded substations to provide voltage support, help power quality and reduce outages - Demand response + controllable water heaters - Microgrids (utility and customer-owned) - Implement a multi-user community microgrid by aggregating existing DERs in or adjacent to critical municipal or community infrastructure - Implement a single-facility community resilience center (CRC) microgrid - Convert critical facilities with existing fossil fuel-based backup power systems to microgrids

DTE

Note: Some examples could be categorized in multiple areas of exploration

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Our initial discussions with stakeholders have elicited a starting point in terms of areas of exploration and ideas (2nd page of 3)

Areas of Exploration

Stakeholder Feedback

Distributed Energy Resources (DERs)

- Bring your own Behind-the-meter (BTM) customer-owned residential solar + storage or stand-alone storage system program
- Aggregation of existing demand response (DR) and distributed energy resources (DER) assets into a Virtual Power Plant (VPP)
- Distributed smart inverter management for grid support
- Utilization of related systems/platforms to support network integration with ITC and MISO and pricing node identification
- Programs or processes to improve internal tracking of DER customer information, including tariff eligibility and other terms
- Methods to improve communication with individual DERs that have been aggregated through a third-party
- Programs or processes to establish secure communication platform between DTE and DER aggregators and owners
- Identify ways to streamline/improve the interconnection process

Electrification

- Electrification of HVAC systems currently using propane or other fuels
- Electric Vehicles (EV): Vehicle to Grid (V2G) and Vehicle to Home (V2H); managed charging
- Hosting capacity maps for electric vehicle charging to Grid applications
- Rebates for bi-directional EV chargers



Note: Some examples could be categorized in multiple areas of exploration

15

Our initial discussions with stakeholders have elicited a starting point in terms of areas of exploration and ideas (3rd page of 3)

Areas of Exploration

Stakeholder Feedback

Equity and Access

- Assess the adoption of new technology solutions by low-middle income (LMI) customers with reduced financial burden
- BTM residential storage systems
- Expanding EV charging infrastructure in cities, including disadvantaged communities and the City of Detroit
- Explore ways to make EV chargers or home electrification available to renters and multi-unit dwellings (MUDs)
- Community solar with community ownership
- Overlay areas of the distribution system that need upgrades with vulnerable communities and deploy storage as a NWA
- Develop portable power station program

Decarbonization

- Evaluate the performance, cost and siting of long-duration storage
- Study fleet vehicles for use for short power opportunities
- Thermal energy to decarbonize the gas system including geothermal and capturing waste heat for district heating
- Price-based demand response programs
- Application-specific Time of Use (TOU) rates
 - Increase the differential between on and off-peak pricing to encourage peak shaving
 - Understand how TOU rates can support renewable energy and storage development, customer bill impacts, and peak shaving through use scheduling



Note: Some examples could be categorized in multiple areas of exploration

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Agenda

- Background on the Expedited Pilot Process
- Workplan Benchmarks and Inputs Received to Date

- **Stakeholder Discussion**

We invite further discussion on the types of areas we should consider exploring through the expedited pilot process

- What do you believe should be the objectives/areas of focus for pilots?
- What problem statements/challenges do you feel could be addressed through a pilot?
- Do you have any specific pilot ideas that you would like to share?
- What other comments would you like to share?

Thank you!

If you have additional thoughts or feedback on our workplan, please don't hesitate to reach out to DTE at dte_expedited_pilots@dteenergy.com

If you would like to provide specific comments, please use the following e-form ([Link](#)).



