John Richter

23061 Britner Ct.
Bingham Farms, MI 48025

EDUCATION

Murdoch University, Perth, Australia – January 2009
M.S. in Renewable Energy

Oakland Community College, Rochester Hills, Michigan – 1991
Alternative Energy Technologies (Solar, Wind, Biomass)

Oakland University, Rochester, Michigan
B.S. Engineering, minor in Economics - 1982

RENEWABLE ENERGY EXPERIENCE

Adjunct Instructor, Macomb Community College (2009 – 2010)
Online / classroom hybrid course including labs.
Grant-funded curriculum development and classroom instruction in solar energy.

President, Great Lakes Renewable Energy Association (2002 – 2003)
Non-profit administration focused on financial planning, fundraising & recruitment. Staffing, budget, and strategic planning.

Policy Analyst, Great Lakes Renewable Energy Association
Developed position papers on policy initiatives. One of three invited presenters to the Northeast and Midwest Caucus meeting on a national RPS. Presented: *Wind Power and Distributed Generation* to U.S. Congressional Staffers at the U.S. Capitol Building. Member of the MPSC collaborative on renewable energy and the Michigan Wind Working Group of the DOE's *Wind Powering America* program.

Renewable Energy Consultant

American Green Careers
Project management and meeting facilitation for a team of independent contractors for the start-up of a proprietary school green jobs training program.

Great Lakes Renewable Energy Association
Researched, developed, and presented policy recommendations: *Opportunities for Renewable Energy Deployment* to Michigan legislators and staff.

Midwest Education Connection Network (MECNet) / Urban Options
Developed K-12 educational materials: *Michigan's Renewable Energy and Efficiency Success Stories*. This complemented materials from NEED.

American Council for an Energy Efficient Economy (ACEEE)
Researched and authored *Michigan's Current Energy Situation* section of an energy efficiency white paper for the State Governor.

Speaker
Scores of speaking engagements at conferences, community colleges, and community groups for two decades, including:

- American Solar Energy Society; *Making the Benefits of RE Real,* and *World Oil Depletion and Its Implications for U.S. Energy Policy*
- Pierce Cedar Creek RE Conference - Keynote speaker: *RE Cornucopia*
- PBS Documentary: *Michigan's Green Energy Economy*

Contributing Writer
Home Power Magazine, The Rock River Times, ReNews, Energy Paths, Energy Times

TELECOM EXPERIENCE

Century Link Communications *(formerly Level-3, Global Crossing, Frontier, and Allnet),* Southeastern Michigan – September 1987 to March 2002, December 2002 – May 2018

Sr. Software Architect

Design and specify software changes to meet program objectives.

- Define project scope, deliverables, schedule and budget.
- Develop software specifications.

Sr. Product Development Manager

Plan, direct, and coordinate all work activities to build new services on-time and within budget.

- Create cross-functional project teams with members from various departments; build team commitment to project objectives.
- Define project scope, deliverables, schedule and budget.
- Create or update business processes to support new products.
- Develop software specifications.

Director, Product Platform Development

Responsible for the selection, purchase, project management, installation, integration, and operation of multi-million dollar real-time call processing systems.

- Performed vendor/product evaluation, purchase negotiations and installation project management.
- Managed staff of 23 Software Engineers developing real-time call processing software and integrating purchased systems.

Senior Manager of Hardware Integration

Responsible for evaluation, selection, engineering, purchase, and installation of all switching equipment and Digital Cross-connect Systems (DCS).

- Planned and managed annual capital budget in excess of $25M.
- Negotiated pricing and payment terms, installation schedules, and acceptance testing procedures.
- Created network traffic forecasting model for budgetary and capacity planning. Selected sites to close for economic efficiency.
- Provided Project Management of equipment purchases, moves, and installs to facilitate consolidation of four acquired carrier switching networks into one fully integrated network.

Exhibit GLREA-2 (JR-2)
Illustrative comparison of a 100% Wind REP to a 100% Solar REP

Cost of New Entry (CONE) ($/kW) 89
source: U-20417, V3 p 579 (witness Mikulan)

System Type	Capacity Factor (1)	MWh/year per MW(ac)	MISO ELCC (2)	Capacity Value at 50% of CONE ($/MWh)	Capacity Value at 100% of CONE ($/MWh)
Solar (2)	23.5%	2059	65.8%	$ 14.22	$ 28.45
Wind (1)	31.3%	2742	11.7%	$ 1.90	$ 3.80
Solar capacity value-add (vs. wind)				**$ 12.32**	**$ 24.65**

Sources:
(1) Capacity Factors
Meridian Wind Park capacity factor Exhibit B-5, pg 1, row 5, column d
Solar PPA capacity factor Exhibit B-5, pg 1, row 7, column d
(3) MISO ELCC values
Wind ELCC U-20471, V3, p 412, line 5 (witness Mikulan)
Solar ELCC for single-axis tracking U-20471, PFD p. 142

Exhibit GLREA-3
Adjusted Summary of selected RFP bids

	Lower-bound Adjustments ($/MWh)	Upper-bound Adjustments ($/MWh)
Wind capacity value	$ (3.80)	$ (1.10)
Solar capacity value	$ (28.45)	$ (14.22)
Wind lifetime	$ 11.54	$ 11.54

