November 6, 2025

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

Via E-File

RE: MPSC Case No. U-21870

Dear Ms. Felice:

Attached please find the enclosed documents for filing:

- Supplemental Brief in Support of Motion to Strike and Exhibits (Ex. 1 through Ex. 4) by Michigan Environmental Council; and
- Proof of Service.
- Please note that Exhibit 3C is filed under seal and will only be served to those with an executed non-disclosure certificate pursuant to the Protective Order.

Thank you for your assistance in this matter. If you have any questions, please feel free to contact me.

Sincerely,

Digitally signed by Christopher M. Bzdok
Date: 2025.11.06 14:20:09 -05'00'

Christopher M. Bzdok
chris@tropospherelegal.com

CC: Parties to Case No. U-21870

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for the generation and distribution of electricity and for other relief.	Case No. U-21870

SUPPLEMENTAL BRIEF IN SUPPORT OF MOTION TO STRIKE BY MICHIGAN ENVIRONMENTAL COUNCIL

November 6, 2025

MEC details here the materials Consumers did and did not produce regarding its new analyses and approval documents for the Generator Step Up (GSU) and Variable Inlet Guide Vane (VIGV) projects at the Jackson plant introduced for the first time in rebuttal. Consumers did not produce net present value (NPV) calculations or workpapers that MEC could use to test or evaluate the results of the new analyses – stating it could not reproduce such calculations from its Copperleaf model. Yet, contradicting these claims, the company did provide NPV calculations reproduced from Copperleaf for another Jackson plant project earlier in this case.

Exhibit 1 – Discovery Response MNSC-CE-0768 and Attachment 1 (GSU project)

MEC requested "all supporting documents, workpapers, and analyses used in developing this new concept approval, in electronic format with formulas intact where applicable." (Part a.) Consumers responded: "The calculations that the Copperleaf software utilizes are described in the following screen clipping from the software. The assumptions are detailed in the Exhibit. The software provides the results, but it does not have an excel type document that has calculations intact." *Id*. Consumers thus did not provide the information requested, claiming it could not. Without the calculations, there is no way to test or evaluate the results.

MEC also requested "the supporting calculation for all NPVs, in electronic format with formulas intact . . ." (Part b.) Consumers did not provide what was requested but said it "provided examples of the NPV calculations that Copperleaf performs" for a different project in MNSC-CE-0224_ATT_0003. (*Id*.) The example contradicts Consumers' position. In 224, MEC requested "the supporting calculations for the NPV estimate" for the JGS engine overhaul. Consumers responded that it used Copperleaf and "*[w]hile the Company does not have the ability to download the supporting NPV calculation as an output of the model, the Company has reproduced the NPV modeling.*" Consumers produced an Excel spreadsheet with data and formulas intact. (**Ex. 4**; MEC

submits the Excel version too). This is the type of information Consumers claimed it could not provide for the new GSU project evaluation. It is not everything requested but it is much closer.

In Ex. 1 (MNSC-CE-0768), Consumers also produced assumed capacity factor values as an attachment. Those values are responsive to a request for data but are not analyses or calculations. Consumers also produced screenshots from Copperleaf *describing* calculations, but that information cannot be used to reproduce, test, or evaluate Consumers' results. Consumers contradictorily argues that it cannot produce calculations from Copperleaf but MEC should be able to do so from screen shots and descriptions of formulas.

Exhibit 2: Discovery Response MNSC-CE-0769 and Attachment 1 (VGIV project)

MEC requested "all supporting documents, workpapers, and analyses used in developing this new concept approval, in electronic format with formulas intact where applicable." (Sub-part a.) Consumers did not produce the materials requested, stating "The software provides the results, but it does not have an excel type document that has calculations intact." (*Id*.) MEC also requested "the supporting calculation for all NPVs, in electronic format with formulas intact where applicable." (Sub-part b.) Consumers responded: "The concept approval and the NPV calculations are performed in Copperleaf pursuant to the procedure provided in . . . Exhibit A-203 . . . No other NPV support is available in electronic format other than the detailed discussion of how Copperleaf models NPV as provided in Exhibit A-205 . . ." (*Id*.) Again, the company earlier produced NPV calculations for the Jackson engine overhaul project, contradicting this claim. (Ex. 4.)

Consumers also provided a screenshot from Copperleaf that cannot be used to evaluate the calculations and claimed results of the new analysis. Consumers also provided fact sheets and proposals from GE in response to requests for source documents but those are not calculations or analyses and cannot be used to evaluate the company's new results. (See Ex. 2, att. 1 and Ex. 3.)

Respectfully submitted,

TROPOSPHERE LEGAL, PLC
Counsel for MEC

Date: November 6, 2025

By: 
Digitally signed by Christopher M. Bzdok
Date: 2025.11.06 14:20:23 -05'00'

Christopher M. Bzdok (P53094)
Holly L. Hillyer (P85318)
Tracy Jane Andrews (P67467)
420 E. Front St.
Traverse City, MI 49686
Phone: 231-709-4000

EXHIBIT LIST

Exhibit 1	MNSC-CE-0768 and Attachment 1
Exhibit 2	MNSC-CE-0769 and Attachment 1
Exhibit 3C	MNSC-CE-0769 Confidential Attachments 2, 3, 4, 5, and 6
Exhibit 4	MNSC-CE-0224 and Attachment 3

Exhibit 1

Question:

5. Refer to Exhibit No. A-202 (RTB-24).

   a. Please provide all supporting documents, workpapers, and analyses used in developing this new concept approval, in electronic format with formulas intact where applicable.

   b. Please provide the supporting calculation for all NPVs, in electronic format with formulas intact where applicable.

   c. Please provide the supporting sources for all assumed or calculated costs and benefits of each alternative.

   d. Please provide support for the calculation of annual capacity value, including the application of probabilities, in electronic format with formulas intact where applicable.

   e. Please describe why the probabilities were applied after 2028 and describe how these post-2028 values were used in the calculation.

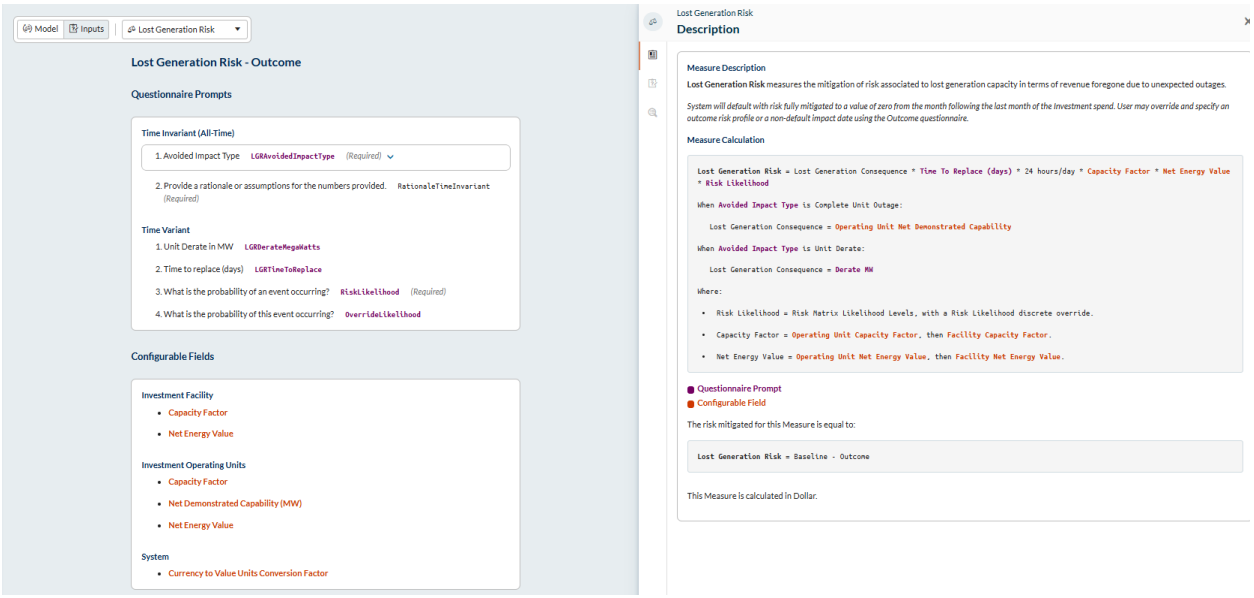
   f. Regarding energy value, confirm that even under a 104 MW derate there would be hours of no energy losses because the plant would not be operating at a high level regardless of the derate.

   g. Confirm that there is potential for the Company to replace the derated capacity for a three-year period at a cost lower than 75% of CONE. If denied, please explain.