Expedited Pilot Workplan Development

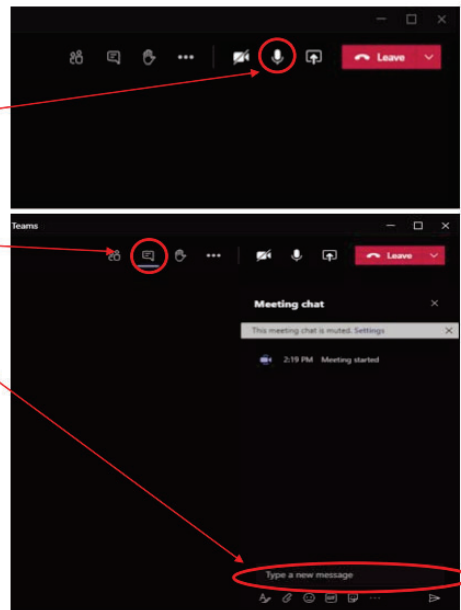
May 9, 2024

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- Questions will be answered at the end of the presentation



DTE

3

Agenda

Open House #2: May 9, 2024

Today's agenda

- Review background on expedited pilot process
- Review focus areas, problem statements and metrics
- Stakeholder discussion

DTE

4

Introductions



David Binkley
Senior Strategist,
Strategy and Special
Projects
DTE



Nate Bennett
Manager, Clean
Energy
DTE



Joyce Leslie
Director, Regulatory
Affairs
DTE



5

Agenda

- **Background on the Expedited Pilot Process**

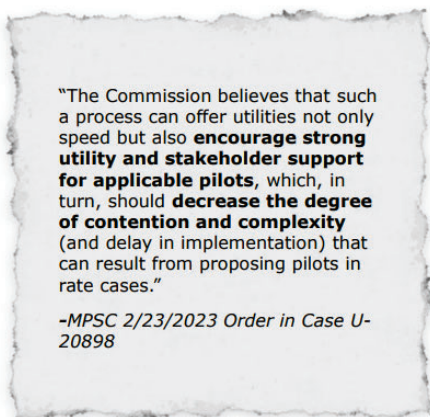
- Review focus areas, problem statements and metrics
- Stakeholder discussion



6

On February 23, 2023, the Michigan Public Service Commission (MPSC) issued an Order in Case U-20898 to create the Expedited Pilot Review Process

Overall Objective



Key Process Attributes



Pilot Workplan: Utility develops workplan with stakeholders to lay out up to five areas of exploration through piloting



Cost Cap: Annual costs for pilots approved through this process are not to exceed a total of \$10M (excluding funding from other sources)



Pilot Proposals: Pilots proposed through this framework must fall into one or more areas identified in the workplan and should include a robust stakeholder process prior to filing (pilots for Energy Waste Reduction, or energy efficiency, are excluded from expedited process scope)



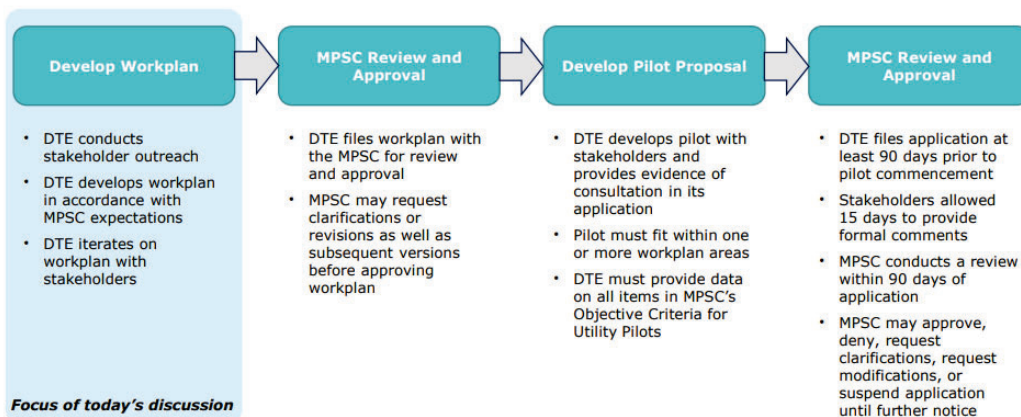
Expedited Review: The MPSC will conduct a review within 90 days of a utility filing a pilot proposal

