

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of)	
DTE ELECTRIC COMPANY for)	
approval of Certificates of Necessity)	
pursuant to MCL 460.6s, as amended,)	
in connection with the addition of a)	Case No. U-18419
natural gas combined cycle generating)	
facility to its generation fleet and for)	
related accounting and ratemaking)	
authorizations.)	

QUALIFICATIONS
AND
DIRECT TESTIMONY
OF
PHILIP DIDOMENICO

January 12, 2018

Table of Contents

I. INTRODUCTION.....	1
II. SUMMARY AND RECOMMENDATIONS.....	4
III. OVERVIEW OF THE APPLICATION	5
IV. ANALYSIS	6
A. The Need for the New Unit.....	6
B. The Reasonableness of Meeting the Need	15
C. Recoverable Costs	46
V. CONCLUSION	50

MICHIGAN DEPARTMENT OF THE ATTORNEY GENERAL
QUALIFICATIONS OF PHIL DIDOMENICO

Line
No.

I. Introduction

Q. Please state your name and business address.

A. My name is Philip DiDomenico. My business address is Daymark Energy Advisors, 370 Main Street, Suite 325, Worcester, Massachusetts 01608.

Q. On whose behalf do you testify in this proceeding?

A. I am testifying on behalf of the Michigan Department of the Attorney General (“AG”).

Q. Please describe Daymark Energy Advisors and your position with the company.

A. Daymark Energy Advisors is a leading provider of integrated planning, policy, and strategic analysis and advisory services to the North American electric and natural gas industries. For 37 years, our mission has been to apply our knowledge, experience, and technology to provide our clients with the highest quality actionable analysis and advice to support efficient and sustainable decisions under uncertainty. Our expertise includes resource planning, market policy and analysis (wholesale, retail, distributed, and renewable), power procurement, economic and financial analysis of energy assets and contracts, and regulatory policy. We provide services to a broad range of organizations involved with energy markets, including public and private utilities, end-use customers, energy producers and traders, financial institutions and investors, regulatory agencies and consumer advocates, and public policy and energy research organizations. I am a Managing Consultant at Daymark Energy Advisors.

Q. Please summarize your qualifications and work experience.

A. I have a Bachelor of Science in Electrical Engineering (“BSEE”) with a power systems major and a Master in Business Administration (“MBA”). I have worked in the electric utility business for 41 years. From 1976 to 1980 I worked at Baltimore Gas & Electric

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and from 1980 to 1999 I worked at Boston Edison Company which evolved into NSTAR Electric & Gas (“NSTAR”), and now Eversource. I have held many technical and managerial positions covering a range of utility engineering, planning, and operations functions. In 1999, I moved into consulting. Since then, I have worked on projects related to power procurement, utility planning, acquisitions, asset valuations, organizational effectiveness, and litigation support. Further details regarding my qualifications and work experience is provided in AG-1.

Q. Have you previously testified before this Commission?

A. This is my first opportunity to appear before the Michigan Public Service Commission (“Commission”).

MICHIGAN DEPARTMENT OF THE ATTORNEY GENERAL
DIRECT TESTIMONY OF PHILIP DIDOMENICO

Q. What is the purpose of your testimony in this proceeding?

A. Daymark Energy Advisors has been retained by the AG to assist in the review of the application (“Application” of “Filing”) made by the DTE Electric Company (“DTE” or “Company”) for three Certificates of Necessity (“CON”) associated with DTE’s proposal to construct a 1,100 MW natural gas combined cycle generating station on Belle River Power Plant site (“Proposed Project”).

Q. Has this testimony been prepared by you or under your direction and control?

A. Yes.

Q. Are you sponsoring any exhibits for your testimony?

A. The following documents are attached as exhibits to my testimony:

Reference	Description
AG-1	Resume of Philip DiDomenico
AG-2	AG to DTE 1.45: MISO Capacity Market Auctions

Line
No.

AG-3	MISO Definitive Planning Phase Schedule
AG-4	AG to DTE 2.4: Generator Connection Queue
AG-5	MISO Portal
AG-6	MEC-NRDC-STDE to DTE 2.23: Constraints on Renewable Build-Out
AG-7	MEC-NRDC-STDE to DTE 2.26: Estimated Carbon Emissions
AG-8	AG to DTE 2.5: Strategist Output and Constraints
AG-9	MEC-NRDC-STDE to DTE 3.1a: Strategist Output Files
AG-10	MEC-NRDC-STDE to DTE 5.3b:Strategist Plans with System Costs
AG-11	AG to DTE 1.25: Workpapers for Load Forecasts
AG-12	AG to DTE 1.35c: Treatment of Net Metering Capacity
AG-13	AG to DTE 1.15h: Term of Natural Gas Transportation Agreement
AG-14	AG to DTE 1.15g: Alternatives to NEXUS Precedent Agreement
AG-15	AG to DTE 1.15e: Contingency Plans for NEXUS
AG-16	AG to DTE 1.17: Natural Gas Transportation Contracts
AG-17	Third Party RFP
AG-18	Staff to DTE 12.33: Engineering, Construction, and Procurement Requests

Line
No.

AG-19	Staff to DTE 2.29 a, b, & c: PPAs and RFPs
AG-20	Midland Cogeneration Discovery Response

1

2 II. Summary and Recommendations

3

4 Q. Please summarize your conclusions and recommendations.

5 A. I have reviewed the Company's Application, including supporting testimonies, responses
6 to data requests in this docket, along with other public data, relevant to my inquiry. I
7 have also traveled to the office of DTE for a document inspection related to certain
8 confidential documents connected with the Company's Request for Proposal ("RFP")
9 process associated with its resource selection. Based on this review my conclusions are
10 summarized as follows:

- 11 • The overall need for an additional resource is primarily driven by the planned coal
12 unit retirements.
- 13 • The Company has largely justified the need for the Proposed Project within the
14 context of existing regulatory requirements, however, I have concerns with the
15 planning and solicitation process that are further articulated in my testimony.
- 16 • The need for the new resource to be exclusively located within the targeted load
17 zone is driven by a combination of the Company's self-imposed internal planning
18 criteria – the Effective Capacity Import Limit – and the Company's general
19 reluctance to rely on resources outside its direct control at a potentially added cost
20 to customers.
- 21 • Some elements of the planning process concerning resource modeling could be
22 more transparent.
- 23 • The Proposed Project is subject to gas supply risks associated with delivery to the
24 proposed facility.
- 25 • The solicitation process to access and evaluate market alternatives to the
26 Company's Proposed Project was not robust.

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No.

1 Based on these conclusions, I recommend the following:

- 2 • The Commission should consider instituting reforms to the resource planning
- 3 process to include more openness and transparency.
- 4 • The Commission should consider improvements to the solicitation process to
- 5 promote a more open, fair and transparent process to obtain more competitive
- 6 market responses and results.
- 7 • The Commission should consider requiring the Company to file for approval with
- 8 the Commission a written mitigation plan for reliance on spot gas supply price
- 9 should risks to the current plan increase or materialize.

10

11 **III. Overview of the Application**

12

13 **Q. Please briefly describe the Application filed by the Company.**

14 A. The Company has submitted several volumes of testimony and accompanying exhibits in
15 support of its request for approval of the Project under Section 6s of 2016 PA 341, MCL
16 460.6s (“Section 6s”). In the Application DTE proposes approval of three related CONs
17 from the Commission concerning a new 1,100 MW natural gas combined cycle
18 generating station at the Company’s existing Belle River site¹:

- 19 • That the power to be supplied is needed.
- 20 • That the size, fuel type, and other design characteristics of the Proposed Project
- 21 represent the most reasonable and prudent means of meeting that power need.
- 22 • That the estimated capital costs of and the financing plan including, but not
- 23 limited to, the costs of siting and licensing and the estimated cost of power, will
- 24 be recoverable in rates from the Company’s customers.

25 The request for a new combined cycle unit is primarily being driven by the Company’s
26 plan to retire existing coal-fired generating facilities. In support of approval of the CONs
27 the Company submitted pre-filed testimony and exhibits from several witnesses.

28

¹ Direct Testimony of Irene M. Dimitry, pp. IMD-10 and IMD-11.

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1 **IV. Analysis**

2

3 **Q. How is your analysis structured?**

4 A. Given the extensive nature of the information provided by the Company, my review is
5 structured in accordance with the three CONs requested by DTE for ease of review.
6

7 **A. The Need for the New Unit**

8

9 **Q. What is the essential driver of the Company's proposed need for a new generation**
10 **resource?**

11 A. The Company's planned retirement of eight older coal-fired generating units between
12 2020 and 2023 are a primary driver of the additional resource needs that the Company
13 proposes to address with a portfolio that includes the Proposed Project. In addition, the
14 Company notes import constraints into the targeted load zone.
15

16 **Q. Have you reviewed the Midwest System Operator ("MISO") Resource Adequacy**
17 **process as it relates to the Application?**

18 A. Yes. Since DTE operates within a MISO load zone, reviewing the MISO requirements is
19 a logical point to begin to analyze the Company's request.
20

21 **Q. Can you summarize the MISO Resource Adequacy requirements?**

22 A. MISO has established a resource adequacy structure based on procuring a collective
23 quantity of installed capacity sufficient to meet the Planning Reserve Margin
24 Requirement ("PRMR") defined as the forecasted peak demand plus a Planning Reserve
25 Margin ("PRM"), while respecting transmission limitations. The North American Electric
26 Reliability Corporation ("NERC") requires MISO to calculate the system-wide PRM on
27 an annual basis by conducting a Loss of Load Expectation ("LOLE") analysis that
28 produces a required level of resource adequacy needed in the MISO region to sustain a
29 loss of load event equal to one day in ten years.
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MISO has also developed ten Local Resource Zones (“LRZ”) based on definition criteria that include transmission limitations, state boundaries, geographic boundaries and other considerations.² Under this market structure, transmission import capability plays a significant role in ensuring resource adequacy by allowing Load Serving Entities (“LSEs”) to access low-cost generation resources from other areas within MISO but also from regions external to the MISO footprint. When sufficient transmission import capability is not available, LSEs within a transmission import-limited LRZ may be forced to rely more on capacity located inside the LSE’s zone even though lower cost resources may be available outside the zone.

Besides the system wide PRMR, MISO produces a LRZ specific PRMR which must be met by the LSEs within the zone. All the LSEs and utilities within the MISO region have the flexibility to meet their respective PRMR by using a combination of self-supply, bilateral contracting, and residual procurements through MISO’s centralized Planning Resource Auctions (“PRAs”).

Besides the system wide and LRZ specific PRMR, MISO produces every year LRZ specific parameters. DTE is located within LRZ 7.

Q. What are the LRZ specific parameters calculated by the MISO and how they are utilized in the Planning Resource Auction?

A. The MISO is obligated to calculate the following LRZ specific parameters on an annual basis³: (i) Local Reliability Requirement (“LRR”), (ii) Capacity Export Limit (“CEL”), (iii) Capacity Import Limit (“CIL”) and (iv) Local Clearing Requirement (“LCR”). The LRR represents the amount of resources needed by a LRZ to reliably meet its forecasted peak load without the benefit of imported capacity.⁴ CIL and CEL provide the maximum amount of capacity that can be imported – CIL – or exported – CEL- from a LRZ after

² MISO’s BPM-011-r16 Resource Adequacy p. 64 of 165.

³ MISO’s Tariff Module E-1 Section 68A.3.

⁴ Section 68A.5 of the Module E-1 of the MISO Tariff defines the Local Reliability Requirement as a “metric for each LRZ to determine the quantity of Unforced Capacity needed such that the LRZ would achieve an LOLE of 0.1 day per year, without consideration of the benefit of the LRZ’s CIL”.

Line
No.

1 respecting the established MISO reliability standards.⁵ LCR is the LRR reduced by CIL
2 (LCR = LRR – CIL).

3
4 These four parameters define system constraints and are used by MISO during the PRA
5 in a way that capacity is procured in the most cost-efficient way while respecting
6 resource adequacy and transmission reliability standards.⁶

7
8 **Q. Are you familiar with the Effective Capacity Import Limit (“ECIL”) as defined by**
9 **the Company?**

10 A. No. According to Mr. Chreston the ECIL captures the difference between the LRZ’s
11 PRMR and LCR.⁷ Based on my understanding, the Company claims that even though the
12 import limit as defined by the MISO is CIL, the maximum the LRZ can actually import
13 without violating the LOLE criterion is ECIL.⁸ As an example, for the 2017/2018
14 Planning year, the PRMR and LCR for LRZ 7 were 22,295 MW and 21,109 MW
15 respectively. The CIL was 3,320 MW. Based on the Company’s definition, the ECIL is
16 approximately 1,200 MW (ECIL = PRMR – LCR = 22,295 MW – 21,109 MW = 1,186
17 MW) or close to 2,100 MW less than CIL.

18
19 However, based on my review of the MISO Tariff, MISO’s Loss of Load Expectation
20 Study, and other planning and administrative MISO documents, I could not identify such
21 a constraint defined. The Company’s response also confirms the lack of definition.⁹ It is
22 unclear to me how the limitation of imports to LRZ, as described by the ECIL, affects the
23 PRA and, as a result, the optimal procurement of capacity. As I noted above, the CIL
24 describes the maximum amount of capacity that can be imported into a LRZ and is the

⁵ Capacity Import Limit is calculated in accordance with section 5.2.2 Local Requirements and Transfer Capability Section of the BPM-011-r17.

⁶ According to MISO’s BPM-011-r16 Resource Adequacy Manual “MISO will use the offers in conjunction with the import and export constraints, local clearing requirements, and other inputs to determine the least cost set of offers that respects the various constraints expressed as described in the Tariff.”

⁷ Direct Testimony of Kevin J. Chreston, p. KJC-19.

⁸ Capacity Import Limit (CIL) is based on a N-1 analysis called First Contingency Incremental Transfer Capability (FCITC) described in BPM-011-r17 Resource Adequacy document.

⁹ Response to AGDE-1.45.

Line
No.

1 only import limit modeled in the PRA.¹⁰ LRZ can import up to the CIL without violating
2 any resource adequacy or transmission system reliability standards.

3
4 **Q. Is the ECIL limitation one of the two main drivers of the need for additional**
5 **capacity to be located exclusively within LRZ 7 as described by the Company?**

6 A. Yes. According to Mr. Chreston's testimony, the ECIL constrains the import capability to
7 LRZ 7, and as a result minimizes the ability for LSEs within the LRZ to procure
8 additional capacity from outside the zone. In his Pre-Filed Direct Testimony, Mr.
9 Chreston note the following¹¹:

10 The ECIL can be utilized by all LSE's in LRZ7. If that capacity was
11 allocated based on the LSE's share of the PRPR requirement DTE Electric
12 would have just under 600 MW and Consumers just over 400 MW. Which
13 would leave around 200 MW to AES's and others. However, known
14 imports as reported in recent annual Electric Supply Reliability Plans filed
15 with the MPSC, U-18197 and U-1792, have shown 700-800 MW
16 utilization (a much larger share) by AES' and others.

17
18 In the excerpt above, Mr. Chreston describes a clear violation of the ECIL without any
19 consequences to the reliability of the system. If currently AES is using 700 MW,
20 Consumers is using 400 MW and DTE is using 600 MW, the total MW are well above
21 the ECIL: 1,700 MW vs 1,200 MW. The Company hasn't fully indicated how this
22 violation is currently mitigated and how the MISO may respond to such violation.

23
24 **Q. What is the second main driver of the capacity need?**

25 A. The second main driver of the capacity need is the coal unit retirements in the LRZ.
26 According to Ms. Dimitry, the units planned for retirement include: River Rouge Unit 3,
27 St. Clair Units 1- 4, St. Clair Unit 6, St. Clair Unit 7, and 13 Trenton Channel Unit 9.
28 These units provide close to 1,800 MW of capacity toward the Company's PRMR in
29 Planning Year 2017.¹² According to the Company, they are planned to retire between
30 2020 and 2023. During those years and after accounting for the lower import limit
31 described by ECIL, LRZ 7 will have a capacity shortfall.¹³

¹⁰ MISO's Tariff Module E-1 Section 69A.7.1.

¹¹ Direct Testimony of Kevin J. Chreston, p. KJC-19.

¹² Refer to Angela Wojtowicz's Exhibit A-27.

¹³ Direct Testimony of Irene M. Dimitry, p. IMD-17.

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Q. Can the Company reasonably rely on resources external to LRZ 7?

9

A. Yes, while there are certainly potential risks that need to be managed, I do not believe the risks in this situation rise to the level of exclusion, whereby the Company is unwilling to even consider resources located outside LRZ 7 as part of its Resource RFP solicitation.

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Q. Please describe how the current U.S. administration may affect the economics of at-risk coal units.

¹⁴

<https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/RASC/2017/20170510/20170510%20RASC%20Item%2002a%202017-18%20PRA%20Summary.pdf> slide 5

¹⁵

<https://www.misoenergy.org/Library/Repository/Meeting%20Material/Stakeholder/Workshops%20and%20Special%20Meetings/2016/OMS-MISO%20Survey/2016OMS-MISOSurveyResults.pdf>

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No.

1 A. The current administration has signaled a desire to support coal-fired generation. The
2 U.S. Environmental Protection Agency has initiated rulemaking proceedings to repeal the
3 Clean Power Plan limiting GHG emissions from existing fossil-fired plants, and to
4 replace it with a rule that would appear to have much more limited impact. The EPA has
5 signaled an intent to roll back other regulations impacting coal-fired generation. In
6 September 2017, the Department of Energy (“DOE”) filed a Notice of Proposed
7 Rulemaking (“NOPR”) under the Federal Power Act seeking to enhance grid resiliency
8 and requesting from the Federal Energy Regulatory Commission (“FERC”) to
9 “accurately price generation resources necessary to maintain reliability and resiliency.”¹⁶
10 The DOE requested the institution of a market design that would provide “for recovery of
11 costs of fuel-secure generation units frequently relied upon to make our grid reliable and
12 resilient”.¹⁷ The provisions of the proposed rule were widely viewed as tailored to
13 provide additional revenue streams to nuclear and coal-fired resources.

14
15 **Q: Are there limitations on the impact that the administration’s stance can have?**

16 A. Yes. On January 8th, the FERC determined that the DOE request, if implemented, would
17 have a negative effect on the wholesale markets. As a result, the Commission asked
18 regional grid operators to review an extensive list of questions about improving power
19 system resilience and report back within 60 days.¹⁸ In parallel and similar to other
20 affected System Operators¹⁹, MISO has committed to undertake new studies to assess
21 whether premature retirements of baseload generators affect the resiliency of the MISO
22 system. Since we are in the early stages of this effort, there are no MISO studies to
23 confirm the need for such reforms as described by the NOPR.²⁰ However, if the FERC
24 and by extension MISO find some form of compensation is justified for baseload units in

¹⁶

<https://www.energy.gov/sites/prod/files/2017/09/f37/Secretary%20Rick%20Perry%27s%20Letter%20to%20the%20Federal%20Energy%20Regulatory%20Commission.pdf> page 7

¹⁷ <https://www.energy.gov/sites/prod/files/2017/09/f37/Notice%20of%20Proposed%20Rulemaking%20.pdf> page

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¹⁸ https://elibrary.ferc.gov/idmws/file_list.asp?document_id=14633130

¹⁹ PJM has also engaged in a grid resiliency effort: <http://www.pjm.com/committees-and-groups/stakeholder-meetings/symposiums-forums/grid-2020-focus-on-resilience-part-1-fuel-mix-diversity-and-security.aspx>

²⁰ <https://www.rtoinsider.com/miso-doe-ancillary-services-76802/>

Line
No.

1 MISO, then this additional stream of revenues may prolong the operability of a number
2 of units potentially at risk of retirement thus alleviating transmission concerns.

3
4 **Q. Has the Company acknowledged the potential changes in environmental policies at**
5 **the federal level?**

6 A. Yes. In her testimony, Ms. Dimitry states the following²¹:

7 The Company acknowledges that the current administration has indicated
8 an intent to review and possibly scale back some environmental
9 requirements. However, given the uncertainty about the scope and timing
10 of possible revisions to environmental requirements and also the age of
11 these plants and the costs to operate them beyond their announced
12 retirements, the Company has concluded that the most reasonable and
13 prudent plan is to close these older coal plants as announced and replace
14 them with new, cleaner, more efficient, and more cost-effective energy
15 resources.

16
17 I share the opinion articulated above by Ms. Dimitry. However, the potential certainly
18 exists that changes in policy at the federal level could result in incremental improvements
19 in the operability of certain existing capacity resources at MISO.

20
21 **Q. What do you conclude based on your review of the Company's capacity need plan**
22 **for the Proposed Project?**

23 A. The need for additional capacity is documented in the Company's filing and driven
24 largely by the planned coal unit retirements. What is unclear is whether the new capacity
25 additions must be located exclusively within LDZ 7, as the Company has indicated.

26
27 **Q. Please describe the process used by MISO to evaluate new generator**
28 **interconnections to its transmission system.**

29 A. MISO has established Generator Interconnection Procedures ("GIP") described in
30 Attachment X of the MISO Open Access Transmission Tariff ("OATT") to ensure all
31 new generators can deliver their output without disturbing the reliability of the
32 transmission system.²² The MISO GIP outlines the Definitive Planning Phase ("DPP")

²¹ Direct Testimony of Irene M. Dimitry, p. IMD-15.

²² <https://www.misoenergy.org/library/tariff/Pages/Tariff.aspx>

Line
No.

1 process which is subdivided into four segments identified as DDP 1 through 3 and
2 Generation Interconnection Agreement (“GIA”) phases.²³ The MISO conducts an
3 updated system impact study during each phase of the DDP that incorporates changes in
4 the MISO system assumptions that occurred during the two sequential phases. Also, each
5 phase requires a milestone payment to enter, and (following the customer’s receipt of the
6 results of the impact study conducted during that phase), a Decision Point where the
7 applicant can withdraw from the interconnection queue and receive a refund for its
8 previous milestone payment. In total, the DDP takes approximately 500 days to
9 complete.

10
11 **Q. Does MISO have different types of interconnection service products?**

12 **A.** Yes, it does. According to Attachment X of the MISO OATT, there are three
13 interconnection service products available at MISO. The Energy Resource
14 Interconnection Service (“ERIS”) allows the new generator to deliver its output using the
15 firm or non-firm capacity of the system on an “as available” basis. Second, the Network
16 Resource Interconnection Service (“NRIS”) ensures the addition of a new generator will
17 not impair the deliverability of existing Network Resources²⁴ already designated as NRIS
18 while serving network load. The last interconnection product is the Net Zero
19 Interconnection Service that applies only to generators with ERIS and allows them to
20 increase their gross generating capability at the same Point of Interconnection.

21
22 MISO has established several qualification methods for different types of resources to
23 become qualified Planning Resources and thus become eligible to provide capacity.²⁵
24 One such mechanism is to demonstrate deliverability via obtaining NRIS.
25

²³ Refer to Exhibit A-34 of Edward P. Weber’s Direct Testimony for additional details on the different phases and their timing.

²⁴ MISO Tariff defines a Capacity Resource as “The Generation Resources, Demand Response Resource- Type I, Demand Response Resource-Type II, Dispatchable Intermittent Resources, External Resources, or Intermittent Generation that are available to meet Demand”.

²⁵ MISO BPM-011-r17 section 4 Qualifying and Quantifying Planning Resources.

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1 Based on the information provided on the MISO portal, the Proposed Project has applied
2 for NRIS.²⁶ The Proposed Project's capacity will be utilized by DTE to meet the
3 Company's estimated capacity shortfall. For the unit to qualify, it must meet the
4 requirements for NRIS.

5
6 **Q. What is the estimated timing for the remainder of the interconnection process?**

7 A. As I mentioned above, the MISO interconnection process takes approximately 500 days.
8 According to Edward P. Weber, the Company submitted an interconnection application
9 on June 2017.²⁷ The Proposed Project obtained a MISO Project Number used to track the
10 progress of the interconnection application and was placed in the DDP-2017-AUG study
11 cycle. To continue the MISO interconnection study process, the Company must make
12 additional milestone payments with the next milestone payment ("M3") anticipated to be
13 required at the end of July 2018. Upon payment of the M3 milestone payment DDP 2
14 commences while the M2 milestone payment will become non-refundable. The last
15 milestone payment ("M4") is presently anticipated to be required in October 2018. Upon
16 payment of the M4 milestone, all milestone payments will be non-refundable. DDP Phase
17 3 commences after M4 is submitted to the MISO and ends with the start of the
18 Generation Interconnection Agreement finalization and execution period. As a result, the
19 completion of the Proposed Project's Interconnection Process is slated to occur in July
20 2019.

21
22 Since the Proposed Project hasn't entered the DDP process yet, any cost estimations
23 related to the interconnection and network upgrades needed are difficult to quantify and
24 subject to variability.

25
26 **Q. Is the total cost of interconnection known at this time?**

27 A. No. Since the interconnection application was submitted in June 2017, the Proposed
28 Project hasn't entered DDP Phase 1 that includes the first of the three MISO System

²⁶ Response to AGDE-2.4. The Company provided the MISO generator interconnection queue number which was used to check the status of the Proposed Project here:

<https://www.misoenergy.org/Planning/GeneratorInterconnection/Pages/InterconnectionQueue.aspx>

²⁷ Direct Testimony of Edward P. Weber, p. EPW-9.

Line
No.

1 Impact Studies (“SIS”) that will determine the necessary Network Upgrades for the
2 procurement of NRIS. As I described above, each DDP Phase includes an updated
3 version of the MISO SIS that incorporates changes in the MISO system assumptions that
4 have occurred since the last SIS was conducted.

5
6 The Proposed Project is at the early stages of the interconnection assessment, and
7 therefore, DTE has limited knowledge of the impact to the MISO system due to the
8 addition of Proposed Project. Mr. Weber provides an estimate of the transmission
9 network upgrades that will likely be identified by the MISO Interconnection process, but
10 notes that “such costs are preliminary and will be firmed up once the MISO electrical
11 interconnection process and associated impact studies are completed.”²⁸ According to Mr.
12 Weber, the total network upgrade cost was estimated at about \$ 29.3 million.²⁹ As a
13 result, the final interconnection cost will not be available until 2019.

14
15 **Q. Can the Company accurately estimate how the updated MISO studies will affect the**
16 **interconnection cost of the Proposed Project?**

17 **A.** No. It is difficult to accurately estimate the extent of the Network Upgrades at this point
18 since the Proposed Project is at the early stages of the Generator Interconnection Process.
19 The uncertainty related to the assumptions used by the MISO to model its system in the
20 SIS and the complexities of the transmission system.

21
22 **B. The Reasonableness of Meeting the Need**

23
24 **Q. Have you reviewed the Company’s Integrated Resource Plan?**

25 **A.** Yes. I have reviewed the Company’s Integrated Resource Plan (“IRP”), including
26 accompanying workpapers and exhibits.

27
28 **Q. Please explain the Company’s IRP and planning process.**

²⁸ *Id.*, p. EPW-10.

²⁹ *Id.*

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No.

1 A. The Company followed an IRP planning process that involved the following seven steps:
2 1) review planning principles, 2) develop data assumptions, 3) develop alternatives, 4)
3 run models, 5) analyze results, 6) review other considerations and 7) risk assessment,
4 propose a course of action, and file an IRP.³⁰

5
6 According to the Company, there are six planning principles (Reliability, Affordability,
7 Clean, Balanced and Flexible, Compliant, and Reasonable Risk), including internal and
8 external factors, that impact its corporate planning policies and need to be considered in
9 concert with known regulatory requirements and other unknown factors.³¹

10
11 In Step 2 of the planning process, DTE developed several scenarios and sensitivities after
12 review of its planning principles to assist the Company in selecting its proposed 2017
13 IRP. The final list of scenarios developed include a Reference scenario, High Gas
14 scenario, Low Gas scenario, Emerging Technology scenario, Aggressive CO₂ scenario,
15 and 2017 Reference scenario (created at the end of the IRP process during the risk
16 assessment step). The Company stated that these scenarios “are made up of driving forces
17 that shape and define different paths to the future. They contain key uncertainties that are
18 critical components to help construct and differentiate among [the] scenarios.”³² In
19 addition, the Company considered several sensitivities that were chosen because they
20 “would potentially cause the most disruption to the base resource plan to test whether the
21 plan would still be reasonable under changing conditions”.³³ Together with the scenarios,
22 the sensitivities were designed to “test the base resource plan ... under changing
23 assumptions and to develop the most reasonable and prudent plan”.³⁴ Lastly in Step 2,
24 market assumptions were developed, along with energy and capacity demand forecasts
25 for DTE. These forecasts were then compared against the Company’s existing supply
26 portfolio and planned retirements to determine additional resource needs. Gaps were
27 identified between supply and demand and the Company projected that the IRP would

³⁰ IRP process steps stated on page 3 of the IRP (Exhibit A-4-Revised) and explained in more detail in Section 4 of the IRP.

³¹ Exhibit A-4-Revised, p. 38.

³² *Id.*, p. 39.

³³ *Id.*

³⁴ *Id.*

Line
No.

1 need to address capacity deficits both in terms of size and timing during the 2016 to 2040
2 forecast period.³⁵

3
4 After the Company determined a need for energy and capacity additions, Step 3 of the
5 IRP planning process focused on selecting resource alternatives for consideration to meet
6 the projected needs. DTE hired HDR, Inc. to provide an engineering valuation study that
7 summarized costs and performance parameters of generation alternatives.^{36,37}

8
9 Step 3 blurs into Step 4, since the evaluation of possible resource alternatives was further
10 conducted under Step 4, which featured a modeling process that included a preliminary
11 economic analysis, followed by a market valuation, then modeling in Strategist to
12 develop build plan options, and finished with completing a financial analysis using an
13 internal revenue requirement model to calculate the impacts of alternative capital projects
14 on the revenue requirement components.³⁸

15
16 A preliminary economic analysis of commercially and technically feasible technologies³⁹
17 was completed through a levelized cost of electricity (“LCOE”) comparison to narrow
18 down possible alternatives based on economics.⁴⁰ This analysis eliminated base load
19 technologies due to cost and risk concerns, except for the inclusion of one sensitivity of
20 adding a nuclear plant in 2030. Then a market valuation, which is a benefit-cost analysis,
21 was completed in Strategist to provide a benefit-cost ratio of the financial benefits from
22 investing in a technology to the costs of executing the project.⁴¹ The market valuation of
23 resource alternatives included analyzing several combined cycle and combustion turbine

³⁵ *Id.*

³⁶ These alternatives included: gas-fired technologies, such as combustion turbines and combined cycles; renewable technologies, such as wind and solar; and demand-side management expansions of demand response and energy efficiency programs beyond what was specified in the Michigan legislature. Exhibit A-4-Revised, p. 40.

³⁷ HDR’s findings were provided as Exhibit A-38.

³⁸ Exhibit A-4-Revised, p. 40.

³⁹ Demand response resources were not included in this analysis.

⁴⁰ Exhibit A-4-Revised, pp. 40-41. Analysis provided in Workpaper KJC-479.

⁴¹ Exhibit A-4-Revised, p. 41.

Line
No.

1 options, as well as three demand response program options, a lithium battery option,
2 solar, and wind under each scenario stated above.⁴²

3
4 The next step in the modeling process was to use the Strategist PROVIEWTM module,
5 along with costs of the alternative resource options and operational data on existing
6 resources, to generate least-cost resource plan options to fill the capacity need under each
7 of the scenarios and sensitivities.⁴³ DTE analyzed the results “to identify a base resource
8 plan based on not only economics but also what was the best option for customers based
9 on the Planning Principles.”⁴⁴ A base resource plan was selected and would remain the
10 same across the scenarios to compare sensitivities. The Company selected the lowest cost
11 resource plan for each scenario or sensitivity for further analysis and ultimately “selected
12 one resource plan that was the most reasonable and prudent as the DTEE 2017 IRP”.⁴⁵

13
14 Next, DTE used PROMOD, which runs an hourly dispatch, to look at customer costs
15 more granularly. Production costs from the PROMOD modeling were used as inputs into
16 an internal revenue requirement model, which DTE stated would “better assess the
17 financial effects to the customer”.⁴⁶ Only a selection of resource plans varying the most
18 from the base resource plan were tested in this model to see how their annual revenue
19 requirements varied from the base resource plan’s annual revenue requirement.⁴⁷

20
21 In Step 5, the Company completed a review of other considerations and a risk
22 assessment, which included an Analytical Hierarchy Process (“AHP”)⁴⁸, Stochastic
23 Analysis, running of a 2017 Reference Scenario that updated assumptions used in the

⁴² Results of each market valuation analysis were provided in Workpapers: KJC-4 through KJC-24 (Reference Scenario), KJC-129 through KJC-147 (Aggressive CO₂ Scenario), KJC-171 through KJC-189 (Emerging Technology Scenario), KJC-206 through KJC-225 (High Gas Scenario), KJC-254 through KJC-272 (Low Gas Scenario), and KJC-324 through KJC-342 (2017 Reference Scenario).

⁴³ Exhibit A-4-Revised, p. 41.

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*, pp. 41-42.

⁴⁸ Exhibit A-4 Revised, p. 209. “In AHP, relevant criteria are selected, ranked, and weighted. DTEE subject matter experts from diverse disciplines applied the criteria and evaluated the results. Criteria included cost, environmental impacts, portfolio balance, and commodity price risk. Stochastic analysis considers various assumptions and resource build scenarios, yielding probabilities of the associated risks.”

Line
No.

1 Reference Scenario, and a Change Analysis. The AHP and Stochastic Analysis were
2 completed by analyzing alternative resource plans or portfolios that were developed,
3 which included a base resource plan (1,100 MW combined cycle in 2022), a wind
4 portfolio (950 MW combustion turbine in 2022 and 1,000 MW of wind between 2017
5 and 2023), a solar portfolio (950 MW combustion turbine in 2022 and 500 MW of solar
6 between 2017 and 2023), and a demand response portfolio (950 MW combustion turbine
7 in 2022 and 150 MW of demand response between 2017 and 2023).⁴⁹ A Change Analysis
8 was used “to measure how much the resource plan would change if certain unknowns in
9 the future came to pass”.⁵⁰ The Change Analysis focused on selected sensitivities that
10 included a high load sensitivity, low load sensitivity, commercial choice returns,
11 commercial and industrial returns, and 2% energy efficiency.⁵¹

12
13 After the modeling and risk assessment steps, the last two steps were the development
14 and filing of the 2017 IRP, which selected a combined cycle gas turbine to replace the
15 retired coal units in the early 2020s. DTE expects the IRP to be re-evaluated over the
16 longer term because of “fluctuation and/or uncertainty of market conditions” that will
17 cause changes to occur.⁵² The final 2017 IRP presented by DTE includes several projects
18 (energy efficiency, demand response interruptible air condition program, addition of wind
19 and solar, a generic, new combined heat and power resource, fossil unit retirements,
20 addition of a 2x1 combined cycle, pumped storage upgrades, and market purchases) that
21 are planned to be implemented over the forecast period.⁵³

22
23 **Q. Based on your review of the Company’s IRP and planning process, what do you**
24 **conclude?**

25 A. Overall, the Company reasonably conducted the IRP and planning process. However,
26 there are some concerns that I have regarding the transparency and decision-making
27 during multiple steps of the IRP and planning process.

⁴⁹ Exhibit A-4-Revised, p. 214, Table 12.1.1-6.

⁵⁰ *Id.*, p. 227.

⁵¹ *Id.*, p. 227, Table 12.3-1.

⁵² *Id.*, p. 42.

⁵³ *Id.*, p. 232.

Line
No.

1

2 **Q. Please explain your concern about the transparency of the IRP and planning**
3 **process.**

4 A. While the Company provides an explanation for each of the steps of the IRP and planning
5 process, there are several processes and decisions interacting throughout the IRP that lack
6 clarity and lead to perceived complexity. For example, the modeling constraints that were
7 used in Strategist to analyze the different scenarios and sensitivities are not all clearly
8 provided and explained. Multiple intervenors asked discovery regarding the constraints
9 used in the Strategist modeling effort.⁵⁴ While responses were provided, there was still a
10 lack of detail, and therefore transparency, on how constraints were determined. While
11 access to the Strategist model was eventually provided, the Company could have
12 provided direct written responses on the constraints as used by Strategist, rather than
13 leaving it in some instances for intervenors to ascertain this information from the model
14 itself. The overall lack of transparency is a concern for a few reasons. First, the resource
15 buildouts selected in the optimization modelling are only as optimal as the constraints
16 imposed by the Company in its planning. Annual and cumulative limitations on the
17 number on MW, units, and technologies available for selection can potentially result in
18 suboptimal buildouts being selected. Second, even with disclosure of the modelling
19 constraints, it is equally important for the Company to explain and document how the
20 constraints were determined and quantified to understand their impact on the resource
21 buildout selection.

22

23 **Q. Can you provide an example of what concerns you regarding the determination of**
24 **modeling constraints?**

25 A. Yes. DTE explained in its response to a data request⁵⁵ that the wind resource buildout in
26 each year was capped at 1,000 MW and the solar resource buildout each year was capped
27 at 500 MW. While this helps inform on what the constraint is, the Company further

⁵⁴ Some examples include DTE responses MEC-NRDC-SCDE 2.23, which sought wind and solar buildout constraints each year; MEC-NRDC-SCDE 2.26, which sought detail on what was hardwired versus economically chosen or computed in Strategist; and AG 2.5, which sought the list of constraints and details for how they were developed and quantified.

⁵⁵ Response to MEC-NRDC-SCDE-2.23.

Line
No.

1 explained in its response that it does not have supporting documentation for these
2 assumptions. Without a better understanding, or transparency, as to why these renewable
3 resources were capped at certain MW levels, it raises concerns regarding the optimality
4 of the selected buildouts.

5
6 **Q. Do you have other concerns about the lack of transparency in the IRP and planning
7 process?**

8 A. Yes. Besides transparency in the Strategist modeling, I am also concerned about the
9 transparency in the decision-making or selection process regarding the scenarios and
10 sensitivities analyzed by DTE. Earlier, I explained that the Company stated that the
11 scenarios “are made up of driving forces that shape and define different paths to the
12 future. They contain key uncertainties that are critical components to help construct and
13 differentiate among [the] scenarios.”⁵⁶ In addition, the Company considered several
14 sensitivities that were chosen because they “would potentially cause the most disruption
15 to the base resource plan to test whether the plan would still be reasonable under
16 changing conditions.”⁵⁷ Together with the scenarios, the sensitivities were designed to
17 “test the base resource plan ... under changing assumptions and to develop the most
18 reasonable and prudent plan.”⁵⁸ The reason for restating the Company’s explanation for
19 the selection of scenarios and sensitivities is to note that there were only certain scenarios
20 presented, and then sensitivities to those scenarios chosen based on an internal decision
21 as to what would cause the most disruption to the base resource plan. There was no
22 further explanation provided as to why other scenarios and sensitivities were not
23 considered and/or chosen. While I understand and appreciate the amount of work that
24 goes into completing an IRP, it is equally important to clearly present and explain all the
25 decisions made throughout the process to ensure all resource options and possible
26 buildouts are properly considered, and then those decisions reviewable by the
27 Commission.

⁵⁶ Exhibit A-4-Revised, p. 39.

⁵⁷ *Id.*

⁵⁸ *Id.*

Line
No.