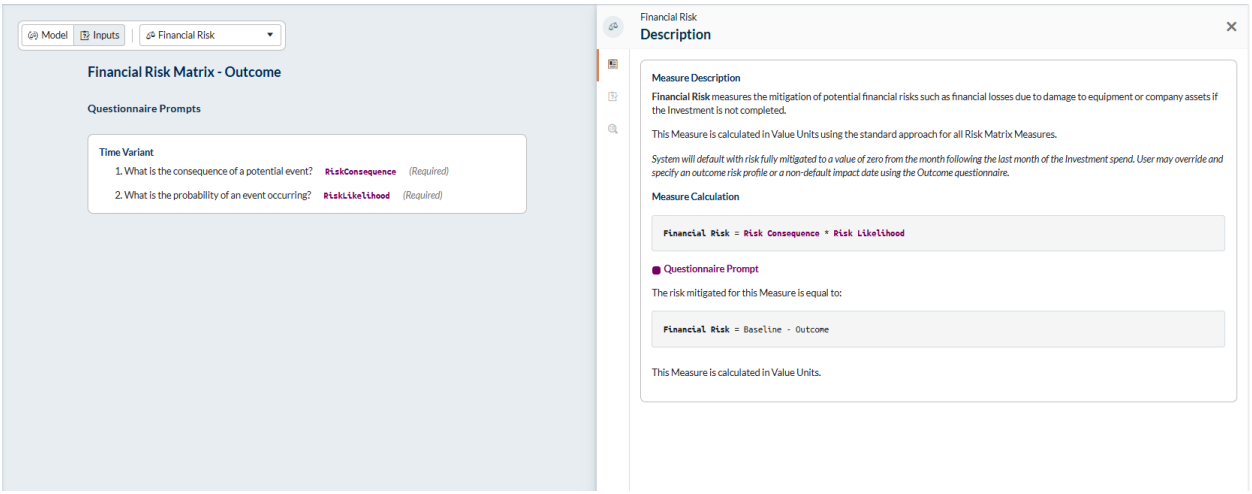
Response:

a. The supporting documentation is reflected in the PSCR case values that are embedded in the Copperleaf models as discussed in prior discovery responses. These values were provided in response to discovery questions U21870-MNSC-CE-071 and U-21870-MNSC-CE-072. The differences between the modeling previously provided and those represented in Exhibit A-202 (RTB-24) are discussed in my rebuttal testimony beginning on page 29. The calculations that the Copperleaf software utilizes are described in the following screen clipping from the software. The assumptions are detailed in the Exhibit. The software provides the results, but it does not have an excel type document that has calculations intact.

Lost Generation Risk



Financial Risk



b. The Company provided examples of the NPV calculations that Copperleaf performs and a document that explains in detail how those are calculated (see Exhibit A-205 (RTB-27)) and example in U21870-MNSC-CE-0224_ATT_0003. See my rebuttal testimony beginning on page 33.

c. See the response to subparts b and d.

d. For annual capacity value and application of probability, the Company provided the generic calculator used for estimating potential capacity lost revenue as well as a document explaining in detail how it works (see Exhibit A-205 (RTB-27)). The probability portion of this question is related to the financial risk model in Copperleaf as captured in subpart a. For the assumed values for Capacity Factor by month see U21870-MNSC-CE-0768_ATT_0001. This document includes all the data for the

background calculations for the Jackson site. In row 2 the assumed capacity factors are listed by month starting January 2024 in column O progressing by month moving to the right. These values are the same as the latest approved PSCR case.

e. Copperleaf's valuation methodology begins by establishing a baseline risk scenario—representing the cumulative risk of inaction through 2039. This baseline serves as the foundation for comparison. To determine the value of a proposed project, Copperleaf subtracts both the risk that would be mitigated prior to the project's completion and the associated project costs from the total baseline risk. The result is the net value of the project, expressed as the amount of risk mitigated. Value = Baseline Risk – (Residual Risk + Project Cost)

f. Confirmed. However, the updated calculations include capacity factor projections and therefore are reflected in the new results.

g. The 75% of CONE value is simply a planning assumption and is not a value based on specific market intelligence. I am unable to confirm the availability of capacity, nor the cost of any such capacity.

Witness: RICHARD T. BLUMENSTOCK
Date: October 29, 2025

	A	B	C	D	E
1	**Code**	Series Type	Name	Is Default	Offset Type
2	Capacity Factor - Jackson	Configurable Field Value	Capacity Factor - Jackson	0	Absolute Calendar Monthly
3	Fuel Cost $/MMBTU - Jackson	Configurable Field Value	Fuel Cost $/MMBTU - Jackson	0	Absolute Calendar Monthly
4	NDC MW - Jackson	Configurable Field Value	NDC MW - Jackson	0	Absolute Calendar Monthly
5	NetEnergyValue - Jackson	Configurable Field Value	NetEnergyValue - Jackson	0	Absolute Calendar Monthly

	F	G	H	I	J	K	L
1	Base Year	Base Month	Custom Series Type	Unit Code	Compound Frequency	Loading Code	Resource Code
2	2024	1		Percent			
3	2024	1					
4	2024	1		Megawatt			
5	2024	1		Dollar			

	M	N	O	P	Q	R
1	Uninflated Reference Fiscal Year	Delete Entity	First Value	Additional Value 1	Additional Value 2	Additional Value 3
2			0.2135005	0.1851007	0.2765036	0.425036
3			2.57	2.503011	2.07	1.84
4			547	547	547	547
5	2024		0	0	0	0

	S	T	U	V	W	X
1	Additional Value 4	Additional Value 5	Additional Value 6	Additional Value 7	Additional Value 8	Additional Value 9
2	0.6585702	0.6543069	0.8033339	0.6631956	0.4792454	0.5129564
3	1.94	2.18	2.35	2.413134	2.31	2.39
4	547	547	547	547	547	547
5	0	0	0	0	0	0

	Y	Z	AA	AB	AC	AD
1	Additional Value 10	Additional Value 11	Additional Value 12	Additional Value 13	Additional Value 14	Additional Value 15
2	0.5819132	0.5739461	0.232036	0.1811784	0.2762508	0.4246474
3	2.78	3.54	3.42	3.291948	2.97	2.54
4	547	547	578.8	578.8	547.5	547.5
5	0	0	1.124929	5.036391	1.843855	5.332389

	AE	AF	AG	AH	AI	AJ
1	Additional Value 16	Additional Value 17	Additional Value 18	Additional Value 19	Additional Value 20	Additional Value 21
2	0.6579683	0.6697334	0.8222743	0.6788319	0.4838986	0.4721108
3	2.59	2.86	3.03	3.063979	2.93	2.99
4	547.5	534.4	534.4	534.4	540	540
5	5.151049	6.601515	12.06974	9.75506	5.836092	3.412354

	AK	AL	AM	AN	AO	AP
1	Additional Value 22	Additional Value 23	Additional Value 24	Additional Value 25	Additional Value 26	Additional Value 27
2	0.589456	0.4147103	0.2320445	0.1811784	0.2661513	0.1559283
3	3.28	4	4.26	4.032386	3.51	2.87
4	540	578.8	578.8	578.8	547.5	547.5
5	2.567774	1.986298	2.059662	2.77725	1.192265	3.448278

	AQ	AR	AS	AT	AU	AV
1	Additional Value 28	Additional Value 29	Additional Value 30	Additional Value 31	Additional Value 32	Additional Value 33
2	0.6579683	0.6697334	0.8222743	0.6121482	0.5025396	0.4895303
3	2.9	3.15	3.31	3.354356	3.21	3.26
4	547.5	534.4	534.4	534.4	540	540
5	4.423745	5.958358	9.156064	8.531598	5.341844	3.619554

	AW	AX	AY	AZ	BA	BB
1	Additional Value 34	Additional Value 35	Additional Value 36	Additional Value 37	Additional Value 38	Additional Value 39
2	0.589456	0.1946455	0.2188818	0.1811784	0.2762508	0.3404571
3	3.53	4.24	4.5	4.262522	3.65	2.9
4	540	578.8	578.8	578.8	547.5	547.5
5	1.941616	1.68007	2.678286	0.644969	0.8629633	3.407477

	BC	BD	BE	BF	BG	BH
1	Additional Value 40	Additional Value 41	Additional Value 42	Additional Value 43	Additional Value 44	Additional Value 45
2	0.6579683	0.6697334	0.8222743	0.6788319	0.5025396	0.5162073
3	2.92	3.17	3.32	3.354356	3.22	3.3
4	547.5	534.4	534.4	534.4	540	540
5	3.57666	6.58904	9.279506	8.690462	4.698626	3.272852

	BI	BJ	BK	BL	BM	BN
1	Additional Value 46	Additional Value 47	Additional Value 48	Additional Value 49	Additional Value 50	Additional Value 51
2	0.589456	0.2986108	0.2070911	0.1749309	0.252229	0.2928667
3	3.57	4.28	4.54	4.297999	3.63	2.8
4	540	578.8	578.8	578.8	547.5	547.5
5	3.550516	2.68093	2.207603	2.994488	1.55296	1.907561

	BO	BP	BQ	BR	BS	BT
1	Additional Value 52	Additional Value 53	Additional Value 54	Additional Value 55	Additional Value 56	Additional Value 57
2	0.5852915	0.6697334	0.8222743	0.6788319	0.5025396	0.4862317
3	2.83	3.1	3.27	3.314304	3.16	3.22
4	547.5	534.4	534.4	534.4	540	540
5	3.791174	6.887315	8.550553	7.72085	3.645391	3.318921

