

BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

Docket No. DE 23-081

**Petition of Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Request for Approval of Revenue Decoupling Adjustment for July 2022
through June 2023**

Technical Statement of
Jacqueline M. Trottier and Elizabeth R. Nixon
Department of Energy, Division of Regulatory Support

January 17, 2024

The Department of Energy (Department or DOE) has conducted a review of the submissions made by Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty (Liberty or the Company) to the Public Utilities Commission (Commission) in this proceeding. These submissions include the testimony and accompanying attachments provided by Tyler J. Culbertson and Adam R. Yusuf, as well as the proposed tariff pages. Collectively, these materials constitute the Company's formal request and support for an adjustment to its Revenue Decoupling Adjustment Factor (RDAF).

As discussed in more detail below, the Department does not believe that the Company has the authority to revenue decouple given that the distribution rates, effective July 1, 2023, did not include an RDAF rate. In addition, the Department is concerned that the Company's enterprise software conversion affected the actual revenues and equivalent bills for the decoupling year. Given these two major concerns, the Department recommends against approval of the Company's RDAF rate. If the Commission moves forward with the Company's revenue decoupling, and allows Liberty to collect an RDAF rate, then, as outlined below, the DOE believes that the Company's submission, with errors corrected and with updates provided in discovery, complies with the requirements set forth in the Settlement Agreement in DE 19-064, Liberty's last rate case, as approved in Order No. 26,376 and as outlined in the tariff that was revised in Docket DE 22-052 and approved in Order No. 26,748.

Background

The RDAF was established to recover the base revenue requirement precisely as approved in the Company's most recent base-rate proceeding, regardless of changes in sales due to factors outside of the utility's control, such as conservation and energy efficiency programs.¹ The Company's initial decoupling year, which concluded in June 2022, experienced a shortfall of \$1,752,926, with \$337,913 exceeding the 3% cap and, as a result, being deferred.²

Pursuant to the terms outlined in the Settlement Agreement in DE 19-064, as approved in Order No. 26,376, and in alignment with the Company's current tariff, the following key points have

¹ See, e.g., Docket No. DE 19-064, Tab 4, Testimony of Gregg Therrien at Bates II-279 – 280; Docket No. DE 22-052, Tab 17, Order No. 26,748 at 3; and Docket No. 23-081, Tab 4, Commencement of Adjudicative Proceeding and Notice of Prehearing Conference and Hearing.

² See Docket No. DE 22-052, Tab 17, Order No. 26,748.

been identified concerning the review of the Revenue Decoupling Mechanism:

1. The Revenue Decoupling Adjustment (RDA) should use a Revenue Per Customer (RPC) model to reconcile monthly actual and authorized RPC by rate class.
 - a. The RDA shall exclude Rates M, LED-1, LED-2, D-11, EV, EV-L, and EV-M.
2. Monthly Target Revenues Per Customer (Monthly Target RPC) amounts will be set for each rate class by:
 - a. Allocating the annual allowed revenue requirement to each applicable rate class, by month, in proportion to the test year.
 - b. Dividing each class monthly target revenue number by the number of monthly equivalent bills from the test year.
3. Monthly Actual RPC is determined using monthly actual revenues by rate class divided by the actual number of equivalent bills for each rate class during that month.
4. The Monthly Actual RPC will be compared to the Monthly Target RPC for each rate class, with the difference being multiplied by the actual number of equivalent bills for each rate class to determine the monthly revenue shortfall/surplus for each rate class. The sum of these amounts constitutes the monthly revenue shortfall/surplus.
 - a. At the end of the reconciliation period, the monthly amounts are summed to determine the cumulative annual revenue shortfall/surplus.
5. Subject to the 3 % cap, the allowed shortfall/surplus should then be allocated to the applicable rate classes using the Rate Class Allocations.
6. The RDAF rate calculation for the applicable rate classes is determined by dividing the Annual Allowed Revenue Decoupling Adjustment revenue shortfall/surplus, plus prior period RDAF rate over- or under-recoveries (including interest), by the rate class sales for the Billing Year.
7. The RDA should be capped at 3 % of the allowed revenue requirement over the relevant Measurement Period for over- and under-recoveries. Any amount exceeding the cap should be deferred with carrying costs accrued monthly at the Prime Rate. The Prime Rate used should be based on the quarterly reports in The Wall Street Journal. Deferred amounts will be added to the aggregate decoupling adjustment amount of the following periods until recovered or refunded such that there is a maximum adjustment of 3% refunded or charged each year.

Potential Issues

The Department has overarching concerns with Liberty's RDAF filing because of the following issues: 1) the temporary distribution rates, effective on July 1, 2023, did not include approval of the continuation of an RDAF rate; and 2) Liberty's billing system change in October 2022 has impacts on the actual revenues per customer and resulting RDAF during this period.

The current distribution rates, effective on July 1, 2023 were not approved to include an RDAF component. In Order No. 26,855 in DE 23-039, the Commission approved temporary distribution rates in Liberty's on-going rate case, which indicated that the total volumetric distribution rate for residential customers would be \$0.06635/kWh, as compared to the total distribution rate at the time of \$0.05848/kWh. This rate would result in a total volumetric distribution rate increase of 13.5% and an overall bill increase of 1.48%. The approved rates, an agreement presented at the hearing, and the Department's letter of June 29, 2023, were all based on the schedules filed by the Company on June 26, 2023. In the June 26, 2023, Company filing as shown on Attachment KMJ/DSD/GHT-TEMP-2 (Settlement), Page 2 of 2, Bates p. II- 083 for Rate Class D (residential customers), the

total distribution rate proposed does not include an RDAF rate but does include an REP/VMP adjustment factor. The Department notes that the Company filed updated schedules on July 5, 2023, and a compliance tariff which both included an RDAF rate, but these total distribution rates do not match the total distribution rates approved in Order No. 26,855 in DE 23-039 nor the rates agreed to by the Department.³ Based on the Commission order, the Company's June 26, 2023, filing, the Department's letter regarding the Company's June 26, 2023, filing, and the discussion above, the Department believes that the Company should have ceased revenue decoupling at the time of the approval of the temporary rates. Therefore, based on these filings and the Commission approval, the Department does not believe that the Company has authority to proceed with revenue decoupling and does not have authority to collect an RDAF rate at this time. Authority to continue revenue decoupling and authority to collect an RDAF rate could be restored by Commission approval in the on-going distribution rate case (Docket DE 23-039).

The Company's implementation of the SAP enterprise software conversion during this revenue decoupling year affected the revenues collected, which is a result of the Company's actions, not customers'. Liberty implemented the SAP enterprise software during the decoupling year, and the Company has indicated that bills were delayed during the conversion. (See Attachment 1—data response DOE 1-1.) Given that actual revenues per customer were affected by the billing system change, the Department believes that the Company should not be allowed to revenue decouple during the subject revenue decoupling year. Actions taken by the Company affected the actual revenues per customers, not actions taken by the customer, such as for energy efficiency or reduced consumption for other reasons, which was the intent of revenue decoupling. The Company indicated that the effects of the SAP system conversion (and the ensuing billing delays) would wash out but was unable to show the "wash out." See Attachment 2 for a data response (DOE TS 1-7) showing how a delay in bills would affect the revenue decoupling for one customer. Since many bills were affected (and many delayed) by the SAP conversion, the impacts to the revenue decoupling are unknown, but this example shows that the SAP conversion impacts the revenue decoupling.

Given these two major issues, the Department recommends against approval of the Company's RDAF rate and recommends that Liberty cease revenue decoupling as of July 1, 2023. Decoupling could be further explored and potentially approved in DE 23-039, Liberty's on-going rate case, or in another future docket. In addition, if the Commission agrees that RDAF should have ceased as of July 1, 2023, then the Department recommends that the Company be required to return any revenues related to RDAF collected since July 1, 2023. If instead the Commission determines that the review of the Company's RDAF filing should proceed, then the remainder of this statement provides our analysis and observations.

DOE's Analysis

The DOE examined the materials furnished in the Company's filing concerning the RDAF. Additionally, a discovery process was conducted, including two rounds of data requests, and pertinent details were discussed with the Company during a Technical Session. Below, we present an overview of DOE's review for each of these elements.

³ The Department notes that the Company did not receive approval for the rates presented in the July 5, 2023, filing, and the Department's letter recommending approval for the rates was based on the June 26, 2023, schedules, which did not include an RDAF component.

1. Revenue per customer model- The Settlement Agreement states the Company shall use an RPC model to reconcile monthly actual and authorized RPC by rate class. The Company's filing and supporting spreadsheets confirm that the proposed RDA utilizes this methodology, and that certain classes, such as street lighting (Rates M, LED-1, and LED-2), battery storage pilot (Rate D-11) and electric vehicle (Rates EV, EV-L, and EV-M), are excluded from the RDA Reconciliation.

- a. Monthly RPC Targets: Liberty's current tariff states:

"If distribution rates change during the Decoupling Year, the monthly Target Revenue per Customer for the remaining months of the Decoupling Year will be revised and filed with the Commission."

It is unclear to the Department whether the Company has filed the appropriate revised RPC targets associated with the multiple rate changes that went into effect during the decoupling year. Despite approved rate changes on October 29, 2021; July 29, 2022; March 1, 2023; and May 31, 2023, it appears that the company only filed revised RPC targets in April 2023. Further, the targets used in this filing do appear to match those presented in the April 6, 2023 filing made by the Company in DE 22-035.⁴

In addition, in response to DOE TS 1-13, the Company acknowledged neglecting to exclude revenues collected from its VMP rate from its actual revenue when calculating its decoupling shortfall, resulting in a double collection of vegetation management revenue through the RDAF. The Company stated that \$6,258 of vegetation management revenues were incorrectly included as part of actual revenues. However, the Company has not yet provided the DOE with the adjusted Actual Revenues or adjusted Actual Revenues per Customer dollar amounts, or the supporting workpapers needed to verify such adjusted values. See Attachment 3.

- b. Monthly Actual RPC: Given the information provided, the Monthly Actual RPC appears to be calculated following the Company's tariff and the terms laid out in the Settlement Agreement. However, an integral component of the Actual RPC calculation is the use of equivalent bills, and as mentioned above, the deployment of SAP resulted in delayed customer bills, significantly affecting the equivalent bill counts as shown below. Additionally, the DOE has concerns that the actual revenue figures themselves are misstated due to issues with the SAP conversion.

⁴ Docket No. DE 22-035, Tab 47, Attachment HMT-2.

Figure 1. Actual Equivalent Bills from DOE TS 1-20. See Attachment 4

Actual		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
Equivalent Bills		Values below are inputs, and represent actual monthly bills adjusted to equivalent bills							
7	Jul-22	37,035	437	148	953	5,835	859	16	45,283
8	Aug-22	36,819	438	155	938	5,832	842	16	45,040
9	Sep-22	33,235	418	162	958	5,408	613	16	40,810
10	Oct-22	39,550	412	104	851	5,735	967	16	47,635
11	Nov-22	38,229	457	137	1,022	6,101	830	16	46,792
12	Dec-22	37,442	409	147	1,015	5,905	732	17	45,667
1	Jan-23	38,705	461	182	992	6,169	927	15	47,451
2	Feb-23	39,051	486	162	1,071	6,171	982	17	47,940
3	Mar-23	37,381	440	179	1,015	5,940	838	16	45,809
4	Apr-23	36,729	429	168	970	5,774	757	16	44,843
5	May-23	37,730	462	147	994	5,958	869	16	46,176
6	Jun-23	35,257	444	141	1,008	5,862	732	16	43,460
		447,163	5,293	1,832	11,787	70,690	9,948	193	546,906

In addition, during discovery the Company disclosed that some of the ‘Actual Distribution Revenues’ used in its Actual RPC calculation were in fact estimates, and that optional demand revenues were not included for the G-1 and G-2 rate classes for October 2022 through January 2023. See Attachment 5 – Supplemental Response to DOE 1-3 for more details regarding these corrections. Other corrections to the equivalent bills and revenues are described in Attachment 6, which is the Company’s response to DOE TS 1-5.

- Revenue Shortfall/Surplus: The Company’s testimony and supporting documentation calculated a revenue shortfall of \$3,406,450. Changes made to the ‘Monthly Actual RPC’ as mentioned above resulted in an updated revenue shortfall of \$3,617,781; see Attachment 4 pg. 13 for the Company’s updated calculation. With the updated information provided, the shortfall appears to be calculated according to the applicable language in the Company’s tariff.
- Cap/Deferral: During the discovery process, the Department identified an error in the Company’s calculation of the ‘Annual Allowed Adjustment’, where the prior year’s deferral balance was excluded resulting in an understated request for the ‘Annual Allowed Adjustment.’ Additionally, the Company acknowledged that the deferral balance provided in the Company’s initial filing incorrectly omitted interest. Below is a comparison of the amounts presented in the initial filing versus those disclosed in the Company’s most recent discovery responses. See Attachment 4 for more details. The calculation provided on December 20, 2023, calculates the Annual Allowed Adjustment and Amount in excess of the Cap correctly according to the applicable language in the Company’s tariff.

Figure 2. Adjustment/Deferral Calculation. See Attachment 4

Annual Deferral Calculation: DY 2									
	A	B	C	D	E	F	G	H	I
			A + B		C / D			(E - F) or (E - G)	D * H
	Current Year Adjustment	Prior Years' Deferral Balance	Total Adjustment	Total Company Target Revenues	Percent of Total	"Soft" Cap		Amount in excess of Cap %	Amount in excess of Cap \$
Initial Filing	\$ (3,406,450)	\$ (337,913)	\$ (3,744,363)	\$ 46,020,950	-8.14%	-3.00%	3.00%	-5.14%	\$ (2,363,735)
As of 12/20/2023	\$ (3,617,781)	\$ (460,653)	\$ (4,078,434)	\$ 46,020,950	-8.86%	-3.00%	3.00%	-5.86%	\$ (2,697,805)
									Deferral of excess to next year's calculation
									Refund / (Charge) to Customers

- Allocation / Rate Calculation: The Settlement and current tariff language specify that the Annual Allowed Adjustment revenue will be allocated across the applicable rate classes using the agreed-upon Rate Class Allocation. The Company’s filing and supporting documentation confirm that the calculation was performed in accordance with the terms outlined above.

Other Observations

While reviewing the information provided throughout the course of this docket, the DOE made some concerning observations that they believe the Commission should keep in mind regarding revenue decoupling.

In Liberty's initial testimony supporting the creation of its RDAF⁵ and in subsequent RDAF filings,⁶ the Company has emphasized the necessity of decoupling to eliminate the disincentive for utilities to promote conservation and energy efficiency programs while briefly describing the added benefit of new customer revenues being retained to fund the Company's investments required to support the addition of additional customers to its distribution system.⁷ The Company has also stated in those same filings that, "[R]evenue decoupling allows a utility to recover the base revenue requirement approved in its most recent base-rate proceeding – no more and no less- despite fluctuations or reductions in sales due to conservation or other factors outside of the utility's control."⁸ While conducting a review of the information provided by Liberty, the Department asked the Company why it felt \$49,278,336 accurately represented the revenue the Company should have collected in the July 2022- June 2023 decoupling year, despite the allowed revenue from the rate case for that decoupling year being \$46,020,950. The Department also inquired about the extent to which the Company believed the revenue per customer shortfall was attributable to declining use per customer. In response to the Department's inquiries, the Company explained that the figure of \$49,278,336 is a direct result of the decoupling calculation and goes on to explain that only \$149,000 of the requested \$3.4 million adjustment is attributable to declining use per customer. See Attachment 7 for the full response. While the Department acknowledges that the Company appears to have adhered to the relevant Settlement and Tariff language regarding decoupling, the DOE is uncertain about whether the decoupling mechanism is serving its intended purpose.

The Department also notes that the Rate Class Allocation being utilized in this mechanism appears to lead to significant cost shifting between rate classes. For example, in the Company's filing nearly half of the decoupling shortfall collection will come from Rate D, yet Rate D accounts for only 23.45% of the decoupling year shortfall. See Attachment 8 for more details on this observation.

The Settlement Agreement and resulting tariff language state that the monthly target revenues per customer amounts will be set by "allocating each year's allowed revenue requirement to each rate class, by month, in proportion to the test year...." It is unclear to the Department how this is applied when there are multiple rate changes throughout the decoupling year, as in this case. It appears that the targets end up disproportionate to the test year. See Attachment 9.

Conclusion

In conclusion, the Department has reviewed Liberty's submissions regarding the Revenue Decoupling Adjustment Factor (RDAF). While acknowledging the Company's adherence to certain aspects of the Settlement and Tariff language, significant concerns arise. The absence of an approved RDAF rate in the temporary distribution rates effective from July 1, 2023, and

⁵ See Direct Testimony of Gregg H. Therrien in Docket No. DE 19-064.

⁶ See Direct Testimony of E. Menard, M. Samenfeld and G. Therrien in Docket No. DE 22-052.

⁷ See Direct Testimony of Gregg H. Therrien in Docket No. DE 19-064, Bates II-265, line 3.

⁸ See Direct Testimony of Tyler J Culbertson and Adam R.M. Yusuf, Bates 005, line 21.

uncertainties in the accuracy of the data provided stemming from Liberty's enterprise software conversion lead the Department to recommend against RDAF approval.

If the Commission proceeds, contingent on corrections and updates, the Department believes Liberty has complied with specified decoupling mechanisms. However, overarching concerns prompt a recommendation to halt revenue decoupling until thorough exploration in the rate case or an appropriate docket has been completed. The Department emphasizes potential cost-shifting between rate classes, urging caution and equity in Rate Class Allocation. In summary, despite compliance, and because Liberty proposed and received approval of temporary rates in DE 23-039 that did not include an RDAF rate and concerns with utility-imposed impacts on the revenues and equivalent bills resulting from the software conversion, the Department advises against RDAF approval in this docket, advocating instead for a comprehensive exploration of the identified issues before proceeding.

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Data Requests - Set 1

Date Request Received: 10/12/23
Request No: DOE 1-1

Date of Response: 10/23/23
Respondent: James Bonner

REQUEST:

Ref. Attachment ARMY/TJC-2, p. 4 of 6 (Bates 22).

Please explain the monthly variations between the number of equivalent bills for the General TOU (G-1) customer class, particularly why the number of equivalent bills in October 2022, was 104, which is 61 fewer bills than the previous month, which had 165 bills.

RESPONSE:

Equivalent bills are the number of customer charges posted in each accounting period. Variation in the number of equivalent bills between accounting periods arise from only two causes: (1) differences in the number of pro-rated bills posted, or (2) the number of bills posted in the accounting period. For Granite State, the second reason is the principal cause of the variation as very few bills are pro-rated each month. The equivalent bill metric is also a signed number. Its value may be positive or negative. It is negative when a bill cancellation is posted and positive for original bills and rebills. Because the original bill, its cancellation, and its rebilling may not occur during the same accounting period, this process can contribute to the variation for the second cause.

The accounting periods September and October 2022 straddle an extraordinary event -- the changeover from the Cogsdale billing system to the SAP billing system. The new SAP system went live on October 10, 2022. This changeover resulted in a disruption of the usual timing of the posting processes for the next several months until the Billing Department was able to resolve the transition issues and render the bills. This can be seen in the Attachment to Response to DOE 1-19 where the equivalent bill counts rise from a low of 103 in October 2022 to a high of 182 in January 2023 then come down thereafter. Thus, bills that would have normally been posted in the month in which the customers' meters were read were being posted in subsequent months.

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 12/5/23
Request No: DOE TS 1-7

Date of Response: 12/22/23
Respondent: James Bonner

REQUEST:

During the technical session, Liberty said that any monthly data variations will all even out; however, if that were true, the annual data should equal the sum of the monthly data, but it does not.

- a) Please provide an example of how a cancelled bill is handled for the revenue decoupling calculation, and how the data variation “washes out.”
- b) Please provide an example of how a late bill is handled for the revenue decoupling calculation, and how the data variation “washes out.”
- c) If the examples in a. and b., do not show the data “washing out,” please explain why.

Please explain why the monthly variation in data in the revenue decoupling calculation requested for approval does not “wash out” the data variations on an annual basis, including, but not limited to those caused as a result of the billing system change.

RESPONSE:

- a) See Attachment 23-081 DOE-TS 1-7.xlsx . The Attachment shows a single Rate G-1 customer whose actual billing during the Decoupling Year exhibited delayed, cancelled and rebilling. The columns whose headers are blue in the tab “pvtCustDat” show the actual summarized billing data for the customer. The leftmost blue column (RevYrMo) shows the month in which the billing transaction was recorded. The columns whose headers are orange show hypothetical “normal” data had this customer been billed on its normal billing schedule (columns AD:AH). These columns also contain an analysis showing the difference between these Normal values and the As Filed values. For Actual Revenues and the equivalent bills, the data “washes out”—that is, the Actual Revenues recorded As Filed equal the Actual Revenues under Normal conditions.

For Actual Revenues, the data “washes out”—that is, the Actual Revenues recorded As Filed equal the Actual Revenues under Normal conditions during the Decoupling Year. However, the Allowed Revenues and the Decoupling Adjustments do not “wash out” during the Decoupling Year. The reason is that under As Filed conditions, the Allowed RPC for the accounting month in which the transactions were posted is used in

the calculation instead of the Allowed RPC that would have been used had each bill been recorded in the accounting month it normally would.

- b) See part (a).
- c) See parts (a) and (b).

Please see the Response to DOE-TS 1-12 for an explanation of why the monthly variation in data in the revenue decoupling calculation requested for approval does not “wash out” the data variations on an annual basis, including, but not limited to those caused as a result of the billing system change.