			(a)	(b)	(c)	(d)	(e)	(h - 1)	(h - 2)	GLREA adjusted values (k)	GLREA adjusted values (l)
From Exhibit	Line No.	Project #		Technology	MW (AC)	Structure	COD	LCOE Range (w/contract adjust) lower-bound ($/MWh)	LCOE Range (w/contract adjust) upper-bound ($/MWh)	Adjusted LCOE lower bound ($/MWh)	Adjusted LCOE upper bound ($/MWh)
B-28	1	1		Wind	225	Self	2021	46	49	$ 53.74	$ 59.44
B-28	2	2		Wind	150	BTA	2021	57	60	$ 64.74	$ 70.44
B-28	3	3		Solar	75	PPA	2021	47	50	$ 18.55	$ 35.78
B-29	1	14		Solar	125	PPA	2022	44	47	$ 15.55	$ 32.78
B-29	3	16		Solar	200	PPA	2022	44	47	$ 15.55	$ 32.78
B-29	14	27		Solar	200	PPA	2022	47	50	$ 18.55	$ 35.78
B-29	20	33		Solar	50	PPA	2022	49	52	$ 20.55	$ 37.78

ROBERT N. RAFSON, P.E.

200 Viridian Drive
Muskegon, MI 49440
C 312.961.0043 rob@charthouseenergy.com

Education:	B.S.M.E. - University of Wisconsin / Madison – 1983 NABCEP certified Installer - 2012
Professional Engineer:	P. E. Wisconsin - 1988 - (recognized in 16 states) P. E. Illinois – 1995 P. E. Michigan - 2017
2009 to Present:	President, Chart House Energy LLC, Renewable energy development firm. Installed the largest solar PV system in Michigan (150kW) and Iowa (200kW) and the second largest PV system in Illinois (630kW). To date, Chart House Energy has installed over 4 MW.
1989 to 2010:	Owner, Rafson Engineering, Inc. providing comprehensive environmental engineering services including air pollution control design, testing, and training and phase I, II and III environmental assessments and clean up planning and oversight. Partner, Greenfield Partners, Ltd. contaminated property buyers involved in all facets of Brownfield redevelopment. 27 property clean ups and redevelopment including 4 SUPERFUND sites. Redevelopment included energy efficiency and renewable energy. Renewable energy projects include the largest solar thermal system in Illinois.
Publications:	Author, Brownfields – Redeveloping Environmentally Distressed Properties, McGraw- Hill, 1999 Author, VOC and Odor control manual, McGraw-Hill, 1997

Project number	Technology	MW	Structure	COD	Bid score	LCOE (as bid)	LCOE range		
1	Wind	225	Self	2021	4	$46	$46-49	$46-49	Currently in consideration for REP Compliance
2	Wind	150	BTA	2021	3.1	$56	$57-60	$57-60	Currently in consideration for VGP
3	Solar	75	PPA	2021	3	$44	$47-50	$51-54	Currently in consideration for REP Compliance
4	Solar	75	BTA	2021	3	$49	$51-54	$51-54	Duplicate of project in consideration for REP Compliance
5	Solar	75	PPA	2021	2.9	$45	$48-51	$52-55	Duplicate of project in consideration for REP Compliance
6	Solar	75	PPA	2021	2.9	$45	$48-51	$56-59	Duplicate of project in consideration for REP Compliance
7	Solar	75	PPA	2021	2.7	$46	$49-52	$56-59	Duplicate of project in consideration for REP Compliance
8	Solar	75	BTA	2021	2.7	$57	$60-63	$60-63	
9	Solar	75	BTA	2021	2.6	$58	$61-64	$61-64	
10	Solar	50	BTA	2021	2.5	$63	$66-69	$66-69	
11	Solar	75	BTA	2021	2.4	$256	$259-262	$259-262	
12	Solar	75	BTA	2021	2.4	$256	$259-262	$259-262	
13	Solar	50	BTA	2021	2.2	$67	$70-73	$70-73	

Wind	375	102	
Solar	300 PPA	45 PPA	
	475 BTA	115.1428571 BTA	With 11 & 12
		58.8	Without 11 & 12

DTE Electric Company
One Energy Plaza, 1635 WCB
Detroit, MI 48226-1279

Lauren D. Donofrio
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April 28, 2020

Don L. Keskey
Brian W. Coyer
Public Law Resource Center PLLC
University Office Place
333 Albert Avenue, Suite 425
East Lansing, MI 48823

RE: In the matter, on the Commission's own motion regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for **DTE ELECTRIC COMPANY** to fully comply with Public Act 295 of 2008. MPSC Case No. U-18232

Dear Mr. Keskey and Mr. Coyer:

Attached for electronic filing in the above referenced matter is DTE Electric Company's Response to Great Lakes Renewable Energy Association's First Discovery Request. The attachments to responses are being provided to the respective parties through the following link listed below:

https://dteenergy.sharepoint.com/sites/DiscoveryPortal/Elec/18232AmendedREP/Documents/Forms/AllItems.aspx

Also attached is the Proof of Service.

Very truly yours,

Lauren D. Donofrio

Digitally signed by Lauren D. Donofrio
Date: 2020.04.28 15:59:55 -04'00'

Lauren D. Donofrio

LDD/lah
Encl.
cc: Service List

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.1a]
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Regarding Exhibit B-2, page 1, Line No. 35, columns g & h (years 2021 and 2022):

a. This exhibit shows a significant negative value for the incremental cost of compliance. What is the ratepayer consequence of this value going negative?

Answer: There is not a ratepayer consequence for the incremental cost of compliance going negative. The negative incremental cost of compliance increases the value in the regulatory liability.