1 Another example of the decision-making process that was not transparent has to do with
2 the Strategist optimization runs that the Company ultimately chose for each scenario and
3 sensitivity. High level results of the Strategist runs were provided in responses to MEC-
4 NRDC-SCDE discovery 3.1a and 5.3b. In the attachments provided in response, the
5 Company showed each Scenario, Case, and Strategist Chosen Plan #, as well as the Least
6 Cost Plan, Strategist Chosen Plan, and Delta (only shown in the response to 5.3b). The
7 Strategist Chosen Plan # referred in these responses is the Strategist-ranked plan number
8 for each scenario and case that was chosen by the Company to be optimal, and was not
9 necessarily the least-cost option. In the IRP, DTE discussed why its preferred least-cost
10 option does not align with the Strategist least-cost option, which selected a 3x1 H Class
11 combined cycle over a 2x1 combined cycle.⁵⁹ Additionally, DTE explains that after the
12 Strategist runs, risk analyses that included the analytic hierarchy process and stochastic
13 analysis were conducted to minimize risk in critical areas.⁶⁰ Outside of the risk analyses
14 and some general explanations provided in the Strategist Results section, 11.6.1, of the
15 IRP, there has been no detailed explanation provided by the Company explaining why it
16 selected plans for each scenario and case (as shown in its response to MEC-NRDC-
17 SCDE discovery 5.3b) that were not the least-cost options determined by Strategist. This
18 lack of detailed explanation makes it difficult to understand the Company's decision-
19 making process.

20
21 **Q. How does a lack of transparency in the decision-making process impact the chosen**
22 **2017 IRP?**

23 A. The Company's IRP planning process is a complex process that has a lot of components
24 interacting together. Complexity is the enemy of transparency. Therefore, it is important
25 to be transparent and detailed as possible in the decision-making processes and modeling
26 conducted throughout the IRP planning process. However, as I noted above through
27 multiple examples, several key decisions were open to Company interpretation and as far
28 as the record shows, some of these decisions appear to be lacking adequate documented
29 data to help reviewers clearly understand the Company's rationale.

⁵⁹ *Id.*, p. 200.

⁶⁰ *Id.*, p. 209.

Line
No.

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2 **Q. Do you have any recommendations that would provide better insight into this IRP**
3 **or future IRPs?**

4 A. Yes. A more streamlined approach to the IRP and planning process would lead to a more
5 transparent and insightful review process, and improve administrative efficiency by
6 lessening the associated regulatory burden on all stakeholders, including the Company.
7 For example, the state of Colorado has developed Electric Resource Planning rules,
8 which it revised in 2011 to address greater transparency and confidential information
9 associated with the planning and acquisition of electric generation resources requirements
10 added to them.⁶¹ The purpose of the Electric Resource Planning is⁶²:

11 [T]o establish a process to determine the need for additional electric resources by
12 electric utilities subject to the Commission's jurisdiction and to develop cost-
13 effective resource portfolios to meet such need reliably. It is the policy of the state
14 of Colorado that a primary goal of electric utility resource planning is to minimize
15 the net present value of revenue requirements. It is also the policy of the state of
16 Colorado that the Commission gives the fullest possible consideration to the cost-
17 effective implementation of new clean energy and energy-efficient technologies.

18

19 Electric Resource Planning rules 3611, 3612, and 3613, which address the utility's plan
20 for meeting the resource need, the use of an independent evaluator, and bid evaluation
21 and selection, are three specific rules that provide better transparency to any RFP process
22 for new resources and for the resource plan to be thoroughly reviewed by an independent
23 evaluator on behalf of the utility, Commission Staff, and the office of consumer counsel.

24

25 While I am not advocating the Commission fully adopt Colorado's Electric Resource
26 Planning rules, I am suggesting that there are ways to streamline the IRP and planning
27 process that allow for better transparency and thorough evaluation of the utility's
28 decision-making throughout the IRP and planning process.

29

30 **Q. How did DTE forecast annual electric sales and system output?**

⁶¹ Docket No. 11R-416E, Decision No. C11-0810, "IN THE MATTER OF THE PROPOSED REVISIONS TO THE COMMISSION'S ELECTRIC RESOURCE PLANNING RULES 4 CCR 723-3-3600 THROUGH 3618", July 27, 2011. A final Order, Decision No. C11-1034, was made on September 22, 2011, which denied application for rehearing, re-argument, and reconsideration.

⁶² Electric Resource Planning Rules, 4 CCR, 723-3-3600 et. seq.

Line
No.

1 A. The Company applied a combination of end-use modeling and regression analysis in
2 building its forecast of DTE Electric service area electric sales (GWh).⁶³

3
4 The forecast is then reduced for electric choice sales and adjusted for losses and company
5 use to determine DTE's forecast of system output (GWh) associated with its bundled
6 sales. To forecast Electric Choice sales in DTE's service area, DTE Electric used 4,865
7 GWh – the expected Electric Choice sales for 2016 as a starting point. The Company
8 further assumed Electric Choice sales would remain flat for most sub-classes over the
9 forecast period. Only the forecast for the steel sub-class beyond 2017 was varied with
10 expected changes in steel production each year.⁶⁴ A summary of annual bundled sales
11 and system output and annual electric choice sales and can be found in U-18419 Exhibit
12 A-15, pages 2 & 3, respectively.

13
14 The Company then used Hourly Electric Load Model (HELM), developed by the Electric
15 Power Research Institute ("EPRI"), to convert aggregate hourly demand profiles from
16 various sales categories or end-uses into a system annual load shape to forecast annual
17 DTE Electric Service Area peak demand (MW).⁶⁵

18
19 DTE Electric's planning reserve margin requirement is the required amount of unforced
20 capacity needed to meet the MISO Resource Adequacy requirements for its bundled load.
21 Alternative Electric Suppliers are responsible for the PRMR for Electric Choice load,
22 thus, Electric Choice load is not part of DTE Electric's planning reserve margin
23 requirement. Accordingly, the Company reduced its forecast of peak demand by the
24 electric choice impact as summarized in U-18419 Exhibit A-16, page 2 of 2.

25
26 Beyond its Reference load forecast, the company also prepared a high load, low load and
27 a 2017 reference scenario, the results of which are shown in Exhibit U-18419 Exhibit A-
28 17.

⁶³ Direct Testimony of Markus B. Leuker, p. MBL-8.

⁶⁴ *Id.*, p. MBL-17.

⁶⁵ *Id.*, pp. MBL-17 through MBL-18.

Line
No.

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2 **Q. What is your opinion about DTE Electric's forecast of electric sales and system**
3 **output?**

4 A. In general, DTE Electric's forecast was developed using accepted industry standards for
5 electricity forecasting taking into consideration regional economic, technological,
6 regulatory and demographic factors that have affected the Company's electric sales in the
7 past including motor vehicle production, steel production, employment and others.⁶⁶

8

9 At a high level, the Company's resulting growth rates are in line with EEI's 2017 Annual
10 Energy Outlook for the US while taking into consideration the uniqueness of Michigan's
11 regional economy. A comparison is provided in the Table 1, below.

12

13 **Table 1: Comparison of Compound Annual Electric Sales Growth Rates**
14 **DTE Electric Reference Case vs. EEI 2017 Annual Energy Outlook**

	2015 – 2025 CAGR		2015 – 2040 CAGR	
	DTE Electric Reference Case (Service Territory)	EEI 2017 Annual Energy Outlook (U.S.)	DTE Electric Reference Case (Service Territory)	EEI 2017 Annual Energy Outlook (U.S.)
Residential	-0.4%	-0.1%	-0.2%	0.1%
Commercial	0.2%	0.0%	0.1%	0.2%
Industrial	-0.3%	1.6%	-0.1%	0.9%
Total	-0.1%	0.4%	-0.1%	0.4%

15

16 As explained above, to properly reflect that DTE Electric is not responsible for meeting
17 the energy and demand reserves associated with electric choice load, the Company's
18 forecasted electric choice sales and coincident peak demand are removed from DTE's
19 system output and planning reserve margin requirement, respectively. The resulting
20 impact of electric choice sales reductions shown as a percent of system output and as a
21 percent of coincident peak demand are shown in Table 2 and Table 3 below.

22

⁶⁶ The models used by the Company for each of the sales forecasts were provided in response to AGDE-1.25.

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Table 2: Retail Choice as % of Total System Output (GWh)

	Leuker Exhibit A-15			
	Pg. 1, column (i)	Pg. 3, column (i)	Pg. 2, column (i)	%
	System	Retail	Bundled	Retail
	Output	Choice	System	Choice
	(GWh)	(GWh)	(GWh)	(GWh)
2010	54,248	5,005	48,987	9%
2011	54,410	5,445	48,545	10%
2012	52,282	5,197	46,575	10%
2013	51,892	5,200	46,384	10%
2014	51,059	5,033	45,591	10%
2015	50,908	4,899	45,545	10%
2016	50,621	5,062	45,281	10%
2017	50,010	4,871	44,853	10%
2018	50,441	4,883	45,272	10%
2019	50,487	4,835	45,368	10%
2020	50,414	4,816	45,315	10%
2021	50,285	4,791	45,212	10%
2022	50,183	4,793	45,107	10%
2023	50,113	4,779	45,052	10%
2024	50,091	4,782	45,027	10%
2025	50,115	4,783	45,050	10%
2026	50,211	4,802	45,127	10%
2027	50,207	4,807	45,117	10%
2028	50,203	4,813	45,107	10%
2029	50,189	4,819	45,086	10%
2030	50,167	4,825	45,058	10%
2031	50,137	4,831	45,022	10%
2032	50,103	4,837	44,982	10%
2033	50,059	4,843	44,931	10%
2034	50,056	4,849	44,922	10%
2035	50,040	4,855	44,900	10%
2036	50,013	4,861	44,867	10%
2037	49,976	4,861	44,824	10%
2038	49,933	4,873	44,774	10%
2039	49,889	4,879	44,724	10%
2040	49,842	4,885	44,671	10%

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No.1 **Table 3: Retail Choice as a Percent of Total System Coincident Peak Demand (MW)**

		Leuker Exhibit A-16,			Retail Choice at Fixed % of Total System			Change in Bundled System Peak
		Pg. 2, column (f)	Pg. 2, column (e)	%			%	Fixed % Electric
	Total	Retail	Bundled	Retail				Choice vs. Company
	System	Choice	System	Choice		Retail	Bundled	Choice
	MWs	MWs	MWs			MWs	MWs	
2010	11,687	854	10,833					
2011	12,547	914	11,633					
2012	12,200	705	11,495					
2013	11,669	930	10,739	8.0%		930	10,739	8.0%
2014	10,970	902	10,068	8.2%		902	10,068	8.2%
2015	10,660	868	9,792	8.1%		868	9,792	8.1%
2016	11,453	915	10,538	8.0%		928	10,525	8.1%
2017	11,272	864	10,408	7.7%		913	10,359	8.1%
2018	11,320	866	10,454	7.7%		917	10,403	8.1%
2019	11,313	860	10,453	7.6%		916	10,397	8.1%
2020	11,293	858	10,435	7.6%		915	10,378	8.1%
2021	11,267	855	10,412	7.6%		913	10,354	8.1%
2022	11,240	855	10,385	7.6%		910	10,330	8.1%
2023	11,217	853	10,364	7.6%		909	10,308	8.1%
2024	11,201	854	10,347	7.6%		907	10,294	8.1%
2025	11,191	854	10,337	7.6%		906	10,285	8.1%
2026	11,189	856	10,333	7.7%		906	10,283	8.1%
2027	11,173	857	10,316	7.7%		905	10,268	8.1%
2028	11,156	858	10,298	7.7%		904	10,252	8.1%
2029	11,135	858	10,277	7.7%		902	10,233	8.1%
2030	11,114	859	10,255	7.7%		900	10,214	8.1%
2031	11,090	860	10,230	7.8%		898	10,192	8.1%
2032	11,064	860	10,204	7.8%		896	10,168	8.1%
2033	11,038	861	10,177	7.8%		894	10,144	8.1%
2034	11,021	862	10,159	7.8%		893	10,128	8.1%
2035	11,001	863	10,138	7.8%		891	10,110	8.1%
2036	10,977	863	10,114	7.9%		889	10,088	8.1%
2037	10,948	861	10,087	7.9%		887	10,061	8.1%
2038	10,924	865	10,059	7.9%		885	10,039	8.1%
2039	10,926	865	10,061	7.9%		885	10,041	8.1%
2040	10,928	866	10,062	7.9%		885	10,043	8.1%
'15-'25 CAGR		-0.2%	0.5%			0.4%	0.5%	
'15-'40 CAGR		0.0%	0.1%			0.1%	0.1%	

Consistent with Mr. Leuker's testimony that the Company assumed Electric Choice sales would remain flat for most sub-classes, electric choice sales represented approximately 10% of total system output throughout both the historical and forecast period.

However, the contribution of Electric Choice to DTE Electric's total system coincident peak demand ranges from 7.6% to 8.0% in the forecast falling below the 8.0% to 8.2% over the past three years. This assumption of lower contribution in the forecast period

Line
No.

1 results in a higher system coincident peak demand associated with bundled customers
2 served by DTE Electric and therefore a higher PRMR requirement for the Company of up
3 to 58 MW. The company has not provided an adequate explanation of this non-
4 proportional shift in peak over the forecast period which raises the question of whether a
5 more reasonable assumption would be to assume Electric Choice contribution to DTE
6 Electric's Total System Coincident Peak remains constant at 8.1% which reflects the
7 average of the past 3 years. This would result in a further reduction to DTE Electric's
8 Total System Coincident Peak of approximately 50 to 58 MW between 2018 – 2026
9 declining to 41 MW by 2030 and to 20 MW by 2040.

10
11 **Q. Did DTE Electric factor energy efficiency into its forecast of electric sales and**
12 **system output?**

13 A. Yes. As described in Kevin Bilyeu's Direct Testimony, DTE Electric included 1.5%
14 energy savings in its 2017 Reference case, up from 1.15% in its 2016 IRP Reference
15 Case. DTE Electric developed its forecast of energy efficiency by first aggregating its
16 energy efficiency programs into low cost-high, mid cost-mid potential, and high cost-low
17 potential categories or "blocks" that reflect the characteristics of existing programs. This
18 approach allows the company to forecast energy efficiency programs based program
19 attributes without requiring the Company to develop detailed program designs for future
20 periods of time.

21
22 The Company then modeled four energy efficiency scenarios through a process that
23 utilized the achievable energy efficiency potential identified in the energy efficiency
24 potential study performed by GDS Associates, Inc. and referenced in Mr. Bilyeu's
25 testimony ("The Energy Efficiency Potential Study"). The Company did this by drawing
26 from low cost-high potential blocks first before moving to mid cost-mid potential and
27 finally high cost-low potential. The scenarios included energy savings of <1.0%, 1.0%,
28 1.5% and 2.0% of retail sales.

29
30 Cost assumptions were modeled starting with baseline costs from the Company's 2018-
31 2019 baseline energy efficiency plan. Costs were escalated using historical cost increase

percentages for future years. The estimated average useful life included in the long-term modeling was 15 years reflecting the weighted average of DTE Electric’s 2018-2019 energy efficiency plan and industry standard measure lifespan assumptions. The total achievable Electric Energy Efficiency Potential energy (MWh) and demand (MW) reduction results for each scenario, as provided in Mr. Bilyeu’s testimony in Table 6 and Table 8, respectively, are provided in Table 4 and Table 5 below.

Table 4: Total Achievable Electric Energy Efficiency Potential (MWh)

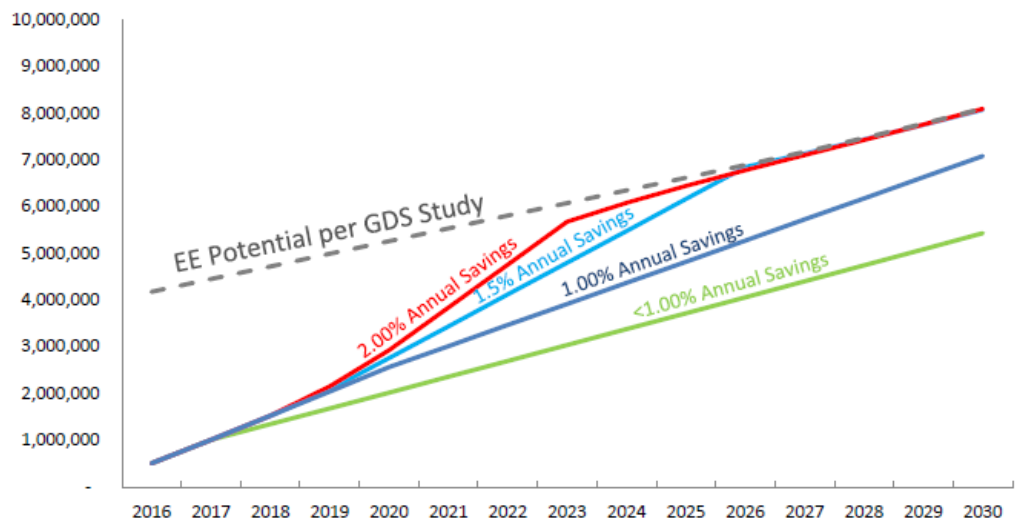
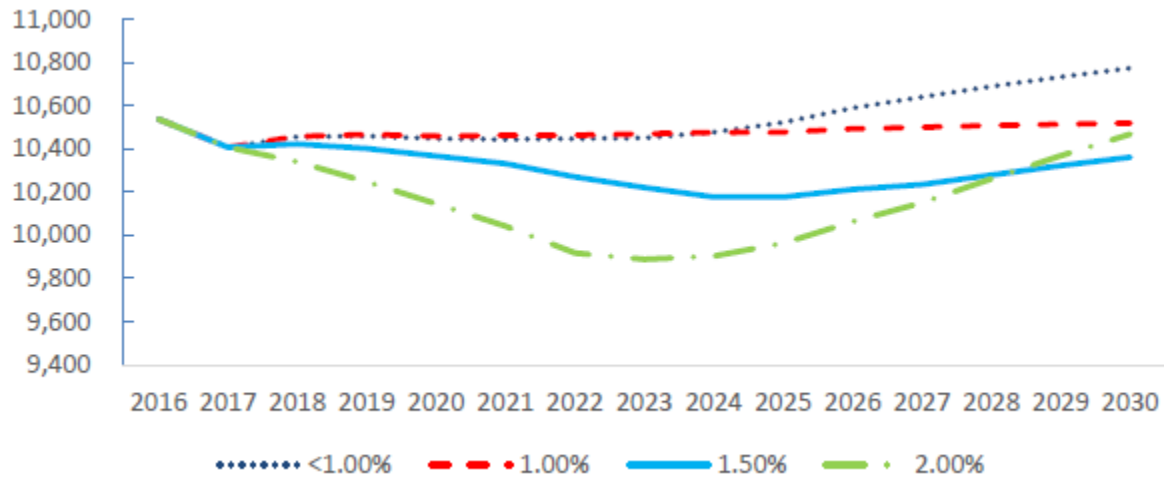


Table 5: Coincident peak with Energy Efficiency Reductions (MW)



The 2.0% and 1.5% scenarios achieve their respective targeted annual energy savings through 2022 and 2024, respectively, at which time the savings declines due to the diminished energy savings potential in its service territory. The 1% and <1% scenarios

Line
No.

1 achieve their respective targeted annual energy savings consistently through the forecast
2 period never achieving full energy efficiency potential.

3
4 Finally, the company performed a cost effectiveness test, using the utility cost test
5 consistent with Public Act 342⁶⁷, to ensure that the overall goal of reducing costs in a
6 cost-effective manner for the utility and its customers is achieved through each scenario.
7 The UCT test results reported in Table 10 of Mr. Bilyeu's testimony are shown in Table 6
8 below.

9 **Table 6: UCT Benefit Cost Ratio Results**

<1.00% Energy Savings	1.00% Energy Savings	1.50% Energy Savings	2.00% Energy Savings
5.63	6.32	8.13	7.95

10
11
12 The Company selected the 1.50% energy savings scenario in its 2017 Reference Scenario
13 bringing the Company's 2017 Reference Scenario into alignment with Public Act 342,
14 The Clean and Renewable Energy and Energy Waste Reduction Act, which among other
15 things increased the annual incremental energy savings target to 1% of total annual retail
16 electric sales.⁶⁸

17
18 **Q. What is your opinion about the level of energy efficiency assumed by DTE Electric**
19 **in its forecast of electric sales and system output?**

20 A. As noted above, the Company's 2017 Reference Scenario was developed using the 1.50%
21 sensitivity bringing the Company's 2017 Reference Scenario into alignment with the new
22 legislation and energy savings targets. Since the company only included cost-effective
23 energy efficiency savings in each of the scenarios described above, it is reasonable to
24 consider why the company did not choose to use the more aggressive 2% scenario in its
25 2017 Reference Scenario. A higher rate of energy efficiency savings would serve to

⁶⁷ State of Michigan Public Act 342 of 2016, Section 73 (2).

⁶⁸ State of Michigan Public Act 342 of 2016, Section 77.

Line
No.

1 further reduce Electric Demand in the near term and therefore contribute to filling the
2 supply gap caused by retiring coal units.

3
4 Looking at the potential impact of shifting from 1.5% to the 2.0% scenario, there are a
5 couple of things to note. First, as evidenced in Table 6 above, both the 1.5% and 2.0%
6 sensitivities provide equivalent total energy savings through 2030. Though the 2.0%
7 scenario delivers greater energy (MWh) and capacity (MW) savings in the early years,
8 both scenarios converge in the 2026-2027 time period when the full energy efficiency
9 potential determined by the Energy Efficiency Potential Study is achieved. Therefore,
10 using the 2.0% scenario instead of the 1.5% scenario would only be able to contribute to
11 filling the supply gap caused by retiring coal units on a temporary basis.

12
13 Second, per Mr. Bilyeu's testimony, the 2.0% energy savings scenario provides energy
14 savings at a greater rate through 2022, without regard for maintaining consistent spend
15 and energy savings creating inconsistencies in program offerings. As noted by the
16 company, this has the potential to introduce a higher degree of administrative burden and
17 energy efficiency program risk associated with program ramps and the potential for poor
18 trade ally, vendor and customer satisfaction which could impact program success.⁶⁹

19
20 Taking this all into account, it is my opinion that the 1.5% scenario modeled in the 2017
21 Reference Scenario reasonably reflects an achievable amount of energy efficiency at a
22 level that: (1) meets the new legislative energy efficiency targets; and (2) attempts to
23 maximize the energy efficiency potential identified in the Energy Efficiency Potential
24 Study. Therefore, it is my opinion that the 1.5% scenario is reasonable for the load
25 forecast assumed in this proceeding.

26
27 **Q. How did DTE factor distributed generation into its IRP load forecast?**

28 **A.** The total net metering sites and capacity as of the end of 2016, by category as provided in
29 Derek Kirchner's testimony and shown in Table 7, below.

30

⁶⁹ Direct Testimony of Kevin L. Bilyeu, p. KLB-21.

Line
No.1
2

**Table 7: Total Net Metering Sites in DTE Electric's Service Territory
As of the End of 2016**

	Sites	Enrolled Capacity (MW)	Capacity Cap (MW)	Percent of Cap
Category 1	1,397	10.1	57.1	17.7%
Category 2	27	1.6	28.6	5.5%
Category 3	0	0.0	28.6	0.0%
Total	1,424	11.7	114.2	10.2%

3
4

Per response by Mr. Kirchner to U-18419, AGDE-1.35c, in the 2016 Reference Case and the High Case, the Company did not forecast the adoption of additional net metering capacity in the sales forecast. In the Low Load Case and the 2017 Reference cases, a scenario was created in which residential solar adoption was increased from the Reference Scenario. The estimated peak demand impact by 2040 is 26 MW for the Low Load Case and 47 MW for the 2017 Reference Scenario.⁷⁰

10

11 **Q. What is your opinion about the treatment of distributed generation?**

12 A. To date, the Company has experienced low participation in its net metering program.
13 The Company's net metering queue as of October 26, 2017 lists an additional 5.2 MW of
14 potential distributed generation. However, 2.4 MW of the capacity has been waiting for
15 customer documentation for greater than 12 months and more than 1.5 MW date back to
16 2014 or earlier.

17

18 Although the economics of distributed generation technologies continue to improve as
19 cost of the technology falls, it is difficult to predict what impact lower costs will have on
20 DTE Electric customer's interest in distributed generation. Although there is likely to be
21 some growth during the forecast period, assuming no material change in net metering
22 policy or program design, it is likely to be insignificant. Therefore, the Company's

⁷⁰ Tables showing the additional forecasted adoption of residential solar in annual sales and estimated impact on peak demand were provided by the Company in response to data request AGDE-1.35.

Line
No.

1 decision not to forecast the adoption of additional net metering capacity in the sales
2 forecast in its reference case is reasonable.

3
4 **Q. How did DTE factor Demand Response into its IRP?**

5 A. As described in Mr. Kirchner's testimony, the Company is currently utilizing 572 MW of
6 demand side management (or demand response) capacity to reduce their overall capacity
7 requirements. This is done through a combination of the residential, commercial and
8 industrial tariff programs. Additionally, the Company expects an additional 125 MW of
9 capacity through its Interruptible A/C program ("IAC") on an annual basis related to
10 installing new load control switches. Together, these programs account for approximately
11 765 MW of UCAP in the forecast period once the impact of the new IAC switches are
12 implemented by 2021.⁷¹

13
14 The Company also modeled demand-side management program impacts associated with
15 planned investments in a Programmable Communicating Thermostat program, a Bring
16 Your Own Thermostat program and a Behavior Modification Report with Peak
17 Reduction Demand Response program. These programs could account for an additional
18 138 MW of UCAP if the programs are fully implemented by 2021.⁷² However, none of
19 these three programs were selected through the modeling process as optimal to be
20 included in the recommended plan in any of the DTE IRP cases. However, the Company
21 believes it to be prudent to continue the development of these demand response resources
22 as they provide the Company with flexibility to react to changes in load forecast, market
23 economics or other generation scenarios quicker than constructing additional capacity.⁷³

24
25 Additional demand response potential was identified in the potential study completed by
26 GDS Associates and referenced in the DTE Electric 2017 IRP that were not modeled or
27 evaluated in the Company's IRP. This additional demand response potential measured in

⁷¹ Exhibit A-31.

⁷² Sum of the maximum capacity for each of the three demand response programs as provided by the Company in response to data request AGDE-1.34a

⁷³ Direct Testimony of Derek D Kirchner, p. DDK-10.

Line
No.

1 MW of UCAP starts at 87 MW in 2020 and grows to 435 MW by 2025 and to 871 MW
2 by 2035.

3

4 **Q. What is your opinion about how DTE factor Demand Response into its IRP?**

5 A. In assessing DTE's treatment of the demand response achievable potential determined in
6 the GDS Associate study, it is useful to consider the potential demand response in the
7 three tranches.

8

9 The first tranche is the forecast of demand response capacity from DTE Electric's current
10 programs, including an additional 125 MW of capacity through its Interruptible A/C
11 program (IAC) on an annual basis related to installing new load control switches. This
12 tranche of demand response is assumed to deliver approximately 765 MW of UCAP in
13 each year of the forecast period.

14

15 The second tranche is the forecast of demand response capacity from DTE Electric's
16 potentially planned investments in a Programmable Communicating Thermostat program,
17 a Bring Your Own Thermostat program and a Behavior Modification Report with Peak
18 Reduction Demand Response program. These programs could potentially account for an
19 additional 138 MW of UCAP if the programs are fully implemented by 2021. Although
20 the Company is planning to make the investment in these programs and has filed for
21 approval of \$22.1 million⁷⁴, to fund pilot programs, it did not include the potential
22 capacity from these programs as committed. Instead, the Company modeled these
23 programs as resources in direct competition with other supply-side resources, which
24 resulted in none of these programs being selected as optimal. It seems counterintuitive to
25 treat these programs as potential alternatives to supply options when the Company has
26 already made the decision to invest in them.

27

⁷⁴ \$2.8 million per Direct Testimony of Kevin L. Bilyeu, p. KLB-21; plus an additional \$18.3 million per MPSC Case No. U-18255, Document No. 0339, page 35 DTE Electric Company Reply Brief and Proof of Service.

Line
No.

1 This lack of transparency regarding why the Company chose not to include these
2 programs as committed rather than alternatives for consideration raises concern that the
3 selected resource buildout may be suboptimal.

4
5 The third tranche includes the remaining demand response achievable potential not
6 already accounted for in the first two tranches. I estimate the achievable demand
7 response potential measured in MW of UCAP at 87 MW in 2020 growing to 435 MW by
8 2025 and to 871 MW by 2035. The Company explained that it has filed the request for
9 the Certificate of Necessity based on actual capacity realized from approved demand
10 response programs because inclusions of estimated impacts associated with non-approved
11 or unplanned demand response programs is considered speculative.⁷⁵

12
13 In summary, I have concerns regarding DTE's IRP planning process and its treatment of
14 demand response. The 2017 Reference Case should include the 138 MW of UCAP
15 capacity associated with DTE's planned investments in the Programmable
16 Communicating Thermostat program, Bring Your Own Thermostat program and
17 Behavior Modification Report with Peak Reduction Demand Response program. I
18 disagree with the characterization of these programs as speculative. They are no more
19 speculative than estimates the Company uses when estimating the impacts of EE
20 programs in its load forecast - by not including these planned programs as a given.
21 Furthermore, it is unclear whether additional demand response capacity identified in the
22 potential study would have been selected as well, since it was not evaluated.

23
24 **Q. Have you reviewed the Company's Gas Transmission Plan associated with the**
25 **Proposed Project?**

26 **A.** Yes. I have reviewed the natural gas supply plan for the Proposed Project as described in
27 the Direct Testimony of Company witness David Swiech, as well as Mr. Swiech's
28 confidential responses to discovery questions.

29
30 **Q. Please summarize your concern with the Company's Gas Transmission Plan?**

⁷⁵ Per the Company's response to data request EPLC-1.19(a).

Line
No.

1 A. I am concerned that the Company has not provided a fully developed plan to provide the
2 necessary firm gas supply and transportation service to support the Proposed Project. The
3 Company discusses a new firm gas supply contract for service on a pipeline that has yet
4 to be built as if it is a key component of the economic analysis of the Proposed Project,
5 but does not adequately reflect the risk associated with potential delays in the in-service
6 for this pipeline with a written plan for mitigation of the risks associated with its
7 contingency plan of spot supply. Also, the Company has omitted a cost estimate
8 associated with a critical link in the infrastructure supply chain that could also affect the
9 ability to have access to the aforementioned firm pipeline contract.

11 **Q. Please summarize your understanding of the Company's plan to provide natural gas**
12 **supply to the Proposed Project.**

13 A. The Company plans to change its current strategy of relying upon spot supply delivered
14 by third-party marketers to interstate pipeline citygate interconnections with local
15 distribution companies ("LDCs"), SEMCO Energy Gas Company and DTE Gas
16 Company, and from there to each individual plant burnertip under tariff service
17 agreements with these same LDCs to include multiple new firm pipeline transportation
18 and storage contracts.

20 Mr. Swiech briefly reviewed the current gas supply plan details for each of the existing
21 units, which I have summarized in the table below.⁷⁶

Summary of Fuel Supply Plan for DTE Electric Natural Gas Fired Generation Units						
Unit Name	Primary Fuel	Alt Fuel	Supply Mkt/LDC	Interstate Pipeline I/C	Transport From P/L CG to Plant	Storage?
Renaissance	NG		3rd Party	MichCon CG	DTE Gas agreemt	DTE Gas
Greenwood	NG		3rd Party	ANR/Semco	SEMCO Tariff	
Dean	NG		3rd Party	MichCon CG	DTE Gas agreemt	DTE Gas
Belle River Peakers	NG		3rd Party	Great Lakes GT	SEMCO Tariff	
Delray Peakers and River Rouge	NG		3rd Party	MichCon CG	DTE Gas agreemt	DTE Gas
Hancock and Northeast Peakers	NG		Consumers Energy		Consumers Energy Tariff	
St. Clair Power Plant and Peakers	NG		SEMCO		SEMCO Tariff	

⁷⁶ Direct Testimony of David Swiech, pp. DS-6 through DS-7.

Line
No.

1 **Q. Does the Company's existing supply plan provide firm natural gas supply to its**
2 **existing fleet of natural gas-fired units?**

3 A. Not entirely, the Company acknowledges that its existing natural gas units are currently
4 supplied primarily through interruptible supply arrangements.
5

6 **Q. If the Company relies primarily upon interruptible supply arrangements, what part**
7 **of its existing supply plan provides firm service to these natural gas-fired units?**

8 A. The Company did not describe specific firm contracts, however, Mr. Swiech indicated
9 that certain units have access to storage service through its affiliate DTE Gas, as
10 summarized in the table above. Access to storage combined with interruptible supply can
11 be considered a type of firm service because it can be withdrawn when interruptible
12 supply has been cut. I assume that the storage service is provided pursuant to a DTE
13 tariff and thus includes firm transportation out of storage as well as specifies the
14 maximum daily quantity and annual capacity available to the Company.
15

16 **Q. Why does the Company plan to change its current gas supply arrangements?**

17 A. The Company indicated that it expects "electric generation will cause MISO to become
18 more dependent on natural gas as a source of fuel for baseload generation in the future.
19 As this occurs, DTE Electric plans to enter into firm gas supply and gas transportation
20 contracts as needed to ensure electric reliability."⁷⁷ Further, the Company stated in its
21 IRP that "[i]n order to provide a reliable supply of natural gas to the power plant, firm gas
22 supply and firm transportation services were considered ... [and that a] combination of
23 firm gas supply, firm transportation, and firm storage would provide a high level of fuel
24 supply reliability to the plant."⁷⁸
25

26 **Q. When does the Company plan to expect this trend to compel it to enter into firm**
27 **contracts?**

⁷⁷ *Id.*, p. DS-7 through DS-8, lines 24-25 and 1-2.

⁷⁸ Exhibit A-4 Revised, p. 162.

Line
No.

1 A. The Company did not provide a timeline. The Company has made plans to enter into a
2 new long-term contract for firm interstate pipeline capacity on NEXUS Gas Transmission
3 system, which is expected to commence service during 2018.

4
5 **Q. Please describe what you mean by “made plans to enter into” a new contract with**
6 **NEXUS Gas Transmission.**

7 A. The Company has entered into a Precedent Agreement with NEXUS Gas Transmission,
8 which anticipates the terms and conditions of a firm service contract. However, it’s my
9 understanding that the Company still needs to secure full regulatory approval of this
10 contract from the Michigan Public Service Commission, which is something the
11 Company is seeking outside of MPSC Case No. U-18419. Precedent Agreements are
12 usually entered into by major customers, referred to as “Anchor Shippers” because they
13 are willing to sign up for sufficient capacity and lengthy contracts to make the cost of
14 building and operating the pipeline economic given the rate for service that customers are
15 willing to pay. In other words, the pipeline operator often agrees to negotiated rates or
16 other terms as part of the Precedent Agreement and subsequently publishes recourse rates
17 for shippers who enter into service contracts for lesser volume after the pipeline is built
18 and enters service.

19
20 **Q. Has the Company entered into the anticipated firm service contract with NEXUS**
21 **Gas Transmission yet?**

22 A. Yes, the Company entered into two additional contracts with NEXUS Gas Transmission
23 pursuant to the Precedent Agreement, a Negotiated Rate Agreement and a Service
24 Agreement. By signing the Precedent Agreement, DTE Electric committed itself to
25 entering into the Negotiated Rate and Service Agreements provided the conditions
26 precedent in the Precedent Agreement were met.⁷⁹ Once again, it’s important to note that
27 the Company still needs to secure full regulatory approval of this contract from the
28 Michigan Public Service Commission. For ease of reference, I will use the term “NEXUS
29 contract” from this point forward to refer to the combined terms of these three
30 agreements. However, I will address one of the conditions precedent in the Precedent

⁷⁹ U-18403, Direct Testimony of R.C. Pratt, p. RCP-6, lines 6-10.

Line
No.

1 Agreement below because it is pertinent to Company's evaluation of the Proposed Plant
2 in this proceeding.

3
4 **Q. When did the Company execute each of these agreements with NEXUS Gas**
5 **Transmission?**

6 A. The Company and NEXUS Gas Transmission executed the Precedent Agreement on July
7 31, 2014, the Negotiated Rate Agreement on September 14, 2016 and the Service
8 Agreement on February 1, 2017.⁸⁰

9
10 **Q. What is the amount of firm capacity available under the NEXUS Agreement?**

11 A. The amount of capacity is equal to a maximum daily quantity ("MDQ") in decatherms
12 per day ("Dth/d"). The Company committed an MDQ of 30,000 Dth/d beginning with
13 the NEXUS in-service date, and the right to increase the MDQ up to 75,000 Dth/d – or an
14 incremental 45,000 Dth/day -- coincident with the addition of the Proposed Plant.⁸¹

15
16 **Q. What is the primary term of the NEXUS Agreement?**

17 A. In this filing, the Company says the NEXUS Agreement has a twenty-year term.⁸²
18 However, in U-18403, the Company clarifies that the term for each increment of capacity
19 is staggered. For the initial MDQ of 30,000 Dth/day extending from the time the pipeline
20 project enters service, and a fifteen-year term for the additional MDQ of 45,000 Dth/d.⁸³

21
22 **Q. Why does the maximum daily quantity of capacity under the NEXUS contract**
23 **increase over the term?**

24 A. The Company states that it expects natural gas requirements to significantly increase with
25 "the need to retire aging coal-fired electric generators and the need to facilitate sufficient
26 natural gas supply options for new natural gas fired generation in Michigan."

27
28 **Q. When is the NEXUS Gas Transmission pipeline expected to enter service?**

⁸⁰ *Id.*, p. RCP-6, lines 12-17.

⁸¹ Direct Testimony of David Swiech, p. DS-8, lines 4-6.

⁸² Response to AGDE-1.15h, page 1 of 1.

⁸³ U-18403, Direct Testimony of R.C. Pratt, p. RCP-6, lines 1-3.

Line
No.

1 A. The Company assumes that the NEXUS Gas Transmission pipeline will enter service in
2 September 2018, approximately nine (9) months from today.⁸⁴

3
4 **Q. Did the Company indicate that the NEXUS contract will be used to serve the**
5 **Proposed Plant?**

6 A. No, the Company did not describe the NEXUS contract as being dedicated to the
7 Proposed Plant. Instead, Mr. Swiech described this contract as a means to supply
8 multiple plants at competitive prices because the NEXUS Gas Transmission path
9 originates in the Utica and Marcellus shale region, where he expects pricing to remain
10 among the lowest in the country for the foreseeable future.⁸⁵

11
12 **Q. How will the NEXUS Gas Transmission system be able to serve multiple plants?**

13 A. The NEXUS contract will be used to replace existing gas supplies, based on Mr.
14 Swiech's description of the Company's plan to offset DTE's need to purchase MichCon
15 CityGate gas supply. NEXUS Gas Transmission system has firm delivery capacity to the
16 MichCon Citygate, which location the Company describes as "Willow
17 Run/Ypsilanti".^{86,87} As summarized in the table above, DTE has several existing plants
18 that receive gas supply at the MichCon Citygate, Renaissance, Dean, Delray Peakers and
19 River Rouge, making it possible to use the NEXUS contract solely for existing plants.
20 However, for reasons described below, I expect the NEXUS contract to be used for the
21 Proposed Plant as well.