CONFIDENTIAL

Liberty Utilities (Granite State Electric) Corp.
Docket DE 23-081
2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2
Request No: DOE TS 1-7
Comparison of Actual Billing vs Normal Billing for a Single Rate G-1 Customer with Delayed, Cancelled and Rebilling

Line_Item_Text		Customer Charge		Equivalent Bills													
RevYrMo	Start_of_Bill_Period	End_of_Bill_Period	Billing_Document_Number	Values Sum of Billing_Quantity	Total	RevYrMo	Allwd RPC	Normal Allwd Rev	Actual RPC	Actual Rev	Allwd RPC	As Filed Allwd Rev	Actual RPC	Actual Rev	Decoupling Adjustment Normal	As Filed	
202301	8/30/2022	10/4/2022	000100033830	0	\$0.00	202210	\$6,359.67	\$0.00	\$0.00	\$0.00							
	10/5/2022	10/27/2022	000100033831	0	\$0.00	202211	\$5,976.11	\$0.00	\$0.00	\$0.00							
	10/28/2022	11/29/2022	000100033832	0	\$0.00	202212	\$6,168.82	\$0.00	\$0.00	\$0.00							
	11/30/2022	12/29/2022	000100033833	0	\$0.00	202301	\$6,237.81	\$0.00	\$0.00	\$0.00							
202301 Total				0	\$0.00						\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
202303	8/30/2022	10/4/2022	000100045565	1	\$4,523.19	202210	\$6,359.67	\$6,359.67	\$4,523.19	\$4,523.19					\$1,836.48		
	10/5/2022	10/27/2022	000100045566	1	\$3,468.09	202211	\$5,976.11	\$5,976.11	\$3,468.09	\$3,468.09					\$2,508.02		
	10/28/2022	11/29/2022	000100046800	1	\$3,509.89	202212	\$6,168.82	\$6,168.82	\$3,509.89	\$3,509.89					\$2,658.93		
	11/30/2022	12/29/2022	000100046801	1	\$3,517.55	202301	\$6,237.81	\$6,237.81	\$3,517.55	\$3,517.55					\$2,720.26		
	12/30/2022	1/30/2023	000100046802	1	\$3,613.71	202302	\$6,190.04	\$6,190.04	\$3,613.71	\$3,613.71					\$2,576.33		
202303 Total				5	\$18,632.43						\$6,029.98	\$30,149.92	\$3,726.49	\$18,632.43		\$11,517.49	
202304	1/31/2023	3/2/2023	100004035233	1	\$3,495.67	202303	\$6,029.98	\$6,023.95	\$3,499.17	\$3,495.67					\$2,522.26		
	3/3/2023	3/30/2023	100004035246	1	\$3,448.50	202304	\$6,105.51	\$6,105.51	\$3,448.50	\$3,448.50					\$2,657.01		
202304 Total				2	\$6,944.17						\$6,105.51	\$12,204.91	\$3,473.82	\$6,944.17		\$5,260.74	
202305	3/31/2023	5/2/2023	100004477227	1	\$4,098.55	202305	\$5,867.61	\$5,867.61	\$4,098.55	\$4,098.55					\$1,769.06		
202305 Total				1	\$4,098.55						\$5,867.61	\$5,867.61	\$4,098.55	\$4,098.55		\$1,769.06	
202306	5/3/2023	5/30/2023	100005006347	1	\$3,670.44	202306	\$6,786.75	\$6,786.75	\$3,670.44	\$3,670.44					\$3,116.31		
202306 Total				1	\$3,670.44						\$6,786.75	\$6,786.75	\$3,670.44	\$3,670.44		\$3,116.31	
Grand Total				9	\$33,345.59	9		\$55,716.27		\$33,345.59		\$55,009.19		\$33,345.59	\$22,364.66	\$21,663.60	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 12/5/23
Request No: DOE TS 1-13

Date of Response: 12/19/23
Respondent: Adam Yusuf
Erin O'Brien
Pamela Moriarty

REQUEST:

Please explain how the Company ensures there is no double-recovery of vegetation management costs through the revenue decoupling adjustments and the annual vegetation management cost reconciliation.

RESPONSE:

The revenue decoupling adjustment reconciles the Company's allowed revenue with actual billed revenue. The vegetation management cost reconciliation reconciles actual vegetation management expense to the amount allowed in base distribution rates (\$2.2 M) and returns any underspending or any approved amount over the \$2.2M through the VMP rate. In preparing this response, the Company identified that the revenues collected from the VMP rate are not being excluded from the actual revenues as part of the revenue decoupling adjustment reconciliation, therefore resulting in a double-recovery of vegetation management revenue through revenue decoupling.

The Company will be reviewing the VMP rates as they are included in the net distribution rate which is also comprised of the RDAF rate charge, as well as the base distribution rate charges. The Company has identified approximately \$6,258 of vegetation management revenues that was incorrectly included in the actual revenues and will adjust the calculation accordingly and provide the DOE with the supporting workpapers to verify the adjustment.

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 12/5/23
Request No: DOE TS 1-20

Date of Response: 12/19/23
Respondent: Adam Yusuf

REQUEST:

Please provide an update to the filing and schedules with the new effective date of March 1, 2024. Please highlight in the live spreadsheet and pdf all data that has changed, including any data that changed because the input for the data changed.

RESPONSE:

Please see Attachment 23-081 DOE TS 1-20.xlsx for the updated filing with all changes since the original filing on September 1, 2023, highlighted in yellow. Please see tab "Change Notes" for tables that changed and "Change Notes DOE 1-20" tab for all updates made to the filing

Changes for March 1 Effective Date/ DOE TS 1-20

Update Attachment 1 Rate Calc Pg 1

Row 7- Update Recovery Period Dates to March 2024-October 2024
 Rows 12-14/ Lines 1-3 Updated (Over)/Under Collections and Interest to reflect changes made from 10/31/2023 to 2/29/24
 Row 18/Line 5- Updated Values
 Row 20/Line 6- Updated Values
 Row 22/Line 7- Updated Values

Update Attachment 1 Rate Calc Pg 2-4

Updated Header to reflect new Reconciliation Period in A6, A98, A189
 Removed kWh sales for November 2022 and December from all rates and reference of * in Column A (Irrelevant data and only led to confusion, since no collections)
 Added Collections for November, December, January, and February for all Rate Classes
 Projected Cumulative Collections, (Over)/Under Collection, excluding interest, Cumulative Interest, and Total (Over)/Under Collection, including interest Lines were updated to reflect changes made

Attachment 2 Rev Subj to Decoupling

No Changes

Attachment 2 Ann Target Rev by Class

No Changes

Attachment 2 Decoupling YR 2

Page 4 of 6

Row 67/Line 49- Updated September Equivalent bills due to removal of Estimated Revenues
 Distribution Revenues- updated to reflect G-1, G-2 changes from Removal of Estimated Revenues in September 2022, Adjusted G-1 and G-2 revenues
 Adjusted Actual Revenue Per Customer per changes made in previous row

Page 5 of 6

Subsequent updates made on formulas reflecting the changes made to Page 4 of 6.

Page 6 of 6

Updates made to Row 190/Line 155 reflect all the changes made throughout the model.

Updated Indicative Monthly Bill Impacts to reflect reconciliation period to March 2024-October 2024, updates from Page 1 Rate Calc Pg 1, and changes from Pages 4 of 6 and Pages 5 of 6

Attachment 3 Rate Calc

Updates to reflection changes in rates throughout model- Changed Dates of Current Rates and Proposed Dates

Attachment 4 Res Bill

Updates to reflection changes in rates throughout model- Changed Dates of Current Rates and Proposed Dates

Included reference with Order No. 26,908 for DE 23-068 for System Benefits Charge effective 1/1/2024

Attachment 5 Deferred Balance

Added Attachment, because Company was incorrectly omitting interest on Deferral Balance from Previous Year

	6-Nov	D	D-10	G-1	G-2	G-3	T	V	TOTAL RDAF
Initial Filmt		\$ 0.00204	\$ 0.00147	\$ 0.00077	\$ 0.00109	\$ 0.00183	\$ 0.00206	\$ 0.00230	\$ 1,233,657
Correct Cap Calculation	Att 2 6 of 6	0.00055	0.00033	0.00021	0.00029	0.0005	0.00056	0.00057	337,913
Add interest to PV Deferral	Att 2 6 of 6	-	-	-	-	-	-	-	-
Correct Revenue for Optional Demand and Sept Estimates	Att 2 4 of 6	-	-	-	-	-	-	-	-
Change from 12 to 11 mo. Recovery period.	Att 2 4 of 6	0.00022	0.00016	0.00008	0.00011	0.0002	0.00026	0.00024	-
Final		\$ 0.00281	\$ 0.00196	\$ 0.00106	\$ 0.00148	\$ 0.00253	\$ 0.00288	\$ 0.00311	\$ 1,590,570

Distribution Revenues		Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total	
D	D-10	G-1	G-2	G-3	T	V			
Values below are inputs, and represent actual monthly billings									
9	Sep-22	\$2,092,380	\$25,987	\$989,854	\$534,834	\$498,479	\$47,752	\$1,424	\$4,187,710
10	Oct-22	\$1,875,712	\$19,694	\$493,309	\$402,008	\$384,895	\$50,252	\$1,070	\$3,226,941
11	Nov-22	\$1,664,998	\$22,413	\$528,119	\$509,527	\$408,218	\$44,848	\$994	\$3,177,117
12	Dec-22	\$1,627,360	\$23,738	\$1,214,006	\$458,946	\$413,838	\$46,365	\$1,410	\$3,985,663
Values below are inputs, and represent actual monthly billings									
9	Sep-22	\$1,747,989	\$24,321	\$501,424	\$402,810	\$384,895	\$50,252	\$1,424	\$3,535,595
10	Oct-22	\$1,875,712	\$19,694	\$501,424	\$402,810	\$384,895	\$50,252	\$1,070	\$3,235,863
11	Nov-22	\$1,664,998	\$22,413	\$509,119	\$513,295	\$408,218	\$44,848	\$994	\$3,180,858
12	Dec-22	\$1,627,360	\$23,738	\$1,214,006	\$458,946	\$413,838	\$46,365	\$1,410	\$3,986,234

Actual Equivalent Bills		D	D-10	G-1	G-2	G-3	T	V	Total
Original	Septemb er 2022	38,099	446	165	1,006	5,938	853	16	48,523
Updated	Septemb er 2022	33,235	418	162	958	5,408	813	16	40,810

652,115.64 Due to removal of Sept estimates
 (8,822.41) Due to updating of optional demand revenue for G rates
 (3,740.90) Due to updating of optional demand revenue for G rates
 (2,571.11) Due to updating of optional demand revenue for G rates

below are hardcoded from EO's file sent on 10/26 11:51am									
Previous before Adjustment									
Cell49->	38099	446	165	1006	5938	853	16	46523	
Distribution Revenue (Gross)	D	D-10	G-1	G-2	G-3 (& L2)	T	V	Excluded (D11/12 & M)	Total
Jan	2,163,279	31,016	893,169	528,903	536,522	92,343	1,261	68,525	4,315,019
Feb	2,225,250	35,279	1,010,996	562,944	544,484	105,289	1,718	97,199	4,583,159
Mar	1,979,498	29,108	892,589	521,006	490,647	78,327	1,659	86,218	4,079,052
Apr	1,757,837	25,075	972,391	460,729	441,937	52,652	1,375	68,424	3,780,519
May	1,579,060	22,375	882,918	473,548	389,174	54,436	1,005	92,332	3,504,848
Jun	1,619,346	21,957	849,010	493,166	430,264	39,413	1,078	82,580	3,536,813
Curr Month Net	1,566,497	21,411	820,098	476,662	414,391	37,738	1,036		
Check s/b \$0	-	-	-	-	-	-	-		
652,115 Due to removal of Sept estimates (8,822.41) Due to updating of optional demand revenue for G rates (3,740.90) Due to updating of optional demand revenue for G rates (2,571.11) Due to updating of optional demand revenue for G rates									

Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Recovery Period March 2024 – October 2024

Line No.	Description	D	D-10	G-1	G-2	G-3	T	V	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	RDAF Prior Period (Over)/Under Collection as of 2/29/24*	-\$218,203	-\$2,769	-\$81,253	-\$53,376	-\$56,022	(\$12,391)	-\$175	-\$424,188
2	Prior Period Interest	\$26,364	\$484	\$13,558	\$7,023	\$6,559	\$883	\$28	\$54,899
3	Total Prior Period (Over)/Under Collection as of 2/29/24*	-\$191,838	-\$2,285	-\$67,695	-\$46,353	-\$49,463	(\$11,507)	-\$148	-\$369,289
4	Less: Decoupling Year 22/23 Refund/(Charge)	(\$672,258)	(\$10,080)	(\$321,454)	(\$176,680)	(\$172,683)	(\$26,838)	(\$637)	(\$1,380,629)
5	Total RDAF Mar 2024 - Oct 2024	\$480,419	\$7,795	\$253,759	\$130,327	\$123,220	\$15,330	\$489	\$1,011,340
6	kWh Sales Mar 2024 - Oct 2024	194,872,818	4,313,383	266,044,823	100,082,087	55,377,403	6,346,206	171,811	627,208,532
7	Rate (\$/kWh)	\$0.00247	\$0.00181	\$0.00095	\$0.00130	\$0.00223	\$0.00242	\$0.00285	

Reference:

Line No. 1: Attachment ARMY-1- Line Nos. 21, 46, 70, 94, 118, 142, 166

Line No. 2: Attachment ARMY-1- Line Nos. 22, 47, 71, 95, 119, 143, 167

Line No. 3: Line 1 + Line 2

Line No. 4: Attachment ARMY-2, Line 177- Correspondent to Rate Category

Line No. 5: Line 3 - Line 5

Line No. 6: Company Forecast

Line No. 7: Line 7 / Line 9

Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Reconciliation Period November 2022 – February 2024

1	Residential Rate D										
2	Month	Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
3		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
4	DY 21/22 Deficiency/(Surplus)	\$689,000									
5	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
6	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
7	Jan-23	\$689,000	\$0.00281	10,629,525	(\$29,869)	\$659,131	\$674,066	7.50%	31	\$4,294	\$4,294
8	Feb-23	\$663,425	\$0.00281	25,598,433	(\$71,932)	\$591,493	\$627,459	7.75%	28	\$3,730	\$8,024
9	Mar-23	\$595,224	\$0.00281	23,743,417	(\$66,719)	\$528,505	\$561,864	7.75%	31	\$3,698	\$11,722
10	Apr-23	\$532,203	\$0.00281	20,737,289	(\$58,272)	\$473,931	\$503,067	8.00%	30	\$3,308	\$15,030
11	May-23	\$477,239	\$0.00281	17,653,603	(\$49,607)	\$427,632	\$452,436	8.00%	31	\$3,074	\$18,104
12	Jun-23	\$430,706	\$0.00281	18,807,435	(\$52,849)	\$377,857	\$404,282	8.25%	30	\$2,741	\$20,846
13	Jul-23	\$380,599	\$0.00281	28,008,748	(\$78,705)	\$301,894	\$341,247	8.25%	31	\$2,391	\$23,237
** 14	Aug-23	\$304,285	\$0.00281	28,015,165	(\$78,723)	\$225,563	\$264,924	8.50%	31	\$1,913	\$25,149
** 15	Sep-23	\$227,475	\$0.00281	22,768,526	(\$63,980)	\$163,496	\$195,485	8.50%	30	\$1,366	\$26,515
** 16	Oct-23	\$164,861	\$0.00281	21,751,892	(\$61,123)	\$103,739	\$134,300	8.50%	31	\$970	\$27,485
** 17	Nov-23	\$104,708	\$0.00281	23,407,884	(\$65,776)	\$38,932	\$71,820	8.50%	30	\$502	\$27,986
** 18	Dec-23	\$39,434	\$0.00281	27,891,092	(\$78,374)	(\$38,940)	\$247	8.50%	31	\$2	\$27,988
** 19	Jan-24	(\$38,938)	\$0.00281	28,774,198	(\$80,855)	(\$119,794)	(\$79,366)	8.50%	31	(\$573)	\$27,415
** 20	Feb-24	(\$120,367)	\$0.00281	25,060,716	(\$70,421)	(\$190,788)	(\$155,577)	8.50%	29	(\$1,051)	\$26,364
21	Total			322,847,923	(\$907,203)					\$26,364	
22											
23	Projected Cumulative Collection				(\$907,203)						
24	Total Approved Collection				\$689,000						
25	(Over)/Under Collection, excluding interest				(\$218,203)						
26	Cumulative Interest				\$26,364						
27	Total (Over)/Under Collection, including interest				(\$191,838)						
28											
29											
30	Residential Rate D-10 Optional Peak Load Rate										
31	Month	Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
32		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
33	DY 21/22 Deficiency/(Surplus)	\$10,331									
34	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
35	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
36	Jan-23	\$10,331	\$0.00180	187,781	(\$338)	\$9,993	\$10,162	7.50%	31	\$65	\$65
37	Feb-23	\$10,057	\$0.00180	568,014	(\$1,022)	\$9,035	\$9,546	7.75%	28	\$57	\$121
38	Mar-23	\$9,092	\$0.00180	519,279	(\$935)	\$8,157	\$8,624	7.75%	31	\$57	\$178
39	Apr-23	\$8,214	\$0.00180	422,327	(\$760)	\$7,454	\$7,834	8.00%	30	\$52	\$230
40	May-23	\$7,505	\$0.00180	332,589	(\$599)	\$6,906	\$7,206	8.00%	31	\$49	\$279
41	Jun-23	\$6,955	\$0.00180	303,687	(\$547)	\$6,409	\$6,682	8.25%	30	\$45	\$324
42	Jul-23	\$6,454	\$0.00180	389,783	(\$702)	\$5,752	\$6,103	8.25%	31	\$43	\$367
** 43	Aug-23	\$5,795	\$0.00180	515,098	(\$927)	\$4,868	\$5,332	8.50%	31	\$38	\$405
** 44	Sep-23	\$4,907	\$0.00180	433,141	(\$780)	\$4,127	\$4,517	8.50%	30	\$32	\$437

** 45	Oct-23	\$4,158	\$0.00180	482,206	(\$868)	\$3,291	\$3,724	8.50%	31	\$27	\$464
** 46	Nov-23	\$3,317	\$0.00180	603,985	(\$1,087)	\$2,230	\$2,774	8.50%	30	\$19	\$483
** 47	Dec-23	\$2,250	\$0.00180	798,524	(\$1,437)	\$812	\$1,531	8.50%	31	\$11	\$494
** 48	Jan-24	\$823	\$0.00180	912,969	(\$1,643)	(\$820)	\$2	8.50%	31	\$0	\$494
** 49	Feb-24	(\$820)	\$0.00180	808,122	(\$1,455)	(\$2,275)	(\$1,547)	8.50%	29	(\$10)	\$484
46	Total			7,277,505	(\$13,100)					\$484	

47											
48											
49											
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53											
54											

General Service Time-of-Use Rate G-1

	Month	Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
55	DY 21/22 Deficiency/(Surplus)	\$329,459									
56											
57	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
58	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
59	Jan-23	\$329,459	\$0.00104	5,615,018	(\$5,840)	\$323,620	\$326,540	7.50%	31	\$2,080	\$2,080
60	Feb-23	\$325,700	\$0.00104	26,388,273	(\$27,444)	\$298,256	\$311,978	7.75%	28	\$1,855	\$3,935
61	Mar-23	\$300,111	\$0.00104	27,275,723	(\$28,367)	\$271,744	\$285,927	7.75%	31	\$1,882	\$5,817
62	Apr-23	\$273,626	\$0.00104	28,229,254	(\$29,358)	\$244,268	\$258,947	8.00%	30	\$1,703	\$7,519
63	May-23	\$245,970	\$0.00104	27,211,476	(\$28,300)	\$217,670	\$231,820	8.00%	31	\$1,575	\$9,095
64	Jun-23	\$219,245	\$0.00104	27,799,630	(\$28,912)	\$190,334	\$204,790	8.25%	30	\$1,389	\$10,483
65	Jul-23	\$191,722	\$0.00104	38,054,136	(\$39,576)	\$152,146	\$171,934	8.25%	31	\$1,205	\$11,688
66	Aug-23	\$153,351	\$0.00104	37,107,772	(\$38,592)	\$114,759	\$134,055	8.50%	31	\$968	\$12,656
67	Sep-23	\$115,726	\$0.00104	33,255,785	(\$34,586)	\$81,140	\$98,433	8.50%	30	\$688	\$13,343
68	Oct-23	\$81,828	\$0.00104	31,355,875	(\$32,610)	\$49,218	\$65,523	8.50%	31	\$473	\$13,816
69	Nov-23	\$49,691	\$0.00104	28,577,108	(\$29,720)	\$19,971	\$34,831	8.50%	30	\$243	\$14,060
70	Dec-23	\$20,214	\$0.00104	28,880,690	(\$30,036)	(\$9,822)	\$5,196	8.50%	31	\$38	\$14,097
71	Jan-24	(\$9,784)	\$0.00104	28,555,737	(\$29,698)	(\$39,482)	(\$24,633)	8.50%	31	(\$178)	\$13,919
72	Feb-24	(\$39,660)	\$0.00104	26,609,071	(\$27,673)	(\$67,333)	(\$53,497)	8.50%	29	(\$361)	\$13,558
73	Total			394,915,546	(\$410,712)					\$13,558	

74											
75											
76											
77											

Docket No. DE 23-081
Attachment ARMY/TJC-1
Page 3 of 4

Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Reconciliation Period November 2022 – February 2024

General Long Hour Service Rate G-2

	Month	Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
78	DY 21/22 Deficiency/(Surplus)	\$181,080									

82	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
83	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
84	Jan-23	\$181,080	\$0.00151	3,977,826	(\$6,007)	\$175,074	\$178,077	7.50%	31	\$1,134	\$1,134
85	Feb-23	\$176,208	\$0.00151	11,213,686	(\$16,933)	\$159,275	\$167,742	7.75%	28	\$997	\$2,132
86	Mar-23	\$160,273	\$0.00151	11,395,437	(\$17,207)	\$143,065	\$151,669	7.75%	31	\$998	\$3,130
87	Apr-23	\$144,064	\$0.00151	10,992,994	(\$16,599)	\$127,464	\$135,764	8.00%	30	\$893	\$4,023
88	May-23	\$128,357	\$0.00151	9,942,325	(\$15,013)	\$113,344	\$120,851	8.00%	31	\$821	\$4,844
89	Jun-23	\$114,165	\$0.00151	10,929,779	(\$16,504)	\$97,661	\$105,913	8.25%	30	\$718	\$5,562
90	Jul-23	\$98,379	\$0.00151	12,437,451	(\$18,781)	\$79,599	\$88,989	8.25%	31	\$624	\$6,185
** 91	Aug-23	\$80,222	\$0.00151	13,088,724	(\$19,764)	\$60,458	\$70,340	8.50%	31	\$508	\$6,693
** 92	Sep-23	\$60,966	\$0.00151	12,067,768	(\$18,222)	\$42,744	\$51,855	8.50%	30	\$362	\$7,055
** 93	Oct-23	\$43,106	\$0.00151	11,901,032	(\$17,971)	\$25,136	\$34,121	8.50%	31	\$246	\$7,302
** 94	Nov-23	\$25,382	\$0.00151	11,279,471	(\$17,032)	\$8,350	\$16,866	8.50%	30	\$118	\$7,420
** 95	Dec-23	\$8,468	\$0.00151	12,071,514	(\$18,228)	(\$9,760)	(\$646)	8.50%	31	(\$5)	\$7,415
** 96	Jan-24	(\$9,765)	\$0.00151	12,515,914	(\$18,899)	(\$28,664)	(\$19,214)	8.50%	31	(\$139)	\$7,276
** 97	Feb-24	(\$28,803)	\$0.00151	11,455,029	(\$17,297)	(\$46,100)	(\$37,451)	8.50%	29	(\$253)	\$7,023
94	Total			155,268,950	(\$234,456)					\$7,023	

96	Projected Cumulative Collection	(\$234,456)
97	Total Approved Collection	\$181,080
98	(Over)/Under Collection, excluding interest	(\$53,376)
99	Cumulative Interest	\$7,023
100	Total (Over)/Under Collection, including interest	(\$46,353)