Attachments: N/A

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.1b]
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Regarding Exhibit B-2, page 1, Line No. 35, columns g & h (years 2021 and 2022):

b. If the Commission does not approve the Company's proposal to use transfer prices when they are higher than the LCOE, would this result in a credit on customer's bills? Describe the impact on customer costs and rate charges.

Answer: No. As shown in Exhibit B-20 (Part B), if the Commission does not approve the Company's proposal, customers would likely see a surcharge on their bill.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.2a]
Respondent: T. L. Schroeder
Page: 1 of 1

Question: Regarding Exhibit B-3, page 1, Line No. 10 & 11:

a. The Pinnebog Wind Build shows an installed capacity of 51 MW for every year (2016 – 2021). Yet its projected generation drops from 173 (1000 MWh) in 2019 (preliminary) to 137 in 2020 and 2021. Why is the output projected to drop?

Answer: There was an error in the formula. The generation should remain at the average of 2017-2019, which is 171,000 MWh for most years and 172,000 MWh in leap years.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.3a]
Respondent: T. L. Schroeder
Page: 1 of 1

Question: Regarding Exhibit B-3, page 1, Line No. 26 & 27, columns h & i:

a. How can the VGP subscribed wind "subscribed capacity" be the same in both years (456.0 MW), but the "subscribed generation" leaps from 91 to 1,195 (1,000 MWh)?

Answer: The wind parks associated with the VGP program come online in 2020, and thus are only credited with approximately one month of generation in column h. Column i represents a full year of generation.

Attachments: *N/A*

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.3b]
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Regarding Exhibit B-3, page 1, Line No. 26 & 27, columns h & i:

b. Shouldn't the subscribed capacity and subscribed generation move in approximately the same proportion?

Answer: See GLREADE-1.3a.

Attachments: *N/A*

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.4a]
Respondent: T. L. Schroeder
Page: 1 of 1

Question: Regarding Exhibit B-5, page 1, Line No. 6 & 7:

a. Is the proposed project identified as Solar PPA – 2021 (line 6) a fixed-mount, single axis tracking, or dual axis tracking solar system?

Answer: The RFP bid response specified a single-axis tracking system.

Attachments: N/A

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.4b]
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Regarding Exhibit B-5, page 1, Line No. 6 & 7:

b. Is the proposed project identified as Solar PPA – 2022 (line 7) a fixed-mount, single axis tracking, or dual axis tracking solar system?

Answer: The RFP bid response specified a single-axis tracking system.

Attachments: N/A

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.5a]
Respondent:	M. J. Rivard
Page:	1 of 1

Question: Regarding Exhibit B-10, page 1, Column d for rows 23 – 26:

a. What is the meaning of the “On-Peak Capacity Credit” values?

Answer: As presented in Case No. U-15806 by Company Witness Byron (6 T 1044-1046), the On-Peak Capacity Credit represents the percent of a renewable energy system’s generation capacity that is available on-peak.

The transfer price schedule presented in Exhibit B-10 was approved by Commission Order in Case No. U-15806 on June 2, 2009.

Attachments: None.

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.5b]
Respondent: M. J. Rivard
Page: 1 of 1

Question: Regarding Exhibit B-10, page 1, Column d for rows 23 – 26:

b. Does this value correspond to the capacity credit under MISO capacity adequacy rules?

Answer: No.

Attachments: None.

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.5c]
Respondent:	M. J. Rivard
Page:	1 of 1

Question: Regarding Exhibit B-10, page 1, Column d for rows 23 – 26:

c. Why is the On-peak capacity credit for solar (line no. 25) 100%, but wind in 12.5%?

Answer: The transfer price schedule presented in Exhibit B-10 was approved by Commission Order in Case No. U-15806 on June 2, 2009.

Attachments: None.

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.5d]
Respondent: M. J. Rivard
Page: 1 of 1

Question: Regarding Exhibit B-10, page 1, Column d for rows 23 – 26:

d. Why is this figure different than exhibit B-35 page 1, "MISO 2019-2020 Solar Capacity Credit" = "50%"

Answer: Please refer to response GLREADE-1.5b.

Attachments: None.

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.5e]
Respondent: M. J. Rivard
Page: 1 of 1

Question: Regarding Exhibit B-10, page 1, Column d for rows 23 – 26:

e. What impact does the On-peak capacity credit have on the financial analysis of proposed facilities (e.g. LCOE or transfer pricing)?

Answer:
Answer:

The transfer prices presented on Exhibit B-10 have no impact on proposed facilities. These transfer prices were approved for the projects listed on Page 4, Lines 6-16 of my direct testimony. The transfer prices that are supported by the Company for proposed facilities are presented on Exhibit B-16.

Attachments: None.

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.6a]
Respondent:	T. W. Lacey
Page:	1 of 1

Question: Regarding Exhibit B-20, page 1, Line No. 6:

a. Column b cites "Treasury" as the source of the "Short Term Interest Rate". What is the basis of this rate? Does it reflect DTE's average short-term borrowing cost?

Answer: The short-term debt rates for 2016-2019 (columns c-f) are the average of the 12-months of the actual weighted monthly commercial paper rate for DTE Electric, as supplied by DTE's Treasury department. The 2016-2018 amounts have all been approved by the MPSC in the REP reconciliations for those years, the 2019 REP reconciliation has not yet been filed. The amounts for 2020-2029 are the average short-term interest rates as projected by DTE's Treasury department.

Attachments: *N/A*

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.6b]
Respondent: T. W. Lacey
Page: 1 of 1

Question: Regarding Exhibit B-20, page 1, Line No. 6:

b. Does it reflect DTE's marginal borrowing cost (most recent loan or bond)?

