TROPOSPHERE LEGAL

February 10, 2025

Ms. Lisa Felice
Michigan Public Service Commission
7109 W. Saginaw Hwy.
Lansing, MI 48909

Via E-File

RE: MPSC Case No. U-21260

Dear Ms. Felice:

Attached please find the enclosed documents for filing:

- Public Direct Testimony and Exhibits of Devi Glick on behalf of Michigan Environmental Council (Exhibits MEC-1 through MEC-17) and;
- Proof of Service.

Please note that there is a Confidential and Public version of Ms. Glick's testimony; the confidential version will only be served on those with a Nondisclosure Certificate on file in this case. Thank you for your assistance in this matter. If you have any questions, please feel free to contact me.

Sincerely,

Digitally signed by Christopher M. Bzdok
Date: 2025.02.11 12:41:15 -05'00'

Chistopher Bzdok
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CC: Parties to Case No. U-21260

STATE OF MICHIGAN

MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of **DTE ELECTRIC COMPANY** for reconciliation of its power supply cost recovery Case No. U-21260 plan (Case No. U-21259) for the 12-month period ending December 31, 2023.	Case No. U-21260

PUBLIC VERSION

DIRECT TESTIMONY OF

DEVI GLICK

ON BEHALF OF MICHIGAN ENVIRONMENTAL COUNCIL

February 11, 2025

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I. INTRODUCTION AND PURPOSE OF TESTIMONY

Q Please state your name and occupation.

A My name is Devi Glick. I am a Senior Principal at Synapse Energy Economics, Inc. ("Synapse"). My business address is 485 Massachusetts Avenue, Suite 3, Cambridge, Massachusetts 02139.

Q Please describe Synapse Energy Economics.

A Synapse is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, ratemaking and rate design, electric industry restructuring and market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse's clients include state consumer advocates, public utilities commission staff, attorneys general, environmental organizations, federal government agencies, and utilities.

Q Please summarize your work experience and educational background.

A At Synapse, I conduct economic analysis and write testimony and publications that focus on a variety of issues related to electric utilities. These issues include power plant economics, electric system dispatch, integrated resource planning, environmental compliance technologies and strategies, and valuation of distributed energy resources. I have submitted expert testimony and reports on these issues before state utility regulators in over 60 litigated proceedings across 20 states.

In the course of my work, I develop in-house electricity system models and perform analysis using industry-standard electricity system models. I am proficient in the use of spreadsheet analysis tools as well as optimization and electric dispatch models including EnCompass and PLEXOS.

Before joining Synapse, I worked at Rocky Mountain Institute, focusing on a wide range of energy and electricity issues. I have a master's degree in public policy and a master's degree in environmental science from the University of Michigan, as well as a bachelor's degree in environmental studies from Middlebury College. I have more than 12 years of professional experience as a consultant, researcher, and analyst. A copy of my current resume is attached as Exhibit MEC-1.

Q On whose behalf are you testifying in this case?

A I am testifying on behalf of Michigan Environmental Council ("MEC").

Q Have you testified before the Michigan Public Service Commission before?

A Yes, I submitted testimony in the following Cases:

- Case No. U-21260 DTE Energy's ("DTE") PSCR reconciliation docket for 2023
- Case No. U-21662 DTE's Public Act 295 compliance docket
- Case No. U-21262, Indiana Michigan Power Company's ("I&M") Power Supply and Cost Recovery ("PSCR") reconciliation docket for 2023
- Case No. U-21051, DTE's PSCR reconciliation docket for 2022
- Case No. U-21427, I&M's PSCR Plan for 2024
- Case No. U-20805, I&M's PSCR reconciliation docket for 2021

- Case No. U-21261, I&M's PSCR Plan for 2023
- Case No. U-21052, I&M's PSCR Plan for 2022
- Case No. U-20528, DTE's PSCR reconciliation docket for 2020
- Case No. 20530, I&M's PSCR reconciliation docket for 2020
- Case No. 20804, I&M's PSCR plan for 2021
- Case No. 20224, I&M's PSCR reconciliation docket for 2019

Q What is the purpose of your testimony?

A The purpose of my testimony is to evaluate the causes and drivers of DTE's under-recovery of PSCR expenses for 2023 with a focus on the reasonableness of DTE's fuel charges and plant operational practices in 2023. I investigate DTE's use of its peaking plants and evaluate whether their unusually high usage was economic for ratepayers. I evaluate DTE's management of its warranty and maintenance outages at Blue Water Energy Center ("BWEC") and its other baseload plants and review the replacement power costs incurred during the outages. I also review the Company's natural gas transportation contracts—specifically with the NEXUS natural gas pipeline, among others—its gas storage contracts, and its management of its excess NEXUS gas pipeline capacity. I also evaluate the reasonableness of DTE's operational practices at its coal- and gas-fired power plants, and whether DTE made prudent and economic commitment and economic reserve decisions for the plants.

Q What are replacement power costs and how are they defined by DTE for the purpose of this PSCR docket review?

A DTE defines replacement power costs as those costs incurred to replace power that the Company had planned to generate from a specific generating unit. DTE creates its PSCR plan assuming a certain level of outages at each plant and therefore the plan already includes some costs incurred to replace power from a plant that is in planned outage. Outages that extend beyond what was included in the 2023 PSCR plan incur replacement costs not accounted for by DTE and not approved by the Commission as part of its PSCR plan. DTE calculates replacement power costs for those outages by calculating the difference between the expected costs and revenues that a plant would otherwise incur and earn during the time it was in outage.

Q How are the NEXUS gas pipeline contract costs and benefits relevant to this PSCR docket?

A All gas pipeline transportation and supply costs are reconciled through this PSCR docket. For the NEXUS gas pipeline, the transportation contract costs are passed through as well as the cost of the fuel that flows through the pipeline. The NEXUS pipeline delivers DTE access to lower cost supply but also comes with a substantial transportation cost. DTE calculates the value of the NEXUS pipeline in the PSCR docket as the transportation costs net the supply benefits – that is, the difference between the gas supply costs DTE pays through NEXUS and what it would have paid otherwise—and net of any revenues received for selling its unused NEXUS capacity.

Q What documents do you rely upon in your analysis, and for your findings and observations?

A My analysis relies primarily upon discovery responses provided by DTE in this proceeding as well as testimony filed by DTE witnesses and other intervenors in other recent DTE PSCR reconciliation and plan dockets.

Q Are you sponsoring any exhibits in this proceeding?

A Yes, I am sponsoring the following exhibits:

Exhibit MEC-1	Resume of Devi Glick
Exhibit MEC-2	DTE Response to Staff Request 1.6, Attachment U-21260 STDE-1.6 2023 Planned Outages Greater than 7 Days
Exhibit MEC-3	DTE Response to Staff Request 1.7, Attachment U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days
Exhibit MEC-4	DTE Response to MEC Request 2.6a-d
Exhibit MEC-5	DTE Response to MEC Request 3.4b
Exhibit MEC-6	DTE Response to MEC Request 4.3c
Exhibit MEC-7	DTE Response to MEC Request 4.3a
Exhibit MEC-8	DTE Response to MEC Request 4.3b
Exhibit MEC-9	DTE Response to MEC Request 1.10a-c
Exhibit MEC-10	DTE Response to AG Request 1.12a-g
Exhibit MEC-11	DTE Response to Staff Request 1.14
Exhibit MEC-12	DTE Response to MEC Request 4.2a-f
Exhibit MEC-13	U-21051, Rebuttal Testimony of Kimmell at 9-11

Exhibit MEC-14	DTE Response to ABATE Request 1.4a-c, Attachment U-21260 ABDE-1.4 90-Day Outage Information
Exhibit MEC-15	DTE Response to MEC Request 2.1
Exhibit MEC-16	DTE Response to Staff Request 2.1g, Attachment U-21260 STDE-2.1g MON1 FO Replacement Costs
Exhibit MEC-17	DTE Response to MEC-1.2a

II. FINDINGS AND RECOMMENDATIONS

Q Please summarize your findings.

A My findings include the following:

1. BWEC was in planned outage twice in 2023 for DTE to perform routine and warranty maintenance. Both outages extended beyond the original plan and during both outages DTE incurred substantial costs to replace the power, $6.4 million of which DTE classifies as replacement power attributed just to the extensions for the warranty maintenance. The replacement power costs for the warranty maintenance extension outage were not included in the PSCR plan.

2. During the BWEC warranty outage in May, between one and two units at Monroe and Belle River were also offline, and DTE had to rely on more expensive power from its peaking fleet.

3. DTE relied on its peaking plants much more than planned in 2023, with Greenwood generating 261 percent more MWh than planned and the other

large gas turbines[1] collectively generating 288 percent more MWh than planned.

4. DTE relied on its baseload plants less than planned, most notably with Monroe generating 21 percent fewer MWh than planned and BWEC generating 7 percent fewer MWh than planned.

5. Many of DTE's baseload coal plants were offline concurrently for unplanned outages during July of 2023, which resulted in replacement power costs of $4.6 million.

6. In 2023 DTE incurred $19.70 million in NEXUS Transportation costs and received only $13.72 million in NEXUS supply value for a net NEXUS cost of $5.97 million. While DTE's supply costs were less than projected, 2023 still continued a pattern of the NEXUS capacity providing millions more in costs than benefits to ratepayers.

Q **Please summarize your recommendations.**

A Based on my findings, I offer the following recommendations:

1. The Commission should disallow the $5.97 million in net costs that DTE incurred through its NEXUS contract. That represents the costs DTE pays for the NEXUS capacity in excess of the supply value it provides.

[1] Large Gas Turbines are a category of DTE peaking resources.

2. The Commission should disallow $6.4 million in net replacement power costs incurred during outages at BWEC to perform warranty maintenance in 2023. DTE has not justified why it believes that ratepayers, rather than the Company or contractor or manufacturer, should be responsible for the replacement power costs.

III. OVERVIEW OF DTE'S 2023 PSCR RECONCILIATION

Q What was DTE's total under-recovery and variance for the 2023 PSCR period?

A As shown in Table 1 and Table 2 below, in 2023, DTE incurred $1.5 billion in PSCR expenses and earned $1.9 billion in PSCR revenues. The Company had projected its PSCR expenses would be $1.7 billion, which is around a $221 million variance from its actual expenses.[2]

As seen in Table 2 below, DTE started the year with an under-recovery balance of $415.6 million. When DTE's 2023 actual PSCR expenses are combined with the prior year under-recovery balance and interest, and the 2023 actual revenues are netted out, the result is a $48.7 million PSCR under-recovery.[3] The actual under-recovery and the variance between actual and projected PSCR expenses are very close, although not identical, because the PSCR factors are set to roughly align

[2] Exhibit A-15 Fuel, PP & PSCR Exp.

[3] Exhibit A-13 PSCR Rec Over (Under).

expenses with revenues based on the PSCR plan projections. When the projections are off, the under-recovery (or over-recovery) will reflect that.[4]

Table 1. 2023 select PSCR actual and project expenses

	Actual ($M)	Projected ($M)	Variance ($M)	Percent variance (%)	Percent total PSCR variance (%)
Fossil fuels	$744	$939	($196)	-21%	89%
Natural gas	$283	$423	($140)	-33%	64%
Purchased power	$323	$355	($32)	-9%	15%
Total PSCR expenses	$1,526	$1,747	($221)	-13%	100%

Source: Exhibit A-7; Exhibit A-13; Exhibit A-15; Exhibit A-16.
Note: Negative percent variance means that expenses are less than projected

Table 2. Summary of 2023 PSCR under-recovery

Item	**Amount ($000)**
Total 2023 PSCR expenses	($1,526.04)
Total 2023 PSCR revenues	$1,905.78
Interest	($11.85)
Prior year balance	($415.59)
2023 under-recovery balance	($48.71)

Source: Exhibit A-15; Exhibit A-13.

Q What were DTE's market purchases and sales in 2023 relative to projections?

A DTE's market purchases were 55 percent higher than planned and sales were 82 percent higher than planned in 2023.[5] Wholesale power costs dropped substantially in 2023 relative to the record high levels in 2022. DTE forecasted

[4] Exhibit A-13 PSCR Rec Over (Under).

[5] Exhibit A-16 PP & Sales Sum.

round-the-clock (RTC) power costs of $70.04/MWh. Actual RTC power costs were $41.18/MWh at the DTE Load Node and $30.90/MWh at the Michigan Hub.[6]

Q How did DTE's fuel costs compare to projections?

A DTE's fuel costs were lower than projected. This is because fuel prices fell relative to levels they were at in the 2023 plan. But overall DTE's utilization of its fleet deviated from the plan in ways that were not necessarily in the best interest of ratepayers, as I describe in the next section.

IV. DTE'S UTILIZATION OF ITS POWER PLANTS DEVIATED FROM ITS 2023 PLAN AND RESULTED IN HIGHER POWER COSTS FOR RATEPAYERS

Q Please provide a brief overview of DTE's generation fleet.

A DTE owns several coal- and gas-power baseload generators, a number of peaking units, a nuclear power plant, and part of a pumped storage plant. DTE's coal fleet consists of the Belle River Power Plant, in which DTE has a partial ownership share, and Monroe Power Plant. DTE also has one combined-cycle gas plant at the BWEC, and the Fermi 2 Nuclear Power Plant.[7] DTE owns the Ludington pumped storage plant jointly with Consumers Energy (the plant is operated by Consumers Energy).[8] Finally, DTE operates the gas-fired peaking plant at Greenwood, along

[6] Exhibit A-17 Wholesale PP.

[7] Exhibit A-24 Base Load Gen Perf.

[8] Direct Testimony of Mark A. Kimmel at. 3.

with dozens of other peaking units that provide power to avoid system reliability issues. I describe all these units in more detail below.

Q Briefly describe the BWEC plant.

A BWEC is a three-unit, 1,150 MW combined-cycle gas turbine ("CCGT") power plant located in East China Township, Michigan. The plant began commercial operations in June 2022.[9]

BWEC is interconnected with two natural gas transmission pipelines, Vector and DTE Gas. DTE has contracted for firm natural gas transportation capacity with NEXUS pipeline (and others) and has storage capacity which provides access to multiple receipt points including Dawn, Kensington, Clarington, NEXUS-Ypsilanti, and Washington 10.[10]

Q Briefly describe the rest of DTE's baseload fleet.

A Aside from BWEC, DTE has the Belle River Power Plant, Monroe Power Plant, Dearborn Power Plant, and Fermi 2 Nuclear Power Plant. Belle River is a two-unit coal-fired power plant with a total nameplate capacity of 1,034 MW. Each unit is over 35 years old. Monroe is a four-unit coal-fired power plant with a nameplate capacity of over 3,066 MW. Each unit is around 50 years old. Dearborn Energy

[9] Direct Testimony of Ryan C. Pratt at. 9.

[10] Direct Testimony of Company Witness Pratt at 8; DTE 2022 IRP at 58.

Center is a small, combined heat and power ("CHP") gas-fired power plant. Fermi 2 is a nuclear power plant with a nameplate capacity of 1,141 MW.[11]

Q Briefly describe DTE's peaker fleet.

A DTE has a single 785 MW gas-powered natural gas generator at the Greenwood Energy Center that it uses as a peaking unit.[12] Additionally, DTE has four classes of peaker plants: 16 Large Gas Turbines, 10 Small Gas Turbines, 10 Oil-Fired Turbines, and 46 Diesel Engines. The total summer capacity of the peaker fleet is 1,998 MW. Peakers are able to start up quickly and reliably; but they have high dispatch costs, so their role is to be deployed quickly yet infrequently to avoid system reliability issues.[13]

Q What actually happened to generation levels at the BWEC and across DTE's fleet during 2023?

A Generation levels at DTE's baseload plants—coal and gas—were all below projections, while generation levels at the Company's peakers were higher than projected.[14]

This pattern indicates that one (or likely all) of the following occurred: (1) at least some of DTE's baseload generators experienced higher-than-projected planned

[11] Exhibit A-23 Net Gen; Exhibit MEC-2, DTE Response to Staff Request 1.6, Attachment U-21260 STDE-1.6 2023 Planned Outages Greater than 7 Days; Exhibit MEC-3, DTE Response to Staff Request 1.7, Attachment U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days.

[12] DTE 2022 IRP at 60.

[13] Direct Testimony of Mark A. Kimmel at 10.

[14] Exhibit A-23 Net Gen.

and unplanned outages; (2) DTE's peakers operated at higher-than-projected levels to make up for some of the lost generation from the baseload plants; (3) some of DTE's coal baseload plants were in economic reserve for at least some of the year. The first two would have a negative impact on ratepayers and result in high replacement power costs and higher than projected fuel costs. The third would benefit ratepayers and result in lower fuel costs. I will explore each of these issues in the sections below.

A. Peaker usage

Q Summarize DTE's utilization of its peaking fleet in 2023.

A DTE used Greenwood and its peaking fleet for 8.8 percent of its total system generation in 2023.[15] This is about double the level seen in 2022 where DTE utilized its peakers for 3.6 percent of its total generation[16] and nearly four times the level that DTE projected in its 2023 PSCR Plan at 2.3 percent (Table 3).[17]

Specifically, generation levels at Greenwood were 261 percent of levels in the PSCR plan and generation levels at the rest of its peaking fleet (mostly the large gas turbines, or GTs) were 288 percent more than planned.[18] This resulted in a net

[15] Calculated based on Exhibit A-23 Net Gen.

[16] Calculated based on Case No. U-21051 Exhibit A-23 Net Gen.

[17] Calculated based on Exhibit A-23 Net Gen.

[18] Exhibit A-23 Net Gen.

capacity factor of 13 percent for Greenwood[19] and 14.5 percent for the rest of the peaker fleet in 2023.[20]

Most of DTE's peaking generation (91 percent) came from three units—Greenwood, Dean and Renaissance. DTE utilized these units much more than planned while utilizing the rest of the peaking fleet slightly less than anticipated.

Table 3. Peaker utilization plan vs actual in 2023

Plant	Plan (GWh)	Actual (GWh)	Variance (%)
Greenwood	249	897	261%
Peakers	616	2,392	288%

Source: Exhibit A-23 Net Gen

Q How does increased utilization of the Company's peakers impact its PSCR costs?