DTE

7

DTE's first step in implementing this order is to develop a workplan that will set the stage for future pilots to be reviewed through this process

Key Steps in the Expedited Pilot Process



DTE

8

The Order establishing the expedited pilot review describes what should be in scope for the workplan

Included in Workplan

- **Areas for Exploration:**

- Workplan should address up to five areas of exploration, including desired goals, improvements, or learnings for each area
- Workplan will serve as a roadmap for pilots proposed through the expedited process
- Workplan must include metrics that provide a measurement of the current state within each identified workplan focus area

- **Stakeholder Engagement:**

- Workplan must be developed with robust documented stakeholder engagement and consultation
- Information on how stakeholders may become involved must be made publicly available to interested stakeholders
- Stakeholder engagement must be documented in the workplan submission

Excluded from Workplan

- **Pilot Specifics:**

- Workplan will not delve into pilot specifics
- Pilot specifics will be addressed through individual pilot applications
- Pilots that have their own separate approval processes (i.e., EWR)¹

- **Cost Recovery:**

- Cost recovery will not be guaranteed as part of the expedited process
- Pilot costs shown to be reasonable and prudent in a rate case will be recovered

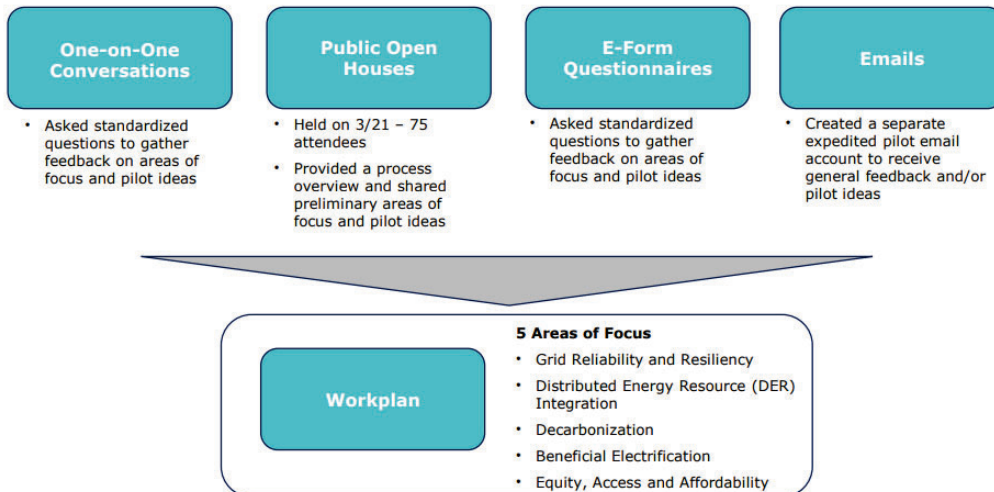
Agenda

- Background on the Expedited Pilot Process

- **Review focus areas, problem statements and metrics**

- Stakeholder discussion

In developing the workplan, we considered feedback from conversations with stakeholders, E-forms, emails, and feedback provided at the first open house



The workplan combines feedback into five areas of focus with associated problem statements and metrics

DTE

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The current workplan contains five areas of focus with associated problem statements and example metrics (1st page of 5)