22
23 **Q. If the Company currently obtains sufficient supply at MichCon Citygate, why would**
24 **it be appropriate to enter into the NEXUS contract as an alternative?**

⁸⁴ U-18403, Direct Testimony of R.C. Pratt, p. RCP-10, lines 9-10.

⁸⁵ A map of the proposed NEXUS Gas Transmission System is available at this link:

<http://www.naturalgasintel.com/ext/resources/Daily-GPI/DG3Q2017/nexus-map.png?1501101126>.

Further, please note that the current path is subject to change, according to the pipeline developer:

<http://www.nexusgastransmission.com/content/project-overview-map>

⁸⁶ Direct Testimony of David Swiech, p. DS-8 at 10-11.

⁸⁷ NEXUS Gas Transmission describes the pipeline project as terminating at the Willow Run M&R (metering and regulating) station in Washtenaw County, Michigan.

http://www.nexusgastransmission.com/sites/all/themes/spectra/images/PDFs/RR1_NEXUS_Vol-II-A_PF-DRAFT_June-2015_1-OF-2.pdf

Line
No.

1 A. The supplies currently received at the MichCon Citygate are delivered by third-party
2 marketers at that location, according to Mr. Swiech's testimony. As a result, these
3 marketers are in a position to charge the current price for delivered gas supply based on
4 supply and demand in the region even if this price exceeds the cost of the gas supply
5 commodity plus the pipeline capacity used to transport it to this destination. The benefit
6 to end-users to rely on Citygate delivery is the ability to avoid the fixed costs of firm
7 service, while paying a price that allows the third-party marketer to make a profit.
8 Securing low cost supply near the production region and transporting it on the NEXUS
9 contract may allow the Company to pass through fuel costs that reduce generation costs
10 for the benefit of ratepayers. But this assumes that the cost of delivered gas supply via
11 the NEXUS contract is less than that for Citygate delivery going forward.

12
13 **Q. Did the Company prepare a cost-benefit analysis to determine whether it would be**
14 **economic to swap NEXUS delivered supplies for third-party marketer supplies?**

15 A. The Company stated that it relied upon a landed cost analysis performed by DTE Gas in
16 July 2014 that showed contracting for transportation capacity on NEXUS Gas
17 Transmission would be cost effective. A copy of this landed cost analysis was provided
18 in discovery response AGDE-1.15g.xls and as Exhibit ____ below. The Company further
19 argues that because NEXUS Gas Transmission is a "greenfield", i.e., new-build, project,
20 it would increase gas supply available in the region, implying that increased gas supply
21 tends to lower prices in general and thereby also reducing costs over the long term for its
22 other natural gas fired generating units that receive gas supply delivered at MichCon
23 Citygate.⁸⁸

24
25 **Q. Do you agree with that the landed cost analysis supports the Company's conclusion**
26 **that NEXUS Gas Transmission will provide low cost gas supply?**

27 A. Introducing a significant source of low cost supply into a constrained market would tend
28 to lower prices, all else being equal. However, I also note two additional observations
29 that suggest things may not be held equal:

⁸⁸ U-18403, Direct Testimony of R.C. Pratt, p. RCP-9, lines 8-18.

Line
No.

- 1 • the Company acknowledges that the landed cost analysis is based on dated
 - 2 pricing from 2014; and
 - 3 • AGDE-1.15g shows that the major difference between the Basis price
 - 4 assumed for each alternative (See line 7, “Ave Basis – ICF”). For MichCon
 - 5 Citygate delivery pricing (Col 1) the basis is positive at \$0.25/Dth and that
 - 6 assumed for NEXUS (Col 11) is negative (\$0.56) per Dth.
- 7 Enough time may have lapsed since 2014 for third-party marketers to respond by
- 8 reducing the positive basis for MichCon deliveries assumed in this analysis. As a result,
- 9 the major justification for entering into the NEXUS contract may not be to obtain a lower
- 10 price so much as to avoid the risk associated with interruptible supply. By purchasing
- 11 supply closer to the production area, the Company is less dependent on marketers and
- 12 more in control of its own destiny as it increases natural gas fired electric generation
- 13 capacity.

14

15 **Q. Is the Company asking for Commission approval of the NEXUS contract in this**

16 **filing?**

17 A. No, the Company indicated that its decision to enter into a Precedent Agreement for

18 NEXUS capacity was addressed by Company witness Pratt in the currently pending

19 MPSC Docket No. U-18403, DTE Electric’s 2018 PSCR Plan Case. However, when I

20 reviewed the filing in this docket, I found that the Company did not ask for Commission

21 approval of the NEXUS contract there either. Instead, the Company asked for approval

22 to recover the transportation related expense that is associated with DTE Electric’s

23 execution of both the Precedent Agreement and the Rate Agreement with NEXUS Gas

24 Transmission.⁸⁹

25

26 **Q. Do you have any concerns with the NEXUS contract in relation to the Proposed**

27 **Plant?**

28 A. Yes, I do. While the Company does not request approval of the NEXUS contract in this

29 proceeding, it is clear that this contract is a key component of its strategy to support

⁸⁹ Application of DTE Electric Company for Authority to Implement a Power Supply Cost Recovery Plan in its Rate Schedules for 2018 Metered Jurisdictional Sales of Electricity, MPUC U-18403, top of page 6.

Line
No.

1 increasing gas fired generation with firm gas supply service. I am concerned that this
2 strategy as presented in this filing, ignores the potential mismatch in the timing of the in-
3 service dates for the Company's Proposed Plant versus that of the NEXUS Gas
4 Transmission system.

5
6 **Q. Please explain why you are concerned that the NEXUS Gas Transmission project**
7 **could be delayed.**

8 A. I am concerned that the NEXUS Gas Transmission project could be delayed because it
9 has been delayed already several times. The Company acknowledged as much in its
10 2018 Power Supply Cost Recovery Plan when it chronicled six amendments to the
11 Precedent Agreement, five of which amend and delay the date for NEXUS's conditions
12 precedent.⁹⁰ While both the Company and NEXUS maintain that the anticipated in-
13 service date for NEXUS Gas Transmission will be September 2018, further delays could
14 occur. This could push the date out by which the Company could request to increase firm
15 capacity from 30,000 Dth/d to 75,000 Dth/d to match the in-service date of the Proposed
16 Project, which is expected to occur in 2022.⁹¹

17
18 **Q. Did the Company specifically state that they plan to rely on the NEXUS contract to**
19 **serve the Proposed Plant.**

20 A. No, they did not. But the Company did say they would enter into firm gas transportation
21 agreements from a combination of providers, and it is likely that NEXUS Gas
22 Transmission will be one of these providers due to timing and cost factors. First, the
23 Proposed Plant, as a nominal 1,100 MW natural gas fired combined cycle generating
24 facility, is classified as a baseload plant that will be located at the Company's Belle River
25 Power Plant site, where the Company has existing peaking units already served by
26 existing gas pipeline infrastructure and listed as receiving gas supply from third party
27 marketers at the MichCon Citygate, the delivery point for the NEXUS contract described
28 above. A baseload plant is expected to operate a significant percentage of the time, and
29 typically at a higher percentage than the existing peaking facilities. If the Company plans

⁹⁰ U-18403, Direct Testimony of R.C. Pratt, p. RCP-7, lines 1-16.

⁹¹ *Id.*, p. RCP-6, line 1.

Line
No.

1 to operate the Proposed Plant at baseload conditions, then it makes sense that it would
2 dedicate a significant portion of the gas supply delivered via NEXUS to this plant, rather
3 than peaking units, for both reliability and to minimize cost. Firm gas supply contracts
4 have significant fixed costs in the form of annual reservation charges that must be paid
5 for whether the Company uses it to transport gas supply or not.⁹² Maximizing use of the
6 NEXUS contract by flowing as much supply as possible by dedicating it to a baseload
7 plant will reduce the average cost of gas per unit, which contributes to lower electric
8 generation costs.

9
10 **Q. Did the Company provide an estimate of the annual fixed costs for the NEXUS**
11 **Contract?**

12 A. Yes, indirectly. The Company provided an estimate of the annual delivered fuel costs for
13 the Proposed Project using projected annual fixed fuel costs for the Belle River Peaking
14 plants as a proxy. These proxied costs were estimated at \$15.7 million for transportation
15 and \$4.5 million for storage costs.⁹³

16
17 **Q. What does the Company plan to do if the NEXUS Gas Transmission project in-**
18 **service date is delayed?**

19 A. In response to discovery, the Company said that in the event of a delay, they would
20 continue to rely upon the spot market purchased at the MichCon Citygate.⁹⁴

21
22 **Q. Can the Company negotiate firm transportation service agreements with other**
23 **pipelines?**

24 A. The Company stated in response to discovery that other pipelines with which it would
25 enter into firm gas transportation contracts are undetermined at this time.⁹⁵ The
26 Company so stated even though elsewhere the Company acknowledges that there are

⁹² Direct Testimony of David Swiech, p. DS-12, lines 12-14.

⁹³ Direct Testimony of David Swiech, p. DS-14, lines 21-23. However, on page DS-12, lines 14-16, the Company states that for the IRP process, at total cost of \$18.5 million for Transportation and \$12 million for Storage was used to evaluate a combination of gas-fired combustion turbines as well as combined cycle units, without explaining how much of the cost was associated with each type of unit.

⁹⁴ Response to AGDE-1.15e, page 1 of 1.

⁹⁵ Response to AGDE-1.17, page 1 of 1.

Line
No.

three large natural gas transmission pipelines within one mile of the proposed site, Vector Pipeline, DTE Gas Company (an affiliate), and Great Lakes Gas Transmission.⁹⁶

Q. Do you have any other concerns with NEXUS Gas Transmission project besides the potential delay in the in-service date?

A. Yes, I am concerned with the Company's plan to rely upon the NEXUS Gas Transmission project for firm gas service at the time of the Proposed Project's in-service date when the ability to increase the NEXUS contract MDQ from 30,000 Dth/d to 75,000 Dth/d is conditioned upon there being sufficient capacity available on this new pipeline. The Company acknowledges that their request for the incremental 45,000 Dth/d of firm capacity could be denied if there is not sufficient unsubscribed capacity available at the time or if NEXUS Gas Transmission decides to build facilities that restrict capacity to the initial level. This admission suggests at the very least that the incremental 45,000 Dth/d of capacity in the firm contract is not very firm at all.

Q. Do you have any other concerns with the Company's gas supply plan for the Proposed Project besides the NEXUS contract?

A. Yes, the Company's filing describes a plan that relies upon the cost of all components of the infrastructure supply chain to be known, from the receipt point on the upstream interstate pipeline all the way to the burnertip, to meet the objective of providing reliable, firm supply at competitive rates. So far, I have discussed the upstream component of the supply plan, the NEXUS contract. But there is a significant missing cost element for the downstream portion of the Company's plan: they have yet to determine how they will deliver the significant amount of gas supply under the NEXUS contract – or a contract with any other pipeline for that matter – from the interstate pipeline to the Proposed Project.

The Company currently relies upon distribution pipelines to provide this "last mile" service, SEMCO and DTE Gas as shown in the table above, however, neither LDCs' distribution lines have enough capacity to meet the Proposed Plant's needs, requiring the

⁹⁶ Direct Testimony of David Swiech, p. DS-13, lines 8-10.

Line
No.

1 Company to build a new line to the aforementioned pipelines located approximately one
2 mile away. Further, the Company has yet to solicit proposals to build this new line,
3 which could add several million dollars to the already significant cost for the NEXUS
4 contract because it will require the construct of not only the lateral line but also an
5 unspecified amount of gas compression facilities and interconnection and metering
6 facilities.⁹⁷

7
8 **Q. What do you conclude based on your review of the Company's gas supply plan for**
9 **the Proposed Project?**

10 A. The Company's plan to provide reliable firm gas supply service to the Proposed Project
11 has some risks that are not fully addressed by the Company. A fully developed written
12 contingency plan apparently does not exist. I recommend that the Company closely
13 monitor the risks associated with its current plan for firm supply, and file a written plan
14 for approval by the Commission to mitigate the risks associated with spot supply should
15 the risks to firm supply increase or materialize.

16
17 **C. Recoverable Costs**
18

19 **Q. Do you have any concerns regarding the recoverability of costs associated with the**
20 **Proposed Project?**

21 A. Yes. According to Section 4(c) of Section 6s:

22 The commission shall find that the cost is reasonable if, in the construction
23 or investment in a new or existing facility, to the extent it is commercially
24 practicable, the estimated costs are the result of competitively bid
25 engineering, procurement, and construction contracts, or in a power
26 purchase agreement, the cost is the result of a competitive solicitation.

27 While I am not an attorney and will leave the discussion of the legal meaning of this
28 section to counsel, a plain language reading of the section suggests to me that costs
29 associated with the Proposed Project must be the result of a competitive process if they
30 are to be recoverable from customers.

⁹⁷ *Id.*, p. DS-14, lines 8-16.

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1

2 **Q. Can you summarize the RFP process that you reviewed?**

3 A. Yes. According to the Company, after its IRP exercise had identified a combined cycle
4 unit of approximately 1,100 MW of base-loaded resource, DTE Electric commenced a
5 process to evaluate projects or “purchase opportunities” to satisfy its identified capacity
6 and energy needs.⁹⁸ These efforts can be divided into two categories: the solicitations
7 for proposals for the Proposed Project if the Company owned the resource (“Self-Build”)
8 that involved seeking “bids for combined cycle gas turbine technologies and Engineer
9 Procure Construct (EPC) services to build a combined cycle natural gas plant of about
10 1,100 MW” for the Company, and a solicitation for market alternatives to the Self-Build
11 option.⁹⁹ My comments concern the market alternatives RFP and whether the Proposed
12 Project was sufficiently market-tested.¹⁰⁰

13

14 **Q. How was that solicitation conducted?**

15 A. The Company retained a third-party facilitator, Power Advocate, to run the solicitation. It
16 issued the solicitation for natural-gas fueled electric resources on March 1, 2017 with
17 several minimum bid requirements set forth in the RFP. These requirements, included,
18 but were not limited to the following¹⁰¹:

- 19 • Technology: Combined cycle or simple cycle natural gas fueled electric generation
- 20 facility
- 21 • Unit Status: Qualifies for MISO capacity credit in the 2022 planning year or earlier
- 22 • Unforced Capacity: 225 MW to 1,200 MW
- 23 • Location: Must be physically located within MISO Zone 7
- 24 • PPA Term Length (if applicable): Up to 7 years, beginning on June 1 of any given
- 25 year between 2018 and 2022

⁹⁸ Direct Testimony of Irene M. Dimitry, p. IMD-20.

⁹⁹ *Id.*, pp. 20-21.

¹⁰⁰ March 1, 2015 Request For Proposals for Acquisition of Natural Gas Combined Cycle / Simple Cycle Generating Facilities and Power Purchase Agreements; STDE-12.33a; STDE-2.29a; STDE-2.29b; and STDE-2.29c.

¹⁰¹ Direct Testimony of Irene M. Dimitry, p. IMD-25.

Line
No.

1 The Company states it sent notices of the RFP to 22 potential energy suppliers and also
2 issued a press release connected with this solicitation. The press release pointed out that:

3 Proposals submitted will be evaluated in conjunction with DTE's recently
4 announced plans to build a state-of-the-art natural gas turbine plant,
5 expected to be located on existing DTE property adjacent to the Belle
6 River power plant in China Township, Mich.

7 "While we have announced plans to build a new natural gas plant, DTE is
8 assessing all options for new power capacity, including the purchase of a
9 natural gas plant to produce electricity," said DTE Electric President
10 Trevor Lauer.

11
12 The Company set March 17, 2017, as the deadline to submit a notice of intent of intent to
13 bid, and fixed April 13, 2017 as the due date for bids.

14
15 **Q. Are minimum bid requirements unusual in RFPs for resources?**

16 A. No, and in fact, bid requirements are a common and essential element of an RFP to signal
17 to potential bidders whether a bid will likely qualify for consideration. Preparing a bid
18 can take a substantial amount time and resources, so market efficiency and price
19 discovery is enhanced by providing the right level of information so that candidates can
20 put in the best bid possible. Taken to an extreme, however, minimum requirements can
21 become so restrictive that bidders will be deterred from making an offer.

22
23 **Q. Do you have any concerns regarding the competitiveness of the solicitation for the**
24 **alternative to the Self Build?**

25 A. Yes. An 1,100 MW facility with an initially estimated cost of \$989 million is a
26 significant investment opportunity, and it is very reasonable to expect that far more
27 qualifying bids would have been received. The lack of a robust market response to meet
28 an 1,100 MW generating station need requires a very close examination of the RFP
29 requirements and overall process to determine whether the scarcity of qualifying bids
30 simply reflects competitive market conditions or whether some peculiarities related to the
31 RFP chilled the market for alternatives in this case.

Line
No.

1 **Q. Have you considered what elements may have deterred a more robust market**
2 **response?**

3 A. Yes. Certain considerations have already been discussed above, particularly the
4 Company's use of a self-defined standard not required by MISO to fix the location of the
5 resource within LRZ 7. This geographic requirement naturally would place a limit on the
6 market alternatives that could be considered qualifying resources.

7

8 **Q. Are there any other elements of the RFP that might limit the robustness of the**
9 **market response?**

10 A. Yes. The Company sought only a purchase power agreement of up to 7 years, but the life
11 of a new generating unit could be 30 years or longer so there is a fundamental disconnect
12 between the need for the resource and the life of a new asset that could meet that need.
13 One of the potential bidders expressly pointed out the structural problem associated with
14 restricting the purchase power agreement to a term of years inconsistent with the life of
15 the underlying generating unit.¹⁰²

16

17 **Q. Given these observations about the RFP for market alternatives, what do you**
18 **recommend?**

19 A. Although the Commission has ample grounds to seriously question the competitiveness
20 of the market testing of the alternatives to the Self Build option, I recommend that the
21 Commission adopt procedures that will help ensure an open, fair and transparent RFP
22 process for future RFPs. Specifically, I recommend that the Commission require that
23 proposed resource RFPs be submitted at least 90 days in advance of issuance with an
24 opportunity for stakeholders to provide comments on the proposed form, ground rules,
25 timeline and other requirements of the RFP. The Commission could then consider these
26 concerns before approving an RFP for a company to issue. Review and approval of an
27 RFP in advance of issuance would enhance openness, fairness and transparency of the
28 process, and should result in a more robust and competitive market response.

¹⁰² DE/MCV-1.3, Attachment A.

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2 **V. Conclusion**

3

4 **Q. Please summarize your conclusions.**

5 A. Based on my review of the Company's Application, supporting testimony, and responses
6 to data requests in this docket, the following are my conclusions and recommendations:

- 7 • The overall need for an additional resource is primarily driven by the planned coal
8 unit retirements.
- 9 • The Company has largely justified the need for the Proposed Project within the
10 context of existing regulatory requirements however, I have concerns with the
11 planning and solicitation process that are further articulated in my testimony.
- 12 • The need for the new resource to be exclusively located within the targeted load
13 zone is driven by a combination of the Company's self-imposed internal planning
14 criteria – the Effective Capacity Import Limit – and the Company's general
15 reluctance to rely on resources outside its direct control at a potentially added cost
16 to customers.
- 17 • Some elements of the planning process concerning resource modeling could be
18 more transparent.
- 19 • The Proposed Project is subject to gas supply risks associated with delivery to the
20 proposed facility.
- 21 • The solicitation process to access and evaluate market alternatives to the
22 Company's Proposed Project was not robust.

23 Based on these conclusions, I recommend the following:

- 24 • The Commission should consider instituting reforms to the resource planning
25 process to include more openness and transparency.
- 26 • The Commission should consider improvements to the solicitation process to
27 promote a more open, fair and transparent process to obtain more competitive
28 market responses and results.

Line
No.

- 1 • The Commission should consider requiring the Company to file for approval with
2 the Commission a written mitigation plan for reliance on spot gas supply price
3 should risks to the current plan increase or materialize.

4

5 **Q. Does this conclude your testimony?**

6 A. At this time, it does.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE
COMMISSION

In the matter of the Application of)
DTE ELECTRIC COMPANY for)
approval of Certificates of Necessity)
pursuant to MCL 460.6s, as amended,)
in connection with the addition of a)
natural gas combined cycle generating)
facility to its generation fleet and for)
related accounting and ratemaking)
authorizations.)

Case No. U-18419

QUALIFICATIONS
AND
DIRECT TESTIMONY
OF
PHILIP DIDOMENICO

Appendix A

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of)	
DTE ELECTRIC COMPANY for)	
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authorizations.)	

QUALIFICATIONS
AND
DIRECT TESTIMONY
OF
PHILIP DIDOMENICO

Appendix

Exhibits in Support of
the Direct Testimony
of Philip DiDomenico

January 12, 2018



Philip DiDomenico

Managing Consultant

SUMMARY

Mr. DiDomenico brings extensive experience as an accomplished leader, management consultant and electrical engineer with extensive and diversified experience in electric utility management, planning, and operations. He provides strategic planning, organizational and decision-making advisory services to a wide range of clients in the electric power industry.

AREAS OF EXPERTISE

Strategy & Decision Making ♦ Organization & Operational Effectiveness ♦ Asset Transaction
♦ Resource Planning & Procurement ♦ Utility Management

Strategy & Decision Making

Mr. DiDomenico has worked to clients to develop robust strategic planning processes. He has experience facilitating senior management discussions of major strategic issues. Building consensus as a means of resolving differences and driving performance.

Project Examples

- **New York Power Authority** - Developed and facilitated a strategic planning effort. Focused interviews were held with executive and senior management personnel in order to identify areas in need of strategic focus. The information gathered and documentation collected served as the basis for developing a structured strategic planning session. Strategic issues requiring discussion were identified and assigned to breakout teams for resolution. Played an integral role in not only identifying the key issues but also facilitating their discussion with the Executive Team.
- **Badger Licensing LLC** - Worked with senior management to facilitate a strategic planning process aimed at developing organizational and market strategy for this technology licensor. Initial stages of this process included developing a coordinated understanding of organizational differentiation, merged with insights into the evolving demands of their customer base. Our independent facilitation skills were used to focus and challenge the team, as well as document the process. Interviews were conducted as a means of highlighting key themes of concern to leadership, which were followed by facilitated group meetings with key stakeholders to improve upon the understanding of key issues, and the development of strategic direction and goals for future growth. Throughout the process, key insights were developed and have been utilized in shaping the strategic direction of the organization.

Organization & Operational Effectiveness

Mr. DiDomenico has worked with numerous clients on the subject of organizational and operational effectiveness. He has helped clients to improve the overall effectiveness and operational efficiency of their organizations. Mr. DiDomenico's skills in this area include an extensive knowledge of asset management related principles and their application to both Power Production and Power Delivery organizations. He has the ability to guide multi-disciplinary teams in the development of a higher

performing organization. In addition, he has experience facilitating senior management discussions of major strategic issues. Building consensus as a means of resolving differences and driving performance.

Project Examples

- **Utah Division of Public Utilities** - Assisted in its review of Rocky Mountain Power's ("RMP's") annual net power cost reconciliation ("Energy Balancing Account" or "EBA") for each year since 2015. The EBA is a rate mechanism through which RMP recovers a portion of the difference between forecast net power costs and actual net power costs. The EBA includes all purchases and sales of electric power, fuel purchases, balancing transactions, and natural gas and electric hedging activities. In addition to auditing these transactions, Mr. DiDomenico examined the prudence of generator outages and their implications for net power costs. An expert report and testimony were filed with the Utah Public Service Commission.
- **Public Service of New Hampshire** - Reviewed distribution planning processes, system reliability, and performed a general system condition assessment. Identified several changes in processes, information systems, management reporting, and documentation that would serve to improve the reliability and system planning. Final report was presented to the Commission.
- **Vermont Electric Cooperative** - Worked with the CEO and Board of Directors in concert with the Vermont Department of Public Service to perform a Business Process Review of the Transmission and Distribution Cooperative. This effort involved a review of the entire organization including Board activities to assess the organization's structure, effectiveness and execution. Recommendations for improvement were extensive impacting capital investment and strategic direction.
- **Southwestern Louisiana Electric Membership Cooperative** - Interviewed the CEO, key managers, and reviewed detailed documentation. Assessed the effectiveness and efficiency of management and business operations. Evaluated the risks associated with anticipated succession issues. Recommendations included a realignment of responsibilities, hiring personnel for several positions, a shift in organizational focus, revised reporting, and new training and mentoring plans.
- **Hoosier Energy Cooperative** – Performed an organizational effectiveness and business process review of the Power Delivery and Power Supply organizations. This process involved a series of interviews with senior executives, managers and staff, relevant document and information reviews, several process review teams composed of Company staff and consulting team members performed an extensive analysis of industry trends to provide recommendations for changes and improvements to the organization, staffing, planning, business processes, and system applications.
- **Confidential Client** - Provided a targeted business process review of the key marketing and proposal development practices of the organization to better align organizational achievement and practices with management expectations and market demands. Facilitated executive-level discussions with a cross-section of organizational groups to investigate barriers to success. Recommended several areas for immediate improvement and documented action items to be addressed.
- **E.ON US** – Assessed the management and operations practices at a number of their generating facilities. Advised senior executives (i.e. engineering operations, planning, and financial management) with respect to areas of best practice along with areas needing improvement. The effort involved facility inspections and staff interviews to assess operations and planning functions.
- **East Kentucky Power Cooperative** - Assessed the effectiveness of the organization's structure, alignment and performance. A functional and core process review was performed in order to analyze the as-is processes, policies, and procedures and how these subsequently hinder, impact, or strengthen

desired levels of efficiency and effectiveness. Specific recommendations were developed for improving performance, organization structure, functional activities, core processes and staffing levels.

- **Nova Scotia Power Company** - Worked with the Senior Management of Nova Scotia Power Company to provide advice and counsel relative to their ability to achieve productivity gains and efficiencies in the management and operations of their generation facilities.
- **Public Service Commission of the District of Columbia Review of Electric Utility Undergrounding Policies and Practices** - conducted an unbiased analysis and assessment of the feasibility and reliability issues related to undergrounding the distribution system. The Study's objectives included:
 - A comprehensive review and analysis of previous undergrounding studies including studies and analyses performed by Pepco.
 - Development of the cost, feasibility, and reliability implications of select undergrounding alternatives to the existing overhead distribution system.
 - Examining the potential impacts of undergrounding projects on the environment, residents, infrastructure, and health and safety.

Key government agency and public interest stakeholders were invited to briefings on the findings and recommendations of the study. These briefings were used to gather stakeholder input in the development of a future District-wide undergrounding policy.

- **Long Island Power Authority** – Reviewed the electrical utilities undergrounding policies and practices. Evaluated the pros and cons of underground versus overhead circuit construction. Several utilities, communities, and governmental agencies were researched in order to gain a broad understanding of the issues involved. Key insights were identified. The focus of the evaluations centered on a combination of factors including; system reliability, public safety, aesthetics and economics.
- **Long Island Power Authority** - Reviewed T&D construction practices and their impact on public safety. Reviewed trends in electrical contact cases on Long Island and identified the public safety implications of alternative T&D construction practices. These alternative practices were compared and contrasted in categories that included; construction cost, environmental impact, reliability impact, and their likely effectiveness in reducing injuries from accidental electrical contact.

Asset Transaction Services

Directed a number of merchant generating unit and T&D asset assessments for use by financial due diligence teams and developers. Multiple energy markets are modeled to assess and forecast the market price of power and the competitive positioning of units or portfolios in each market. This complex modeling considers a myriad of relevant market factors such as interconnection issues, market rules, customer choice levels, fuel price characteristics, and the operational aspects of the assets in question.

Project Examples

- **Devens Electric System** - Retained by the Massachusetts Development Finance Agency in connection with the proposed issuance of \$10.4 million in Electric System Revenue Bonds for the purpose of financing improvements and additions to the electric system at the Devens Commerce Center. Conducted an onsite inspection of the transmission and distribution (T&D) system and authored the T&D system condition assessment portion of the Independent Consultant's Report.
- **Long Island Power Authority (LIPA) Acquisition of Long Island Lighting Company T&D Assets** - Led the consulting effort to support the negotiation and implementation of a management services agreement with KeySpan Energy to operate and maintain LIPA's T&D facilities. The agreement was a key

component of a comprehensive restructuring plan under which LIPA acquired the former Long Island Lighting Company's transmission and distribution assets as a means of lowering electric rates on Long Island. As LIPA's representative, identified assets to be transferred, evaluated the overall condition of T&D facilities, negotiated capital and O&M budgets, established capital project justification guidelines and the criteria for LIPA's review of major capital projects and scheduled maintenance deferral, determined criteria for defining "major storm" events, and reviewed procurement practices.

- **Western Resources T&D Asset Valuation** – Supported the determination of the value of the T&D system in preparation for a potential municipalizing action. The Replacement Cost New value was determined based on a combination of cost trending, construction costs and field observations.
- **Long Island Power Authority T&D Facilities Condition Assessment in Support of Bond Financing** - Developed a T&D facilities condition assessment in support of a \$200 million bond offering. Onsite inspections were performed on a representative of sample of T&D facilities. Maintenance records were also reviewed for selected major pieces of equipment.
- **Long Island Power Authority Generation Acquisition** - Evaluated the strategic value of acquiring 4000 megawatts of generating assets on Long Island. Issues evaluated included; economics under varying purchase prices, potential for operations and maintenance related savings, opportunities for reduced staffing, economics of alternative financing proposals as well as market power related concerns and the likely implications for stimulating a competitive market on Long Island.
- **Confidential Client: Power and Renewable Energy Market Assessment to Support Potential Acquisition**—Performed a market advisory assessment to support a client's investigation into potential acquisition of several biomass-fueled generation resources in the New England and California power markets. Provided insight into the U.S. power industry, including specifically, the wholesale power markets and Renewable Energy Credits (REC's) markets for both of these regions, as well as the related fuel supply markets in New Hampshire and California for wood-waste biomass. Market price projections were developed to support the anticipated revenues from the output of each of the three facilities, including a review of the industry market outlooks for wholesale power, ancillary services, and for REC's. This assessment incorporated an outlook on carbon prices and the carbon initiative that were under development in the U.S.; also identified potential risk implications for each of the three facilities, based on the U.S. market trends and the future of REC markets.

Integrated Resource Planning & Procurement

Mr. DiDomenico has worked with numerous clients in the development and execution of Integrated resource plans. He has helped clients to improve the overall effectiveness and documentation of their resource planning process. His skills in this area include an extensive knowledge of the use of probabilistic approaches to planning.

Project Examples

- **Public Service Electric & Gas - Long Island – Renewable Resource Procurement** - Provided support and evaluation services in support of the drafting the 2015 Renewable RFP, associated pre-submittal development activities, process administration, evaluation and selection of the winning bidder(s). Efforts included the development of an evaluation guide addressing both qualitative and quantitative criteria, a bidder information webinar and the development and administration of a Project Website. Developed, hosted, and maintained RFP websites for PSEG Long Island's 2015 Renewables RFP and the Western Nassau RFP. The RFP website(s) hosted key documents, provided a portal for bidder questions, and tracked registrants and interested bidders. The website also provided an update feed for updates to the RFP documents and new responses to questions. Also assisted PSEG Long Island in

hosting two webinars regarding each RFP.

Also developed feed-in tariffs for both commercial solar rooftop installations and fossil-fired fuel cells. Led all aspects of tariff development, execution, and evaluation.

- **Guam Public Utilities Commission – Resource Planning Review and Reliability Assessment -** Reviewed the multi-year major construction plan of the Guam Power Authority to assess their approach to planning, prioritization, budgeting, and timing of capital projects relative to anticipated need for system investment for generation, transmission, and distribution system. The review recommended an updated approach to the prioritization and a more detailed presentation of budgeting and project management by the Power Authority to the Commission.

Also reviewed the Power Authority's Integrated Resource Plan on behalf of the Commission. The review recommended a need for additional information and investigative steps prior to investment in new capacity sources and an expansion of the technologies considered to address a goal of increased resource diversity. Our team also recommended an investigation of the DSM planning, a move toward more renewable resources, and an assessment of Island reliability.

The reliability review looked at the current metrics relative to reliability, root cause analyses, reporting and communication of outages to all stakeholders and is in review by the Commission in preparation for an Order to GPA for enhancements.

- **Long Island Power Authority Electric Resource Plan (ERP) Development -** Working in conjunction with the Authority's staff, supported the development of a multi-faceted ERP to meet the energy needs of Long Island. The plan provides a comprehensive and flexible approach to providing a safe, reliable, environmentally friendly and cost efficient supply of electricity to customers well into the future. This is accomplished by investing in customer programs, energy efficiency, conservation, new technologies, encouraging development of merchant transmission and generation, adding off-island transmission interconnection capability, enhancing existing power supply resources and evaluating the need to build additional ones. The ERP includes programs for energy efficiency and renewable resources.
- **Long Island Power Authority Resource Planning Process -** Developed a unique approach to managing the risk inherent in resource planning. The probabilistic Decision Analysis based approach allows decision makers the ability to clearly understand the uncertainties in the planning process and the implications of planning to meet varying levels of uncertainty.
- **Consumers Energy Company Long-term Resource Plan -** Worked with the Senior Management Team to develop an integrated resource plan. Reviewed and recommended options for the core energy issues affecting resource availability and planning. Topics investigated included the use of energy efficiency, load management and demand response programs, the appropriate technologies for short and long term resource needs, the impact of MISO market operations on planning for the energy future, the potential for price volatility and availability issues in fuel markets, the treatment of fuel markets in strategic planning, and transmission constraints and expansion planning. Our team developed a broad set of efficiency programs for potential adoption.
- **MIT Utility Master Plan -** Established a long term plan for MIT's utility infrastructure to support the continued operation and expansion of the Cambridge campus facilities. The plan benchmarked existing utilities and provided a firm plan for improvements needed over the next five years with a projection of the improvements that may be needed in years six through ten. The plan also provided a framework for annual updating in support of an ongoing five year planning horizon. While the plan is based on future development scenarios for the complete build out of the campus, it also provides guidance for incorporating changes in development priorities in the decision making process. A dynamic model was created capable of providing feedback on the impacts that individual building projects would have on the campus system so that utility supply decisions can be made within a broad context.

Electric Utility Management

Leadership Examples

- **Management of Electric Delivery System** - Played a key role in restructuring and realigning Boston Edison Company's electric distribution operations to reduce costs, improve customer service, and position the company for competition.
 - Directed all facets of the business group's \$80-million capital budget, supervised staff of 28 engineers, and developed and implemented competitive business and operational strategies.
 - Facilitated the transition from a traditional engineering based operation to one structured along process lines.
 - Planned and directed a comprehensive, strategic assessment of the present and future needs of the electric delivery system as a guide for infrastructure planning and development.
 - Implemented a reliability-centered maintenance initiative, leading the way to a 40 percent cost reduction and an increase in the effectiveness of the distribution system's maintenance program. Also, developed criteria for performance-based ratemaking.
- **Management of Engineering Services** - Developed and implemented business and operational strategies to support the successful operation of the Company's fossil generating units.
 - Directed all facets of the business unit's \$30-million capital budget.
 - Achieved a \$6-million inventory reduction, far exceeding company goals, by devising highly effective planning and control procedures.
 - Facilitated development of the Production Engineering Planning System, an IT application that significantly improved budget accountability and control.
- **Power Supply Planning and Management** - Prepared analyses of alternative operating strategies and emerging generation technologies for strategic evaluation. Planned and mobilized the Power Supply Group's initial business and strategic operating plan, which focused the organization's direction and ensured consistency with overall corporate objectives. Managed the group's \$60-million capital budget establishing processes that led to excellence in budget performance and the optimal use of resources.
- **Fossil Power Plant Performance Improvement** - Developed innovative approaches for improving the operating efficiency of and capital planning criteria for the company's fossil generating units. Developed a new program for monitoring and evaluating the condition of turbine lube oil. Created, analyzed and monitored fossil unit performance goals as a means of predicting operating problems in advance of outages. Extended the time between major turbine overhauls. As the primary witness before the Massachusetts Department of Public Utilities, prepared and offered testimony regarding fossil unit performance. Through effective presentation of events and their underlying causes, incurred zero penalties for replacement power costs for an unprecedented three consecutive years.
- **Resource Planning and Management** - Performed and directed production cost and financial analyses to evaluate capital investments and identified power purchase and sales opportunities for Boston Edison Company. Created a unique approach using decision analysis techniques to manage the risks inherent in energy supply planning and capital investment decisions associated with power plants.
- **Underground Distribution Engineering and Construction** - Developed construction standards, prepared specifications, and evaluated materials and equipment for Baltimore Gas & Electric Company's underground distribution system. Also responsible for correcting unusual outage and engineering problems related to duplicate 34.5 kV supply to industrial customers and 13 kV supply to large residential subdivisions.

EMPLOYMENT HISTORY

Daymark Energy Advisors, Inc. <i>Managing Consultant</i>	Boston, MA 2015 – Present
Lummus (formerly Shaw) Consultants International <i>Senior Principal Consultant, Management Consulting</i>	Canton, MA 2002 – 2015
Navigant Consulting <i>Director, T&D Management Services</i>	Burlington, MA 1997 – 2002
Boston Edison Company (Eversource Energy) <i>Manager, Electric Delivery</i> <i>Manager, Engineering Services</i> <i>Executive Assistant to Senior Vice President, Power Supply</i> <i>Performance & Reliability Coordinator, Production Operations</i> <i>Senior Electrical Engineer, Resource Planning</i>	Boston, MA 1995 – 1997 1993 – 1995 1991 – 1993 1988 – 1991 1980 – 1988
Baltimore Gas & Electric (Exelon) <i>Electrical Engineer, Distribution Engineering and Construction</i>	Baltimore, MD 1976 – 1980

EDUCATION

Loyola College <i>M.B.A., Management</i>	Baltimore, MD 1979
Northeastern University <i>B.S., Electrical Engineering (Power Systems)</i>	Boston, MA 1976

GROUPS AND ASSOCIATIONS

Association of Edison Illuminating Companies <i>Electric Power Apparatus Committee</i> <i>Power Generation Committee, Distributed Resources Subcommittee</i>	1996-1997 1994-1995
New England Power Pool <i>Unit Availability Task Force</i> <i>Generation Task Force</i>	1989-1992 1986-1988

PUBLICATIONS, PRESENTATIONS & CONFERENCES

Publication

“Guidelines for Capital Investment Analysis - Fossil Stations.” Prepared for Boston Edison Company

Conference Presentations

- “An Apples to Apples Survey of Utility Measurement.” American Public Power Association, Engineering & Operations Workshop Proceedings*
- “Plant Performance Optimization Using Cost-Benefit Decision Analysis Techniques.” Inter-RAM Conference Proceedings*

EXPERT TESTIMONY

<u>Forum</u>	<u>On Behalf of:</u>	<u>Topic</u>
Utah Division of Public Utilities	Utah Division of Public Utilities	Rocky Mountain Power's annual net power cost reconciliation review – generator outage prudence.
Newfoundland Board of Commissioners of Public Utilities	Newfoundland and Labrador Hydro	Prudence Review of Selected Unit Outages as part of the 2013 Amended General Rate Application.
Massachusetts Department of Public Utilities	Massachusetts Attorney General's Office	Prudence review of the capital spending related to the electric T&D system. Fitchburg 2015 Electric Rate Case.
Massachusetts Department of Public Utilities	Boston Edison Company	Prudence of the operating performance of the Company's fossil generating fleet over a three year period from 1988 to 1991.
Massachusetts Electric Facilities Siting Council	Boston Edison Company	Innovative approach to balancing risk in the development of resource plans using decision analysis techniques.