A Overall, peakers have higher (worse) heat rates and are more expensive to operate than BWEC and DTE's other baseload resources (Table 4). This means that their fuel and operational costs are higher than baseload units. They also have costs that, on average, exceed RTC market prices. This means that they are best relied on to provide generation during periods of time with high demand when market prices are high. Peaking power plants are not an economic substitute for baseload power or zero-marginal cost energy from renewable sources.

[19] Calculated based on capacity from DTE 2022 IRP at 60 and generation from Exhibit A-24 Base Load Gen Perf.

[20] WP-6 Peaker Ops at 2-3.

Table 4. DTE units' heat rate and dispatch cost / RTC energy market price

Generation source	Actual heat rate (BTU/kWh)	Ave cost / price ($/MWh)
Peakers		
Greenwood	10,875	$32.67
Peaker units (Large)	11,327	$32.00
Peaker units (Small, Oil & Diesel)	10,676 – 15,573	$115 - $304
Baseload		
BWEC	6,597	$19.82
Belle River 1-2	10,820 – 11,151	$30.52
Monroe Units 1-4	10,071 – 10,709	$28.71
Market		
RTC average price DTE Load Node		$31.18
RTC average price Michigan Hub		$30.90

Source: Market prices from Exhibit A-17 Wholesale PP; Peaker costs and heat rates from WP-6 Peaker Ops Pg. 1; BWEC & Coal plant costs and heat rate calculated from Exhibit A-24 Base Load Gen Perf and Exhibit A-7 Fuel Exp; Greenwood heat rate and costs calculated based on DTE Response to Staff Request 1.28b; Exhibit A-6 Fuel Exp. All costs/prices affected by natural gas prices.

B. Baseload usage and performance

Q Summarize DTE's utilization of its baseload fleet in 2023.

A DTE relied on its baseload plants less than planned in 2023. Specifically, DTE's baseload units generated 9 percent less than planned, most notably with Monroe generating 21 percent less generation and BWEC generating 7 percent less generation than planned.[21] Table 5 below shows DTE's baseload plant statistics for 2023.

[21] Exhibit A-23 Net Gen.

Table 5. DTE's Baseload plant outage and operational statistics for 2023

Unit	Planned outage factor	Random outage factor	Equivalent availability factor (EAF)	Capacity factor
Belle River 1	4.75%	2.92%	92	59%
Belle River 2	4.81%	6.99%	88	46%
BWEC	10.92%	2.35%	87	79%
Dearborn	0.00%	7.41%	93	85%
Monroe 1	33.94%	10.97%	55	36%
Monroe 2	6.21%	11.43%	82	54%
Monroe 3	7.96%	9.61%	73	44%
Monroe 4	11.24%	14.79%	94	35%

Source: Exhibit A-24 Base Load Gen Perf; Capacity factors from DTE response to Staff Request 1.28a.

Q Why did DTE's utilization of its baseload deviate so much from its plan?

A DTE had several planned outages at the BWEC to perform warranty maintenance, and each of these extended beyond the timeframe that was originally planned. I will discuss the warranty outages in more detail below.

Monroe Units 1–4 also were offline for longer than projected for planned and random outages, as well as economic reserve. Specifically, Monroe Unit 1 was in planned outage for 38 percent of the time in 2023, and Unit 4 was in planned outage 11 percent of the time in 2023.[22] This continues a pattern from 2022 where several units had high planned outage rates (37 percent and 11 percent).[23] Monroe Units 1–3 exhibited random outage rates of roughly 10 percent with Unit 4 having a 15 percent random outage rate. That is lower than 2022 when all units except one had random outages rates between 11 and 27 percent.[24] Monroe (at least one

[22] Exhibit A-24 Base Load Gen Perf.

[23] Case U-21051, A-24 Base Load Gen Perf.

[24] *Id.*

unit) was also offline in economic reserve for over 125 days and Belle River for over 70 days in 2023 when it was uneconomic to operate.[25]

C. Replacement cost analysis and methodology

Q Provide a summary of DTE's replacement cost methodology.

A DTE calculates replacement cost for plant outages over 7 days when a unit outage is either unplanned/random or planned but extends beyond the planned outage period AND the unit generates less during the entire year than was in the PSCR plan.[26] This is because DTE has already included the cost associated with planned outages in its PSCR plan. The replacement power cost represents the gross margin of the plant in outage—that is, the difference between the fuel cost and market revenues of the plant during the time it was in outage.

Q Do you have any concerns with DTE's replacement cost methodology?

A Yes, I have a number of concerns.

First, calculating replacement costs only if generation is below the annual plan doesn't account for the timing of when an outage occurs, and the cost incurred to purchase or generate replacement power. If a plant has a random outage, but total annual generation is still above the planned level, the replacement cost for the

[25] Direct Testimony of Company Witness Kimmel at 19.

[26] Exhibit MEC-4, DTE Response to MEC Request 2.6a-d.

outage is not calculated, regardless of whether the outage occurred during the peak day in July.[27]

Second, market power prices and gas prices are all substantially different than when the plan was developed as evidenced by the deviation between gas price and power prices forecasted in the plan and reported as actual.[28] So, the generation levels projected in the plan are not necessarily representative of how the system would be expected to operate under current market prices.

Third, the inherent assumption with DTE's gross margin calculation is that the replacement resource is market power[29] and there is no additional net margin (cost) to procure the power from a different, and more expensive, generator such as a peaking plant with a higher fuel cost. If DTE economically dispatched its units at all times, this may be true. But given that DTE does not economically dispatch its units at all times, this calculation may not capture the full cost of the replacement power.

[27] Exhibit MEC-4, DTE Response to MEC Request 2.6a-d; Exhibit MEC-5, DTE Response to MEC Request 3.4b.

[28] Exhibit A-16 PP & Sales Summ.

[29] Exhibit MEC-6, DTE Response to MEC Request 4.3c.

D. Cost of BWEC outages

Q Provide a summary of the maintenance and warranty outages at BWEC in 2023.

A BWEC was in planned outage for 23 days in the spring and 17 days in the fall.[30] DTE stated that the April–May outage and the November outage were scheduled to complete non-warranty work but both were extended to complete warranty work.[31] DTE initially indicated that it identified this warranty work during the testing phase of the plants' commissioning process[32] but later updated that to reflect that the repairs were not identified until after the plant entered commercial operation. The spring outage was to replace Combustion Turbine Generator 11 combustion can seals. These seals prevent the leakage of steam between generator components. The fall outage was to replace the Heat Recovery Steam Generator 11 and 12 high-pressure steam drum demisters. The demister catches the large water droplets (which fall to the bottom of the drum) and allows dry steam to pass out of the unit. In total, DTE attributed 10 days in the spring and 5 days in the fall to warranty work.

[30] Exhibit A-3 Steam Units Outage Actual.

[31] Exhibit MEC-7, DTE Response to MEC Request 4.3a; Exhibit MEC-8, DTE Response to MEC Request 4.3b; Exhibit MEC-9, DTE Response to MEC Request 1.10a-c; Exhibit MEC-10, DTE Response to AG Request 1.12a-g.

[32] Direct Testimony of Company Witness Kimmel at 18; Exhibit MEC-10, DTE Response to AG Request 1.12 a-g.

During the outage, DTE amended a natural gas storage agreement to manage its firm gas supply. This resulted in increased PSCR costs for DTE ratepayers, although DTE does not specify the amount of the incremental cost.[33]

Q Are these the first warranty outages that DTE has had at BWEC since the plant came online in June 2022?

A No. BWEC was in outage for 12 days between November 26 and December 11 in 2022 to address a number of warranty items, including replacement of combustion turbine extraction hoses and relocation of the steam turbine pressure tap.[34] Looking at the 2022 and 2023 warranty and maintenance outages collectively, the plant was offline for 52 days in the first year-and-a-half of operation for warranty and other maintenance.

Q Should DTE customers be responsible for these warranty and other replacement power costs?

A Errors and faulty installation by DTE's suppliers should be borne by the Company or the contractor, not the customers. DTE can and should better protect itself from liability with contractor and manufacturer contracts.

[33] Exhibit MEC-11, DTE Response to Staff Request 1.14.

[34] Case U-21051 PFD at 38.

DTE indicated that it is common for new plants to experience warranty repairs but provided no specifics to support this statement aside from a confidential Technical Information Letter from General Electric provided in Case U-21051.[35]

The PFD for Case U-21051 agrees that some of the 2022 warranty repairs were foreseeable and recommends a disallowance of the $3.6 million outage replacement costs incurred during the replacement of the combustion turbine extraction hoses. The PFD makes this recommendation on the grounds that the issues with the combustion turbine extraction hoses were foreseeable and should have been addressed prior to BWEC coming online.[36]

Q How did the outages impact DTE's plant usage and operational decisions?

A During 2023, 80 percent of DTE's load was served by DTE's baseload plants. During the BWEC warranty outages in May and November, that dropped to [redacted] respectively.[37] This is further explained by a few instances in April and May when outages occurred simultaneously at multiple baseload units which weren't originally scheduled to overlap (Table 6). The number of overlapping outages is surprising given that DTE stated in its direct application that it planned and scheduled its outages based on unit and market

[35] Exhibit MEC-12, DTE Response to MEC Request 4.2a-f; Exhibit MEC-13, U-21051, Rebuttal Testimony of Kimmell at 9-11.

[36] Case U-21051 PFD at 40-41.

[37] Calculated based on DTE Response to MEC Request 2.1, Attachment U-21260 MECDE-2.1 2023 PSCR Hourly Load; [redacted] Exhibit A-3; Exhibit A-24; Exhibit MEC-3, DTE Response to Staff Request-1.7, Attachment U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days.

conditions and to "minimize the number of large units in simultaneous outages."[38] Specifically:

- For the 11 days between April 23 and May 3, 2023, BWEC and Monroe Units 1 and 2 were all offline. The outages at BWEC and Monroe 1 were scheduled to overlap, but the outage at Monroe 2 wasn't scheduled to occur after BWEC came back online. It is unclear why DTE opted to take Monroe 2 offline when two other baseload units were already offline.

- For the 7 days between May 5 and May 11, 2023, BWEC, Monroe 1 and Belle River 1 were offline simultaneously. Once again, the outages at Monroe 1 and BWEC were scheduled to overlap, but the outages at Belle River were not planned to overlap. It is unclear why DTE opted to take Belle River offline when two other baseload units were already offline.

Table 6. Spring 2023 overlapping planned outages

Unit	Scheduled outage	Actual outage
BWEC 1–3	April 8 – April 19	April 19 – May 11
Monroe 1	February – June	February – June
Monroe 2	May 1 – May 10	April 23 – May 4
Belle River 1	May 26 – June 4	May 5 – May 14

Source: Exhibit A-1 Steam Units Outage Plan; Exhibit A-3 Steam Units Outages Actual

With multiple units offline at once, DTE must rely on the market and its peaking resources to meet load requirements. This results in less market revenue and higher fuel costs than if DTE had been using its own baseload units to generate electricity

[38] Direct Testimony of Company Witness Kimmel at 5.

sufficient to meet its load. This also leaves DTE more exposed to the market and any potential price fluctuations it experiences in response to weather events, other major unit outages on the system, fuel supply constraints, or other limitations.

Q How did the outages impact DTE's cost to provide power to its customers?

A Peaker usage in May roughly matched the lost generation from BWEC, but the cost of running the peakers is much higher than the cost of operating BWEC, and generally higher than the cost of RTC market power. DTE itself indicated that peakers have "high dispatch costs due to their design, fuel type, and operational characteristics."[39]

DTE calculated replacement cost for the outages for the extension days (Table 7). Given the extended time that the plant has been offline for maintenance in its first year, I used the Company's methodology to calculate the full cost of the warranty outage (not just extension days). Results are displayed in Table 7 below.

[39] Direct Testimony of Company Witness Kimmell at 10.

Table 7. Confidential Lost power generation and gross margin for Blue Water Energy Center

Event	Days	Lost Generation (MWh)	BWEC Gross Margin ($)
Warranty repairs			
Fall 2022 - Combustion turbine repair	8.5	308,210*	$3,580,428
Fall 2022 - Pressure tap change	3.5		$1,474,294
May 2023 Extension	10	270,605	$4,681,010
November 2023 Extension	5	132,866	$1,754,605
Total warranty outages	**27**	**711,681**	**$11,490,337**
Total BWEC maintenance outages			
April – May 2023 full outage	23	565,811	[redacted]
November 2023 full outage	18	478,317	[redacted]
Total BWEC maintenance and warranty outages	**53**	**1,352,338**	[redacted]

Note: DTE did not provide replacement generation numbers separately for the Fall 2022 outage. Source: Fall 2022 data from Case U-21051, PFD at 38-41 and Case U-21051 Direct Testimony of Attorney General Witness Sebastian Coppola, Exhibit AG-15; 2023 Extension Gross Margins from DTE Response to MEC 1.6f, Attachment U-21260 MECDE-1.6f Replacement Costs Analysis; 2023 Full Gross Margins calculated based on DTE Response to MECDE-1.6f, Attachment U-21260 MECDE-1.6f Replacement Costs Analysis; [redacted] *and DTE Response to MECDE-3.3, Attachment U-21260 MECDE-3.3 2023 DTE Actual Nodal DA LMPs.*

In total, the warranty outages in 2023 resulted in $6.4 million in replacement power costs. When added to the warranty costs from 2022, DTE incurred $11.5 million in replacement power costs. In addition, DTE incurred another [redacted] million to replace the generation from BWEC in what DTE considered routine maintenance outages in 2023. In total, DTE customers have incurred just under [redacted] million to replace power from BWEC when the plant was in outage in its first year-and-a-half of operation. DTE has not justified why ratepayers should be on the hook for the replacement power costs incurred during the warranty outages and further, why it is reasonable for a plant to be offline for over two months during its first year-and-a-half of operation.

E. Cost of other baseload outages

Q Did DTE provide replacement costs for any other planned outages for its baseload fleet in 2023?

A Yes. Monroe 1 was in a planned outage for 34 days from May 12, 2023, through June 14, 2023, for planned turbine maintenance. Because Monroe generated fewer MWh in 2023 than DTE projected in its plan, the Company calculated replacement power costs for that outage as $1,206,306.[40]

Q Did DTE experience any unplanned outages of note at its baseload plants?

A Yes. DTE incurred several overlapping outages at its baseload plants during a high load period in July. These unplanned outages incurred high costs to replace the power, which DTE normally tries to avoid. Given its attempts to schedule planned outages outside of peak times to minimize replacement power needs,[41] it is concerning that the Company experienced such a high level of unplanned outages during peak times. Specifically:

- For the 20 days from July 6–25, 2023, at least one unit was on random outage among the baseload units of Monroe 1, 3, 4, and Belle River 2.

[40] Exhibit MEC-14, DTE Response to ABATE Request 1.4a-c, Attachment U-21260 ABDE-1.4 90-Day Outage Information. Only captures replacement power for outage above 90 days, from May 12– June 14, 2023.

[41] Direct Testimony of Mark A. Kimmel at 5.

- For the 13 days from July 11–23, at least two of these units were on random outage.
- For 7 days between July 11-23, at least three of these units were on random outage.
- For 2 days in July (July 16 and 17), all four of these units were on random outage simultaneously.

Table 8 below summarizes the overlapping outages at DTE's baseload fleet during the summer of 2023.

Table 8. Concurrent random outages at DTE's baseload fleet – summer of 2023

	Monroe 1	Monroe 3	Monroe 4	Belle River 2	Units in outage
7/6/2023			x		1
7/7/2023			x		1
7/8/2023			x		1
7/9/2023			x		1
7/10/2023			x		1
7/11/2023			x	x	2
7/12/2023			x	x	2
7/13/2023	x		x	x	3
7/14/2023	x		x	x	3
7/15/2023	x		x	x	3
7/16/2023	x	x	x	x	4
7/17/2023	x	x	x	x	4
7/18/2023	x	x		x	3
7/19/2023	x	x		x	3
7/20/2023	x	x			2
7/21/2023	x	x			2
7/22/2023	x	x			2
7/23/2023	x	x			2
7/24/2023	x				1
7/25/2023	x				1

Source: DTE Response to Staff Request 1.7, Attachment U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days.

Q **Why are these summer outages so concerning?**

A July in Michigan is a high load period due to hot summer weather. This 20-day period included 2 of the 10 highest load days of the year, July 6 and July 25. Of the 50 highest load days in 2023, 14 of them occurred during this period.[42]

[42] Exhibit MEC-15, DTE Response to MEC Request 2.1.

On top of these July outages, DTE experienced additional outages in August. Specifically, Monroe 4 was again on random outage from August 6 until August 17, another 10-day period during high load season. Of the 50 highest load days in 2023, 7 of them occurred during this August Monroe 4 outage.[43] It is concerning that so many of DTE's thermal resources, which DTE relies upon for firm peaking capacity, were unavailable during high load events. This could have left DTE subject to high-priced market power with minimal generation to offset the cost.

Q Did DTE calculate replacement power costs for these summer outages?

A By and large, no. During the outages discussed above, DTE incurred costs to replace the power that the Company intends to pass on to ratepayers. But DTE's own method for capturing replacement costs does not even flag these events as noteworthy, thus making it more difficult for the Commission to consider their impact.

As stated elsewhere in this testimony, DTE's replacement cost method reports replacement costs for only (1) the power plants that generated below the PSCR plan for the year, (2) outages over 7 days, and (3) the lost margin of the plant in outage, without including incremental costs incurred to replace the power. Overall, this method undercounts replacement costs by assuming that timing of generation doesn't matter as long as a plant generates as many MWh as projected in the plan. But timing of these baseload outages does matter: (1) outages during high load

[43] *Id.*

periods will result in higher gross margins / replacement costs, and (2) overlapping outages during high load events can together drive up market prices which in turn drives up the cost of market purchases passed through in the PSCR dockets.

In response to a discovery request about replacement power costs incurred during 2 days of the Monroe 1 outage during which the plant had 4 shifts (2 days) of re-work, DTE estimated the Total Lost Power Generation over those two days at 24,847 MWh and the replacement cost at $294,314.[44]

Q How much in replacement power costs did DTE incur during the over-lapping summer outages at its baseload fleet?