General Service Rate G-3***

		Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
103	Month										
104		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
105	DY 21/22 Deficiency/(Surplus)	\$176,984									
106	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
107	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
108	Jan-23	\$176,984	\$0.00253	2,659,925	(\$6,730)	\$170,254	\$173,619	7.50%	31	\$1,106	\$1,106
109	Feb-23	\$171,360	\$0.00253	7,372,836	(\$18,653)	\$152,707	\$162,033	7.75%	28	\$963	\$2,069
110	Mar-23	\$153,670	\$0.00253	7,144,090	(\$18,075)	\$135,595	\$144,633	7.75%	31	\$952	\$3,021
111	Apr-23	\$136,547	\$0.00253	6,513,564	(\$16,505)	\$120,042	\$128,295	8.00%	30	\$844	\$3,865
112	May-23	\$120,886	\$0.00253	5,758,068	(\$14,568)	\$106,318	\$113,602	8.00%	31	\$772	\$4,637
113	Jun-23	\$107,090	\$0.00253	6,273,933	(\$15,873)	\$91,217	\$99,153	8.25%	30	\$672	\$5,309
114	Jul-23	\$91,889	\$0.00253	7,377,908	(\$18,666)	\$73,223	\$82,556	8.25%	31	\$578	\$5,888
** 115	Aug-23	\$73,801	\$0.00253	7,579,305	(\$19,176)	\$54,626	\$64,214	8.50%	31	\$464	\$6,351
** 116	Sep-23	\$55,089	\$0.00253	6,572,037	(\$16,627)	\$38,462	\$46,776	8.50%	30	\$327	\$6,678
** 117	Oct-23	\$38,789	\$0.00253	6,407,018	(\$16,210)	\$22,579	\$30,684	8.50%	31	\$222	\$6,899
** 118	Nov-23	\$22,801	\$0.00253	6,420,812	(\$16,245)	\$6,556	\$14,678	8.50%	30	\$103	\$7,002
** 119	Dec-23	\$6,658	\$0.00253	7,211,017	(\$18,244)	(\$11,585)	(\$2,463)	8.50%	31	(\$18)	\$6,984
** 120	Jan-24	(\$11,603)	\$0.00253	7,676,389	(\$19,421)	(\$31,024)	(\$21,314)	8.50%	31	(\$154)	\$6,830
** 121	Feb-24	(\$31,178)	\$0.00253	7,119,829	(\$18,013)	(\$49,191)	(\$40,185)	8.50%	29	(\$271)	\$6,559
118	Total			92,086,731	(\$233,005)					\$6,559	

120	Projected Cumulative Collection	(\$233,005)
121	Total Approved Collection	\$176,984
122	(Over)/Under Collection, excluding interest	(\$56,022)
123	Cumulative Interest	\$6,559
124	Total (Over)/Under Collection, including interest	(\$49,463)

Limited Total Electrical Living Rate T

	Month	Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
127	DY 21/22 Deficiency/(Surplus)	\$27,506									
128											
129											
130	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
131	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
132	Jan-23	\$27,506	\$0.00285	429,794	(\$1,225)	\$26,281	\$26,894	7.50%	31	\$171	\$171
133	Feb-23	\$26,452	\$0.00285	1,588,857	(\$4,528)	\$21,924	\$24,188	7.75%	28	\$144	\$315
134	Mar-23	\$22,068	\$0.00285	1,321,276	(\$3,766)	\$18,302	\$20,185	7.75%	31	\$133	\$448
135	Apr-23	\$18,435	\$0.00285	854,697	(\$2,436)	\$15,999	\$17,217	8.00%	30	\$113	\$561
136	May-23	\$16,113	\$0.00285	860,272	(\$2,452)	\$13,661	\$14,887	8.00%	31	\$101	\$662
137	Jun-23	\$13,762	\$0.00285	587,763	(\$1,675)	\$12,087	\$12,924	8.25%	30	\$88	\$750
138	Jul-23	\$12,174	\$0.00285	778,535	(\$2,219)	\$9,956	\$11,065	8.25%	31	\$78	\$828
** 139	Aug-23	\$10,033	\$0.00285	743,013	(\$2,118)	\$7,916	\$8,974	8.50%	31	\$65	\$892
** 140	Sep-23	\$7,980	\$0.00285	660,517	(\$1,882)	\$6,098	\$7,039	8.50%	30	\$49	\$941
** 141	Oct-23	\$6,147	\$0.00285	803,345	(\$2,290)	\$3,858	\$5,002	8.50%	31	\$36	\$978
** 142	Nov-23	\$3,894	\$0.00285	1,058,003	(\$3,015)	\$878	\$2,386	8.50%	30	\$17	\$994
** 143	Dec-23	\$895	\$0.00285	1,414,793	(\$4,032)	(\$3,137)	(\$1,121)	8.50%	31	(\$8)	\$986
** 144	Jan-24	(\$3,145)	\$0.00285	1,539,582	(\$4,388)	(\$7,533)	(\$5,339)	8.50%	31	(\$39)	\$948
** 145	Feb-24	(\$7,572)	\$0.00285	1,358,425	(\$3,872)	(\$11,443)	(\$9,507)	8.50%	29	(\$64)	\$883
142	Total			13,998,873	(\$39,897)					\$883	
143											
144	Projected Cumulative Collection					(\$39,897)					
145	Total Approved Collection					\$27,506					
146	(Over)/Under Collection, excluding interest					(\$12,391)					
147	Cumulative Interest					\$883					
148	Total (Over)/Under Collection, including interest					(\$11,507)					
149											

Docket No. DE 23-081
Attachment ARMY/TJC-1
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Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Reconciliation Period November 2022 – February 2024

	Month	Beginning Balance	Recovery Rate	kWh Sales	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
150	DY 21/22 Deficiency/(Surplus)	\$653									
151											
152											
153	Nov-22	\$0	\$0.00000	0	\$0	\$0	\$0	6.25%	30	\$0	\$0
154	Dec-22	\$0	\$0.00000	0	\$0	\$0	\$0	7.00%	31	\$0	\$0
155	Jan-23	\$653	\$0.00291	6,393	(\$19)	\$635	\$644	7.50%	31	\$4	\$4
156	Feb-23	\$639	\$0.00291	23,781	(\$69)	\$569	\$604	7.75%	28	\$4	\$8
157	Mar-23	\$573	\$0.00291	24,642	(\$72)	\$501	\$537	7.75%	31	\$4	\$11
158	Apr-23	\$505	\$0.00291	20,022	(\$58)	\$447	\$476	8.00%	30	\$3	\$14
159	May-23	\$450	\$0.00291	13,399	(\$39)	\$411	\$430	8.00%	31	\$3	\$17
160	Jun-23	\$414	\$0.00291	14,520	(\$42)	\$371	\$393	8.25%	30	\$3	\$20
161	Jul-23	\$374	\$0.00291	20,734	(\$60)	\$314	\$344	8.25%	31	\$2	\$22
** 162	Aug-23	\$316	\$0.00291	21,131	(\$61)	\$255	\$285	8.50%	31	\$2	\$24
** 163	Sep-23	\$257	\$0.00291	17,953	(\$52)	\$204	\$231	8.50%	30	\$2	\$26
** 164	Oct-23	\$206	\$0.00291	19,975	(\$58)	\$148	\$177	8.50%	31	\$1	\$27
** 165	Nov-23	\$149	\$0.00291	21,228	(\$62)	\$87	\$118	8.50%	30	\$1	\$28

** 167	Dec-23	\$88	\$0.00291	26,130	(\$76)	\$12	\$50	8.50%	31	\$0	\$28
** 168	Jan-24	\$13	\$0.00291	28,227	(\$82)	(\$70)	(\$28)	8.50%	31	(\$0)	\$28
** 169	Feb-24	(\$70)	\$0.00291	26,602	(\$77)	(\$147)	(\$108)	8.50%	29	(\$1)	\$28
166	Total			284,737	(\$829)					\$28	
167											
168	Projected Cumulative Collection				(\$829)						
169	Total Approved Collection				\$653						
170	(Over)/Under Collection, excluding interest				(\$175)						
171	Cumulative Interest				\$28						
172	Total (Over)/Under Collection, including interest				(\$148)						

Reference:

Column (a): Attachment ARMY-2, Line 177

Column (b): Per Order No. 26,748 in Docket DE 22-052, dated December 16, 2022

Column (c): Company records, includes Hybrid Rate Sales where applicable (G-1, G-2, G-3)

Column (d): Company records

Column (e): Column (a) + Column (d)

Column (f): [Column (a) + Column (e)] / 2

Column (g): Prime Rate effective first day of each month. Source: http://www.fedprimerate.com/wall_street_journal_prime_rate_history.htm

Column (h): Days per month

Column (i): [Column (f) x ((Column (g) / 365) * Column (h))]

Column (j): Column (i) + Prior Month's Column (j)

~~Projected Revenues~~

** Projected Forecasted Sales from Company records

*** Includes L2 rate

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Distribution Revenues Subject to Decoupling

Line No.	Decoupling Year	(a)	(b)	(c.)	(d)
	Distribution Revenues	Effective July 1, 2022	Effective August 1, 2022	Effective March 1, 2023	Effective June 1, 2023
1	Base	\$ 48,394,904	\$ 48,394,904	\$ 47,432,821	\$ 46,052,622
2	Step	\$ -	\$ 1,751,403	\$ (1,380,199)	\$ -
3	Recoupment	\$ -	\$ (1,939,679)	\$ -	\$ 917,996
4	Rate Case Expense	\$ -	\$ (565,077)	\$ -	\$ 276,821
5	July 2022 recoupment over collected	\$ -	\$ (161,640)	\$ -	\$ 76,500
6	July 2022 rate case expenses over collected	\$ -	\$ (47,090)	\$ -	\$ 23,068
7	Total	\$ 48,394,904	\$ 47,432,821	\$ 46,052,622	\$ 47,347,007

	Less: Street Lighting Distribution Revenues	Effective July 1, 2022	Effective August 1, 2022	Effective March 1, 2023	Effective June 1, 2023
8	Base	\$ 1,195,835	\$ 1,195,835	\$ 1,172,926	\$ 1,140,539
9	Step	\$ -	\$ (22,909)	\$ (32,387)	\$ 31,410
10	Recoupment	\$ -	\$ -	\$ -	\$ -
11	Rate Case Expense	\$ -	\$ -	\$ -	\$ -
12	July 2022 recoupment over collected	\$ -	\$ -	\$ -	\$ -
13	July 2022 rate case expenses over collected	\$ -	\$ -	\$ -	\$ -
14	Total	\$ 1,195,835	\$ 1,172,926	\$ 1,140,539	\$ 1,171,949

	Distribution Revenues Subject To Decoupling	Effective July 1, 2022	Effective August 1, 2022	Effective March 1, 2023	Effective June 1, 2023
15	Base	\$ 47,199,069	\$ 47,199,069	\$ 46,259,895	\$ 44,912,083
16	Step	\$ -	\$ 1,774,312	\$ (1,347,812)	\$ (31,410)
17	Recoupment	\$ -	\$ (1,939,679)	\$ -	\$ 917,996
18	Rate Case Expense	\$ -	\$ (565,077)	\$ -	\$ 276,821
19	July 2022 recoupment over collected	\$ -	\$ (161,640)	\$ -	\$ 76,500
20	July 2022 rate case expenses over collected	\$ -	\$ (47,090)	\$ -	\$ 23,068
21	Total	\$ 47,199,069	\$ 46,259,895	\$ 44,912,083	\$ 46,175,058

Line	(a)	(b)	(c.)	(d.)	(d.)
		Approved in Docket No. DE 19-064 Order No. 26,537 (October 29, 2021)			
1			Prior year total	Prior year total	Prior year total
			Approved in Docket No. DE 22-035 Order No. 035 Order No. 26,780 (March 1, 2023) and 26,781 (March 3, 2023)		
2	N/A			Approved in Docket No. DE 22-035 Order No. 26,836 (May 31, 2023)	
3	N/A	N/A	N/A	N/A	
4	N/A	N/A	N/A	N/A	
5	N/A	N/A	N/A	N/A	
6	N/A	N/A	N/A	N/A	
7	Sum of lines 1 through 6	Sum of lines 1 through 6	Sum of lines 1 through 6	Sum of lines 1 through 6	Sum of lines 1 through 6
		Approved in Docket No. DE 19-064 Order No. 26,537 (October 29, 2021)			
8			Prior year total	Prior year total	Prior year total
9	N/A	Allocated in Rate Design	Allocated in Rate Design	Allocated in Rate Design	
10	N/A	N/A	N/A	N/A	
11	N/A	N/A	N/A	N/A	
12	N/A	N/A	N/A	N/A	
13	N/A	N/A	N/A	N/A	
14	Sum of lines 8 through 12	Sum of lines 8 through 12	Sum of lines 8 through 12	Sum of lines 8 through 12	Sum of lines 8 through 12
15	Line 1 - Line 8	Line 1 - Line 8	Line 1 - Line 8	Line 1 - Line 8	
16	Line 2 - Line 9	Line 2 - Line 9	Line 2 - Line 9	Line 2 - Line 9	
17	Line 3 - Line 10	Line 3 - Line 10	Line 3 - Line 10	Line 3 - Line 10	
18	Line 4 - Line 11	Line 4 - Line 11	Line 4 - Line 11	Line 4 - Line 11	
19	Line 5 - Line 12	Line 5 - Line 12	Line 5 - Line 12	Line 5 - Line 12	
20	Line 6 - Line 13	Line 6 - Line 13	Line 6 - Line 13	Line 6 - Line 13	
21	Sum of lines 15 through 20	Sum of lines 15 through 20	Sum of lines 15 through 20	Sum of lines 15 through 20	Sum of lines 15 through 20

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Annual Target Revenues by Rate Class

Line No.	Decoupling Year 2: Allowed Revenue Requirement 7/1/2022 - 7/31/2022	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
1	Distribution Revenue Requirement	\$22,982,235	\$344,590	\$10,989,421	\$6,040,095	\$5,903,452	\$917,491	\$21,785	\$ 47,199,069
2	Step Increase	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
3	Recoupment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
4	Rate Case Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
5	July 2022 recoupment over collected	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
6	July 2022 rate case expenses over collected	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
7	Total Target Revenues	\$22,982,235	\$344,590	\$10,989,421	\$6,040,095	\$5,903,452	\$917,491	\$21,785	\$47,199,069

	Decoupling Year 2: Allowed Revenue Requirement 8/1/2022 - 2/28/2023	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
8	Distribution Revenue Requirement	\$22,982,235	\$344,590	\$10,989,421	\$6,040,095	\$5,903,452	\$917,491	\$21,785	\$ 47,199,069
9	Step Increase	\$863,950	\$12,954	\$413,115	\$227,060	\$221,923	\$34,490	\$819	\$ 1,774,312
10	Recoupment	(\$944,471)	(\$14,161)	(\$451,618)	(\$248,222)	(\$242,607)	(\$37,705)	(\$895)	\$ (1,939,679)
11	Rate Case Expense	(\$275,148)	(\$4,126)	(\$131,568)	(\$72,313)	(\$70,677)	(\$10,984)	(\$261)	\$ (565,077)
12	July 2022 recoupment over collected	(\$78,706)	(\$1,180)	(\$37,635)	(\$20,685)	(\$20,217)	(\$3,142)	(\$75)	\$ (161,640)
13	July 2022 rate case expenses over collected	(\$22,929)	(\$344)	(\$10,964)	(\$6,026)	(\$5,890)	(\$915)	(\$22)	\$ (47,090)
14	Total Target Revenues	\$22,524,931	\$337,733	\$10,770,752	\$5,919,908	\$5,785,984	\$899,235	\$21,352	\$46,259,895

	Decoupling Year 2: Allowed Revenue Requirement 3/1/2023 - 5/31/2023	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
15	Distribution Revenue Requirement	\$22,524,931	\$337,733	\$10,770,752	\$5,919,908	\$5,785,984	\$899,235	\$21,352	\$ 46,259,895
16	Step Increase	(\$656,278)	(\$9,840)	(\$313,813)	(\$172,480)	(\$168,578)	(\$26,200)	(\$622)	\$ (1,347,812)
17	Recoupment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
18	Rate Case Expense	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
19	July 2022 recoupment over collected	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
20	July 2022 rate case expenses over collected	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
21	Total Target Revenues	\$21,868,653	\$327,893	\$10,456,939	\$5,747,428	\$5,617,405	\$873,035	\$20,730	\$44,912,083

	Decoupling Year 2: Allowed Revenue Requirement 6/1/2023 - 6/30/2023	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
22	Distribution Revenue Requirement	\$21,868,653	\$327,893	\$10,456,939	\$5,747,428	\$5,617,405	\$873,035	\$20,730	\$ 44,912,083
23	Step Increase	(\$15,294)	(\$229)	(\$7,313)	(\$4,020)	(\$3,929)	(\$611)	(\$14)	\$ (31,410)
24	Recoupment	\$446,992	\$6,702	\$213,738	\$117,476	\$114,819	\$17,845	\$424	\$ 917,996
25	Rate Case Expense	\$134,790	\$2,021	\$64,453	\$35,425	\$34,624	\$5,381	\$128	\$ 276,821
26	July 2022 recoupment over collected	\$37,249	\$559	\$17,812	\$9,790	\$9,568	\$1,487	\$35	\$ 76,500
27	July 2022 rate case expenses over collected	\$11,233	\$168	\$5,371	\$2,952	\$2,885	\$448	\$11	\$ 23,068
28	Total Target Revenues	\$22,483,622	\$337,114	\$10,750,999	\$5,909,052	\$5,775,373	\$897,586	\$21,313	\$46,175,058

	Normalized Test Year Revenues (used to spread Annual Allowed Revenues Among the Classes)	D-05 & -06	D-10	G-1	G-2	G-3	T	V	Total
29	Jul-18	\$1,694,413	\$22,074	\$841,222	\$447,540	\$419,271	\$48,672	\$1,582	\$3,474,773
30	Aug-18	\$1,857,431	\$24,560	\$884,497	\$457,478	\$453,725	\$52,599	\$1,842	\$3,732,132
31	Sep-18	\$1,678,165	\$23,102	\$836,223	\$423,981	\$418,285	\$46,607	\$1,260	\$3,427,623
32	Oct-18	\$1,371,371	\$18,950	\$757,938	\$417,729	\$367,687	\$44,713	\$1,206	\$2,979,594
33	Nov-18	\$1,401,629	\$20,584	\$707,174	\$393,114	\$358,966	\$57,503	\$1,124	\$2,940,094
34	Dec-18	\$1,688,605	\$26,286	\$756,050	\$400,390	\$426,308	\$80,056	\$1,608	\$3,379,303
35	Jan-18	\$1,891,081	\$31,136	\$711,780	\$403,946	\$451,098	\$102,669	\$2,007	\$3,593,716
36	Feb-18	\$1,599,187	\$28,894	\$706,330	\$404,252	\$425,561	\$84,220	\$1,783	\$3,250,227
37	Mar-18	\$1,520,355	\$25,807	\$692,966	\$411,845	\$407,660	\$77,033	\$1,583	\$3,137,249
38	Apr-18	\$1,496,779	\$24,334	\$696,329	\$399,178	\$397,471	\$67,951	\$1,507	\$3,083,549
39	May-18	\$1,351,666	\$20,212	\$720,281	\$416,875	\$370,820	\$51,763	\$1,260	\$2,932,877
40	Jun-18	\$1,488,295	\$19,526	\$793,083	\$427,417	\$393,696	\$46,282	\$1,287	\$3,169,586
41		\$19,038,977	\$285,466	\$9,103,872	\$5,003,744	\$4,890,546	\$760,069	\$18,047	\$39,100,722
42	Percent of Total	48.69%	0.73%	23.28%	12.80%	12.51%	1.94%	0.05%	100.00%

	Normalized Test Year Revenue Allocator	D	D-10	G-1	G-2	G-3	T	V
43	Jul-18	8.90%	7.73%	9.24%	8.94%	8.57%	6.40%	8.77%
44	Aug-18	9.76%	8.60%	9.72%	9.14%	9.28%	6.92%	10.21%
45	Sep-18	8.81%	8.09%	9.19%	8.47%	8.55%	6.13%	6.98%
46	Oct-18	7.20%	6.64%	8.33%	8.35%	7.52%	5.88%	6.68%
47	Nov-18	7.36%	7.21%	7.77%	7.86%	7.34%	7.57%	6.23%
48	Dec-18	8.87%	9.21%	8.30%	8.00%	8.72%	10.53%	8.91%
49	Jan-18	9.93%	10.91%	7.82%	8.07%	9.22%	13.51%	11.12%
50	Feb-18	8.40%	10.12%	7.76%	8.08%	8.70%	11.08%	9.88%
51	Mar-18	7.99%	9.04%	7.61%	8.23%	8.34%	10.14%	8.77%
52	Apr-18	7.86%	8.52%	7.65%	7.98%	8.13%	8.94%	8.35%
53	May-18	7.10%	7.08%	7.91%	8.33%	7.58%	6.81%	6.98%
54	Jun-18	7.82%	6.84%	8.71%	8.54%	8.05%	6.09%	7.13%
55	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)

Line No.