Areas of Focus	Problem Statements										
Grid Reliability and Resiliency	- One option to reduce outages going forward is to pursue underground power lines. Pilots could focus on exploring the benefits of replacing overhead service lines with either new overhead or new underground services to reduce outage frequency. - An important element in speeding up restoration times is the identification of outages. Pilots could focus on technologies or processes to improve customer and/or company notification of outages for faster restoration. - Currently, approximately one-third of the Company's distribution substations have loading constraints, either within the substation or on its circuits. Pilots could focus on utilizing Non-Wires Alternatives (NWAs) to defer or eliminate distribution investments or identify distribution improvements to address more variable generation and load. - There has been increasing interest in microgrids and behind-the-meter (BTM) solar and storage resources (utility and customer-owned), and their ability to improve system reliability and resiliency. Pilots could focus on executing BTM resources and NWA projects that will expand future distributed energy resource (DER) use (including aggregation) and test the use of adaptive networked microgrids. These pilots could also include a focus on critical community infrastructure. - Maintaining sufficient tree clearance from electrical equipment and lines is critical to ensuring safe and reliable power for customers. Pilots could include programs and tools to improve tree trimming effectiveness such as preventative tree trimming for customer service drop lines to reduce single service outages that result from storms.										
	<table> <tr> <th>Metrics</th><th>Units</th></tr> <tr> <td>System or circuit level All-weather SAIDI or SAIDI excluding major event days (MEDs)</td><td>Minutes</td></tr> <tr> <td>Restoration time</td><td>Minutes</td></tr> <tr> <td>Number of single or total customers who experience an outage in pilot</td><td># of accounts</td></tr> <tr> <td>Incidence of >48-hour restoration time</td><td># of outage incidents</td></tr> </table>	Metrics	Units	System or circuit level All-weather SAIDI or SAIDI excluding major event days (MEDs)	Minutes	Restoration time	Minutes	Number of single or total customers who experience an outage in pilot	# of accounts	Incidence of >48-hour restoration time	# of outage incidents
Metrics	Units										
System or circuit level All-weather SAIDI or SAIDI excluding major event days (MEDs)	Minutes										
Restoration time	Minutes										
Number of single or total customers who experience an outage in pilot	# of accounts										
Incidence of >48-hour restoration time	# of outage incidents										

DTE

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The current workplan contains five areas of focus with associated problem statements and example metrics (2nd page of 5)

Areas of Focus	Problem Statements								
Distributed Energy Resources (DERs)	- There is interest in understanding how BTM customer-owned residential solar + storage or stand-alone storage systems providing grid services will function in terms of grid and reliability management. Pilots could focus on issues such as methods to interface and manage BTM DERs in conjunction with the rest of the system or better understanding the potential benefits that DERs may provide. - As a result of Order 2222, the possibilities for DER aggregation have been expanded. An example of a pilot could be the aggregation of existing demand response (DR) and DER assets into a virtual power plant (VPP)¹. - Smart inverters are an emerging technology that can help integrate solar energy and other DERs into the electric grid. Pilots could focus on understanding and/or demonstrating distributed smart inverter management for grid support in the field. - As the penetration of DERs increases, it will be important to have systems/platforms to support their integration on the grid with the Transmission Operator and Regional Transmission Operator including communication between parties. Pilot programs can help test the capabilities and effectiveness of these systems/platforms prior to full scale implementation. - Maintaining an efficient interconnection process will become increasingly important as demand for DERs grows. Pilots could identify ways to streamline/improve interconnection processes on the distribution and sub-transmission systems, including automated systems, and standards-based installer training.								
	<table> <tr> <th>Metrics</th><th>Units</th></tr> <tr> <td>Capacity</td><td>MW</td></tr> <tr> <td>Total load reduced or shifted off-peak</td><td>kW/kWh</td></tr> <tr> <td>Increased process efficiency</td><td>Number of steps or handoffs</td></tr> </table>	Metrics	Units	Capacity	MW	Total load reduced or shifted off-peak	kW/kWh	Increased process efficiency	Number of steps or handoffs
Metrics	Units								
Capacity	MW								
Total load reduced or shifted off-peak	kW/kWh								
Increased process efficiency	Number of steps or handoffs								
DTE	1. A VPP describes the aggregation of a specific collection of DERs to provide unique generation and distribution benefits. 13								

The current workplan contains five areas of focus with associated problem statements and example metrics (3rd page of 5)