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the Application of)	
DTE ELECTRIC COMPANY for)	
approval of Certificates of Necessity)	
pursuant to MCL 460.6s, as amended,)	
in connection with the addition of a)	Case No. U-18419
natural gas combined cycle generating)	
facility to its generation fleet and for)	
related accounting and ratemaking)	
authorizations.)	

QUALIFICATIONS
AND
DIRECT TESTIMONY
OF
PHILIP DIDOMENICO

Appendix B

Referenced Discovery and Documents

January 12, 2018

MPSC Case No.: U-18419
Respondent: A. P. Wojtowicz
Requestor: Attorney General
Question No.: AGDE-1.45a
Page: 1 of 1

Question: Please refer to the Direct Testimony of Angela P. Wojtowicz, page 8, lines 12-19.

- a. Define ECIL and provide historical data in Excel spreadsheet format for the past 5 years.

Answer: The effective capacity import limit (ECIL) does not have a formal MISO definition. The ECIL is the result of a local reliability requirement (the Local Clearing Requirement, or LCR), and a system-wide reliability requirement (the Planning Reserve Margin Requirement, or PRMR), being simultaneously enforced/constrained in the Planning Resource Auction (PRA).

MISO performs a local reliability study for each Local Resource Zone (LRZ) based on the zone's coincident peak load and internal zone attributes. The study enforces a of Loss of Load Expectation (LOLE) standard of 0.1 days/year and results in a Local Resource Requirement (LRR), which is the amount of resources needed by that LRZ to reliably meet its forecasted peak load without the benefit of imported capacity. After considering the maximum benefit of the LRZ's Capacity Import Limit (CIL), the remaining capacity must be physically located within the LRZ, which is referred to as the LCR, where $LCR = LRR - CIL$.

MISO also performs a system-wide reliability study for entire MISO system based on the system-wide coincident peak load. The study enforces a of Loss of Load Expectation (LOLE) standard of 0.1 days/year, which results in a PRMR of which each LRZ has a share to reliably meet its forecasted load coincident with the MISO peak. Due to load diversity and other system-wide benefits, the PRMR for each LRZ is less than the LRR.

MPSC Case No.: U-18419
Respondent: A. P. Wojtowicz
Requestor: Attorney General
Question No.: AGDE-1.45b
Page: 1 of 1

Question: Please refer to the Direct Testimony of Angela P. Wojtowicz, page 8, lines 12-19.

- b. Please indicate instances over the past 5 MISO Capacity market auctions where the ECIL was different than the CIL for MISO's zone 7. Describe the reasons for those differences.

Answer: The CIL was different from the ECIL for LRZ 7 over the past 4 years as shown below (5 years are not available because MISO's zonal resource construct began 4 years ago by order of the FERC). The reason the CIL and ECIL are different is described in response AGDE-1.45a.

Planning Year	CIL	PRMR	LCR	ECIL
2013/14	4,576	22,702	21,055	1,647
2014/15	3,884	22,998	21,293	1,705
2015/16	3,813	22,678	21,442	1,236
2016/17	3,521	22,406	20,851	1,555

Michigan Office of the Attorney General
DTE Electric
MISO Definitive Planning Phase Schedule

Case: U-18419
Witness: P. DiDomenico
Exhibit: AG-3
Page 1 of 1

November 2017 IPTF - last update

Region	Study Cycle	Number of projects	MW's	DPP Start	DPP 1 Completion	DPP 2 Completion	DPP 3 Completion	GIA Execution	Current Stage/Status	Reason for Delay	Expected Time of Delay	Details
Central	DPP-2016-Feb	3	1307	08/15/2016	NA	12/15/2016	03/15/2017	05/15/2017	J351 and J515 final report posted J468 draft report posted			DPP-2016-Feb is not in the transition plan. All projects are in the GIA Execution phase.
	DPP-2016-Aug	8	1315	01/05/2017	06/22/2017	11/30/2017	04/14/2018	09/11/2018	DPP 2	Delay: MISO Posted SIS without Affected System Study.	Original start delayed from 12/31/16 date included in Queue Reform Filing	DPP Phase 2 SIS is delayed due to delay in modeling data exchange between MISO and PJM causing delays in completion of Affected System Study.
	DPP-2017-Feb	11	2454	06/22/2017	01/13/2018	04/03/2018	08/16/2018	01/13/2019	DPP 1			Kicked off complete June 23. Models rebuilt with new LBA dispatch. ICs/TOs forwarding model review comments.
	DPP-2017-Aug	42	7955	01/14/2018	06/03/2018	08/22/2018	01/04/2019	06/03/2019				
East (ATC)	DPP-2016-Feb	1	99	12/13/2016	05/02/2017	07/14/2017	08/09/2017	01/06/2018	DPP3 and ICIF FS Complete			DPP 2 and DPP 3 studies are not anticipated for this cycle due to minor changes from DPP 1. DP2 ends on 7/14/2017. ICIF FS is completed and the report was posted for review. Final SIS/DPP3 Report will be posted on 8/9/2017. No NU FS required. GIA execution phase is expected to start sooner (tentatively in Aug/Sep 2017) than the scheduled date.
	DPP-2016-Aug	1	98	05/02/2017	09/06/2017	02/07/2018	06/22/2018	11/19/2018	DPP 2	Affected System Study Delay	Original Start delayed from 12/31/2016 date included in Queue Reform Filing	Revised schedule is based on estimated time for PJM AFS completion.
	DPP-2017-Feb	4	391	10/20/2017	03/09/2018	05/28/2018	10/10/2018	03/09/2019	DPP 1	Model/Mitigation Delay		Models with new dispatch assumptions are being developed. DPP 1 kicked off on 10/20/2017
	DPP-2017-Aug	17	2515	03/12/2018	07/30/2018	10/18/2018	03/02/2019	07/30/2019				
East (ITC)	DPP-2016-Feb	3	399	02/24/2017	07/28/2017	12/21/2017	05/05/2018	10/02/2018	DPP2	Affected System Study Delay	Original Start delayed from 12/31/16 date included in Queue Reform Filing	Revised schedule is based on estimated time for PJM AFS completion.
	DPP-2016-Aug	6	705	02/24/2017	08/21/2017	02/07/2018	07/13/2018	12/10/2018	DPP2	Affected System Study Delay	Original Start delayed from 12/31/16 date included in Queue Reform Filing	Revised schedule is based on estimated time for PJM AFS completion.
	DPP-2017-Feb	8	1104	10/13/2017	03/02/2018	05/21/2018	10/03/2018	03/02/2019	DPP 1	Model/Mitigation Delay		Models with new dispatch assumptions are being developed. DPP 1 kicked off on 10/13/2017
	DPP-2017-Aug	26	5748	03/05/2018	07/23/2018	10/11/2018	02/23/2019	07/23/2019				
East (UP)	DPP-2016 Aug / 2017-Feb	3	313	02/06/2017	06/26/2017	08/08/2017	10/25/2017	03/24/2018	DPP3 SIS Complete. FS Ongoing			Decision Point 1 completed on 6/26/2017. Milestone payment (M3)/ ERIS/NRIS elections were submitted. Decision Point 2 completed on 8/8/2017. Milestone payment (M4)/ERIS/NRIS elections/75% site control were submitted. DPP3 SIS Report posted on 9/1. Facility Studies are completed. Facility Study Reports will be finalised by 10/25.
	DPP-2017-Aug	4	375	11/30/2017	04/19/2018	07/08/2018	11/20/2018	04/19/2019				
West	DPP-2016-Feb	25	4817	01/27/2017	08/31/2017	12/11/2017	04/25/2018	09/22/2018	DPP 2			Study on hold due to 2015-AUG-West restudy.
	DPP-2016-Aug	31	5622	09/12/2017	01/30/2018	04/20/2018	09/02/2018	01/30/2019	DPP 1	Model/Mitigation Delay		Feedback on the initial Models are being consolidated. Models will be updated to reflect the feedback received.
	DPP-2017-Feb	27	3425	01/31/2018	06/20/2018	09/08/2018	01/21/2019	06/20/2019				
	DPP-2017-Aug	51	7976	06/21/2018	11/08/2018	01/27/2019	06/11/2019	11/08/2019				
South	DPP-2016-Aug	14	2989	10/03/2016	05/16/2017	08/08/2017	12/21/2017	05/20/2018	DPP3			Decision Point 2 completed on 8/8/2017. DPP3 started on 8/9. Estimated completion of DPP3 for projects having no network upgrades is 12/21/2017. While estimated completion of DPP3 for projects having network upgrades is 1/31/2018.
	DPP-2017-Feb	6	430	02/08/2017	06/28/2017	12/15/2017	04/29/2018	09/26/2018	DPP2			ICIF Facility Studies and Phase 2 System Impact Study under way. Based on estimated time for SOCO and Power South AFS completion.
	DPP-2017-AUG	43	4855	12/16/2017	05/05/2018	07/24/2018	12/06/2018	05/05/2019				Kick off meeting has been postponed due to delay in DPP 2017 Feb south phase 2.

Notes:

- 1) The dates provided are an estimate of queue cycle performance and are not adjusted for Federal Holidays or Weekends.
- 2) DPP3 (Final System Impact Study) of several DPP cycles is scheduled to start before expected GIA execution of higher queued cycles. This schedule does not consider any restudies that may occur after Decision Point 2 of higher queued cycles.
- 3) Updates from the previous version are provided in red font.
- 4) The number of projects or MWs in a study group might change when studies commence (at kick-off dates).

Categories for Reason of Delay:

TO Delay
MISO Delay
IC Delay
Restudy Delay
Affected System Study Delay
Pending FERC Ruling
Model/Mitigation Delay
Pending Previous Study results

MPSC Case No.: U-18419
Respondent: E. P. Weber
Requestor: Attorney General
Question No.: AGDE-2.4
Page: 1 of 1

Question: Please refer to DTE's response to AG 1.50. Indicate the project number on MISO's Generator Interconnection Queue.

Answer: MISO generator interconnection queue no. for this Project is J793.

Midwest ISO Generator Interconnection Queue - 12/6/2017

Export to CSV

Project Number	Queue Date	Transmission Owner	County	State	Study Status	Study Cycle	Study Group	Interconnection Serv. Type	Point of Interconnection	Max Summer Output (MW)	Max Winter Output (MW)
3793	6/16/2017	ITC Transmission	St. Clair County	Michigan	DPP - System Impact Study	DPP-2017- AUG	East (ITC)	NRIS	Bell River 345KV Substation	1322	1343

Transmission Studies and Requested In Service Dates From To (mm/dd/yyyy)

MPSC Case No.: U-18419
Respondent: K. J. Chreston/T. L. Schroeder
Requestor: MECNRDCSC
Question No.: MECNRDCSCDE-2.23
Page: 1 of 1

Question: Has DTE constrained the amount of solar and wind that can be built in a given year? If so, please specify what the limit is, and provide supporting materials for this assumption.

Answer: Yes, in Strategist, the amount of solar and wind that can be built in a given year was constrained to 1,000 MWs of wind and 500 MWs of solar. There is no supporting documentation for this assumption.

MPSC Case No.: U-18419
Respondent: K. J. Chreston
Requestor: MECNRDCSC
Question No.: MECNRDCSCDE-2.26
Page: 1 of 1

Question: For each generating resource, please provide the total estimated carbon emissions for each year of the 25-year planning period (2016 through 2040) for each of the sensitivities evaluated in STRATEGIST under the five national modeling scenarios.

Answer: Please see the Company's response to Question No. MECNRDCSCDE-2.24a.

MPSC Case No.: U-18419
Respondent: K. J. Chreston/Legal
Requestor: Attorney General
Question No.: AGDE-2.5a
Page: 1 of 1

Question: Please refer to U-18419 Exhibit A-4 Revised, and respond to the following:

a. Provide a list of constraints used for each scenario that was run in Strategist.

Answer: DTE Electric objects to this interrogatory for the reason that the term “constraints” is vague and ambiguous. Subject to this objection and without waiver thereof, the Company would answer as follows: The modeling constraints for each scenario can be found in the Strategist SAV files that have been provided to those parties identified as modelers in Attachment 4 to the Protective Order in this case who have signed a non-disclosure certificate and are titled.

MPSC Case No.: U-18419
Respondent: K. J. Chreston/Legal
Requestor: Attorney General
Question No.: AGDE-2.5b
Page: 1 of 1

Question: Please refer to U-18419 Exhibit A-4 Revised, and respond to the following:

b. For each of the constraints listed in (a), provide details for how the constraints were developed and quantified, including any applicable workpapers or sources that were used.

Answer: DTE Electric objects to this interrogatory for the reason that the term “constraints” is vague and ambiguous. Subject to this objection and without waiver thereof, the Company would answer as follows: See the Company’s answer to AGDE-2.5a.

MPSC Case No.: U-18419
Respondent: K. J. Chreston/Legal
Requestor: MECNRDCSC
Question No.: MECNRDCSCDE-3.1a
Page: 1 of 3

Question: Please provide the Strategist sav files for the Strategist runs described in the Company's 2017 IRP and the Company's filed direct testimony. The results of the Strategist runs provided by the Company via download from the Company's secure site do not match the Strategist results shown in Table 11.6.1-2 on page 198 and 199 of the Company's 2017 IRP. Examples follow.

a. The Strategist run labeled "Ref Base.sav" provided by the Company shows a 3x1 combined cycle unit added in 2022 and a 1x1 combined cycle unit added in 2030, when Table 11.6.1-2 shows a 2x1 combined cycle unit added in 2022 and another 2x1 combined cycle unit added in 2029 for the "Base Resource Plan."

Answer: DTE Electric objects for the reason that the information requested consists of confidential, proprietary research and development of trade secrets or commercial information, the disclosure of which would cause DTE Electric and its customers commercial harm. Subject to this objection and without waiver thereof, the Company would answer as follows: The information is being provided only to those persons who have executed non-disclosure certificates pursuant to the Protective Order issued in this proceeding and were identified as modelers in Attachment 4 to the Protective Order.

As indicated in the response to MECNRDCSCDE-1.2c, the least cost plan determined by Strategist was not always the recommended solution. See U-18419 MECNRDCSCDE-3.1a_Selected Plans.xls for a compilation of the selected plan numbers for each case. This file is not subject to the protective order in this case.

Each Strategist run file was saved after a dynamic programming Proview optimization. The Load Forecast Adjustment (LFA) and Generation and Fuel (GAF) modules automatically run the least cost plan from that optimization. If it is desired to display the results of a plan that is different than the least cost plan, refer to the attached document titled *U-18419 MECNRDCSCDE-3.1a - Strategist Plan Selection*. This file is not subject to the protective order in this case.

MPSC Case No.: U-18419
Respondent: K. J. Chreston/Legal
Requestor: MECNRDCSC
Question No.: MECNRDCSCDE-3.1a
Page: 2 of 3

For this response, we have made a copy of all the Strategist .SAV files and saved them after running the Proview Resource Optimization module with our selected plan and Proview run flag set to "S" (PROVIEW Plan analysis option). When you run the standard report for Planning Period Plan Comparison all the plans will have stayed the same. Now you will see the selected plan displayed in the GAF and LFA modules.

Below is a list of the SAV files reconfigured with the chosen plan loaded as the selected plan. These files are subject to the protective order in this case. The selected plan number is indicated in the file name:

U-18419 MECNRDCSCDE-3.1a Agg CO2 Base-Plan 3.SAV
U-18419 MECNRDCSCDE-3.1a Emerg Tech 1 % EE-Plan 13.SAV
U-18419 MECNRDCSCDE-3.1a Emerg Tech 3x1 in 2022-Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Emerg Tech Base-Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a Emerg Tech CC Capital-Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a HI GAS-HI RENEW -Plan 41.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS NUCLEAR -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Agg CO2 1 % EE-Plan 18.SAV
U-18419 MECNRDCSCDE-3.1a Agg CO2 3x1 in 2022-Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a LOW GAS-1% EE -Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a LOW GAS-3X1 IN 2022 -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref 1 % EE -Plan 16.SAV
U-18419 MECNRDCSCDE-3.1a 2017 Ref Base-Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS BASE -Plan 11.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS CC CAPITAL -Plan 20.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS 1 % EE -Plan 45.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS NEW SOURCE -Plan 12.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS-3X1 IN 2022 -PLAN 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref 3x1 CC -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref Base -Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a Ref High Renewables -Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a Ref less than 1% EE -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref Low Load -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref 1.5 % EE -Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a Ref 1x1 CC -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Agg CO2 1.5 % EE-Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a Agg CO2 Aggressive-Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Emerg Tech 1.5 % EE-Plan 2.SAV

MPSC Case No.: U-18419
Respondent: K. J. Chreston/Legal
Requestor: MECNRDCSC
Question No.: MECNRDCSCDE-3.1a
Page: 3 of 3

U-18419 MECNRDCSCDE-3.1a Emerg Tech High Renew-Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a HIGH GAS 1.5 % EE -Plan 6.SAV
U-18419 MECNRDCSCDE-3.1a LOW GAS 1.5 % EE -Plan 4.SAV
U-18419 MECNRDCSCDE-3.1a LOW GAS BASE -Plan 5.SAV
U-18419 MECNRDCSCDE-3.1a LOW GAS CC CAPITAL INC -Plan 2.SAV
U-18419 MECNRDCSCDE-3.1a Ref 2 % EE -Plan 22.SAV
U-18419 MECNRDCSCDE-3.1a Ref CHOICE RETURNS -Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref Comm Choice Return Plan 1.SAV
U-18419 MECNRDCSCDE-3.1a Ref High Load -Plan 1.SAV

MPSC Case No.: U-18419
Respondent: K. J. Chreston
Requestor: MECNRDCSC
Question No.: MECNRDCSCDE-5.3b
Page: 1 of 1

Question: Strategist portfolio choices: Refer to discovery response MEC-NRDC-SCDE- 3.1a_Selected Plans.

- b. Please augment this table by providing two additional columns of data: (a) the total system cost of the Strategist plan chosen by DTE, and (b) the total system cost of the least-cost Strategist plan. Or, if DTE objects to augmenting the table as the creation of a document, identify each of these requested values.

Answer: Please refer to “U-18419 MECNRDCSCDE-5.3b_Selected Plans with system cost.xlsx”, attached.

MPSC Case No.: U-18419
Respondent: M. B. Leuker
Requestor: Attorney General
Question No.: AGDE-1.25
Page: 1 of 1

Question: **Leuker's testimony - Load Forecasting**

Please provide the regression diagnostics and results by class/subclass, in excel format with formulas intact, used to produce each of the load forecasts (Reference Scenario, 2017 Reference Case, High Load Sensitivity and Low Load Sensitivity) described in Leuker's testimony.

Answer: The models that the Company used for each of the sales forecasts described in Mr. Leuker's testimony are attached in the Excel files listed below. The EViews statistical software package was used for running regressions for the Commercial class forecasts.

U-18419 AGDE-1.25 Residential Reference Scenario
U-18419 AGDE-1.25 Commercial Reference Scenario
U-18419 AGDE-1.25 Commercial Support Reference Scenario
U-18419 AGDE-1.25 Industrial Reference Scenario
U-18419 AGDE-1.25 Auto Reference Scenario
U-18419 AGDE-1.25 Residential High Load Sensitivity
U-18419 AGDE-1.25 Commercial High Load Sensitivity
U-18419 AGDE-1.25 Commercial Support High Load Sensitivity
U-18419 AGDE-1.25 Industrial High Load Sensitivity
U-18419 AGDE-1.25 Auto High Load Sensitivity
U-18419 AGDE-1.25 Residential Low Load Sensitivity
U-18419 AGDE-1.25 Commercial Low Load Sensitivity
U-18419 AGDE-1.25 Commercial Support Low Load Sensitivity
U-18419 AGDE-1.25 Industrial Low Load Sensitivity
U-18419 AGDE-1.25 Auto Low Load Sensitivity
U-18419 AGDE-1.25 Residential 2017 Reference Case
U-18419 AGDE-1.25 Commercial 2017 Reference Case
U-18419 AGDE-1.25 Commercial Support 2017 Reference Case
U-18419 AGDE-1.25 Industrial 2017 Reference Case
U-18419 AGDE-1.25 Auto 2017 Reference Case

MPSC Case No.: U-18419
Respondent: D. D. Kirchner
Requestor: Attorney General
Question No.: AGDE-1.35c
Page: 1 of 3

Question: **Demand Response:**

Referencing the table of installed distributed generation on page 12 of Mr. Kirchner's testimony:

- c. Please explain how installed, planned (applications filed), and forecasted net metering capacity is treated in the Company's 2016 IRP reference case and the 2017 IRP Refresh case as well as any of the sensitivity cases.

Answer: In the 2016 Reference Case and the High Case, the Company did not forecast the adoption of additional net metering capacity in the sales forecast.

In the Low Load Case, a scenario was created in which residential solar adoption was increased from the Reference Scenario. 2015 installed residential capacity in sales was estimated to be (10.7) GWh. The table below shows the impact on sales of the additional forecasted adoption of residential solar in GWh and estimated impact on Peak Demand in MW.

MPSC Case No.: U-18419
Respondent: D. D. Kirchner
Requestor: Attorney General
Question No.: AGDE-1.35c
Page: 2 of 3

	<u>Sales Impact</u>	<u>Demand Impact</u>
	GWh	MW
2016	-3	-1
2017	-6	-2
2018	-9	-3
2019	-12	-4
2020	-15	-5
2021	-18	-6
2022	-21	-7
2023	-24	-8
2024	-27	-10
2025	-30	-11
2026	-33	-12
2027	-36	-13
2028	-39	-14
2029	-42	-15
2030	-45	-16
2031	-48	-17
2032	-51	-18
2033	-54	-19
2034	-57	-20
2035	-60	-21
2036	-63	-22
2037	-66	-23
2038	-69	-24
2039	-72	-25
2040	-75	-26

In the 2017 Reference Case, residential solar adoption was modeled utilizing an S-curve market adoption calculation. As solar systems are already included in historical data through 2015, the residential model only includes the incremental impacts of additional adoption of solar systems for 2017-2041. The table below shows the additional forecasted adoption of residential solar in sales (GWh) and estimated impact on Peak Demand in MW.

MPSC Case No.: U-18419
Respondent: D. D. Kirchner
Requestor: Attorney General
Question No.: AGDE-1.35c
Page: 3 of 3

	<u>Sales Impact</u>	<u>Demand Impact</u>
2016	GWh	MW
2017	-7.0	-2
2018	-16.5	-6
2019	-28.5	-10
2020	-42.7	-15
2021	-58.4	-21
2022	-74.1	-26
2023	-88.5	-31
2024	-100.8	-35
2025	-110.6	-39
2026	-117.9	-41
2027	-123.1	-43
2028	-126.8	-45
2029	-129.3	-46
2030	-131.0	-46
2031	-132.1	-47
2032	-132.9	-47
2033	-133.4	-47
2034	-133.7	-47
2035	-133.9	-47
2036	-134.0	-47
2037	-134.1	-47
2038	-134.2	-47
2039	-134.2	-47
2040	-134.2	-47
2041	-134.3	-47

MPSC Case No.: U-18419
Respondent: D. Swiech
Requestor: Attorney General
Question No.: AGDE-1.15h
Page: 1 of 1

Question: **Natural Gas**

Please respond to the below subquestions after reviewing the Direct Testimony of David Swiech, page DS-7 lines 22-25 and DS-8 lines 1-6, which states:

“While the Company’s existing natural gas fired generating facilities are currently supplied primarily th(r)ough interruptible supply arrangements, the Company expects that electric generation in MISO will become more become more dependent on natural gas as a source of fuel for base load generation in the future. As this occurs, DTE will enter into firm gas supply and gas transportation contracts as needed to ensure electric reliability. For example, DTE Electric entered into a Precedent Agreement with NEXUS Gas Transmission to provide firm natural gas transportation starting upon the in- service date of the pipeline. DTE Electric’s agreement with NEXUS is for 30,000 Dth per day of transportation capacity, increasing to 75,000 Dth per day upon in-service of gas fired generation facilities.

h. What is the term of the firm transportation agreement anticipated by the Precedent Agreement?

Answer: The term of the transportation agreement is 20 years from the date that the NEXUS pipeline is placed in-service.

MPSC Case No.: U-18419
Respondent: D. Swiech
Requestor: Attorney General
Question No.: AGDE-1.15g
Page: 1 of 1

Question: **Natural Gas**

Please respond to the below subquestions after reviewing the Direct Testimony of David Swiech, page DS-7 lines 22-25 and DS-8 lines 1-6, which states:

“While the Company’s existing natural gas fired generating facilities are currently supplied primarily th(r)ough interruptible supply arrangements, the Company expects that electric generation in MISO will become more become more dependent on natural gas as a source of fuel for base load generation in the future. As this occurs, DTE will enter into firm gas supply and gas transportation contracts as needed to ensure electric reliability. For example, DTE Electric entered into a Precedent Agreement with NEXUS Gas Transmission to provide firm natural gas transportation starting upon the in- service date of the pipeline. DTE Electric’s agreement with NEXUS is for 30,000 Dth per day of transportation capacity, increasing to 75,000 Dth per day upon in-service of gas fired generation facilities.

- g. Please describe the cost benefit analysis the Company undertook to consider alternatives to entering into a Precedent Agreement for NEXUS capacity, including pipeline and non-pipeline resources.

Answer: DTE Electric’s decision to enter into a Precedent Agreement for NEXUS capacity is described in detail by Witness Pratt in DTE Electric’s 2018 PSER Plan Case (U-18403).

In summary, DTE Electric relied upon a landed cost analysis performed by DTE Gas in July 2014 that showed that contracting for transportation capacity on NEXUS would be expected to result in among the lowest landed costs between competing alternatives. Additionally, contracting with NEXUS was expected to be even more beneficial because it is a greenfield pipeline that increases gas deliverability and introduces new supply into the region. New greenfield pipeline capacity would be expected to lower gas prices in the region, further reducing gas supply costs for DTE Electric’s customers.

The referenced landed cost analysis is provided as Attachment “U-18419 AGDE-1.15g NEXUS Landed Cost Analysis”.

MPSC Case No.: U-18419
Respondent: D. Swiech
Requestor: Attorney General
Question No.: AGDE-1.15e
Page: 1 of 1

Question: **Natural Gas**

Please respond to the below subquestions after reviewing the Direct Testimony of David Swiech, page DS-7 lines 22-25 and DS-8 lines 1-6, which states:

“While the Company’s existing natural gas fired generating facilities are currently supplied primarily th(r)ough interruptible supply arrangements, the Company expects that electric generation in MISO will become more become more dependent on natural gas as a source of fuel for base load generation in the future. As this occurs, DTE will enter into firm gas supply and gas transportation contracts as needed to ensure electric reliability. For example, DTE Electric entered into a Precedent Agreement with NEXUS Gas Transmission to provide firm natural gas transportation starting upon the in- service date of the pipeline. DTE Electric’s agreement with NEXUS is for 30,000 Dth per day of transportation capacity, increasing to 75,000 Dth per day upon in-service of gas fired generation facilities.

e. What are the Company’s contingency plans in the event the NEXUS does not receive FERC approval in a timely manner?

Answer: As discussed in the response to AGDE-1.15b, FERC issued the NEXUS Certificate Order on August 25, 2017. The Company will continue its current practice of purchasing spot natural gas at MichCon Citygate until the NEXUS pipeline is in-service.

MPSC Case No.: U-18419
Respondent: D. Swiech
Requestor: Attorney General
Question No.: AGDE-1.17
Page: 1 of 1

Question: **Natural Gas**

Please identify the names of other pipelines with which the Company will enter into firm gas transportation contracts “as needed”, and explain the analysis the Company will undertake to determine if these contracts are needed for this electric generation project.

Answer: The Company has determined that it will enter into firm contracts to supply the Proposed Project. However, other pipeline companies with which the Company will enter into firm gas transportation contracts are undetermined at this time. The Company expects to utilize a competitive bidding process to determine which pipeline companies can provide the needed services at the lowest cost.

DTE ELECTRIC COMPANY

**REQUEST FOR PROPOSALS
for
Acquisition of Natural Gas Combined Cycle / Simple Cycle Generating Facilities
and
Power Purchase Agreements**

Issued

March 1, 2017

Bid Proposals Due:

April 13, 2017 EPT (Detroit, MI)

Web Address: <http://PowerAdvocate.com>

Table of Contents

Section	Page
1. Introduction	1
2. Purpose / Desired Product	2
3. Information and Schedule.....	4
4. RFP General Requirements	7
5. Content Requirements for All Proposals	8
6. Proposal Content Requirements – Acquisition Specific.....	12
7. Proposal Content Requirements – Power Purchase Agreement Specific.....	15
8. Proposal Evaluation and Contract Negotiations	15
9. Reservation of Rights	17
10. Confidentiality of Information	17
11. Regulatory Approvals	17

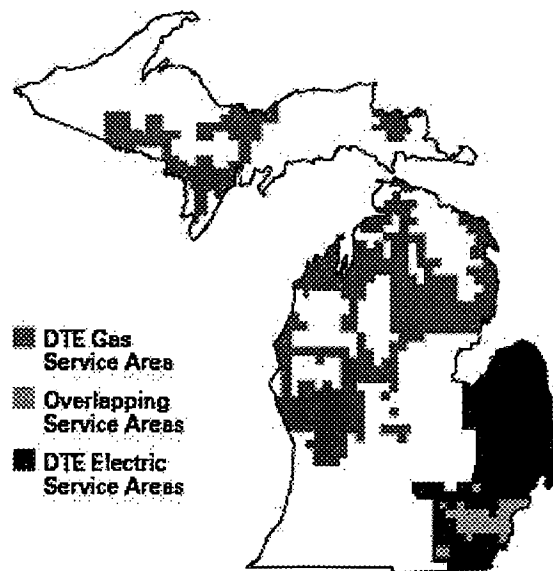
Appendices

Notice of Intent.....	Appendix A
Non Disclosure Agreement.....	Appendix B
Pre-qualification Application Including Credit - Related Information.....	Appendix C
Asset Purchase Agreement.....	Appendix D
Power Purchase Agreement Key Commercial Term Sheet.....	Appendix E
Standard RFP Response Form – RFP Content Requirements Checklist.....	Appendix F
Standard RFP Response Form – Operating Data.....	Appendix G

1. Introduction

DTE Electric Company ("DTE") is a subsidiary of Detroit-based DTE Energy Company and generates and distributes electricity to approximately 2.2 million customers in southeastern Michigan. With over 11,000 megawatts of system capacity, the company uses coal, nuclear fuel, natural gas, hydroelectric pumped storage and renewable sources to generate its electrical output. Founded in 1903, DTE Electric is the largest electric utility in Michigan and one of the largest in the nation.

DTE Energy Service Territory



More information about DTE is available by visiting www.dteenergy.com.

DTE is a non-transmission owning member of the ReliabilityFirst Corporation and the Midcontinent Independent System Operator ("MISO"), in which DTE is a registered Market Participant and a certified Asset Owner. DTE operates a Local Balancing Area inside the MISO footprint and is within the transmission system of ITC Holdings.

DTE is committed to providing a reliable supply of electric power to its customers. In order to ensure reliable, adequate capacity and energy supplies to meet the needs of its customers, DTE seeks to acquire new supplies of capacity and energy, that at a minimum, meet established industry-wide reliability and performance criteria and existing new source requirements for electric generation facilities.

Accordingly, you are invited to submit a written, non-binding bid proposal ("Proposal") in accordance with the requirements described in this Request for

Proposals ("RFP"). All Proposals must meet the criteria set forth in Section 2.2 ("Proposals") and the general requirements set forth in Section 4.

Responses to this RFP will be accepted only through the RFP website.

The general schedule for the RFP process is shown below (see also Subsection 3.5.2):

Issue RFP	March 1, 2017
Notice of Intent Due	March 17, 2017
Non-disclosure Agreement Due	March 17, 2017
Pre-Qualification Applications Due	March 17, 2017
Proposals Due	April 13, 2017, 5:00 PM EPT

2. Purpose / Desired Product

2.1 Purpose and Background

DTE is pursuing this RFP to address an approximate 1,100 MW base load generation resource need starting in 2022 as a result of DTE's planned coal plant retirements. We will also accept proposals to address potential shorter term capacity needs beginning as early as 2018. Proposals shall be for facilities with an unforced capacity (UCAP) in the range of 225MW – 1,200MW, whether the proposal is submitted to address DTE's long-term or potential short-term needs. Through this RFP, DTE solicits Proposals for the purchase and sale of combined cycle and simple cycle natural gas-fueled electric generating assets as described in Section 2.2(a). Through this RFP, DTE also solicits proposals for power purchase agreements (PPAs) as described in Section 2.2(b).

2.2 Product Description

(a) DTE seeks Proposals for the purchase and sale of an asset(s) meeting the following conditions:

- **Technology:** combined cycle or simple cycle natural gas-fueled electric generating assets
- **Unit Status:**
 - Existing assets must be commercially operational as of the date of issuance of this RFP
 - New assets must be under significant development, meaning that the developer has obtained site control and has commenced or completed the bidding process to identify turbine technology as of the date of issuance of this RFP. Proposals shall include a detailed development timeline demonstrating the ability to be in service and commercially operational on or before February 2022
- **Unforced Capacity ("UCAP", as defined by MISO):** 225 MW to 1,200 MW
- **Location:** Must be physically located within MISO Local Resource Zone ("LRZ") 7 as defined by MISO
- **Permits:** Generating assets must have all relevant environmental and other permits as further defined in Section 5.12

(b) DTE seeks Proposals for power purchase agreements (PPAs) meeting the following conditions:

- **Technology:** combined cycle or simple cycle natural gas-fueled electric generating assets
- **Delivery Term:** Up to 7 years, beginning on June 1 of any given year between 2018 and 2022
- **Unforced Capacity ("UCAP", as defined by MISO):** 225 MW to 1,200 MW
- **Location:** Must be physically located within MISO Local Resource Zone ("LRZ") 7 as defined by MISO

3. Information and Schedule

3.1 Information Provided to Potential Respondents

Access to RFP

In order to access the RFP website, respondents need to register their company information on the PowerAdvocate website (<http://PowerAdvocate.com>).

The RFP number is: **67418 : Natural Gas CC/SC Generating Facilities and Power Purchase Agreements RFP**

Detailed instructions on the use of the website are available in "Supplier Quick Start Guide" posted on the website under the above RFP number. Additionally, "Supplier Frequently Asked Questions" is posted if you have questions relative to the website.

Submittal Instructions

Proposal may be submitted in Microsoft Word (*.doc or *.docx) format or Adobe Acrobat (*.pdf) format. MS Excel requested pricing shall be uploaded in Excel format.

RFP Response Deadline

Electronic upload of Proposal must be received by April 13 at 5:00PM (EPT) on the PowerAdvocate bid event platform. A Proposal will not be considered unless it is submitted via the PowerAdvocate bid event platform. Any exceptions to the response date will be accepted at DTE's sole discretion. DTE reserves the right, in its sole discretion, to extend the due date.

DTE anticipates sending an electronic mail notice on March 2, 2017 to parties that it considers likely participants in this RFP.

By submitting a Proposal in response to this RFP, the party on whose behalf the Proposal is submitted ("Respondent") certifies that it has not divulged, discussed or compared any commercial terms of its Proposal with other Respondents, including prospective Respondents, and has not colluded whatsoever with any other party believed to be a Respondent or a prospective Respondent.

Each Respondent is solely responsible for all its expenses related to its Proposal and/or any other expenses incurred in connection with this RFP.

3.2 Information on the RFP Website

The information on the website will contain the following bid documents:

- 1) This RFP
- 2) Form of Notice of Intent
- 3) Form of Non Disclosure Agreement ("Non Disclosure Agreement")
- 4) Form of Pre-Qualification Application including Credit-Related information
- 5) Form of Asset Purchase Agreement ("APA")
- 6) Form of Power Purchase Agreement (PPA) Key Commercial Term Sheet
- 7) Standard RFP Response Form – RFP Content Requirements Checklist
- 8) Standard RFP Response Form – Operating Data
- 9) Questions and answers about this RFP

3.3 Questions

Question and answer:

Should Respondent find discrepancies or have any questions as to the meaning of any portion of the bid documents, please submit questions in accordance with the due dates for submittal of Respondent's Proposal set forth.

Respondents shall utilize the "messaging" tab of the PowerAdvocate website to ask questions. DTE will create a spreadsheet entitled "question and answer" and will be posted under the "addendum" section on the PowerAdvocate website. Each Respondent is responsible for frequently reviewing the Q&A document.

Copies of all questions and answers will be provided anonymously without attribution for all Respondents to review via <http://PowerAdvocate.com>.

3.4 Clarification of Proposals

While evaluating Proposals, DTE may request additional information about any item in the Proposal. The Respondent will be required to respond to the request within five (5) business days of receipt of such request or DTE may choose to stop evaluating the Respondent's Proposal.

3.5 Schedule

The following schedule and deadlines apply to this RFP. DTE reserves the right to extend or otherwise modify any portion of this schedule at any time or terminate the RFP process at its sole discretion.

- 3.5.1** EPT or Eastern Prevailing Time means Eastern Standard Time or Eastern Daylight Savings Time, whichever is in effect in Detroit, Michigan on any date specified.
- 3.5.2** All Proposals are due by 5:00 p.m. EPT, April 13, 2017. Proposals received after the specified date and time will be disqualified from further evaluation.

Step	Timetable
RFP Issued	March 1, 2017
Notice of Intent Due, Non-Disclosure Agreement, and Respondent Pre-Qualification Application Due	March 17, 2017, 5:00 p.m. EPT
Proposal Due	April 13, 2017, 5:00 p.m., EPT
Short-List Target	May 12, 2017
Selection Target	July 14, 2017

4. RFP General Requirements

Proposals that do not meet the following criteria may be deemed to be ineligible and not be considered for further evaluation.

4.1 Respondent Pre-Qualification

To be eligible to submit a Proposal in response to this RFP, Respondents should be pre-qualified. To pre-qualify, a Respondent must

- a) Submit (i) a Notice of Intent (Appendix A) (ii) a completed Non-Disclosure Agreement (Appendix B) and (iii) a completed Pre-Qualification Application (Appendix C) including credit-related information through the RFP website (<http://PowerAdvocate.com>) no later than the date and time specified pursuant to Section 3.5 above; and
- b) Receive confirmation that Respondent is pre-qualified to submit a Proposal.

4.2 Proposal Quantities and Pricing

In the event that multiple Proposals for different facilities are submitted by the same Respondent, Respondent must indicate whether or not the Proposals are mutually exclusive.

4.3 Non Disclosure Agreement

This RFP contains a proposed form of Non Disclosure Agreement. Respondents shall upload a signed version to the RFP Submission Website (see Subsection 3.1) by the specified deadline in the RFP timetable set forth in Section 3.5.2. Respondents may download the Non Disclosure Agreement from the website specified in Section 3.1.

4.4 Valid Proposal Duration

Unless DTE and Seller mutually agree otherwise, proposal pricing must be valid for six (6) months following the Proposal Due Date set forth in Section 3.5.2, upon which time Proposals shall expire unless the Respondent has been notified that its Proposal has been selected.