A	B	C	D	E	F	G	H	I	J
Decoupling Year 2: 7/1/2022 - 6/30/2023		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
Bills	(Test Year Equivalent Bills)								
7	Jul-18	35,232	443	139	922	5,691	961	18	43,406
8	Aug-18	37,134	441	143	942	5,902	1,034	19	45,615
9	Sep-18	33,822	435	138	872	5,425	881	15	41,588
10	Oct-18	35,547	440	141	906	5,680	956	17	43,687
11	Nov-18	35,400	437	140	900	5,679	951	17	43,524
12	Dec-18	35,656	439	145	902	5,704	950	17	43,813
1	Jan-18	35,344	438	135	904	5,649	981	18	43,469
2	Feb-18	35,193	441	135	906	5,663	975	18	43,331
3	Mar-18	35,347	441	132	910	5,671	975	18	43,494
4	Apr-18	35,329	443	131	901	5,688	967	18	43,477
5	May-18	35,313	440	141	914	5,650	968	18	43,444
6	Jun-18	35,263	439	138	903	5,638	967	18	43,366
		424,580	5,277	1,658	10,882	68,040	11,566	211	522,214
Distribution Revenues	(Settlement Allowed)								
7	Jul-22	\$2,045,352	\$26,645	\$1,015,451	\$540,232	\$506,108	\$58,752	\$1,910	\$4,194,451
8	Aug-22	\$2,197,519	\$29,056	\$1,046,444	\$541,241	\$536,800	\$62,230	\$2,179	\$4,415,469
9	Sep-22	\$1,985,430	\$27,332	\$989,332	\$501,610	\$494,871	\$55,141	\$1,491	\$4,055,206
10	Oct-22	\$1,622,463	\$22,419	\$896,713	\$494,213	\$435,009	\$52,900	\$1,427	\$3,525,144
11	Nov-22	\$1,658,261	\$24,353	\$836,655	\$465,092	\$424,691	\$68,032	\$1,329	\$3,478,413
12	Dec-22	\$1,997,781	\$31,099	\$894,479	\$473,699	\$504,363	\$94,714	\$1,902	\$3,998,038
1	Jan-23	\$2,237,329	\$36,837	\$842,104	\$477,907	\$533,692	\$121,468	\$2,374	\$4,251,710
2	Feb-23	\$1,891,992	\$34,185	\$835,656	\$478,268	\$503,479	\$99,640	\$2,109	\$3,845,329
3	Mar-23	\$1,746,318	\$29,643	\$795,958	\$473,056	\$468,249	\$88,482	\$1,818	\$3,603,524
4	Apr-23	\$1,719,239	\$27,951	\$799,821	\$458,066	\$456,545	\$78,050	\$1,731	\$3,541,843
5	May-23	\$1,552,558	\$23,216	\$827,333	\$478,833	\$425,933	\$59,456	\$1,448	\$3,368,777
6	Jun-23	\$1,757,566	\$23,059	\$936,572	\$504,747	\$464,926	\$54,656	\$1,519	\$3,743,046
		\$22,411,807	\$335,796	\$10,716,519	\$5,887,405	\$5,754,665	\$93,521	\$2,237	\$46,020,950
Monthly Target Revenue Per Customer (Monthly RPC)									
7	Jul-22	\$58.05	\$60.15	\$7,305.40	\$585.94	\$88.93	\$61.14	\$106.09	
8	Aug-22	\$59.18	\$65.89	\$7,317.79	\$574.57	\$90.95	\$60.18	\$114.68	
9	Sep-22	\$58.70	\$62.83	\$7,169.07	\$575.24	\$91.22	\$62.59	\$99.38	
10	Oct-22	\$45.64	\$50.95	\$6,359.67	\$545.49	\$76.59	\$55.34	\$83.92	
11	Nov-22	\$46.84	\$55.73	\$5,976.11	\$516.77	\$74.78	\$71.54	\$78.20	
12	Dec-22	\$56.03	\$70.84	\$6,168.82	\$525.17	\$88.42	\$99.70	\$111.89	
1	Jan-23	\$63.30	\$84.10	\$6,237.81	\$528.66	\$94.48	\$123.82	\$131.90	
2	Feb-23	\$53.76	\$77.52	\$6,190.04	\$527.89	\$88.91	\$102.20	\$117.16	
3	Mar-23	\$49.40	\$67.22	\$6,029.98	\$519.84	\$82.57	\$90.75	\$101.00	
4	Apr-23	\$48.66	\$63.09	\$6,105.51	\$508.89	\$80.26	\$80.71	\$96.19	
5	May-23	\$43.97	\$52.76	\$5,867.61	\$523.89	\$75.39	\$61.42	\$80.43	
6	Jun-23	\$49.84	\$52.53	\$6,786.75	\$558.97	\$82.46	\$56.52	\$84.41	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)

Actual		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
Equivalent Bills		Values below are inputs, and represent actual monthly bills adjusted to equivalent bills							
7	Jul-22	37,035	437	148	953	5,835	859	16	45,283
8	Aug-22	36,819	438	155	938	5,832	842	16	45,040
9	Sep-22	33,235	418	162	958	5,408	613	16	40,810
10	Oct-22	39,550	412	104	851	5,735	967	16	47,635
11	Nov-22	38,229	457	137	1,022	6,101	830	16	46,792
12	Dec-22	37,442	409	147	1,015	5,905	732	17	45,667
1	Jan-23	38,705	461	182	992	6,169	927	15	47,451
2	Feb-23	39,051	486	162	1,071	6,171	982	17	47,940
3	Mar-23	37,381	440	179	1,015	5,940	838	16	45,809
4	Apr-23	36,729	429	168	970	5,774	757	16	44,843
5	May-23	37,730	462	147	994	5,958	869	16	46,176
6	Jun-23	35,257	444	141	1,008	5,862	732	16	43,460
		447,163	5,293	1,832	11,787	70,690	9,948	193	546,906
Distribution Revenues		Values below are inputs, and represent actual monthly billings							
7	Jul-22	\$2,207,329	\$26,615	\$913,135	\$521,444	\$492,235	\$52,190	\$1,490	\$4,214,438
8	Aug-22	\$2,397,174	\$31,057	\$953,770	\$493,175	\$522,907	\$52,797	\$1,720	\$4,452,601
9	Sep-22	\$1,747,984	\$24,150	\$759,197	\$502,929	\$465,136	\$34,774	\$1,424	\$3,535,595
10	Oct-22	\$1,875,712	\$19,694	\$501,424	\$402,815	\$384,895	\$50,252	\$1,070	\$3,235,863
11	Nov-22	\$1,664,998	\$22,413	\$528,110	\$513,268	\$406,216	\$44,849	\$994	\$3,180,858
12	Dec-22	\$1,827,360	\$23,738	\$1,214,006	\$461,517	\$413,838	\$46,365	\$1,410	\$3,988,234
1	Jan-23	\$2,133,410	\$30,678	\$910,614	\$525,388	\$529,792	\$91,118	\$1,242	\$4,222,242
2	Feb-23	\$2,153,318	\$34,257	\$983,552	\$546,011	\$525,831	\$100,761	\$1,649	\$4,345,379
3	Mar-23	\$1,912,779	\$28,174	\$864,222	\$503,799	\$472,573	\$74,561	\$1,587	\$3,857,694
4	Apr-23	\$1,699,665	\$24,315	\$943,032	\$444,129	\$425,432	\$50,216	\$1,316	\$3,588,106
5	May-23	\$1,529,453	\$21,777	\$854,618	\$458,535	\$384,606	\$51,984	\$966	\$3,301,939
6	Jun-23	\$1,566,497	\$21,411	\$820,098	\$476,662	\$414,391	\$37,738	\$1,036	\$3,337,832
		\$ 22,715,679	\$ 308,279	\$ 10,245,789	\$ 5,849,673	\$ 5,437,851	\$ 687,606	\$ 15,905	\$ 45,260,782
Actual Revenue Per Customer									
7	Jul-22	\$59.60	\$60.90	\$6,169.83	\$547.16	\$84.36	\$60.76	\$93.13	
8	Aug-22	\$65.11	\$70.91	\$6,153.36	\$525.77	\$89.66	\$62.70	\$107.52	
9	Sep-22	\$52.59	\$57.78	\$4,686.40	\$524.98	\$86.01	\$56.73	\$89.02	
10	Oct-22	\$47.43	\$47.80	\$4,821.39	\$473.34	\$67.11	\$51.97	\$66.89	
11	Nov-22	\$43.55	\$49.04	\$3,854.89	\$502.22	\$66.58	\$54.04	\$62.11	
12	Dec-22	\$48.81	\$58.04	\$8,258.54	\$454.70	\$70.08	\$63.34	\$82.92	
1	Jan-23	\$55.12	\$66.55	\$5,003.37	\$529.63	\$85.88	\$98.29	\$82.82	
2	Feb-23	\$55.14	\$70.49	\$6,071.31	\$509.81	\$85.21	\$102.61	\$96.98	
3	Mar-23	\$51.17	\$64.03	\$4,828.06	\$496.35	\$79.56	\$88.97	\$99.18	
4	Apr-23	\$46.28	\$56.68	\$5,613.29	\$457.87	\$73.68	\$66.34	\$82.27	
5	May-23	\$40.54	\$47.14	\$5,813.73	\$461.30	\$64.55	\$59.82	\$60.40	
6	Jun-23	\$44.43	\$48.22	\$5,816.30	\$472.88	\$70.69	\$51.55	\$64.73	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)

1	2	3	4	5	6	7	8	9
A	B	C	D	E	F	G	H	I

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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)

Decoupling Calculation: Decoupling Year 2		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total Refund / (Charge) to Customers
		DOD2	D10	G01	G02	G03	T00	V00	
Jul-22	Target RPC	\$58.05	\$60.15	\$7,305.40	\$585.94	\$88.93	\$61.14	\$106.09	
7	Actual RPC	\$59.60	\$60.90	\$6,169.83	\$547.16	\$84.36	\$60.76	\$93.13	
	Difference	\$1.5474	\$0.7559	(\$1,135.5733)	(\$38.7746)	(\$4.5723)	(\$0.3799)	(\$12.9626)	
	Actual Bills	37,035	437	148	953	5,835	859	16	
	Decoupling Adjustment	\$57,307	\$330	(\$168,065)	(\$36,679)	(\$326)	(\$207)	(\$174,592)	
Aug-22	Target RPC	\$59.18	\$65.89	\$7,317.79	\$574.57	\$90.95	\$60.18	\$114.68	
8	Actual RPC	\$65.11	\$70.91	\$6,153.36	\$525.77	\$89.66	\$62.70	\$107.52	
	Difference	\$5.9289	\$5.0189	(\$1,164.4343)	(\$48.7927)	(\$1.2905)	\$2.5206	(\$7.1647)	
	Actual Bills	36,819	438	155	938	5,832	842	16	
	Decoupling Adjustment	\$218,296	\$2,198	(\$180,487)	(\$45,768)	(\$7,526)	\$2,122	(\$11,280)	
Sep-22	Target RPC	\$58.70	\$62.83	\$7,165.07	\$575.24	\$91.22	\$62.59	\$90.38	
9	Actual RPC	\$52.58	\$57.78	\$4,686.40	\$524.98	\$86.01	\$56.73	\$89.02	
	Difference	(\$6.1076)	(\$5.0577)	(\$2,482.6739)	(\$50.2621)	(\$5.2116)	(\$5.8609)	(\$10.3581)	
	Actual Bills	33,235	418	162	958	5,408	613	16	
	Decoupling Adjustment	(\$202,988)	(\$2,114)	(\$402,193)	(\$48,151)	(\$28,184)	(\$3,583)	(\$166)	(\$687,389)
Oct-22	Target RPC	\$45.64	\$50.95	\$6,359.67	\$545.49	\$76.59	\$55.34	\$83.92	
10	Actual RPC	\$47.43	\$47.80	\$4,821.39	\$473.34	\$67.11	\$51.97	\$66.89	
	Difference	\$1.7836	(\$3.1520)	(\$1,538.2803)	(\$72.1459)	(\$9.4727)	(\$3.3682)	(\$17.0315)	
	Actual Bills	39,550	412	104	851	5,735	967	16	
	Decoupling Adjustment	\$70,542	(\$1,299)	(\$159,981)	(\$61,396)	(\$54,326)	(\$3,257)	(\$273)	(\$209,990)
Nov-22	Target RPC	\$46.84	\$55.73	\$5,976.11	\$516.77	\$74.78	\$71.54	\$78.20	
11	Actual RPC	\$43.55	\$49.04	\$3,854.89	\$502.22	\$66.58	\$54.04	\$62.11	
	Difference	(\$3.2903)	(\$6.6836)	(\$2,121.2216)	(\$14.5496)	(\$8.2008)	(\$17.5016)	(\$16.0850)	
	Actual Bills	38,229	457	137	1,022	6,101	830	16	
	Decoupling Adjustment	(\$125,783)	(\$3,054)	(\$290,607)	(\$14,870)	(\$50,033)	(\$14,526)	(\$257)	(\$499,130)
Dec-22	Target RPC	\$56.03	\$70.84	\$6,168.82	\$525.17	\$88.42	\$99.70	\$111.89	
12	Actual RPC	\$48.81	\$58.04	\$8,258.54	\$454.70	\$70.08	\$63.34	\$82.92	
	Difference	(\$7.2242)	(\$12.8011)	\$2,089.7227	(\$70.4688)	(\$18.3401)	(\$36.3586)	(\$28.9715)	
	Actual Bills	37,442	409	147	1,015	5,905	732	17	
	Decoupling Adjustment	(\$270,490)	(\$5,236)	\$307,189	(\$71,526)	(\$108,298)	(\$26,615)	(\$493)	(\$175,469)
Jan-23	Target RPC	\$63.30	\$84.10	\$6,237.81	\$528.66	\$94.48	\$123.82	\$131.90	
1	Actual RPC	\$55.12	\$66.55	\$5,003.37	\$529.63	\$85.88	\$98.29	\$82.82	
	Difference	(\$8.1818)	(\$17.5553)	(\$1,234.4368)	\$0.9672	(\$8.5956)	(\$25.5271)	(\$49.0802)	
	Actual Bills	38,705	461	182	992	6,169	927	15	
	Decoupling Adjustment	(\$316,676)	(\$8,093)	(\$224,667)	\$959	(\$53,026)	(\$23,664)	(\$736)	(\$625,903)
Feb-23	Target RPC	\$53.76	\$77.52	\$6,190.04	\$527.89	\$88.91	\$102.20	\$117.16	
2	Actual RPC	\$55.14	\$70.49	\$6,071.31	\$509.81	\$85.21	\$102.61	\$96.98	
	Difference	\$1.3807	(\$7.0289)	(\$118.7330)	(\$18.0758)	(\$3.6968)	\$0.4131	(\$20.1796)	
	Actual Bills	39,051	486	162	1,071	6,171	982	17	
	Decoupling Adjustment	\$53,919	(\$3,416)	(\$19,235)	(\$19,359)	(\$22,813)	\$406	(\$343)	(\$10,841)
Mar-23	Target RPC	\$49.40	\$67.22	\$6,029.98	\$519.84	\$82.57	\$90.75	\$101.00	
3	Actual RPC	\$51.17	\$64.03	\$4,828.06	\$496.35	\$79.56	\$88.97	\$99.18	
	Difference	\$1.7648	(\$3.1859)	(\$1,201.9256)	(\$23.4879)	(\$3.0113)	(\$1.7763)	(\$1.8214)	
	Actual Bills	37,381	440	179	1,015	5,940	838	16	
	Decoupling Adjustment	\$65,971	(\$1,402)	(\$215,145)	(\$23,840)	(\$17,887)	(\$1,489)	(\$29)	(\$193,821)
Apr-23	Target RPC	\$48.66	\$63.09	\$6,105.51	\$508.89	\$80.26	\$80.71	\$96.19	
4	Actual RPC	\$46.28	\$56.68	\$5,613.29	\$457.87	\$73.68	\$66.34	\$82.27	
	Difference	(\$2.3878)	(\$6.4156)	(\$492.2178)	(\$51.0201)	(\$6.5840)	(\$14.3777)	(\$13.9180)	
	Actual Bills	36,729	429	168	970	5,774	757	16	
	Decoupling Adjustment	(\$87,703)	(\$2,752)	(\$82,693)	(\$49,489)	(\$38,016)	(\$10,884)	(\$223)	(\$271,760)
May-23	Target RPC	\$43.97	\$52.76	\$5,867.61	\$523.89	\$75.39	\$61.42	\$80.43	
5	Actual RPC	\$40.54	\$47.14	\$5,813.73	\$461.30	\$64.55	\$59.82	\$60.40	
	Difference	(\$3.4288)	(\$5.6288)	(\$53.8816)	(\$62.5849)	(\$10.8334)	(\$1.6012)	(\$20.0293)	
	Actual Bills	37,730	462	147	994	5,958	869	16	
	Decoupling Adjustment	(\$129,369)	(\$2,601)	(\$7,921)	(\$62,209)	(\$64,545)	(\$1,391)	(\$320)	(\$268,356)
Jun-23	Target RPC	\$49.84	\$52.53	\$6,786.75	\$558.97	\$82.46	\$56.52	\$84.41	
6	Actual RPC	\$44.43	\$48.22	\$5,816.30	\$472.88	\$70.69	\$51.55	\$64.73	
	Difference	(\$5.4108)	(\$4.3041)	(\$970.4558)	(\$86.0882)	(\$11.7719)	(\$4.9668)	(\$19.6854)	
	Actual Bills	35,257	444	141	1,008	5,862	732	16	
	Decoupling Adjustment	(\$190,770)	(\$1,911)	(\$136,834)	(\$86,777)	(\$69,007)	(\$3,636)	(\$315)	(\$489,250)
	Annual Total	(\$857,744)	(\$29,350)	(\$1,580,639)	(\$519,378)	(\$540,340)	(\$86,853)	(\$3,477)	(\$3,617,781)

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)

Annual Deferral Calculation: DY 2											
A	B		C	D	E	F	G	H	I	J	
		A + B	D	C / D				(E - F) or (E - G)	D * H	C - I	
Current Year Adjustment	Prior Years' Deferral Balance	Total Adjustment	Total Company Target Revenues	Percent of Total	"Soft" Cap		Amount in excess of Cap %	Amount in excess of Cap \$	Annual Allowed Adjustment		
\$ (3,617,781)	\$ (460,653)	\$ (4,078,434)	\$ 46,020,950	-8.86%	-3.00%		3.00%	-5.86%	\$ (2,697,805)	\$ (1,380,629)	
									Deferral of excess to next year's calculation	Refund / (Charge) to Customers	

Normalized Test Year Revenues (used to spread Annual		D-05 & -06	D-10	G-1	G-2	G-3	T	V	Total
Jul-18		\$1,694,413	\$22,074	\$841,222	\$447,540	\$419,271	\$48,672	\$1,582	\$3,474,773
Aug-18		\$1,857,431	\$24,560	\$884,497	\$457,478	\$453,725	\$52,599	\$1,842	\$3,732,132
Sep-18		\$1,678,165	\$23,102	\$836,223	\$423,981	\$418,285	\$46,607	\$1,260	\$3,427,623
Oct-18		\$1,371,371	\$18,950	\$757,938	\$417,729	\$367,687	\$44,713	\$1,206	\$2,979,594
Nov-18		\$1,401,629	\$20,584	\$707,174	\$393,114	\$358,966	\$57,503	\$1,124	\$2,940,094
Dec-18		\$1,688,605	\$26,286	\$756,050	\$400,390	\$426,308	\$80,056	\$1,608	\$3,379,303
Jan-18		\$1,891,081	\$31,136	\$711,780	\$403,946	\$451,098	\$102,669	\$2,007	\$3,593,716
Feb-18		\$1,599,187	\$28,894	\$706,330	\$404,252	\$425,961	\$84,220	\$1,783	\$3,250,227
Mar-18		\$1,520,355	\$25,807	\$692,966	\$411,845	\$407,660	\$77,033	\$1,583	\$3,137,249
Apr-18		\$1,496,779	\$24,334	\$696,329	\$399,178	\$397,471	\$67,951	\$1,507	\$3,083,549
May-18		\$1,351,666	\$20,212	\$720,281	\$416,875	\$370,620	\$51,763	\$1,260	\$2,932,877
Jun-18		\$1,498,295	\$19,526	\$793,083	\$427,417	\$393,696	\$46,282	\$1,287	\$3,169,586
		\$19,038,977	\$285,466	\$9,103,872	\$5,003,744	\$4,890,546	\$760,065	\$18,047	\$39,100,722
	Percent of Total	48.69%	0.73%	23.28%	12.80%	12.51%	1.94%	0.05%	100.00%

Rate Class Allocation		DOD2	D10	G01	G02	G03	T00	V00	Total Refund / (Charge) to Customers Year 1
Class % of Total Test Year Distribution Revenues		48.69%	0.73%	23.28%	12.80%	12.51%	1.94%	0.05%	100.00%
Decoupling Adjustment		\$ (672,258)	\$ (10,080)	\$ (321,454)	\$ (176,680)	\$ (172,683)	\$ (26,838)	\$ (637)	\$ (1,380,629)

Indicative Monthly Bill Impacts*		DOD2	D10	G01	G02	G03	T00	V00	Total
Mar 2024-Oct 2024	Monthly kWh	194,872,818	4,313,383	266,044,823	100,082,087	55,377,403	6,346,206	171,811	627,208,532

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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty																
Revenue Decoupling Adjustment Factor (RDAF)																
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)																
181		\$/kWh	\$	0.00345	\$	0.00234	\$	0.00121	\$	0.00177	\$	0.00312	\$	0.00423	\$	0.00371
182																
183	Monthly Use Per Customer (kWh)			436		815		145,221		8,491		783		638		890
184	Monthly Impact		\$	1.50	\$	1.91	\$	175.72	\$	15.03	\$	2.44	\$	2.70	\$	3.30

Reference:
* Rate does not include any reconciliation from decoupling years

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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)

Permanent Rate Design - July 1, 2022 - June 30, 2023 Decoupling Year Adjustment-Rates Effective March 1, 2024

Line No.	Rate Class	Distribution Rate Component	December 1, 2023	Current REP/VMP Adjustment	Proposed March 1, 2024 Decoupling Adjustment	Total Distribution Rates March 1, 2024
			Current Rates (a)	Factor (b)	Factor (c)	Rates (d)
3	D	Customer Charge	\$14.74			\$14.74
4		All kWh	\$0.06752	(\$0.00002)	\$0.00247	\$0.06997
5		16 Hour Off Peak kWh	\$0.05829	(\$0.00002)	\$0.00247	\$0.06074
6		Farm kWh	\$0.06374	(\$0.00002)	\$0.00247	\$0.06619
7		D-6 kWh	\$0.05938	(\$0.00002)	\$0.00247	\$0.06183
8	D-10	Customer Charge	\$14.74			\$14.74
9		On Peak kWh	\$0.14355	(\$0.00002)	\$0.00181	0.14534
10		Off Peak kWh	\$0.00190	(\$0.00002)	\$0.00181	0.00369
11	G-1	Customer Charge	\$502.08			\$502.08
12		Demand Charge	\$10.63			\$10.63
13		On Peak kWh	\$0.00679	(\$0.00002)	\$0.00095	\$0.00772
14		Off Peak kWh	\$0.00199	(\$0.00002)	\$0.00095	\$0.00292
15		Credit for High Voltage Delivery > 2.4 kv	(\$0.57)			(\$0.57)
16	G-2	Customer Charge	\$83.66			\$83.66
17		Demand Charge	\$10.67			\$10.67
18		All kWh	\$0.00267	(\$0.00002)	\$0.00130	\$0.00395
19		Credit for High Voltage Delivery > 2.4 kv	(\$0.57)			(\$0.57)
20	G-3	Customer Charge	\$19.20			\$19.20
21		All kWh	\$0.06093	(\$0.00002)	\$0.00223	\$0.06314
22	T	Customer Charge	\$17.01			\$17.01
23		All kWh	\$0.05469	(\$0.00002)	\$0.00242	\$0.05709
24	V	Minimum Charge	\$19.20			\$19.20
25		All kWh	\$0.06266	(\$0.00002)	\$0.00285	\$0.06549

* Proposed Rates pending Commission Approval for Docket DE 22-035- Step Adjustment

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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Bill Calculation - Residential Rate D

Line No.		Usage	650	kWh	Rate Effective	March 1, 2024	Current	March 1, 2024
					January 1, 2024	Proposed Rates	Bill	Proposed Bill
1					(a)	(b)	(c)	(b)
2								
3	Customer Charge				\$14.74	\$14.74	\$14.74	\$14.74
4	Distribution Charge				\$0.06752	\$0.06752	\$43.89	\$43.89
5	Revenue Decoupling Adjustment Factor				\$0.00281	\$0.00247	\$1.83	\$1.61
6	REP/VMP				(\$0.00002)	(\$0.00002)	(\$0.01)	(\$0.01)
7	Storm Recovery Adjustment				(\$0.00202)	(\$0.00202)	(\$1.31)	(\$1.31)
8	Transmission Charge				\$0.03334	\$0.03334	\$21.67	\$21.67
9	Stranded Cost Charge				(\$0.00031)	(\$0.00031)	(\$0.20)	(\$0.20)
10	System Benefits Charge*				\$0.00727	\$0.00727	\$4.73	\$4.73
11	Electricity Consumption Tax				\$0.00000	\$0.00000	\$0.00	\$0.00
12	Subtotal Retail Delivery Services						\$85.32	\$85.10
13	Energy Service Charge				\$0.12612	\$0.12612	<u>\$81.98</u>	<u>\$81.98</u>
14				Total Bill			\$167.30	\$167.08
15				\$ increase in 650 kWh Total Residential Bill compared to Current Bill				-\$0.22100
16				% increase in 650 kWh Total Residential Bill compared to Current Bill				-0.13%

Reference:

(a) Order No. 26,781 in Docket DE 22-035, dated March 3, 2023

(b) Does not include the proposed step adjustment rates, effective December 1, 2023, in Docket No. 22-035.