	BU	BV	BW	BX	BY	BZ
1	Additional Value 58	Additional Value 59	Additional Value 60	Additional Value 61	Additional Value 62	Additional Value 63
2	0.589456	0.2578315	0.218403	0.1726136	0.270244	0.4246474
3	3.48	4.2	4.46	4.232504	3.54	2.75
4	540	578.8	578.8	578.8	547.5	547.5
5	3.801088	3.480172	2.611418	3.331342	1.478001	2.79372

	CA	CB	CC	CD	CE	CF
1	Additional Value 64	Additional Value 65	Additional Value 66	Additional Value 67	Additional Value 68	Additional Value 69
2	0.3642432	0.6231856	0.8222743	0.6788319	0.5025396	0.4690971
3	2.78	3.07	3.27	3.304291	3.16	3.23
4	547.5	534.4	534.4	534.4	540	540
5	4.607188	6.457403	8.05315	7.995289	4.403912	3.612572

	CG	CH	CI	CJ	CK	CL
1	Additional Value 70	Additional Value 71	Additional Value 72	Additional Value 73	Additional Value 74	Additional Value 75
2	0.589456	0.2843903	0.22169128	0.17821594	0.26822518	0.32770938
3	3.49	4.2	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.887255	2.508287	2.1363796	2.956888	1.38600886	3.377885

	CM	CN	CO	CP	CQ	CR
1	Additional Value 76	Additional Value 77	Additional Value 78	Additional Value 79	Additional Value 80	Additional Value 81
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	CS	CT	CU	CV	CW	CX
1	Additional Value 82	Additional Value 83	Additional Value 84	Additional Value 85	Additional Value 86	Additional Value 87
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	CY	CZ	DA	DB	DC	DD
1	Additional Value 88	Additional Value 89	Additional Value 90	Additional Value 91	Additional Value 92	Additional Value 93
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	DE	DF	DG	DH	DI	DJ
1	Additional Value 94	Additional Value 95	Additional Value 96	Additional Value 97	Additional Value 98	Additional Value 99
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	DK	DL	DM	DN	DO	DP
1	Additional Value 100	Additional Value 101	Additional Value 102	Additional Value 103	Additional Value 104	Additional Value 105
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	DQ	DR	DS	DT	DU	DV
1	Additional Value 106	Additional Value 107	Additional Value 108	Additional Value 109	Additional Value 110	Additional Value 111
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	DW	DX	DY	DZ	EA	EB
1	Additional Value 112	Additional Value 113	Additional Value 114	Additional Value 115	Additional Value 116	Additional Value 117
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	EC	ED	EE	EF	EG	EH
1	Additional Value 118	Additional Value 119	Additional Value 120	Additional Value 121	Additional Value 122	Additional Value 123
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	EI	EJ	EK	EL	EM	EN
1	Additional Value 124	Additional Value 125	Additional Value 126	Additional Value 127	Additional Value 128	Additional Value 129
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	EO	EP	EQ	ER	ES	ET
1	Additional Value 130	Additional Value 131	Additional Value 132	Additional Value 133	Additional Value 134	Additional Value 135
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	EU	EV	EW	EX	EY	EZ
1	Additional Value 136	Additional Value 137	Additional Value 138	Additional Value 139	Additional Value 140	Additional Value 141
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	FA	FB	FC	FD	FE	FF
1	Additional Value 142	Additional Value 143	Additional Value 144	Additional Value 145	Additional Value 146	Additional Value 147
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	FG	FH	FI	FJ	FK	FL
1	Additional Value 148	Additional Value 149	Additional Value 150	Additional Value 151	Additional Value 152	Additional Value 153
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	FM	FN	FO	FP	FQ	FR
1	Additional Value 154	Additional Value 155	Additional Value 156	Additional Value 157	Additional Value 158	Additional Value 159
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	FS	FT	FU	FV	FW	FX
1	Additional Value 160	Additional Value 161	Additional Value 162	Additional Value 163	Additional Value 164	Additional Value 165
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	FY	FZ	GA	GB	GC	GD
1	Additional Value 166	Additional Value 167	Additional Value 168	Additional Value 169	Additional Value 170	Additional Value 171
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	GE	GF	GG	GH	GI	GJ
1	Additional Value 172	Additional Value 173	Additional Value 174	Additional Value 175	Additional Value 176	Additional Value 177
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	GK	GL	GM	GN	GO	GP
1	Additional Value 178	Additional Value 179	Additional Value 180	Additional Value 181	Additional Value 182	Additional Value 183
2	0.589456	0.29003768	0.22169128	0.17821594	0.26822518	0.32770938
3	3.47	4.184	4.236	4.0234718	3.46	2.772
4	540	578.8	578.8	578.8	547.5	547.5
5	2.9496498	2.4671514	2.1363796	2.956888	1.38600886	3.377885

	GQ	GR	GS	GT	GU	GV
1	Additional Value 184	Additional Value 185	Additional Value 186	Additional Value 187	Additional Value 188	Additional Value 189
2	0.58468792	0.66042384	0.8222743	0.66549516	0.4988114	0.48663544
3	2.804	3.07	3.24	3.2782572	3.136	3.2
4	547.5	534.4	534.4	534.4	540	540
5	4.3099632	6.4987262	9.4218026	8.5386518	4.785173	3.4472506

	GW	GX
1	Additional Value 190	Additional Value 191
2	0.589456	0.29003768
3	3.47	4.184
4	540	578.8
5	2.9496498	2.4671514

Exhibit 2

Question:

6. Refer to Exhibit No. A-203 (RTB-25).

   a. Please provide all supporting documents, workpapers, and analyses used in developing this new concept approval, in electronic format with formulas intact where applicable.

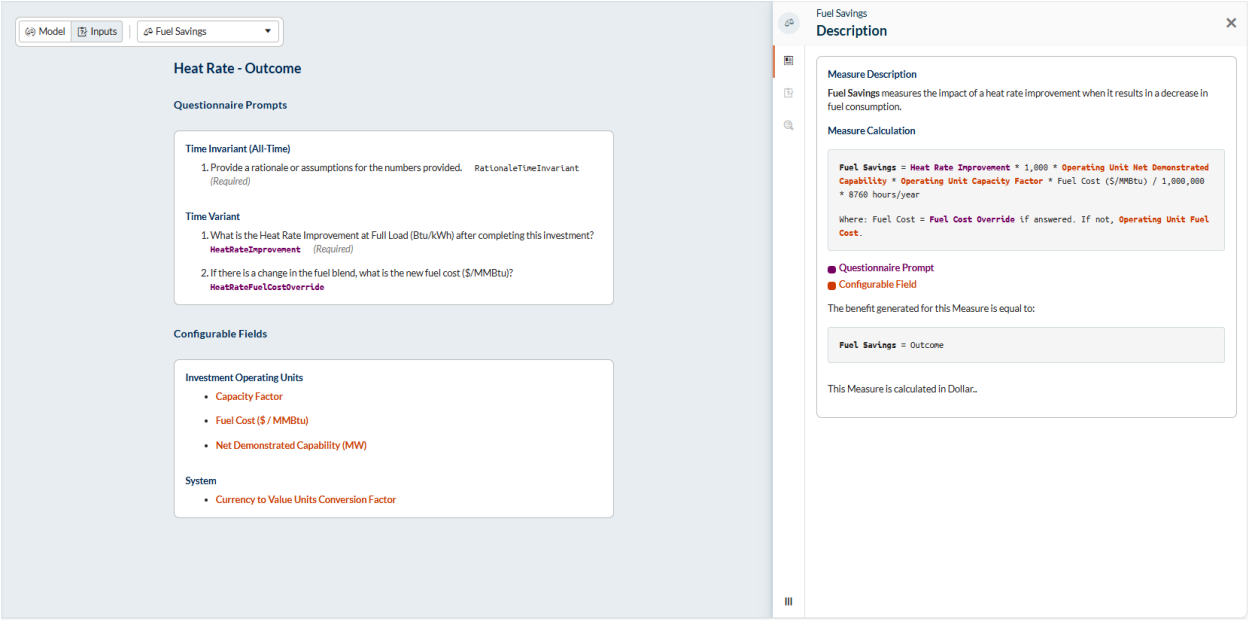
   b. Please provide the supporting calculation for all NPVs, in electronic format with formulas intact where applicable.

   c. Please provide the supporting sources for all assumed or calculated costs and benefits of each alternative, in electronic format with formulas intact where applicable.

Response:

a. For the LM VIGV project benefits (heat rate during duct burning (286 Btu/kWh) and non-duct burning (189 Btu/kWh)), GE provided us with a fact sheet on the VIGV enhancement as well as performance estimate graphs. This simple cycle info was entered into our EBSILON® Professional modeling software program to get the estimated heat rate changes for the JGS combined cycle plant. Attached as U21870-MNSC-CE-0769_ATT_0001, U21870-MNSC-CE-0769_ATT_0002_CONF, and U21870-MNSC-CE-0769_ATT_0003_CONF are copies of the VIGV fact sheet and budgetary estimates/ proposals which have info utilized for modeling, and communication of EBSILON® modeling results. The calculation for Heat Rate that the Copperleaf software utilizes are described in the following screen clipping from the software. The calculations for Lost Generation Risk and Financial Risk are included in U21870-MNSC-CE-0768 part a. The assumptions for each calculation are detailed in the Exhibit. The software provides the results, but it does not have an excel type document that has calculations intact. The Fuel Cost assumptions are included in U21870-MNSC-CE-0768_ATT_0001, row 3.