A I calculated replacement costs for the five July and August random outages at baseload units across Monroe 1, 3, 4, and Belle River 2 to be $4.6 million (Table 9)[45] using the same methodology that DTE used to calculate the gross margin for unit replacement costs.[46] I used the daily lost power generation (12,424 MWh) calculated by DTE for the Monroe 1 outage as a proxy for how much power was lost by each unit during each day it was in outage. The table below summarizes

[44] Exhibit MEC-16, DTE Response to Staff Request 2.1g, Attachment U-21260 STDE-2.1g MON1 FO Replacement Costs.

[45] Calculated based on DTE Response to MEC Request 3.1c, Attachment NDA_U-21260 MECDE-3.1c 2023 DA Awards and RT Gen. For Belle River 2, I scaled the replacement generation down to be 64% of the Monroe unit replacement generation. Scaling was based on average generation during two-day period 7/23-24 where Monroe 1 generation 12,424 MWh/day and Belle River 2 generated 7,931 MWh/day (64% of Monroe 1's generation).

[46] Calculated based on DTE Response to MEC Request 3.3, Attachment U-21260 MECDE-3.3 2023 DTE Actual Nodal DA LMPs; DTE Response to MEC Request-1.1d, Attachment NDA_U-21260 MECDE-1.1d 2023 Fuel Dispatch Costs; DTE Response to MEC Request 1.1e, Attachment NDA_U-21260 MECDE-1.1e 2023 Heat Rate Curves.

my calculations. While some of these costs were included in the PSCR plan, DTE didn't account for the impact of multiple overlapping outages when making its PSCR plan. It's likely that the plan understated the replacement power costs incurred during these overlapping outages.

Table 9. Confidential Lost generation and gross margin for Monroe 1, 3, 4 and Belle River 2

Unit	Start date	End date	Days	Lost generation (MWh)	Gross Margin ($)
Monroe 1	7/23/2023	7/24/2023	2	24,847	$294,314
	7/13/2023	7/22/2023	10	124,236	[redacted]
	7/25/2023	7/25/2023	1	12,424	[redacted]
Monroe 3	7/16/2023	7/23/2023	8	99,389	[redacted]
Monroe 4	7/6/2023	7/17/2023	12	149,083	[redacted]
	8/6/2023	8/17/2023	12	149,083	[redacted]
Belle River 2	7/11/2023	7/19/2023	9	71,560	[redacted]
Total			**54**	**630,621**	**$4,594,666**

Source: DTE Response to Staff Request 2.1g, Attachment U-21260 STDE-2.1g MON1 FO Replacement Costs; DTE Response to Staff Request 1.7, Attachment U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days; [redacted] *and DTE Response to MEC Request 3.3, Attachment U-21260 MECDE-3.3 2023 DTE Actual Nodal DA LMPs.*

Q What do you conclude regarding DTE's operation of its baseload fleet in 2023?

A Overall, I find it concerning that DTE's baseload fleet incurred such high unplanned outage levels during the summer peak months. Baseload plants should be available to provide firm capacity during peak periods. If they are unreliable as firm resources during peak events, then they need to be derated by DTE in future resource planning exercises.

V. DTE CONTINUED TO OVERPAY FOR THE NEXUS PIPELINE IN 2023

Q Summarize DTE's NEXUS pipeline contract that was in place in 2023.

A DTE has contracted with the NEXUS pipeline for 30,000 Dth/d of transportation capacity from Kensington to Ypsilanti in a 20-year contract. The contracted capacity increased to 75,000 Dth/d in July 2022 after BWEC came online. The term of the incremental 45,000 Dth/d is 15 years.

In October 2018, DTE signed an amendment to access lower-cost gas from the Clarington receipt point, which is south of Kensington, through the Texas Eastern Appalachian Lease (TEAL) pipeline project. The term of the amendment was November 1, 2018–October 31, 2022. This agreement covered 15,000 Dth/d; this is half of what DTE originally contracted from NEXUS. DTE attempted to negotiate for the full 30,000 Dth/d to come from Clarington, but NEXUS was unwilling to provide more than 15,000 Dth/d from Clarington. When the TEAL amendment expired in October 2022, DTE was able to negotiate an extension of just 8,000 Dth/of TEAL capacity through October 2024. DTE negotiated an additional amendment to extend the terms of the TEAL capacity through October 31, 2026.[47]

Aside from NEXUS, DTE can and should purchase natural gas from other supply points when gas is available at a lower cost than it is through NEXUS (inclusive of the transportation capacity cost).

[47] Exhibit MEC-11, DTE Response to Staff Request 1.14.

Q How was NEXUS expected to deliver cost savings to DTE customers?

A NEXUS was supposed to give DTE access to low-cost natural gas. DTE would pay a transportation cost (reservation charge) to reserve the NEXUS pipeline capacity, but that reservation was supposed to be smaller than the supply savings. Unfortunately for DTE and its ratepayers, those cost savings never materialized, and they are not expected to materialize going forward. The savings from the lower-cost supply, as measured by the basis from Kensington to Dawn (the alternative regional supply point), have not been higher than the NEXUS reservation charge. As a result, DTE has been overpaying for gas and passing those excess costs on to its ratepayers.

Q What were the total and net costs of the NEXUS pipeline to DTE customers in 2023?

A According to DTE's data, as shown in Table 10 below, in 2023 the Company incurred $19.70 million in NEXUS transportation costs and received $13.72 million in NEXUS supply value for a net NEXUS cost of $5.97 million.[48] This shows that the NEXUS contract did not provide value to DTE ratepayers in 2023, and in fact had a net impact cost impact of $5.97 million in 2023.

[48] Direct Testimony of Ryan C. Pratt at 14; Exhibit A-26.

Table 10. Confidential Market value to DTE electric customer of NEXUS commitment

Month	From Clarington	From Kensington	Total NEXUS	Transport Cost		Supply savings as % transport cost
Jan	[redacted]	[redacted]	$1,226,920	$1,675,395		73%
Feb	[redacted]	[redacted]	$1,058,480	$1,513,260		70%
Mar	[redacted]	[redacted]	$1,010,860	$1,645,724		61%
Apr	[redacted]	[redacted]	$551,225	$1,621,350		34%
May	[redacted]	[redacted]	$661,470	$1,675,395		39%
Jun	[redacted]	[redacted]	$1,025,280	$1,621,350		63%
Jul	[redacted]	[redacted]	$1,361,760	$1,675,395		81%
Aug	[redacted]	[redacted]	$1,698,499	$1,675,395		101%
Sep	[redacted]	[redacted]	$1,883,550	$1,621,350		116%
Oct	[redacted]	[redacted]	$1,395,930	$1,675,395		83%
Nov	[redacted]	[redacted]	$1,294,230	$1,621,350		80%
Dec	[redacted]	[redacted]	$553,722	$1,675,395		33%
Total	[redacted]	[redacted]	**$13,721,926**	**$19,696,754**		**70%**

[redacted] *Source:* [redacted] *Exhibit A-26 NEXUS Impact 2023.*

Q How did DTE's projection of NEXUS costs in its 2023 PSCR Plan compare to NEXUS's actual costs to DTE ratepayers?

A DTE projected that NEXUS transportation costs would be around $19.73 million, and the NEXUS supply value would be around $10.92 million for a net cost of $8.81 million. The actual cost was about 32 percent lower than DTE projected because transportation costs from NEXUS were lower than DTE had projected and supply benefits were higher than DTE had projected.[49] This is in contrast to 2022, when the actual supply benefits were less than half what DTE had planned.

[49] Exhibit A-26 NEXUS Impact 2023.

Q How much of the NEXUS pipeline capacity did DTE utilize in 2023?

A As shown in Table 11 below, DTE used an average of [redacted] of the NEXUS pipeline capacity during 2023.[50] Its utilization of the TEAL capacity was [redacted] for 2023.

Table 11. Confidential NEXUS utilization in 2023

Month	Total Deliveries (Dth)	Daily Average (Dth/d)	NEXUS Utilization	TEAL Utilization
Jan	[redacted]	[redacted]	[redacted]	[redacted]
Feb	[redacted]	[redacted]	[redacted]	[redacted]
Mar	[redacted]	[redacted]	[redacted]	[redacted]
Apr	[redacted]	[redacted]	[redacted]	[redacted]
May	[redacted]	[redacted]	[redacted]	[redacted]
Jun	[redacted]	[redacted]	[redacted]	[redacted]
Jul	[redacted]	[redacted]	[redacted]	[redacted]
Aug	[redacted]	[redacted]	[redacted]	[redacted]
Sep	[redacted]	[redacted]	[redacted]	[redacted]
Oct	[redacted]	[redacted]	[redacted]	[redacted]
Nov	[redacted]	[redacted]	[redacted]	[redacted]
Dec	[redacted]	[redacted]	[redacted]	[redacted]
Total	[redacted]	[redacted]	[redacted]	[redacted]

Source: [redacted]

Q What do you conclude about the efforts DTE took to manage the costs of the NEXUS contract during 2023?

A DTE did not adequately manage the costs of the NEXUS capacity and incurred firm transportation costs far in excess of the contract's supply benefits. Specifically, in 2023, DTE incurred $5.97 million in net costs through the NEXUS contract. These excess costs should be disallowed from rates.

[50] Direct Testimony of Ryan C. Pratt at 14.

VI. DTE SELF-COMMITTED ITS BASELOAD FLEET MORE THAN IT SHOULD HAVE IN 2023

Q How did DTE commit and dispatch its baseload coal and gas fleet in 2023?

A [redacted] DTE acknowledges in its testimony that it operates some of its units with a must-run status, but it is not clear about the extent to which it determines unit-commitment decisions for its fleet outside of the MISO market. Overall, DTE's dominant strategy is to self-commit its non-peaking power plants and to decide internally when to bring plants online and when to turn them off, outside of the market.[53]

Q How did DTE decide when to operate its baseload plants in 2023?

A DTE made its daily unit-commitment decisions for BWEC, and all other non-peaking units, based on analysis it conducts daily and publishes in a report called the Economic Reserve and Cycling ("ER&C") Report.[54] DTE states that it considers a number of factors including the units' current commitment status, cycling costs, system reliability concerns, unit testing, environmental compliance, unit constraints, and the 14-day ER&C Reports. DTE acknowledges that it uses

[51] Calculated from DTE Response to MEC-1.1a, [redacted]

[52] [redacted]

[53] Direct Testimony of Company Witness Bidlingmaier at 8-9.

[54] Exhibit MEC-17, DTE Response to MEC-1.2a.

these reports to determine commitment status for many of its units. Only units not evaluated in these reports are regularly economically committed into MISO.[55]

Q Did DTE put any of its baseload units into economic reserve in 2023?

A Yes. DTE used its ER&C reports to identify times when it was uneconomic to keep its coal plants online. DTE placed the Belle River units into economic reserve shutdown for over 70 days in 2023 and the Monroe units into economic reserve shutdown for over 125 days in 2023.[56] Critically, when units are in economic reserve shutdown, they are still available to MISO and can still be called upon based on economics or reliability needs.[57]

Q How do your findings around DTE's outages at its baseload plants align with your findings around DTE's unit commitment processes?

A Earlier in testimony I discuss my concerns with the high outage rate at DTE's baseload plants while in this section I discuss my concerns with DTE operating its units with a must-run status too much of the time. These concerns are both fundamentally about whether DTE is operating its plants in a manner that maximizes economic value to ratepayers. When a plant is committed to the market with a must-run status, the Company is over-ruling market signals and not necessarily committing plants economically. When a plant is in outage more than planned, during peak times, or unexpectedly concurrently with other baseload

[55] *Id.*

[56] Direct Testimony of Company Witness Kimmel at 18.

[57] Direct Testimony of Company Witness Bidlingmaier at 8.

outages, it can incur substantial costs to replace the power. My concerns are not with how much the plants are operated, but how efficiently and economically they are operated.

Q What do you conclude about DTE's commitment and operation of the Company's baseload fleet during 2023?

A DTE's strategy of self-committing its plants the majority of the time they are available is risky and imprudent as a rule. While DTE may not have incurred substantial uneconomic costs in 2023, it should still be careful not to uneconomically self-commit its units and to only operate them when economic. Self-committing its units whenever they are available under reasonable market conditions will result in uneconomic operations that will incur substantial excess costs for ratepayers. The Company should also continue to look for opportunities to place its legacy coal plants into economic reserve status to save ratepayers money.

Q Does this complete your direct testimony?

A Yes, it does.

Devi Glick, Senior Principal

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Senior Principal*, May 2022 – Present; *Principal Associate*, June 2021 – May 2022; *Senior Associate*, April 2019 – June 2021; *Associate*, January 2018 – March 2019.

Conducts research and provides expert witness and consulting services on energy sector issues. Examples include:

- Modeling for resource planning using PLEXOS and Encompass utility planning software to evaluate the reasonableness of utility IRP modeling.
- Modeling for resource planning to explore alternative, lower-cost and lower-emission resource portfolio options.
- Providing expert testimony in rate cases on the prudence of continued investment in, and operation of, coal plants based on the economics of plant operations relative to market prices and alternative resource costs.
- Providing expert testimony and analysis on the reasonableness of utility coal plant commitment and dispatch practice in fuel and power cost adjustment dockets.
- Serving as an expert witness on avoided cost of distributed solar PV and submitting direct and surrebuttal testimony regarding the appropriate calculation of benefit categories associated with the value of solar calculations.
- Reviewing and assessing the reasonableness of methodologies and assumptions relied on in utility IRPs and other long-term planning documents for expert report, public comments, and expert testimony.
- Evaluating utility long-term resource plans and developing alternative clean energy portfolios for expert reports.
- Co-authoring public comments on the adequacy of utility coal ash disposal plans, and federal coal ash disposal rules and amendments.
- Analyzing system-level cost impacts of energy efficiency at the state and national level.

Rocky Mountain Institute, Basalt, CO. August 2012 – September 2017
Senior Associate

- Led technical analysis, modeling, training and capacity building work for utilities and governments in Sub-Saharan Africa around integrated resource planning for the central electricity grid energy. Identified over one billion dollars in savings based on improved resource-planning processes.

- Represented RMI as a content expert and presented materials on electricity pricing and rate design at conferences and events.
- Led a project to research and evaluate utility resource planning and spending processes, focusing specifically on integrated resource planning, to highlight systematic overspending on conventional resources and underinvestment and underutilization of distributed energy resources as a least-cost alternative.

Associate

- Led modeling analysis in collaboration with NextGen Climate America which identified a CO2 loophole in the Clean Power Plan of 250 million tons, or 41 percent of EPA projected abatement. Analysis was submitted as an official federal comment which led to a modification to address the loophole in the final rule.
- Led financial and economic modeling in collaboration with a major U.S. utility to quantify the impact that solar PV would have on their sales and helped identify alternative business models which would allow them to recapture a significant portion of this at-risk value.
- Supported the planning, content development, facilitation, and execution of numerous events and workshops with participants from across the electricity sector for RMI's Electricity Innovation Lab (eLab) initiative.
- Co-authored two studies reviewing valuation methodologies for solar PV and laying out new principles and recommendations around pricing and rate design for a distributed energy future in the United States. These studies have been highly cited by the industry and submitted as evidence in numerous Public Utility Commission rate cases.

The University of Michigan, Ann Arbor, MI. *Graduate Student Instructor*, September 2011 – July 2012

The Virginia Sea Grant at the Virginia Institute of Marine Science, Gloucester Point, VA. *Policy Intern*, Summer 2011

Managed a communication network analysis study of coastal resource management stakeholders on the Eastern Shore of the Delmarva Peninsula.

The Commission for Environmental Cooperation (NAFTA), Montreal, QC. *Short Term Educational Program/Intern*, Summer 2010

Researched energy and climate issues relevant to the NAFTA parties to assist the executive director in conducting a GAP analysis of emission monitoring, reporting, and verification systems in North America.

Congressman Tom Allen, Portland, ME. *Technology Systems and Outreach Coordinator*, August 2007 – December 2008

Directed Congressman Allen's technology operation, responded to constituent requests, and represented the Congressman at events throughout southern Maine.

EDUCATION

The University of Michigan, Ann Arbor, MI
Master of Public Policy, Gerald R. Ford School of Public Policy, 2012
Master of Science, School of Natural Resources and the Environment, 2012
Masters Project: *Climate Change Adaptation Planning in U.S. Cities*

Middlebury College, Middlebury, VT
Bachelor of Arts, 2007
Environmental Studies, Policy Focus; Minor in Spanish
Thesis: *Environmental Security in a Changing National Security Environment: Reconciling Divergent Policy Interests, Cold War to Present*

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Public Service Commission of South Carolina (Docket No. 2024-203-E): Direct Testimony of Devi Glick in Application of Kingstree East 230 for a certificate of environmental compatibility and public convenience and necessity for the construction and operation of a 249 MW AC solar and battery facility in Williamsburg County, South Carolina Pursuant to S.C.Code Ann. § 58-33-10 et. Seq., and request to proceed with initial construction work, S.C. Code Ann. § 58-33-110(7). On behalf of Kingstree East 230 LLC. August 9, 2024.

Indiana Utility Regulatory Commission (Cause No. 46038): Direct Testimony of Devi Glick in Petition of Duke Energy Indiana, LLC Pursuant to Indiana code §§ 8-1-2-42.7 and 8-1-2-61, for authority to modify its rate and changes. On behalf of Citizens Action Coalition of Indiana, Inc. July 11, 2024.

State of Vermont Public Utility Commission (Case No. 23-1447-PET): Rebuttal testimony of Devi Glick in the Petition of VT Real Estate Holdings 1 LLC for a Certificate of Public Good, pursuant to 30 V.S.A. § 248, for a 20 MW ground-mounted solar array in Shaftsbury, Vermont. On behalf of VT Real Estate Holdings 1 LLC ("Shaftsbury Solar"). Revised June 27, 2024.