*Includes Order No. 26,908 in Docket DE 23-068, dated November 30, 2023 reflecting SBC change from \$0.00700 to \$0.00727

Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Reconciliation
Deferred Balance Interest Calculation

Deferred Balance from Decoupling Year 1									
Month	Beginning Balance	Deferred	Approved for Recovery	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	
DY 21/22 Deficiency/(Surplus)									
Nov-22	\$0			\$0	\$0	6.25%	30	\$0	\$0
Dec-22	\$0			\$0	\$0	7.00%	31	\$0	\$0
Jan-23	\$0	\$337,913		\$337,913	\$168,957	7.50%	31	\$1,076	\$1,076
Feb-23	\$338,989			\$338,989	\$338,989	7.75%	28	\$2,015	\$3,092
Mar-23	\$341,005			\$341,005	\$341,005	7.75%	31	\$2,245	\$5,336
Apr-23	\$343,249			\$343,249	\$343,249	8.00%	30	\$2,257	\$7,593
May-23	\$345,506			\$345,506	\$345,506	8.00%	31	\$2,348	\$9,941
Jun-23	\$347,854			\$347,854	\$347,854	8.25%	30	\$2,359	\$12,299
Jul-23	\$350,212			\$350,212	\$350,212	8.25%	31	\$2,454	\$14,753
Aug-23	\$352,666			\$352,666	\$352,666	8.50%	31	\$2,546	\$17,299
Sep-23	\$355,212			\$355,212	\$355,212	8.50%	30	\$2,482	\$19,781
Oct-23	\$357,694			\$357,694	\$357,694	8.50%	31	\$2,582	\$22,363
Nov-23	\$360,276	\$3,617,781		\$3,978,057	\$2,169,167	8.50%	30	\$15,154	\$37,518
Dec-23	\$3,993,212			\$3,993,212	\$3,993,212	8.50%	31	\$28,828	\$66,345
Jan-24	\$4,022,039			\$4,022,039	\$4,022,039	8.50%	31	\$29,036	\$95,381
Feb-24	\$4,051,075			\$4,051,075	\$4,051,075	8.50%	29	\$27,359	\$122,740
Total								\$122,740	
Total Deferred Balance from Previous Year					\$337,913				
Cumulative Interest					\$122,740				
Total Deferred Balance to Collect, including interest					\$460,653				

Reference:

Column (a): DE 22-052 Revised Filing, Attachment 2 Decoup YR 1, Line 155, Column I

Column (b): Prior year deferred amount

Column (c): Company records, includes Hybrid Rate Sales where applicable (G-1, G-2, G-3)

Column (d): (Column (a) + Column (b))

Column (e): [Column (a) + Column (d)] / 2

Column (f): Prime Rate effective first day of each month. Source: http://www.fedprimerate.com/wall_street_journal_prime_rate_history.htm

Column (g): Days per month

Column (h): [Column (e) x ((Column (f) / 365) * Column (g))]

Column (i): Column (h) + Prior Month's Column (i)

Rate Class	2023 Rate (\$/kWh)	Rate Effective 12/1/2023- 10/31/2024 (\$/kWh)	Difference	Difference %
D	\$0.00281	\$0.00247	-\$0.00034	-12.10%
D-10	\$0.00180	\$0.00181	\$0.00001	0.56%
G-1	\$0.00104	\$0.00095	-\$0.00009	-8.65%
G-2	\$0.00151	\$0.00130	-\$0.00021	-13.91%
G-3	\$0.00253	\$0.00223	-\$0.00030	-11.86%
T	\$0.00285	\$0.00242	-\$0.00043	-15.09%
V	\$0.00291	\$0.00285	-\$0.00006	-2.06%

Liberty Utilities (Granite State Electric) Corp.
All Revenue pulled from Monthly Revenue Reports
November 2022

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Qty_Adj
GSER_D	35,086	18,939,847
GSER_D10	413	330,557
GSER_D11	86	75,614
GSEC_G1	109	14,927,628
GSEC_G2	805	11,065,480
GSEC_G3	4,640	5,810,606
GSEC_G3H	1	5,600
GSES_M	504	224,396
GSES_L2	1	20,482
GSER_T	744	570,137
GSEC_T	27	119,542
GSEC_V	16	13,384
Grand Total	41,639	52,103,273

All Revenue
March 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Quantity
GSER_D	35,893	23,812,891
GSER_D10	423	523,311
GSER_D11	96	116,653
GSEC_G1	137	27,609,188
GSEC_G2	866	11,827,401
GSEC_G3	4,771	7,218,676
GSES_M	506	222,653
GSES_L2	1	10,241
GSER_T	787	999,098
GSEC_T	30	337,688
GSEC_V	16	24,642
GSEC_G1H	5	1,356,190
GSEC_G2H	1	45,100
GSEC_G3H	1	4,000
Grand Total	42,708	74,107,732

All Revenue
July 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Quantity
GSER_D	35,641	28,013,828
GSER_D10	422	389,783
GSER_D11	96	86,820
GSER_D12	1	401
GSEC_G1	137	37,145,036
GSEC_G1H	4	909,100
GSEC_G2	880	12,385,451
GSEC_G3	4,820	7,362,547
GSES_M	494	204,182
GSES_L2	1	10,241
GSER_T	744	601,733
GSEC_T	30	176,802
GSEC_V	15	20,734
GSEC_G2H	1	37,800
GSEC_G3H	1	4,200
Grand Total	42,463	87,348,658

November 2022-July 2023

All Revenue
December 2022

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Qty_Adj
GSER_D	34,433	22,239,115
GSER_D10	392	401,307
GSER_D11	79	84,316
GSEC_G1	119	47,462,031
GSEC_G2	819	10,960,960
GSEC_G3	4,570	6,067,443
GSES_M	505	255,377
GSES_L2	1	10,241
GSER_T	671	642,765
GSEC_T	24	117,778
GSEC_V	16	21,035
Grand Total	40,854	88,262,368

All Revenue
April 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Quantity
GSER_D	35,547	20,743,951
GSER_D10	412	427,737
GSER_D11	5	4,677
GSEC_G1	138	29,438,854
GSEC_G2	857	10,971,794
GSEC_G3	4,734	6,511,867
GSES_M	135	186,988
GSES_L2	1	10,241
GSER_T	720	650,687
GSEC_T	27	204,010
GSEC_V	16	20,022
GSEC_G1H	3	737,800
GSEC_G2H	1	21,200
GSEC_G3H	1	1,600
GSEC_D12	1	159
Grand Total	41,979	69,931,587

All Revenue
January 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Qty_Adj
GSER_D	35,566	26,802,670
GSER_D10	419	571,748
GSER_D11	8	11,874
GSEC_G1	131	25,193,045
GSEC_G2	837	11,747,560
GSEC_G3	4,728	8,116,801
GSES_M	502	221,480
GSES_L2	1	10,241
GSER_T	767	1,179,851
GSEC_T	29	453,294
GSEC_V	15	18,262
GSEC_G1H	4	389,550
GSEC_G2H	1	73,600
GSEC_G3H	1	4,600
Grand Total	42,197	74,794,575

All Revenue
May 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Quantity
GSER_D	36,064	17,664,329
GSER_D10	433	332,589
GSER_D11	91	122,783
GSEC_G1	134	27,269,076
GSEC_G2	874	9,943,125
GSEC_G3	4,819	5,714,973
GSES_M	504	251,246
GSES_L2	1	10,241
GSER_T	788	612,566
GSEC_T	30	247,706
GSEC_V	16	13,399
Grand Total	42,922	62,182,033

All Revenue
February 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Quantity
GSER_D	36,064	27,028,502
GSER_D10	433	627,785
GSER_D11	95	330,359
GSEC_G1	132	34,930,842
GSEC_G2	871	12,293,397
GSEC_G3	4,809	8,058,644
GSES_M	506	222,774
GSES_L2	1	10,241
GSER_T	791	1,343,998
GSEC_T	30	477,078
GSEC_V	16	25,129
Grand Total	42,907	85,348,748

All Revenue
June 2023

Customers and kWh Deliveries (Delivery Service)

Row Labels	ActvLoc	Sum of Billing_Quantity
GSER_D	35,908	18,803,826
GSER_D10	426	306,184
GSER_D11	95	129,857
GSER_D12	1	262
GSEC_G1	132	27,637,630
GSEC_G1H	1	188,000
GSEC_G2	887	10,929,779
GSEC_G3	4,818	6,262,495
GSES_M	499	219,873
GSES_L2	1	10,241
GSER_T	775	464,783
GSEC_T	28	122,980
GSEC_V	16	14,520
Grand Total	42,753	65,090,430

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month January 2023

RateCI											
Bill Period	D	D10	G1	G1H	G2	G2H	G3	G3H	T	V	Total
	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
Jul2022	3,451				13,040		4,406				
Aug2022	19,122	244	103,200		31,857		20,985		3,753		
Sep2022	103,011	5,055	207,795	176,380	122,328	15,700	168,272		19,638		
Oct2022	287,122	10,766	2,316,311	193,750	303,932	18,000	340,208		46,221		
Nov2022	1,154,531	40,993	4,234,316	193,780	720,020	17,500	635,979	2,400	277,718		112
Dec2022	14,605,312	326,908	12,819,805	137,500	6,578,557	22,400	4,262,013	2,200	856,021		11,757
Jan2023	10,629,525	187,781	5,615,018		3,977,826		2,659,925		429,794	6,393	23,506,262
2023 Totals	10,629,525	187,781	5,615,018		3,977,826		2,659,925		429,794	6,393	23,506,262

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month February 2023

RateCI									
Bill Period	D	D10	G1	G2	G3	L2	T	V	Total
	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
Aug2022	12,846	601	15,349	-21,329	30,594		2,230		
Sep2022	73,236	3,515	108,804	-24,379	28,456		6,620		
Oct2022	126,394	3,462	137,403	72,886	56,340		6,864		
Nov2022	221,155	8,532	203,085	321,698	181,250		42,859		
Dec2022	961,473	43,662	8,077,928	720,914	404,449		172,846	1,348	
Jan2023	14,836,906	361,701	20,263,314	6,937,644	4,466,366	10,241	948,092	15,667	47,839,931
Feb2023	10,761,528	206,313	6,124,958	4,276,042	2,896,229		640,765	8,114	24,913,948
2023 Totals	25,598,433	568,014	26,388,273	11,213,686	7,362,595	10,241	1,588,857	23,781	72,753,880

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month March 2023

RateCI												
Bill Period	D	D10	G1	G1H	G2	G2H	G3	G3H	L2	T	V	Total
	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
Jul2022	414		19,270		15,360							
Aug2022	2,402		28,262		23,935		2,035					
Sep2022	5,345		160,927	129,720	60,612		8,387			0		
Oct2022	12,501		277,090	132,450	95,850		23,443			3,165		
Nov2022	18,880	1,925	282,015	132,520	119,186		24,985			5,586		
Dec2022	29,932	2,107	281,371	240,800	162,121		29,976			6,759		
Jan2023	423,217	11,349	794,078	382,200	337,364	24,900	168,370	2,200		27,899	389	2,171,965
Feb2023	11,456,775	278,551	17,704,435	338,500	5,733,779	20,200	3,603,458	1,800	10,241	591,343	14,283	39,753,365
Mar2023	11,863,425	229,379	8,056,510		5,279,194		3,358,022			702,034	9,970	29,498,534
2023 Totals	23,743,417	519,279	26,555,023	720,700	11,350,337	45,100	7,129,849	4,000	10,241	1,321,276	24,642	71,423,864

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month April 2023

RateCI												
Bill Period	D	D10	G1	G1H	G2	G2H	G3	G3H	L2	T	V	Total
	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
Aug2022	346				0							
Sep2022	472	746	217,228	58,800	0		-86					
Oct2022	-849	1,648	433,772	87,500	0		-41					
Nov2022	1,354	1,529	481,091	86,800	0		88					
Dec2022	5,339	1,487	455,509	126,700	0		-59					
Jan2023	6,012	2,898	633,024	126,700	28,425		4,875					801,934
Feb2023	256,622	15,722	1,231,626	114,100	220,027		149,132			9,939	83	1,997,252
Mar2023	10,472,915	237,209	18,706,253	137,200	5,883,311	21,200	3,508,817	1,600	10,241	443,733	11,984	39,434,463
Apr2023	10,001,739	166,498	7,280,351		4,840,031		2,849,140			401,024	7,955	25,546,739
2023 Totals	20,737,289	422,327	27,851,254	378,000	10,971,794	21,200	6,511,964	1,600	10,241	854,697	20,022	67,780,388

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month May 2023

RateCI										
Bill Period	D	D10	G1	G2	G3	L2	M	T	V	Total
	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
Jul2022					2,373					
Aug2022	131			31	2,454					
Sep2022	532		189	-1,354			-121	0		
Oct2022	1,298		195	-11,676			-534	0		
Nov2022	2,744		189	-13,320			-655	0		
Dec2022	6,020		57,600	195	-11,332		-655	0		
Jan2023	9,025		253,511	-5,018	-7,290		-655	0		249,573

Feb2023	28,989	582	240,289	33,226	-3,186		-655	0		299,245
Mar2023	422,096	16,683	1,190,810	251,914	199,620		-655	70,312	146	2,150,925
Apr2023	8,968,409	188,979	19,281,436	5,594,390	3,241,902	10,241	220,472	472,235	7,843	37,985,907
May2023	8,225,084	126,345	6,245,430	4,067,813	2,316,782		34,704	317,725	5,411	21,339,294
2023 Totals	17,653,603	332,589	27,211,476	9,942,325	5,747,827	10,241	253,211	860,272	13,399	62,024,943

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month June 2023

	RateCI									
	D	D10	G1	G1H	G2	G3	L2	T	V	
Bill Period	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Total
Jul2022	139									
Aug2022	100									
Sep2022	251	173	0			0				
Oct2022	-380	373	0			-579				
Nov2022	-1,351	601	0			-869				
Dec2022	-2,573	1,351	26,000			251				
Jan2023	-4,841	1,894	32,100		2,592	545				32,290
Feb2023	-9,342	1,432	9,900		6,046	1,119				9,155
Mar2023	-23,585	1,125	85,354	63,200	11,813	3,484		-451		140,940
Apr2023	-122,108	5,012	759,646	63,200	203,124	100,962		5,662	362	1,015,860
May2023	10,209,700	172,366	19,695,070	61,600	6,489,164	3,696,502	10,241	328,010	8,980	40,671,633
Jun2023	8,757,611	121,858	7,029,560		4,217,040	2,461,080		254,542	5,178	22,846,869
2023 Totals	18,807,435	303,687	27,611,630	188,000	10,929,779	6,263,692	10,241	587,763	14,520	64,716,747

Liberty Utilities (Granite State Electric) Corp.
Calendar Month Delivery Service kWh Sales by Rate Class
Revenue Month July 2023

Bill Period	RateCI												Total
	D	D10	G1	G1H	G2	G2H	G3	G3H	L2	T	V		
	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	Consumption	
Sep2022	-1		0					3					
Oct2022	427		0		114			6					
Nov2022	1,942				-4,350			-320					
Dec2022	2,712				-9,963			-609					
Jan2023	6,645				-6,201			-632					-187
Feb2023	11,661				-7,599			-839					3,223
Mar2023	37,905			219,200	4,294			1,870			488		263,757
Apr2023	395,446	1,529	90,000	335,300	41,633	13,400	35,056	1,400			13,589		927,353
May2023	841,923	9,772	3,529,966	261,000	208,996	11,700	158,487	1,200			56,235	521	5,079,800
Jun2023	13,246,887	196,344	23,877,310	93,600	6,643,633	12,700	3,843,074	1,600	10,241		374,862	11,359	48,311,610
Jul2023	13,468,281	182,138	9,647,760		5,514,895		3,326,450				333,361	8,854	32,481,739
2023 Totals	28,008,748	389,783	37,145,036	909,100	12,399,651	37,800	7,363,467	4,200	10,241	778,535	20,734		87,067,295

date	d02	g3	g2	g1s	g1l	d10	m	v	t	total
6/1/2022	23,954,417	6,862,023	11,598,926	23,163,628	10,314,994	446,274	231,838	19,034	714,492	77,305,628
7/1/2022	28,419,125	7,659,295	12,532,309	25,384,061	11,753,179	510,711	239,367	23,392	790,722	87,312,159
8/1/2022	27,457,364	7,520,092	12,593,091	25,231,898	11,386,032	496,561	239,169	21,498	768,853	85,714,559
9/1/2022	22,331,324	6,535,667	11,591,831	22,825,157	10,123,997	417,616	231,265	18,108	683,775	74,758,742
10/1/2022	21,323,968	6,380,860	11,482,463	22,102,178	8,976,425	464,873	246,707	19,514	831,059	71,828,047
11/1/2022	22,941,773	6,402,681	10,913,519	20,449,031	7,906,876	582,166	230,892	20,622	1,093,661	70,541,220
12/1/2022	27,339,049	7,195,034	11,704,545	21,001,655	7,640,576	769,542	238,399	25,620	1,461,588	77,376,008
1/1/2023	28,197,453	7,663,032	12,138,245	21,209,734	7,204,920	868,468	238,211	27,858	1,610,768	79,158,688
2/1/2023	24,323,109	6,978,855	11,117,610	19,670,669	6,914,455	755,962	224,940	26,116	1,399,700	71,411,416
3/1/2023	24,179,926	7,181,011	11,827,822	21,305,952	7,722,952	700,735	237,841	26,135	1,292,301	74,474,676
4/1/2023	20,859,502	6,351,503	11,073,286	20,145,112	8,422,005	523,223	229,993	22,160	944,538	68,571,321
5/1/2023	21,289,229	6,646,231	11,716,462	22,090,857	9,620,723	457,289	237,479	19,753	751,226	72,829,248
6/1/2023	24,458,024	6,945,978	12,124,438	22,997,036	10,314,994	462,883	229,645	19,974	690,275	78,543,248
7/1/2023	29,006,647	7,741,325	13,097,375	25,845,438	11,753,179	529,785	237,123	23,331	764,210	88,998,413
8/1/2023	28,015,165	7,579,305	13,088,724	25,721,739	11,386,032	515,098	236,947	21,131	743,013	87,307,154
9/1/2023	22,768,526	6,572,037	12,067,768	23,131,788	10,123,997	433,141	229,136	17,953	660,517	76,004,862
10/1/2023	21,751,892	6,407,018	11,901,032	22,379,450	8,976,425	482,206	244,456	19,975	803,345	72,965,799
11/1/2023	23,407,884	6,420,812	11,279,471	20,670,232	7,906,876	603,985	228,804	21,228	1,058,003	71,597,295
12/1/2023	27,891,092	7,211,017	12,071,514	21,240,114	7,640,576	798,524	236,262	26,130	1,414,793	78,530,022
1/1/2024	28,774,198	7,676,389	12,515,914	21,350,817	7,204,920	912,969	236,094	28,227	1,539,582	80,239,111
2/1/2024	25,060,716	7,119,829	11,455,029	19,777,596	6,831,475	808,122	222,959	26,602	1,358,425	72,660,753
3/1/2024	24,614,544	7,188,277	12,178,958	21,504,770	7,722,952	736,564	235,764	26,193	1,234,708	75,442,729
4/1/2024	21,189,250	6,355,799	11,376,132	20,352,034	8,422,005	549,870	228,001	22,335	901,781	69,397,206
5/1/2024	21,580,106	6,649,523	12,000,830	22,235,747	9,620,723	480,527	235,439	20,027	716,718	73,539,640
6/1/2024	24,767,835	6,946,861	12,417,183	23,697,022	10,314,994	486,415	227,689	20,272	658,375	79,536,645
7/1/2024	29,347,465	7,724,626	13,440,726	26,492,307	11,753,179	556,781	235,120	23,572	729,170	90,302,946
8/1/2024	28,348,532	7,562,711	13,591,069	26,565,920	11,386,032	541,336	234,962	21,288	708,886	88,960,735
9/1/2024	23,033,961	6,556,633	12,569,843	23,888,722	10,123,997	455,142	227,232	18,052	629,913	77,503,494
10/1/2024	21,991,125	6,392,974	12,507,346	22,987,995	8,976,425	506,749	242,441	20,073	766,655	74,391,782
11/1/2024	23,642,135	6,405,950	11,969,952	21,194,106	7,906,876	634,833	226,933	21,345	1,010,463	73,012,592
12/1/2024	28,154,458	7,195,664	12,934,118	21,723,082	7,640,576	839,441	234,345	26,266	1,352,047	80,099,998
1/1/2025	29,026,113	7,660,496	13,412,725	21,917,390	7,204,920	957,470	234,194	28,364	1,468,617	81,910,288
2/1/2025	24,960,583	6,968,096	12,244,620	20,226,420	6,914,455	833,328	221,178	26,363	1,275,576	73,670,618
3/1/2025	24,792,146	7,173,858	12,961,801	22,007,267	7,722,952	772,391	233,895	26,287	1,177,335	76,867,933
4/1/2025	21,337,377	6,342,420	12,101,254	20,819,767	8,422,005	576,516	226,208	22,411	859,244	70,707,201
5/1/2025	21,735,106	6,636,776	12,727,986	22,735,918	9,620,723	503,765	233,602	20,097	682,430	74,896,401
6/1/2025	24,940,573	6,933,033	13,228,262	24,118,742	10,314,994	509,945	225,926	20,341	626,694	80,918,510
7/1/2025	29,557,969	7,710,934	14,178,530	26,548,443	11,753,179	583,776	233,312	23,640	694,349	91,284,131
8/1/2025	28,551,199	7,549,470	14,218,878	26,621,415	11,386,032	567,572	233,170	21,349	674,976	89,824,061
9/1/2025	23,193,950	6,544,391	13,005,901	23,909,179	10,123,997	477,142	225,511	18,106	599,525	78,097,701
10/1/2025	22,147,800	6,382,154	12,800,899	22,997,222	8,976,425	531,289	240,618	20,121	730,182	74,826,710
11/1/2025	23,806,022	6,394,430	12,129,489	21,180,422	7,906,876	665,678	225,239	21,387	963,139	73,292,682
12/1/2025	28,355,271	7,184,112	12,979,026	21,715,485	7,640,576	880,355	232,609	26,306	1,289,514	80,303,254
1/1/2026	29,233,111	7,648,675	13,457,743	21,909,200	7,204,920	1,001,970	232,471	28,403	1,397,874	82,114,368
2/1/2026	25,123,639	6,954,679	12,286,560	20,196,695	6,914,455	872,009	219,563	26,400	1,213,845	73,807,845
3/1/2026	24,968,376	7,163,247	13,007,086	21,999,868	7,722,952	808,217	232,199	26,323	1,120,183	77,048,452
4/1/2026	21,484,336	6,332,397	12,144,343	20,797,457	8,422,005	603,159	224,579	22,443	816,927	70,847,646
5/1/2026	21,888,939	6,627,497	12,774,314	22,738,321	9,620,723	527,000	231,931	20,125	648,362	75,077,212
6/1/2026	25,111,987	6,922,800	13,276,911	24,136,850	10,314,994	533,473	224,321	20,366	595,232	81,136,934
7/1/2026	29,766,938	7,701,178	14,231,506	26,597,372	11,753,179	610,768	231,667	23,662	659,745	91,576,014
8/1/2026	28,752,407	7,540,037	14,272,624	26,669,689	11,386,032	593,805	231,537	21,369	641,283	90,108,784
9/1/2026	23,352,765	6,535,418	13,055,921	23,922,381	10,123,997	499,138	223,942	18,125	569,354	78,301,041
10/1/2026	22,303,376	6,374,470	12,851,032	22,999,197	8,976,425	555,826	238,956	20,140	693,925	75,013,346
11/1/2026	23,968,739	6,386,020	12,177,731	21,159,478	7,906,876	696,520	223,694	21,404	916,030	73,456,492
12/1/2026	28,554,720	7,175,993	13,031,419	21,700,613	7,640,576	921,265	231,023	26,321	1,227,196	80,509,126
1/1/2027	29,438,726	7,640,457	13,510,455	21,893,858	7,204,920	1,046,467	230,897	28,417	1,327,353	82,321,549
2/1/2027	25,285,503	6,944,525	12,335,427	20,159,802	6,914,455	910,688	218,086	26,413	1,152,334	73,947,233
3/1/2027	25,143,459	7,155,917	13,059,603	21,985,301	7,722,952	844,040	230,647	26,336	1,063,253	77,231,507
4/1/2027	21,630,316	6,325,244	12,194,087	20,767,980	8,422,005	629,800	223,087	22,455	774,831	70,989,804
5/1/2027	22,041,795	6,621,170	12,827,566	22,733,557	9,620,723	550,232	230,401	20,136	614,514	75,260,094
6/1/2027	25,282,290	6,915,616	13,332,598	24,147,772	10,314,994	556,998	222,851	20,375	563,989	81,357,483
7/1/2027	29,974,616	7,694,752	14,291,903	26,639,114	11,753,179	637,756	230,158	23,670	625,359	91,870,506
8/1/2027	28,952,386	7,533,820	14,333,662	26,710,757	11,386,032	620,035	230,038	21,376	607,807	90,395,913
9/1/2027	23,510,591	6,529,206	13,112,515	23,928,337	10,123,997	521,130	222,502	18,132	539,400	78,505,810
10/1/2027	22,458,025	6,369,434	12,907,554	22,993,925	8,976,425	580,359	237,428	20,146	657,884	75,201,179
11/1/2027	24,130,469	6,380,237	12,231,935	21,131,277	7,906,876	727,357	222,273	21,410	869,136	73,620,970
12/1/2027	28,753,015	7,170,773	13,090,093	21,678,471	7,640,576	962,171	229,564	26,327	1,165,093	80,716,083
1/1/2028	29,643,169	7,635,283	13,536,667	21,741,364	7,204,920	1,090,961	229,448	28,422	1,270,682	82,380,916
2/1/2028	25,755,264	7,073,345	12,383,833	20,051,236	6,831,475	965,493	216,725	26,772	1,120,233	74,424,376
3/1/2028	25,317,569	7,151,364	13,086,252	21,832,870	7,722,952	879,859	229,217	26,340	1,017,455	77,263,879
4/1/2028	21,775,464	6,320,523	12,219,567	20,608,080	8,422,005	656,437	221,713	22,459	740,902	70,987,148
5/1/2028	22,193,819	6,617,347	12,855,087	22,586,036	9,620,723	573,459	228,990	20,139	587,184	75,282,783
6/1/2028	25,451,647	6,911,021	13,361,625	24,007,726	10,314,994	580,518	221,494	20,378	538,744	81,408,147