Answer: It is unclear what is meant by "most recent'. Assuming it means amounts borrowed in April 2020, the answer is no, as explained in the answer to GLREADE-1.6a, the rates reflected are either historic (2016-2019) short-term rates or projections.

Attachments: *N/A*

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.7a]
Respondent: D. B. Harwood
Page: 1 of 1

Question: Regarding Exhibit B-31, page 6 & Exhibit B-32:

a. B-31 Section 3.2.1.2 states "Proposals submitted must include the utilization of union labor where/when appropriate." What does the Company consider the "appropriate" use of union vs. non-union labor?

Answer: The Company considers the appropriate use of union labor as consideration and utilization when a recognized local labor organization exists, when there is availability of applicable trades, and when its use is not economically detrimental to the project.

Attachments: *N/A*

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.7b]
Respondent:	D. B. Harwood
Page:	1 of 1

Question: Regarding Exhibit B-31, page 6 & Exhibit B-32:

b. Does the use of union labor benefit ratepayers? If so, how?

Answer: Use of union labor often benefits rate payers due to skill, experience, and productivity advantages. DTE encourages the use of union labor when a local labor organization exists, when there is availability of applicable trades, and when its use is not economically detrimental to the project.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.7c]
Respondent: D. B. Harwood
Page: 1 of 1

Question: Regarding Exhibit B-31, page 6 & Exhibit B-32:

c. Why was this stipulation included in the Wind RFP (exhibit B-31), but not in the solar RFP (exhibit B-32)?

Answer: This was an inadvertent omission.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.8]
Respondent: D. B. Harwood
Page: 1 of 1

Question: Regarding Exhibit B-31 & Exhibit B-32, section 7.1, where it is stated:

"The Company will consider a conforming bid one where Respondent submits at least one of the following for a Project:

1) Build Transfer Proposal

2) Power Purchase Proposal & Build Transfer Proposal"

a. Were any bids that proposed a Power Purchase Proposal without a Build and Transfer Proposal considered non-conforming? If yes, what is the Company's rational for rejecting bids that do not include the option for transfer of ownership?

Answer: No. The Company did not reject bids because they did not include an option for transfer of ownership.

Attachments: N/A

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.9a]
Respondent:	D. B. Harwood
Page:	1 of 1

Question: Regarding Exhibit B-34, pages 1 & 2, the last bullet states "The PACE curves spike in 2040 due to the projected retirement of DTE's Monroe Power Plant"

a. Why and how does the retirement of a power plant cause a spike in the projected price of solar and wind energy?

Answer: The projected retirement of a power plant can cause a spike in projected energy prices as there will be a higher demand for energy and less supply in the market.

Attachments: N/A

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.10a]
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Regarding the testimony of T. L. SCHROEDER, pages TLS-14 and TLS-15:

a. Why does the company propose a change in the recovery process to avoid the creation of a regulatory asset? What would be the impact to ratepayers if this proposal was rejected and a regulatory asset was created?

Answer: As noted in testimony, without the change in the recovery process, a regulatory asset could accrue. Per Sec. 49 (3) (b) of PA 342, "The commission shall ensure that the recovery mechanism is projected to maintain a minimum balance of accumulated reserve so that a regulatory asset does not accrue." If a regulatory asset accrues, ratepayers may be assessed a surcharge under the revenue recovery mechanism.

Attachments: *N/A*

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.11a]
Respondent: T. L. Schroeder
Page: 1 of 1

Question: Regarding the testimony of T. L. SCHROEDER, page TLS-23, which states:

"Additionally, as of this filing, the Rider 19 assets are fully subscribed from the time they come online, as DTE currently has customer agreements signed in excess of the total amount of megawatt hours from these facilities"

a. Is the Company's VGP over-subscribed at this time?

Answer: The Company's large customer VGP has signed contracts with large customers exceeding the output of the first three approved program assets.

Attachments: *N/A*

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.11b]
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Regarding the testimony of T. L. SCHROEDER, page TLS-23, which states:

"Additionally, as of this filing, the Rider 19 assets are fully subscribed from the time they come online, as DTE currently has customer agreements signed in excess of the total amount of megawatt hours from these facilities"

b. Does the Company believe that projects proposed in this case are sufficient to comply with the law AND meet the full demand of their VGP customers?

Answer: No. The intent of this filing was to demonstrate compliance with the renewable portfolio standard portion of PA 342. The Company will address VGP projects in its forthcoming Section 61 filing.

Attachments: *N/A*

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.12a]
Respondent:	M. J. Rivard
Page:	1 of 1

Question: Regarding the testimony of M. J. RIVARD, pages MJR-7 to MJR-9:

a. Does the proposed change in how costs are transferred to the PSCR result in accelerating cash flow to the Company, vs. the status quo?

Answer: As stated in my direct testimony, the proposed change does not change the overall cost of renewable energy that is recovered by the Company. This change increases the expense recovered in the PSCR but will allow for a zero dollar surcharge to continue for customers.

Attachments: None.

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.13a]
Respondent:	P. D. Kauffman
Page:	1 of 1

Question: Regarding the testimony of P. D. KAUFFMAN, page PDK-5:

a. How are the depreciation rates for solar and wind facilities determined?

Answer: See the attached U-18232 GLREADE-1.13a DTE Electric Company's Adjusted Annual Depreciation Rate Schedule and Accruals filed on April 2, 2019 in case U-18150 which are the Commission approved depreciation rates. The 3.71% for wind is calculated on line 77, column (o). The 4.80% for solar is calculated on line 65, column (f).