State of Vermont Public Utility Commission (Case No. 23-1447-PET): Direct testimony of Devi Glick in the Petition of VT Real Estate Holdings 1 LLC ("Shaftsbury Solar") for a Certificate of Public Good, pursuant to 30 V.S.A. § 248, authorizing the installation and operation of a 20 MW solar electric generation facility off Holy Smoke Road in Shaftsbury, Vermont to be known as the "Shaftsbury Solar Project". On behalf of VT Real Estate Holdings 1 LLC ("Shaftsbury Solar"). Revised June 27, 2024.

Iowa Utilities Board (RPU-2023-002): Supplemental Testimony of Devi Glick in re: Interstate Power and Light Company, Proposed Rate Increase. On behalf of Environmental Intervenors. June 21, 2024.

Florida Public Service Commission (Docket No. 20240026-EI): Direct testimony of Devi Glick in petition for rate increase by Tampa Electric Company. On behalf of Sierra Club. June 6, 2024.

Iowa Utilities Board (RPU-2023-0002): Surrebuttal Testimony of Devi Glick in re: Interstate Power and Light Company, Proposed Rate Increase. On behalf of Environmental Intervenors. June 3, 2024.

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Michigan Public Service Commission (Case No. U-21051): Direct Testimony of Devi Glick in the Matter of the application of DTE Electric Company for reconciliation of its power supply cost recovery plan (Case No. U-21050) for the 12 months ended December 31, 2022. On behalf of Michigan Environmental Council. March 8, 2024.

Michigan Public Service Commission (Case No. U-21427): Direct Testimony of Devi Glick in the matter of the Application of Indiana Michigan Power Company for approval of a Power Supply Cost Recovery plan and factors (2024). On behalf of Sierra Club and Citizens Utility Board of Michigan. March 4, 2024.

Georgia Public Service Commission (Docket No. 55378): Direct Testimony of Devi Glick and Lucy Metz in Re: Georgia Power Company's 2023 Integrated Resource Plan Update. On behalf of Sierra Club. February 15, 2024.

Louisiana Public Service Commission (Docket No. U-36923): Direct Testimony of Devi Glick in the Application of Cleco Power LLC for: (1) Implementation of changes in rates to be effective July 1, 2024; and (2) extension of existing formula rate plan. On behalf of Sierra Club. February 5, 2024.

Public Service Commission of South Carolina (Docket No. 2023-154-E): Supplemental Testimony of Devi Glick in re: 2023 Integrated Resource Plan for the South Carolina Public Service Authority. On behalf of Sierra Club. January 29, 2024.

Public Service Commission of South Carolina (Docket No. 2023-154-E): Surrebuttal Testimony of Devi Glick in re: 2023 Integrated Resource Plan for the South Carolina Public Service Authority. On behalf of Sierra Club. November 17, 2023.

Public Utilities Commission of Ohio (Case No. 21-477-EL-RDR): Direct Testimony of Devi Glick in the Matter of the OVEC Generation Purchase Rider Audits Required by 4928.148 for Duke Energy Ohio, Inc. the Dayton Power and Light Company, and AEP Ohio. On behalf of Union of Concerned Scientists and the Citizens Utility Board. October 10, 2023.

Public Service Commission of South Carolina (Docket No. 2023-154-E): Direct Testimony of Devi Glick in re: 2023 Integrated Resource Plan for the South Carolina Public Service Authority. On behalf of Sierra Club. September 22, 2023.

Public Utilities Commission of Ohio (Case No. 20-165-EL-RDR): Direct Testimony of Devi Glick in the matter of the review of the Reconciliation Rider of the Dayton Power and Light Company. On behalf of Office of the Ohio Consumers' Counsel. September 12, 2023.

Virginia State Corporation Commission (Case No. PUR-2023-00066): Direct Testimony of Devi Glick in re: Virginia Electric and Power Company's 2023 Integrated Resource Plan filing pursuant to Virginia Code to §56-597 *et seq.* On behalf of Sierra Club. August 8, 2023.

Public Utility Commission of Texas (PUC Docket No. 54634): Direct Testimony of Devi Glick in the application of Southwestern Public Service Company for authority to change rates. On behalf of Sierra Club. August 4, 2023

Arizona Corporation Commission (Docket No. E-1345A-22-0144): Surrebuttal Testimony of Devi Glick in the matter of the application of Arizona Public Service Company for a hearing to determine the fair value of the utility property of the company for ratemaking purposes, to fix a just and reasonable rate of return thereon, and to approve rate schedules designed to develop such return. On Behalf of Sierra Club. July 26, 2023.

Arizona Corporation Commission (Docket No. E-01345A-22-0144): Direct Testimony of Devi Glick in the matter of the application of Arizona Public Service Company for a hearing to determine the fair value of the utility property of the company for ratemaking purposes, to fix a just and reasonable rate of return thereon, and to approve rate schedules designed to develop such return. On Behalf of Sierra Club. June 5, 2023.

Virginia State Corporation Commission (Case No. PUR-2023-00005): Direct Testimony of Devi Glick in the Petition of Virginia Electric & Power Company for revision of rate adjustment clause, Rider E, for the recovery of costs incurred to comply with state and federal environmental regulations pursuant to §56-585.1 A 5 e of the Code of Virginia. On behalf of Sierra Club. May 23, 2023.

New Mexico Public Regulation Commission (Case No, 22-00286-UT): Direct Testimony of Devi Glick in the matter of Southwestern Public Service Company's application for: (1) Revisions of its retail rates under advance no. 312; (2) Authority to abandon the Plant X Unit 1, Plant X Unit 2, and Cunningham Unit 1 Generating Stations and amend the abandonment date of the Tolk Generating Station; and (3) other associated relief. On behalf of Sierra Club. April 21, 2023.

Michigan Public Service Commission (Case No. U-20805): Direct Testimony of Devi Glick in the matter of the Application of Indiana Michigan Power Company for a Power Supply Cost Recovery Reconciliation proceeding for the 12-month period ended December 31, 2021. On behalf of Michigan Attorney General. April 17, 2023.

Michigan Public Service Commission (Case No. U-21261): Direct Testimony of Devi Glick in the matter of the application of Indiana Michigan Power Company for approval to implement a Power Supply Cost Recovery Plan for the twelve months ending December 31, 2023. On Behalf of Sierra Club. March 23, 2023.

New Mexico Public Regulation Commission (Case No. 19-00099-UT / 19-00348-UT): Direct Testimony of Devi Glick in the matter of El Paso Electric Company's Application for Approval of Long-Term Purchased Power Agreements with Hecate Energy Santa Teresa, LLC, Buena Vista Energy, LLC, and Canutillo Energy Center LLC. On Behalf of New Mexico Office of the Attorney General, January 23, 2023.

Arizona Corporation Commission (Docket No. E-01933A-22-0107): Direct Testimony of Devi Glick in the matter of the application of Tucson Electric Power Company for the establishment of just and reasonable rates and charges designed to realize a reasonable rate of return on the fair value of the properties of Tucson Electric Power Company devoted to its operations throughout the state of Arizona for related approvals. On Behalf of Sierra Club. January 11, 2023.

New Mexico Public Regulation Commission (Case No. 22-00093-UT): Direct Testimony of Devi Glick in the amended application for approval of El Paso Electric Company's 2022 renewable energy act plan pursuant to the renewable energy act and 17.9.572 NMAC, and sixth revised rate no. 38-RPS cost rider. On Behalf of New Mexico Office of the Attorney General, January 9, 2023.

Iowa Utilities Board (Docket No. RPU-2022-0001): Supplemental Direct and Rebuttal Testimony of Devi Glick in MidAmerican Energy Company Application for a Determination of Ratemaking Principles. On behalf of Environmental Intervenors. November 21, 2022.

Public Utility Commission of Texas (PUC Docket No. 53719): Direct Testimony of Devi Glick in the application of Entergy Texas, Inc. for authority to change rates. On behalf of Sierra Club. October 26, 2022.

Virginia State Corporation Commission (Case No. PUR-2022-00051): Direct Testimony of Devi Glick in re: Appalachian Power Company's Integrated Resource Plan filing pursuant to Virginia Code §56-597 *et seq*. On behalf of Sierra Club. September 2, 2022.

Public Service Commission of the State of Missouri (Case No. ER-2022-0129, Case No. ER-2022-0130): Surrebuttal Testimony of Devi Glick in the matter of Every Missouri Metro and Evergy Missouri West request for authority to implement a general rate increase for electric service. On behalf of Sierra Club. August 16, 2022.

Iowa Utilities Board (Docket No. RPU-2022-0001): Direct Testimony of Devi Glick in MidAmerican Energy Company Application for a Determination of Ratemaking Principles. On behalf of Environmental Intervenors. July 29, 2022.

Public Service Commission of the State of Missouri (Case No. ER-2022-0129, Case No. ER-2022-0130): Direct Testimony of Devi Glick in the matter of Every Missouri Metro and Evergy Missouri West request for authority to implement a general rate increase for electric service. On behalf of Sierra Club. June 8, 2022.

Virginia State Corporation Commission (Case No. PUR-2022-00006): Direct Testimony of Devi Glick in the petition of Virginia Electric & Power Company for revision of rate adjustment clause: Rider E, for the recovery of costs incurred to comply with state and federal environmental regulations pursuant to §56-585.1 A 5 e of the Code of Virginia. On behalf of Sierra Club. May 24, 2022.

Oklahoma Corporation Commission (Case No. PUD 202100164): Direct Testimony of Devi Glick in the matter of the application of Oklahoma gas and electric company for an order of the Commission authorizing application to modify its rates, charges, and tariffs for retail electric service in Oklahoma. On behalf of Sierra Club. April 27, 2022.

Public Utility Commission of Texas (PUC Docket No. 52485): Direct Testimony of Devi Glick in the application of Southwestern Public Service Company to amend its certifications of public convenience and necessity to convert Harrington Generation Station from coal to natural gas. On behalf of Sierra Club. March 25, 2022.

Public Utility Commission of Texas (PUC Docket No. 52487): Direct Testimony of Devi Glick in the application of Entergy Texas Inc. to amend its certificate of convenience and necessity to construct Orange County Advanced Power Station. On behalf of Sierra Club. March 18, 2022.

Michigan Public Service Commission (Case No. U-21052): Direct Testimony of Devi Glick in the matter of the application of Indiana Michigan Power Company for approval of a Power Supply Cost Recovery Plan and Factors (2022). On Behalf of Sierra Club. March 9, 2022.

Arkansas Public Service Commission (Docket No. 21-070-U): Surrebuttal Testimony of Devi Glick in the Matter of the Application of Southwestern Electric Power Company for approval of a general change in rate and tariffs. On behalf of Sierra Club. February 17, 2022.

New Mexico Public Regulation Commission (Case No. 21-00200-UT): Direct Testimony of Devi Glick in the Matter of the Southwestern Public Service Company's application to amend its certifications of public convenience and necessity to convert Harrington Generation Station from coal to natural gas. On behalf of Sierra Club. January 14, 2022.

Public Utilities Commission of Ohio (Case No. 18-1004-EL-RDR): Direct Testimony of Devi Glick in the Matter of the Review of the Power Purchase Agreement Rider of Ohio Power Company for 2018 and 2019. On behalf of the Office of the Ohio Consumer's Counsel. December 29, 2021.

Arkansas Public Service Commission (Docket No. 21-070-U): Direct Testimony of Devi Glick in the Matter of the Application of Southwestern Electric Power Company for Approval of a General Change in Rates and Tariffs. On behalf of Sierra Club. December 7, 2021.

Michigan Public Service Commission (Case No. U-20528): Direct Testimony of Devi Glick in the matter of the Application of DTE Electric Company for reconciliation of its power supply cost recovery plan (Case No. U-20527) for the 12-month period ending December 31, 2020. On behalf of Michigan Environmental Council. November 23, 2021.

Public Utilities Commission of Ohio (Case No. 20-167-EL-RDR): Direct Testimony of Devi Glick in the Matter of the Review of the Reconciliation Rider of Duke Energy Ohio, Inc. On behalf of The Office of the Ohio Consumer's Counsel. October 26, 2021.

Public Utilities Commission of Nevada (Docket No. 21-06001): Phase III Direct Testimony of Devi Glick in the joint application of Nevada Power Company d/b/a NV Energy and Sierra Pacific Power Company d/b/a NV Energy for approval of their 2022-2041 Triennial Intergrade Resource Plan and 2022-2024 Energy Supply Plan. On behalf of Sierra Club and Natural Resource Defense Council. October 6, 2021.

Public Service Commission of South Carolina (Docket No, 2021-3-E): Direct Testimony of Devi Glick in the matter of the annual review of base rates for fuel costs for Duke Energy Carolinas, LLC (for potential increase or decrease in fuel adjustment and gas adjustment). On behalf of the South Carolina Coastal Conservation League and the Southern Alliance for Clean Energy. September 10, 2021.

North Carolina Utilities Commission (Docket No. E-2, Sub 1272): Direct Testimony of Devi Glick in the matter of the application of Duke Energy Progress, LLC pursuant to N.C.G.S § 62-133.2 and commission R8-5 relating to fuel and fuel-related change adjustments for electric utilities. On behalf of Sierra Club. August 31, 2021.

Michigan Public Service Commission (Docket No. U-20530): Direct Testimony of Devi Glick in the application of Indiana Michigan Power Company for a Power Supply Cost Recovery Reconciliation proceeding for the 12-month period ending December 31, 2020. On behalf of the Michigan Attorney General. August 24, 2021.

Public Utilities Commission of Nevada (Docket No. 21-06001): Phase I Direct Testimony of Devi Glick in the joint application of Nevada Power Company d/b/a NV Energy and Sierra Pacific Power Company d/b/a NV Energy for approval of their 2022-2041 Triennial Intergrade Resource Plan and 2022-2024 Energy Supply Plan. On behalf of Sierra Club and Natural Resource Defense Council. August 16, 2021.

North Carolina Utilities Commission (Docket No. E-7, Sub 1250): Direct Testimony of Devi Glick in the Mater of Application Duke Energy Carolinas, LLC Pursuant to §N.C.G.S 62-133.2 and Commission Rule R8-5 Relating to Fuel and Fuel-Related Charge Adjustments for Electric Utilities. On behalf of Sierra Club. May 17, 2021.

Public Utility Commission of Texas (PUC Docket No. 51415): Direct Testimony of Devi Glick in the application of Southwestern Electric Power Company for authority to change rates. On behalf of Sierra Club. March 31, 2021.

Michigan Public Service Commission (Docket No. U-20804): Direct Testimony of Devi Glick in the application of Indiana Michigan Power Company for approval of a Power Supply Cost Recovery Plan and factors (2021). On behalf of Sierra Club. March 12, 2021.

Public Utility Commission of Texas (PUC Docket No. 50997): Direct Testimony of Devi Glick in the application of Southwestern Electric Power Company for authority to reconcile fuel costs for the period May 1, 2017- December 31, 2019. On behalf of Sierra Club. January 7, 2021.

Michigan Public Service Commission (Docket No. U-20224): Direct Testimony of Devi Glick in the application of Indiana Michigan Power Company for Reconciliation of its Power Supply Cost Recovery Plan. On behalf of the Sierra Club. October 23, 2020.

Public Service Commission of Wisconsin (Docket No. 3270-UR-123): Surrebuttal Testimony of Devi Glick in the application of Madison Gas and Electric Company for authority to change electric and natural gas rates. On behalf of Sierra Club. September 29, 2020.

Public Service Commission of Wisconsin (Docket No. 6680-UR-122): Surrebuttal Testimony of Devi Glick in the application of Wisconsin Power and Light Company for approval to extend electric and natural gas rates into 2021 and for approval of its 2021 fuel cost plan. On behalf of Sierra Club. September 21, 2020.

Public Service Commission of Wisconsin (Docket No. 3270-UR-123): Direct Testimony and Exhibits of Devi Glick in the application of Madison Gas and Electric Company for authority to change electric and natural gas rates. On behalf of Sierra Club. September 18, 2020.

Public Service Commission of Wisconsin (Docket No. 6680-UR-122): Direct Testimony and Exhibits of Devi Glick in the application of Wisconsin Power and Light Company for approval to extend electric and natural gas rates into 2021 and for approval of its 2021 fuel cost plan. On behalf of Sierra Club. September 8, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC125): Direct Testimony and Exhibits of Devi Glick in the application of Duke Energy Indiana, LLC for approval of a change in its fuel cost adjustment for electric service. On behalf of Sierra Club. September 4, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC123 S1): Direct Testimony and Exhibits of Devi Glick in the Subdocket for review of Duke Energy Indian, LLC's Generation Unit Commitment Decisions. On behalf of Sierra Club. July 31, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC124): Direct Testimony and Exhibits of Devi Glick in the application of Duke Energy Indiana, LLC for approval of a change in its fuel cost adjustment for electric service. On behalf of Sierra Club. June 4, 2020.

Arizona Corporation Commission (Docket No. E-01933A-19-0028): Reply to Late-filed ACC Staff Testimony of Devi Glick in the application of Tucson Electric Power Company for the establishment of just and reasonable rates. On behalf of Sierra Club. May 8, 2020.

Indiana Utility Regulatory Commission (Cause No. 38707-FAC123): Direct Testimony and Exhibits of Devi Glick in the application of Duke Energy Indiana, LLC for approval of a change in its fuel cost adjustment for electric service. On behalf of Sierra Club. March 6, 2020.

Public Utility Commission of Texas (PUC Docket No. 49831): Direct Testimony of Devi Glick in the application of Southwestern Public Service Company for authority to change rates. On behalf of Sierra Club. February 10, 2020.

New Mexico Public Regulation Commission (Case No. 19-00170-UT): Testimony of Devi Glick in Support of Uncontested Comprehensive Stipulation. On behalf of Sierra Club. January 21, 2020.

Nova Scotia Utility and Review Board (Matter M09420): Expert Evidence of Fagan, B, D. Glick reviewing Nova Scotia Power's Application for Extra Large Industrial Active Demand Control Tariff for Port Hawkesbury Paper. Prepared for Nova Scotia Utility and Review Board Counsel. December 3, 2019.