Heat Rate



b. The concept approval and the NPV calculations are performed in Copperleaf pursuant to the procedure provided in both discovery and as Exhibit A-203 (RTB-25). No other NPV support is available in electronic format other than the detailed discussion of how Copperleaf models NPV as provided in Exhibit A-205 (RTB-27).

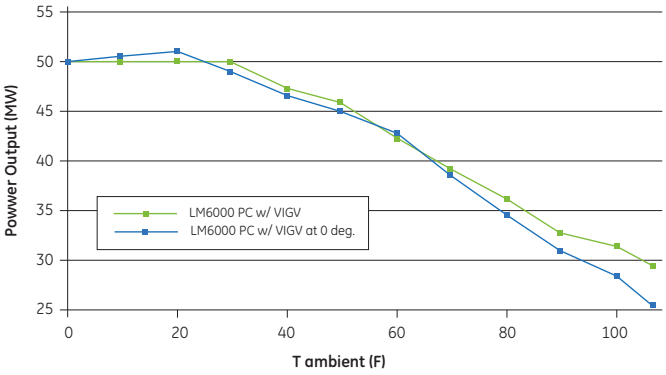
c. Please see attachments U21870-MNSC-CE-0769_ATT_0004_CONF, U21870-MNSC-CE-0769_ATT_0005_CONF, and U21870-MNSC-CE-0769_ATT_0006_CONF, which reflect the costs for the stalled engine. This represents the bulk of the total cost.

Witness: RICHARD T. BLUMENSTOCK
Date: October 27, 2025

Variable Inlet Guide Vane (VIGV)

Product Description

- Variable Inlet Air vanes help guide inlet airflow to maximize engine performance.
- Assembly located in front of Low Pressure Compressor (LPC), consisting of 43 stationary leading-edge vanes and variable trailing flaps (rotate -10 to +60 degrees).
- Variable Differential Transformers (LVDTs) on actuator ring drivetwin hydraulic actuators.
- LVDTs and VIGV positions are controlled by continuous measurement of LPC inlet temperature and HPC discharge static pressure.
- If turbine has Fixed Inlet Guide Vanes, the upgrade involves adding VIGVs, Hydraulic Control Unit (if applicable), off-engine Cables, hydraulic lines and updating the software.



Variable Inlet Guide Vanes Assembly

Temp. (F)	Power Increase
70	2.0%
80	5.8%
90	7.2%
100	11.5%
110	13.5%

Customer Benefits

- Increases generator power output by up to 3.25 MW.
- Improves performance for simple and heat recovery cycles at less than full load; reduces engine waste heat.
- Minimizes variable bypass valve (VBV) flow and pressure levels thereby reducing associated flow noise

For LM6000PC SPRINT Gas Turbine with EFS

- Average power increase of 2 MW.
- Greater than 2% fuel efficiency increase at 70% power.
- Exhaust energy increase of 3%.
- Flaps close during large power reductions to quickly reduce LPC flow rate, helping maintain LPC stall margin.

Applicable Units

LM6000*	✓	LM2500	
LMS100		LM5000	
LM1600		TM2500	

* Configured for LM6000 PC units only

To learn more about this product and its applicability to your gas turbine, please contact your GE Gas Power sales representative.

gepower.com

GEA32093B (07/2021)

CONFIDENTIAL ATTACHMENT NOT INCLUDED IN

PUBLIC VERSION OF EXHIBIT 3C

Exhibit 4

Question:

18. Refer to Company response attachment U21870-ST-CE-0004_ATT_0024 regarding the "JGS - Engine 191-306 Overhaul" project. Please provide the supporting calculations for the NPV estimate of $4,316,758.

Response:

The Company employs a financial model from the Copperleaf Capital Planning Tool to evaluate the economics of our generation projects. The Company has attached a full electronic version of the concept approval as U21870-MNSC-CE-0224_ATT_0002. The NPV estimate of $4,316,758 is an output of the Copperleaf model. While the Company does not have the ability to download the supporting NPV calculation as an output of the model, the Company has reproduced the NPV modeling. The NPV calculation for this project is reflected on attachment U21870-MNSC-CE-0224_ATT_0003. The NPV is the summation of the financial benefits, the lost generation risk, less the cost. See also an attached document (Attachment U21870-MNSC-CE-0224_ATT_0001) which defines the financial evaluation methodology utilized by the Copperleaf model.

Witness: RICHARD T. BLUMENSTOCK
Date: August 14, 2025

Instructions

Description
These instructions will discuss how to replicate the calculation that Core Suite does to calculate the total value after performing Net Present Value (NPV) of a measure output on the Alternative Value page.

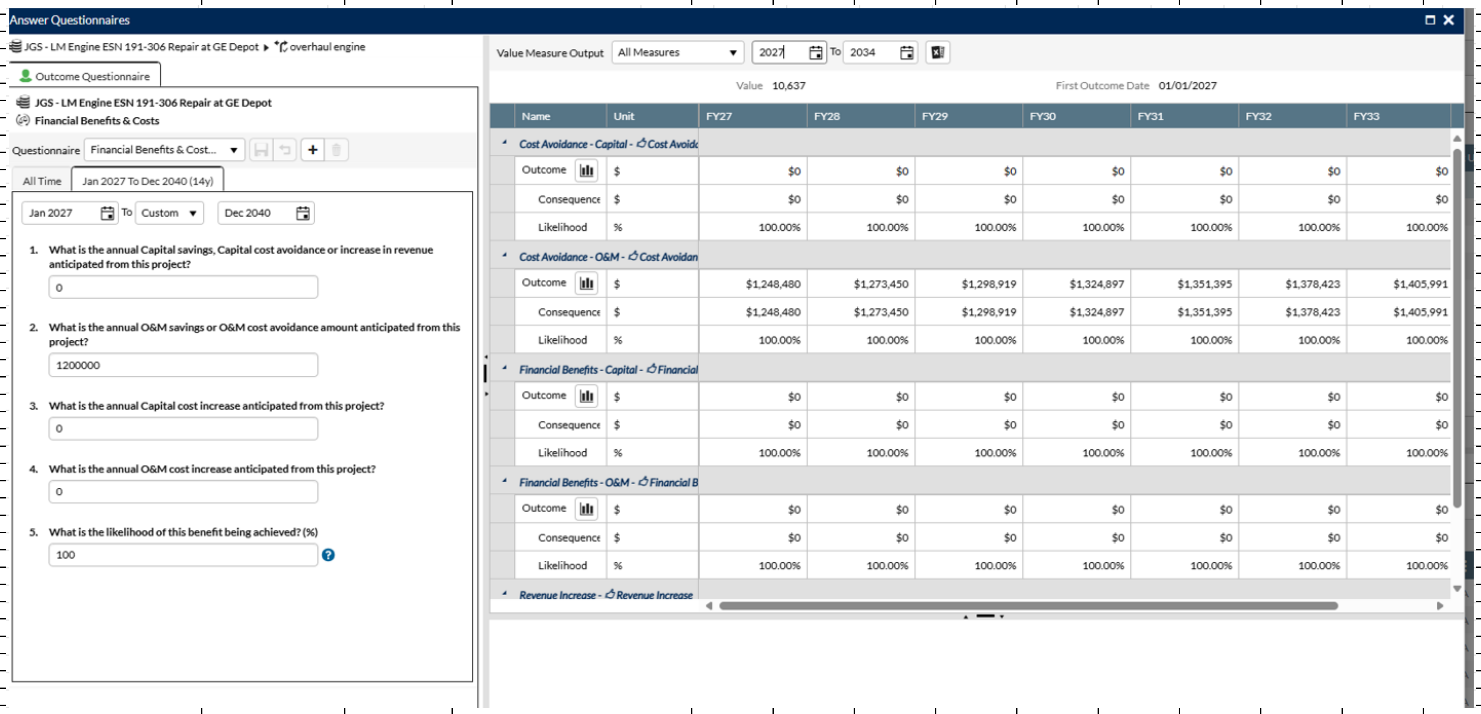
Net Present Value Analysis
Net Present Value analysis is used to help determine how much an investment, project, or any series of cash flows over time is worth at the present moment.

Value in the future is worth less than value that is received immediately due to the expected growth of money. Core Suite automatically performs this analysis using the standard NPV formula with the first month of the calculation period being the 0th period before calculating the total value measure output.

In order to replicate the value calculation that Core Suite performs, we would need to apply this formula to each monthly measure outputs within the calculated period. Unfortunately, the NPV function in Excel treats the first period as the 1st period instead of the 0th period, so the output value will not be accurate for replicating the Core Suite calculations.