Attachments: U-18232 GLREADE-1.13a DTE Electric Company's Adjusted Annual Depreciation Rate Schedule and Accruals

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.13b]
Respondent:	P. D. Kauffman
Page:	1 of 1

Question: Regarding the testimony of P. D. KAUFFMAN, page PDK-5:

b. Why is the depreciation rate for wind lower than for solar?

Answer: The current Commission approved depreciation rates assume the expected lifetime of a wind facility is longer than a solar facility.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.13c]
Respondent: P. D. Kauffman
Page: 1 of 1

Question: Regarding the testimony of P. D. KAUFFMAN, page PDK-5:

c. Does this imply that the expected lifetime of a wind facility is longer than a solar facility?

Answer: Yes, the current Commission approved depreciation rates imply the expected lifetime of a wind facility is longer than a solar facility.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.14a]
Respondent: D. B. Harwood
Page: 1 of 1

Question: Regarding the testimony of D. B. HARWOOD, page DBH-10:

a. On what basis or by what criteria did the Company use a 35-year project life for both wind and solar projects?

Answer: The Company utilized a 35-year project life for both wind and solar projects to put all projects on an equal footing with respect to life cycle costs, given that proposals were submitted with different life cycle assumptions.

Attachments: N/A

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	GLREADE-1.15a]
Respondent:	D. B. Harwood
Page:	1 of 1

Question: Regarding the testimony of D. B. HARWOOD, page DBH-19:

a. How did the Company decide to assign which proposed projects to assign to REP compliance, and which projects to assign to the VGP?

Answer: As described in my testimony, the Company shortlisted projects for both the REP and VGP programs resulting from the RFP. The projects selected for the REP represent those that are low cost, meet the compliance requirements, and that the Company felt it could negotiate consistent with the mandatory April 1, 2020 filing deadline for the Amended REP.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.15b]
Respondent: D. B. Harwood
Page: 1 of 1

Question: Regarding the testimony of D. B. HARWOOD, page DBH-19:

b. Did the Company make RFP bidders aware that their bids would be evaluated on a 35-year project lifetime basis before the bids were submitted?

Answer: No.

Attachments: N/A

MPSC Case No.: U-18232
Requestor: GLREA
Question No.: GLREADE-1.15c]
Respondent: D. B. Harwood/Legal
Page: 1 of 1

Question: Regarding the testimony of D. B. HARWOOD, page DBH-19:

c. In comparing bids from the wind RFP to bids from the solar RFP, what financial consideration was given to the contribution the facility would provide to the Company's capacity adequacy (under MISO rules)?

Answer: DTE Electric objects to the question for the reason that it is unduly vague and incapable of answer in its current form. In further answer and without waiving the objection, the Company states as follows: None.

Attachments: N/A

Michigan Public Service Commission — **Revised Attachment A** — **Page 1 of 2**
DTE Electric Company
MPSC Case No. U-18150
MPSC Ordered Depreciation Rates and Amortization Periods
with Corrected Rates for Accounts 373060 and 373080