New Mexico Public Regulation Commission (Case No. 19-00170-UT): Direct Testimony of Devi Glick regarding Southwestern Public Service Company's application for revision of its retail rates and authorization and approval to shorten the service life and abandon its Tolk generation station units. On behalf of Sierra Club. November 22, 2019.

North Carolina Utilities Commission (Docket No. E-100, Sub 158): Responsive testimony of Devi Glick regarding battery storage and PURPA avoided cost rates. On behalf of Southern Alliance for Clean Energy. July 3, 2019.

State Corporation Commission of Virginia (Case No. PUR-2018-00195): Direct testimony of Devi Glick regarding the economic performance of four of Virginia Electric and Power Company's coal-fired units and the Company's petition to recover costs incurred to company with state and federal environmental regulations. On behalf of Sierra Club. April 23, 2019.

Connecticut Siting Council (Docket No. 470B): Joint testimony of Robert Fagan and Devi Glick regarding NTE Connecticut's application for a Certificate of Environmental Compatibility and Public Need for the Killingly generating facility. On behalf of Not Another Power Plant and Sierra Club. April 11, 2019.

Public Service Commission of South Carolina (Docket No. 2018-3-E): Surrebuttal testimony of Devi Glick regarding annual review of base rates of fuel costs for Duke Energy Carolinas. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. August 31, 2018.

Public Service Commission of South Carolina (Docket No. 2018-3-E): Direct testimony of Devi Glick regarding the annual review of base rates of fuel costs for Duke Energy Carolinas. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. August 17, 2018.

Public Service Commission of South Carolina (Docket No. 2018-1-E): Surrebuttal testimony of Devi Glick regarding Duke Energy Progress' net energy metering methodology for valuing distributed energy resources system within South Carolina. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. June 4, 2018.

Public Service Commission of South Carolina (Docket No. 2018-1-E): Direct testimony of Devi Glick regarding Duke Energy Progress' net energy metering methodology for valuing distributed energy resources system within South Carolina. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. May 22, 2018.

Public Service Commission of South Carolina (Docket No. 2018-2-E): Surrebuttal testimony of Devi Glick on avoided cost calculations and the costs and benefits of solar net energy metering for South Carolina Electric and Gas Company. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. April 4, 2018.

Public Service Commission of South Carolina (Docket No. 2018-2-E): Direct testimony of Devi Glick on avoided cost calculations and the costs and benefits of solar net energy metering for South Carolina Electric and Gas Company. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. March 23, 2018.

Resume updated October 2024

MPSC Case No: U-21260	
Requester: Staff	
Question No.: STDE-1.6a-f	
Respondent: M. A. Kimmel	
Page: 1 of 2	

Question: Please provide the following for all planned/maintenance outages greater than seven days for each DTE Electric generating unit in 2023, including Peakers, in Excel if possible:

a. Planned outage start and end dates, and planned duration.
b. Actual outage start and end dates, and actual duration.
c. Any work that was completed that was not planned, i.e. emergent work.
d. If the actual start and end dates, duration, and/or actual work performed was different than planned, please provide an explanation for any differences.
e. The detailed root cause explanation for the outage.
f. The actions the Company took to resolve the outage and mitigate the length of the outage.

Answer: DTE Electric objects to the request for the reasons that the request is overly broad, seeks excessive detail, seeks confidential, proprietary research, or commercial information belonging to DTE Electric, the disclosure of which would cause DTE Electric and its customers competitive or commercial harm, seeks information involving Cyber Security, CEII (either critical energy infrastructure information or critical electric infrastructure information), North American Electric Reliability Corporation (NERC) NERC-CIP (including but not limited to BES Cyber Asset information subject to protection under the Information Protection Program pursuant to NERC Reliability Standards CIP-003-6 and CIP-011-2), Supervisory Control and Data Acquisition (SCADA), confidential Midcontinent Independent System Operation (MISO) and ITC Holdings Corp and/or its affiliate companies' information in the possession of DTE Electric, U.S. export control laws and regulations, including but not limited to 10 C.F.R. Part 810 et. seq., or 10 CFR Part 2.390 and is otherwise not reasonably calculated to lead to the discovery of admissible evidence. Subject to this objection, and without waiving this objection, DTE Electric would answer as follows:

Co-Respondent(s): K. E. Hullum-Lawson, Legal

MPSC Case No: U-21260	
Requester: Staff	
Question No.: STDE-1.6a-f	
Respondent: M. A. Kimmel	
Page: 2 of 2	

Please see attachment labelled "NDA_U-21260 STDE-1.6 2023 Planned Outages Greater than 7 Days".

Planned outages are outages that are planned to perform routine maintenance, and therefore a root cause analysis is not needed nor performed. Please see discovery response STDE-1.9 for outage reports.

In order to mitigate the length of outages, the Company takes several actions, including, but not limited to, developing a scope and schedule prior to execution of the outage, staging material, contracting labor resources, and monitoring outage work progress.

Nuclear: Please refer to the direct testimony of Kendra Hullum-Lawson and attachment "NDA_U-21260_STDE-1.6-01_NG_Outage_23-01_RCE" root cause report for details regarding the Fermi 2 outage to address the unidentified leakage in the drywell.

Attachment: U-21260 STDE-1.6 2023 Planned Outages Greater than 7 Days
NDA_U-21260_STDE-1.6-01_NG_Outage_23-01_RCE_Redacted

Co-Respondent(s): K. E. Hullum-Lawson, Legal

MPSC Case No.: U-21260
Respondent: M. A. Kimmel
K. E. Hullum-Lawson
Question No.: STDE-1.6

	2023 DTE Electric Steam Power Generation Planned Outages of ≥ 7 Days					2023 DTE Electric Steam Power Generation Planned Outages - Actual of ≥ 7 Days						
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
Line	**Plant**	**Unit**	**Start Date**	**End Date**	**Total Days**	**Plant**	**Unit**	**Start Date**	**End Date**	**Total Days**	**Short Form Event Report #**	**Reference**
1	Belle River	1	27-Jan-23	5-Feb-23	10	Belle River	1	5-May-23	14-May-23	8	89982	
2	Belle River	1	26-May-23	4-Jun-23	10	Belle River	1	21-Oct-23	29-Oct-23	9	93943	
3	Belle River	1	1-Sep-23	10-Sep-23	10							
4	Belle River	2	15-Jan-23	24-Jan-23	10	Belle River	2	3-Mar-23	13-Mar-23	10	88022	
5	Belle River	2	12-May-23	21-May-23	10	Belle River	2	29-Sep-23	7-Oct-23	8	91762	
6	Belle River	2	15-Sep-23	10-Dec-23	87							
7	Bluewater	1	8-Apr-23	19-Apr-23	12	Blue Water	1	19-Apr-23	11-May-23	22	90482	
8	Bluewater	1	8-Oct-23	19-Oct-23	12	Blue Water	1	1-Nov-23	18-Nov-23	17	94382	
9	Bluewater	2	8-Apr-23	19-Apr-23	12	Blue Water	2	19-Apr-23	9-May-23	21	90502	
10	Bluewater	2	8-Oct-23	19-Oct-23	12	Blue Water	2	1-Nov-23	18-Nov-23	17	94402	
11	Bluewater	3	8-Apr-23	19-Apr-23	12	Blue Water	3	18-Apr-23	11-May-23	23	90503	
12	Bluewater	3	8-Oct-23	19-Oct-23	12	Blue Water	3	1-Nov-23	18-Nov-23	17	94403	
13						Fermi	2	20-Aug-23	8-Sep-23	19	N/A	Kendra Hullum-Lawson DT
14	Greenwood	1	1-Apr-23	11-Apr-23	11	Greenwood	1	30-Oct-23	12-Nov-23	13	91943	
15	Monroe	1	11-Feb-23	21-Jun-23	131	Monroe	1	11-Feb-23	14-Jun-23	124	90782	M. A. Kimmel DT, pages 7-8
16	Monroe	1	1-Jul-23	13-Jul-23	13							
17	Monroe	1	25-Nov-23	5-Dec-23	11							
18	Monroe	2	1-May-23	10-May-23	10	Monroe	2	23-Apr-23	4-May-23	11	88943	
19	Monroe	2	28-Oct-23	7-Nov-23	11	Monroe	2	28-Oct-23	8-Nov-23	11	92088	
20	Monroe	3	3-Jun-23	13-Jun-23	11							
21	Monroe	3	16-Sep-23	27-Oct-23	42	Monroe	3	4-Jun-23	3-Jul-23	29	90322 & 90362	
22	Monroe	4	13-May-23	23-May-23	11							
23	Monroe	4	1-Nov-23	12-Dec-23	42	Monroe	4	27-Oct-23	4-Dec-23	39	92222	

MPSC Case No.: U-21260
Respondent: M. A. Kimmel
K. E. Hullum-Lawson

Question No.: STDE-1.6

2023 DTE Electric Other Generation (Peaking Units) Planned Outages of ≥ 7 Days | **2023 DTE Electric Other Generation (Peaking Units) Planned Outages - Actual of ≥ 7 Days**

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
Line	**Plant**	**Unit**	**Start Date**	**End Date**	**Total Days**	**Plant**	**Unit**	**Start Date**	**End Date**	**Total Days**	**Short Form Event Report #**	**Reference**
1	Belle River 12	1	7-Nov-22	28-Jan-23	83							
2	Belle River 12	1	8-Apr-23	17-Apr-23	10	Belle River 12	1	8-Apr-23	17-Apr-23	9	88583	
3	Belle River 12	2	9-Jan-23	29-Apr-23	111	Belle River 12	2	9-Jan-23	26-Apr-23	107	88584	M. A. Kimmel DT, page 11
4	Belle River 13	1	22-Apr-23	1-May-23	10	Belle River 13	1	22-Apr-23	1-May-23	9	88585	
5	Belle River 13	1	16-Sep-23	30-Sep-23	15	Belle River 13	1	16-Sep-23	30-Sep-23	15	91482	
6						Belle River 13	1	2-Dec-23	19-Dec-23	18	92743 & 92763	
7						Dean	1	3-Apr-23	14-Apr-23	12	88502	
8						Dean	2	3-Apr-23	14-Apr-23	12	88503	
9						Dean	2	25-Sep-23	2-Oct-23	8	91402 & 91422	
10						Dean	3	3-Apr-23	14-Apr-23	12	88504	
11						Dean	3	25-Sep-23	25-Oct-23	30	91404	
12						Dean	4	3-Apr-23	14-Apr-23	12	88505	
13						Dean	4	25-Sep-23	2-Oct-23	8	91403 & 91423	
14	Delray 11	1	5-Mar-23	11-Mar-23	7	Delray 11	1	5-Mar-23	2-Apr-23	29	88162 & 88202	
15	Delray 11	1	16-Sep-23	23-Sep-23	8	Delray 11	1	6-Nov-23	6-Dec-23	31	92582	
16	Delray 12	1	12-Mar-23	18-Mar-23	7	Delray 12	1	5-Mar-23	3-Apr-23	29	88182 & 88203	
17	Delray 12	1	30-Sep-23	7-Oct-23	8	Delray 12	1	6-Nov-23	6-Dec-23	31	92583	
18						Enrico Fermi 11	4	16-Oct-23	23-Oct-23	8	93062	
19	Greenwood 11	1	12-May-23	19-May-23	8	Greenwood 11	1	24-Feb-23	11-Mar-23	15	88042	
20	Greenwood 11	2	5-May-23	12-May-23	8	Greenwood 11	1	8-May-23	19-May-23	12	88043	
21						Greenwood 11	1	22-May-23	31-May-23	10	88044	
22						Greenwood 11	2	24-Feb-23	11-Mar-23	15	88062	
23						Greenwood 11	2	12-May-23	19-May-23	7	88423	
24	Greenwood 12	1	28-Apr-23	5-May-23	8	Greenwood 12	1	24-Feb-23	11-Mar-23	15	88082	
25	Greenwood 12	1	30-Sep-23	15-Oct-23	16	Greenwood 12	1	22-Apr-23	4-May-23	13	88084 & 88085	
26						Greenwood 12	1	8-May-23	19-May-23	12	88083	
27						Greenwood 12	1	1-Oct-23	13-Oct-23	12	91063	
28						Hancock 11	1	15-Sep-23	29-Sep-23	15	90942 & 90962	
29						Hancock 11	3	15-Sep-23	29-Sep-23	15	90982 & 91302	
30						Hancock 12	1	15-Sep-23	29-Sep-23	15	90922	
31						Hancock 12	1	23-Oct-23	3-Nov-23	12	91702	
32						Hancock 12	1	3-Nov-23	17-Nov-23	14	91822	
33						Hancock 12	2	15-Sep-23	29-Sep-23	15	91322	
34						Hancock 12	2	23-Oct-23	3-Nov-23	12	91742	
35						Hancock 12	2	3-Nov-23	17-Nov-23	14	91722	
36						Monroe 11	1	7-Dec-23	21-Dec-23	14	92606	
37						Monroe 11	2	12-Dec-23	29-Dec-23	17	92607 & 92608	
38						Monroe 11	3	12-Dec-23	29-Dec-23	17	92609 & 92610	
39						Monroe 11	4	12-Dec-23	29-Dec-23	17	92611 & 92612	
40						Monroe 11	5	12-Dec-23	29-Dec-23	17	92614 & 92615	
41						Northeast 11	2	2-Jan-23	30-Jan-23	28	87982	
42						Northeast 11	2	27-Nov-23	15-Dec-23	18	92244, 93364, & 93464	
43						Northeast 11	3	2-Jan-23	30-Jan-23	28	87983	
44						Northeast 11	3	27-Nov-23	15-Dec-23	18	93326, 93382, & 93463	
45						Northeast 11	4	2-Jan-23	30-Jan-23	28	87984	
46						Northeast 11	4	27-Nov-23	15-Dec-23	18	93340, 93383, & 93462	
47						Northeast 12	1	6-Mar-23	14-Apr-23	40	89102	
48						Northeast 12	1	20-Oct-23	31-Oct-23	11	91682	
49						Northeast 12	1	4-Dec-23	15-Dec-23	12	93542	
50						Northeast 13	1	6-Mar-23	10-Apr-23	35	88962	
51						Northeast 13	1	16-Oct-23	31-Oct-23	16	92905, 92903, & 92922	
52						Northeast 13	1	4-Dec-23	15-Dec-23	12	92942	
53						Northeast 13	2	6-Mar-23	10-Apr-23	35	89022	
54						Northeast 13	2	16-Oct-23	31-Oct-23	16	93002, 92982, & 92963	
55						Northeast 13	2	4-Dec-23	15-Dec-23	12	92962	
56	Renaissance	1	6-Mar-23	2-Jun-23	89	Renaissance	1	24-Oct-22	9-Jan-23	77	85422, 90202, & 87902	M. A. Kimmel DT, page 15
57	Renaissance	1	30-Sep-23	14-Oct-23	15	Renaissance	1	18-Mar-23	31-Mar-23	13	89542	
58						Renaissance	1	17-Apr-23	25-Apr-23	9	89543	
59						Renaissance	1	6-Nov-23	20-Nov-23	14	92282	
60	Renaissance	2	16-Mar-23	30-Apr-23	46	Renaissance	2	6-Mar-23	27-Apr-23	53	89602 & 89603	
61	Renaissance	2	30-Sep-23	14-Oct-23	15	Renaissance	2	6-Nov-23	30-Dec-23	55	92284	
62	Renaissance	3	17-Mar-23	31-Mar-23	15	Renaissance	3	13-Mar-23	8-May-23	56	89708 & 89722	
63	Renaissance	3	30-Sep-23	14-Oct-23	15	Renaissance	3	6-Nov-23	20-Nov-23	14	92283	
64	Renaissance	4	16-Mar-23	30-Apr-23	46	Renaissance	4	30-Jan-23	15-Mar-23	44	89862	M. A. Kimmel DT, page 15
65	Renaissance	4	30-Sep-23	14-Oct-23	15	Renaissance	4	6-Nov-23	20-Nov-23	14	92285	
66						Renaissance	4	25-Nov-23	29-Dec-23	34	93022	
67						River Rouge 11	1-4	1-Oct-23	11-Jan-24	103	93528, 94242, 94243, & 93964	M. A. Kimmel DT, page 16
68						Slocum 11	1-5	4-Aug-23	31-Oct-23	88	90722, 90723, 90724, 91602, & 91622	
69	Superior 11	1	24-Sep-23	22-Dec-23	90							
70	Wilmot 11	1	6-Nov-23	20-Nov-23	15	Wilmot 11	1	30-Jan-23	16-Feb-23	17	89342	M. A. Kimmel DT, page 17
71	Wilmot 11	2	6-Nov-23	20-Nov-23	15							
72	Wilmot 11	3	6-Nov-23	20-Nov-23	15	Wilmot 11	3	30-Jan-23	16-Feb-23	17	89122	M. A. Kimmel DT, page 17
73	Wilmot 11	4	6-Nov-23	20-Nov-23	15	Wilmot 11	4	30-Jan-23	16-Feb-23	17	89182	M. A. Kimmel DT, page 17
74	Wilmot 11	5	6-Nov-23	20-Nov-23	15	Wilmot 11	5	30-Jan-23	16-Feb-23	17	89262	M. A. Kimmel DT, page 17

MPSC Case No.: U-21260
Respondent: M. A. Kimmel
K. E. Hullum-Lawson
Question No.: STDE-1.6

2023 DTE Electric Hydraulic
Planned Outages ≥ 7 Days

	(a)	(b)	(c)	(d)	(e)
Line	**Plant**	**Unit**	**Start Date**	**End Date**	**Total Days**
1	Ludington	1	3-Apr-23	21-Apr-23	19
2	Ludington	2	3-Apr-23	21-Apr-23	19
3	Ludington	3	24-Apr-23	12-May-23	19
4	Ludington	4	24-Apr-23	12-May-23	19
5	Ludington	5	15-May-23	25-Jun-23	42
6	Ludington	6	15-May-23	25-Jun-23	42

2023 DTE Electric Hydraulic
Planned Outages - Actual ≥ 7 Days

(f)	(g)	(h)	(i)	(j)	(k)
Plant	**Unit**	**Start Date**	**End Date**	**Total Days**	**Reference**
Ludington	1	3-Apr-23	21-Apr-23	18	Consumers Case No. U-21258
Ludington	2	3-Apr-23	21-Apr-23	18	Consumers Case No. U-21258
Ludington	3	24-Apr-23	22-May-23	28	Consumers Case No. U-21258
Ludington	4	24-Apr-23	15-May-23	21	Consumers Case No. U-21258
Ludington	5	15-May-23	30-Jun-23	46	Consumers Case No. U-21258
Ludington	6	15-May-23	23-Jun-23	40	Consumers Case No. U-21258

MPSC Case No: U-21260	
Requester: Staff	
Question No.: STDE-1.7a-f	
Respondent: M. A. Kimmel	
Page: 1 of 1	

Question: Please provide the following for all forced/random outages greater than seven days for each DTE Electric generating unit in 2023, including Peakers, in Excel if possible:

a. Outage start and end dates.
b. Duration of the outage.
c. MWhs lost due to the outage.
d. The detailed root cause explanation for the outage.
e. The last time the unit went down for a similar issue.
f. The actions the Company took to resolve the outage and mitigate the length of the outage.