Excel Calculation
The sample attached Excel file contains all the formula needed to perform the Total Value Calculation, to use it:
1. Determine the time period that system is calculating the value measure in
2. Find the start of the cashflow calculation (i=0, where i is the discount period), this is the start month of the current fiscal year
3 Find the first outcome date, this is where we will start the calculations
4 Find the end of the cash flow period, this is the start of the current fiscal year plus the investment value calculation horizon (fill out the months until all the periods are filled until the end of the cash flow period)
5 Obtain the monthly values from the yearly values
6. If the measure has different values per year, manual adjust row 3 for the correct yearly amount by diving the yearly amount by 12
7. Obtain the monthly discount rate
8. If there is only one discount rate for the entire period, enter discount rate used for the measure in cell C7
9. If there are multiple annual discount rate, each of them will need to be manually converted into a monthly discount rate and manually added to the formula in the excel sheet in the correct location. It is recommend to add a separate column for the current discount rate of the time period.
10. Adjust the sum ranges to reflect the actual time period of the calculation

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	**Financial Benefits & Costs**			Period (i)												
2	Month starts with 24 because benefits start 24 months after start of current fiscal year			Month (update this with the periods)	24	25	26	27	28	29	30	31	32	33	34	35
3				Raw (update this with inflated values)	104040	104040	104040	104040	104040	104040	104040	104040	104040	104040	104040	104040
4				Discounted	90029.20498	89488.25572	88950.5568	88416.08871	87884.83201	87356.76743	86831.87577	86310.13798	85791.53509	85276.04829	84763.65883	84254.34812
5																
6				Date	Jan-27	Feb-27	Mar-27	Apr-27	May-27	Jun-27	Jul-27	Aug-27	Sep-27	Oct-27	Nov-27	Dec-27
7	Discount rate (yearly) - update this	7.500%														
8	Discount rate (monthly) - auto-updated	0.006044919														
9																
10																
11	Starting from Jan 2025 as '0'	$ 10,637,168.61	<-- simulates the Copperleaf calculation													
12																
13																
14	the NPV function in Excel treats the first cashflow amount as month '1', meaning that it discounts it when it shouldn't, but Copperleaf treats the first cashflow as month '0', which creates a different output between them															
15																
16																
17					FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38
18	Yearly outcome or benefit from Copperleaf				1248480	1273449.6	1298918.592	1324896.964	1351394.903	1378422.801	1405991.257	1434111.082	1462793.304	1492049.17	1521890.153	1552327.957
19																
20																
21	**rationale or assumptions for the numbers provided.**															
22	avoid leasing costs for spare. 100% chance of realizing this risk if the project isn't executed.															
23																



	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
1																						
2	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57
3	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	106120.8	108243.216	108243.216	108243.216	108243.216	108243.216	108243.216	108243.216	108243.216	108243.216	108243.216
4	85423.0596	84909.78682	84399.59808	83892.47487	83388.39875	82887.35142	82389.31468	81894.27045	81402.20074	80913.08768	80426.9135	79943.66054	81052.57749	80565.56517	80081.47911	79600.30173	79122.01556	78646.60321	78174.04742	77704.33103	77237.43698	76773.34831
5																						
6	Jan-28	Feb-28	Mar-28	Apr-28	May-28	Jun-28	Jul-28	Aug-28	Sep-28	Oct-28	Nov-28	Dec-28	Jan-29	Feb-29	Mar-29	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29
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2	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
3	108243.216	108243.216	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	110408.1	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	112616.2	114868.6	114868.6
4	76312.04816	75853.51977	76905.7	76443.61	75984.29	75527.73	75073.91	74622.82	74174.44	73728.76	73285.75	72845.41	72407.71	71972.64	72970.99	72532.54	72096.72	71663.52	71232.92	70804.91	70379.47	69956.59	69536.25	69118.44	68703.13	68290.32	69237.59	68821.57
5																												
6	Nov-29	Dec-29	Jan-30	Feb-30	Mar-30	Apr-30	May-30	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30	Jan-31	Feb-31	Mar-31	Apr-31	May-31	Jun-31	Jul-31	Aug-31	Sep-31	Oct-31	Nov-31	Dec-31	Jan-32	Feb-32
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4	68408.05	67997.01	67588.45	67182.33	66778.66	66377.42	65978.58	65582.14	65188.09	64796.4	65695.2	65300.47	64908.1	64518.1	64130.43	63745.1	63362.08	62981.36	62602.93	62226.78	61852.88	61481.23	62334.05	61959.51	61587.22	61217.17	60849.34	60483.72	60120.3
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6	Mar-32	Apr-32	May-32	Jun-32	Jul-32	Aug-32	Sep-32	Oct-32	Nov-32	Dec-32	Jan-33	Feb-33	Mar-33	Apr-33	May-33	Jun-33	Jul-33	Aug-33	Sep-33	Oct-33	Nov-33	Dec-33	Jan-34	Feb-34	Mar-34	Apr-34	May-34	Jun-34	Jul-34
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2	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
3	119509.3	119509.3	119509.3	119509.3	119509.3	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	121899.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4	124337.4
4	59759.06	59399.99	59043.08	58688.32	58335.68	59144.87	58789.49	58436.25	58085.13	57736.12	57389.21	57044.38	56701.62	56360.92	56022.27	55685.66	55351.07	56118.85	55781.66	55446.49	55113.33	54782.18	54453.01	54125.83	53800.61	53477.34	53156.02	52836.62	52519.15
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2	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172
3	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	126824.2	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	129360.7	131947.9	131947.9	131947.9	131947.9	131947.9
4	53247.66	52927.71	52609.69	52293.58	51979.37	51667.05	51356.6	51048.02	50741.29	50436.41	50133.36	49832.12	50523.36	50219.78	49918.03	49618.09	49319.96	49023.62	48729.05	48436.26	48145.23	47855.94	47568.39	47282.57	47938.44	47650.4	47364.09	47079.49	46796.61
5																													
6	Jan-37	Feb-37	Mar-37	Apr-37	May-37	Jun-37	Jul-37	Aug-37	Sep-37	Oct-37	Nov-37	Dec-37	Jan-38	Feb-38	Mar-38	Apr-38	May-38	Jun-38	Jul-38	Aug-38	Sep-38	Oct-38	Nov-38	Dec-38	Jan-39	Feb-39	Mar-39	Apr-39	May-39
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3	131947.9	131947.9	131947.9	131947.9	131947.9	131947.9	131947.9	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8	134586.8
4	46515.43	46235.94	45958.12	45681.98	45407.5	45134.66	44863.46	45485.78	45212.47	44940.81	44670.78	44402.37	44135.57	43870.38	43606.78	43344.76	43084.32	42825.45	42568.12
5																			
6	Jun-39	Jul-39	Aug-39	Sep-39	Oct-39	Nov-39	Dec-39	Jan-40	Feb-40	Mar-40	Apr-40	May-40	Jun-40	Jul-40	Aug-40	Sep-40	Oct-40	Nov-40	Dec-40
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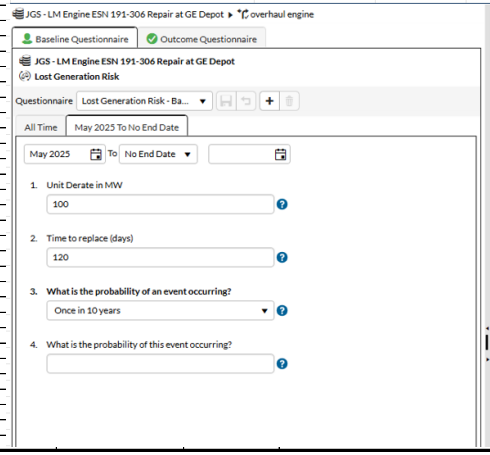
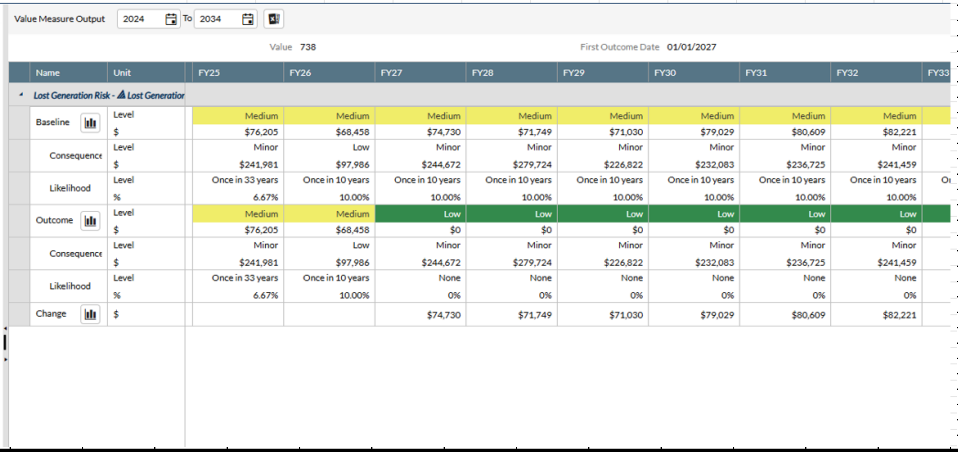
1		**Lost Generation & Risk**			Period (i)															
2		Month starts with 24 because benefits start 24 months after start of current fiscal year			Month (update this with the periods)	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
3					Raw (update this with inflated values)	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	6227.510483	5979.056967	5979.056967	5979.056967
4					Discounted	5388.867913	5356.488375	5324.303392	5292.311796	5260.512424	5228.904122	5197.485742	5166.256142	5135.214188	5104.358753	5073.688715	5043.202962	4812.905101	4783.986292	4755.241243
5																				
6					Date	Jan-27	Feb-27	Mar-27	Apr-27	May-27	Jun-27	Jul-27	Aug-27	Sep-27	Oct-27	Nov-27	Dec-27	Jan-28	Feb-28	Mar-28
7		Discount rate (yearly) - update this	7.500%																	
8		Discount rate (monthly) - auto-updated	0.006044919																	
9																				
10																				
11		Starting from Jan 2025 as '0'	$ 740,585.23	<-- simulates the Copperleaf calculation																
12																				
13																				
14		the NPV function in Excel treats the first cashflow amount as month '1', meaning that it discounts it when it shouldn't, but Copperleaf treats the first cashflow as month '0', which creates a different output between them																		
15																				
16																				
17						FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41
18		Yearly outcome or benefit from Copperleaf				74730.12579	71748.6836	71029.91433	79028.63306	80609.20572	82221.38984	83865.81763	85543.13399	87253.99667	88999.0766	90779.05813	92594.63929	94446.53208	28290.81507	28856.63137
19																				
20																				
21																				
22		**rationale or assumptions for the numbers provided.**																		
23		10% chance that leased engine is recalled and we have no way of operating unit.																		
24																				