7/1/2028	30,181,194	7,691,155	14,323,642	26,514,421	11,753,179	664,739	228,765	23,673	597,601	91,978,369
8/1/2028	29,151,318	7,530,338	14,365,991	26,585,341	11,386,032	646,260	228,654	21,379	580,778	90,496,091
9/1/2028	23,667,572	6,525,346	13,142,720	23,784,597	10,123,997	543,118	221,171	18,134	515,188	78,541,843
10/1/2028	22,611,883	6,366,653	12,937,939	22,844,565	8,976,425	604,887	236,016	20,148	628,803	75,227,320
11/1/2028	24,291,354	6,376,694	12,261,280	20,970,256	7,906,876	758,189	220,958	21,412	831,374	73,638,394
12/1/2028	28,950,324	7,168,029	13,122,072	21,520,191	7,640,576	1,003,071	228,215	26,329	1,115,165	80,773,972
1/1/2029	29,846,609	7,632,710	13,568,837	21,585,295	7,204,920	1,135,451	228,107	28,424	1,214,188	82,444,540
2/1/2029	25,606,343	6,932,105	12,389,908	19,828,997	6,914,455	988,034	215,466	26,419	1,053,589	73,955,316
3/1/2029	25,490,844	7,149,189	13,118,514	21,676,855	7,722,952	915,674	227,893	26,342	971,834	77,300,097
4/1/2029	21,919,899	6,317,885	12,250,220	20,444,596	8,422,005	683,069	220,439	22,460	707,149	70,987,721
5/1/2029	22,345,129	6,615,669	12,887,999	22,434,930	9,620,723	596,683	227,681	20,141	560,030	75,308,984
6/1/2029	25,620,190	6,908,647	13,396,142	23,864,088	10,314,994	604,034	220,235	20,379	513,675	81,462,383
7/1/2029	30,386,826	7,689,987	14,361,184	26,386,134	11,753,179	691,719	227,472	23,674	570,017	92,090,192
8/1/2029	29,349,347	7,529,207	14,404,036	26,456,321	11,386,032	672,480	227,368	21,380	553,923	90,600,095
9/1/2029	23,823,825	6,523,508	13,178,090	23,637,234	10,123,997	565,100	219,934	18,135	491,150	78,580,973
10/1/2029	22,765,057	6,365,814	12,973,356	22,691,582	8,976,425	629,410	234,704	20,149	599,896	75,256,394
11/1/2029	24,451,509	6,375,082	12,295,332	20,805,606	7,906,876	789,017	219,736	21,413	793,785	73,658,356
12/1/2029	29,146,780	7,167,420	13,159,022	21,358,276	7,640,576	1,043,967	226,960	26,329	1,065,408	80,834,738
1/1/2030	30,049,181	7,632,382	13,606,097	21,425,651	7,204,920	1,179,937	226,859	28,425	1,157,872	82,511,322
2/1/2030	25,765,578	6,929,119	12,424,423	19,658,218	6,914,455	1,026,700	214,293	26,420	1,004,481	73,963,688
3/1/2030	25,663,396	7,149,068	13,155,579	21,517,257	7,722,952	951,485	226,659	26,342	926,390	77,339,129
4/1/2030	22,063,714	6,317,051	12,285,304	20,277,527	8,422,005	709,697	219,252	22,461	673,573	70,990,583
5/1/2030	22,495,818	6,615,850	12,925,534	22,280,242	9,620,723	619,901	226,461	20,141	533,052	75,337,722
6/1/2030	25,788,026	6,908,198	13,435,370	23,716,857	10,314,994	627,544	219,061	20,380	488,780	81,519,212
7/1/2030	30,591,636	7,690,927	14,403,708	26,254,253	11,753,179	718,693	226,266	23,674	542,608	92,204,943
8/1/2030	29,546,592	7,530,117	14,446,991	26,323,698	11,386,032	698,695	226,169	21,380	527,242	90,706,916
9/1/2030	23,979,443	6,523,427	13,217,903	23,486,247	10,123,997	587,078	218,780	18,135	467,286	78,622,296
10/1/2030	22,917,637	6,366,665	13,013,102	22,534,976	8,976,425	653,928	233,478	20,149	571,162	75,287,522
11/1/2030	24,611,028	6,375,150	12,333,436	20,637,328	7,906,876	819,839	218,595	21,413	756,368	73,680,033
12/1/2030	29,342,492	7,168,670	13,200,257	21,192,725	7,640,576	1,084,857	225,787	26,330	1,015,823	80,897,516
1/1/2031	30,250,996	7,634,010	13,647,748	21,262,432	7,204,920	1,224,417	225,692	28,425	1,101,734	82,580,373
2/1/2031	25,924,157	6,927,914	12,462,900	19,483,856	6,914,455	1,065,362	213,197	26,420	955,550	73,973,810
3/1/2031	25,835,315	7,150,742	13,196,793	21,354,076	7,722,952	987,290	225,505	26,342	881,122	77,380,138
4/1/2031	22,206,987	6,317,793	12,324,218	20,106,875	8,422,005	736,319	218,141	22,461	640,173	70,994,971
5/1/2031	22,645,965	6,617,655	12,967,066	22,121,970	9,620,723	643,115	225,320	20,141	506,250	75,368,205
6/1/2031	25,955,243	6,909,434	13,478,676	23,566,034	10,314,994	651,050	217,963	20,380	464,061	81,577,835
7/1/2031	30,795,725	7,693,710	14,450,547	26,118,778	11,753,179	745,661	225,137	23,674	515,373	92,321,784
8/1/2031	29,743,148	7,532,814	14,494,202	26,187,471	11,386,032	724,905	225,046	21,380	500,734	90,815,732
9/1/2031	24,134,504	6,524,887	13,261,566	23,331,637	10,123,997	609,050	217,698	18,135	443,595	78,665,070
10/1/2031	23,069,694	6,368,995	13,056,604	22,374,746	8,976,425	678,441	232,330	20,150	542,601	75,319,984
11/1/2031	24,769,988	6,376,693	12,375,058	20,465,421	7,906,876	850,655	217,525	21,413	719,124	73,702,753
12/1/2031	29,537,550	7,171,552	13,245,212	21,023,538	7,640,576	1,125,741	224,686	26,330	966,410	80,961,596
1/1/2032	30,452,144	7,637,356	13,693,216	21,095,637	7,204,920	1,268,893	224,598	28,425	1,045,772	82,650,962
2/1/2032	26,416,531	7,066,795	12,528,979	19,362,338	6,831,475	1,122,801	212,168	26,775	921,176	74,489,038
3/1/2032	26,006,678	7,153,992	13,241,619	21,187,311	7,722,952	1,023,091	224,422	26,342	836,031	77,422,439
4/1/2032	22,349,783	6,319,920	12,366,467	19,932,640	8,422,005	762,937	217,098	22,461	606,949	71,000,259
5/1/2032	22,795,634	6,620,890	13,012,084	21,960,115	9,620,723	666,323	224,247	20,141	479,624	75,399,781
6/1/2032	26,121,913	6,912,153	13,525,538	23,411,618	10,314,994	674,550	216,930	20,380	439,518	81,637,594
7/1/2032	30,999,178	7,698,118	14,501,150	25,979,709	11,753,179	772,625	224,075	23,674	488,313	92,440,021
8/1/2032	29,939,097	7,537,087	14,545,128	26,047,640	11,386,032	751,109	223,989	21,380	474,400	90,925,863
9/1/2032	24,289,074	6,527,705	13,308,595	23,173,405	10,123,997	631,017	216,681	18,135	420,078	78,708,687
10/1/2032	23,221,289	6,372,632	13,103,389	22,210,893	8,976,425	702,948	231,249	20,150	514,213	75,353,188
11/1/2032	24,928,453	6,379,539	12,419,758	20,289,887	7,906,876	881,466	216,517	21,413	682,051	73,725,960
12/1/2032	29,732,030	7,175,876	13,293,425	20,850,716	7,640,576	1,166,620	223,651	26,330	917,168	81,026,392
1/1/2033	30,652,703	7,642,222	13,716,588	20,925,267	7,204,920	1,313,364	223,567	28,425	1,000,803	82,707,859
2/1/2033	26,239,645	6,930,024	12,526,515	19,124,379	6,914,455	1,142,671	211,198	26,420	867,591	73,982,898
3/1/2033	26,177,547	7,158,639	13,264,954	21,016,963	7,722,952	1,058,886	223,401	26,342	799,759	77,449,444
4/1/2033	22,492,155	6,323,276	12,388,594	19,754,820	8,422,005	789,550	216,115	22,461	580,170	70,989,144
5/1/2033	22,944,879	6,625,392	13,035,796	21,794,677	9,620,723	689,527	223,236	20,141	458,124	75,412,494
6/1/2033	26,288,099	6,916,189	13,550,361	23,253,609	10,314,994	698,046	215,956	20,380	419,685	81,677,319
7/1/2033	31,202,066	7,703,968	14,528,104	25,837,046	11,753,179	799,583	223,073	23,674	466,467	92,537,161
8/1/2033	30,134,506	7,542,759	14,572,399	25,904,206	11,386,032	777,308	222,992	21,380	453,137	91,014,719
9/1/2033	24,443,206	6,531,732	13,333,912	23,011,548	10,123,997	652,978	215,721	18,135	401,067	78,732,296
10/1/2033	23,372,473	6,377,432	13,128,703	22,043,417	8,976,425	727,449	230,229	20,150	491,307	75,367,585
11/1/2033	25,086,478	6,383,544	12,444,064	20,110,723	7,906,876	912,271	215,566	21,413	652,199	73,733,134
12/1/2033	29,925,995	7,181,484	13,319,768	20,674,258	7,640,576	1,207,493	222,672	26,330	877,581	81,076,156
1/1/2034	30,852,737	7,648,441	13,743,209	20,751,322	7,204,920	1,357,830	222,593	28,425	955,975	82,765,452
2/1/2034	26,396,675	6,933,008	12,551,145	18,939,265	6,914,455	1,181,317	210,282	26,420	828,529	73,981,097
3/1/2034	26,347,977	7,164,531	13,291,373	20,843,031	7,722,952	1,094,676	222,436	26,342	763,628	77,476,946
4/1/2034	22,634,149	6,327,727	12,413,574	19,573,417	8,422,005	816,157	215,185	22,461	553,533	70,978,206
5/1/2034	23,093,745	6,631,026	13,062,493	21,625,655	9,620,723	712,725	222,280	20,141	436,764	75,425,552
6/1/2034	26,453,850	6,921,399	13,578,237	23,092,008	10,314,994	721,536	215,035	20,380	399,992	81,717,431
7/1/2034	31,404,450	7,711,106	14,558,293	25,690,789	11,753,179	826,537	222,126	23,674	444,761	92,634,915
8/1/2034	30,329,432	7,549,681	14,602,869	25,757,167	11,386,032	803,502	222,049	21,380	432,012	91,104,125

9/1/2034	24,596,946	6,536,838	13,362,130	22,846,069	10,123,997	674,934	214,812	18,135	382,196	78,756,058
10/1/2034	23,523,290	6,383,270	13,156,853	21,872,317	8,976,425	751,946	229,263	20,150	468,539	75,382,053
11/1/2034	25,244,109	6,388,585	12,471,032	19,927,932	7,906,876	943,071	214,666	21,413	622,484	73,740,168
12/1/2034	30,119,498	7,188,241	13,348,933	20,494,164	7,640,576	1,248,361	221,746	26,330	838,131	81,125,978
1/1/2035	31,052,300	7,655,871	13,772,720	20,573,802	7,204,920	1,402,291	221,671	28,425	911,290	82,823,289
2/1/2035	26,553,295	6,937,100	12,578,389	18,750,567	6,914,455	1,219,959	209,414	26,420	789,608	73,979,208
3/1/2035	26,518,012	7,171,538	13,320,538	20,665,515	7,722,952	1,130,462	221,521	26,342	727,638	77,504,518
4/1/2035	22,775,804	6,333,160	12,441,095	19,388,430	8,422,005	842,759	214,304	22,461	527,037	70,967,053
5/1/2035	23,242,271	6,637,673	13,091,850	21,453,050	9,620,723	735,918	221,374	20,141	415,546	75,438,545
6/1/2035	26,619,213	6,927,663	13,608,832	22,926,814	10,314,994	745,021	214,161	20,380	380,440	81,757,519
7/1/2035	31,606,380	7,719,399	14,591,369	25,540,939	11,753,179	853,484	221,227	23,674	423,195	92,732,845
8/1/2035	30,523,925	7,557,725	14,636,193	25,606,525	11,386,032	829,690	221,154	21,380	411,027	91,193,651
9/1/2035	24,750,335	6,542,914	13,392,938	22,676,967	10,123,997	696,885	213,950	18,135	363,464	78,779,583
10/1/2035	23,673,777	6,390,042	13,187,536	21,697,594	8,976,425	776,436	228,346	20,150	445,910	75,396,215
11/1/2035	25,401,385	6,394,559	12,500,379	19,741,512	7,906,876	973,866	213,810	21,413	592,907	73,746,706
12/1/2035	30,312,586	7,196,030	13,380,620	20,310,435	7,640,576	1,289,223	220,866	26,330	798,818	81,175,483
1/1/2036	31,251,440	7,664,391	13,804,814	20,392,706	7,204,920	1,446,747	220,794	28,425	866,746	82,880,983
2/1/2036	27,069,340	7,083,397	12,632,346	18,616,099	6,831,475	1,280,030	208,590	26,775	762,826	74,510,878
3/1/2036	26,687,691	7,179,549	13,352,159	20,484,417	7,722,952	1,166,242	220,653	26,342	691,789	77,531,795
4/1/2036	22,917,153	6,339,478	12,470,891	19,199,858	8,422,005	869,356	213,467	22,461	500,681	70,955,350
5/1/2036	23,390,490	6,645,235	13,123,589	21,276,862	9,620,723	759,105	220,512	20,141	394,468	75,451,125
6/1/2036	26,784,225	6,934,879	13,641,864	22,758,028	10,314,994	768,500	213,331	20,380	361,027	81,797,228
7/1/2036	31,807,902	7,728,735	14,627,030	25,387,494	11,753,179	880,427	220,372	23,674	401,768	92,830,580
8/1/2036	30,718,026	7,566,782	14,672,075	25,452,279	11,386,032	855,873	220,303	21,380	390,180	91,282,932
9/1/2036	24,903,406	6,549,865	13,426,068	22,504,241	10,123,997	718,830	213,130	18,135	344,870	78,802,542
10/1/2036	23,823,965	6,397,658	13,220,490	21,519,247	8,976,425	800,921	227,474	20,150	423,419	75,409,749
11/1/2036	25,558,340	6,401,375	12,531,860	19,551,464	7,906,876	1,004,655	212,997	21,413	563,468	73,752,447
12/1/2036	30,505,299	7,204,754	13,414,571	20,123,070	7,640,576	1,330,079	220,028	26,330	759,642	81,224,350
1/1/2037	31,450,197	7,673,897	13,839,230	20,208,035	7,204,920	1,491,198	219,960	28,425	822,344	82,938,205
2/1/2037	26,865,460	6,948,181	12,639,658	18,362,420	6,914,455	1,297,227	207,805	26,420	712,190	73,973,817
3/1/2037	26,857,050	7,188,470	13,385,989	20,299,734	7,722,952	1,202,017	219,825	26,342	656,082	77,558,461
4/1/2037	23,058,226	6,346,597	12,502,732	19,007,704	8,422,005	895,948	212,669	22,461	474,467	70,942,808
5/1/2037	23,538,432	6,653,624	13,157,471	21,097,091	9,620,723	782,288	219,691	20,141	373,531	75,462,992
6/1/2037	26,948,918	6,942,955	13,677,088	22,585,650	10,314,994	791,974	212,540	20,380	341,756	81,836,255
7/1/2037	32,009,053	7,739,015	14,665,020	25,230,455	11,753,179	907,364	219,558	23,674	380,480	92,927,798
8/1/2037	30,911,773	7,576,758	14,710,261	25,294,430	11,386,032	882,051	219,492	21,380	369,473	91,371,650
9/1/2037	25,056,189	6,557,612	13,461,291	22,327,892	10,123,997	740,770	212,347	18,135	326,415	78,824,648
10/1/2037	23,973,883	6,406,038	13,255,491	21,337,277	8,976,425	825,401	226,642	20,150	401,067	75,422,374
11/1/2037	25,715,004	6,408,956	12,565,265	19,357,787	7,906,876	1,035,438	212,221	21,413	534,166	73,757,127
12/1/2037	30,697,672	7,214,326	13,450,564	19,932,070	7,640,576	1,370,931	219,229	26,330	720,604	81,272,301
1/1/2038	31,648,606	7,684,297	13,875,739	20,019,789	7,204,920	1,535,644	219,164	28,425	778,084	82,994,668
2/1/2038	27,021,071	6,954,994	12,673,240	18,162,970	6,914,455	1,335,853	207,055	26,420	673,693	73,969,753
3/1/2038	27,026,116	7,198,216	13,421,813	20,111,469	7,722,952	1,237,786	219,035	26,342	620,516	77,584,246
4/1/2038	23,199,046	6,354,445	12,536,420	18,811,965	8,422,005	922,535	211,908	22,461	448,394	70,929,179
5/1/2038	23,686,122	6,662,766	13,193,288	20,913,736	9,620,723	805,465	218,907	20,141	352,735	75,473,884
6/1/2038	27,113,323	6,951,815	13,714,294	22,409,678	10,314,994	815,444	211,784	20,380	322,624	81,874,336
7/1/2038	32,209,867	7,750,155	14,705,114	25,069,822	11,753,179	934,296	218,780	23,674	359,332	93,024,219
8/1/2038	31,105,197	7,587,569	14,750,531	25,132,976	11,386,032	908,224	218,717	21,380	348,904	91,459,530
9/1/2038	25,208,709	6,566,081	13,498,406	22,147,920	10,123,997	762,705	211,600	18,135	308,099	78,845,652
10/1/2038	24,123,554	6,415,115	13,292,345	21,151,684	8,976,425	849,876	225,847	20,150	378,853	75,433,849
11/1/2038	25,871,404	6,417,234	12,600,411	19,160,482	7,906,876	1,066,217	211,479	21,413	505,003	73,760,518
12/1/2038	30,889,735	7,224,670	13,488,405	19,737,434	7,640,576	1,411,777	218,466	26,330	681,703	81,319,094
1/1/2039	31,846,698	7,695,513	13,894,431	19,827,968	7,204,920	1,580,085	218,404	28,425	742,532	83,038,976
2/1/2039	27,176,405	6,962,554	12,690,519	17,959,937	6,914,455	1,374,475	206,339	26,420	642,752	73,953,857
3/1/2039	27,194,916	7,208,715	13,440,331	19,919,620	7,722,952	1,273,551	218,280	26,342	591,920	77,596,629
4/1/2039	23,339,638	6,362,958	12,553,916	18,612,642	8,422,005	949,117	211,179	22,461	427,392	70,901,308
5/1/2039	23,833,582	6,672,594	13,211,972	20,726,798	9,620,723	828,637	218,158	20,141	335,956	75,468,562
6/1/2039	27,277,463	6,961,391	13,733,788	22,230,114	10,314,994	838,908	211,061	20,380	307,177	81,895,277
7/1/2039	32,410,374	7,762,079	14,726,213	24,905,595	11,753,179	961,223	218,036	23,674	342,273	93,102,645
8/1/2039	31,298,326	7,599,143	14,771,812	24,967,919	11,386,032	934,391	217,975	21,380	332,309	91,529,288
9/1/2039	25,360,990	6,575,211	13,518,103	21,964,324	10,123,997	784,634	210,885	18,135	293,305	78,849,586
10/1/2039	24,273,000	6,424,829	13,311,984	20,962,467	8,976,425	874,346	225,087	20,150	360,941	75,429,228
11/1/2039	26,027,561	6,426,149	12,619,215	18,959,549	7,906,876	1,096,990	210,769	21,413	481,532	73,750,054
12/1/2039	31,081,514	7,235,720	13,508,731	19,539,162	7,640,576	1,452,617	217,735	26,330	650,443	81,352,828
1/1/2040	32,044,501	7,707,476	13,915,026	19,632,571	7,204,920	1,624,521	217,675	28,425	707,094	83,082,209
2/1/2040	27,716,677	7,114,933	12,734,111	17,812,518	6,831,475	1,437,178	205,653	26,775	621,777	74,501,098
3/1/2040	27,363,472	7,219,904	13,460,666	19,724,187	7,722,952	1,309,311	217,557	26,342	563,437	77,607,829
4/1/2040	23,480,019	6,372,079	12,573,096	18,409,736	8,422,005	975,694	210,482	22,461	406,504	70,872,075
5/1/2040	23,980,832	6,683,052	13,232,422	20,536,277	9,620,723	851,805	217,439	20,141	319,289	75,461,980
6/1/2040	27,441,362	6,971,622	13,755,093	22,046,958	10,314,994	862,367	210,368	20,380	291,842	81,914,986
7/1/2040	32,610,599	7,774,722	14,749,236	24,737,774	11,753,179	988,145	217,322	23,674	325,324	93,179,977
8/1/2040	31,491,186	7,611,417	14,795,000	24,799,258	11,386,032	960,553	217,264	21,380	315,825	91,597,916
9/1/2040	25,513,051	6,584,948	13,539,534	21,777,105	10,123,997	806,559	210,200	18,135	278,623	78,852,152
10/1/2040	24,422,240	6,435,127	13,333,322	20,769,627	8,976,425	898,810	224,357	20,150	343,141	75,423,198