Areas of Focus	Problem Statements										
Decarbonization	- As traditional forms of generation are retired, it will be important to consider all technologies that might help fulfill the need for reliable energy. Pilots could focus on evaluating the performance, cost and siting of new and emerging technologies, including long-duration and multi-day storage, hydrogen, carbon capture and sequestration (CCS), small modular reactors (SMRs), etc. - As we continue to decarbonize our resources, it is expected that demand response (DR) will be increasingly utilized as a means to reduce or shift load at crucial times. Pilots could focus on testing new DR approaches such as price-based programs, managed charging of electric vehicles, behind the meter (BTM) storage, and other customer-owned devices. - Time of Use (TOU) rates involve setting the electricity price to more closely reflect the cost of generation as a way to shift customer usage away from peak demand hours. For example, pilots could include understanding how application-specific TOU rates can support renewable energy and storage development, customer bill impacts, and peak shaving through use scheduling. - Making use of thermal energy has the potential to increase efficiencies in homes/buildings and help customers meet their sustainability goals. Pilots could focus on decarbonizing the gas system, including geothermal and capturing waste heat for district heating. - Voluntary programs that support customers' sustainability goals and access to clean energy resources can be effective methods to achieve decarbonization. Pilots could focus on developing new and novel clean energy programs.										
	<table> <tr> <th>Metrics</th><th>Units</th></tr> <tr> <td>Technology pilot cost</td><td>\$/MW</td></tr> <tr> <td>Cost per CO₂e reduction</td><td>\$/Tonne</td></tr> <tr> <td>Estimate of total reductions that this technology could achieve at scale</td><td>Tonnes</td></tr> <tr> <td>Total load reduced or shifted off-peak</td><td>kW/kWh</td></tr> </table>	Metrics	Units	Technology pilot cost	\$/MW	Cost per CO ₂ e reduction	\$/Tonne	Estimate of total reductions that this technology could achieve at scale	Tonnes	Total load reduced or shifted off-peak	kW/kWh
Metrics	Units										
Technology pilot cost	\$/MW										
Cost per CO ₂ e reduction	\$/Tonne										
Estimate of total reductions that this technology could achieve at scale	Tonnes										
Total load reduced or shifted off-peak	kW/kWh										
DTE	14										

The current workplan contains five areas of focus with associated problem statements and example metrics (4th page of 5)

Areas of Focus	Problem Statements								
Beneficial Electrification	- The cost of propane and other delivered fuels can be volatile and put a strain on customer affordability. The electrification of HVAC and other systems that use these fuel types is one possible way to reduce this burden. Pilots could focus on examining the customer interest, feasibility and cost efficiency of this approach. - Continued investment in the grid is critical to meet the changing needs of customers, including adoption of electric vehicles (EVs). Pilots could focus on near-term approaches to enable greater EV penetration. For example, hosting capacity maps could be developed for EV charging to grid applications. - As the penetration of EVs increases, it will be important to test and understand new or innovative approaches to integrate EVs, utilize their potential benefits and increase their accessibility. For example, this could include integration technologies to enable Vehicle-to-Building and Vehicle-to-Grid power exchanges, wireless charging, active load management, infrastructure build out, engaging overburdened communities, testing second-life applications for used EV batteries, etc. - While the cost of EVs has decreased, there is an opportunity to reduce cost barriers and increase customer affordability. Incentives, such as rebates, or novel payment programs could be provided for residential or commercial/business customers in order to increase EV adoption. For example, pilots could involve offering turnkey trusted home EV charger installation services (including bidirectional chargers) and rebates.								
	<table> <tr> <th>Metrics</th><th>Units</th></tr> <tr> <td>Customer Opt-Out Rates</td><td>% or # of times customer selects to not participate in a pilot event</td></tr> <tr> <td>Total load reduced or shifted off-peak</td><td>kW/kWh</td></tr> <tr> <td>Evaluation of customer interest, customer participation, customer experience and/or program effectiveness</td><td>Varies by pilot</td></tr> </table>	Metrics	Units	Customer Opt-Out Rates	% or # of times customer selects to not participate in a pilot event	Total load reduced or shifted off-peak	kW/kWh	Evaluation of customer interest, customer participation, customer experience and/or program effectiveness	Varies by pilot
Metrics	Units								
Customer Opt-Out Rates	% or # of times customer selects to not participate in a pilot event								
Total load reduced or shifted off-peak	kW/kWh								
Evaluation of customer interest, customer participation, customer experience and/or program effectiveness	Varies by pilot								