4.5 Credit/Collateral Requirements

The evaluation seeks to ensure the credit quality of respondents complies with DTE's corporate risk management standards and that any associated requirements for collateral or security protects DTE's interest. Upon selection, Respondents submitting Proposals for new facility acquisitions may be required to maintain minimum collateral or security requirements, the terms and conditions of which shall be determined at a later date.

Upon selection, Respondents submitting Proposals for Power Purchase Agreements shall provide Development Security and Operating Security in accordance with the security milestone schedule located in Appendix E.

5. Content Requirements for All Proposals

This section describes DTE's expectation and requirements for the content of Proposals. Proposals that do not meet the following criteria will be deemed to be ineligible and not be considered for further evaluation. DTE expects Respondents to provide any information that could impact the Respondent's ability to deliver the proposed option as offered. If it appears that certain information is inadvertently omitted from a Proposal, DTE may contact the Respondent to obtain the information.

To facilitate the RFP process, DTE is providing standardized forms as Appendices F and G to this RFP that will be available on the RFP website. These forms will allow Respondents to provide required data in an electronic format and will help facilitate the review process. All Proposals must include a table of contents and provide concise and complete information on all of the following topics:

5.1 Respondent's Information

Proposals must include information on the Respondent's corporate structure (including identification of any parent companies), a copy of the Respondent's most recent quarterly report containing unaudited consolidated financial statements that is signed and verified by an authorized officer of Respondent attesting to its accuracy and a copy of Respondent's most recent annual report containing audited consolidated financial statements. Financial statements, annual reports and other large documents may be referenced via a web site address.

5.2 Executive Summary

Proposals must include an executive summary of the Proposal's characteristics including any unique aspects and benefits.

5.3 Name and Location

Respondents shall state the name of the generating facility, the county where the generating facility is located, the owner of the facility, and the commercial pricing node associated with the facility, if applicable. The facility must be physically located in MISO LRZ 7 as defined by MISO.

5.4 Net Capability of Generating Facility

Respondents proposing existing assets shall state the nameplate capacity, net summer operating capacity, net winter operating capacity and the unforced capacity (UCAP) of the facility for the 2017/2018 MISO planning year. Respondents shall specifically identify any known derates affecting the facility. In no event shall any Proposal include a generating facility that is less than 225 MW of UCAP.

Respondents proposing existing assets shall also list the UCAP awarded to the facility, for the MISO Planning Years 2011, 2012, 2013, 2014, 2015 and 2016. Respondents shall provide the projected UCAP for the facility for the next three (3) years. In the event that the projected UCAP has sizable deviation from historical UCAP, Respondents shall provide a detailed explanation.

Respondents proposing facilities in development, please provide the anticipated UCAP for MISO Planning years 2020, 2021 and 2022.

5.5 Acquisition / Start of Delivery Date

In preparing their Proposals, Respondents shall assume the following:

- Acquisition: Acquisition of the facility shall be closed and transfer of title shall occur on or before February 2022
- PPA: The start of the delivery term shall commence on June 1 of any given year between 2018 and 2022

5.6 Generation Technology

Respondents shall describe the generation technology of the facility, including the make of the equipment, model and name of supplier. Such technology must consist of a combined cycle or simple cycle natural gas-fueled generating facility.

5.7 Heat Rate and Emission Rates

Respondents shall provide the current operating heat rate curve (e.g., the coefficients of a fifth-order equation), the no-load heat rate and full load heat rate of the facility. Respondents shall also provide a summary of any environmental control equipment installed at the facility and the emission rates for NO_x, SO₂, CO₂, VOC, PM and CO in units of lb/mmBTU.

5.8 Dispatch Characteristics

All Respondents shall state/describe the dispatch characteristics of the facility, including, but not limited to, minimum load level, ramp rates (up and down), number of gas turbines that can be started simultaneously (if applicable), fuel consumption during startup, capability decreases as a result of ambient temperature increases, supplemental firing capability and any operating limitations caused by such factors as design, material condition of the facility, and various permit restrictions.

Regarding any major operational limitations, Respondents shall provide a description of the root causes of the limitations (e.g., OEM design, material condition of the facility, environmental permits, etc.)

5.9 Fuel Supply

All bidder's must supply a detailed fuel supply plan that fully details how fuel is purchased and transported to the facility as well as any existing or known potential operational restrictions or impediments on such fuel supply. The bidder is also required to provide a description, including detailed cost information, of all natural gas pipeline service agreements and natural gas supply purchase agreements providing service to the facilities.

Respondents bidding a PPA shall be solely responsible for maintaining reliable fuel supply that is delivered to the bidder's proposed generating unit(s) to ensure reliable delivery of firm capacity and energy to DTE throughout the Delivery Term. The plant must have firm natural gas supply agreement(s) capable of meeting 100% of the facility's maximum daily consumption requirements throughout the Delivery Term. The supply agreement(s) should provide all services required to cause natural gas to be delivered to the facility on a firm basis, which may include both timely and intraday supply, transportation, storage, and/or balancing.

5.10 Water Supply

Respondents shall provide a detailed description of the water supply, including but not limited to, contract term, water usage and cost of water for the facility.

Respondents shall provide the status of the facility's National Pollutant Discharge Elimination System permits (NPDES) including, but not limited to, permit conditions, permit violations reported over the last five years, the timing of next permit renewal, and any other known concerns.

5.11 Other Contractual Commitments

Respondents shall provide a description, including detailed cost information, of any other contracts that are currently necessary for facility operations, including, but not limited to, long-term service agreements, state union labor contracts and/or technical support contracts, agreements related to capacity and/or energy sales from the facility and any capacity offers submitted to any ISO/RTO related to the facility that if accepted would be binding on DTE. Respondents must also state whether or not there are any provisions that would prohibit the assignment and/or affect the performance obligations of either party under the respective contract.

5.12 Permits

The facility must have all relevant environmental and other permits necessary for its operation and maintenance, or in the case of a new facility, demonstrate the ability to obtain all relevant permits by the commercial operation date specified in 2.2(a). Respondents offering an existing facility shall provide a description of all permits currently in place for the operation and maintenance of the facility (e.g. Spill Prevention Containment and Control plans, Title IV and Title V permits of the Clean Air Act, Cap and Trade Permits, NPDES permits, Water Withdrawal, Pollution Incident Prevention Plan). Respondents offering a new facility shall provide a detailed timeline and supporting documentation (e.g. applications, studies, assessments) demonstrating the ability to obtain all permits required for the operation and maintenance of the facility. Respondents must also state whether or not there are any provisions that would prohibit the assignment of such permits and/or any consents required for the assignment of the permit.

Respondents shall provide a description of any identified environmental liabilities (e.g., potential site remediation requirements, pending future regulatory requirements, etc.) for the facility.

5.13 Asset(s) Specific Financial Information

Respondents shall submit audited or unaudited Financial Statements including Balance Sheets, Income Statements and Cash Flow Statements for the proposed asset(s) for the past three years. Respondents shall clearly indicate book value of the asset(s) in the financial information submitted.

6. Proposal Content Requirements – Acquisition Specific

Section 6 outlines the content requirements related to each facility's revenue and cost characteristics. Unless otherwise stated, DTE requires existing facilities to provide three (3) years of data history and three (3) years of estimated data for each category requested. For facilities currently in development, DTE requires three (3) years of projected data from the facility's commercial operation date COD forward.

6.1 Revenues and Operating Costs

All Respondents bidding existing facilities shall provide a detailed breakout of the facility's actual annual revenues for each of the past three (3) years. This will include energy, capacity and ancillary service revenues if applicable (e.g., reactive power, regulation, spinning, supplemental), as well as any other revenues the plant may have earned. In addition to providing a detailed breakout of the revenues, Respondents will also provide corresponding fuel and other variable costs associated with those revenues so that an energy margin can be calculated for each of the past three (3) years.

All respondents shall state, on a fixed (\$) and variable (\$/MWh) basis, the estimated annual operation and maintenance costs of the facility for the next three (3) years and provide the actual annual operation and maintenance costs of the facility for each of the past three (3) years in nominal dollars. Respondents shall clearly break out fixed, variable and total operation and maintenance costs for each year.

All respondents shall provide a detailed breakout of the facility's estimated and actual annual fixed costs along the following categories: labor, benefits, materials & supplies, utilities, insurance, major maintenance and all others. Respondents shall clearly separate any corporate allocations from the plant operating costs. Respondents shall provide a breakdown of the number of people employed at the facility, including permanent and contracted employees.

All respondents shall provide detailed timing and cost information on each of the major planned and forced outages for each of the past three (3) years. Respondents shall provide estimated timing and cost information for the next major planned outage events for the generating units. The cost data shall be in nominal dollars.

All respondents shall also state and describe any property taxes and tax abatements associated with the facility, including actual annual property taxes for the past three (3) years and estimated property taxes for the facility for the next three (3) years.

6.2 Capital Expenditures

All respondents shall provide historical and budgeted capital expenditures for the facility. Historical capital expenditures shall be provided for each of the past three (3) years in nominal dollars. Budgeted capital expenditures shall be provided for each of next three (3) years in nominal dollars along with a description of the projects involved.

6.3 Operating Data

Existing facilities must be in service and commercially operational as of the date of issuance of this RFP. Respondents shall provide historical operating data consisting of (per unit, if applicable):

1. Net unit generation in MWh
2. Commercial operation date of the facility,
3. Annual run-time hours,
4. Annual operating cycles per year
5. Annual unit capacity and availability factors
6. Annual average heat rate, and
7. MISO equivalent forced outage rate demand (EFORd)

The above annual data may be limited to the most recent five (5) years. The EFORd should correspond to the Unforced Capacity amounts awarded for the last five (5) Planning Years (as defined by MISO). If available, Respondents shall provide a breakdown of EFORd by failure mode or NERC/GADS category. Respondents shall provide a description of the major contributors to the facility EFORd.

Respondents shall provide details on any equipment health issues and concerns, including the potential drivers and recommended mitigation procedures for the issues and/or concerns. These may include, but are not limited to, turbine startup vibration, uneven heating, compromised turbine or compressor blades, etc. Respondents shall provide a list of any redundant equipment that is currently bypassed or out of service because it is non-functional.

Respondents shall provide maintenance history consisting of: (1) dates of last full unit inspection and findings based on OEM recommendations; (2) total number of equivalent starts and equivalent operating hours on each unit; (3) equivalent starts and equivalent hours since the last major maintenance activity; and (4) outstanding OEM recommendations remaining to be implemented.

Respondents shall also provide: (1) an identification of the heat rate during startup of the facility, and identification of the time startup takes; (2) a description of the total number of annual hours the facility can be assumed to be in startup mode; (3) an identification of the heat rate of the facility when it is being shut down and a description of how long shutdown takes; (4) an identification of the annual hours the facility is in shutdown mode; (5) an identification of the annual hours the facility operates at full load; and (6) the number of annual hours that exclude startup and shutdown where the facility operates at less than full load and the corresponding heat rate.

If applicable, Respondents shall provide a summary of the facility's water chemistry program and its performance in the most recent year.

6.4 Asset Purchase Agreement

This RFP contains a proposed form of APA. Respondents shall submit a "mark-up" of the APA containing any comments thereon proposed for consideration as part of Respondent's Proposal. Respondents should download the APA from the RFP website (see Subsection 3.1) and upload comments in red-lined form to the RFP Submission Website (see Subsection 3.1) by the Proposal Due Date.

6.5 Acquisition Price

Respondents shall submit an acquisition price consisting of a single fixed payment that is inclusive of all monetary consideration for the generating assets, interconnection facilities, working inventory, and, if applicable, ancillary facilities and contractual arrangements (e.g. for fuel supply and transportation, maintenance, etc.).

6.6 Inventories

All respondents shall supply a summary list of all spare parts and components currently owned by the facility and their approximate dollar value. Respondents shall clearly identify spare parts valued at \$10,000 or more. For turbine capital spares, Respondents shall identify the total number of operating hours and remaining life for each major component subject to replacement and/or refurbishment as part of the major maintenance cycle. Respondents shall also identify any spare parts or components that are currently needed and/or on order as of the date of this RFP

7. Proposal Content Requirements – Power Purchase Agreement Specific

7.1 Mark-up of PPA Term Sheet

Bidders submitting a Proposal in the form of a PPA must submit a mark-up of the Form of Power Purchase Agreement Key Commercial Term Sheet provided in association with this RFP.

8. Proposal Evaluation and Contract Negotiations

8.1 Initial Proposal Review

After the Proposal Due Date, DTE will review all responses for completeness, responsiveness and compliance with the minimum bid eligibility requirements specified in Sections 4 through 7 of this RFP. DTE will not accept updated information from Respondents during the evaluation period unless such information is requested by DTE. As a result of this screening, DTE may either eliminate bids from further consideration, or contact Respondents to clarify issues or request additional information. DTE will make such requests in writing via email and Respondents will be required to respond to the request within five (5) business days of receipt of such request or DTE may choose to stop evaluating a Respondent's Proposal (see Subsection 3.4).

DTE will only evaluate proposals that meet DTE's capacity and energy needs consistent with Section 2.1. All proposals that meet DTE's capacity needs and are consistent with the conditions outlined in Sections 4 through 7 will be considered "Qualified Proposals."

8.2 Proposal Evaluation

DTE will evaluate these proposals taking into account economic and non-economic criteria to identify the best option(s) for customers.

The least cost analysis is the primary evaluation criteria for the Proposals and the analysis is composed of:

- a) An evaluation of the resource costs including asset purchase price, expected future fuel costs, non-fuel O&M costs, emissions costs, and capital expenditures, and/or costs of capacity and energy related to the power purchase agreement
- b) An evaluation of the resource benefits from capacity and associated energy
- c) An evaluation of the net present value of the total net costs to DTE customers by subtracting resource benefits from resource costs discussed above.

DTE will place high emphasis on the Proposal costs in its evaluation, not only in terms of the initial costs to DTE, but also the long-term costs. The resource costs and benefits will be evaluated on net present value basis utilizing the same DTE discount rate and timeline.

To the extent possible, DTE seeks to monetize the components of each Proposal. Where cost and benefit information is known and can be applied to such characteristics, it will be incorporated into the benefit cost analysis.

DTE will evaluate the Proposals using an economic dispatch production cost model. By its reliance on the economic dispatch production cost model, the process outlined above encourages the use of least cost resources.

Non-economic factors used to differentiate Proposals of similar costs include, but are not limited to the following:

- a) Technology and operational flexibility
- b) Reliability and availability
- c) Ability to meet applicable commercial operation date(s)
- d) Project / counterparty specific risks

These factors will be applied to all of the qualifying Proposals and used to qualitatively differentiate Proposals with similar costs for those resources under consideration. DTE requests the Respondents elaborate in their Proposal on the benefits of their assets with regard to the qualitative factors.

During the evaluation process, DTE may or may not choose to initiate discussions with one or more Respondents. Discussions with a Respondent shall in no way be construed as commencing contract negotiations. As part of these discussions, DTE may conduct additional detailed due diligence on the Proposal which may include, but not be limited to, onsite visits, management interviews, requests for plant reports, permits, contracts and related documentation, and detailed engineering assessments.

8.3 Contract Negotiations

DTE's commencement of and participation in negotiations shall not be construed as a commitment to execute a contract. Only execution of a Definitive Agreement by both DTE and a Respondent on mutually acceptable terms will constitute a "Winning Proposal".

9. Reservation of Rights

DTE reserves the right, without qualification, to reject any or all Proposals and to waive any irregularity in submitted information. There is no assurance, expressed or implied, that any agreement will be executed pursuant to this RFP. DTE also reserves the right to solicit additional Proposals if it is deemed necessary to do so and the right to submit additional information requests to Respondents during the Proposal evaluation process.

This RFP shall not, by itself, give any right to any party for any claim against DTE. Furthermore, by submitting a Proposal, the Respondent shall be deemed to have acknowledged that DTE assumes no liability with respect to this RFP or any matters related thereto. By submission of a Proposal, the Respondent, for itself as well as for its successors and assignees (if any), agrees that, as between Respondent and DTE, Respondent is to be solely responsible for all claims, demands, accounts, damages, costs, losses and expenses of whatsoever kind in law or equity, known or unknown, foreseen or unforeseeable, arising from or out of this RFP or its Proposal.

10. Confidentiality of Information

All Proposals submitted in response to this RFP become the property of DTE upon submittal. Respondents should clearly identify each page of information considered to be confidential or proprietary. Consistent with the Non Disclosure Agreement, DTE will take reasonable precautions and use reasonable efforts to maintain the confidentiality of all information so identified. DTE reserves the right to release any proposals, or portions thereof, to agents or consultants for purposes of Proposal evaluation. Regardless of the confidentiality claimed, however, and regardless of the provisions of this RFP, all such information may be subject to review by the appropriate state authority, or any other governmental authority or judicial body with jurisdiction relating to these matters, and may also be subject to discovery by other parties. DTE will not release any of the Respondent's confidential information to any of its affiliates who respond to the RFP.

11. Regulatory Approvals

Respondent agrees to cooperate, to the fullest extent necessary, to obtain any and all State, Federal, or other regulatory approvals DTE deems to be required for the effectiveness of the Definitive Agreement.

Appendix C

Pre-Qualification Application Respondent's Credit-Related Information

Provide the following data to enable DTE to assess the financial viability of the Respondent as well as the entity providing the credit support on behalf of the Respondent (if applicable). Include any additional sheets and materials with this Appendix as necessary. As necessary, please specify whether the information provided is for the Respondent, its parent or the entity providing the credit support on behalf of the Respondent.

Full Legal Name of the Respondent: _____
Dun & Bradstreet No. of Respondent: _____

Type of Organization: (Corporation, Partnership, etc.) _____
State of Organization: _____

Respondent's Percent Ownership in Proposed Project: _____

Full Legal Name(s) of Parent Corporation: _____

Entity Providing Credit Support on Behalf of Respondent (if applicable): _____
Dun & Bradstreet No. of Entity Providing Credit Support: _____

Address for each entity referenced (provide additional sheets, if necessary): _____

Type of Relationship: _____

Current Senior Unsecured Debt Rating from each of S&P and Moody's Rating
Agencies (specify the entity these ratings are for): _____

OR, if Respondent does not have a current Senior Unsecured Debt Rating, then
Tangible Net Worth (total assets minus intangible assets (e.g. goodwill) minus total liabilities):

Bank References & Name of Institution: _____

Bank Contact: Name, Title, Address and Phone Number: _____

Pending Legal Disputes, if any (describe): _____

Financial Statements (Income Statement, Balance Sheet, and Statement of Cash Flows): (Please provide copies of the Annual Reports for the three most recent fiscal years and quarterly report for the most recent quarter ended, if available. If available electronically, please provide link.)

TABLE OF CONTENTS

	Page
ARTICLE I Definitions	2
1.01 Definitions	2
1.02 Interpretation	11
1.03 Knowledge.....	12
ARTICLE II Purchase and Sale, Purchase Price, Allocation and Other Related Matters.....	12
2.01 Purchase and Sale	12
2.02 Purchase Price	12
2.03 Assumed Liabilities	12
2.04 Sales and Transfer Taxes	13
2.05 Allocation of Purchase Price	13
2.06 Prorations	13
ARTICLE III Closing and Closing Date Deliveries	13
3.01 Closing	14
3.02 Closing Deliveries by Seller.....	14
3.03 Closing Deliveries by Purchaser.....	15
3.04 Cooperation	15
ARTICLE IV Pre-Closing Filings	16
4.01 Government Approvals; Consents.....	16
4.02 HSR and Other Filings.....	16
4.03 FERC Regulatory Filing.....	16
4.04 Cooperation in Regulatory Review Process.....	17
4.05 Conditions or Limitations	17
4.06 [MISO Notification of Sale and Scheduling and Bidding for day of Closing	17
ARTICLE V Covenants	18
5.01 Due Diligence Review	18
5.02 Pending Closing.....	18
5.03 Consents	19
5.04 Environmental Assessments.....	20
5.05 Notice of Breach.....	20

TABLE OF CONTENTS
(continued)

	Page
5.06 Workforce.....	20
5.07 Cooperation	20
5.08 Tax Matters.....	21
5.09 Market Power Study	22
ARTICLE VI Title and Survey.....	22
6.01 Pre-Closing Title Policy and Survey Delivery	22
ARTICLE VII Warranties and Representations of Seller	24
7.01 Organization and Good Standing.....	24
7.02 Authority	24
7.03 No Violations and Consents.....	24
7.04 Brokers	25
7.05 Required Assets	25
7.06 Contracts	25
7.07 Insurance	26
7.08 Title to Real Property.....	26
7.09 Title to Purchased Assets	26
7.10 Intellectual Property.....	26
7.11 Litigation	27
7.12 Compliance With Laws.....	27
7.13 Labor Matters	27
7.14 Taxes	27
7.15 Licenses and Permits.....	28
7.16 Environmental Compliance	28
7.17 No Misrepresentation in Due Diligence Materials	28
7.18 Properties.....	28
7.19 Absence of Material Adverse Effect.....	29
7.20 Disclaimer of Warranties	29
7.21 Good Utility Practice	29
ARTICLE VIII Warranties and Representations of Purchaser	29
8.01 Due Incorporation.....	29

TABLE OF CONTENTS
(continued)

	Page
8.02 Authority	29
8.03 No Violations.....	30
8.04 Brokers	30
8.05 Litigation	30
8.06 Financing.....	30
ARTICLE IX Conditions to Closing Applicable to Purchaser.....	30
9.01 No Termination.....	31
9.02 Bring-Down of Seller Warranties.....	31
9.03 No Material Adverse Effect	31
9.04 Pending Actions.....	31
9.05 Consents and Approvals.....	31
9.06 HSR Act	31
9.07 All Necessary Documents	31
9.08 Title Policy	31
9.09 Estoppel Certificates	32
ARTICLE X Conditions to Closing Applicable to Seller	32
10.01 No Termination.....	32
10.02 Bring-Down of Purchaser Warranties.....	32
10.03 Pending Actions.....	32
10.04 Consents and Approvals.....	32
10.05 HSR Act	33
10.06 All Necessary Documents	33
ARTICLE XI Termination	33
11.01 Termination	33
11.02 Effect of Termination.....	34
ARTICLE XII Indemnification.....	34
12.01 Seller Indemnification.....	34
12.02 Purchaser Indemnification.....	34
12.03 Limitation	35
12.04 Indemnification Notice	36

TABLE OF CONTENTS
(continued)

	Page
12.05 Indemnification Procedure	37
12.06 Effect of Indemnity Payments	37
ARTICLE XIII Confidentiality	38
13.01 Confidentiality of Materials	38
13.02 Remedy	39
ARTICLE XIV Certain Other Understandings	39
14.01 Post Closing Access to Records and Records Retention	39
14.02 Consents Not Obtained at Closing.....	39
14.03 Avoidance of Double Withholding Taxes.....	39
14.04 Use/Removal of Trademarks, Etc.....	39
14.05 Supplemental Disclosure Schedule.....	40
ARTICLE XV Miscellaneous	40
15.01 Cost and Expenses	40
15.02 Entire Agreement.....	40
15.03 Counterparts	41
15.04 Assignment, Successors and Assigns	41
15.05 Savings Clause.....	41
15.06 Headings.....	41
15.07 Risk of Loss.....	41
15.08 Governing Law	41
15.09 Press Releases.....	41
15.10 U.S. Dollars	42
15.11 Survival	42
15.12 Notices	42
15.13 No Third Party Beneficiaries.....	43
15.14 Venue and Consent to Jurisdiction	43
15.15 WAIVER OF A JURY TRIAL	43
15.16 No Presumption Against Drafter	44
15.17 Parent Guaranty	44

PROFORMA

ASSET PURCHASE AGREEMENT¹

dated [____], 2017

By and Between

DTE Electric Company

and

[_____]

¹ DTE Electric Company reserves the right to structure the transaction as an equity acquisition in which case a Purchase and Sale Agreement reflecting that structure shall be reissued containing terms and conditions substantially similar to those contained herein.

ASSET PURCHASE AGREEMENT

This Asset Purchase Agreement made and entered into this [] day of [], 2017 (this "Agreement") by and between DTE Electric Company, a Michigan corporation ("Purchaser"), and [], a [] ("Seller"). Each of Seller and Purchaser may be referred to herein as a "Party" and collectively as the "Parties."

Recitals:

A. Seller owns that gas-fired facility and related facilities, and equipment, near [city/state], in [] County (collectively, the "Facility").

B. Seller desires to sell the Facility and the assets and properties relating to the Facility hereinafter described as Purchased Assets and Purchaser desires to acquire the Purchased Assets, on the terms and subject to the conditions hereinafter set forth.

Now, therefore, in consideration of the covenants and agreements hereinafter set forth, the parties hereto agree as follows:

ARTICLE I

Definitions

1.01 Definitions. The following terms shall have the meanings set forth below unless otherwise expressly provided or unless the context clearly requires otherwise:

"Affiliate" shall mean a Person which, directly or indirectly is controlled by, controls, or is under common control with another Person. As used in the preceding sentence, "control" shall mean (i) the ownership of more than 50% of the voting securities or other voting interest of any Person or (ii) the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise.

"Agreement" has the meaning set forth in the first paragraph hereof.

"Assumed Liabilities" has the meaning set forth in Section 2.03(b).

"Assumption Agreement" has the meaning set forth in Section 3.03(d) hereof.

"Business" means the ownership of the Purchased Assets and the operation of the Facility as currently conducted by Seller.

“Closing” has the meaning set forth in Section 3.01.

“Closing Date” has the meaning set forth in Section 3.01.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

“Cure Period” has the meaning set forth in Section 6.01(c).

“Date of the Notice of Claim” has the meaning set forth in Section 12.05(c).

“Deed” has the meaning set forth in Section 3.02(a).

“Disclosure Schedules” shall mean the disclosure schedules attached to this Agreement.

“DOJ” shall mean the United States Department of Justice.

“Due Diligence Materials” means those due diligence materials relating to the Facility and made available to Purchaser in the virtual data room for the Facility.

“Effective Time” shall mean 9:00 a.m. local time at the Facility on the Closing Date.

“Environmental Laws” shall mean any federal, state, local, or foreign law, statute, common law, ordinance, rule, regulation, code, treaty or international agreement having the force of law, license, Permits, authorization, approval, consent, judicial or administrative order, judgment, decree, directive, injunction, requirement, or agreement with any Governmental Authority relating to (a) the pollution, protection, preservation, or restoration of the environment (including air, surface water, groundwater, drinking water supply, surface land, subsurface land, structures, plant and animal life, or any other natural resource), (b) human health or safety, or (c) the exposure to, or the use, storage, recycling, treatment, generation, transportation, processing, handling, labeling, production, distribution, disposal, release, or threatened release, of Hazardous Substances (including releases to ambient air, surface water, groundwater, land, surface and subsurface strata), including, but not limited to: the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq.; the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.; the Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.; the Clean Air Act, 42 U.S.C. § 7401 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. § 1471 et seq.; the Toxic Substances Control Act, 15 U.S.C. §§ 2601 through 2629; the Oil Pollution Act, 33 U.S.C. § 2701 et seq.; the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11001 et seq.; the Safe Drinking Water Act, 42 U.S.C. §§ 300f through 300j; the Occupational Safety and Health Act, 29 U.S.C. § 651 et seq.; the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. § 1201 et seq.; the Federal

Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. § 136 et seq.; and any similar state or federal law.

“Facility” has the meaning set forth in the Recitals hereto.

“FERC” means the Federal Energy Regulatory Commission.

“FERC Regulatory Filing” has the meaning set forth in Section 4.03(a).

“FIRPTA Affidavit” has the meaning set forth in Section 3.02(e).

“FTC” shall mean the Federal Trade Commission.

“Good Utility Practice” shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice.

“Governmental Approval” shall mean a Seller Governmental Approval or a Purchaser Governmental Approval, as the case may be.

“Governmental Authority” shall mean the government of the United States or any foreign country or any state or political subdivision thereof, any tribal authority and any department, commission, agency, bureau, entity, body or authority exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including any quasi-governmental entities established to perform such functions, any independent system operator, any regional transmission organization, reliability council or authority, and any court of competent jurisdiction.

“Hazardous Substances” shall mean any substance presently listed, defined, designated, or classified as a contaminant, hazardous substance, toxic substance, hazardous waste or special waste, or that is otherwise regulated under any Environmental Law, including petroleum products, asbestos, urea formaldehyde foam insulation, and lead-containing paints or coatings.

“HSR Act” shall mean the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder.

“Indemnified Party” has the meaning set forth in Section 12.04.

“Indemnifying Party” has the meaning set forth in Section 12.04.

“Information” has the meaning set forth in Section 13.01.

“Interconnection Facilities” means, except for those facilities owned by [_____], the electric lines, substation and communication facilities located on the Real Property and related Purchased Assets that are used solely in connection with the operation of the Facility, together with all related interconnection rights, rights-of-way and corridor easements related to such facilities.

“Inventory” has the meaning set forth in clause (ii) of the definition of Purchased Assets.

“IRS” shall mean the Internal Revenue Service.

“Law” shall mean any statute, law, ordinance, executive order, rule, or regulation (including a regulation that has been formally promulgated in a rule making proceeding but, pending final adoption, is in proposed or temporary form having force of law); notice having force of law; or judgment, order, decree, injunction, or writ of any Governmental Authority, as in effect from time to time.

“Lien” shall mean any mortgage, lien (except for any lien for Taxes not yet due and payable), charge, restriction, pledge, security interest, option, lease or sublease, collateral assignment, mineral interest, claim, right of any third party, easement, encroachment or other encumbrance.

“Material Adverse Effect” shall mean any change in, effect on, or occurrence with respect to the Purchased Assets, the Facility or on the ownership, operation, maintenance, or repair of such Purchased Assets as currently conducted by Seller, or on the ability to make sales of power and ancillary services from the Facility and arrange for the transmission thereof, that, individually or in the aggregate, is or would reasonably be expected to be materially adverse to the condition, value, utility, or useful life of the Purchased Assets related to such Facility, after giving effect to this Agreement, other than changes or effects caused by or resulting from (i) conditions affecting the electric generation industry generally, (ii) United States or global economic conditions or financial markets generally, or (iii) the announcement of the transactions contemplated by this Agreement.

“MISO” shall mean Midcontinent Independent System Operator, Inc., an independent, member based, non-profit organization.

“MPSC” shall mean the Michigan Public Service Commission.

“Non-Assumed Liabilities” has the meaning set forth in Section 2.03(b).

“Notice of Claim” has the meaning set forth in Section 12.04.

“Objection Notice” has the meaning set forth in Section 6.01(c).

“Parent Guaranty” shall mean that certain Guaranty dated as of the date hereof executed by [] in favor of Purchaser, as supplemented and amended from time to time, a form of which is attached hereto as Exhibit A.

“Permits” shall mean permits, consents, licenses, franchises, certificates, authorizations, registrations, or waivers, extensions, renewals, or variances relating thereto, in each case issued by any Governmental Authority.

“Permitted Exceptions” shall mean, with respect to the Real Property, the following:

(a) liens or encumbrances securing the Assumed Liabilities;

(b) all liens for Taxes, assessments, both general and special, and other governmental charges which are not due and payable as of the Closing Date.

“Permitted Real Estate Exceptions” has the meaning set forth in Section 6.01(a).

“Person” shall mean any natural person, corporation, limited liability company, partnership, joint venture, trust, association or unincorporated entity of any kind and any Governmental Authority or instrumentality.

“Phase I Environmental Site Assessment” has the meaning set forth in Section 5.04.

“Properties” has the meaning set forth in clause (iii) of definition of Purchased Assets.

“Proration Period” has the meaning set forth in Section 2.06.

“Purchase Price” has the meaning set forth in Section 2.02.

“Purchased Assets” shall mean the Facility, Interconnection Facilities, and the following described assets, rights and properties owned by Seller or in which Seller has an interest as of the date hereof or may prior to the Closing Date acquire an interest, and used exclusively in connection with the Facility, except for the Retained Assets:

(i) the deposits and advances, prepaid expenses and other prepaid items of Seller under any of the Purchased Contracts;

(ii) except as otherwise set forth on Schedule I, all inventories (including inventories of raw materials, work-in-progress and finished goods), the tangible assets, machinery and equipment (including the metering equipment located on that portion designated as property of "[]" on the single-line diagram attached hereto as Exhibit B, turbine generator units, gas fuel conditioning facility, transformers and other electrical switchgear, pumps, piping and fittings), tools, dies, molds, spare parts as set forth on Schedule IA, vehicles, transportation equipment, furniture and office equipment, construction-in-progress, communication facilities, computer hardware and computer software located at the Facility, lubricants, chemicals, fluids, oils, and fuel owned by Seller located on the Properties or paid for but not yet delivered to the Facility or otherwise held or used in the ownership, operation, maintenance or repair of the Properties, Facility or Inventory or in the pursuit of transactions under the Purchased Contracts ("Inventory");

(iii) (A) Seller's rights, title and interest in and to the real properties (including easements, rights-of-way and water rights) described in Schedule II ("Real Property") together with all buildings, other improvements, fixtures and appurtenances, and all other rights, privileges and entitlements thereunto belonging or appertaining and (B) Seller's right, title, and interest in and to the real property leases described in Schedule III (together with the Real Property, the "Properties");

(iv) Seller's rights, title and interest in and under the Purchased Contracts and any claims thereunder;

(v) Seller's right, title and interest in and to the following intellectual property to the extent related to the Purchased Assets: copyrights, copyright registrations, copyright applications; patent rights (including issued patents, applications, divisions, continuations and continuations-in-part, reissues, patents of addition, utility models and inventors' certificates); trade secrets, proprietary manufacturing information and inventions, drawings and designs; customer and vendor lists, the goodwill associated with any of the foregoing and the rights of Seller as licensee under licenses with respect to any of the foregoing;

(vi) unexpired warranties, if any, as of the Effective Time from third Persons (and claims thereunder) which relate specifically to any of the Purchased Assets and which are transferable to Purchaser;

(vii) the right of Seller to receive, to the extent transferable, Tax exemptions, Tax credits, Tax reductions, Tax rebates, or other amounts from a Governmental

Authority with respect to the Purchased Assets, and all pending applications therefor, that are attributable to the ownership or operation of the Purchased Assets after Closing;

(viii) rights to insurance proceeds not received before the Effective Time relating to any insured loss of the Purchased Assets incurred before the Effective Time, less any costs incurred by Seller or any of its Affiliates before the Effective Time in the investigation or repair of damage from any such loss;

(ix) any Permits of Seller relating to the Purchased Assets, and all pending applications for the issuance or renewal of any of the same, to the extent any of the same are transferable or assignable to Purchaser, and all deposits, prepayments and prepaid expenses held by third parties and/or Governmental Authorities in connection therewith;

(x) [all allowances for air and water emissions and all greenhouse gas, NOx, and other similar credits, and all pending applications therefor, relating to the Facility existing prior to Closing to the extent any of the same are transferable or assignable to Purchaser; provided, however, that this provision is not intended to apply to unused NOx allowances for 20[] and 20[] that are removed by the Michigan Department of Environmental Quality from Seller's accounts prior to Closing];

(xi) all accounts receivable arising from the conduct of the Business from and after 11:59 p.m. Eastern Time on the day immediately preceding the Closing Date;

(xii) all rights of Seller under non-disclosure or confidentiality, non-compete, or non-solicitation agreements with employees and agents of Seller or any Affiliate thereof or with third parties, in each case, to the extent relating to the Business or the Purchased Assets (or any portion thereof);

(xiii) any rights, demands, claims, counterclaims, defenses, causes of action (either at law or in equity, for past, present, or future infringement or unauthorized use or misappropriation), rights of recovery, credits, allowances, rebates, or rights of setoff or subrogation arising out of or relating to any of the Purchased Assets or Assumed Liabilities; and

(xiv) At least one copy (in its existing hard copy or electronic form) of each of the following: the operating and maintenance records; maintenance plans and schedules; operating, safety and maintenance manuals; engineering design plans and specifications; construction records as to what was built and where it was built; blueprints and as-built drawings; procedures; environmental data and reports; governmental filings; records relating to compliance with Law with respect to the Facility, and inspection and test reports related to the Facility or concerning the Purchased Assets, whether or not exclusively related, that are in Seller's or its Affiliates' possession (subject to the right of Seller to redact information in such records that is not related to the Facility and the Purchased Assets and to retain archival copies). This is not to include third party

proprietary items for which consent to transfer cannot be obtained as listed on Schedule IV and accounting records of Seller. The foregoing is not intended to require Seller to modify or reformat any of the information provided pursuant to this subparagraph or to search or produce database or email archives, routine correspondence, SEC or FERC filings, records relating to internal project approvals, negotiations with contractors or vendors, or any other materials that are not necessary to the future ownership, operation or maintenance of the Facility or the Purchased Assets.

“Purchased Contracts” means those contracts described on Schedule 7.06(a) hereto.

“Purchaser” has the meaning set forth in the first paragraph hereof.

“Purchaser Governmental Approval” shall mean the consents, approvals, filings, notices, authorizations and other actions disclosed in Schedule 8.03 and the applicable requirements of the HSR Act.

“Purchaser Fundamental Representations and Warranties” means the representations and warranties in Sections 8.01, 8.02, 8.03(a)(i) and 8.04.

“Real Property” has the meaning set forth in clause (iii) of the definition of “Purchased Assets.”

“Retained Assets” shall mean the following described assets, rights and properties of Seller or, as specifically denoted below, [_____]:

- (i) all cash and cash equivalents, including bank overdrafts and marketable securities;
- (ii) any accounts receivable or intercompany obligations owed to Seller by any Affiliate of Seller other than those under any Purchased Contract;
- (iii) all insurance policies of Seller or acquired or assumed by Seller prior to the Closing Date pertaining to the Facility and (except for claims described in clause (viii) of the definition of Purchased Assets) all rights of Seller of every nature and description under or arising out of such insurance policies;
- (iv) all rights to use the name “[_____]” and all derivatives thereof;
- (v) claims for refunds of Taxes paid by Seller (except for items described in clause (vii) of the definition of Purchased Assets);

(vi) all past, present and future claims, causes of action, choses in action, rights of recovery and rights of set-off of any kind, except to the extent related to or arising under the Purchased Contracts or otherwise included in the definition of Purchased Assets or to the extent, but only to the extent, such claims or causes of action offset the liabilities assumed by Purchaser pursuant to this Agreement;

(vii) any rights, interest or assets not included in the Purchased Assets;

(viii) all rights of Seller under this Agreement and the agreements and instruments delivered to Seller by Purchaser pursuant to this Agreement;

(ix) Seller's corporate seal, minute books and stock record books, the general ledgers and books of original entry, all income Tax returns and other income Tax records, reports, data, files and documents;

(x) the Retained Contracts; and

(xi) the other assets listed on Schedule V.

"Retained Contracts" means those contracts described on Schedule 7.06(b)(i).

"Sales Tax" shall mean any sales, use, value added, excise, and other similar Tax, if any, together with all recording or filing fees, notarial fees, and other similar costs that may be imposed upon, or payable, collectible, or incurred in connection with or as a result of the transfer of the Purchased Assets to Purchaser.

"Section 14.05 Side Letter" shall have the meaning set forth in Section 14.05.

"Seller" has the meaning set forth in the first paragraph hereof.