Answer: Please see attachment labelled “U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days”.

Attachment: U-21260 STDE-1.7 2023 Random Outages Greater than 7 Days

MPSC Case No.: U-21260
Respondent: M. A. Kimmel
Question No.: STDE-1.7

2023 Random Outages Greater than 7 Days

PLANT_ID	UNIT	MW_LOSS	START_DATE_TIME	END_DATE_TIME	2023 HOURS	2023 MWWKS	NERC_DESCRIPTION	FAILURE	Previous Failure	Short Form Event #	Reference
BRVPK	2	3	5/24/2023 11:50	6/9/2023 17:15	389	7	COOLING SYSTEM	Leaks	No similar failure in last 5 years	88602	
BRVPK	5	3	12/5/2023 18:33	12/20/2023 15:13	357	6	COOLING SYSTEM	Leaks	No similar failure in last 5 years	92621	
BRVPP	2	635	7/11/2023 20:37	7/19/2023 14:55	186	704	FIRST SUPERHEATER	Leaks	6/4/2023	90702	
COLFX	1	2	9/20/2023 14:04	10/2/2023 12:19	286	3	OTHER ENGINE CONTROL PROBLEMS	Erratic or unexplained operating behavio	No similar failure in last 5 years	90862	
COLFX	1	2	12/12/2023 13:53	4/22/2024 0:00	466	6	TURBO CHARGER	Pressure; not within limits	No similar failure in last 5 years	95762	Kimmel DT, page 11
COLFX	2	3	10/25/2022 13:31	4/10/2023 0:00	2,376	42	EXHAUST VALVES	Leaks	No similar failure in last 5 years	88603	Kimmel DT, page 12
COLFX	2	3	4/12/2023 10:01	7/12/2023 12:48	2,187	39	EXHAUST GAS BELLOW	Leaks	No similar failure in last 5 years	89422	Kimmel DT, page 12
COLFX	2	3	9/20/2023 14:04	10/2/2023 12:19	286	5	OTHER ENGINE CONTROL PROBLEMS	Erratic or unexplained operating behavio	No similar failure in last 5 years	90882	
COLFX	3	3	8/4/2022 15:43	8/21/2023 11:22	5,579	100	GENERATOR OUTPUT BREAKER	Failure	5/11/2022	90566	Kimmel DT, page 12
COLFX	3	3	9/20/2023 14:04	10/2/2023 12:19	286	5	OTHER ENGINE CONTROL PROBLEMS	Erratic or unexplained operating behavio	No similar failure in last 5 years	90883	
COLFX	4	3	8/13/2023 9:53	8/31/2023 14:53	437	8	COOLING SYSTEM	Maintenance - general	No similar failure in last 5 years	90563	
COLFX	4	3	9/20/2023 14:04	10/2/2023 12:19	286	5	OTHER ENGINE CONTROL PROBLEMS	Erratic or unexplained operating behavio	No similar failure in last 5 years	90884	
COLFX	5	3	9/20/2023 14:04	10/2/2023 12:19	286	5	OTHER ENGINE CONTROL PROBLEMS	Erratic or unexplained operating behavio	No similar failure in last 5 years	90885	
DBNEC	2	15	4/7/2023 0:00	4/16/2023 11:30	228	20	OTHER MISCELLANEOUS GAS TURBINE PROBLEMS	Periodic inspection	No similar failure in last 5 years	N/A	
DBNEC	3	5	1/29/2023 7:00	3/8/2023 15:00	920	27	TURBINE SUPERVISORY SYSTEM (USE CODES 4290 TO 4299 FOR HYDRAULIC OIL)	Instrumentation	No similar failure in last 5 years	N/A	
DEAN	1	91	11/27/2023 0:00	12/21/2023 17:01	593	321	TRANSMISSION LINE (CONNECTED TO POWERHOUSE SWITCHYARD TO 1ST SUBSTATION)	Periodic inspection	No similar failure in last 5 years	92882	
DEAN	2	91	11/27/2023 0:00	12/21/2023 17:03	593	321	TRANSMISSION LINE (CONNECTED TO POWERHOUSE SWITCHYARD TO 1ST SUBSTATION)	Periodic inspection	No similar failure in last 5 years	92862	
DEL11	1	75	4/11/2023 12:53	4/21/2023 0:00	227	101	OTHER FUEL QUALITY PROBLEMS (OMC)	Temperature - general; not within limits	4/4/2023	88122	
DEL11	1	75	4/25/2023 10:59	5/3/2023 15:00	196	88	FUEL GAS COMPRESSOR - OTHER	Vibration; not within limits	No similar failure in last 5 years	88124	
DEL11	1	68	5/3/2023 15:00	5/16/2023 11:18	308	125	FUEL GAS COMPRESSOR HEAT EXCHANGERS	Failure	No similar failure in last 5 years	88142	
DEL11	1	64	6/27/2023 10:15	7/28/2023 7:42	741	282	FUEL NOZZLES/VANES	Clogged	No similar failure in last 5 years	89706	
DEL12	1	75	4/4/2023 10:31	4/11/2023 12:40	170	76	OTHER FUEL QUALITY PROBLEMS (OMC)	Temperature - general; not within limits	No similar failure in last 5 years	88143	
DEL12	1	75	4/11/2023 13:28	4/21/2023 0:00	227	101	OTHER FUEL QUALITY PROBLEMS (OMC)	Temperature - general; not within limits	4/4/2023	88144	
EF1PK	2	19	1/9/2023 11:00	1/17/2023 8:58	190	21	GAS FUEL SYSTEM INCLUDING CONTROLS AND INSTRUMENTATION	Leaks	No similar failure in last 5 years	87622	
EF1PK	2	19	1/17/2023 9:36	1/31/2023 8:08	335	38	GAS FUEL SYSTEM INCLUDING CONTROLS AND INSTRUMENTATION	Leaks	1/9/2023	87642	
EF1PK	2	19	2/16/2023 14:05	2/24/2023 10:39	189	21	HYDRAULIC OIL SYSTEM PIPING/VALVES	Leaks	No similar failure in last 5 years	88524	
EF1PK	2	17	4/26/2023 17:07	5/23/2023 11:09	642	65	ATOMIZING AIR SYSTEM	Electrical	No similar failure in last 5 years	88522	
EF1PK	2	15	5/23/2023 13:03	10/31/2023 15:08	3,866	345	ATOMIZING AIR SYSTEM	Electrical	4/26/2023	91522	Kimmel DT, pages 12-13
EF1PK	2	17	11/14/2023 0:00	11/21/2023 14:00	182	18	OTHER VOLTAGE PROTECTION DEVICES	Testing	No similar failure in last 5 years	92063	
EF1PK	3	13	8/27/2023 12:30	9/28/2023 9:43	765	59	GAS FUEL SYSTEM INCLUDING CONTROLS AND INSTRUMENTATION	Grounded electrical component	No similar failure in last 5 years	91082	
EF1PK	4	16	11/27/2022 10:44	1/17/2023 9:08	393	37	OTHER CONTROLS AND INSTRUMENTATION PROBLEMS	Instrumentation	No similar failure in last 5 years	87602	
GW1PP	1	785	2/22/2023 1:00	3/20/2023 6:00	629	2,939	INDUCED DRAFT FANS	Vibration; not within limits	10/9/2022	88762	
GW1PP	1	785	11/12/2023 21:00	11/22/2023 10:21	229	1,072	LUBE OIL COOLERS	Leaks	No similar failure in last 5 years	92042	
HK11	3	17	7/27/2023 14:14	8/23/2023 13:13	647	65	TURNING GEAR AND MOTOR	Electrical	No similar failure in last 5 years	90902	
HK11	3	17	8/24/2023 19:40	9/6/2023 14:01	306	31	4000-7000 VOLT CIRCUIT BREAKERS	Temperature - general; not within limits	No similar failure in last 5 years	91283	
LDTPR	2	187	9/26/2023 10:17	10/17/2023 10:15	504	561	OTHER MISCELLANEOUS BALANCE OF PLANT PROBLEMS	Inspection	10/14/2022	N/A	Consumers Case No. U-21258
LDTPR	3	187	5/22/2023 16:00	5/30/2023 12:32	189	210	OTHER MISCELLANEOUS GENERATOR PROBLEMS	Inspection	No similar failure in last 5 years	N/A	Consumers Case No. U-21258
LDTPR	3	187	9/26/2023 10:17	10/18/2023 9:16	527	587	OTHER MISCELLANEOUS BALANCE OF PLANT PROBLEMS	Inspection	8/22/2023	N/A	Consumers Case No. U-21258
LDTPR	4	187	9/26/2023 10:17	10/14/2023 10:40	432	481	OTHER MISCELLANEOUS BALANCE OF PLANT PROBLEMS	Inspection	6/27/2023	N/A	Consumers Case No. U-21258
LDTPR	5	187	9/2/2023 7:09	9/22/2023 13:04	486	541	TURBINE GOVERNOR	Inspection	4/17/2023	N/A	Consumers Case No. U-21258
LDTPR	5	187	9/26/2023 10:17	10/14/2023 10:40	432	481	OTHER MISCELLANEOUS BALANCE OF PLANT PROBLEMS	Inspection	6/25/2019	N/A	Consumers Case No. U-21258
LDTPR	6	187	9/14/2023 6:36	10/5/2023 11:48	509	567	ROUTINE HYDRO PLANNED OUTAGE (REOCCURRING SCHEDULE) (USE 4840 OR 7201 FOR SPECIFIC INSPECTIONS.)	Inspection	No similar failure in last 5 years	N/A	Consumers Case No. U-21258
LDTPR	6	187	10/5/2023 11:48	10/13/2023 13:57	194	216	OTHER MISCELLANEOUS BALANCE OF PLANT PROBLEMS	Inspection	7/2/2021	N/A	Consumers Case No. U-21258
MONPK	1	2	11/1/2022 11:12	2/2/2023 10:31	779	9	GENERATOR VOLTAGE CONTROL	Controls	No similar failure in last 5 years	88604	Kimmel DT, page 13
MONPK	1	2	2/3/2023 14:27	4/17/2023 6:00	1,744	21	MAIN TRANSFORMER	Electrical	No similar failure in last 5 years	88623	Kimmel DT, page 13
MONPK	1	2	4/21/2023 16:00	10/10/2023 9:36	4,122	49	MAIN TRANSFORMER	Electrical	2/3/2023	91811	Kimmel DT, page 13
MONPK	1	2	10/10/2023 12:02	12/7/2023 7:00	1,387	17	SYNCHRONIZATION SYSTEM	Electrical	No similar failure in last 5 years	92623	Kimmel DT, pages 13-14
MONPK	1	2	12/21/2023 12:07	8/28/2024 15:04	252	3	SYNCHRONIZATION SYSTEM	Electrical	10/10/2023	95982	Kimmel DT, pages 13-14
MONPK	2	3	2/3/2023 1:06	4/17/2023 6:00	1,757	31	MAIN TRANSFORMER	Electrical	No similar failure in last 5 years	88624	Kimmel DT, page 13
MONPK	2	3	4/21/2023 16:00	10/10/2023 9:36	4,122	74	MAIN TRANSFORMER	Electrical	2/3/2023	91809	Kimmel DT, page 13
MONPK	2	3	10/10/2023 12:02	10/23/2023 18:33	319	6	OTHER PLC PROBLEMS	Modification(s)	No similar failure in last 5 years	91810	
MONPK	3	3	2/3/2023 14:27	4/17/2023 6:00	1,744	31	MAIN TRANSFORMER	Electrical	No similar failure in last 5 years	88625	Kimmel DT, page 13
MONPK	3	3	4/21/2023 16:00	10/10/2023 9:36	4,122	74	MAIN TRANSFORMER	Electrical	2/3/2023	91807	Kimmel DT, page 13
MONPK	3	3	10/10/2023 12:02	10/23/2023 18:33	319	6	OTHER PLC PROBLEMS	Modification(s)	No similar failure in last 5 years	91808	
MONPK	4	3	2/3/2023 14:27	4/17/2023 6:00	1,744	31	MAIN TRANSFORMER	Electrical	No similar failure in last 5 years	88626	Kimmel DT, page 13
MONPK	4	3	4/21/2023 16:00	10/10/2023 9:36	4,122	74	MAIN TRANSFORMER	Electrical	2/3/2023	91804	Kimmel DT, page 13
MONPK	4	3	10/10/2023 12:02	10/23/2023 18:33	319	6	OTHER PLC PROBLEMS	Modification(s)	No similar failure in last 5 years	91805	
MONPK	5	3	2/3/2023 14:27	4/17/2023 6:00	1,744	31	MAIN TRANSFORMER	Electrical	No similar failure in last 5 years	88642	Kimmel DT, page 13
MONPK	5	3	4/21/2023 16:00	10/10/2023 9:36	4,122	74	MAIN TRANSFORMER	Electrical	2/3/2023	91802	Kimmel DT, page 13
MONPK	5	3	10/10/2023 12:02	10/23/2023 18:33	319	6	OTHER PLC PROBLEMS	Modification(s)	No similar failure in last 5 years	91803	
MONPP	1	758	7/13/2023 21:57	7/25/2023 2:02	268	1,210	WATERWALL (FURNACE WALL)	Leaks	12/20/2022	89462	
MONPP	2	783	11/11/2023 8:00	11/20/2023 5:00	213	993	LUBE OIL PUMPS	Restricted	No similar failure in last 5 years	92142	
MONPP	2	783	11/21/2023 23:40	11/30/2023 1:53	194	905	FEEDWATER PUMP	Broken	No similar failure in last 5 years	92086	
MONPP	3	773	7/16/2023 1:43	7/23/2023 12:03	178	821	ECONOMIZER	Leaks	7/8/2020	91004	
MONPP	4	762	7/6/2023 18:43	7/17/2023 8:52	254	1,153	FIRST REHEATER	Leaks	No similar failure in last 5 years	91882	
MONPP	4	762	8/6/2023 14:27	8/17/2023 1:14	251	1,137	OTHER BOILER TUBE LEAKS	Leaks	8/20/2019	90162	
NE11	1	20	2/3/2020 6:00	6/1/2023 0:00	3,624	431	HIGH PRESSURE SHAFT	Vibration; not within limits	No similar failure in last 5 years	90045	Kimmel DT, page 14
NE13	1	23	2/25/2023 13:00	3/6/2023 6:00	209	29	OTHER EXCITER PROBLEMS	Inspection	No similar failure in last 5 years	88362	
NE13	2	23	11/1/2021 7:09	2/25/2023 19:11	1,339	183	GENERATOR SYNCHRONIZATION EQUIPMENT	Shorted electrical component	No similar failure in last 5 years	90222	Kimmel DT, page 14
OLIVR	2	3	10/16/2022 18:00	3/27/2023 0:00	2,040	36	GENERATOR OUTPUT BREAKER	Failure	4/14/2022	88643	Kimmel DT, pages 14-15
OLIVR	2	3	3/29/2023 10:36	8/22/2023 9:42	3,503	63	GENERATOR OUTPUT BREAKER	Failure	10/16/2022	90582	Kimmel DT, pages 14-15
OLIVR	5	3	5/20/2023 7:11	6/6/2023 13:46	415	7	LUBE OIL SYSTEM	Electrical	No similar failure in last 5 years	88644	
PLACD	1	2	4/19/2023 8:50	5/23/2023 10:35	818	10	GENERATOR SYNCHRONIZATION EQUIPMENT	Controls	No similar failure in last 5 years	88645	
PLACD	1	2	8/24/2023 18:06	9/1/2023 11:42	186	2	GENERATOR OUTPUT BREAKER	Erratic or unexplained operating behavio	No similar failure in last 5 years	90628	
PLACD	2	3	4/19/2023 8:50	5/23/2023 10:35	818	15	OTHER EXCITER PROBLEMS	Corrosion - general	No similar failure in last 5 years	88662	
PUTNM	1	2	7/28/2023 16:43	8/17/2023 12:02	475	6	AIR COOLING SYSTEM	Controls	No similar failure in last 5 years	90822	
PUTNM	4	3	10/26/2023 8:42	11/14/2023 14:33	462	8	GOVERNOR	Broken	No similar failure in last 5 years	92170	
PUTNM	5	3	7/28/2023 16:16	8/17/2023 11:28	475	8	ENGINE CONTROL SYSTEM	Maintenance - general	No similar failure in last 5 years	90662	
RENPK	1	194	1/9/2023 18:50	1/24/2023 10:00	351	406	CLUTCH	Erratic or unexplained operating behavio	No similar failure in last 5 years	87462	Kimmel DT, page 15
RENPK	3	163	7/5/2023 16:51	7/21/2023 18:00	385	374	FUEL NOZZLES/VANES	Plugged	No similar failure in last 5 years	89682	
RENPK	3	170	9/25/2023 6:54	10/2/2023 7:43	169	171	NOX WATER INJECTION SYSTEM INCLUDING PUMP	Leaks	7/5/2023	92082	
RENPK	4	192	12/20/2022 15:28	1/30/2023 0:00	696	795	STATOR GENERAL	Shorted electrical component	No similar failure in last 5 years	87562	Kimmel DT, page 15
RENPK	4	187	3/15/2023 0:00	3/24/2023 0:00	216	240	STATOR GENERAL	Shorted electrical component	12/20/2022	89764	Kimmel DT, page 15
RENPK	4	187	3/27/2023 12:00	4/18/2023 12:08	528	588	STATOR GENERAL	Shorted electrical component	3/15/2023	89802	Kimmel DT, page 15
RENPK	4	180	4/18/2023 15:59	4/29/2023 9:29	258	276	OTHER MISCELLANEOUS GENERATOR PROBLEMS	Vibration; not within limits	No similar failure in last 5 years	89803	Kimmel DT, page 15
RENPK	4	180	4/29/2023 13:59	5/26/2023 10:52	645	691	OTHER MISCELLANEOUS GENERATOR PROBLEMS	Vibration; not within limits	No similar failure in last 5 years	89822	Kimmel DT, page 15
RENPK	4	166	6/9/2023 15:00	6/20/2023 4:00	253	250	FUEL NOZZLES/VANES	Restricted	No similar failure in last 5 years	89884	
RENPK	4	163	7/19/2023 8:00	7/27/2023 12:00	196	190	COOLING AND SEAL AIR SYSTEM	Material defects	No similar failure in last 5 years	89885	
RRGPK	1	2	5/17/2022 18:00	10/1/2023 0:00	6,552	78	ENGINE CONTROL SYSTEM	Error; wiring	5/13/2022	92162	Kimmel DT, page 16
RRGPK	2	3	5/17/2022 18:00	10/1/2023 0:00	6,552	117	ENGINE CONTROL SYSTEM	Error; wiring	5/13/2022	92163	Kimmel DT, page 16
RRGPK	3	3	5/17/2022 18:00	10/1/2023 0:00	6,552	117	ENGINE CONTROL SYSTEM	Error; wiring	5/13/2022	92165	Kimmel DT, page 16
RRGPK	4	3	5/17/2022 18:00	10/1/2023 0:00	6,552	117	ENGINE CONTROL SYSTEM	Error; wiring	5/13/2022	92168	Kimmel DT, page 16
SLOCM	2	3	5/11/2022 16:29	1/13/2023 11:10	299	5	ENGINE CONTROL SYSTEM	Indication; false	No similar failure in last 5 years	87102	Kimmel DT, page 16
STC12	1	2	12/20/2022 13:45	3/18/2024 6:00	8,760	104	MAIN TRANSFORMER	Impact damage	No similar failure in last 5 years	93924	Kimmel DT, page 16
STC12	2	3	12/20/2022 13:45	3/18/2024 6:00	8,760	156	MAIN TRANSFORMER	Impact damage	No similar failure in last 5 years	93922	Kimmel DT, page 16
SUPER	1	15	10/10/2023 9:08	10/17/2023 11:51	171	15	GENERATOR CURRENT AND POTENTIAL TRANSFORMERS	Connection; loose	No similar failure in last 5 years	92323	
SUPER	2	15	10/10/2023 9:08	10/17/2023 11:51	171	15	GENERATOR CURRENT AND POTENTIAL TRANSFORMERS	Connection; loose	No similar failure in last 5 years	92462	
SUPER	4	16	10/17/2023 13:00	10/30/2023 0:00	299	28	GENERATOR OUTPUT BREAKER	Broken	No similar failure in last 5 years	92324	
SUPER	4	18	11/3/2023 18:00	11/16/2023 12:39	307	33	GENERATOR OUTPUT BREAKER	Broken	No similar failure in last 5 years	92402	
WILMT	1	2	1/12/2023 14:49	1/24/2023 14:37	288	3	START SYSTEM	Failure	6/15/2022	87103	
WILMT	1	2	7/28/2023 16:13	8/28/2023 14:56	743	9	START SYSTEM	Erratic or unexplained operating behavio	6/27/2023	90642	
WILMT	1	2	9/20/2023 14:04	9/28/2023 9:37	188	2	START SYSTEM	Failure	1/12/2023	90842	
WILMT	2	3	5/19/2022 12:30	1/24/2023 13:49	566	10	MAJOR OVERHAUL (USE FOR NON-SPECIFIC OVERHAUL ONLY; SEE PAGE B-CCGT-2)	Failure	No similar failure in last 5 years	88723	Kimmel DT, page 17
WILMT	2	3	1/24/2023 15:15	2/28/2023 10:00	835	15	GENERATOR CASING	Cracked	No similar failure in last 5 years	88242	Kimmel DT, page 17