11/1/2040	26,183,496	6,435,649	12,639,619	18,754,987	7,906,876	1,127,758	210,088	21,413	458,172	73,738,058
12/1/2040	31,273,034	7,247,418	13,530,756	19,337,255	7,640,576	1,493,453	217,034	26,330	619,293	81,385,148
1/1/2041	32,242,039	7,720,123	13,937,361	19,433,600	7,204,920	1,668,952	216,977	28,425	671,770	83,124,165
2/1/2041	27,486,330	6,979,675	12,730,107	17,543,119	6,914,455	1,451,703	204,995	26,420	581,209	73,918,014
3/1/2041	27,531,806	7,231,726	13,482,661	19,525,171	7,722,952	1,345,066	216,863	26,342	535,067	77,617,655
4/1/2041	23,620,208	6,381,759	12,593,817	18,203,246	8,422,005	1,002,266	209,812	22,461	385,728	70,841,301
5/1/2041	24,127,888	6,694,087	13,254,490	20,342,173	9,620,723	874,967	216,750	20,141	302,735	75,453,954
6/1/2041	27,605,038	6,982,455	13,778,055	21,860,209	10,314,994	885,821	209,703	20,380	276,619	81,933,275
7/1/2041	32,810,566	7,788,026	14,774,022	24,566,360	11,753,179	1,015,062	216,638	23,674	308,488	93,256,014
8/1/2041	31,683,798	7,624,334	14,819,936	24,626,994	11,386,032	986,711	216,582	21,380	299,451	91,665,217
9/1/2041	25,664,911	6,595,241	13,562,555	21,586,264	10,123,997	828,478	209,541	18,135	264,051	78,853,174
10/1/2041	24,571,290	6,445,961	13,356,217	20,573,164	8,976,425	923,269	223,657	20,150	325,451	75,415,583
11/1/2041	26,339,227	6,445,686	12,661,489	18,546,797	7,906,876	1,158,521	209,434	21,413	434,922	73,724,365
12/1/2041	31,464,315	7,259,714	13,554,340	19,131,712	7,640,576	1,534,283	216,360	26,330	588,252	81,415,881
1/1/2042	32,439,332	7,733,400	13,961,291	19,231,053	7,204,920	1,713,378	216,305	28,425	636,558	83,164,663
2/1/2042	27,640,961	6,989,130	12,752,137	17,329,334	6,914,455	1,490,310	204,363	26,420	550,607	73,897,717
3/1/2042	27,699,934	7,244,131	13,506,180	19,322,571	7,722,952	1,380,817	216,196	26,342	506,811	77,625,933
4/1/2042	23,760,219	6,391,954	12,615,952	17,993,172	8,422,005	1,028,833	209,169	22,461	365,065	70,808,829
5/1/2042	24,274,767	6,705,655	13,278,041	20,144,485	9,620,723	898,125	216,087	20,141	286,293	75,444,317
6/1/2042	27,768,510	6,993,843	13,802,538	21,669,868	10,314,994	909,271	209,064	20,380	261,508	81,949,977
7/1/2042	33,010,295	7,801,939	14,800,426	24,391,351	11,753,179	1,041,974	215,979	23,674	291,763	93,330,581
8/1/2042	31,876,181	7,637,843	14,846,476	24,451,125	11,386,032	1,012,863	215,925	21,380	283,190	91,731,017
9/1/2042	25,816,584	6,606,049	13,587,035	21,391,799	10,123,997	850,393	208,908	18,135	249,591	78,852,492
10/1/2042	24,720,166	6,457,291	13,380,543	20,373,077	8,976,425	947,724	222,983	20,150	307,872	75,406,231
11/1/2042	26,494,770	6,456,220	12,684,706	18,334,978	7,906,876	1,189,279	208,805	21,413	411,782	73,708,829
12/1/2042	31,655,376	7,272,559	13,579,356	18,922,533	7,640,576	1,575,109	215,712	26,330	557,322	81,444,872
1/1/2043	32,636,401	7,747,259	13,986,688	19,024,930	7,204,920	1,757,800	215,659	28,425	601,461	83,203,544
2/1/2043	27,795,394	6,999,120	12,775,499	17,111,965	6,914,455	1,528,913	203,754	26,420	520,118	73,875,638
3/1/2043	27,867,872	7,257,074	13,531,101	19,116,389	7,722,952	1,416,562	215,554	26,342	478,667	77,632,513
4/1/2043	23,900,066	6,402,626	12,639,388	17,779,514	8,422,005	1,055,396	208,550	22,461	344,515	70,774,519
5/1/2043	24,421,481	6,717,715	13,302,959	19,943,214	9,620,723	921,278	215,449	20,141	269,964	75,432,924
6/1/2043	27,931,793	7,005,745	13,828,423	21,475,933	10,314,994	932,715	208,449	20,380	246,510	81,964,943
7/1/2043	33,209,804	7,816,415	14,828,321	24,212,748	11,753,179	1,068,881	215,345	23,674	275,150	93,403,518
8/1/2043	32,068,354	7,651,901	14,874,494	24,271,653	11,386,032	1,039,011	215,294	21,380	267,039	91,795,159
9/1/2043	25,968,085	6,617,333	13,612,860	21,193,710	10,123,997	872,303	208,299	18,135	235,242	78,849,965
10/1/2043	24,868,880	6,469,080	13,406,188	20,169,367	8,976,425	972,174	222,334	20,150	290,403	75,395,001
11/1/2043	26,650,138	6,467,213	12,709,164	18,119,531	7,906,876	1,220,033	208,199	21,413	388,753	73,691,321
12/1/2043	31,846,233	7,285,914	13,605,692	18,709,719	7,640,576	1,615,930	215,088	26,330	526,501	81,471,982
1/1/2044	32,833,261	7,761,657	14,013,439	18,815,233	7,204,920	1,802,217	215,037	28,425	566,477	83,240,666
2/1/2044	28,360,223	7,156,826	12,824,867	16,951,595	6,831,475	1,594,250	203,168	26,775	497,688	74,446,866
3/1/2044	28,035,635	7,270,516	13,557,315	18,906,622	7,722,952	1,452,303	214,936	26,342	450,636	77,637,258
4/1/2044	24,039,761	6,413,738	12,664,025	17,562,272	8,422,005	1,081,953	207,953	22,461	324,078	70,738,247
5/1/2044	24,568,044	6,730,231	13,329,137	19,738,360	9,620,723	944,426	214,835	20,141	253,747	75,419,643
6/1/2044	28,094,902	7,018,123	13,855,600	21,278,407	10,314,994	956,155	207,856	20,380	231,624	81,978,041
7/1/2044	33,409,109	7,831,413	14,857,592	24,030,551	11,753,179	1,095,784	214,734	23,674	258,648	93,474,685
8/1/2044	32,260,332	7,666,467	14,903,877	24,088,577	11,386,032	1,065,154	214,684	21,380	251,000	91,857,505
9/1/2044	26,119,428	6,629,058	13,639,928	20,991,999	10,123,997	894,208	207,711	18,135	221,003	78,845,467
10/1/2044	25,017,445	6,481,293	13,433,052	19,962,034	8,976,425	996,618	221,709	20,150	273,046	75,381,771
11/1/2044	26,805,346	6,478,632	12,734,771	17,900,456	7,906,876	1,250,781	207,615	21,413	365,834	73,671,724
12/1/2044	32,036,902	7,299,742	13,633,249	18,493,269	7,640,576	1,656,745	214,486	26,330	495,790	81,497,089
1/1/2045	33,029,929	7,776,554	14,041,441	18,601,960	7,204,920	1,846,630	214,437	28,425	531,607	83,275,902
2/1/2045	28,103,723	7,020,553	12,825,814	16,666,475	6,914,455	1,606,103	202,603	26,420	459,479	73,825,626
3/1/2045	28,203,235	7,284,421	13,584,726	18,693,272	7,722,952	1,488,039	214,339	26,342	422,718	77,640,047
4/1/2045	24,179,316	6,425,260	12,689,773	17,341,447	8,422,005	1,108,507	207,378	22,461	303,753	70,699,899
5/1/2045	24,714,466	6,743,170	13,356,481	19,529,922	9,620,723	967,570	214,242	20,141	237,644	75,404,358
6/1/2045	28,257,848	7,030,942	13,883,974	21,077,288	10,314,994	979,591	207,284	20,380	216,850	81,989,150
7/1/2045	33,608,226	7,846,895	14,888,136	23,844,760	11,753,179	1,122,682	214,145	23,674	242,258	93,543,957
8/1/2045	32,452,129	7,681,505	14,934,524	23,901,898	11,386,032	1,091,292	214,097	21,380	235,071	91,917,929
9/1/2045	26,270,622	6,641,192	13,668,145	20,786,664	10,123,997	916,108	207,144	18,135	206,876	78,838,885
10/1/2045	25,165,872	6,493,901	13,461,043	19,751,077	8,976,425	1,021,059	221,105	20,150	255,799	75,366,430
11/1/2045	26,960,403	6,490,448	12,761,440	17,677,753	7,906,876	1,281,525	207,051	21,413	343,025	73,649,933
12/1/2045	32,227,396	7,314,009	13,661,936	18,273,183	7,640,576	1,697,557	213,905	26,330	465,189	81,520,080
1/1/2046	33,226,417	7,791,916	14,070,601	18,385,112	7,204,920	1,891,038	213,857	28,425	496,850	83,309,137
2/1/2046	28,257,644	7,031,929	12,852,592	16,438,355	6,914,455	1,644,692	202,056	26,420	429,329	73,797,472
3/1/2046	28,370,685	7,298,757	13,613,246	18,476,339	7,722,952	1,523,771	213,763	26,342	394,914	77,640,769
4/1/2046	24,318,740	6,437,162	12,716,550	17,117,038	8,422,005	1,135,055	206,822	22,461	283,542	70,659,375
5/1/2046	24,860,757	6,756,502	13,384,907	19,317,901	9,620,723	990,709	213,669	20,141	221,653	75,386,962
6/1/2046	28,420,643	7,044,172	13,913,458	20,872,576	10,314,994	1,003,022	206,731	20,380	202,188	81,998,164
7/1/2046	33,807,168	7,862,829	14,919,862	23,655,376	11,753,179	1,149,576	213,575	23,674	225,980	93,611,218
8/1/2046	32,643,758	7,696,983	14,966,343	23,711,614	11,386,032	1,117,426	213,528	21,380	219,255	91,976,319
9/1/2046	26,421,680	6,653,708	13,697,430	20,577,706	10,123,997	938,004	206,595	18,135	192,860	78,830,116
10/1/2046	25,314,169	6,506,878	13,490,081	19,536,497	8,976,425	1,045,494	220,521	20,150	238,665	75,348,878
11/1/2046	27,115,322	6,502,632	12,789,095	17,451,421	7,906,876	1,312,264	206,506	21,413	320,326	73,625,855
12/1/2046	32,417,727	7,328,686	13,691,673	18,049,462	7,640,576	1,738,363	213,343	26,330	434,698	81,540,857

1/1/2047	33,422,739	7,807,711	14,100,837	18,164,689	7,204,920	1,935,442	213,297	28,425	462,206	83,340,267
2/1/2047	28,411,417	7,043,704	12,880,347	16,206,650	6,914,455	1,683,276	201,528	26,420	399,292	73,767,090
3/1/2047	28,537,994	7,313,493	13,642,795	18,255,822	7,722,952	1,559,499	213,206	26,342	367,222	77,639,326
4/1/2047	24,458,043	6,449,420	12,744,284	16,889,045	8,422,005	1,161,600	206,284	22,461	263,443	70,616,585
5/1/2047	25,006,926	6,770,202	13,414,338	19,102,297	9,620,723	1,013,844	213,115	20,141	205,774	75,367,359
6/1/2047	28,583,298	7,057,786	13,943,972	20,664,272	10,314,994	1,026,448	206,196	20,380	187,639	82,004,986
7/1/2047	34,005,946	7,879,183	14,952,685	23,462,397	11,753,179	1,176,465	213,024	23,674	209,813	93,676,367
8/1/2047	32,835,230	7,712,870	14,999,251	23,517,727	11,386,032	1,143,555	212,979	21,380	203,549	92,032,573
9/1/2047	26,572,609	6,666,581	13,727,707	20,365,125	10,123,997	959,896	206,065	18,135	178,955	78,819,070
10/1/2047	25,462,347	6,520,197	13,520,093	19,318,293	8,976,425	1,069,925	219,956	20,150	221,638	75,329,024
11/1/2047	27,270,111	6,515,161	12,817,668	17,221,461	7,906,876	1,342,999	205,978	21,413	297,738	73,599,405
12/1/2047	32,607,906	7,343,744	13,722,386	17,822,105	7,640,576	1,779,165	212,800	26,330	404,317	81,559,328
1/1/2048	33,618,906	7,823,910	14,132,075	17,940,691	7,204,920	1,979,841	212,755	28,425	427,677	83,369,200
2/1/2048	29,001,014	7,206,271	12,934,020	16,033,329	6,831,475	1,751,248	201,017	26,775	375,408	74,360,557
3/1/2048	28,705,173	7,328,605	13,673,302	18,031,722	7,722,952	1,595,222	212,666	26,342	339,644	77,635,628
4/1/2048	24,597,232	6,462,010	12,772,909	16,657,468	8,422,005	1,188,140	205,763	22,461	243,457	70,571,445
5/1/2048	25,152,982	6,784,245	13,444,704	18,883,110	9,620,723	1,036,974	212,578	20,141	190,008	75,345,465
6/1/2048	28,745,823	7,071,759	13,975,447	20,452,375	10,314,994	1,049,870	205,678	20,380	173,202	82,009,528
7/1/2048	34,204,573	7,895,930	14,986,531	23,265,824	11,753,179	1,203,349	212,490	23,674	193,758	93,739,309
8/1/2048	33,026,555	7,729,141	15,033,174	23,320,236	11,386,032	1,169,680	212,447	21,380	187,955	92,086,601
9/1/2048	26,723,418	6,679,787	13,758,908	20,148,921	10,123,997	981,783	205,551	18,135	165,161	78,805,661
10/1/2048	25,610,412	6,533,838	13,551,012	19,096,466	8,976,425	1,094,352	219,409	20,150	204,723	75,306,787
11/1/2048	27,424,778	6,528,013	12,847,095	16,987,872	7,906,876	1,373,729	205,467	21,413	275,260	73,570,504
12/1/2048	32,797,944	7,359,161	13,754,008	17,591,113	7,640,576	1,819,963	212,273	26,330	374,045	81,575,412
1/1/2049	33,814,929	7,840,488	14,164,246	17,713,117	7,204,920	2,024,237	212,230	28,425	393,260	83,395,851
2/1/2049	28,718,560	7,068,350	12,938,523	15,732,490	6,914,455	1,760,432	200,522	26,420	339,557	73,699,310
3/1/2049	28,872,229	7,344,067	13,704,704	17,804,038	7,722,952	1,630,941	212,144	26,342	312,178	77,629,595
4/1/2049	24,736,316	6,474,911	12,802,363	16,422,307	8,422,005	1,214,675	205,259	22,461	223,585	70,523,881
5/1/2049	25,298,932	6,798,609	13,475,942	18,660,339	9,620,723	1,060,100	212,058	20,141	174,355	75,321,200
6/1/2049	28,908,224	7,086,067	14,007,817	20,236,885	10,314,994	1,073,288	205,177	20,380	158,877	82,011,710
7/1/2049	34,403,057	7,913,046	15,021,331	23,065,657	11,753,179	1,230,230	211,973	23,674	177,815	93,799,961
8/1/2049	33,217,745	7,745,771	15,068,043	23,119,141	11,386,032	1,195,800	211,931	21,380	172,472	92,138,316
9/1/2049	26,874,116	6,693,305	13,790,972	19,929,093	10,123,997	1,003,665	205,054	18,135	151,478	78,789,815
10/1/2049	25,758,372	6,547,779	13,582,777	18,871,016	8,976,425	1,118,775	218,879	20,150	187,919	75,282,093
11/1/2049	27,579,332	6,541,167	12,877,321	16,750,655	7,906,876	1,404,455	204,972	21,413	252,892	73,539,083
12/1/2049	32,987,850	7,374,912	13,786,480	17,356,485	7,640,576	1,860,756	211,763	26,330	343,884	81,589,034
1/1/2050	34,010,815	7,857,420	14,197,288	17,481,968	7,204,920	2,068,628	211,721	28,425	358,958	83,420,142
2/1/2050	28,871,947	7,081,176	12,968,827	15,490,034	6,914,455	1,799,003	200,043	26,420	309,859	73,661,764
3/1/2050	29,039,171	7,359,858	13,736,939	17,572,771	7,722,952	1,666,655	211,637	26,342	284,826	77,621,153
4/1/2050	24,875,300	6,488,103	12,832,593	16,183,562	8,422,005	1,241,207	204,770	22,461	203,824	70,473,825
5/1/2050	25,444,782	6,813,275	13,507,995	18,433,985	9,620,723	1,083,222	211,554	20,141	158,814	75,294,492
6/1/2050	29,070,511	7,100,690	14,041,024	20,017,804	10,314,994	1,096,702	204,690	20,380	144,665	82,011,460
7/1/2050	34,601,407	7,930,507	15,057,022	22,861,897	11,753,179	1,257,106	211,472	23,674	161,983	93,858,246
8/1/2050	33,408,806	7,762,738	15,103,798	22,914,443	11,386,032	1,221,917	211,431	21,380	157,100	92,187,645
9/1/2050	27,024,709	6,707,115	13,823,841	19,705,642	10,123,997	1,025,544	204,571	18,135	137,906	78,771,461
10/1/2050	25,906,235	6,562,003	13,615,334	18,641,943	8,976,425	1,143,193	218,365	20,150	171,226	75,254,873
11/1/2050	27,733,780	6,554,604	12,908,292	16,509,810	7,906,876	1,435,177	204,492	21,413	230,635	75,505,078
12/1/2050	33,177,631	7,390,978	13,819,746	17,118,221	7,640,576	1,901,545	211,267	26,330	313,832	81,600,126
1/1/2051	34,206,575	7,874,684	14,231,145	17,247,244	7,204,920	2,113,015	211,227	28,425	324,769	83,442,004
2/1/2051	29,025,221	7,094,310	12,999,871	15,243,994	6,914,455	1,837,571	199,577	26,420	280,274	73,621,692
3/1/2051	29,206,006	7,375,958	13,769,956	17,337,920	7,722,952	1,702,366	211,146	26,342	257,587	77,610,233
4/1/2051	25,014,191	6,501,569	12,863,549	15,941,234	8,422,005	1,267,734	204,296	22,461	184,177	70,421,215
5/1/2051	25,590,540	6,828,223	13,540,811	18,204,048	9,620,723	1,106,340	211,065	20,141	143,386	75,265,278
6/1/2051	29,232,691	7,115,609	14,075,014	19,795,129	10,314,994	1,120,111	204,218	20,380	130,565	82,008,712
7/1/2051	34,799,633	7,948,292	15,093,547	22,654,542	11,753,179	1,283,978	210,985	23,674	146,263	93,914,093
8/1/2051	33,599,748	7,780,021	15,140,381	22,706,141	11,386,032	1,248,029	210,945	21,380	141,839	92,234,516
9/1/2051	27,175,205	6,721,201	13,857,466	19,478,568	10,123,997	1,047,418	204,102	18,135	124,445	78,750,537
10/1/2051	26,054,005	6,576,492	13,648,632	18,409,246	8,976,425	1,167,606	217,866	20,150	154,644	75,225,065
11/1/2051	27,888,128	6,568,308	12,939,962	16,265,336	7,906,876	1,465,894	204,025	21,413	208,487	73,468,430
12/1/2051	33,367,297	7,407,339	13,853,756	16,876,321	7,640,576	1,942,330	210,786	26,330	283,890	81,608,625
1/1/2052	34,402,216	7,892,262	14,265,766	17,008,945	7,204,920	2,157,398	210,747	28,425	290,693	83,461,371
2/1/2052	29,639,731	7,261,435	13,056,876	15,057,722	6,831,475	1,908,178	199,124	26,775	254,935	74,236,252
3/1/2052	29,372,740	7,392,349	13,803,704	17,099,486	7,722,952	1,738,072	210,668	26,342	230,461	77,596,775
4/1/2052	25,152,994	6,515,292	12,895,186	15,695,322	8,422,005	1,294,257	203,835	22,461	164,643	70,365,994
5/1/2052	25,736,210	6,843,438	13,574,343	17,970,527	9,620,723	1,129,453	210,590	20,141	128,071	75,233,496
6/1/2052	29,394,770	7,130,807	14,109,739	19,568,862	10,314,994	1,143,516	203,759	20,380	116,577	82,003,404
7/1/2052	34,997,742	7,966,383	15,130,854	22,443,593	11,753,179	1,310,846	210,512	23,674	130,655	93,967,437
8/1/2052	33,790,577	7,797,602	15,177,741	22,494,235	11,386,032	1,274,137	210,473	21,380	126,690	92,278,867
9/1/2052	27,325,607	6,735,547	13,891,798	19,247,871	10,123,997	1,069,288	203,646	18,135	111,095	78,726,985
10/1/2052	26,201,689	6,591,231	13,682,624	18,172,925	8,976,425	1,192,016	217,380	20,150	138,173	75,192,613
11/1/2052	28,042,383	6,582,263	12,972,288	16,017,234	7,906,876	1,496,607	203,572	21,413	186,450	73,429,086
12/1/2052	33,556,853	7,423,979	13,888,464	16,630,786	7,640,576	1,983,110	210,319	26,330	254,058	81,614,475