"Seller Governmental Approval" shall mean the consents, approvals, filings, notices, authorizations and other actions disclosed in Schedule 7.03 and the applicable requirements of the HSR Act.

"Seller Fundamental Representations and Warranties" means the representations and warranties in Sections 7.01, 7.02, 7.03(a)(i) and 7.04.

"Seller Marks" has the meaning set forth in Section 14.04.

"Seller's Federal Tax Owner" shall mean [____], a [STATE NAME] [ENTITY TYPE].

"Standard Real Estate Documents" shall mean the following as applicable to either Seller or Purchaser and any other documents reasonably required by the Title Company:

(a) a transfer valuation affidavit; (b) an Owner's Affidavit in the form required by the Title Company in order to issue the Title Policy; (c) a closing settlement statement prepared by the Title Company; and (d) a real estate transfer affidavit.

"Substation" shall mean that [] owned by [] and located at the Facility.

"Supplemental Disclosure Schedule" has the meaning set forth in Section 14.05.

"Survey" shall have the meaning set forth in Section 6.01(b).

"Tax Proceeding" or "Tax Proceedings" has the meaning set forth in Section 5.08(e).

"Taxes" shall mean all federal, state, local, or foreign taxes, charges, fees, duties (including custom duties), levies or other assessments, including income, alternative or add-on, gross receipts, net proceeds, capital gains, real or personal ad valorem, turnover, real and personal property (tangible and intangible), sales, use, franchise, excise, value added, stamp, leasing, lease, user, transfer, title, documentary, registration, fuel, excess profits, occupational, interest equalization, windfall profits, license, payroll, environmental (including Taxes under Code section 59A), capital stock, disability, severance, employee's income withholding, other withholding unemployment and Social Security taxes, which are imposed by any Governmental Authority. "Taxes" shall include (i) any liability for the payment of any amounts described in the preceding sentence or as a result of being a member of an affiliated, consolidated, combined, or unitary group for any taxable period, (ii) any liability for the payment of any amount described in the preceding sentence as a result of being a Person required to withhold or collect Taxes imposed on another Person, (iii) any liability for the payment of any amount described in the preceding sentence or in clause (i) of (ii) of this sentence as a result of being a transferee of, or successor in interest to, any Person or as a result of an express or implied obligation to indemnify any Person, and (iv) any and all interest, penalties, additions to tax, or additional amounts imposed in connection with or with respect to any amount described in this definition.

"Taxing Authority" shall mean with respect to any Tax, the Governmental Authority or political subdivision thereof that imposes such Tax, and the agency (if any) charged with the collection of such Tax for such entity or subdivision, or any agency that grants or administers any exemption, abatement, rebate, or reduction of any Tax or any credit with respect thereto.

"Threshold" has the meaning set forth in Section 12.03(b).

"Title Commitment" has the meaning set forth in Section 6.01(a).

“Title Company” shall mean [_____].

“Title Policy” shall have the meaning set forth in Section 6.01(a).

“Title Policy Form” means a Title Policy issued by the Title Company in accordance with the Title Commitment, with the following features, endorsements, and coverages: (i) deletion of all so-called standard and/or general exceptions, including, without limitation, all mechanic’s and construction lien exceptions, provided, however, taxes not yet due and payable and use of roads by the public may remain as standard and/or general exceptions; (ii) containing all the endorsements listed on Exhibit D in the forms attached thereunder; and (iv) providing title coverage over all other objections made by Purchaser in the Title Objection Notice to the extent required under Section 2.6(a)(ii).

“Transfer Taxes” shall mean any transfer, real property transfer, goods and services, recordation, documentary, stamp duty, gross receipts, excise, and conveyance Tax and other similar Tax, duty, fee or charge (other than Sales Taxes), as levied by any Taxing Authority in connection with or as a result of the transfer of the Purchased Assets to Purchaser.

1.02 **Interpretation.** Unless the context of this Agreement otherwise requires, (a) words of any gender shall be deemed to include each other gender, (b) words using the singular or plural number shall also include the plural or singular number, respectively, (c) references to “hereof”, “herein”, “hereby” and similar terms shall refer to this entire Agreement; (d) the words “include” and “including” mean “including without limitation”, (e) all references in this Agreement to Articles, Sections, Schedules and Exhibits shall mean and refer to Articles, Sections, Schedules and Exhibits of this Agreement, (f) all references to statutes and related regulations shall include all amendments of the same and any successor or replacement statutes and regulations, (g) references to any Person shall be deemed to mean and include the successors and permitted assigns of such Person (or, in the case of a Governmental Authority, Persons succeeding to the relevant functions of such Person), and (h) references to any agreement shall include a reference to all schedules, exhibits and other attachments thereto as such agreement and schedules, exhibits, and other attachments may be amended or supplemented from time to time.

1.03 **Knowledge.** As used herein the terms “knowledge” or “best knowledge” shall have the same meaning and shall mean the actual knowledge, after reasonable inquiry, of [LIST SELLER KNOWLEDGE PARTIES] as it relates to Seller and [LIST PURCHASER KNOWLEDGE PARTIES] as it relates to Purchaser, in each instance after due inquiry and reasonable investigation.

ARTICLE II

Purchase and Sale, Purchase Price, Allocation and Other Related Matters

2.01 Purchase and Sale. Upon the terms and subject to the conditions of this Agreement, at the Closing Seller shall sell, assign, convey, transfer and deliver to Purchaser or its designees and Purchaser or such designees shall acquire from Seller the Purchased Assets.

2.02 Purchase Price. The aggregate purchase price (the "Purchase Price") payable by Purchaser for the Purchased Assets shall be [_____] (\$[_____]), less the amount of any insurance proceeds received by Seller or any of its Affiliates whether directly or as a beneficiary after the date hereof and before the Effective Time relating to any insured loss of the Purchased Assets incurred before the Effective Time, after reducing such proceeds by any costs incurred by Seller or any of its Affiliates before the Effective Time in the investigation or repair of damage from any such loss.

2.03 Assumed Liabilities.

(a) As additional consideration for the purchase of the Purchased Assets, Purchaser hereby agrees to assume on the Closing Date but as of the Effective Time and discharge in accordance with their terms or as otherwise provided by this Agreement only those obligations of Seller related to the Purchased Assets (including the Purchased Contracts) arising and attributable to the period after the Effective Time, other than those obligations arising out of or attributable to any breach or other violation in connection therewith by Seller or incurred as a result of an act or omission of Seller in contravention of the provisions of this Agreement. Assumed Liabilities are limited to the items expressly described in this Section 2.03. The foregoing provisions of this Section 2.03 notwithstanding, Purchaser shall not be obligated to assume any liability or obligation as to which Seller, its Affiliate, or the counterparty is in breach in any material respect on the Closing Date.

(b) The debts, liabilities and obligations to be assumed by Purchaser under this Agreement are hereinafter sometimes referred to as the "Assumed Liabilities" and the debts, liabilities and obligations that are not assumed by Purchaser under this Agreement are hereinafter sometimes referred to as "Non-Assumed Liabilities."

(c) This Section 2.03 is not intended to and shall not benefit any Person other than Seller and Purchaser.

(d) All of the Non-Assumed Liabilities shall remain and be the debts, obligations and liabilities of Seller, and Purchaser shall have no liability or responsibility for any of the debts, obligations or liabilities arising therefrom. Seller covenants and agrees with Purchaser that it shall perform and discharge the Non-Assumed Liabilities.

2.04 Sales and Transfer Taxes. Seller shall bear the cost of any (a) real property transfer or similar tax imposed by any Governmental Authority which arises out of the transfer of the Real Property, including any excise tax assessed on any deed conveying the Real Property; and (b) all other transfer, sales, purchase, use, value added, excise or similar taxes imposed by any Governmental Authority which arises out of the transfer of any of the Purchased Assets.

2.05 Allocation of Purchase Price. The parties agree that the Purchase Price shall be allocated among the Purchased Assets in accordance with Schedule 2.05. After the Closing, the parties will make consistent use of the allocation, fair market value, and useful lives specified in Schedule 2.05 for all Tax purposes and in all Tax returns, including those required by section 1060 of the Code. Purchaser agrees to complete IRS Form 8594 consistently with such allocation within 45 days after the Closing Date and to furnish Seller with a copy of such form prepared in draft form, within a reasonable period before the filing due date of such form. The Form 8594 will be amended from time to time in accordance with Schedule 2.05. Except to the extent required by applicable Law, neither Seller nor Purchaser shall file any Tax return or take a position with a Tax authority that is inconsistent with such allocation.

2.06 Prorations. The parties will prorate, as of Closing, all items under those Purchased Contracts that relate to a period that begins prior to the Effective Time and ends after the Effective Time (each a "Proration Period") (other than Taxes, which are to be prorated as provided in Section 5.08) as follows: any amount that is appropriately attributed to transactions or activities before Closing will be borne or enjoyed by Seller, and any amount that is appropriately attributed to transactions or activities on or after Closing will be borne or enjoyed by Purchaser. Any amounts that cannot be so attributed will be borne or enjoyed by the parties in proportion to the number of days, during the billing period related to that amount, that are before Closing and on or after Closing, respectively. Within ninety (90) days after the Closing, the parties, based upon any and all invoices relating to all Proration Periods, shall agree upon the relative amounts allocable to each Party and as required adjust the amount paid by Purchaser to Seller at Closing to reflect such amounts.

ARTICLE III

Closing and Closing Date Deliveries

3.01 Closing. The term "Closing" as used herein shall refer to the actual conveyance, transfer, assignment and delivery of the Purchased Assets to Purchaser in exchange for the Purchase Price to Seller pursuant to Section 2.02 of this Agreement. The Closing shall take place at the offices of DTE Electric Company, One Energy Plaza, Detroit, Michigan, at 9:00 a.m. local time on the fifth business day following the date upon which all of the conditions precedent set forth in Articles IX and X of this Agreement (other than those that are to be satisfied at Closing) are satisfied or waived by the appropriate Party hereto, subject to Article XI

of this Agreement, or at such other place and time or on such other date as is mutually agreed to in writing by Seller and Purchaser ("Closing Date"). The Closing shall be effective as of the Effective Time.

3.02 Closing Deliveries by Seller. At the Closing, Seller shall deliver to Purchaser:

(a) with respect to the Purchased Assets related to the Facility, a warranty deed for all Real Property (the "Deed");

(b) with respect to the Purchased Assets related to the Facility, all such bills of sale, lease assignments, trademark assignments, copyright assignments, patent assignments, contract assignments, easements assignments, permit assignments and other documents and instruments of sale, assignment, conveyance and transfer, as Purchaser or its counsel may deem necessary or desirable;

(c) certified copies of minutes or unanimous written consents of the Board of Directors and if required, the members and/or managers of Seller approving the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated by this Agreement;

(d) a certificate, dated the Closing Date, executed by the appropriate officers of Seller as to the matters set forth in Section 9.02;

(e) a non-foreign affidavit dated as of the Closing Date, sworn under penalty of perjury and in form and substance required under the Treasury Regulations issued pursuant to Code §1445 stating that Seller is not a "foreign person" as defined in Code §1445 (the "FIRPTA Affidavit");

(f) a certificate from the Secretary of State of Seller's state of formation certifying as to Seller's existence and good standing certificates of Seller to the extent provided under the laws of its state of formation and the states in which the Facility is located;

(g) a reaffirmation of the Parent Guaranty executed by the Guarantor hereunder in form and substance reasonably acceptable to Purchaser;

(h) executed copies of the Standard Real Estate Documents;

(i) a copy of the data room contents on CD; and

(j) such other documents as Purchaser, its counsel or the Title Company may reasonably request to carry out the purposes of this Agreement, including the documents to be delivered pursuant to Article IX of this Agreement.

The items described in clause (x) of the definition of Purchased Assets shall be delivered to Purchaser's offices in Detroit, Michigan or to the Facility and shall include a general directory of contents and their location.

3.03 Closing Deliveries by Purchaser. At the Closing, Purchaser shall deliver to Seller:

(a) the Purchase Price, subject to proration and other adjustments and credits as herein provided;

(b) evidence written approval of the Board of Directors, approving or designating authority to approve, the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated under this Agreement;

(c) the certificate, dated the Closing Date, executed by the appropriate officer of Purchaser, required by Section 10.02 of this Agreement;

(d) an assumption agreement executed by Purchaser or Purchaser's designee reflecting the assumption of the liabilities set forth in Section 2.03(a) of this Agreement, in the form attached hereto as Exhibit C (the "Assumption Agreement");

(e) executed copies of the Standard Real Estate Documents;

(f) a certificate from the Secretary of State of Purchaser's state of formation and that of each of Purchaser's designees certifying as to such entity's existence and good standing certificates of such entity to the extent provided under the laws of its state of formation and the states in which the Facility is located; and

(g) such other documents as Seller or its counsel or the Title Company may reasonably request to carry out the purposes of this Agreement, including the documents to be delivered pursuant to Article X of this Agreement.

3.04 Cooperation. Subject to the provisions of Section 4.04, Seller and Purchaser shall, on request, on and after the Closing Date, cooperate with one another by furnishing any additional information, executing and delivering any additional documents and/or instruments and doing any and all such other things as may be reasonably required by the parties or their counsel to consummate or otherwise implement the transactions contemplated by this Agreement.

ARTICLE IV

Pre-Closing Filings

4.01 Government Approvals; Consents. Subject to the terms and conditions of this Agreement and applicable Law, prior to the Closing each Party shall, at its own expense, use its commercially reasonable efforts to take or cause to be taken all actions necessary, proper, or advisable, including all possible appeals, to obtain such Party's Governmental Approvals and all other necessary or appropriate filings, registrations, consents, approvals, certifications, determinations, authorizations, or waivers (including the transfer or re-issuance of Permits) required in order to consummate the transactions contemplated hereby and to take or cause to be taken all actions necessary to comply with the terms upon which any of the same are granted.

4.02 HSR and Other Filings. Without limitation of the foregoing, each Party undertakes and agrees to (i) file (and each Party agrees to cause any Person that may be deemed to be the ultimate parent entity or otherwise to control such Party to file, if such filing is required by applicable Law) as soon as practicable following the date hereof, a Notification and Report Form under the HSR Act with the FTC and the Antitrust Division of the DOJ (the filing fees payable in connection therewith to be paid by Purchaser); (ii) subject to the allocation of responsibility set forth in Section 4.03, file as soon as practicable after the date hereof any forms or reports required by FERC, and any applicable state or local government public utility regulatory bodies; (iii) submit as soon as practicable after the date hereof a request for each other Governmental Approval to be sought by that Party; (iv) file as soon as practicable any form or report required by any other Governmental Authority relating to antitrust, competition, trade, Tax, or energy or utility regulation matters; and (v) subject to Section 4.05, take any action and agree to any undertaking necessary to receive any clearance or approval required by any Governmental Authority or applicable Law, in each case, with respect to the transactions contemplated hereby. Each Party shall (and shall cause any such parent entity to) (vi) respond as promptly as practicable to any inquiries or requests received from any Governmental Authority for additional information or documentation; and (vii) not extend any waiting period under the HSR Act or enter into any agreement with any Governmental Authority not to consummate the transactions contemplated hereby, except with the prior consent of the other Party.

4.03 FERC Regulatory Filing.

(a) Purchaser shall have primary responsibility for the preparation and filing of the regulatory filing(s) to be made to FERC requesting approval under Section 203 (and Section 205, if necessary) of the Federal Power Act (the "FERC Regulatory Filing"). Upon the request of Purchaser, Seller shall use its commercially reasonable efforts to cooperate with Purchaser to prepare and file the FERC Regulatory Filing.

(b) Purchaser and Seller shall use commercially reasonable efforts to file as soon as practicable after the date hereof the FERC Regulatory Filing, and execute all agreements

and documents, in each case, to obtain as promptly as practicable approval under Section 203 (and Section 205, if necessary) of the Federal Power Act. Purchaser and Seller shall act diligently, and shall coordinate in completing and submitting the FERC Regulatory Filing. Purchaser and Seller shall each have the right to review and approve (which such approval shall not be unreasonably delayed or withheld) in advance all of the information relating to the transactions contemplated by this Agreement which appears in the FERC Regulatory Filing. Purchaser and Seller agree that all telephonic calls and meetings with the FERC regarding the transactions contemplated by this Agreement shall be conducted by Purchaser and Seller jointly.

4.04 Cooperation in Regulatory Review Process. Each Party shall consult and cooperate in the regulatory review process. Notwithstanding anything in this Agreement to the contrary, each Party agrees not to oppose, obstruct, or otherwise interfere with, in any manner whatsoever, the efforts of the other Party to obtain such Party's Governmental Approvals and all other clearance or approval required by any Governmental Authority or applicable Law with respect to the transactions contemplated hereby.

4.05 Conditions or Limitations. Nothing in this Agreement will require Purchaser to accept any condition to, limitation on, or other term concerning the grant of any Governmental Approval if such condition, limitation, or other term, alone or in the aggregate with other such conditions, limitations, or other terms would (i) require the disposition by Purchaser of any material asset(s); (ii) have a material adverse effect on Purchaser or any of its Affiliates in its acquisition, ownership, use, operation, or disposition of any property other than the Purchased Assets; (iii) would materially change or impair the commercial expectation of Purchaser with respect to the acquisition of the Facility or the sale or transmission of power from the Facility; or (iv) prohibit Purchaser from recovering in the rates it charges to its jurisdictional customers any amounts paid or to be paid hereunder or incurred by Purchaser for the acquisition of the Facility.

4.06 [MISO Notification of Sale and Scheduling and Bidding for day of Closing.

(a) Seller and Purchaser shall cooperate in the transfer of the Facility from Seller's account with MISO to Purchaser's account with MISO which cooperation shall include [the transfer of ownership of the Facility on the Closing Date and the allocation of costs and revenues related to the Facility for the Closing Date. Seller has provided to or shall provide to Purchaser as of the Closing Date access to all historical GADS data related to the Facility].

(b) For any Facility bids submitted to MISO that will be effective on the Closing Date, Seller agrees to bid the Facility units in the ordinary course consistent with past practice and Good Utility Practice.]²

ARTICLE V

Covenants

5.01 Due Diligence Review. Pending Closing, Seller shall at all reasonable times and upon reasonable prior notice make the Facility, properties, assets, books and records, and involved personnel pertaining to the Purchased Assets available for examination, inspection and review by Purchaser and its lenders, agents and representatives; *provided, however*, Purchaser's inspections and examinations shall not unreasonably disrupt the normal operations of the Facility and any interview by Purchaser of such involved personnel shall require the prior written approval of Seller. Neither the representations and warranties of Seller, nor the indemnification obligations of Seller, shall be affected, qualified, modified or deemed waived by reason of Purchaser's exercise or failure to exercise its rights under this Section.

5.02 Pending Closing. Pending the Closing, and unless otherwise consented to by Purchaser in writing, Seller shall:

(a) conduct and carry out operations at the Facility consistent with Good Utility Practice and, in all events, maintain the Purchased Assets in the same condition in all material respects as existed on [____], ordinary wear and tear excepted;

(b) not sell, lease, mortgage, pledge or otherwise dispose of any of the Purchased Assets or other material properties or assets of or in connection with the Facility, except for tangible personal property purchased, sold or otherwise disposed of in the ordinary course and the disposal of which does not materially impair the value or the utility of the Purchased Assets;

(c) except as set forth on Schedule 5.02(c), not enter into, or become obligated under, any lease, contract, agreement or commitment with respect to the Facility, Properties or Inventory that cannot be terminated by Seller without penalty at or before Closing;

(d) not materially change, amend, or otherwise modify or terminate any Purchased Contract or waive any rights thereunder;

² Seller and Purchaser to agree upon steps to be taken to notify MISO of the transfer of the Facility and to schedule and bid the Facility on the Closing Date.

(e) maintain in full force and effect with respect to the Facility, Properties and Inventory, policies of insurance of the same type, character and coverage as the policies currently carried and described in Schedule 7.07;

(f) if a spare part set forth on Schedule IA and worth more than \$[_____] is used or removed from the inventory of spare parts, replace such spare part with its equivalent before Closing;

(g) use Inventory and spare parts comprising part of the Purchased Assets only in connection with the Facility, in the ordinary course of business, and in accordance with Good Utility Practice;

(h) not enter into any labor or collective bargaining agreement with employees at the Facility;

(i) not enter into, modify, or renew any contract with respect to the purchase, sale, or transmission of electric power, capacity, or ancillary services from the Facility or any contract with respect to the financial settlement for electric power, capacity, ancillary services, or transmission rights that will call for the delivery of electric power or ancillary services or have a term expiring after the Closing;

(j) not enter into, modify, or renew any contract with respect to the purchase, sale, or transportation of fuel to the Facility or any contract with respect to the financial settlement for fuel that will call for the delivery of electric power or ancillary services or have a term expiring after the Closing;

(k) not enter into, modify, or renew any contract with respect to the purchase, sale, or exchange of allowances for air and water emissions and all greenhouse gas, NOx, and other similar credits relating to the Facility existing prior to Closing, except to the extent necessary for compliance for the Facility;

(l) not file any Tax return, make any Tax election, or settle any Liability for Taxes to the extent it would materially adversely affect Purchaser in any taxable period prior to the Closing Date; or

(m) not agree to do any of the items prohibited by Section 5.02(b), (c), (d), (e) (f), (g), (h), (i), (j), (k), or (l).

5.03 Consents. Pending the Closing Date, the parties shall proceed with all reasonable diligence and use commercially reasonable efforts to obtain the written consents, authorizations or approvals required for the consummation of transactions contemplated by this Agreement (including the assignment and assumption of the Purchased Contracts and the Permits included in clause (ix) of the definition of Purchased Assets); provided, however, Purchaser shall

no obligation to pay any third Person a fee to obtain any such consent, authorization or approval not already provided for by the applicable agreement or Law.

5.04 Environmental Assessments. Purchaser shall have the right to obtain, at Purchaser's expense and from environmental consultants selected by Purchaser, environmental assessments of any of the Properties and all structures thereon for the purpose of determining whether there exists any Hazardous Substance on, about or underneath the Properties or any structure thereon or thereunder, or migrating or threatening to migrate from any of the Properties or any structure thereon or thereunder, or any condition, circumstance, or activity which constitutes a violation of or noncompliance with any Environmental Laws ("Phase I Environmental Site Assessment"). Prior to Closing, if Purchaser's Phase I Environmental Site Assessment concludes that further investigation is warranted, Purchaser shall provide to Seller a copy of the proposal for a Phase II investigation, which Seller may approve in its sole discretion. Purchaser shall provide Seller copies of any Phase I or Phase II Environmental Site Assessment reports to Seller, upon Seller's request. Seller shall provide to Purchaser and Purchaser's consultants access to the Facility during normal business hours and upon reasonable notice.

5.05 Notice of Breach. Pending Closing, each Party shall provide notice to the other Party within ten (10) days of becoming aware of any material breach of (x) any representations or warranties of such notifying Party contained in this Agreement or (y) any of the covenants of such notifying Party contained in this Agreement.

5.06 Workforce. Pending Closing and subject to Seller's prior written consent, Purchaser may interview Facility Employees to determine whether Purchaser wishes to make offers of employment to any such employee(s); *provided, however*, that to the extent any such employee accepts an offer of employment from Purchaser (or any of its Affiliates or agents), Purchaser agrees not to permit, or to cause its Affiliates or agents not to permit, such employees to commence employment with Purchaser (or any of its Affiliates or agents) prior to the Closing Date.

5.07 Cooperation.

(a) Each Party agrees that after the Closing Date it will use its commercially reasonable efforts to cooperate with and make available to the other Party, upon reasonable notice and during normal business hours, books and records and information of or relating to the Purchased Assets and other matters relevant to this Agreement which are necessary or useful in connection with Purchaser's operation or maintenance of the Purchased Assets, any proceeding by a Governmental Authority, preparation of tax returns, or any claim by or against a third party involving the Purchased Assets (other than in connection with disputes between the parties). The Party requesting any such books and records, information, or cooperation shall bear all of the out-of-pocket costs and expenses of the other Party reasonably incurred in connection therewith (including out-of-pocket expenses to third parties incurred by any Party).

(b) Purchaser and Seller shall cooperate in good faith pending the Closing Date to insure that there is no interruption in phone or electrical service to the Facility.

5.08 Tax Matters. (a) Except as provided in clause (b) of this Section 5.08 or with respect to items included in Purchased Assets as described in clause (vii) of the definition of Purchased Assets, in respect of Taxes on or with respect to the Purchased Assets, (i) with respect to a taxable period, or portion thereof, that ends before or as of the Closing Date, Seller shall be liable and indemnify Purchaser for all Taxes arising out of such period or related to a breach of any of the representations and warranties set forth in Section 7.14 of this Agreement or the Covenants of Seller in this Article V, and (ii) Purchaser shall be liable and indemnify Seller for all such Taxes with respect to a taxable period, or portion thereof, that begins on or after the Closing Date.

(b) Ad valorem property Taxes imposed on or with respect to the Purchased Assets for the Taxable Period that contains the Effective Time shall be prorated between Seller and Purchaser based on their relative number of days of ownership during the Taxable Period, with Seller being responsible for such prorated ad valorem property Taxes for the period ending as of the end of the Closing Date and Purchaser being responsible for such prorated ad valorem property Taxes for the period after the Closing Date. At the election of either Party, the amount to be paid by Purchaser at Closing shall be adjusted by an estimated proration based on the previous year's Taxes. All amounts receivable or payable between the parties under this Section 5.08(b) will be an adjustment to the Purchase Price.

(c) Any Tax return to be prepared pursuant to the provisions of this Section 5.08 shall be prepared in a manner consistent with practices followed in prior years with respect to similar Tax returns and in compliance with the applicable Law of each respective jurisdiction, except for changes required by changes in applicable Law. Purchaser shall not file an amended Tax return relating to the Purchased Assets for any period ending on or prior to the Closing Date without the consent of Seller, which may be withheld in Seller's reasonable discretion, and Seller shall not file any Tax return relating to the Purchased Assets for any period ending after the Closing Date without the prior consent of Purchaser, which may be withheld in Purchaser's reasonable discretion.

(e) Purchaser and Seller shall cooperate fully, and shall cause their respective Affiliates to cooperate fully, as and to the extent reasonably requested by either Party, in connection with the filing of Tax returns and any audit, litigation, examination, or other proceeding ("Tax Proceeding") with respect to Taxes of or relating to the Purchased Assets and in connection with the filing of any application with any Taxing authority for approval of the transfer or assignment of any item described in clause (vii) of the definition of Purchased Assets. Such cooperation shall include the retention and (upon a Party's request) the provision of records and information which are reasonably relevant to any such Tax return, Tax Proceeding, or

application and making employees available on a mutually convenient basis to provide additional information and explanation of any material provided hereunder.

(f) Seller shall notify Purchaser within thirty (30) days of Seller's receipt of notice of a Tax Proceeding related to the Purchased Assets or to Seller but only if the Tax Proceeding could reasonably be expected to affect Purchaser's ownership or operation of the Purchased Assets after the Closing or result in the imposition of any Tax for which Purchaser is responsible. Purchaser, at its expense, shall have the right to control the defense and settlement of any such Tax proceeding.

(g) Except with respect to items included in Purchased Assets as described in clause (vii) of the definition thereof, Seller shall be entitled to any refunds or credits for any Taxes relating to the Purchased Assets for periods ending prior to or as of the Closing Date, and Purchaser shall be entitled to any refunds or credits for any Taxes relating to the Purchased Assets for periods on and after the Closing Date. Any Party receiving a refund or the right to a credit to which the other Party is entitled shall immediately notify the Party so entitled and remit the refund or the value of the credit, as the case may be, within thirty (30) days of receipt of such refund or entitlement to the credit.

(h) Subject to Section 2.04, Seller shall file all Tax returns required to be filed to report Transfer Taxes imposed on or with respect to the transactions contemplated hereby, shall solely be liable for and shall pay all such Transfer Taxes, and shall indemnify, defend and hold harmless Purchaser and its Affiliates from and against any and all liability for the payment of such Transfer Taxes and the filing of such Tax returns.

5.09 Market Power Study. Purchaser shall have the right to obtain, at Purchaser's sole expense and from a consultant selected by Purchaser, a market power study for purposes of determining whether there exist any issues concerning market power or the need to mitigate such market power in connection with Purchaser's acquisition of the Facility.

ARTICLE VI

Title and Survey

6.01 Pre-Closing Title Policy and Survey Delivery. No more than thirty (30) days after the date hereof, Seller, at its sole costs and expense, shall obtain and deliver to Purchaser:

(a) With respect to the Properties, an owner's title commitment (the "Title Commitment") covering a date subsequent to the date hereof, issued by the Title Company, which Title Commitment shall contain a commitment of the Title Company to (i) issue an owner's title insurance policy in the amount of the Purchase Price (the "Title Policy") on an ALTA Owner's 2016 Policy of Title Insurance, or if such form is decertified prior to Closing

then the 2016 form of ALTA Owners Policy of Title Insurance, in the Title Policy Form (as defined hereafter) insuring Purchaser as to the fee simple title or other applicable estate in each parcel comprising the Properties and subject only to, (A) Permitted Exceptions, and (B) such other matters as are consented to in writing by Purchaser (clauses (A), and (B) are collectively referred to as “Permitted Real Estate Exceptions”), together with a true, correct, and legible copy of each document referred to in the Title Commitment; and (ii) guarantee that each such parcel of real estate adjoins a public road or highway and that entrance to and exit from such premises may be had via such public road or highway; and

(b) A current as-built survey and metes and bounds description of the Properties prepared by a registered land surveyor or engineer, duly licensed in the applicable state and approved by Purchaser (i) certified to Purchaser, its successors and assigns, the Title Company, and such other interested parties as Purchaser may identify; (ii) conforming to 2016 ALTA/NSPS minimum standard detail requirements and containing the following “Table A” items: 3,4, 6(a), 6(b), 11, 13, 15 and 19; (iii) showing the location and recording information (if applicable) of all observable improvements, location of all observable roads, easements, means of access to public streets, encroachments, driveways, and the observable physical conditions affecting the title and use of the Properties including access thereto; (iv) containing a note confirming that all constituent parcels are contiguous and contain no gaps, gores, or overlaps; (v) containing a note confirming that all locatable easements, servitudes, and similar instruments identified as exceptions in the Title Commitment have been located on the Survey; and (vi) containing a note which specifically identifies all inconsistencies and variances between the legal descriptions to be insured pursuant to the Title Commitment and the legal description of the Project Site contained in the Survey (the “Survey”).

(c) No later than thirty (30) days after Purchaser has received the last of the Title Commitment (and copies of referenced documents) and the Survey, Purchaser shall provide a written notice (“Objection Notice”) to Seller of any matters objectionable to Purchaser, as determined in its sole and absolute discretion, including any objections based on Purchaser’s review of any secured transaction search undertaken by Purchaser. Purchaser shall be deemed to have accepted all defects and exceptions disclosed by the Title Commitment, any secured transaction search undertaken by Purchaser, and Survey to which Purchaser does not object in a timely Objection Notice, and such accepted defects and exceptions shall be deemed to be Permitted Real Estate Exceptions hereunder. Seller shall have thirty (30) days (the “Cure Period”) from receipt of the Objection Notice to cure any defect or exception which is the subject of an Objection Notice, failing which Purchaser shall have the option to either (i) terminate this Agreement as provided in Section 11.01 by giving written notice to Seller no later than fifteen (15) days following the expiration of the Cure Period or (ii) be deemed to have accepted the Properties subject to all such uncured defects and exceptions disclosed by the Title Commitment, any secured transaction search undertaken by Purchaser, or Survey, all of which shall be Permitted Real Estate Exceptions hereunder.

(d) The costs and expenses of the Title Commitment, the Title Policy and the Survey shall be borne by Seller and all costs and expenses for all endorsements shall be borne by Purchaser, whether or not the transactions contemplated under this Agreement are consummated. All costs and expenses incurred by Seller in response to any Objection Notice shall be borne by Seller.

ARTICLE VII

Warranties and Representations of Seller

Seller warrants and represents to Purchaser as follows as of the date hereof and as of the Closing Date (except for representations and warranties that are made as of a specific date, which are made only as of such date):

7.01 Organization and Good Standing. Seller is a [limited liability company] duly formed, validly existing and in good standing under the laws of the State of [____]. Seller is duly qualified to transact business and is in good standing in each jurisdiction where such qualification is necessary, except where the failure to be so qualified or in good standing could not reasonably be expected to have a Material Adverse Effect or impair Seller's ability to perform its obligations hereunder in any material respect.

7.02 Authority. Seller has the right and power to enter into, and perform its obligations under this Agreement; and has taken all requisite action to authorize its execution and delivery of this Agreement and the performance of its obligations under this Agreement; and this Agreement has been duly authorized, executed and delivered by Seller and is binding upon, and enforceable against, Seller in accordance with its terms; except as such enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting enforcement of creditors' rights generally and by general principles of equity (whether applied in a proceeding at law or in equity).

7.03 No Violations and Consents. (a) The execution, delivery and performance of this Agreement by Seller does not and will not, after the giving of notice, or the lapse of time, or otherwise, (i) conflict with, result in a breach of, or constitute a default under, the Certificate of Formation or Operating Agreement of Seller or any of its Affiliates or any Law or any Purchased Contract; (ii) result in the creation of any Lien upon any of the Purchased Assets; (iii) terminate, amend or modify, or give any party the right to terminate, amend, modify, abandon, or refuse to perform, any Purchased Contract; (iv) accelerate or modify, or give any party the right to accelerate or modify, the time within which, or the terms under which, any duties or obligations are to be performed by Seller or any of its Affiliates, or any rights or benefits are to be received by any Person, under any Purchased Contract; or (v) violate or result in a default (or give rise to any right of termination, suspension, modification, cancellation, or acceleration) under any other indebtedness or obligation, lease, contract, other agreement, commitment, indenture, mortgage, deed of trust, or other instrument, document, or arrangement

to which Seller or any of its Affiliates is a party or by which any of the Purchased Assets is bound.

(b) The execution and delivery by Seller of this Agreement does not, and the performance by Seller or any of its Affiliates of its obligations hereunder will not, require Seller or any of its Affiliates to obtain any consent, approval, authorization or other action of, or make any filing with or give any notice to, any Governmental Authority, except (i) as disclosed in Schedule 7.03 (b), (ii) pursuant to the applicable requirements of the HSR Act, (iii) where failure to obtain such consents, approvals, authorizations or actions, make such filings or give such notices would not affect the Purchased Assets or the Business in any material respect or impair Seller's ability to perform its obligations or delay the transaction hereunder in any material respect or (iv) as may be necessary as a result of any facts or circumstances relating solely to Purchaser.

7.04 Brokers. Except as otherwise set forth in Schedule 7.04, neither this Agreement nor the sale of the Purchased Assets or any other transaction contemplated by this Agreement was induced or procured through any Person acting on behalf of, or representing, Seller or any of its Affiliates as broker, finder, investment banker, financial advisor or in any similar capacity.

7.05 Required Assets. Except for the Retained Assets, all of the material rights, properties and assets required by Seller in connection with the ownership, operation, maintenance, and repair of the Facility, the delivery of fuel thereto and the delivery of power, capacity and ancillary services therefrom to the Substation, each as of the date hereof, are (a) owned by Seller or licensed or leased to Seller under one of the Purchased Contracts (except as otherwise contemplated by Section 14.02 hereof); and (b) included in the Purchased Assets.

7.06 Contracts. (a) Except for the Purchased Contracts set forth in Schedule 7.06(a)(i) (a complete copy of each of which has been made available to Purchaser) and the Retained Contracts set forth in Schedule 7.06(a)(ii), Seller is not a party to, and its properties are not subject to, any contract pertaining to the Purchased Assets that meets any of the following descriptions and has a term extending beyond the anticipated Closing Date: (i) contracts for the purchase, exchange, or sale of electric power, capacity, or ancillary services; (ii) contracts for the transmission of electric power or financial transmission congestion rights; (iii) with respect to the Facility, interconnection contracts, including generation imbalance agreements and similar agreements with the transmission grid operator; (iv) contracts for the purchase, exchange, sale, transportation, or storage of fuel; (v) contracts for the purchase, exchange or sale of allowances for air and water emissions and all greenhouse gas, NOx, and other similar credits; and (vi) other than contracts of the nature addressed by clauses (i), (ii), (iii), (iv), and (v) of this Section 7.06, contracts for the sale, lease, or use of any Purchased Asset or that grant a right or option to purchase, lease, or use any Purchased Asset with any other Person, other than in each case contracts entered into in the ordinary course of business consistent with past practices with an annual or aggregate cost or value of less than \$50,000 individually or \$150,000 in the aggregate;

(v) other than contracts of the nature addressed by clauses (i), (ii), and (iii) of this Section 7.06, contracts for the future provision or receipt of goods or services relating to the Purchased Assets requiring annual or aggregate payments in excess of \$50,000 for each individual contract; (vi) outstanding futures, swap, collar, put, call, floor, cap, option, or other contracts that are intended to benefit from or reduce or eliminate the risk of fluctuations in the price of commodities (including electric power, capacity, ancillary services, emissions allowances or credits, or natural gas) the value of securities, interest rates, or the cost or availability of transmission rights; (vii) contracts that purport to limit the Facility's freedom to be used to compete with, or be used in, any business or line of business in any geographic area; or (viii) any amendment, supplement, and modification (whether oral or written) in respect of any of the foregoing.

(b) Except as set forth in Schedule 7.06(b)(i): (i) each Purchased Contract is in full force and effect and is valid and enforceable against all parties thereto in accordance with its terms; (ii) except as to Seller Governmental Approvals and the approvals and consents described in Schedule 7.06(b)(ii), each Purchased Contract is assignable by Seller to Purchaser without the consent of any other Person; (iii) (x) Seller and, to Seller's knowledge, each other Person that has or had any obligation or liability under any Purchased Contract is, and at all times since three (3) years prior to the date hereof, has been, in compliance with all applicable terms and requirements of each Purchased Contract in all material respects, and (y) Seller has not given to or received from any other Person, at any time since three (3) years prior to the date hereof, any written notice or other written communication regarding any actual, alleged, possible, or potential violation or breach of, or default under, any Purchased Contract; (iv) to Seller's knowledge, no event has occurred or circumstance exists that in any material respect (with or without notice or lapse of time) may conflict with or give Seller or another Person the right to cancel, modify, terminate, or accelerate the maturity or performance of or payment under any Purchased Contract; (v) there are no renegotiations of, attempts to renegotiate, or outstanding rights or obligations to renegotiate any amounts paid or payable to Seller or any of its Affiliates under any Purchased Contract; and (vi) no Affiliate of Seller is the counterparty to any Purchased Contract.

7.07 Insurance. All material properties and risks associated with the Properties and Facility are covered and shall remain covered through the Closing Date, by valid and currently effective insurance policies or binders of insurance or programs of self-insurance in such types and amounts as are consistent with customary practices and standards in Seller's industry. Schedule 7.07 contains a complete list of all material liability, property, accident, casualty, fire, flood, workers' compensation or other insurance policies and arrangements affecting or relating to the ownership, use or operations of the Purchased Assets or the Facility, true and correct copies of which have been made available to Purchaser. Seller is in material compliance with the terms and provisions of such policies and all premiums due and payable with respect thereto have been paid. Seller has not received a written notice of cancellation or termination of any such policy. Except as set forth on Schedule 7.07, there are no material claims pending as of the date hereof under any of such policies where underwriters have reserved their rights or disclaimed coverage under such policy. Notice has been provided under any applicable or potentially applicable policy for all known incidents that occurred before the Closing Date and

that could result in a claim in excess of one hundred thousand dollars (\$100,000) under any policy after the Closing Date.