(a) Line No.	(b) Accounts and Descriptions	(c) 12/31/2015 Plant Investment	(d) Current Depreciation Rates	(e) Current 2015 Depreciation Accrual	(f) MPSC Order U-18150 Depreciation Rates	(g)	(h) MPSC Order U-18150 Depreciation Accrual	(i) Increase/ (Decrease) in Accrual
1	**STEAM PRODUCTION PLANT - TIER 1**							
2	**Belle River Production Plant**							
3	311010 Structures and Improvements	$ 371,928,413	1.53%	$ 5,689,597	3.07%		$ 11,404,602	$ 5,715,005
4	312010 Boiler Plant Equipment	1,071,849,970	1.60%	17,108,873	3.61%		38,709,161	21,600,288
5	314010 Turbogenerator Units	246,364,649	1.57%	3,863,709	3.27%		8,061,380	4,197,671
6	315010 Accessory Electric Equipment	37,973,676	1.64%	621,211	3.21%		1,218,616	597,405
7	316010 Miscellaneous Power Plant Equipment	5,850,109	1.58%	92,431	3.14%		183,875	91,444
8	**Total Belle River Production Plant**	$ 1,733,966,817	1.58%	$ 27,375,821	3.44%		$ 59,577,634	$ 32,201,813
9	**Monroe Production Plant**							
10	311010 Structures and Improvements	$ 484,166,635	1.41%	$ 6,826,750	3.11%		$ 15,058,389	$ 8,231,639
11	312010 Boiler Plant Equipment	2,903,348,741	2.23%	64,744,677	3.26%		94,696,928	29,952,251
12	314010 Turbogenerator Units	242,142,970	2.27%	5,496,645	2.92%		7,065,249	1,568,604
13	315010 Accessory Electric Equipment	45,269,534	2.13%	964,241	2.85%		1,290,119	325,878
14	316010 Miscellaneous Power Plant Equipment	3,233,969	2.08%	67,267	2.65%		85,707	18,440
15	**Total Monroe Production Plant**	$ 3,678,161,849	2.12%	$ 78,099,580	3.21%		$ 118,196,392	$ 40,096,812
16	**Greenwood Production Plant**							
17	311010 Structures and Improvements	$ 78,468,643	1.41%	$ 1,106,408	2.26%		$ 1,773,391	$ 666,983
18	312010 Boiler Plant Equipment	196,565,339	2.23%	4,383,407	2.52%		4,953,447	570,039
19	314010 Turbogenerator Units	77,015,894	2.27%	1,748,261	2.39%		1,840,680	92,419
20	315010 Accessory Electric Equipment	34,683,040	2.13%	738,749	2.22%		769,963	31,215
21	316010 Miscellaneous Power Plant Equipment	3,108,873	2.08%	64,665	2.20%		68,395	3,731
22	**Total Greenwood Production Plant**	$ 389,841,789	2.06%	$ 8,041,489	2.41%		$ 9,405,876	$ 1,364,387
23	**Total Steam Production Plant - Tier 1**	$ 5,801,970,455	1.96%	$ 113,516,890	3.23%		$ 187,179,902	$ 73,663,013
24	**STEAM PRODUCTION PLANT - TIER 2**							
25	**River Rouge Production Plant**							
26	311010 Structures and Improvements	$ 22,476,032	1.41%	$ 316,912	1.41%		$ 316,912	$ -
27	312010 Boiler Plant Equipment	142,755,100	2.23%	3,183,439	2.23%		3,183,439	-
28	314010 Turbogenerator Units	40,019,057	2.27%	908,433	2.27%		908,433	-
29	315010 Accessory Electric Equipment	13,863,073	2.13%	295,283	2.13%		295,283	-
30	316010 Miscellaneous Power Plant Equipment	1,064,552	2.08%	22,143	2.08%		22,143	-
31	**Total River Rouge Production Plant**	$ 220,177,814	2.15%	$ 4,726,210	2.15%		$ 4,726,210	$ -
32	**St. Clair Production Plant**							
33	311010 Structures and Improvements	$ 72,989,770	1.41%	$ 1,029,156	1.41%		$ 1,029,156	$ -
34	312010 Boiler Plant Equipment	669,382,305	2.23%	14,927,225	2.23%		14,927,225	-
35	314010 Turbogenerator Units	130,333,479	2.27%	2,958,570	2.27%		2,958,570	-
36	315010 Accessory Electric Equipment	36,156,011	2.13%	770,123	2.13%		770,123	-
37	316010 Miscellaneous Power Plant Equipment	4,626,838	2.08%	96,238	2.08%		96,238	-
38	**Total St. Clair Production Plant**	$ 913,488,403	2.17%	$ 19,781,312	2.17%		$ 19,781,312	$ -
39	**Trenton Channel Production Plant**							
40	311010 Structures and Improvements	$ 44,799,689	1.41%	$ 631,676	1.41%		$ 631,676	$ -
41	312010 Boiler Plant Equipment	186,196,690	2.23%	4,152,186	2.23%		4,152,186	-
42	314010 Turbogenerator Units	33,409,606	2.27%	758,398	2.27%		758,398	-
43	315010 Accessory Electric Equipment	8,846,849	2.13%	188,438	2.13%		188,438	-
44	316010 Miscellaneous Power Plant Equipment	2,301,123	2.08%	47,863	2.08%		47,863	-
45	**Total Trenton Channel Prouction Plant**	$ 275,553,957	2.10%	$ 5,778,561	2.10%		$ 5,778,561	$ -
46	**Total Steam Production Plant - Tier 2**	$ 1,409,220,174	2.15%	$ 30,286,083	2.15%		$ 30,286,083	$ -
47	**NUCLEAR PRODUCTION PLANT**							
48	321000 Structures and Improvements	$ 168,333,745	4.54%	$ 7,642,352	4.11%		$ 6,918,517	$ (723,835)
49	322000 Reactor Plant Equipment	377,823,703	3.55%	13,412,741	4.34%		16,397,549	2,984,807
50	323000 Turbogenerator Units	172,815,018	4.46%	7,707,550	4.22%		7,292,794	(414,756)
51	324000 Accessory Electric Equipment	52,775,719	4.22%	2,227,135	4.10%		2,163,804	(63,331)
52	325000 Miscellaneous Power Plant Equipment	88,345,270	4.24%	3,745,839	4.38%		3,869,523	123,683
53	**Total Nuclear Production Plant**	$ 860,093,455	4.04%	$ 34,735,618	4.26%		$ 36,642,187	$ 1,906,569
54	**OTHER PRODUCTION PLANT (Peakers & Non-Peakers)**							
55	341000 Structures and Improvements	$ 10,244,609	3.84%	$ 393,391	2.97%		$ 303,824	$ (89,567)
56	342000 Fuel Holders, Producers, and Accessories	14,965,817	3.60%	538,768	2.74%		409,684	(129,084)
57	343000 Prime Movers	121,502,322	5.62%	6,828,430	2.77%		3,360,572	(3,467,858)
58	344000 Generators	371,562,238	3.63%	13,487,709	1.52%		5,646,217	(7,841,492)
59	345000 Accessory Electric Equipment	38,023,784	3.73%	1,418,287	2.52%		959,980	(458,307)
60	**Total Other Production Plant (Peakers & Non-Peakers)**	$ 556,298,770	4.07%	$ 22,666,585	1.92%		$ 10,680,277	$ (11,986,308)
61	**RENEWABLES: SOLAR PRODUCTION PLANT**							
62	346020 Miscellaneous Power Plant Equipment	$ 50,883,198	4.93%	$ 2,508,542	4.79%		$ 2,437,305	$ (71,236)
63	362000 Station Equipment	48,806	2.72%	1,328	1.33%		649	(678)
64	391010 Office Furniture **(Amortizable)**	452,593	**15-Yrs.**	30,174	**15-Yrs.**	**(1)**	30,174	-
65	**Total Renewables: Solar Production Plant**	$ 51,384,597	4.94%	$ 2,540,044	4.80%		$ 2,468,129	$ (71,915)