	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT
1																										
2	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
3	5979.056967	5979.056967	5979.056967	5979.056967	5979.056967	5979.056967	5979.056967	5979.056967	5979.056967	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	5919.159528	6585.719	6585.719	6585.719	6585.719	6585.719
4	4726.668912	4698.268261	4670.038258	4641.977878	4614.086101	4586.361915	4558.804312	4531.412291	4504.184858	4432.26979	4405.638065	4379.166359	4352.85371	4326.699164	4300.70177	4274.860584	4249.174668	4223.643087	4198.264916	4173.039231	4147.965118	4587.34	4559.776	4532.378	4505.145	4478.076
5																										
6	Apr-28	May-28	Jun-28	Jul-28	Aug-28	Sep-28	Oct-28	Nov-28	Dec-28	Jan-29	Feb-29	Mar-29	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29	Nov-29	Dec-29	Jan-30	Feb-30	Mar-30	Apr-30	May-30
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17	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51	FY52	FY53	FY54	FY55	FY56	FY57	FY58	FY59	FY60	FY61	FY62	FY63	FY64	FY65	FY66	FY67
18	29433.764	30022.43928	30622.88807	31235.34583	31860.05274	32497.2538	33147.19888	33810.14285	34486.34571	35176.07262	35879.59408	36597.18596	37329.12968	38075.71227	38837.22652	39613.97105	40406.25047	41214.37548	42038.66299	42879.43625	43737.02497	44611.77	45504	46414.08	47342.36	48289.21
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1																																	
2	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
3	6585.719	6585.719	6585.719	6585.719	6585.719	6585.719	6585.719	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6717.434	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6851.782	6988.818	6988.818
4	4451.169	4424.423	4397.839	4371.414	4345.148	4319.04	4293.088	4352.639	4326.485	4300.489	4274.649	4248.965	4223.434	4198.057	4172.833	4147.76	4122.838	4098.065	4073.442	4129.945	4105.13	4080.464	4055.946	4031.576	4007.352	3983.273	3959.339	3935.549	3911.902	3888.397	3865.033	3918.646	3895.1
5																																	
6	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30	Jan-31	Feb-31	Mar-31	Apr-31	May-31	Jun-31	Jul-31	Aug-31	Sep-31	Oct-31	Nov-31	Dec-31	Jan-32	Feb-32	Mar-32	Apr-32	May-32	Jun-32	Jul-32	Aug-32	Sep-32	Oct-32	Nov-32	Dec-32	Jan-33	Feb-33
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17	FY68	FY69	FY70																														
18	49254.99	50240.09	51244.9																														
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1																																	
2	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130
3	6988.818	6988.818	6988.818	6988.818	6988.818	6988.818	6988.818	6988.818	6988.818	6988.818	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7128.594	7271.166	7271.166	7271.166	7271.166	7271.166	7271.166	7271.166	7271.166	7271.166	7271.166	7271.166
4	3871.696	3848.433	3825.309	3802.324	3779.478	3756.768	3734.195	3711.758	3689.456	3667.287	3718.157	3695.816	3673.609	3651.536	3629.596	3607.787	3586.109	3564.562	3543.144	3521.854	3500.693	3479.659	3527.926	3506.728	3485.657	3464.713	3443.895	3423.202	3402.634	3382.189	3361.867	3341.666	3321.588
5																																	
6	Mar-33	Apr-33	May-33	Jun-33	Jul-33	Aug-33	Sep-33	Oct-33	Nov-33	Dec-33	Jan-34	Feb-34	Mar-34	Apr-34	May-34	Jun-34	Jul-34	Aug-34	Sep-34	Oct-34	Nov-34	Dec-34	Jan-35	Feb-35	Mar-35	Apr-35	May-35	Jun-35	Jul-35	Aug-35	Sep-35	Oct-35	Nov-35
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1																																	
2	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163
3	7271.166	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7416.59	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7564.922	7716.22	7716.22	7716.22	7716.22	7716.22	7716.22	7716.22	7716.22
4	3301.63	3347.427	3327.314	3307.321	3287.449	3267.696	3248.062	3228.546	3209.147	3189.864	3170.697	3151.646	3132.709	3176.164	3157.079	3138.11	3119.254	3100.512	3081.882	3063.364	3044.958	3026.662	3008.476	2990.399	2972.431	3013.662	2995.554	2977.555	2959.664	2941.881	2924.204	2906.634	2889.169
5																																	
6	Dec-35	Jan-36	Feb-36	Mar-36	Apr-36	May-36	Jun-36	Jul-36	Aug-36	Sep-36	Oct-36	Nov-36	Dec-36	Jan-37	Feb-37	Mar-37	Apr-37	May-37	Jun-37	Jul-37	Aug-37	Sep-37	Oct-37	Nov-37	Dec-37	Jan-38	Feb-38	Mar-38	Apr-38	May-38	Jun-38	Jul-38	Aug-38
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1																																	
2	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196
3	7716.22	7716.22	7716.22	7716.22	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	7870.544	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2357.568	2404.719	2404.719	2404.719	2404.719	2404.719
4	2871.809	2854.554	2837.402	2820.353	2859.475	2842.293	2825.215	2808.24	2791.366	2774.594	2757.922	2741.351	2724.879	2708.507	2692.232	2676.056	796.7778	791.9903	787.2316	782.5014	777.7997	773.1262	768.4808	763.8633	759.2736	754.7114	750.1766	745.6691	756.0125	751.4699	746.9546	742.4665	738.0053
5																																	
6	Sep-38	Oct-38	Nov-38	Dec-38	Jan-39	Feb-39	Mar-39	Apr-39	May-39	Jun-39	Jul-39	Aug-39	Sep-39	Oct-39	Nov-39	Dec-39	Jan-40	Feb-40	Mar-40	Apr-40	May-40	Jun-40	Jul-40	Aug-40	Sep-40	Oct-40	Nov-40	Dec-40	Jan-41	Feb-41	Mar-41	Apr-41	May-41
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1																																	
2	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229
3	2404.719	2404.719	2404.719	2404.719	2404.719	2404.719	2404.719	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2452.814	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2501.87	2551.907	2551.907
4	733.5709	729.1632	724.7819	720.427	716.0982	711.7955	707.5186	717.3328	713.0226	708.7383	704.4798	700.2469	696.0394	691.8571	687.7001	683.5679	679.4607	675.3781	671.32	680.632	676.5424	672.4773	668.4367	664.4203	660.4281	656.4598	652.5154	648.5947	644.6976	640.8238	636.9734	645.809	641.9286
5																																	
6	Jun-41	Jul-41	Aug-41	Sep-41	Oct-41	Nov-41	Dec-41	Jan-42	Feb-42	Mar-42	Apr-42	May-42	Jun-42	Jul-42	Aug-42	Sep-42	Oct-42	Nov-42	Dec-42	Jan-43	Feb-43	Mar-43	Apr-43	May-43	Jun-43	Jul-43	Aug-43	Sep-43	Oct-43	Nov-43	Dec-43	Jan-44	Feb-44
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1																																	
2	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262
3	2551.907	2551.907	2551.907	2551.907	2551.907	2551.907	2551.907	2551.907	2551.907	2551.907	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2602.945	2655.004	2655.004	2655.004	2655.004	2655.004	2655.004	2655.004	2655.004	2655.004	2655.004	2655.004
4	638.0715	634.2376	630.4267	626.6387	622.8735	619.1309	615.4108	611.713	608.0375	604.384	612.7676	609.0857	605.426	601.7882	598.1723	594.5781	591.0055	587.4544	583.9247	580.4161	576.9286	573.4621	581.4167	577.9232	574.4507	570.999	567.5681	564.1578	560.7681	557.3986	554.0494	550.7204	547.4113
5																																	
6	Mar-44	Apr-44	May-44	Jun-44	Jul-44	Aug-44	Sep-44	Oct-44	Nov-44	Dec-44	Jan-45	Feb-45	Mar-45	Apr-45	May-45	Jun-45	Jul-45	Aug-45	Sep-45	Oct-45	Nov-45	Dec-45	Jan-46	Feb-46	Mar-46	Apr-46	May-46	Jun-46	Jul-46	Aug-46	Sep-46	Oct-46	Nov-46
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1																																	
2	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295
3	2655.004	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2708.104	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2762.267	2817.512	2817.512	2817.512	2817.512	2817.512	2817.512	2817.512	2817.512
4	544.1221	551.6698	548.355	545.0602	541.7851	538.5298	535.294	532.0776	528.8806	525.7027	522.544	519.4042	516.2833	523.4448	520.2997	517.1734	514.0659	510.9771	507.9068	504.855	501.8215	498.8063	495.8092	492.8301	489.8688	496.6639	493.6797	490.7134	487.7649	484.8341	481.9209	479.0252	476.147
5																																	
6	Dec-46	Jan-47	Feb-47	Mar-47	Apr-47	May-47	Jun-47	Jul-47	Aug-47	Sep-47	Oct-47	Nov-47	Dec-47	Jan-48	Feb-48	Mar-48	Apr-48	May-48	Jun-48	Jul-48	Aug-48	Sep-48	Oct-48	Nov-48	Dec-48	Jan-49	Feb-49	Mar-49	Apr-49	May-49	Jun-49	Jul-49	Aug-49
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1																																	
2	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328
3	2817.512	2817.512	2817.512	2817.512	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2873.862	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2931.339	2989.966	2989.966	2989.966	2989.966	2989.966