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-2.6a	
Respondent: K. E. Hullum-Lawson	
Page: 1 of 1	

Question: Refer to DTE response to AGDE 1.6j regarding the outage at Fermi and 1-12 regarding the outage at BWEC.

a. Explain why no replacement cost was incurred at Fermi if the plant was not available during a planned time period in 2023.

Answer: Fermi 2 was more available, in total, compared to the 2023 PSCR Plan which supplants DTE Electric's demand for electricity from other generation sources.

Attachment: None

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-2.6b	
Respondent: E. R. Bidlingmaier	
Page: 1 of 1	

Question: Refer to DTE response to AGDE 1.6j regarding the outage at Fermi and 1-12 regarding the outage at BWEC.

b. Explain why DTE conducts its replacement cost analysis on an annual net basis rather than an hourly basis.

Answer: Replacement cost analyses are conducted on an hourly basis. The replacement cost analysis provided for the BWEC outage in AGDE 1.12 reflects an hourly analysis conducted as described in MECDE-2.4c. For Fermi 2, the unit's generation in the Company's 2023 PSCR Plan, U-21259, was forecasted with an assumed outage rate based on historic unplanned outages spread across the hourly generation forecast. There would only be incremental PSCR replacement costs if the total outage amount reduces the unit’s annual generation below the forecasted generation in the 2023 PSCR Plan as you are not replacing generation that was already assumed to not be available. The Fermi 2 Power Plant generated 9,356 GWHs in 2023 which is above the 2023 PSCR Plan value of 9,026 GWHs. Therefore, the drywell outage was within the outage rate assumed in the PSCR Plan and there is no incremental replacement cost associated with this outage.

Attachment: None

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-2.6c	
Respondent: E. R. Bidlingmaier	
Page: 1 of 1	

Question: Refer to DTE response to AGDE 1.6j regarding the outage at Fermi and 1-12 regarding the outage at BWEC.

c. Has DTE evaluated how the price of power it was required to purchase during the outages compared to the cost of generation at Fermi and BWEC respectively during that same time? If yes, provide any such evaluation and conclusions.

Answer: No.

Attachment: None

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-2.6d	
Respondent: E. R. Bidlingmaier	
Page: 1 of 1	

Question: Refer to DTE response to AGDE 1.6j regarding the outage at Fermi and 1-12 regarding the outage at BWEC.

d. Has DTE evaluated how the price of power it was required to purchase during the outages compared to the price of power on average that Fermi and BWEC each earned from the market during the year? If yes, provide any such evaluation and conclusions.

Answer: No.

Attachment: None

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-3.4b	
Respondent: E. R. Bidlingmaier	
Page: 1 of 1	

Question: Refer to DTE response to MEC 2.6b regarding the Company's replacement cost analysis and the Company's PSCR Plan.

b. Does DTE consider the timing of resource availability and outages when deciding whether to calculate a replacement cost?

Answer: No. Generally, DTE Electric only performs replacement cost analyses when requested in the Company's PSCR Reconciliation cases for historical outages. Replacement cost analyses are reviewed with respect to the generation forecast provided in the relevant PSCR Plan filing; in other words, if the PSCR Plan forecast already accounts for the unavailability of the generating unit, it is not considered incremental replacement power from the approved PSCR plan until the actual outages exceed the forecast.

Attachment: None

MPSC Case No: U-21260
Requester: MEC
Question No.: MECDE-4.3c
Respondent: E. R. Bidlingmaier
Page: 1 of 1

Question: Refer to DTE response to MEC request 1.6 attachment regarding replacement costs for BWEC outages.

c. Did DTE use the replacement cost methodology outlined in DTE response to MEC request 2.4c in calculating the replacement costs displayed in DTE Response to MEC 1.6 attachment?

i. If yes, describe in detail whether DTE actually purchased market power to replace the power from DTE during these time periods or if it utilized power from some of its own generators instead.

ii. If no, describe in detail the methodology used to calculate the replacement costs.

Answer: Yes, the methodology outlined in 2.4c was used in calculating the replacement costs in the MEC 1.6 attachment. If an economic generator is in outage, the Company would have higher net wholesale purchases than if the generator was available and committed by MISO. The Company purchases all of its customer load from MISO every day and does not determine what generation is utilized to serve load.

Attachment: None.

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-4.3a	
Respondent: M. A. Kimmel	
Page: 1 of 1	

Question: Refer to DTE response to MEC request 1.6 attachment regarding replacement costs for BWEC outages.

a. Provide the lost power generation (GWh) for the entire warranty outage period in April-May beyond the 10 day extension.

Answer: The April-May BWEC periodic outage was established to complete CTG borescope inspections which are non-warranty work. The Company completed borescope inspections, other non-warranty work and warranty work during the timeframe of the outage. Lost power generation attributable to warranty work was identified in discovery response MECDE-1.10a-c.

Attachment: None.

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-4.3b	
Respondent: M. A. Kimmel	
Page: 1 of 1	

Question: Refer to DTE response to MEC request 1.6 attachment regarding replacement costs for BWEC outages.

b. Provide the lost power generation (GWh for the entire warranty outage period on November beyond the 5 day extension.

Answer: The November BWEC periodic outage was established to complete CTG borescope inspections which are non-warranty work. The Company completed borescope inspections, other non-warranty work and warranty work during the timeframe of the outage. Lost power generation attributable to warranty work was identified in discovery response MECDE-1.10a-c.

Attachment: None.

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-1.10a-c	
Respondent: M. A. Kimmel	
Page: 1 of 1	

Question: 10. Refer to the Direct Testimony of Company witness Kimmel at 17 regarding warranty work at Blue Water Energy Center. Please provide the following information.

a. The outage period with both start and end dates for the planned warranty work.

b. The amount of lost power generation in MWh and the related incremental replacement cost for the duration of the outage with calculations by day. Provide the underlying calculations in Excel with formulas intact.

c. If there was an incremental cost of replacement power to address the warranty work, did the manufacturer pay for the incremental cost or is DTE asking ratepayers to cover that cost?

Answer: The planned warranty work that extended the Spring 2023 outage was the replacement of the Combustion Turbine Generator 11 combustion can seals. The work began on April 24th and completed on April 29th.

The planned warranty work that extended the Fall 2023 outage was the replacement of the Heat Recovery Steam Generator 11 & 12 high pressure steam drum demisters. The work began at the start of the outage and was done in parallel with other non-warranty work. It did require the outage to be extended four days starting November 13th and ending November 17th.

Please see discovery response MECDE-1.6 for the lost power generation and associated incremental replacement power costs.

The manufacturer did not pay for incremental replacement power costs. The Company's actions and decisions were reasonable and prudent (not negligent) before and during the 2023 BWEC planned outages.

Attachment: None.

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No: U-21260	
Requester: AG	
Question No.: AGDE-1.12a-g	
Respondent: M. A. Kimmel	
Page: 1 of 2	

Question: 12. Refer to lines 12-18 on page 24 of Mr. Kimmel's direct testimony on plant outages for warranty work at the Blue Water Energy Center. Please:

a. Explain what the problems were that required warranty work and caused 583 GWh of less generation.
b. Provide the timeframe with dates of each warranty plant outage with related lost power in MWh totaling to the 583 GWh generation that did not occur.
c. Explain how the Company calculated the 583 GWh of lost generation.
d. Identify the warranty work that was identified during the multi-month testing phase of the plant and the dates when the warranty work was identified.
e. Explain why the warranty work could not be completed before the plant went into commercial operation.
f. Provide the time period with specific dates when the warranty work was performed and what specifically was done.
g. For the lost power generation, provide the related incremental replacement cost for the duration of the period with calculations by day. Provide the underlying calculations in Excel with formulas intact.

Answer: Assuming the questions are in reference to page 18 and not page 24 of Witness Kimmel's direct testimony, the 583 GWh of generation represents the difference between the total generation forecasted in the 2023 PSCR Plan and the actual generation from Blue Water Energy Center in 2023. The 583 GWh is not a direct calculation of lost generation due to warranty work.

Two outages were planned for 2023 at Blue Water Energy Center to perform borescope inspections on the CTG 11 & 12. Borescope inspections are not warranty work. Two warranty jobs (one per outage) caused outage extensions:

The planned warranty work that extended the Spring 2023 outage was the replacement of the Combustion Turbine Generator 11 combustion can seals. The work began on April 24th and completed on April 29th. Inspection in

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No: U-21260	
Requester: AG	
Question No.: AGDE-1.12a-g	
Respondent: M. A. Kimmel	
Page: 2 of 2	

February 2023 revealed the CTG 11 combustion can seals needed to be replaced.

The planned warranty work that extended the Fall 2023 outage was the replacement of the Heat Recovery Steam Generator 11 & 12 high-pressure steam drum demisters. The work began at the start of the outage and was done in parallel with other non-warranty work. It did require the outage to be extended four days starting November 13th and ending November 17th. In December of 2022, General Electric notified DTE Electric that the high-pressure steam drum demisters needed to be replaced.

The need to replace either the Combustion Turbine Generator 11 combustion can seals or to replace the Heat Recovery Steam Generator 11 & 12 high pressure steam drum demisters was not identified until after the plant began commercial operation and therefore could not have been completed prior to that time.

Please see discovery response MECDE-1.6 for details on the warranty work completed during the Blue Water Energy Center planned outages and incremental replacement cost calculations.

The Company's actions and decisions were reasonable and prudent (not negligent) before and during the 2023 BWEC planned outages.

Attachment: None.

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No: U-21260	
Requester: Staff	
Question No.: STDE-1.14	
Respondent: D. Swiech	
Page: 1 of 2	

Question: Did DTE Electric amend any contract terms in 2023 for fuel, purchase power, transportation, or any other PSCR cost? If so, please describe the changes, the reason(s) the changes were made, and the impact on PSCR costs for 2023.

Answer: Please see response to STDE-1.13 related to purchase power.

Nuclear:
DTE Electric did not amend any contract terms in 2023 for nuclear fuel that impacted 2023 PSCR costs.

Fossil Fuels:
One High Sulfur Eastern (HSE) and four Low Sulfur Western (LSW) coal contracts were amended to reduce the 2023 volume due to reduced coal consumption requirements. This had no impact to price and no impact to 2023 PSCR costs.

One oil transportation contract was amended to revise Freight Rate Schedule at an increase to the PSCR cost.

Another oil transportation contract was amended twice in 2023 to facilitate the removal of oil at the retired River Rouge Power Plant at an increased PSCR cost compared to the 2023 plan.

The natural gas balancing agreement for Dean Peakers was amended to temporarily increase the Maximum Loan Quantity at no PSCR expense. The natural gas transportation agreement for Dean Peakers was amended to temporarily allow an alternative receipt point at no impact to PSCR cost.

A natural gas storage agreement for BWEC was amended to increase storage capacity to help manage firm gas supply during BWEC outages. This resulted in an increase in PSCR expense. Another BWEC storage agreement was amended to allow an additional interruptible receipt point for 2024 and 2025 at no increase to 2023 PSCR Costs.

Co-Respondent(s): E. R. Bidlingmaier, K. Hullum-Lawson

MPSC Case No: U-21260	
Requester: Staff	
Question No.: STDE-1.14	
Respondent: D. Swiech	
Page: 2 of 2	

The BWEC Fuel Management and Gas Supply Agreement was amended twice. Amendment 1 extended certain notification dates related to the agreement term. Amendment 2 extended the term of the agreement by two years and changed the index price structure at no impact to 2023 PSCR costs.

The Nexus gas transportation agreement was amended to extend the term of the TEAL capacity through October 31, 2026 at no impact to 2023 PSCR costs.

Attachment: None

Co-Respondent(s): E. R. Bidlingmaier, K. Hullum-Lawson

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-4.2a-f	
Respondent: M. A. Kimmel	
Page: 1 of 2	

Question: Refer to DTE response to MEC request 1.10 regarding the warranty work at BWEC.

a. Provide DTE's contract with the manufacturer, particularly the portions relating to each party's obligation in the event that warranty repairs are necessary.
b. Did DTE discuss the replacement power costs with the manufacturer or the installer, or otherwise attempt to recover the cost of the replacement power from the manufacturer? If yes, provide all communications. If no, explain why.
c. Did DTE consider including a provision in its contract with the manufacturer to cover the cost of replacement power in the case of warranty repairs?
   i. Will DTE consider including a provision to cover the placement power costs in contracts for future power plants?
d. How did DTE decide when to take the plant offline to perform warranty repairs? Provide all reports, analysis, and communications regarding this decision.
e. Has DTE ever had to take a new plant offline and complete warranty repairs comparable to the repairs completed at BWEC?
f. Is DTE aware of any other power plants owned by other utilities that have been brought online in the past five years that have experienced warranty repairs that required outages? If yes, provide all available details.

Answer: DTE Electric objects to the request for the reasons that the request is overly broad, seeks excessive detail, seeks confidential, proprietary, research and development of trade secrets, or commercial information, the disclosure of which would cause DTE Electric and its customers competitive and/or commercial harm and is otherwise not reasonably calculated to lead to the discovery of admissible evidence. Furthermore, DTE Electric Company objects to the extent the request seeks a legal opinion and/or information subject to the attorney-client privilege, material prepared in anticipation of litigation, attorney work product, or the mental impressions of counsel. Subject to these objections, and without waiving these objections, DTE Electric would answer as follows:

Co-Respondent(s): E. R. Bidlingmaier, Legal

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-4.2a-f	
Respondent: M. A. Kimmel	
Page: 2 of 2	

Please see attachment labelled “NDA U-21260 MECDE-4.2a Redacted Kiewit Contract”.

The Kiewit contract speaks for itself.