Michigan Public Service Commission **Revised Attachment A** **Page 2 of 2**
DTE Electric Company
MPSC Case No. U-18150
MPSC Ordered Depreciation Rates and Amortization Periods
with Corrected Rates for Accounts 373060 and 373080

Line No.	(j)	(k) Accounts and Descriptions	(l) 12/31/2015 Plant Investment	(m) Current Depreciation Rates	(n) Current 2015 Depreciation Accrual	(o) MPSC Order U-18150 Depreciation Rates	(p)	(q) MPSC Order U-18150 Depreciation Accrual	(r) Increase/ (Decrease) in Accrual
66		**RENEWABLES: WIND PRODUCTION PLANT**							
67	344010	Generators	$ 796,359,990	3.78%	$ 30,102,408	3.91%		$ 31,137,676	$ 1,035,268
68	361000	Structures and Improvements	3,925,119	1.75%	68,690	1.66%		65,157	(3,533)
69	362000	Station Equipment	32,436,005	2.72%	882,259	1.33%		431,399	(450,860)
70	364000	Poles, Towers and Fixtures	543,896	5.00%	27,195	2.93%		15,936	(11,259)
71	365000	Overhead Conductors and Devices	5,105,606	5.00%	255,280	2.85%		145,510	(109,771)
72	367000	Underground Conductors and Devices	44,697,615	3.33%	1,488,431	2.21%		987,817	(500,613)
73	390000	Structures and Improvements	718,999	3.53%	25,381	2.85%		20,491	(4,889)
74	391010	Office Furniture **(Amortizable)**	11,162	**15-Yrs.**	744	**15-Yrs.**	**(1)**	744	-
75	391020	Computer Equipment **(Amortizable)**	205,736	**8-Yrs.**	25,717	**8-Yrs.**	**(1)**	25,717	-
76	397000	Communication Equipment **(Amortizable)**	8,190	4.34%	355	**15-Yrs.**	**(1) (2)**	546	191
77		**Total Renewables: Wind Production Plant**	$ 884,012,318	3.72%	$ 32,876,460	3.71%		$ 32,830,993	$ (45,466)
78		**Total Renewables**	$ 935,396,915	3.79%	$ 35,416,503	3.77%		$ 35,299,121	$ (117,382)
79		**TRANSMISSION PLANT**							
80	353000	Station Equipment	$ 83,517,490	1.65%	$ 1,378,039	2.37%		$ 1,979,364	$ 601,325
81		**DISTRIBUTION PLANT**							
82	361000	Structures and Improvements	$ 150,661,015	1.76%	$ 2,651,634	1.40%		$ 2,109,254	$ (542,380)
83	362000	Station Equipment	1,145,357,431	2.66%	30,466,508	2.05%		23,479,827	(6,986,680)
84	363000	Storage Battery Equipment	324,509	6.70%	21,742	6.68%		21,677	(65)
85	364000	Poles, Towers and Fixtures	1,272,793,313	5.24%	66,694,370	6.12%		77,894,951	11,200,581
86	365000	Overhead Conductors and Devices	1,905,043,870	4.41%	84,012,435	4.55%		86,679,496	2,667,061
87	366000	Underground Conduit	345,346,988	1.84%	6,354,385	1.91%		6,596,127	241,743
88	367000	Underground Conductors and Devices	1,045,355,113	3.43%	35,855,680	3.55%		37,110,107	1,254,426
89	368000	Line Transformers	541,394,048	2.77%	14,996,615	2.85%		15,429,730	433,115
90	369010	Services - Overhead	169,548,171	5.83%	9,884,658	6.04%		10,240,710	356,051
91	369020	Services - Underground	185,284,488	6.29%	11,654,394	6.65%		12,321,418	667,024
92	370010	Meters - Conventional **(Amortizable)**	80,173,404	3.37%	2,701,844	**10-Yrs.**	**(1) (3)**	2,545,539	(156,305)
93	370020	Meters - AMI	258,697,902	5.00%	12,934,895	5.04%		13,038,374	103,479
94	371010	Installations on Customers' Premises - Power Equip.	24,922,590	3.38%	842,384	3.60%		897,213	54,830
95	371020	Installations on Customers' Premises - Yard Lighting	29,591,398	6.24%	1,846,503	6.56%		1,941,196	94,692
96	373010	Street Lighting Infrastructure - Overhead	36,616,203	5.83%	2,134,725	10.32%		3,778,792	1,644,068
97	373020	Street Lighting Infrastructure - Underground	58,806,887	2.93%	1,723,042	4.84%		2,846,253	1,123,212
98	373030	Street Lighting Wire - Overhead	13,153,693	5.83%	766,860	4.41%		580,078	(186,782)
99	373040	Street Lighting Wire/Cable - Underground	44,456,350	2.93%	1,302,571	4.52%		2,009,427	706,856
100	373050	Street Lighting Luminaires - HID Underground	20,073,823	2.93%	588,163	7.11%		1,427,249	839,086
101	**373060**	**Street Lighting Luminaires - LED Underground**	**904,079**	**2.93%**	**26,490**	**6.73%**		**60,845**	**34,355**
102	373070	Street Lighting Luminaires - HID Overhead	34,598,490	5.83%	2,017,092	6.69%		2,314,639	297,547
103	**373080**	**Street Lighting Luminaires - LED Overhead**	**1,445,722**	**5.83%**	**84,286**	**6.72%**		**97,153**	**12,867**
104		**Total Distribution Plant**	$ 7,364,549,487	3.93%	$ 289,561,274	4.13%		$ 303,420,055	$ 13,858,781
105		**GENERAL PLANT**							
106		**Depreciable**							
107	390000	Structures and Improvements	$ 314,513,901	3.53%	$ 11,102,341	4.85%		$ 15,253,924	$ 4,151,583
108	392000	Transportation Equipment	155,371,978	7.45%	11,575,212	12.88%		20,011,911	8,436,698
109	396000	Power Operated Equipment	14,238,293	2.97%	422,877	8.72%		1,241,579	818,702
110		**Total Depreciable General Plant**	$ 484,124,172	4.77%	$ 23,100,430	7.54%		$ 36,507,414	$ 13,406,984
111		**Amortizable**							
112	391010	Office Furniture	$ 39,962,870	**15-Yrs.**	$ 2,632,335	**15-Yrs.**	**(1)**	$ 2,632,335	$ -
113	391020	Computer Equipment	60,241,496	**8-Yrs.**	6,499,034	**8-Yrs.**	**(1)**	6,499,034	-
114	391030	Office Equipment	5,566,573	**10-Yrs.**	556,504	**10-Yrs.**	**(1)**	556,504	-
115	391040	Computer Equipment - 5 Year	16,202,823	**5-Yrs.**	2,798,730	**5-Yrs.**	**(1)**	2,798,730	-
116	393000	Stores Equipment	4,864,750	**22-Yrs.**	154,589	**22-Yrs.**	**(1)**	154,589	-
117	394000	Tools, Shop and Garage Equipment	80,708,504	**25-Yrs.**	3,184,904	**25-Yrs.**	**(1)**	3,184,904	-
118	395000	Laboratory Equipment	16,441,378	**15-Yrs.**	1,092,995	**15-Yrs.**	**(1)**	1,092,995	-
119	397000	Communication Equipment	121,198,723	4.34%	5,260,025	**15-Yrs.**	**(1) (2)**	3,122,712	(2,137,312)
120	398000	Miscellaneous Equipment	5,029,382	**15-Yrs.**	335,292	**15-Yrs.**	**(1)**	335,292	-
121		**Total Amortizable General Plant**	$ 350,216,499	6.43%	$ 22,514,408	5.82%		$ 20,377,096	$ (2,137,312)
122		**Total General Plant**	$ 834,340,671	5.47%	$ 45,614,839	6.82%		$ 56,884,510	$ 11,269,671
123		**Total 2015 Utility Plant and Settlement Depreciation**	$ 17,845,387,417	**3.21%**	$ 573,175,830	**3.71%**		$ 662,371,500	$ 89,195,671