4	473.286	470.4422	467.6155	464.8058	471.2532	468.4216	465.6071	462.8094	460.0286	457.2645	454.517	451.786	449.0714	446.3731	443.691	441.025	447.1426	444.4559	441.7853	439.1308	436.4923	433.8696	431.2626	428.6713	426.0956	423.5354	420.9905	418.461	424.2655	421.7163	419.1824	416.6637	414.1601
5																																	
6	Sep-49	Oct-49	Nov-49	Dec-49	Jan-50	Feb-50	Mar-50	Apr-50	May-50	Jun-50	Jul-50	Aug-50	Sep-50	Oct-50	Nov-50	Dec-50	Jan-51	Feb-51	Mar-51	Apr-51	May-51	Jun-51	Jul-51	Aug-51	Sep-51	Oct-51	Nov-51	Dec-51	Jan-52	Feb-52	Mar-52	Apr-52	May-52
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1																																	
2	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361
3	2989.966	2989.966	2989.966	2989.966	2989.966	2989.966	2989.966	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3049.765	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3110.761	3172.976	3172.976
4	411.6716	409.198	406.7393	404.2954	401.8661	399.4515	397.0513	402.5589	400.1401	397.7358	395.346	392.9705	390.6093	388.2623	385.9294	383.6105	381.3055	379.0144	376.7371	381.9629	379.6678	377.3865	375.119	372.865	370.6246	368.3977	366.1842	363.9839	361.7969	359.623	357.4621	362.4206	360.243
5																																	
6	Jun-52	Jul-52	Aug-52	Sep-52	Oct-52	Nov-52	Dec-52	Jan-53	Feb-53	Mar-53	Apr-53	May-53	Jun-53	Jul-53	Aug-53	Sep-53	Oct-53	Nov-53	Dec-53	Jan-54	Feb-54	Mar-54	Apr-54	May-54	Jun-54	Jul-54	Aug-54	Sep-54	Oct-54	Nov-54	Dec-54	Jan-55	Feb-55
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1																																	
2	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394
3	3172.976	3172.976	3172.976	3172.976	3172.976	3172.976	3172.976	3172.976	3172.976	3172.976	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3236.436	3301.164	3301.164	3301.164	3301.164	3301.164	3301.164	3301.164	3301.164	3301.164	3301.164	3301.164
4	358.0784	355.9268	353.7882	351.6625	349.5495	347.4492	345.3615	343.2863	341.2237	339.1734	343.8781	341.8119	339.7581	337.7166	335.6874	333.6704	331.6655	329.6727	327.6918	325.7228	323.7657	321.8203	326.2844	324.3239	322.3751	320.4381	318.5127	316.5989	314.6966	312.8057	310.9262	309.058	307.201
5																																	
6	Mar-55	Apr-55	May-55	Jun-55	Jul-55	Aug-55	Sep-55	Oct-55	Nov-55	Dec-55	Jan-56	Feb-56	Mar-56	Apr-56	May-56	Jun-56	Jul-56	Aug-56	Sep-56	Oct-56	Nov-56	Dec-56	Jan-57	Feb-57	Mar-57	Apr-57	May-57	Jun-57	Jul-57	Aug-57	Sep-57	Oct-57	Nov-57
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1																																	
2	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427
3	3301.164	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3367.188	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3434.531	3503.222	3503.222	3503.222	3503.222	3503.222	3503.222	3503.222	3503.222
4	305.3551	309.5908	307.7306	305.8815	304.0436	302.2167	300.4008	298.5958	296.8017	295.0183	293.2457	291.4837	289.7323	293.7512	291.9862	290.2318	288.4879	286.7545	285.0315	283.3188	281.6165	279.9244	278.2424	276.5706	274.9088	278.7221	277.0474	275.3827	273.728	272.0833	270.4485	268.8235	267.2082
5																																	
6	Dec-57	Jan-58	Feb-58	Mar-58	Apr-58	May-58	Jun-58	Jul-58	Aug-58	Sep-58	Oct-58	Nov-58	Dec-58	Jan-59	Feb-59	Mar-59	Apr-59	May-59	Jun-59	Jul-59	Aug-59	Sep-59	Oct-59	Nov-59	Dec-59	Jan-60	Feb-60	Mar-60	Apr-60	May-60	Jun-60	Jul-60	Aug-60
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1																																	
2	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
3	3503.222	3503.222	3503.222	3503.222	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3573.286	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3644.752	3717.647	3717.647	3717.647	3717.647	3717.647
4	265.6027	264.0068	262.4205	260.8437	264.4619	262.8729	261.2934	259.7233	258.1628	256.6116	255.0697	253.5371	252.0137	250.4994	248.9943	247.4982	250.9313	249.4235	247.9249	246.4352	244.9544	243.4826	242.0196	240.5654	239.12	237.6832	236.255	234.8355	238.0929	236.6623	235.2403	233.8269	232.4219
5																																	
6	Sep-60	Oct-60	Nov-60	Dec-60	Jan-61	Feb-61	Mar-61	Apr-61	May-61	Jun-61	Jul-61	Aug-61	Sep-61	Oct-61	Nov-61	Dec-61	Jan-62	Feb-62	Mar-62	Apr-62	May-62	Jun-62	Jul-62	Aug-62	Sep-62	Oct-62	Nov-62	Dec-62	Jan-63	Feb-63	Mar-63	Apr-63	May-63
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1																																	
2	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493
3	3717.647	3717.647	3717.647	3717.647	3717.647	3717.647	3717.647	3792	3792	3792	3792	3792	3792	3792	3792	3792	3792	3792	3792	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3867.84	3945.197	3945.197
4	231.0254	229.6372	228.2574	226.8859	225.5227	224.1676	222.8206	225.9114	224.554	223.2048	221.8636	220.5305	219.2055	217.8883	216.5791	215.2778	213.9843	212.6985	211.4205	214.3532	213.0652	211.785	210.5125	209.2476	207.9903	206.7406	205.4983	204.2636	203.0363	201.8163	200.6037	203.3863	202.1642
5																																	
6	Jun-63	Jul-63	Aug-63	Sep-63	Oct-63	Nov-63	Dec-63	Jan-64	Feb-64	Mar-64	Apr-64	May-64	Jun-64	Jul-64	Aug-64	Sep-64	Oct-64	Nov-64	Dec-64	Jan-65	Feb-65	Mar-65	Apr-65	May-65	Jun-65	Jul-65	Aug-65	Sep-65	Oct-65	Nov-65	Dec-65	Jan-66	Feb-66
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1																																	
2	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526
3	3945.197	3945.197	3945.197	3945.197	3945.197	3945.197	3945.197	3945.197	3945.197	3945.197	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4024.101	4104.583	4104.583	4104.583	4104.583	4104.583	4104.583	4104.583	4104.583	4104.583	4104.583	4104.583
4	200.9495	199.7421	198.5419	197.3489	196.1631	194.9845	193.8129	192.6484	191.4908	190.3402	192.9805	191.8209	190.6684	189.5227	188.3839	187.252	186.1269	185.0085	183.8969	182.7919	181.6936	180.6019	183.107	182.0068	180.9132	179.8262	178.7457	177.6717	176.6041	175.543	174.4882	173.4398	172.3976
5																																	
6	Mar-66	Apr-66	May-66	Jun-66	Jul-66	Aug-66	Sep-66	Oct-66	Nov-66	Dec-66	Jan-67	Feb-67	Mar-67	Apr-67	May-67	Jun-67	Jul-67	Aug-67	Sep-67	Oct-67	Nov-67	Dec-67	Jan-68	Feb-68	Mar-68	Apr-68	May-68	Jun-68	Jul-68	Aug-68	Sep-68	Oct-68	Nov-68
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	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM
1																									
2	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551
3	4104.583	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4186.674	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408	4270.408
4	171.3618	173.7388	172.6949	171.6572	170.6258	169.6006	168.5815	167.5686	166.5617	165.5609	164.5661	163.5773	162.5944	164.8498	163.8593	162.8747	161.8961	160.9233	159.9564	158.9953	158.0399	157.0903	156.1465	155.2082	154.2756
5																									
6	Dec-68	Jan-69	Feb-69	Mar-69	Apr-69	May-69	Jun-69	Jul-69	Aug-69	Sep-69	Oct-69	Nov-69	Dec-69	Jan-70	Feb-70	Mar-70	Apr-70	May-70	Jun-70	Jul-70	Aug-70	Sep-70	Oct-70	Nov-70	Dec-70
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1		**Cost**			Period (i)													
2		Month starts with 12 because Spending starst 12 months after start of current fiscal year			Month (update this with the periods)	12	13	14	15	16	17	18	19	20	21	22	23	
3					Raw (update this with inflated values)	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	-653469.667	
4					Discounted	-607878.76	-604226.261	-600595.708	-596986.971	-593399.916	-589834.415	-586290.337	-582767.555	-579265.939	-575785.363	-572325.7	-568886.826	
5																		
6					Date	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26	
7		Discount rate (yearly) - update this	7.500%															
8		Discount rate (monthly) - auto-updated	0.006044919															
9																		
10																		
11		Starting from Jan 2025 as '0'	$ (7,058,243.75)		<-- simulates the Copperleaf calculation													
12																		
13																		
14		the NPV function in Excel treats the first cashflow amount as month '1', meaning that it discounts it when it shouldn't, but Copperleaf treats the first cashflow as month '0', which creates a different output between them																
15																		
16																		
17						FY26												
18		Total investment cost from Copperleaf				-7841636												
19																		
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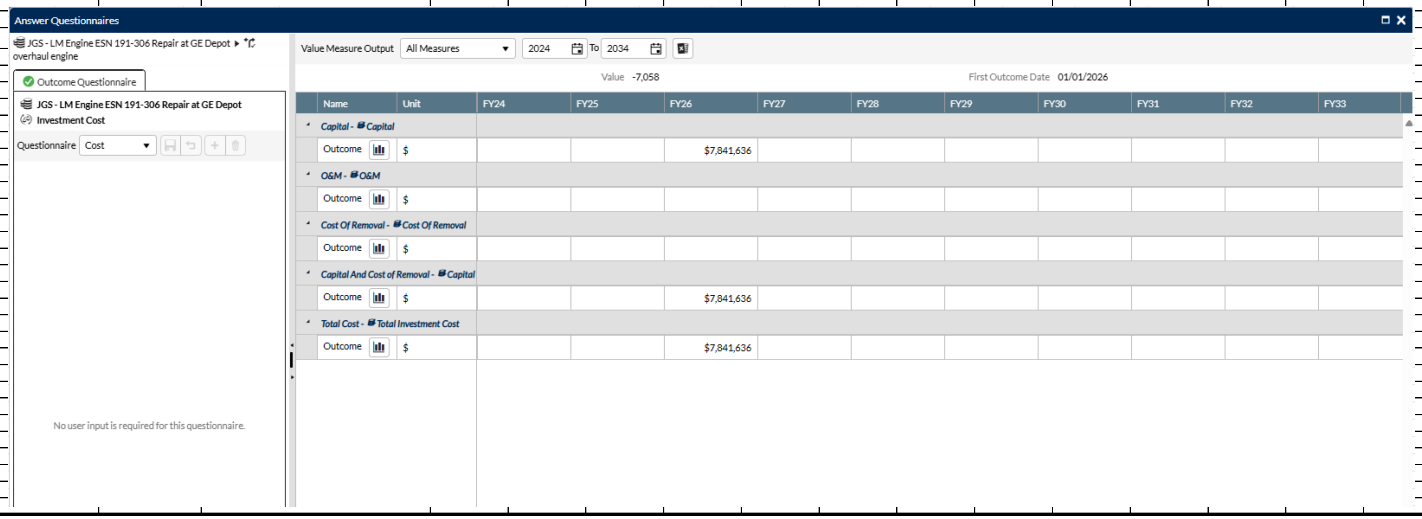