The Company schedules routine spring and fall BWEC maintenance outages (as it does for many of its generation units) to ensure reliable operation during summer and winter high demand periods, regardless of whether warranty work is needed. BWEC was not taken offline to solely perform warranty work. Rather, even without warranty work, BWEC would have been taken offline for routine maintenance and inspections. The 2023 BWEC maintenance spring and fall outages were performed in the shoulder months to not coincide with potential high demand periods.

It is common for new plants to experience warranty repairs. The Company is aware of power plants that have required outages for warranty repairs. As an example, please refer to General Electric technical information letter discussed in Witness M.A. Kimmel rebuttal testimony in case U-21051.

Attachment: NDA U-21260 MECDE-4.2a Redacted Kiewit Contract

Co-Respondent(s): E. R. Bidlingmaier, Legal

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of	)	
DTE ELECTRIC COMPANY for	)	
Reconciliation of its power supply cost recovery	)	Case No. U-21051
plan (Case No. U-21050) for the	)	
12 months ended December 31, 2022.	)	

PUBLIC VERSION

REBUTTAL TESTIMONY OF

MARK A. KIMMEL

Q15. Was there a reason why the first warranty repair, the replacement of the combustion turbine extraction hoses, was not able to be completed before BWEC started commercial operations?

A15. The requirement to modify the design of the initial combustion turbine extraction hoses was identified in January 2022 when GE sent the Company a Technical Information Letter (TIL), provided as confidential Exhibit A-29, describing a [redacted] Shortly after the TIL was received, hoses of the upgraded design were ordered. These hoses are 10-inch diameter flexible metal hoses that see extreme temperatures (700 to 900 degrees Fahrenheit) directly from the combustion turbines during operation. Parts to complete the repair were received at the end of October 2022, only a month before the Fall planned outage in which the Company installed them.

Q16. Why was the second warranty repair, the update to the steam pressure tap, not able to be completed before BWEC started commercial operations?

A16. The issue with the steam pressure tap was first identified when the steam turbine was tested at full load in March 2022 during the pre-COD testing program. While the pressure tap was installed per design, the instrument was found to be providing inaccurate steam pressure readings. GE recommended an updated design that would provide more accurate readings. The required parts were placed on order and arrived in June 2022 after the plant's COD. A temporary solution provided by GE allowed the Company to operate the unit safely until the permanent modification could be made in the Fall planned outage.

Q17. Why is an accurate steam pressure reading critical for plant operations?

A17. This specific steam pressure tap is utilized in the control logic of the unit. The reading is utilized in the unit loading control software to calculate the optimal reheat setpoint and flow reference setpoint, which affects the automatic operation of steam valves. An inaccurate steam pressure reading can result in the inability to properly control the operation of the unit leading to equipment instability and/or a unit trip resulting in a forced outage.

Q18. What were some of the benefits of waiting to perform the warranty repairs until Fall 2022 rather than completing the warranty repairs earlier?

A18. By planning the outage in the fall, the Company was able to schedule the outage in a lower-price energy market and efficiently consolidate the warranty repairs into one comprehensive outage. Alternatively, the Company could have taken outages in a higher-priced energy market, such as the summer, or performed the repairs in a piecemealed fashion which would have required a longer overall outage duration.

Line No.

Instead, the Company prudently consolidated the warranty work into the already-scheduled Fall planned outage.

Q19. Is it unusual to have warranty work required at a new power plant?

A19. No, some amount of warranty work should be expected with such a complex and massive undertaking. Power plants include thousands of components working together in various systems, each one serving a specific purpose.

In a way, building a power plant is a lot like building a new house, albeit houses are smaller and less complicated. Home builders may offer one-year warranties to protect homebuyers. After construction of a new house, there may be some minor unanticipated repairs that require the builder's attention, such as the incorrect finish on a fixture or nail pops in the drywall. In these instances, the new house has passed required building codes and is functional when released to the buyer, allowing them to move into and live in the home, but the builder may need to procure replacement fixtures and arrange for labor to make the repairs after the homeowner takes possession. Furthermore, it would be logical for the builder to consolidate such warranty repairs into fewer repair visits to minimize impact to the homeowner, just like occurred with respect to BWEC.

Similarly, the Company successfully commissioned BWEC on June 1, 2022, and operated it reliably for the benefit of customers, even though the builder had some repairs to make under warranty. Identifying necessary improvements requires time

MPSC Case No: U-21260	
Requester: ABATE	
Question No.: ABDE-1.4a-c	
Respondent: M. A. Kimmel	
Page: 1 of 1	

Question: Please identify and describe any and all net increased costs included in the Company's Application which are related to a generating plant outage of more than 90 days in duration, as well as:

a. The underlying cause(s) of the outage;
b. Whether the outage was prolonged for any reason and, if so, the cause(s) thereof; and
c. Any actions the Company took to avoid or rectify the outage.

Answer: Please refer to M. A. Kimmel direct testimony.

Please see attachment labelled "U-21260 ABDE-1.4 90-Day Outage Information" which includes a brief explanation of the outage and any associated replacement energy cost. No outage, or any part of an outage, was caused or prolonged by DTE Electric's negligence or by DTE Electric's unreasonable or imprudent management.

Attachment: U-21260 ABDE-1.4 90-Day Outage Information

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No.: U-21260
Requestor: ABATE
Question No.: ABDE-1.4a-c
Respondent: M. A. Kimmel / E. R. Bidlingmaier

Unit	2023 Timeframe in Excess of 90 Outage Days		Estimated Replacement Energy Costs ($)	a. The underlying cause(s) of the outage	b. Whether the outage was prolonged for any reason and, if so, the cause(s) thereof,	c. Any actions the Company took to avoid or rectify the outage
Monroe Unit 1	5/12/2023	6/14/2023	$1,206,306	The Monroe Unit 1 periodic outage was planned for 131 days in the Company's 2023 PSCR Plan due to the extensive steam turbine work required on all four turbine rotors (MAK-7 lines 20-22). The outage was completed in only 124 days (7 days less than the Plan).	The HP turbine and IP turbines required new rows of turbine blades due to solid particle erosion. The two LP turbines required their rotors and blades to be replaced due to stress corrosion cracking in the blade root areas (MAK-7 lines 22-24).	The Company minimized the duration of the Monroe Unit 1 planned outage by scheduling round-the-clock disassembly and reassembly of the turbines, having turbine parts manufactured prior to the outage, acquiring necessary transportation permits in advance of shipment dates, securing high priority, round-the-clock vendor shop time to manufacture turbine parts, and actively managing the outage, including daily review of critical path activities and making adjustments based on progress of activities (MAK-8 lines 18-24). The duration of this outage was reasonable and prudent based on the restorative work required to ensure future reliability of the unit
Belle River 12-2	4/9/2023	4/26/2023	$0	Belle River 12-2 Peaker was in a planned outage to perform a major overhaul on the unit. This was the first major overhaul of the unit since it was constructed in 1999 (MAK-11 lines 3-5).	The major overhaul included extensive inspection, repair, and replacement of various equipment and inspections for cracking and erosion. Preventative and corrective maintenance was performed on the compressor, combustion system, gas turbine blading, and hot gas path. The maintenance work scope included repairs and/or replacement of rotating blades, stationary nozzles, seals, shrouds, combustion hardware, exhaust diffuser, exhaust casing replacement, compressor blade work, and generator overhaul. The combustion turbine work scope required disassembly and shipping to the OEM for repair and return to the site for reassembly (MAK-11 lines 5-13).	The duration of this outage was reasonable and prudent based on the restorative work required to ensure future reliability of the unit (MAK-11 lines 16-18).
Colfax 11-2	1/23/2023	7/12/2023	$0	Colfax 11-2 was removed from service due to exhaust leaks (MAK-12 lines 3-4).	Exhaust leaks lead to oil accumulating on the engine manifold creating a fire risk requiring gaskets to be replaced (MAK 12 lines 4-6).	The duration of this outage was reasonable and prudent based on the restorative work required.
Colfax 11-3	1/1/2023	8/21/2023	$0	Colfax 11-3 was in outage due to generator output breaker failure (MAK-12 lines 11-12).	Parts for the faulty breaker were not available due to obsolescene(MAK-12 lines 12-13).	A breaker was taken from River Rouge, refurbished, and was used to replace the Colfax 11-3 faulty breaker. (MAK-12 lines 13-14).
Fermi 11-2	8/21/2023	10/31/2023	$0	Enrico Fermi 11-2 was placed in outage due to a failure of the electrical isolation switching system (MAK-12 lines 20-21).	The switching system cannot be repaired until the entire Fermi Nuclear Power Plant site is offline which was next scheduled for the spring of 2024 (MAK-12 lines 21-23)	To allow the peaker to return to service in the interim, an alternative startup procedure was developed and implemented, and the unit was returned to service (MAK-12 lines 23-25).
Monroe 11-1	1/30/2023	2/2/2023	$0	Monroe 11-1 Peaker was removed from service and placed in an outage after it failed to start due to a fault in the protective relay system (MAK-13 lines 6-7).	Troubeshooting was performed on the relay system and the peaker was returned to service (MAK-13 lines 7-8).	The outage duration and work scope were reasonable and prudent.
Monroe 11-1, 11-2, 11-3, 11-4, 11-5	5/4/2023	10/10/2023	$0	Monroe 11-1 through 11-5 Peakers were in an outage due to an electrical cable failure (MAK-12 lines 14-15).	A new cable was procured and installed (MAK-12 lines 15-16).	The outage duration and work scope were reasonable and prudent.
Northeast 11-1	1/1/2023	6/1/2023	$0	Northeast 11-1 Peaker was removed from service due to excessive axial movement in the machine (MAK-14 lines 5-7).	Subsequent inspection identified extensive compressor section damage requiring a major overhaul (MAK-14 lines 7-8).	The Company retired the unit in May 2023 (MAK-14 lines 8-10).
Northeast 13-2	1/1/2023	2/25/2023	$0	Northeast 13-2 Peaker was removed from service due to a failed generator field (MAK-14 lines 15-16).	The generator field rotor was removed and shipped out for repairs (MAK-14 lines 16-17)	The outage duration and work scope were reasonable and prudent.
Oliver 11-2	1/1/2023	8/22/2023	$0	Oliver 11-2 was removed from service due to generator output breaker failiure (MAK-14 lines 22-23).	Parts for the faulty breaker were not available due to obsolescene(MAK-14 lines 23-24).	A breaker was taken from River Rouge, refurbished, and was used to replace the Oliver 11-2 faulty breaker. (MAK-14 lines 24-25).
Renaissance Unit 1	1/22/2023	1/24/2023	$0	Renaissance Unit 1 Peaker was in a planned to perform a major overhaul/rebuild on the unit. This was the first major overhaul of the unit since it was constructed by the previous owner in 2002 (MAK-15 lines 6-8).	The major overhaul included a replacement of turbine and compressor rotor, turbine blades, vane, seals, compressor blades, compressor diaphragms, turbine exhaust, exhaust manifold, compressor insulation, turbine insulation, and exhaust insulation (MAK-15 lines 9-12).	The duration of this outage was reasonable and prudent based on the restorative work required to ensure future reliability of the unit (MAK-15 lines 12-14).
Renaissance Unit 4	3/20/2023	5/26/2023	$0	Renaissance Unit 4 Peaker started an outage due to a protective electrical relay fault (MAK-15 lines 17-18).	Inspection revealed the unit required a generator stator rewind and rotor repair. These repairs required expedited materials procurement, mobilization of specialty crews to site, as well as off-site repair coordination (MAK-15 lines 18-21).	The duration of this outage was reasonable and prudent based on the restorative work required to ensure future reliability of the unit (MAK-15 lines 22-23).
River Rouge 11-1, 11-2, 11-3, 11-4	1/1/2023	12/31/2023	$0	River Rouge 11-1, 11-2, 11-3, and 11-4 were placed in outage due to an indicated fault in the relay system which was caused by animal damage (MAK-16 lines 2-4).	River Rouge 11-1, 11-2, 11-3, and 11-4 were placed in outage due to an indicated fault in the relay system which was caused by animal damage (MAK-16 lines 2-4).	The Company retired the units in May 2024 (MAK-16 lines 4-5).
Slocum 11-2	1/1/2023	1/13/2023	$0	Slocum 11-2 Peaker was placed in outage due to a false indication within the engine control system (MAK-16 lines 9-11).	In order to return the unit to service, significant troubleshooting and anumber of components required replacement. Components requiring replacement included the jumper line, power pack, injector, aftercoolers, and electronic governor box (MAK-16 lines 11-14).	The duration of this outage was reasonable and prudent based on the restorative work required (MAK-16 lines 14-15).
St. Clair 12-1, 12-2	3/20/2023	12/31/2023	$0	St. Clair 12-1 Peaker and St. Clair 12-2 Peaker were placed in outage due to an electrical cable failure. (MAK-16 lines 20-21).	The company retired the St. Clair 12 diesel engines in May 2024. (MAK-16 lines 21-22).	The company retired the St. Clair 12 diesel engines in May 2024. (MAK-16 lines 21-22).
Wilmot 11-2	1/1/2023	2/28/2023	$0	Wilmot 11-2 Peaker was placed in outage due to a failed turbocharger (MAK-17 lines 2-3).	In order to return the unit to service, the turbocharger required replacement and the engine required a rebuild. On January 24, 2023, a test run was completed, but a crack was identified on the generator retaining ring. Following repairs, teh peaker was returned to service. (MAK-17 lines 3-6).	The maintenance work scope on Wilmot 11-2 Peaker was reasonable and prudent.

MPSC Case No: U-21260
Requester: MEC
Question No.: MECDE-2.1
Respondent: E. R. Bidlingmaier
Page: 1 of 1

Question: Please provide DTE hourly load for the 2023 PSCR period.

Answer: Please see attachment labelled “U-21260 MECDE-2.1 2023 PSCR Hourly Load”.

Attachment: U-21260 MECDE-2.1 2023 PSCR Hourly Load

MPSC Case No: U-21260	
Requester: Staff	
Question No.: STDE-2.1g	
Respondent: M. A. Kimmel	
Page: 1 of 1	

Question: Referring to the file “U-21260 STDE-1.9 2023 FO Reports”, please provide the following:

g. Page 68 of the document, Event Report #89462, please (i) explain the reasons that led to the 4 shifts of rework that failed the initial inspection, (ii) whether the this work was performed by DTE Electric employees or by a contractor, and if performed by a contractor, explain what oversight DTE Electric had in ensuring the welds were performed to Company standards and according to procedures to pass inspection, and (iii) provide the replacement power costs for the 4 shifts of rework during this outage, in Excel with supporting documentation.

Answer: Boiler tube dutchmen were installed by contracted union boilermaker-welders during the outage detailed in Event Report #89462. Union boilermaker-welders complete a multi-year apprenticeship and receive ongoing training from their Union. The Company uses radiographic testing (RT) inspection to ensure the integrity of welds prior to final acceptance, avoiding potential additional future forced outages. In this case, the testing identified welds with inclusions. These inclusions were imperfections embedded in the weld material, not detectable to the naked eye and needed additional work prior to being accepted. Radiographic testing is required to detect these imperfections. To find inclusions that need to be removed and rewelded is common within the industry. This work was done, and the unit was returned to service with no leaks.

Please see attachment labelled “U-21260 STDE-2.1g Monroe 1 Replacement Power Costs” for the replacement power costs.

Attachment: U-21260 STDE-2.1g Monroe 1 Replacement Power Costs

Co-Respondent(s): E. R. Bidlingmaier

MPSC Case No.: U-21260
Requestor: STDE
Question No.: STDE-2.1g
Respondent: E. R. Bidlingmaier

Forecasted ROR (%)	12.3%
Total Lost Power Generation (MWh)	24,847
Replacement cost ($)	294,314

Monroe 1

Date	Gross Margin	Gross Margin w/ ROR	Generation (MWh)	Generation (MWh) w/ ROR
7/23/2023	$ 128,332	$ 112,547	13,786	12,090
7/24/2023	$ 207,259	$ 181,766	14,546	12,757

MPSC Case No: U-21260	
Requester: MEC	
Question No.: MECDE-1.2a	
Respondent: E. R. Bidlingmaier	
Page: 1 of 1	

Question: 2. Regarding DTE's decisions about when to operate its fossil-fuel power plants in 2023, provide the following:

a. A narrative explanation of how DTE makes its unit commitment and dispatch decisions for all its fossil fuel power plants. If there are any differences by plan or fuel types, please include that in the narrative explanation.

Answer: As described in my direct testimony page 8 lines 20-24 and page 9 lines 1-17, DTE Electric makes commitment decisions based on several factors including: the units current commitment status, cycling costs, system reliability concerns, unit testing, environmental compliance, unit constraints, and a 14-day forecast published on standard business days called the Economic Reserve and Cycling (ER&C) Report. The ER&C report is run every business day and forecasts gross margin for certain fossil-fuel power plants, including Monroe, Blue Water, Belle River, and Greenwood, in addition to peaking units at the Renaissance, Dean, Delray, Belle River, and Greenwood sites. The 14-day forecast is based on LMP forecasts for the MICHIGAN.HUB node, in addition to forecasted unit costs, and known unit availability at the time the report is run. For the fossil-fuel power plants, this forecast is used to determine economic periods to commit these long lead units. For the peaking units included in the report, the forecast is used to determine economic periods to run the units, and economic periods to complete testing.

For units not included in the report, DTE Electric offers the units as economic commit status to MISO who determines unit commitment. MISO makes dispatch decisions whether economic or for reliability with the exception of fixed dispatches submitted for testing purposes. In the case of testing, the test requirement determines the dispatch level.

Attachment: None.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **DTE ELECTRIC COMPANY** for reconciliation of its power supply cost recovery plan (Case No. U-21261) for the twelve months ending December 31, 2023.	U-21260

PROOF OF SERVICE

On the date below, an electronic copy of **Public Version of Direct Testimony and Exhibits of Devi Glick on behalf of Michigan Environmental Council** was served on the following:

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The statements above are true to the best of my knowledge, information and belief.

TROPOSPHERE LEGAL, PLC
Counsel for MEC

Natasha L. Fowles
Digitally signed by Natasha Fowles
Date: 2025.02.11 12:38:29 -05'00'

Date: February 10, 2025

By: ______________________________

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