7.08 Title to Real Property. Seller has good and indefeasible title to the Real Property and a valid and subsisting leasehold estate to the Properties other than the Real Property, free and clear of all Liens, except for the Permitted Real Estate Exceptions. Seller is not in breach in any material respect of any contracts with respect to Real Property. Seller has not received any notice of any condemnation, zoning or other similar proceeding affecting any Real Property. Seller has no notice of any claim against title to the Real Property, which claim has not been resolved. Neither the whole nor any material portion of any Real Property has been damaged or destroyed by fire or other casualty.

7.09 Title to Purchased Assets. Seller has good and marketable title to all the Purchased Assets consisting of tangible personal property owned by Seller and valid and subsisting leases with respect to all of the material Purchased Assets consisting of tangible personal property leased by Seller. All such owned tangible personal property is owned free and clear of all Liens, except: (a) as set forth in Schedule 7.09; (b) liens for Taxes and assessments not yet payable; (c) liens securing or relating to liabilities or obligations which are to be assumed by Purchaser pursuant to this Agreement or the Assumption Agreement; and (d) imperfections of title, Liens, claims and other charges and encumbrances the existence of which would not materially impair the value or utility of such property. Seller is not in breach in any material respect of any contracts with respect to tangible personal property that are Purchased Assets.

7.10 Intellectual Property.

(a) Except as set forth in Schedule 7.10, to Seller's knowledge there has not been in the past six (6) years, nor is there currently, any infringement or misappropriation arising out of the construction, operation, maintenance, repair, modification, or other activities at or relating to the Facility of any patents, trademarks, service marks, trade names, copyright, or trade secrets owned or controlled by a third-party.

(b) Except as set forth in Schedule 7.10, there has not been in the past six (6) years, nor is there currently, any claim or, to Seller's Knowledge, any threatened claim, that the operation, maintenance, repair, modification, or other activities at or relating to the Facility infringe or misappropriate any patents, trademarks, service marks, trade names, copyright, or trade secrets owned or controlled by a third-party, nor has there been in the same period of time, any request or demand that a license of any patents, trademarks, service marks, trade names, copyright, or trade secrets owned or controlled by a third-party is necessary to continue operation, maintenance, repair, modification, or other activities at or relating to the Facility.

7.11 Litigation. Except as set forth in Schedule 7.11, (a) there are no material actions, claims or proceedings pending, or to Seller's Knowledge, threatened, against Seller or its Affiliates relating to the Facility or any of the Purchased Assets at law or in equity, before or by

any Governmental Authority, or by any other Person; and (b) there is no action, claim, proceeding, order, writ, judgment or decree that seeks to restrain or prohibit or restrains or prohibits the consummation of the transactions contemplated hereby or seeks to impose or imposes any material limitation or restriction on the operation or maintenance of the Purchased Assets or the sale or delivery of electric power, capacity, or ancillary services therefrom or the purchase or receipt of fuel thereto.

7.12 Compliance With Laws. Since three (3) years prior to the date hereof, neither Seller nor its Affiliates have been in material violation (and has not received any written notice or allegation of material violation) of any Law applicable to the Purchased Assets, the Facility or the Business, or by which any of the Purchased Assets, the Facility, or the Business are bound or subject, except as set forth in Schedule 7.12. Notwithstanding the foregoing, compliance with Environmental Laws is exclusively and solely governed by Sections 7.15 and Section 7.16 hereof.

7.13 Labor Matters. All employees employed at the Facility (“Facility Employees”) are employees of Seller; provided, however, that certain employees of [] may from time to time work at the Facility in connection with their primary responsibilities at the Substation or elsewhere. No labor organization has or has had representation rights with respect to the Facility Employees; and there are no and have never been collective bargaining agreements relating to the Facility Employees. To Seller’s Knowledge, there are no organizing efforts presently being made, at the Facility involving the Facility Employees.

7.14 Taxes. Except as set forth in Schedule 7.14, Seller has duly and timely filed all federal, state and local Tax reports and returns required to be filed by it in respect of the Purchased Assets, the Facility and the Business and paid all Taxes shown thereon to be due. There are no pending or to Seller’s Knowledge, threatened, Tax audits or examinations of, or with respect to, the Purchased Assets, the Facility or the Business, and there are no written notices of deficiency, proposed deficiency, or assessment from any Tax authority with respect to Taxes of, or relating to, the Purchased Assets, the Facility or the Business. All deficiencies asserted or assessments made for Taxes due with respect to the Purchased Assets, the Facility or the Business as a result of any completed and settled examinations or any concluded litigation have been fully paid. [Seller is disregarded as an entity separate from its owner within the meaning of Treasury Regulation Section 301.7701-3 and neither Seller nor Seller’s Federal Tax Owner has made any elections to the contrary].

7.15 Licenses and Permits; MISO. Seller has, or has applied for, all material Permits (including Permits under Environmental Laws) necessary for the ownership, lease, use, operation, and maintenance of the Purchased Assets, and all such Permits and their status are described in Schedule 7.15. Each such Permit is in full force and effect, and Seller is not in violation of any such Permit in any material respect. There are no pending or, to Seller’s knowledge, threatened proceedings challenging the validity of, or seeking to revoke, withdraw, suspend, cancel, terminate, or modify any such Permits. Seller is a certified MISO market

participant and Seller has at all times ensured that it and the Facility have been in compliance with all applicable requirements of MISO's as-filed Open Access Transmission, Energy and Operating Reserve Markets Tariff.

7.16 Environmental Compliance.

(a) Except as set forth on Schedule 7.16(a) of the Disclosure Schedules, in the past three (3) years prior to the date hereof, Seller is and has been in compliance with all Environmental Laws in all material respects. There is no material violation of any Environmental Law or other material liability arising under any Environmental Law with respect to the Properties, the Facility, the Business or the Purchased Assets.

(b) There are no Actions or Proceedings pending or, to the Knowledge of Seller, threatened, as of the date of this Agreement against Seller, its Affiliates, the Facility, or the Properties relating to any material violation of Environmental Law. Neither Seller nor its Affiliates have received notice from any Governmental Authority of any material violation of any Environmental Law with respect to the Facility, the Properties, the Business or the Purchased Assets.

(c) Schedule 7.16(c) of the Disclosure Schedules sets forth all material Permits required pursuant to any Environmental Law held by Seller for the ownership, use or operation of the Facility and Purchased Assets as currently conducted. Except as set forth in Schedule 7.16(c) of the Disclosure Schedules, such Permits have been obtained in a timely manner and are presently maintained in full force and effect in the name of Seller.

(d) To the Knowledge of Seller, there has been no release of Hazardous Substances at or from the Facility or the Properties in violation of Environmental Laws or Permits required by or issued pursuant to any Environmental Law for the ownership, use or operation of the Properties or the Facility as currently operated that would be reasonably expected to trigger any obligation of Seller or its Affiliates under Environmental Laws to report, investigate, remove or remediate such release.

(e) Seller has made available to Purchaser all environmental reports, assessments and documents that are in the possession of Seller or its Affiliates and that relate to actual or potential material liabilities or obligations under Environmental Laws with respect to the Facility or the Properties.

7.17 No Misrepresentation in Due Diligence Materials. The Due Diligence Materials contain no material false statement or misrepresentation with respect to the information such Due Diligence Materials purport to present.

7.18 Properties.

(a) Except as set forth on Schedule 7.18, (i) none of the Properties consists of “wetlands” under applicable federal or state law; (ii) the Properties are zoned for industrial or agricultural purposes; and (iii) no part of the Properties is located in a flood prone area.

(b) (i) Seller has not received and has no knowledge of any notice or request, formal or informal, from any insurance company or board of fire underwriters identifying any defects in the Properties that would adversely affect the insurability of the Properties; (ii) all required building permits, occupancy permits or other approvals or consents of Governmental Authorities or public or private utilities having jurisdiction have been obtained with respect to the Properties; (iii) adequate supplies of all public utilities, including, but not limited to, electricity, telephone and other utilities required by law or by the normal use and operation of the Properties (x) are installed to the property lines of the Properties, (y) are connected pursuant to valid Permits, (z) are adequate to service the Properties, (xx) are adequate to permit full compliance with all requirements of Law and normal usage of the Properties by the occupants and their licensees and invitees, and (yy) either enter the Properties through adjoining public streets, or if they pass through adjoining private land, do so in accordance with valid public easements or private easements that inure to the benefit of Seller and its successors in title to the Properties.

7.19 Absence of Material Adverse Effect. Since three (3) years prior to the date hereof, there has not been a Material Adverse Effect.

7.20 Disclaimer of Warranties. EXCEPT WITH RESPECT TO THE WARRANTIES AND REPRESENTATIONS SPECIFICALLY SET FORTH IN THIS AGREEMENT, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY, SUITABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR QUALITY AS TO THE PURCHASED ASSETS, OR ANY PART THEREOF, OR AS TO THE CONDITION OR WORKMANSHIP THEREOF, OR THE ABSENCE OF ANY DEFECTS THEREIN, WHETHER LATENT OR PATENT, IT BEING UNDERSTOOD THAT THE PURCHASED ASSETS ARE TO BE CONVEYED HEREUNDER “AS IS” AND “WHERE IS” ON THE CLOSING DATE, AND IN THEIR THEN PRESENT CONDITION. PURCHASER SHALL RELY UPON ITS OWN EXAMINATION THEREOF.

7.21 Good Utility Practice. The Facility has been operated and maintained at all times in accordance with Good Utility Practice, applicable Law and applicable manufacturers’ operating manuals.

ARTICLE VIII

Warranties and Representations of Purchaser

Purchaser warrants and represents to Seller as follows as of the date hereof and as of the Closing Date (except for representations and warranties that are made as of a specific date, which are made only as of such date):

8.01 Due Incorporation. Purchaser is a Michigan corporation duly incorporated, validly existing and in good standing under the laws of the State of its incorporation.

8.02 Authority. Purchaser has the corporate right and power to enter into, and perform its obligations under this Agreement, and has taken all requisite corporate action to authorize its execution and delivery of this Agreement and the performance of its obligations under this Agreement, subject to receipt of its board approval described in Section 9.07; and this Agreement has been duly executed and delivered by Purchaser and each is binding upon, and enforceable against, Purchaser in accordance with its terms; except as such enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting enforcement of creditors' rights generally and by general principles of equity (whether applied in a proceeding at law or in equity).

8.03 No Violations. (a) The execution, delivery or performance of this Agreement by Purchaser does not and will not, after the giving of notice, or the lapse of time, or otherwise: conflict with, result in a breach of, or constitute a default under, (i) the Certificate of Incorporation or By-laws of Purchaser, (ii) any applicable Law, or (iii) any material contract, agreement, commitment or plan to which Purchaser is a party.

(b) The execution and delivery by Purchaser and its Affiliates of this Agreement does not, and the performance by Purchaser and its Affiliates of its obligations hereunder will not, require Purchaser to obtain any consent, approval, authorization or other action of, or make any filing with or give any notice to, any Governmental Authority, except (a) as disclosed in Schedule 8.03, (b) pursuant to the applicable requirements of the HSR Act, (c) where failure to obtain such consents, approvals, authorizations or actions, make such filings or give such notices would not impair Purchaser's ability to perform its obligations hereunder in any material respect and (d) as may be necessary as a result of any facts or circumstances relating solely to Seller.

8.04 Brokers. Neither this Agreement nor the purchase of the Purchased Assets or any other transaction contemplated by this Agreement was induced or procured through any Person, acting on behalf of, or representing, Purchaser or any of its Affiliates as broker, finder, investment banker, financial advisor or in any similar capacity.

8.05 Litigation. There are no actions, claims or proceedings pending against Purchaser or any of its assets or properties at law or in equity, before or by any Governmental Authority, or by any other Person, which, individually or in the aggregate, could reasonably be

expected to have a material adverse effect on Purchaser's ability to consummate the transactions contemplated hereby.

ARTICLE IX

Conditions to Closing Applicable to Purchaser

The obligations of Purchaser hereunder (including the obligation of Purchaser to close the transactions herein contemplated) are subject to the following conditions precedent:

9.01 No Termination. Neither Purchaser nor Seller shall have terminated this Agreement pursuant to Section 11.01 hereof.

9.02 Bring-Down of Seller Representations and Warranties. The representations and warranties made by Seller to Purchaser are true and correct in all material respects on the date hereof and shall be true and correct in all material respects on and as of the Closing Date (except for representations and warranties that are made as of a specific date, which are made only as of such date) with the same effect as if such warranties and representations had been made on and as of the Closing Date (except that any representations or warranties containing a materiality standard and the Seller Fundamental Representations are, and shall be, true and correct in all respects) and Seller shall have performed and complied with all agreements, covenants and conditions on its part required to be performed or complied on or prior to the Closing Date.

9.03 No Material Adverse Effect. Between the date hereof and the Effective Time, there shall have been no Material Adverse Effect.

9.04 Pending Actions. No investigation, action, suit or proceeding by any Governmental Authority and no action, suit or proceeding by any other Person, shall be pending on the Closing Date which challenges this Agreement and seeks to modify, prohibit or enjoin the consummation of the transactions contemplated hereby.

9.05 Consents and Approvals. All Seller Governmental Approvals and Purchaser Governmental Approvals and other consents, approvals or authorizations of other Persons set forth in Schedule 9.05 shall have been obtained; *provided, however*, that if Purchaser's breach of its obligations hereunder caused the failure to obtain any such consent, approval, or authorization Purchaser shall be deemed to have waived this condition to the extent of such failure.

9.06 HSR Act. The waiting period applicable to the consummation of the transactions contemplated hereunder required pursuant to the provisions of the HSR Act shall have expired.

9.07 Approval of the Board. Purchaser's Board shall have approved this Agreement and the consummation of the transactions contemplated hereby, which approval may be given or denied in the Board's sole and absolute discretion.

9.08 All Necessary Documents. All proceedings to be taken in connection with the consummation of the transactions contemplated by this Agreement and all documents incident thereto, shall be reasonably satisfactory in form and substance to Purchaser and its counsel, and Purchaser shall have received copies of such documents as Purchaser and its counsel may reasonably request in connection with said transactions, including those documents to be delivered pursuant to Section 3.02 hereof.

9.09 Title Policy. At the Closing, Seller shall have delivered to Purchaser the Title Policy dated as of the date of the recording of the Deed, issued by the Title Company insuring the fee simple or other applicable estate of Purchaser in the amount of the Purchase Price, subject only to the Permitted Real Estate Exceptions.

9.10 Estoppel Certificates. Seller shall have delivered to Purchaser an estoppel certificate executed by the lessor with respect to each Property that is not a Real Property certifying that the lease with respect to such Property is in full force and effect, that the lessee thereunder is not in default under such lease, and such other statements as Purchaser may reasonably request.

Purchaser shall have the right to waive any of the foregoing conditions precedent, except for the condition set forth in Section 9.06 hereof.

ARTICLE X

Conditions to Closing Applicable to Seller

The obligations of Seller hereunder (including the obligation of Seller to close the transactions herein contemplated) are subject to the following conditions precedent:

10.01 No Termination. Neither Purchaser nor Seller shall have terminated this Agreement pursuant to Section 11.01 hereof.

10.02 Bring-Down of Purchaser Representations and Warranties. The representations and warranties made by Purchaser to Seller are true and correct in all material respects on the date hereof and shall be true and correct in all material respects on and as of the Closing Date (except for representations and warranties that are made as of a specific date, which are made only as of such date) with the same effect as if such warranties and representations had been made on and as of the Closing Date (except that any representations or warranties containing a materiality standard and the Purchaser Fundamental Representations are, and shall be, true and

correct in all respects) and Purchaser shall have performed and complied with all agreements, covenants and conditions on its part required to be performed or complied on or prior to the Closing Date.

10.03 Pending Actions. No investigation, action, suit or proceeding by any Governmental Authority and no action, suit or proceeding by any other Person shall be pending on the Closing Date which challenges this Agreement and seeks to modify, prohibit or enjoin the consummation of the transactions contemplated hereby.

10.04 Consents and Approvals. All Seller Governmental Approvals and Purchaser Governmental Approvals and other consents, approvals or authorizations of other Persons set forth in Schedule 10.04 shall have been obtained; provided, however, that if Seller's breach of its obligations hereunder caused the failure to obtain any such consent, approval, or authorization Seller shall be deemed to have waived this condition to the extent of such failure.

10.05 HSR Act. The waiting period applicable to the consummation of the transactions contemplated hereunder required pursuant to the HSR Act shall have expired.

10.06 All Necessary Documents. All proceedings to be taken in connection with the consummation of the transactions contemplated by this Agreement, and all documents incident thereto, shall be reasonably satisfactory in form and substance to Seller and its counsel, and Seller and its counsel shall have received copies of such documents as it and its counsel may reasonably request in connection with said transactions, including those documents to be delivered pursuant to Section 3.03 hereof.

Seller shall have the right to waive in writing any of the foregoing conditions precedent, except for the condition set forth in Section 10.05 hereof.

ARTICLE XI

Termination

11.01 Termination. This Agreement may be terminated at any time prior to the Closing as follows, and in no other manner:

- (a) by mutual written consent of Purchaser and Seller;
- (b) by Purchaser or by Seller, if at or before the Closing any condition set forth herein for the benefit of Purchaser or Seller, respectively, shall not have been timely met in all material respects or cannot be timely met in all material respects; provided, the Party seeking to terminate is not in material breach of, or material default under, this Agreement;

(c) by Purchaser or by Seller if the Closing of the transactions contemplated by this Agreement shall not have occurred on or before [____, ____], or such later date as may have been agreed upon in writing by the Parties hereto; provided, the Party seeking to terminate is not in material breach of, or material default under, this Agreement;

(d) by Purchaser as provided in Section 6.01(c) or if Purchaser does not receive its Board approval by [____, ____];

(e) by Purchaser, as determined in its sole and absolute discretion, if any of the conditions or limitations set forth in Section 4.05 are imposed by FERC in response to, respectively, the FERC Regulatory Filing; or

(f) by Purchaser or by Seller if any representation or warranty made herein for the benefit of Purchaser or Seller, respectively, or in any certificate, schedule or documents furnished to Purchaser or Seller, respectively, pursuant to this Agreement is untrue in any material respect (except that, in each such case, representations and warranties containing a materiality standard and the Seller Fundamental Representations or the Purchaser Fundamental Representations, as the case may be, shall have been and be true and correct in all respects), or Seller or Purchaser, respectively, shall have defaulted in the performance of any material obligation under this Agreement.

11.02 Effect of Termination. If a Party terminates this Agreement in accordance with Section 11.01(a), (c), (d) or (e), such termination will be without liability to such party or to any Affiliate, member, shareholder, partner, director, manager, officer, employee, agent, consultant, attorney, or other representative of such party. Upon a termination of this Agreement, the obligations of the parties hereunder shall be of no further force or effect, provided that:

(a) the obligations of the parties under Article XII, Article XIII, 15.01, 15.02 and 15.13 and under shall survive such termination; and

(b) such termination shall be without prejudice to the rights of the parties to any payments due under this Agreement existing at the time of termination; any remedies which either Party may then have hereunder or at law; and either Party's right to obtain performance of any obligations provided for in this Agreement which survive termination.

ARTICLE XII

Indemnification

12.01 Seller Indemnification. Seller agrees to indemnify, defend and hold Purchaser and its successors and permitted assigns, harmless against any loss, damage or

expense (including reasonable attorneys' fees), which arises out of or is in respect of (a) any inaccuracy or misrepresentation in or breach of any of the warranties and representations, made by Seller in this Agreement, or any other certificate, document, instrument or affidavit furnished by Seller in accordance with the provisions of this Agreement, (b) any breach of any covenant or agreement made by Seller in this Agreement, (c) any and all Non-Assumed Liabilities, (d) any tax matters under Section 5.08, and (e) fraud or intentional misconduct on the part of Seller or any of its Affiliates in connection with this Agreement or the transactions contemplated hereby.

12.02 Purchaser Indemnification. Purchaser agrees to indemnify, defend and hold Seller harmless against any loss, damage or expense (including reasonable attorneys' fees), which arises out of or is in respect of (a) any inaccuracy or misrepresentation in or breach of any of the warranties, representations, covenants or agreements made by Purchaser in this Agreement or in any certificate, document, instrument or affidavit furnished by Purchaser in accordance with the provisions of this Agreement, (b) any and all Assumed Liabilities, and (c) fraud or intentional misconduct on the part of Purchaser or any of its Affiliates in connection with this Agreement or the transactions contemplated hereby.

12.03 Limitation. The parties' rights to indemnification pursuant to Article XII of this Agreement is subject to the following limitations:

(a) The Indemnified Party shall not be entitled to assert any right of indemnification pursuant to this Article XII for any loss, damage or expense suffered by such Party after the third (3rd) anniversary date of the Closing Date, except (i) that indemnification claims arising from a breach in the Seller Fundamental Representations or the Purchaser Fundamental Representations, Section 7.14 or 7.16 may be asserted at any time before six (6) months after the expiration of the statute of limitations applicable to the underlying claim, charge, or cause of action, (ii) that indemnification claims arising from Sections 7.04, 7.12, 7.15, or 7.17 may be asserted at any time before the fifth (5th) anniversary of the Closing Date; (vi) that indemnification claims (A) arising from Sections 7.08, (B) for breach of Seller's obligations with respect to Non-Assumed Liabilities, (C) for breach of Purchaser's obligations with respect to Assumed Liabilities or (D) for fraud or intentional misconduct shall not be limited by this Agreement; and (iv) that if notice of any claim shall have been given before the end of the applicable period under this paragraph (a), the Indemnified Party shall continue to have the right to be indemnified with respect to such claim. The covenants and agreements of the Parties to be performed or complied with prior to the Closing shall not survive the Closing and those covenants and agreements of the Parties that by their terms are to be performed or complied with after the Closing shall survive for a period of thirty (30) days after their expiration in accordance with their terms, except in the case of covenants and agreements relating to Taxes or have no term, which covenants shall survive indefinitely.

(b) No indemnification claim (other than a claim for breach of Seller's obligations with respect to any covenants, Seller's Fundamental Representations, Non-Assumed Liabilities, fraud or intentional misconduct, or Taxes or Purchaser's obligations with respect to

covenants, Purchaser's Fundamental Representations, Assumed Liabilities or fraud or intentional misconduct) may be made against a Party for indemnification pursuant to this Article XII unless the aggregate of all indemnifiable losses, damages and expenses with respect to this Article XII shall exceed \$100,000 ("Threshold"), and then the Indemnifying Party shall only be required to pay or be liable for the excess over the Threshold. For purposes of applying this paragraph (b) in determining the losses, damages and expenses resulting from any breach of a representation or warranty that contains a materiality standard, such representation or warranty shall be read as if it did not contain such materiality standard.

(c) The Indemnifying Party's maximum liability to the other Party pursuant to this Agreement other than indemnification claims based on a breach of covenant, Seller's Fundamental Representations, Taxes, Non-Assumed Liabilities, Assumed Liabilities, fraud or intentional misconduct shall be thirty-five percent (35%) of the Purchase Price. The Indemnifying Party's maximum liability to the other Party pursuant to this Agreement based on a breach of the Seller's Fundamental Representations shall be one hundred percent (100%) of the Purchase Price.

(d) For the purposes of this Article XII, in computing such aggregate amounts of claims, the amount of each claim shall be deemed to be an amount net of any insurance proceeds and any indemnity, contribution or other similar payment recoverable by the Indemnified Party or any Affiliate from any third party with respect thereto.

(e) Each Party hereby acknowledges and agrees that its sole and exclusive remedy with respect to any and all claims relating to the subject matter of this Agreement and the Assumption Agreement shall be pursuant to the indemnification provisions set forth in this Article XII. In furtherance of the foregoing, each Party hereby waives, to the fullest extent permitted under applicable Law, any and all rights, claims and causes of action it may have against the other Party arising under or based upon any Law (including any such rights, claims or causes of action arising under or based upon common law or otherwise) or Environmental Laws, including the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation and Liability Act.

(f) Except as set forth in this Agreement or any other certificate, document, instrument or affidavit furnished by a Party in accordance with the provisions of this Agreement, such party is not making any representation, warranty, covenant or agreement with respect to the matters contained herein. Anything herein to the contrary notwithstanding, no breach of any representation, warranty, covenant or agreement contained herein or any other certificate, document, instrument or affidavit furnished by a party in accordance with the provisions of this Agreement shall give rise to any right on the part of the other Party, after the consummation of the purchase and sale of the Facility and the Purchased Assets contemplated hereby, to rescind this Agreement or any of the transactions contemplated hereby.

(g) Seller shall have no liability under any provision of this Agreement for any liabilities and damages to the extent that such liabilities and damages relate to actions taken or not taken by Purchaser or its Affiliates after the Closing Date. In no event shall either Party be liable to the other Party for consequential or punitive damages. Each Party shall take all reasonable steps to mitigate all such liabilities and damages upon and after becoming aware of any event which could reasonably be expected to give rise to such losses, damages and expenses.

12.04 Indemnification Notice. Promptly upon obtaining knowledge of any claim, event, facts or demand which gives rise to, or could reasonably be expected to give rise to, a claim for indemnification hereunder (including in the case of a claim pursuant to Section 12.01 or 12.02 any claim which is not payable due to the limitations set forth in Section 12.03(b) hereof), any Party seeking indemnification under this Article XII (an "Indemnified Party") shall give written notice of such claim or demand ("Notice of Claim") to the Party from which indemnification is sought (an "Indemnifying Party"), setting forth the amount of the claim. The Indemnified Party shall furnish to the Indemnifying Party, in reasonable detail, such information as it may have with respect to such indemnification claim (including copies of any summons, complaint or other pleading which may have been served on it and any written claim, demand, invoice, billing or other document evidencing or asserting the same). No failure or delay by the Indemnified Party in the performance of the foregoing shall reduce or otherwise affect the obligation of any Indemnifying Party to indemnify, defend and hold the Indemnified Party harmless, except to the extent that such failure or delay shall have adversely affected the Indemnifying Party's ability to defend against, settle or satisfy any loss, damage or expense for which the Indemnified Party is entitled to indemnification hereunder.

12.05 Indemnification Procedure. (a) If the claim or demand set forth in the Notice of Claim given by the Indemnified Party pursuant to Section 12.04 of this Agreement is a claim or demand asserted by a third party, the Indemnifying Party shall have fifteen (15) days after the Date of the Notice of Claim to notify the Indemnified Party in writing of its election to defend such third party claim or demand on behalf of the Indemnified Party. If the Indemnifying Party elects to defend such third party claim or demand, the Indemnified Party shall at the expense of the Indemnifying Party make available to the Indemnifying Party and its agents and representatives all records and other materials which are reasonably required in the defense of such third party claim or demand and shall otherwise cooperate with, and assist the Indemnifying Party in the defense of, such third party claim or demand, and so long as the Indemnifying Party is defending such third party claim or demand in good faith, the Indemnified Party shall not pay, settle or compromise such third party claim or demand. If the Indemnifying Party elects to defend such third party claim or demand, the Indemnified Party shall have the right to participate in the defense of such third party claim or demand, at its own expense. If the Indemnifying Party does not elect to defend such third party claim or demand, or does not defend such third party claim in good faith, the Indemnified Party shall have the right, in addition to any other right or remedy it may have hereunder, at the Indemnifying Party's expense, to defend such third party claim or demand; provided, however, that (i) the Indemnified Party shall not have any obligation to participate in the defense of, or defend, any such third party claim or demand; and (ii) the

Indemnified Party's defense of or its participation in the defense of any such third party claim or demand shall not in any way diminish or lessen the obligations of the Indemnifying Party under the agreements of indemnification set forth in this Article XII. Without the Indemnified Party's written consent, the Indemnifying Party shall not enter into any settlement of a third party claim unless (i) there is no finding or admission of any violation of legal requirements or any violation of the rights of any Person and no effect on any other claims that may be made against the Indemnified Party or its Affiliates; (ii) the settlement includes a complete and unconditional release of the Indemnified Party with respect to the third party claim; and (iii) the sole relief provided under the settlement is monetary damages that are paid in full by the Indemnifying Party.

(b) Except for third party claims being defended in good faith, the Indemnifying Party shall satisfy its obligations hereunder in cash within thirty (30) days after the Date of Notice of Claim.

(c) The term "Date of the Notice of Claim" as used in this Article XII shall mean the date the Notice of Claim is deemed delivered pursuant to Section 15.12 hereof.

12.06 Effect of Indemnity Payments. The parties agree to treat all payments made under the indemnity provisions of Article XII of this Agreement as adjustments to the Purchase Price for Tax purposes and that such agreed treatment shall govern for purposes hereof.

ARTICLE XIII

Confidentiality

13.01 Confidentiality of Materials. The Parties hereto agree with respect to all technical, commercial and other information that is furnished or disclosed by another Party, including information regarding such Party's (and its subsidiaries' and affiliates') organization, personnel, business activities, customers, policies, assets, finances, costs, sales, revenues, technology, rights, obligations, liabilities and strategies ("Information"), that (a) such Information is confidential and/or proprietary to the furnishing/disclosing Party and entitled to and shall receive treatment as such by the receiving Party; (b) the receiving Party will hold in confidence and not disclose nor use (except in respect of the transactions contemplated by this Agreement) any such Information, treating such Information with the same degree of care and confidentiality as it accords its own confidential and proprietary Information; provided, however, that the receiving Party shall not have any restrictive obligation with respect to any Information which (i) was prior to the date of its disclosure contained in a printed publication available to the general public, (ii) is or becomes publicly known through no wrongful act or omission of the receiving Party, or (iii) is known by the receiving Party without any proprietary restrictions by the furnishing/disclosing Party at the time of receipt of such Information; and (c) all such Information furnished to either Party by the other, unless otherwise specified in writing, shall remain the property of the furnishing/disclosing Party and, in the event this Agreement is

terminated, shall be returned to it, together with any and all copies made thereof, upon request for such return by it (except for documents submitted to a governmental agency with the consent of the furnishing/disclosing Party or upon subpoena and which cannot be retrieved with reasonable effort) and in the case of (i) oral information furnished to any Party by the other which shall have been reduced to writing by the receiving Party and (ii) all internal documents of any Party describing, analyzing or otherwise containing Information furnished by the other Party, all such writings and documents shall be destroyed, upon request, in the event this Agreement is terminated, and each Party shall confirm in writing to the other compliance with any such request. The recipient of confidential Information may disclose such confidential Information if required pursuant to a subpoena by a court of competent jurisdiction or by order of a governmental agency or other applicable Law, so long as the Party required to disclose the confidential Information provides the other Party prior notice (unless such notice is prohibited) of such requirement to permit such Party time to seek appropriate relief against such disclosure. Notwithstanding the foregoing, Seller's confidential Information that relates exclusively to the Purchased Assets or is included in the Purchased Assets shall, after closing, be treated as Purchaser's confidential Information to be protected as provided in this Section from use or disclosure by Seller. Notwithstanding anything in this Section 13.01 to the contrary, Purchaser may disclose any confidential Information (i) to the MPSC or its staff to the extent required in connection with any regulatory filing, (ii) to the Michigan Attorney General and any intervenor in any MPSC regulatory filing and (iii) to FERC to the extent required in connection with the FERC Regulatory Filing.

13.02 Remedy. Each Party hereto acknowledges that the remedy at law for any breach by either Party of its obligations under Section 13.01 of this Agreement is inadequate and that the other Party shall be entitled to equitable remedies, including an injunction, in the event of breach by any other Party.

ARTICLE XIV

Certain Other Understandings

14.01 Post Closing Access to Records and Records Retention. Purchaser agrees for a period extending five (5) years after the Closing Date not to destroy or otherwise dispose of any records relating to the period prior to its acquisition of the Purchased Assets. After such five (5) year period, Purchaser may destroy or otherwise dispose of such records if Purchaser shall offer in writing to surrender such records to Seller and Seller shall fail to agree in writing to take possession thereof during the thirty (30) day period after such offer is made.

14.02 Consents Not Obtained at Closing. Each of Seller and Purchaser agree to attempt diligently to obtain any necessary consents which may be required to effect the assignment to Purchaser of the contract obligations transferred under this Agreement and each Party will diligently cooperate with the other in obtaining the same, and will take such steps as

reasonably requested by such Party with respect thereto. In such cases where such consents have not been obtained by the Closing Date, this Agreement, to the extent permitted by Law and if so elected by Purchaser, shall constitute an equitable assignment by Seller to Purchaser of all of Seller's rights, benefits, title and interest in and to the assigned contracts and commitments, and Purchaser shall be deemed to be Seller's agent for the purpose of completing, fulfilling and discharging all of Seller's rights and liabilities arising after the Closing Date under such assigned contracts and commitments, and Seller shall take all necessary steps and actions to provide Purchaser with the benefits of such contracts and commitments.

14.03 [Avoidance of Double Withholding Taxes]. Purchaser and Seller hereby acknowledge that the standard procedure described in Section 4 of the Revenue Procedure 2004-53 as promulgated by the IRS with respect to wage reporting, and F.I.C.A. withholding and similar tax and other collections is applicable to Seller's employees who become employees of Purchaser or its Affiliates.]

14.04 Use/Removal of Trademarks, Etc. Purchaser acknowledges and agrees that it has and, upon consummation of the transactions contemplated hereby shall have, no right, title, interest, license, or any other right whatsoever to use the trade names and trademarks of Seller or its Affiliates, including references to "[_____]" and derivatives thereof, including all logos ("Seller Marks"). Purchaser shall promptly after the Closing Date but in no event later than ninety (90) days after the Closing Date, return or destroy all Purchased Assets that are not necessary to the operation or maintenance of the Facility that contain any Seller Marks that are not removable and remove or permanently cover any Seller Marks from the Purchased Assets that are removable. Purchaser will not conduct any business or offer any goods or services under any Seller Marks.

14.05 Notification of Certain Matters.

(a) Seller shall promptly notify Purchaser in writing of any changes or additions to any of the Disclosure Schedules of which it has Knowledge that may be necessary to correct any matter that would otherwise constitute a breach of any representation or warranty of Seller such that the closing condition in Section 9.02 cannot be satisfied ("Supplemental Disclosure Schedule").

(b) The Parties shall, prior to Closing, execute a side letter addressing each inaccuracy or breach identified pursuant to paragraph (a) above and the Parties agreed action in response to each respective breach (the "Section 14.05 Side Letter").

(c) No updates made pursuant to this Section 14.05 shall be deemed to cure any inaccuracy or breach of any representation or warranty made in this Agreement as of the date hereof or for purposes of Section 9.02 unless Purchaser (in its sole discretion) specifically agrees to this in writing in the Section 14.05 Side Letter, subject to the terms and conditions agreed therein.

ARTICLE XV

Miscellaneous

15.01 Cost and Expenses. Purchaser will pay its own costs and expenses (including attorneys' fees, accountants' fees and other professional fees and expenses) in connection with the negotiation, preparation, execution and delivery of this Agreement and the consummation of the purchase of the Purchased Assets and the other transactions contemplated by this Agreement (except as otherwise specifically provided for herein); and Seller will pay its own costs and expenses (including attorneys' fees, accountants' fees and other professional fees and expenses) in connection with the negotiation, preparation, execution and delivery of this Agreement and the consummation of the sale of the Purchased Assets and the other transactions contemplated by this Agreement (except as otherwise specifically provided for herein).

15.02 Entire Agreement. The Disclosure Schedules and the Exhibits referenced in this Agreement are incorporated into this Agreement and together contain the entire agreement between the parties hereto with respect to the transactions contemplated hereunder, and supersede all negotiations, representations, warranties, commitments, offers, contracts and writings prior to the date hereof. No waiver and no modification or amendment of any provision of this Agreement shall be effective unless specifically made in writing and duly signed by the Party to be bound thereby.

15.03 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which, together, shall constitute one and the same instrument.

15.04 Assignment, Successors and Assigns. The respective rights and obligations of the parties hereto shall not be assignable without the prior written consent of the other parties; *provided, however*, that Purchaser may assign all or part of its rights under this Agreement and delegate all or part of its obligations under this Agreement to one or more of its Affiliates, in which event all the rights and powers of Purchaser and remedies available to it under this Agreement shall extend to and be enforceable by each such Affiliate. Any such assignment and delegation shall not release Purchaser from its obligations under this Agreement, and further Purchaser guarantees to Seller the performance by each such Affiliate of its obligations under this Agreement. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their successors and permitted assigns.

15.05 Savings Clause. If any provision hereof shall be held invalid or unenforceable by any court of competent jurisdiction or as a result of future legislative action, such holding or action shall be strictly construed and shall not affect the validity or effect of any other provision hereof.

15.06 Headings. The captions of the various Articles and Sections of this Agreement have been inserted only for convenience of reference and shall not be deemed to modify, explain, enlarge or restrict any of the provisions of this Agreement.

15.07 Risk of Loss. Risk of loss, damage or destruction to the Purchased Assets shall be upon Seller until the Closing, and shall thereafter be upon Purchaser.

15.08 Governing Law. The validity, interpretation and effect of this Agreement shall be governed exclusively by the laws of the State of Michigan.

15.09 Press Releases. Pending Closing, all notices to third parties and all other publicity relating to the transactions contemplated by this Agreement shall be jointly planned, coordinated, and agreed to by Purchaser and Seller, except to the extent disclosures are required by Law or any listing agreement with the NYSE; *provided, however*, that Seller on the one hand and Purchaser on the other hand may confirm information previously made public in compliance with this Agreement.

15.10 U.S. Dollars. All amounts expressed in this Agreement and all payments required by this Agreement are in United States dollars.

15.11 Survival. All representations and warranties made by any Party in this Agreement shall be deemed made for the purpose of inducing the other Party to enter into this Agreement and shall survive the Closing, subject to Section 12.03 hereof.

15.12 Notices. (a) All notices, requests, demand and other communications under this Agreement shall be in writing and delivered in person, or sent by facsimile or sent by certified mail, postage prepaid, and properly addressed as follows:

To Seller:

[COMPANY NAME]

[ADDRESS]

Fax:

Attention:

With Copy To:

[COMPANY NAME]

[ADDRESS]

Fax:

Attention:

To Purchaser:

DTE Electric Company
One Energy Plaza, 688WCB
Detroit, Michigan 48226
Fax: 313-235-8500
Attention: General Counsel

With Copy To:

[COMPANY NAME]
[ADDRESS]
Fax:
Attention:

(b) Any Party may from time to time change its address for the purpose of notices to that Party by a similar notice specifying a new address, but no such change shall be deemed to have been given until it is actually received by the Party sought to be charged with its contents.

(c) All notices and other communications required or permitted under this Agreement which are addressed as provided in this Section 15.12 if delivered personally or air courier, shall be effective upon delivery; if sent by facsimile, shall be delivered upon receipt of proof of transmission and if delivered by mail, shall be effective upon deposit in the United States mail, postage prepaid.

15.13 No Third Party Beneficiaries. This Agreement is solely for the benefit of Seller and its successors and permitted assigns with respect to the obligations of Purchaser under this Agreement, and for the benefit of Purchaser and its successors and permitted assigns with respect to the obligations of Seller under this Agreement. This Agreement shall not be deemed to confer upon or give to any other third party any remedy, claim, liability, reimbursement, cause of action or other right.