DTE

15

The current workplan contains five areas of focus with associated problem statements and example metrics (5th page of 5)

Areas of Focus	Problem Statements										
Equity, Access and Affordability	- There is interest in understanding how to increase access to BTM customer-owned residential solar + storage or stand-alone storage systems to low-to-moderate income (LMI) customers. Pilots could test or evaluate ways to accomplish this goal, including exploring new programs. - Solar projects with community ownership have been identified as a means to expand access to renewable energy to non-homeowners and LMI customers. Pilots could focus on exploring different implementation models. - While DTE continues to upgrade its distribution system, there is an opportunity to overlay areas of the distribution system that are identified for upgrades in overburdened communities. Pilots could explore deploying NWAs or other new technologies to improve reliability. - DTE is committed to reducing customer restoration times and reducing outages, especially in overburdened communities. Pilots could focus on programs such as portable power stations to support customers during outages. - As technological advancements emerge, the Company continually looks for ways to improve service to its customers. In particular, pilots focused on artificial intelligence and data analytics offer possibilities to improve communication and better understand customer segments and their needs.										
	<table> <tr> <th>Metrics</th><th>Units</th></tr> <tr> <td>Community mapping score for localities involved in the pilot (e.g., MI EJ Screen, Climate and Economic Justice Screening Tool)</td><td>0-100 score</td></tr> <tr> <td>Quantifiable or Qualitative Benefits for income-qualified customer pilot participants</td><td>Varies by pilot</td></tr> <tr> <td>% pilot participants that are LMI customers vs % LMI customers systemwide</td><td>%</td></tr> <tr> <td>Overall positivity of customer experience through pilot experience</td><td>Varies by pilot</td></tr> </table>	Metrics	Units	Community mapping score for localities involved in the pilot (e.g., MI EJ Screen, Climate and Economic Justice Screening Tool)	0-100 score	Quantifiable or Qualitative Benefits for income-qualified customer pilot participants	Varies by pilot	% pilot participants that are LMI customers vs % LMI customers systemwide	%	Overall positivity of customer experience through pilot experience	Varies by pilot
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% pilot participants that are LMI customers vs % LMI customers systemwide	%										
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DTE

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Agenda

- Background on the Expedited Pilot Process
- Review focus areas, problem statements and metrics

- **Stakeholder discussion**

Thank you!

If you have additional thoughts or feedback on our workplan, please don't hesitate to reach out to DTE at dte_expedited_pilots@dteenergy.com

PROOF OF SERVICE

STATE OF MICHIGAN)

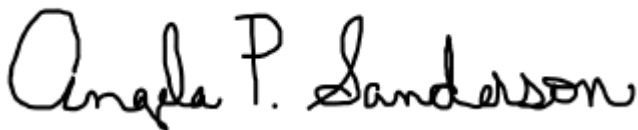
Case No. U-21653

County of Ingham)

Brianna Brown being duly sworn, deposes and says that on August 22, 2024 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).


Brianna Brown

Subscribed and sworn to before me
this 22nd day of August 2024.



Angela P. Sanderson
Notary Public, Shiawassee County, Michigan
As acting in Eaton County
My Commission Expires: May 21, 2030

Service List for Case: U-21653

Name	On Behalf Of	Email Address
DTE Electric Company	DTE Electric Company	mpscfilings_account@dteenergy.com
DTE Gas Company	DTE Gas Company	mpscfilings_account@dteenergy.com
Paula Johnson-Bacon	DTE Electric Company	paula.bacon@dteenergy.com