124 **(1) The amounts shown here reflect the proper accrual based on the approved amortization period.**
125 **(2) Per the Settlement Agreement in this Case, Account 397000, Communication Equipment was authorized to change from depreciable to 15-yr amortizable.**
126 **(3) Account 370010, Meters - Conventional, was changed from depreciable to 10-yr amortizable because these meters are being phased out due to the conversion to**
127 **AMI Meters. The balance in this account has declined from $80.2 million at the time of this filing (see above) to $5 million as of 12/31/2018.**

DTE Electric Company
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May 18, 2020

Don L. Keskey
Brian W. Coyer
Public Law Resource Center PLLC
University Office Place
333 Albert Avenue, Suite 425
East Lansing, MI 48823

RE: In the matter, on the Commission's own motion regarding the regulatory reviews, revisions, determinations, and/or approvals necessary for **DTE ELECTRIC COMPANY** to fully comply with Public Act 295 of 2008.
MPSC Case No. U-18232

Dear Mr. Keskey and Mr. Coyer:

Attached for electronic filing in the above referenced matter is DTE Electric Company's Supplemental Response to GLREADE-1.2a to Great Lakes Renewable Energy Association's First Discovery Request. Also attached is the Proof of Service.

Very truly yours,

Lauren D. Donofrio
Digitally signed by Lauren D. Donofrio
Date: 2020.05.18 13:08:55 -04'00'

Lauren D. Donofrio

LDD/lah
Encl.
cc: Service List

MPSC Case No.:	U-18232
Requestor:	GLREA
Question No.:	1.2a Supplemental
Respondent:	T. L. Schroeder
Page:	1 of 1

Question: Supplemental response to GLREADE-1.2a

Answer: As noted in GLREADE-1.2a, the original exhibit file had an error when forecasting generation from Pinnebog Wind Build. As noted in my testimony, on page 20, forward-looking capacity factor projections for the operational parks were based on historical performance of the existing wind farms and projected for approved but not yet operational projects. We typically look at 5 years of operational performance. The formula inadvertently included 5 years for Pinnebog, which has not been operational for 5 years. This caused the capacity factor to drop from approximately 38.5% to 30.7%.

The average capacity factor for the fully operational years (2017-2019) is 38.5%, which increases the average annual generation from 137,000 MWh to 172,000 MWh. These changes flow through many of the exhibit files, but directionally, the changes increase the number of available RECs and decrease the incremental cost of compliance. The ending balance for RECs increases from 1,290,048 to 1,639,087 in 2029. Additionally, the total forecasted incremental cost of compliance is reduced to $34 million from the $54 million originally cited in testimony.

Attachments: N/A