15.14 Venue and Consent to Jurisdiction. Each of the Parties hereby irrevocably consents and agrees that any legal action or proceedings with respect to this Agreement shall be brought in the courts of the United States of America for the Eastern District of Michigan having subject matter jurisdiction and, by execution and delivery of this Agreement and such other documents executed in connection herewith, each Party hereby (a) accepts the non-exclusive jurisdiction of the aforesaid courts, (b) irrevocably agrees to be bound by any final judgment (after any and all appeals) of any such court with respect to such documents, (c) irrevocably waives, to the fullest extent permitted by Law, any objection which it may now or hereafter have to the laying of venue of any Action or Proceeding with respect to such documents brought in any such court, and further irrevocably waives, to the fullest extent permitted by law, any claim

that any such Action or Proceeding brought in any such court has been brought in any inconvenient forum, (d) agrees that service of process in any such Action or Proceeding may be effected by mailing a copy thereof by registered or certified mail (or any substantially similar form of mail), postage prepaid, to such Party at its address in Section 15.12, or at such other address of which the other Parties shall have been notified and (e) agrees that nothing herein shall affect the right to effect service of process in any other manner permitted by Law or limit the right to bring any Action or Proceeding in any other jurisdiction.

15.15 WAIVER OF A JURY TRIAL. EACH OF THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE THE RIGHT ANY OF THEM MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION BASED HEREON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT AND THE ASSIGNMENT AND ASSUMPTION AGREEMENT CONTEMPLATED TO BE EXECUTED IN CONJUNCTION HERewith, OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. THIS PROVISION IS A MATERIAL INDUCEMENT FOR THE PARTIES ENTERING INTO THIS AGREEMENT.

15.16 No Presumption Against Drafter. Each of the parties hereto has jointly participated in the negotiation and drafting of this Agreement. In the event of an ambiguity or a question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by each of the parties hereto and no presumptions or burdens of proof shall arise favoring any party by virtue of the authorship of any of the provisions of this Agreement.

15.17 Parent Guaranty. The obligations of Seller under this Agreement and the documents to be executed and delivered by Seller at Closing is guaranteed by [_____] under the Parent Guaranty.

IN WITNESS WHEREOF, the parties hereto have executed this Asset Purchase Agreement the day and year first above written.

DTE ELECTRIC COMPANY

By: _____
Title: _____

[_____]

By: _____
Title: _____

EXHIBIT A
Parent Guaranty

EXHIBIT B
Facility Site Diagram

EXHIBIT C
Assumption Agreement

EXHIBIT D
Endorsement List

1. ALTA 3.1-06 (Zoning)
2. ALTA 8.2-06 (EPL)
3. ALTA 9.2-06 (Comprehensive)
4. ALTA 9.9-06 (Private Rights)
5. ALTA 13 (Leasehold) (if applicable)
6. ALTA 17-06 (Access)
7. ALTA 17.2-06 (Utility)
8. ALTA 18-06 (Single Tax Parcel) or ALTA 18.01-06 (Multi Tax Parcel), as applicable
9. ALTA 19-06 (Multi Contiguity) or ALTA 19.1-06 (Single Contiguity), as applicable
10. ALTA 22.1-06 (Location and Map)
11. ALTA 25-06 (Survey)
12. ALTA 26-06 (Subdivision) (if applicable)
13. ALTA 28-06 (Easement – Enforced Removal) (as to all Permitted Real Estate Exceptions)
14. ALTA 28.1-06 (Encroachments) (as to all Permitted Real Estate Exceptions)
15. ALTA 31-06 (Severable Improvements)
16. ALTA 35-06 (Minerals - Buildings)
17. ALTA 35.1 (Minerals – Improvements)
19. ALTA 36-06 Energy Project
20. Arbitration Endorsement

Exhibits and Schedules

Exhibit

Description

A	Parent Guaranty
B	Facility Site Diagram
C	Assumption Agreement
D	Endorsement List

Schedule

Description

I	Excluded Inventory
IA	Spare Parts
II	Real Property
III	Real Property Leases
IV	Proprietary Items
V	Other Retained Assets
2.05	Allocation of Purchase Price
5.02	Pending Closing
6.01	Title Policy and Survey
7.03	Seller Governmental Approvals
7.04	Brokers
7.06(a)(i)	Purchased Contracts
7.06(a)(ii)	Retained Contracts
7.06(b)(i)	Purchased Contracts not in Effect
7.06(b)(ii)	Approvals and Consents related to Purchased Contracts
7.07	Insurance
7.09	Title to Purchased Assets
7.10	Intellectual Property
7.11	Litigation
7.12	Compliance with Laws
7.14	Taxes
7.15	Licenses and Permits
7.16(a)	Environmental Compliance
7.16(c)	Material Permits
7.18	Properties
8.03	Purchaser Governmental Approvals
9.05	Other Consents as Conditions Precedent to Purchaser Obligations
10.04	Other Consents as Conditions Precedent to Seller Obligations

E

KEY COMMERCIAL TERM SHEET

POWER PURCHASE AGREEMENT

The terms set forth in this summary of principal commercial terms ("Term Sheet") will establish the basis for DTE's evaluation of the bid and potential negotiation and execution of a definitive agreement between the Buyer and any Seller (the "Definitive Agreement") and does not create and is not intended to create a binding and enforceable contract between the Parties with respect to the terms described herein and any potential transaction (collectively the "Transaction").

1	Seller:	[_____]
2	Buyer:	DTE Electric Company
3	Generating Facility:	<p><i>(Provide a detailed description of the facility. Facility must be a natural gas-fired electric generation facility with a [planned] unforced capacity rating (UCAP), as defined by MISO, of between 225 and 1,200 MW located within MISO Zone 7).</i></p> <p>[_____].</p>
4	Fuel Supply Details:	<p><i>(Submit a detailed fuel supply plan that fully details how fuel is purchased and transported to the facility as well as any existing or known potential operational restrictions or impediments on such fuel supply. Also provide a description of the existing natural gas infrastructure serving the generating unit.</i></p> <p><i>Note that Seller shall be solely responsible for maintaining reliable fuel supply that is delivered to the generating unit[s] to ensure reliable delivery of firm Capacity and Energy (collectively "Product") to Buyer throughout the Delivery Term. The Generating Facility must have firm natural gas supply agreement(s) capable of meeting 100% of its maximum daily consumption requirements. Such firm natural gas supply agreement(s) should provide all services required to cause Products to be delivered to Buyer on a firm basis during the Delivery Term.)</i></p> <p>[_____].</p>

5	Delivery Term:	<p><i>(Indicate the period during which Seller is obligated to provide Products to Buyer).</i></p> <p>The Delivery Term shall commence on June 1 of any given year between 2018 and 2022 and continue for a term of up to seven (7) years)</p> <p>[_____].</p>
6	Pricing:	<p><i>(Provide a detailed description of the pricing associated with the generation and delivery of firm capacity and energy to be delivered to DTE, including any and all pricing related to energy, capacity, start-up charges, and other items.</i></p> <p><i>Capacity pricing shall be listed in \$/MW-yr form. Bidder shall indicate whether the capacity price is fixed over the life of the Delivery Term or if an escalation rate applies.</i></p> <p><i>Energy pricing shall be listed in \$/MWH form. Bidder shall indicate whether the energy price is fixed over the life of the Delivery Term or if an escalation rate applies. Alternatively, the bidder may submit energy pricing in the form of a variable O&M rate plus fuel charge format. Energy pricing shall be inclusive of all costs and fees necessary to deliver energy to DTE at the Delivery Point.)</i></p> <p>[_____].</p>
7	Delivery Point:	<p><i>(Provide the interconnection point within MISO Local Resource Zone 7.)</i></p> <p>[_____].</p>
8	Commercial Operation:	<p><i>(Provide the Commercial Operation Date of the generating facility. Commercial Operation shall mean, with respect to the Generating Facility, that date designated by Seller and confirmed by Buyer on which the Generating Facility has been placed in commercial operation. The Commercial Operation Date may be extended for delays caused by Buyer or force majeure events. In the event Seller fails to achieve Commercial Operation on or before the agreed upon Commercial Operation Date, Seller shall be required to pay to Buyer liquidated damages for each day of delay beyond the Commercial Operation Date)</i></p> <p>[_____].</p>

9	Guaranteed Availability/Reliability:	<p><i>(Provide DTE with the guaranteed level of availability/reliability within this proposal:</i></p> <p>Seller will guarantee that the Generating Facility's Forced Outage Rate (as defined by GADS) will not be greater than [_____] on an annual basis.</p> <p>The "Monthly Availability Requirement" will be [_____] for each Summer Month of the Delivery Term (June through August) and [_____] for each Winter Month of the Delivery Term (December through February) and [_____] for each other month of the Delivery Term.</p> <p>The "Monthly Availability" will be calculated for each month as follows:</p> <p>[_____].</p>
10	Expected Initial Delivery Date and Project Milestones:	<p><i>(Provide a detailed project milestone schedule, which includes all applicable permit application filing dates, interconnection application filing dates, major equipment purchases, construction schedule, and fuel agreement.)</i></p> <p>Seller shall establish the projected Initial Delivery Date ("Expected Initial Delivery Date") consistent with the project milestones schedule.</p> <p>If Seller falls behind in its schedule by more than a negotiated amount of days, such event will be deemed an Event of Default.)</p> <p>[_____].</p>
11	Maintenance Outages:	<p>Seller will be responsible for all operation and maintenance of the Generating Facility and will bear all costs related thereto.</p> <p>Seller shall provide a schedule of its expected annual planned partial or full maintenance outages ("Planned Maintenance") for the next calendar year by [_____] of each year of the Delivery Term; and shall update such schedule for each calendar quarter no later than [_____] days before the commencement of such quarter.</p> <p>Seller shall furnish Buyer with as much advance notice as practicable of any proposed or necessary maintenance outages, taking into account the reasonable requirements of Seller and the reasonable requests of Buyer. Seller shall</p>

		promptly provide written notice to Buyer, to the extent information is available, of the reason, timing, expected duration and the impact upon the energy output of any forced outage. Seller shall also provide to Buyer, in a form reasonably acceptable to Buyer, a monthly report of forced outages.												
12	Scheduling Rights:	<p>Buyer shall have day-ahead, hour-ahead and real-time scheduling rights, within the defined operational limitations of the Generating Facility.</p> <p>Buyer shall have the right to schedule deliveries of Energy and Ancillary Services (e.g., reactive power, regulation, spinning, supplemental) from the Generating Facility throughout the Delivery Term. Notwithstanding the foregoing sentence, depending on the Expected Initial Delivery Date and then-applicable standard scheduling protocols, Buyer will have the right, in accordance with then-applicable standard scheduling protocols, to schedule the Generating Facility in advance of the Initial Delivery Date as necessary to commence deliveries of Energy and Ancillary Services on the Initial Delivery Date.</p>												
13	Credit Support and Security:	<p>Seller, or a guarantor acceptable to DTE in its sole discretion, shall have a minimum credit rating of “BBB-” if rated by S&P, or “Baa3” if rated by Moody’s.</p> <p>Seller shall provide Development Security and Operating Security amounts in accordance with the table below:</p> <p>For New Units:</p> <table border="1"> <thead> <tr> <th>Milestone</th><th>Security Amount*</th><th>Security Type</th></tr> </thead> <tbody> <tr> <td>Execution of Power Purchase Agreement</td><td>\$20,000/MW</td><td>Development Security</td></tr> <tr> <td>Regulatory Approval</td><td>\$75,000/MW</td><td>Development Security</td></tr> <tr> <td>Commercial Operation</td><td>\$200,000/MW</td><td>Operating Security</td></tr> </tbody> </table> <p><i>*Note: Upon Regulatory Approval, the Development Security amount shall total \$95,000/MW. Upon Commercial Operation, the Development Security requirement ends and the Operating Security shall be \$200,000/MW.</i></p>	Milestone	Security Amount*	Security Type	Execution of Power Purchase Agreement	\$20,000/MW	Development Security	Regulatory Approval	\$75,000/MW	Development Security	Commercial Operation	\$200,000/MW	Operating Security
Milestone	Security Amount*	Security Type												
Execution of Power Purchase Agreement	\$20,000/MW	Development Security												
Regulatory Approval	\$75,000/MW	Development Security												
Commercial Operation	\$200,000/MW	Operating Security												

		<p>For Existing Units:</p> <table border="1" data-bbox="652 262 1409 531"> <thead> <tr> <th>Milestone</th><th>Security Amount*</th><th>Security Type</th></tr> </thead> <tbody> <tr> <td>Execution of Power Purchase Agreement</td><td>\$20,000/MW</td><td>Development Security</td></tr> <tr> <td>Regulatory Approval</td><td>\$200,000/MW</td><td>Operating Security</td></tr> </tbody> </table> <p><i>*Note: Upon receipt of Regulatory Approval, the Development Security requirement ends and the Operating Security shall be \$200,000/MW.</i></p> <p>Development Security secures the Seller's obligation to negotiate a Power Purchase Agreement in good faith, the Seller's obligations to satisfy certain project milestones (if applicable), and damages incurred by Buyer related to an early termination event.</p> <p>Operating Security secures the Seller's performance obligations, such as meeting stated levels of availability, reliability, capacity, and heat rate through the Delivery Term and damages incurred by Buyer related to an early termination event.</p> <p>Development Security and Operating Security shall be provided via a letter of credit issued by a Qualified Financial Institution acceptable to Buyer in its sole discretion. "Qualified Financial Institution" means a commercial bank or trust company organized under the laws of the United States or a political subdivision thereof or foreign bank with a U.S. branch office, with (a) a Credit Rating of at least (i) "A-" by S&P and "A3" by Moody's, if such entity is rated by both S&P and Moody's or (ii) "A-" by S&P or "A3" by Moody's, if such entity is rated by either S&P and Moody's, but not both, and (b) having a capital and surplus of at least \$1,000,000,000</p>	Milestone	Security Amount*	Security Type	Execution of Power Purchase Agreement	\$20,000/MW	Development Security	Regulatory Approval	\$200,000/MW	Operating Security
Milestone	Security Amount*	Security Type									
Execution of Power Purchase Agreement	\$20,000/MW	Development Security									
Regulatory Approval	\$200,000/MW	Operating Security									
14	Exclusivity:	<p>Seller may not enter into any agreement or arrangement under which Product attributable to Buyer's entitlement relating to the Generating Facility may be claimed by any person other than Buyer.</p>									

15	Confidentiality:	<p>Neither Party shall disclose the terms or conditions of this Term Sheet to a third party (other than either Party's employees, lenders, counsel, accountants, advisors or ratings agencies) except in order to comply with any applicable law, regulation, or any exchange, control area or independent system operator rule or in connection with any court or regulatory proceeding or request applicable to such Party, or as Buyer deems necessary in order to demonstrate the reasonableness of its actions to duly authorized governmental or regulatory agencies.</p> <p>The confidentiality obligation hereunder shall not apply to any information that was or hereafter becomes available to the public other than as a result of a disclosure in violation of this provision.</p>
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Appendix F - DTE Electric Company Request for Proposals
Acquisition of Natural Gas Combined Cycle / Simple Cycle Generating Facilities
and
Power Purchase Agreements

Certify that the Proposal meets the following conditions by checking the boxes below:

- ☐ The generating asset uses combined cycle or simple cycle natural gas-fueled technology. (Section 2.2)
- ☐ If bidding an acquisition, the Unit is in service and commercially operational or will be as of February 2022. (Section 2.2)
- ☐ If bidding a PPA, the term is 7 years or less, and begins on June 1 of any given year between 2018 and 2022. (Section 2.2)
- ☐ The asset's Unforced Capacity ("UCAP", as defined by MISO) is between 250 and 1,200 MW. (Section 2.2)
- ☐ The asset is physically located within MISO Local Resource Zone ("LRZ") 7 as defined by MISO. (Section 2.2)
- ☐ The generating assets have all relevant environmental and other permits necessary for its operation and maintenance. (Sections 2.2, 5.12)
- ☐ The Respondent has not divulged, discussed or compared any commercial terms of its Proposal with other Respondents, including prospective Respondents, and have not colluded whatsoever with any other party believed to be a Respondent or a prospective Respondent. (Section 3.1)

Content Requirements for All Proposals

Please use the following checklist to confirm that your Proposal includes all of the content requirements as outlined in Section 5 of the RFP. Please indicate to the RFP Manager the page numbers of your Proposal that are intended to be responsive to each request and include a completed copy of this checklist with your Proposal.

Please leave the response box unchecked for any requested data items that are unavailable or intentionally omitted by the Respondent.

5.1 Respondent's Information

- ☐ Information on the Respondent's corporate structure (including identification of any parent companies),
- ☐ A copy of the Respondent's most recent quarterly report containing unaudited consolidated financial statements that is signed and verified by an authorized officer of Respondent attesting to its accuracy,
- ☐ A copy of Respondent's most recent annual report containing audited consolidated financial statements.

Page number(s):

5.2 Executive Summary

- ☐ An executive summary of the Proposal's characteristics including any unique aspects and benefits.

Page number(s):

5.3 Name and Location

- ☐ The name of the generating facility,
- ☐ The county where the generating facility is located,
- ☐ The owner of the facility,
- ☐ The commercial pricing node associated with the facility, if applicable

Page number(s):

5.4 Net Capability of Generating Facility

- ☐ State the nameplate capacity,
- ☐ Net summer operating capacity,
- ☐ Net winter operating capacity and the unforced capacity (UCAP) of the facility for the 2017/2018 MISO planning year,
- ☐ A list of the UCAP awarded to the facility, for the MISO Planning Years requested.
- ☐ Any known de-rates affecting the facility.

Page number(s):

5.6 Generation Technology

- ☐ Description of the generation technology of the facility, including the make of the equipment, model and name of supplier.

Page number(s):

5.7 Heat Rate and Emission Rates

- ☐ The current operating heat rate curve (e.g., the coefficients of a fifth-order equation), the no-load heat rate and full load heat rate of the facility.
- ☐ A summary of any environmental control equipment installed at the facility and the emission rates for NOx, SO2, CO2, VOC, PM and CO in units of lb/mmBTU.

Page number(s):

5.8 Dispatch Characteristics

- ☐ Description of the dispatch characteristics of the facility, including, but not limited to, minimum load level, ramp rates (up and down), number of gas turbines that can be started simultaneously (if applicable), fuel consumption during startup, capability decreases as a result of ambient temperature increases, supplemental firing capability and any operating limitations caused by such factors as design, material condition of the facility, and various permit restrictions,
- ☐ A description of the root causes regarding any major operational limitations (e.g., OEM design, material condition of the facility, environmental permits, etc.).

Page number(s):

5.9 Fuel Supply

- ☐ A description, including detailed cost information, of all natural gas pipeline service agreements and natural gas supply purchase agreements providing service to the facilities,
- ☐ Whether or not there are any provisions or other considerations that would prohibit the assignment and/ or affect the performance obligations of either party under the respective contract,
- ☐ How fuel is purchased and transported to the facility as well as any existing or known potential operational restrictions or impediments on such fuel supply,
- ☐ A description of the existing natural gas infrastructure serving the generating unit.

Page number(s):

5.10 Water Supply

- ☐ A description of the water supply, including but not limited to, contract term, water usage and cost of water for the facility,
- ☐ Status of the facility's National Pollutant Discharge Elimination System permits (NPDES) including, but not limited to, permit conditions, permit violations reported over the last five years, the timing of next permit renewal, and any other known concerns.

Page number(s):

5.11 Other Contractual Commitments

- ☐ A description, including detailed cost information, of any other contracts that are currently necessary for facility operations, including, but not limited to, long-term service agreements, state union labor contracts and/or technical support contracts, agreements related to capacity and/or energy sales from the facility and any capacity offers submitted to any ISO/RTO related to the facility that if accepted would be binding on DTE as a result of an acquisition,
- ☐ Whether or not there are any provisions that would prohibit the assignment and/or affect the performance obligations of either party under the respective contract.

Page number(s):

5.12 Permits

- ☐ A description of all permits currently in place for the operation and maintenance of the facility (e.g. Spill Prevention Containment and Control plans, Title IV and Title V permits of the Clean Air Act, Cap and Trade Permits, NPDES permits, Water Withdrawal, Pollution Incident Prevention Plan),
- ☐ Whether or not there are any provisions that would prohibit the assignment of such permits and/or any consents required for the assignment of the permit,
- ☐ A description of any identified environmental liabilities (e.g., potential site remediation requirements, pending future regulatory requirements, etc.) for the facility.

Page number(s):

5.13 Asset(s) Specific Financial Information

- ☐ Audited or unaudited Financial Statements including Balance Sheets, Income Statements and Cash Flow Statements for the proposed asset(s),
- ☐ Indicate book value of the asset(s) in the financial information submitted.

Page number(s):

Content Requirements for Acquisition Specific Proposals

Please use the following checklist to confirm that your acquisition specific Proposal includes all of the content requirements as outlined in Section 6 of the RFP. Please indicate to the RFP Manager the page numbers of your Proposal that are intended to be responsive to each request and include a completed copy of this checklist with your Proposal.

Please leave the response box unchecked for any requested data items that are unavailable or intentionally omitted by the Respondent.

6.1 Revenues and Operating Costs

- ☐ A breakout of the facility's actual annual revenues. This will include energy, capacity and ancillary service revenues if applicable (e.g., reactive power, regulation, spinning, supplemental), as well as any other revenues the plant may have earned,
- ☐ Corresponding fuel and other variable costs,
- ☐ Estimated annual operation and maintenance costs of the facility on a fixed (\$) and variable (\$/MWh) basis,
- ☐ Actual annual operation and maintenance costs of the facility in nominal dollars. Respondents shall clearly break out fixed, variable and total operation and maintenance costs for each year, on a fixed (\$) and variable (\$/MWh) basis,
- ☐ A breakout of the facility's estimated and actual annual fixed costs along the following categories: labor, benefits, materials & supplies, utilities, insurance, major maintenance and all others,
- ☐ Separate any corporate allocations from the plant operating costs,
- ☐ A breakdown of the number of people employed at the facility, including permanent and contracted employees,
- ☐ Timing and cost information on major planned and forced outages in nominal dollars,
- ☐ Description of any property taxes and tax abatements associated with the facility.

Page number(s):

6.2 Capital Expenditures

- ☐ Historical and budgeted capital expenditures for the facility along with a description of the projects involved,

Page number(s):

6.3 Operating Data

- ☐ Historical operating data consisting of: (1) Net facility generation in MWh, (2) Commercial operation date of the facility, (3) Annual run-time hours (per unit, if applicable), (4) Annual operating cycles per year (per unit, if applicable) (5) Annual facility capacity and availability factors, (6) Annual average heat rate and (7) MISO equivalent forced outage rate demand (EFORd). The EFORd should correspond to the Unforced Capacity amounts awarded (as defined by MISO).
- ☐ A breakdown of EFORd by failure mode or NERC/GADS category,
- ☐ A description of the major contributors to the facility EFORd,
- ☐ Details on any equipment health issues and concerns, including the potential drivers and recommended mitigation procedures for the issues and/or concerns. (turbine startup vibration, uneven heating, compromised turbine or compressor blades, etc.),
- ☐ A list of any redundant equipment that is currently bypassed or out of service because it is non-functional,
- ☐ Maintenance history consisting of: (1) dates of last full unit inspection and findings based on OEM recommendations, (2) total number of equivalent starts and equivalent operating hours on each unit, (3) equivalent starts and equivalent hours since the last major maintenance activity, and (4) outstanding OEM recommendations remaining to be implemented,
- ☐ Outage reports for major planned and forced outages,
- ☐ An identification of the heat rate during startup of the facility, and identification of the time startup takes,
- ☐ A description of the total number of annual hours the facility can be assumed to be in startup mode,
- ☐ An identification of the heat rate of the facility when it is being shut down and a description of how long shutdown takes,
- ☐ An identification of the annual hours the facility is in shutdown mode,
- ☐ An identification of the annual hours the facility operates at full load,
- ☐ The number of annual hours that exclude startup and shutdown where the facility operates at less than full load and the corresponding heat rate,
- ☐ A summary of the facility's water chemistry program and its performance in the most recent year.

Page number(s):

6.4 Asset Purchase Agreement

- ☐ A "mark-up" of the APA containing any comments thereon proposed for consideration as part of Respondent's Proposal.

Page number(s):

6.5 Acquisition Price

- ☐ An acquisition price consisting of a single fixed payment that is inclusive of all monetary consideration for the generating assets, working inventory, and, if applicable, ancillary facilities and contractual arrangements (e.g. for fuel supply and transportation, maintenance, etc.).

Page number(s):

6.6 Inventories

- ☐ A summary list of all spare parts and components currently owned by the facility and their approximate dollar value
- ☐ A summary list of all spare parts and components currently owned by the facility and their approximate dollar value clearly identifying parts and materials valued at \$10,000 or more,
- ☐ For turbine capital spares, identify the total number of operating hours and remaining life for each major component subject to replacement and/or refurbishment as part of the major maintenance cycle,
- ☐ Identify any spare parts or components that are currently needed and/or on order as of the date of this RFP.

Page number(s):

Content Requirements for Power Purchase Agreement Specific Proposals

Please use the following checklist to confirm that your acquisition specific Proposal includes all of the content requirements as outlined in Section 7 of the RFP. Please indicate to the RFP Manager the page numbers of your Proposal that are intended to be responsive to each request and include a completed copy of this checklist with your Proposal.

Please leave the response box unchecked for any requested data items that are unavailable or intentionally omitted by the Respondent.

7.1 Mark-up of PPA Key Commercial Term Sheet

- ☐ A "mark-up" of the PPA key commercial term sheet containing any comments thereon proposed for consideration as part of Respondent's Proposal.

MPSC Case No.: U-18419
Respondent: D. O. Fahrer/Legal
Requestor: STAFF
Question No.: STDE-12.33a
Page: 1 of 1

Question: Please provide all request for proposals that the Company has issued related to engineering, construction, or procurement of this project. In addition, please answer the following questions;

a) Has the Company issued all of the necessary RFPs for the proposed project using a competitive bid process? If so, please explain how that was done if done differently than the previously explained competitive bid process.

Answer: DTE Electric objects for the reason that the information requested consists of confidential, proprietary research and development of trade secrets or commercial information, the disclosure of which would cause DTE Electric, its bidders to the requests for proposals, and its customers competitive harm. Subject to this objection and without waiver thereof, the Company would answer as follows:

Yes, the Company has issued all RFP's for the proposed project using the competitive bid process previously explained in STDE-2.20.

MPSC Case No.: U-18419
Respondent: D. O. Fahrer/Legal
Requestor: STAFF
Question No.: STDE-12.33b
Page: 1 of 1

Question: Please provide all request for proposals that the Company has issued related to engineering, construction, or procurement of this project. In addition, please answer the following questions;

b) Has the Company issued contracts for the major equipment? If so, when and what is the major equipment contracted price? If not, when are such contracts expected to be issued? Have the respondents included contingency dollars or measures in their response? If so, please explain. If not, please explain how the Company has insured that contingency was not included.

Answer: DTE Electric objects for the reason that the information requested consists of confidential, proprietary research and development of trade secrets or commercial information, the disclosure of which would cause DTE Electric, its bidders to the requests for proposals, and its customers competitive harm. Subject to this objection and without waiver thereof, the Company would answer as follows:

The Company has not issued contracts for the major equipment. The Company will not be issuing a separate contract for major equipment. Instead, the Company will issue one contract for a full turnkey project that includes the supply of all equipment (including the major components) plus the cost to engineer and construct the Proposed Plant. The contract will be issued as a fixed priced contract. No breakdown in cost allocation is contained. The final contract price is not yet finalized. The anticipated execution of the Contract will occur when the CON is approved.

MPSC Case No.: U-18419
Respondent: D. O. Fahrer/Legal
Requestor: STAFF
Question No.: STDE-12.33c
Page: 1 of 1

Question: Please provide all request for proposals that the Company has issued related to engineering, construction, or procurement of this project. In addition, please answer the following questions;

c) Has the Company issued contracts for balance of plant? If so, when, and what is the balance of plant contracted price? If not, when are such contracts expected to be issued? If so, please explain. If not, please explain how the Company has insured that contingency was not included.

Answer: DTE Electric objects for the reason that the information requested consists of confidential, proprietary research and development of trade secrets or commercial information, the disclosure of which would cause DTE Electric, its bidders to the requests for proposals, and its customers competitive harm. Subject to this objection and without waiver thereof, the Company would answer as follows:

Please refer to STDE-12.33b.

MPSC Case No.: U-18419
Respondent: D. O. Fahrer/Legal
Requestor: STAFF
Question No.: STDE-12.33d
Page: 1 of 1

Question: Please provide all request for proposals that the Company has issued related to engineering, construction, or procurement of this project. In addition, please answer the following questions;

d) Did the Company competitively bid its engineering services? (Include the contracted price for engineering services related to the proposed project.) If so, please explain. If not, please explain how the Company has insured that contingency was not included.

Answer: DTE Electric objects for the reason that the information requested consists of confidential, proprietary research and development of trade secrets or commercial information, the disclosure of which would cause DTE Electric, its bidders to the requests for proposals, and its customers competitive harm. Subject to this objection and without waiver thereof, the Company would answer as follows:

Please refer to STDE-12.33b.

MPSC Case No.: U-18419
Respondent: I. M. Dimitry
Requestor: STAFF
Question No.: STDE-2.29a
Page: 1 of 1

Question: Please reference Irene Dimitry's testimony on page 25-31 regarding PPA's and RFP's, please provide a summary of the responses the Company received regarding the March 1, 2017 RFP.

a. How many non-conforming bids did the Company receive?

Answer:

Summary of RFP Responses:

Bids:

Structure	Location	Technology	Size (MW)	Term
PPA	MISO Zone 7	SCGT	72*	6/1/2019 – 5/31/2026
PPA	MISO Zone 7	SCGT	225	6/1/2021 – 5/31/2028
Purchase	MISO Zone 7	CCGT	~1,100	Purchase between 5/31/2019 and 5/31/2021

**72 MW is below the conforming bid requirement of 225 MW*

Other:

In response to the RFP, the Company also received a letter from Midland Cogeneration Venture (MCV). See responses to STDE-2.29c and 2.29d.

As shown in the table above, the Company received one non-conforming bid, a 7-year PPA for a 72 MW simple cycle generating unit.

MPSC Case No.: U-18419
Respondent: I. M. Dimitry
Requestor: STAFF
Question No.: STDE-2.29b
Page: 1 of 1

Question: Please reference Irene Dimitry's testimony on page 25-31 regarding PPA's and RFP's, please provide a summary of the responses the Company received regarding the March 1, 2017 RFP.

b. Why were they non-conforming?

Answer: The bid was non-conforming due to its size of 72 MW. The minimum size requirement for a conforming bid was 225 MW.

MPSC Case No.: U-18419
Respondent: I. M. Dimitry
Requestor: STAFF
Question No.: STDE-2.29c
Page: 1 of 1

Question: Please reference Irene Dimitry's testimony on page 25-31 regarding PPA's and RFP's, please provide a summary of the responses the Company received regarding the March 1, 2017 RFP.

- c. In lieu of a bid, did any respondent provide communication regarding their inability to submit a bid due to Company requirements for a conforming bid?

Answer: Yes, a letter was received on March 17, 2017 from Midland Cogeneration Venture (MCV) as a response to the Company's RFP.

DE/MCV-1.3

Does MCV or an affiliate of MCV plan on filing an alternative proposal? If so:

- a. When does MCV or an affiliate of MCV plan to file an alternative?
- b. Provide any and all RFPs issued to support the alternative proposal.

ANSWER:

No. DTE Electric invited MCV to submit a bid proposal in response to DTE Electric's March 1, 2017 Request for Proposals ("RFP"). MCV responded on March 17, 2017 seeking additional information from DTE such as start date, life of project, energy source, capacity, dispatch, and other information that would allow MCV to submit a meaningful proposal to allow DTE Electric to select the most reasonable and prudent option for the capacity needs identified in the RFP. See Attachment A. MCV also explained that the RFP included unwarranted bidding limitations that prevented Independent Power Producers from presenting commercially viable Power Purchase Agreement proposals.

Rather than providing the information necessary for MCV to craft a proposal, DTE Electric's March 28, 2017 response instead indicated that MCV's request for necessary information constituted a non-conforming bid that DTE Electric would not consider. See Attachment B.

- a. N/A
- b. N/A

Attachment A



Michigan's Choice for Energy

Kevin R. Olling

Vice President Energy Supply & Marketing

March 17, 2017

VIA ELECTRONIC SUBMISSION

RE: DTE Electric Company
Requests for Proposals Issued March 1, 2017
Solicitation for Unforced Capacity 225 MW to 1200 MW

Dear Sir or Madam,

The following is in response to DTE Electric Company's (DTE's) invitation to submit a written, non-binding bid proposal in accordance with the requirements described in the Request for Proposal (RFP) dated issued March 1, 2017. Implicit in the RFP, is DTE's apparent desire to obtain market information that will allow it to compare available alternatives to its preferred construction of a self-build option at the Belle River station in China Township to address the stated 1,100 MW base load generation resource in the RFP. While MCV, as the owner and operator of North America's largest natural gas combined cycle electric generating plant, is otherwise willing, able and uniquely qualified to participate in the bid process, the RFP places express unwarranted bidding limitations on independent power suppliers like MCV that prevent it from presenting a commercially viable Power Purchase Agreement (PPA) option in the case where new generation capacity is the preferred option or need. Specifically, the RFP limits the Delivery Term for PPAs to 7 years, whereas the useful life of a new electric generating asset is upwards of 30 years, therefore unfairly restricting the IPP from commercially favorable financing mechanisms. Other unreasonable and onerous bid requirements as part of the PPA Key Commercial Term Sheet in the RFP present unfair obstacles for IPPs to present an equivalent competitive alternative.

In an effort to allow MCV, as well as other IPPs, to provide DTE with information which would allow it to select the most reasonable and prudent option for fulfilling its stated future capacity need, we are requesting that DTE provide responses to the items below as to its self-build option. With those responses, MCV will be able to offer a direct alternative to DTE's preferred option, and thus, allow DTE to conduct a fair analysis as to the most reasonable and prudent option for addressing any capacity need. The information requested is not necessarily all-inclusive and additional information will more than likely be necessary to complete a thorough comparative analysis and subsequent proposal.

Please provide the proposed project descriptive information as follows:

- Confirmation of the physical location of the project
- The commercial operation / start of energy delivery date
- The life of the project (delivery term) of the project (i.e. 20, 25, or 30 years)
- The energy source for the power generation (i.e. natural gas, coal, etc.)
 - Fuel supply plan that details how the fuel is purchased and transported to the facility
 - Interconnection and pricing location(s) associated with the facility energy source
 - Firm fuel supply service and supply agreements

- The interconnection location for the energy delivery (i.e. electrical transmission interconnection)
 - Commercial pricing node associated with the facility
 - Status of the project generator interconnection agreement (GIA - assume located within MISO Local Resource Zone 7)
- The technology selection for the power generation (i.e. combined cycle, simply cycle, capability of CHP/cogeneration)
 - If utilizing natural gas combustion turbines, the class of turbine technology (i.e., F-Class, H-Class, J-Class)
 - Make of the equipment, model and name of supplier
- The electric delivery capacity of the project
 - Nameplate capacity
 - Net summer operating capacity
 - Net winter operating capacity
 - List projected UCAP for the facility for three years beyond commercial operation date (i.e. 2020, 2021, and 2022 - UCAP, as defined by MISO)
- The dispatch characteristics of the facility
 - Minimum load level
 - Ramp rates (up and down)
 - Supplemental firing capability
- The heat rate and emission rates of the project
 - The full load and no-load net electric heat rates
 - Operating heat rate curve (i.e. the coefficients of the fifth-order equation of the net plant heat rate versus net electric delivery curve)
 - Summary of environmental control equipment and the emission rates for NO_x, CO₂, SO₂, VOC, PM and CO in units of lb/mmBTU
 - The status of the project air permit
- The description of the water supply for cooling and consumption
 - The status of the NPDES permit
 - Confirm heat rejection technology (i.e. once through cooling, wet cooling tower, air cooled condenser, etc.)
 - Water usage and cost of water for the facility
- Liquidated damages being sought in EPC contract to guarantee construction schedule, commercial operating date, and plant performance metrics (availability, reliability, capacity, heat rate, etc.)
- The estimated annual fixed and variable operation and maintenance costs
 - Including but not limited to the following categories:
 - Major equipment Maintenance and Services Agreements (aka LTSA for the generating units)
 - Environmental controls
 - Labor (permanent and contracted, include benefits)
 - Materials and supplies (i.e. chemicals, consumables, etc.)
 - Insurance
 - Taxes
 - Information for major planned outage events for the generating units

Please contact me if you do have any questions as we look forward to working cooperatively with you on addressing Michigan's future energy capacity needs.

Kindest Regards,

A handwritten signature in black ink, appearing to read "K. R. Olling", with a stylized flourish at the end.

Kevin R. Olling

Attachment B



David S. Maquera
Counsel
(313) 235-3724
david.maquera@dteenergy.com

March 28, 2017

Via E-Mail: krolling@midcogen.com

Kevin R. Olling
Midland Cogeneration Venture
100 Progress Place
Midland, MI 48640

RE: *DTE Electric Company; Requests for Proposals Issued March 1, 2017*

Dear Mr. Olling:

DTE Electric Company ("DTE Electric" or "Company") acknowledges receipt of your March 17, 2017 correspondence ("March 17 Correspondence"), which is styled as Midland Cogeneration Venture's ("MCV") response to the Company's Request for Proposal ("RFP") issued March 1, 2017. However, be advised that your March 17 Correspondence is construed to be a non-conforming bid. Therefore, MCV's non-confirming bid will not be considered.

In addition, DTE Electric disagrees with several conclusory assertions in your March 17 Correspondence. For example, your March 17 Correspondence asserts that DTE Electric's bid requirements were "unreasonable and onerous." The apparent basis for such assertion appears to be that a 30-year purchase power agreement ("PPA") is the equivalent of a new electric generation asset with a useful life of 30 years or more. However, DTE Electric does not agree with that assertion. Nevertheless, DTE Electric does recognize a possible role for PPAs, albeit for a maximum delivery term of seven (7) years as indicated in the Company's RFP.

Finally, your March 17 Correspondence requests detailed information regarding a "self-build option." However, DTE Electric has not finalized plans for a "self-build option" nor received or considered proposals in response to the RFP. Therefore, furnishing such requested information at this time would be premature and inappropriate. Accordingly, such information will not be forthcoming as requested.

If there are any other questions related to DTE Electric's RFP or your March 17 Correspondence, then please feel free to have MCV's legal counsel contact me.

Very truly yours,

**David S.
Maquera**

David S. Maquera

Digitally signed by David S. Maquera
DN: cn=David S. Maquera, o=DTE
Energy, ou=General Counsel -
Regulatory,
email=david.maquera@dteenergy.com
, c=US
Date: 2017.03.28 14:12:59 -04'00'

DSM/lah

PROOF OF SERVICE - U-18419

The undersigned certifies that a copy of the *Direct Testimony and Exhibits of Philip DiDomenico filed on behalf of the Attorney General* was served upon the parties listed below by emailing the same to them at their respective e-mail addresses on the 12th day of January 2018.

John A. Janiszewski

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