Totals

Investments / JGS - LM Engine ESN 191-306 Repair at GE Depot

Investment Summary

Submit | Initiate Workflow | 4 | Reports | Follow Investment

Overview

JGS - LM Engine ESN 191-306 Repair at GE Depot

Engine ESN 191-306 had a stall event on 02/09/25 while in LM5 package which made it inoperable and later determined to be unserviceable. The engine was removed from its package and a lease engine was installed so the plant could return to full capability. The engine was shipped from JGS to GE Depot (Houston) on 03/03/25.

Owner Cummings, Jeffery (Jeffery.Cummings@cmsenergy.com)

Planning Portfolio Jackson

Stage Initial

Alternatives

Name	Value	Draft Forecast	Spend Date Range
overhaul engine	4,317	$7,841,636	Jan FY26 to Dec FY26

Risks Impacted for overhaul engine

Asset Unique ID	Value Measure	Value Model	Impact Date
	Lost Generation Risk	Lost Generation Risk	01/01/2027

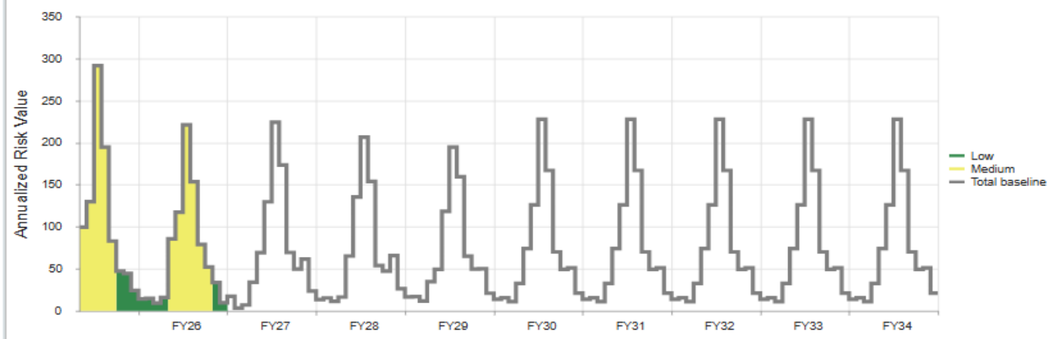
1 | 10 items per page | 1 - 1 of 1 items

Financial Metrics

Metrics	Value
Cost Present Value	$7,058,244
Benefit Present Value	$11,375,002
Net Present Value	$4,316,758
Payback Period	91 months
Internal Rate Of Return	16.14%
Benefit/Cost Ratio	1.61
Value/Cost Ratio	0.61

Annualized Outcome Risks by Risk Level

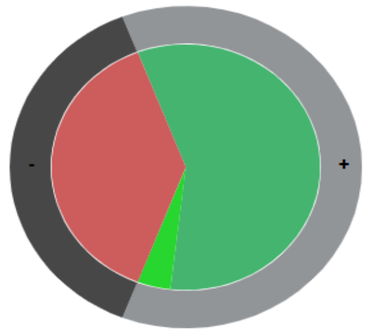
JGS - LM Engine ESN 191-306 Repair at GE Depot



Edit Value for Recommended Alternative

Draft Investment Value

JGS - LM Engine ESN 191-306 Repair at GE Depot



Value Measure	Value
Cost Avoidance - ...	10,637
Lost Generation Ri...	738
Cost Avoidance - C...	0
Financial Benefits -...	0
Financial Benefits -...	0
Revenue Increase	0
Total Investment C...	-7,058
Total	**4,317**

Edit Value for Recommended Alternative

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for the generation and distribution of electricity and for other relief.	Case No. U-21870

PROOF OF SERVICE

On the date below, an electronic copy of **Supplemental Brief in Support of Motion to Strike and Exhibits (Ex. 1 through Ex. 4) by Michigan Environmental Council** was served on the following:

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[signature page below]

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

Troposphere Legal, PLC
Counsel for MEC

Date: November 6, 2025

By: Natasha L. Fowles Digitally signed by Natasha Fowles Date: 2025.11.06 14:19:45 -05'00'

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STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for authority to increase its rates for the generation and distribution of electricity and for other relief.	Case No. U-21870

CONFIDENTIAL
PROOF OF SERVICE

On the date below, an electronic copy of **Confidential Exhibit 3C of the Supplemental Brief in Support of Motion to Strike by Michigan Environmental Council** was served on the following:

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

Troposphere Legal, PLC
Counsel for MEC

Date: November 6, 2025

By: Natasha J. Fowles Digitally signed by Natasha Fowles Date: 2025.11.06 14:19:34 -05'00'

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