RECOVERY OF REVENUE DECOUPLING YEAR 1

SOURCE of KWH: W:\Finance\Book Closing Entries-2023\2023 Granite State Electric 3071\GSE Accounting Close\DECOUPLING\Monthly Support - 2023
Egy_BillByCalMo(Deliv_SAP_v2_YYYYMM - Delivery Service by Rate Class.xlsx

	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total	
	D	D-10	G-1 & G1H	G-2 & G2H	G-3 / G3H / L2	T	V		
	\$ 0.00291	\$ 0.00180	\$ 0.00104	\$ 0.00151	\$ 0.00253	\$ 0.00285	\$ 0.00291		Beginning Balance \$ 1,415,013.00
1 RDAF Rate									
January 2023	10,629,525	187,781	6,815,016	3,977,826	2,658,525	429,794	6,393	23,506,262	Recovery Current Balance
Recovery	\$ 29,868.97	\$ 338.01	\$ 5,839.62	\$ 6,006.52	\$ 6,729.61	\$ 1,224.91	\$ 18.60	\$ 50,026.24	Jan-23 \$ 50,026.24 \$ 1,364,986.76
2 February 2023	25,598,433	568,014	26,388,273	11,213,686	7,372,836	1,588,857	23,781	72,753,880	Feb-23 140,581.22 1,224,405.54
Recovery	\$ 71,931.80	\$ 1,022.43	\$ 27,443.80	\$ 16,932.67	\$ 18,653.28	\$ 4,528.24	\$ 69.20	\$ 140,581.22	Mar-23 135,139.46 1,089,266.98
3 March 2023	23,743,417	519,279	27,275,723	11,356,437	7,144,090	1,321,276	24,942	71,423,864	Apr-23 123,989.19 965,276.99
Recovery	\$ 66,719.00	\$ 934.70	\$ 28,366.75	\$ 17,207.11	\$ 18,074.55	\$ 3,765.64	\$ 71.71	\$ 135,139.46	May-23 110,576.81 854,700.08
4 April 2023	20,737,289	422,327	28,229,254	10,962,984	6,523,805	854,697	20,022	67,780,388	Jun-23 116,401.54 738,298.54
Recovery	\$ 58,271.78	\$ 760.19	\$ 29,368.42	\$ 16,599.42	\$ 16,505.23	\$ 2,435.89	\$ 58.26	\$ 123,989.19	Jul-23
5 May 2023	17,653,693	332,589	27,211,476	9,942,325	5,758,068	860,272	13,369	61,771,732	Aug-23
Recovery	\$ 48,606.62	\$ 598.66	\$ 28,299.94	\$ 15,012.91	\$ 14,567.91	\$ 2,451.78	\$ 38.99	\$ 110,576.81	Sep-23
6 Jun 2023	18,807,435	303,687	27,799,630	10,929,779	6,273,933	587,763	14,520	64,716,747	Oct-23
Recovery	\$ 52,848.89	\$ 546.64	\$ 28,911.62	\$ 16,503.97	\$ 15,673.05	\$ 1,675.12	\$ 42.25	\$ 116,401.54	

MONTH	DATES	PRIME	
		RATE	# DAYS
Jan-20	01/01 - 01/31	4.75%	31
Feb-20	02/01 - 02/28	4.75%	28
Mar-20	03/01 - 03/31	4.75%	31
Apr-20	04/01 - 04/30	3.25%	30
May-20	05/01 - 05/31	3.25%	31
Jun-20	06/01 - 06/30	3.25%	30
Jul-20	07/01 - 07/31	3.25%	31
Aug-20	08/01 - 08/31	3.25%	31
Sep-20	09/01 - 09/30	3.25%	30
Oct-20	10/01 - 10/31	3.25%	31
Nov-20	11/01 - 11/30	3.25%	30
Dec-20	12/01 - 01/2/31	3.25%	31
Jan-21	01/01 - 01/31	3.25%	31
Feb-21	02/01 - 02/28	3.25%	28
Mar-21	03/01 - 03/31	3.25%	31
Apr-21	04/01 - 04/30	3.25%	30
May-21	05/01 - 05/31	3.25%	30
Jun-21	06/01 - 06/30	3.25%	31
Jul-21	07/01 - 07/31	3.25%	31
Aug-21	08/01 - 08/31	3.25%	28
Sep-21	09/01 - 09/30	3.25%	31
Oct-21	10/01 - 10/31	3.25%	30
Nov-21	11/01 - 11/30	3.25%	30
Dec-21	12/01 - 01/2/31	3.25%	31
Jan-22	01/01 - 01/31	3.25%	31
Feb-22	02/01 - 02/28	3.25%	28
Mar-22	03/01 - 03/31	3.25%	31
Apr-22	04/01 - 04/30	3.50%	30
May-22	05/01 - 05/31	3.50%	30
Jun-22	06/01 - 06/30	4.00%	31
Jul-22	07/01 - 07/31	4.75%	31
Aug-22	08/01 - 08/31	5.50%	31
Sep-22	09/01 - 09/30	5.50%	30
Oct-22	10/01 - 10/31	6.25%	31
Nov-22	11/01 - 11/30	6.25%	30
Dec-22	12/01 - 01/2/31	7.00%	31
Jan-23	01/01 - 01/31	7.50%	31
Feb-23	02/01 - 02/28	7.75%	28
Mar-23	03/01 - 03/31	7.75%	31
Apr-23	04/01 - 04/30	8.00%	30
May-23	05/01 - 05/31	8.00%	30
Jun-23	06/01 - 06/30	8.25%	31
Jul-23	07/01 - 07/31	8.25%	31
Aug-23	08/01 - 08/31	8.50%	31
Sep-23	09/01 - 09/30	8.50%	30
Oct-23	10/01 - 10/31	8.50%	31
Nov-23	11/01 - 11/30	8.50%	30
Dec-23	12/01 - 12/31	8.50%	31
Jan-24	01/01 - 01/31	8.50%	31
Feb-24	02/01 - 02/29	8.50%	29
Mar-24	03/01 - 03/31	8.50%	31
Apr-24	04/01 - 04/30	8.50%	30
May-24	05/01 - 05/31	8.50%	31
Jun-24	06/01 - 06/30	8.50%	30
Jul-24	07/01 - 07/31	8.50%	31
Aug-24	08/01 - 08/31	8.50%	31

Note, when calculating interest, accounting uses the rate in place on the first of the month. (Except PTAM for ENNG)

Source below

http://www.fedprimerate.com/wall_street_journal_prime_rate_history.htm

https://www.fedprimerate.com/wall_street_journal_prime_rate_history.htm

March 22, 2018	4.75
June 14, 2018	5.00
September 27, 2018	5.25
December 20, 2018	5.50
July 31, 2019	5.25
September 18, 2019	5.00
October 30, 2019	4.75
March 3, 2020	4.25
March 15, 2020	3.25
March 16, 2022	3.50
May 4, 2022	4.00
June 15, 2022	4.75
July 27, 2022	5.50
September 21, 2022	6.25
November 2, 2022	7.0
December 14, 2022	7.50
Date of Rate Change	Rate (%)
February 1, 2023	7.75
March 22, 2023	8.00
May 3, 2023	8.25
July 26, 2023	8.50 (The Current U.S. Prime Rate)
The Current U.S. (Fed) Prime Rate is: 8.50%	
July 26, 2023: The FOMC has voted to raise the target range for the fed funds rate to 5.25% - 5.50%. Therefore, the United States Prime Rate remains is now 8.50%	
The next FOMC meeting and decision on short-term interest rates will be on September 20, 2023.	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Distribution Revenues Subject to Decoupling

Line No.	Decoupling Year Distribution Revenues	(a)		(b)		(c.)	
		Effective July 1, 2020		Effective July 1, 2021		Effective November 1, 2021	
1	Base	\$	43,710,962	\$	46,437,733	\$	48,300,840
2	Step	\$	1,321,451	\$	1,534,738	\$	94,064
3	Reliability Enhancement Program	\$	210,503	\$	213,246	\$	-
4	Recoupment	\$	917,996	\$	103,688	\$	-
5	Rate Case Expense	\$	276,821	\$	11,435	\$	-
6	Additional Forecasted Revenue/Rounding	\$	-	\$	-	\$	-
7	Total	\$	46,437,733	\$	48,300,840	\$	48,394,904

Line No.	Less: Street Lighting Distribution Revenues	Effective July 1, 2020		Effective July 1, 2021		Effective November 1, 2021	
8	Base	\$	1,075,932	\$	1,142,986	\$	1,193,596
9	Step	\$	32,501	\$	45,508	\$	2,239
10	Reliability Enhancement Program	\$	5,176	\$	5,102	\$	-
11	Recoupment	\$	29,377	\$	-	\$	-
12	Rate Case Expense	\$	-	\$	-	\$	-
13	Additional Forecasted Revenue/Rounding	\$	-	\$	-	\$	-
14	Total	\$	1,142,986	\$	1,193,596	\$	1,195,835

Line No.	Distribution Revenues Subject To Decoupling	Effective July 1, 2020		Effective July 1, 2021		Effective November 1, 2021	
15	Base	\$	42,635,030	\$	45,294,747	\$	47,107,244
16	Step	\$	1,288,950	\$	1,489,230	\$	91,825
17	Reliability Enhancement Program	\$	205,327	\$	208,144	\$	-
18	Recoupment	\$	888,619	\$	103,688	\$	-
19	Rate Case Expense	\$	276,821	\$	11,435	\$	-
20	Additional Forecasted Revenue/Rounding	\$	-	\$	-	\$	-
21	Total	\$	45,294,747	\$	47,107,244	\$	47,199,069

Line	(a)	(b)	(c.)
1	Bates 034 DE 19-064 Settlement Agreement filed May 26, 2020	Prior year total	Prior year total
2	Approved in Docket No. DE 19-064 Order No. 26,377	Approved in Docket No. DE 19-064 Order No. 26,494	Approved in Docket No. DE 19-064 Order No. 26,537
3	Approved in Docket No. DE 20-036 Order No. 26,352	Approved in Docket No. DE 21-049 Order No. 26,478	N/A
4	Bates 061 DE 19-064 Settlement Agreement filed May 26, 2020	Approved in Docket No. DE 19-064 Order No. 26,494	N/A
5	Bates 061 DE 19-064 Settlement Agreement filed May 26, 2020	Approved in Docket No. DE 19-064 Order No. 26,494	N/A
6	N/A for 2020	N/A for 2021	N/A
7	Sum of lines 1 through 6	Sum of lines 1 through 6	Sum of lines 1 through 6
8	Bates 034 DE 19-064 Settlement Agreement filed May 26, 2020	Prior year total	Prior year total
9	Allocated in Rate Calculation	Allocated in Rate Calculation	Allocated in Rate Calculation
10	Allocated in Rate Calculation	Allocated in Rate Calculation	Allocated in Rate Calculation
11	Allocated in Rate Calculation	Allocated in Rate Calculation	Allocated in Rate Calculation
12	Allocated in Rate Calculation	Allocated in Rate Calculation	Allocated in Rate Calculation
13	N/A for 2020	N/A for 2021	N/A for 2021
14	Sum of lines 8 through 12	Sum of lines 8 through 12	Sum of lines 8 through 12
15	Line 1 - Line 8	Line 1 - Line 8	Line 1 - Line 8
16	Line 2 - Line 9	Line 2 - Line 9	Line 2 - Line 9
17	Line 3 - Line 10	Line 3 - Line 10	Line 3 - Line 10
18	Line 4 - Line 11	Line 4 - Line 11	Line 4 - Line 11
19	Line 5 - Line 12	Line 5 - Line 12	Line 5 - Line 12
20	Line 6 - Line 13	Line 6 - Line 13	Line 6 - Line 13
21	Sum of lines 15 through 20	Sum of lines 15 through 20	Sum of lines 15 through 20

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Annual Target Revenues by Rate Class

Line No.	Rate Year (No Decoupling) Allowed Revenue Requirement 7/1/2020 - 6/30/2021	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
1	Distribution Revenue Requirement	\$20,759,906	\$311,269	\$9,926,770	\$5,456,032	\$5,332,602	\$828,772	\$19,679	\$ 42,635,030
2	Step Increase	\$627,617	\$9,410	\$300,108	\$164,948	\$161,216	\$25,056	\$595	\$ 1,288,950
3	Reliability Enhancement Program	\$99,978	\$1,499	\$47,807	\$26,276	\$25,681	\$3,991	\$95	\$ 205,327
5	Recoupment	\$432,688	\$6,488	\$206,898	\$113,717	\$111,145	\$17,274	\$410	\$ 888,619
6	Rate Case expenses	\$134,790	\$2,021	\$64,453	\$35,425	\$34,624	\$5,381	\$128	\$ 276,821
7	Additional Forecasted Revenue/Rounding	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
8	Total Target Revenues	\$22,054,980	\$330,687	\$10,546,035	\$5,796,398	\$5,665,267	\$880,473	\$20,906	\$45,294,747

	Decoupling Year 1: Allowed Revenue Requirement 7/1/2021 - 10/31/2021	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
9	Distribution Revenue Requirement	\$22,054,980	\$330,687	\$10,546,035	\$5,796,398	\$5,665,267	\$880,473	\$20,906	\$ 45,294,747
10	Step Increase	\$725,138	\$10,873	\$346,739	\$190,578	\$186,266	\$28,949	\$687	\$ 1,489,230
11	Reliability Enhancement Program	\$101,350	\$1,520	\$48,462	\$26,636	\$26,034	\$4,046	\$96	\$ 208,144
12	Recoupment	\$50,488	\$757	\$24,142	\$13,269	\$12,969	\$2,016	\$48	\$ 103,688
13	Rate Case expenses	\$5,568	\$83	\$2,662	\$1,463	\$1,430	\$222	\$5	\$ 11,435
14	Additional Forecasted Revenue/Rounding	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
15	Total Target Revenues	\$22,937,523	\$343,920	\$10,968,041	\$6,028,344	\$5,891,966	\$915,706	\$21,743	\$47,107,244

	Decoupling Year 1: Allowed Revenue Requirement 11/1/2021 - 6/30/2022	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
16	Distribution Revenue Requirement	\$22,937,523	\$343,920	\$10,968,041	\$6,028,344	\$5,891,966	\$915,706	\$21,743	\$ 47,107,244
17	Step Increase	\$44,711	\$670	\$21,380	\$11,751	\$11,485	\$1,785	\$42	\$ 91,825
18	Reliability Enhancement Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
19	Recoupment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
20	Rate Case expenses	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
21	Additional Forecasted Revenue/Rounding	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$ -
22	Total Target Revenues	\$22,982,235	\$344,590	\$10,989,421	\$6,040,095	\$5,903,452	\$917,491	\$21,785	\$47,199,069

	Normalized Test Year Revenues (used to spread Annual Allowed Revenues Among the Classes)	D-05 & -06	D-10	G-1	G-2	G-3	T	V	Total
23	Jul-18	\$1,694,413	\$22,074	\$841,222	\$447,540	\$419,271	\$48,672	\$1,582	\$3,474,773
24	Aug-18	\$1,857,431	\$24,560	\$884,497	\$457,478	\$453,725	\$52,599	\$1,842	\$3,732,132
25	Sep-18	\$1,678,165	\$23,102	\$836,223	\$423,981	\$418,285	\$46,607	\$1,260	\$3,427,623
26	Oct-18	\$1,371,371	\$18,950	\$757,938	\$417,729	\$367,687	\$44,713	\$1,206	\$2,979,594
27	Nov-18	\$1,401,629	\$20,584	\$707,174	\$393,114	\$358,966	\$57,503	\$1,124	\$2,940,094
28	Dec-18	\$1,688,605	\$26,286	\$756,050	\$400,390	\$426,308	\$80,056	\$1,608	\$3,379,303
29	Jan-18	\$1,891,081	\$31,136	\$711,780	\$403,946	\$451,098	\$102,669	\$2,007	\$3,593,716
30	Feb-18	\$1,599,187	\$28,894	\$706,330	\$404,252	\$425,561	\$84,220	\$1,783	\$3,250,227
31	Mar-18	\$1,520,355	\$25,807	\$692,966	\$411,845	\$407,660	\$77,033	\$1,583	\$3,137,249
32	Apr-18	\$1,496,779	\$24,334	\$696,329	\$399,178	\$397,471	\$67,951	\$1,507	\$3,083,549
33	May-18	\$1,351,666	\$20,212	\$720,281	\$416,875	\$370,820	\$51,763	\$1,260	\$2,932,877
34	Jun-18	\$1,488,295	\$19,526	\$793,083	\$427,417	\$393,696	\$46,282	\$1,287	\$3,169,586
35		\$19,038,977	\$285,466	\$9,103,872	\$5,003,744	\$4,890,546	\$760,069	\$18,047	\$39,100,722
36	Percent of Total	48.69%	0.73%	23.28%	12.80%	12.51%	1.94%	0.05%	100.00%

	Normalized Test Year Revenue Allocator	D	D-10	G-1	G-2	G-3	T	V
37	Jul-18	8.90%	7.73%	9.24%	8.94%	8.57%	6.40%	8.77%
38	Aug-18	9.76%	8.60%	9.72%	9.14%	9.28%	6.92%	10.21%
39	Sep-18	8.81%	8.09%	9.19%	8.47%	8.55%	6.13%	6.98%
40	Oct-18	7.20%	6.64%	8.33%	8.35%	7.52%	5.88%	6.68%
41	Nov-18	7.36%	7.21%	7.77%	7.86%	7.34%	7.57%	6.23%
42	Dec-18	8.87%	9.21%	8.30%	8.00%	8.72%	10.53%	8.91%
43	Jan-18	9.93%	10.91%	7.82%	8.07%	9.22%	13.51%	11.12%
44	Feb-18	8.40%	10.12%	7.76%	8.08%	8.70%	11.08%	9.88%
45	Mar-18	7.99%	9.04%	7.61%	8.23%	8.34%	10.14%	8.77%
46	Apr-18	7.86%	8.52%	7.65%	7.98%	8.13%	8.94%	8.35%
47	May-18	7.10%	7.08%	7.91%	8.33%	7.58%	6.81%	6.98%
48	Jun-18	7.82%	6.84%	8.71%	8.54%	8.05%	6.09%	7.13%
49	Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Calculation: Year 1 (7/1/2021-6/30/22)

Line No.	A	B	C	D	E	F	G	H	I	J
	Decoupling Year 1: 7/1/2021 - 6/30/2022		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
			DOD2	D10	G01	G02	G03	T00	V00	
	Bills	(Test Year Equivalent Bills)								
1	7	Jul-18	35,232	443	139	922	5,691	961	18	43,406
2	8	Aug-18	37,134	441	143	942	5,902	1,034	19	45,615
3	9	Sep-18	33,822	435	138	872	5,425	881	15	41,588
4	10	Oct-18	35,547	440	141	906	5,680	956	17	43,687
5	11	Nov-18	35,400	437	140	900	5,679	951	17	43,524
6	12	Dec-18	35,656	439	145	902	5,704	950	17	43,813
7	1	Jan-18	35,344	438	135	904	5,649	981	18	43,469
8	2	Feb-18	35,193	441	135	906	5,663	975	18	43,331
9	3	Mar-18	35,347	441	132	910	5,671	975	18	43,494
10	4	Apr-18	35,329	443	131	901	5,688	967	18	43,477
11	5	May-18	35,313	440	141	914	5,650	968	18	43,444
12	6	Jun-18	35,263	439	138	903	5,638	967	18	43,366
13			424,580	5,277	1,658	10,882	68,040	11,566	211	522,214
14	Distribution Revenues		(Settlement Allowed)							
15	7	July	\$2,041,372	\$26,593	\$1,013,476	\$539,181	\$505,124	\$58,638	\$1,906	\$4,186,291
16	8	August	\$2,237,771	\$29,589	\$1,065,612	\$551,155	\$546,632	\$63,370	\$2,219	\$4,496,348
17	9	September	\$2,021,798	\$27,833	\$1,007,454	\$510,798	\$503,935	\$56,151	\$1,518	\$4,129,486
18	10	October	\$1,652,182	\$22,830	\$913,139	\$503,266	\$442,977	\$53,869	\$1,453	\$3,589,715
19	11	November	\$1,691,927	\$24,848	\$853,641	\$474,534	\$433,313	\$69,413	\$1,356	\$3,549,032
20	12	December	\$2,038,341	\$31,730	\$912,639	\$483,317	\$514,603	\$96,637	\$1,941	\$4,079,207
21	1	January	\$2,282,752	\$37,585	\$859,201	\$487,610	\$544,527	\$123,934	\$2,422	\$4,338,029
22	2	February	\$1,930,403	\$34,879	\$852,622	\$487,978	\$513,701	\$101,663	\$2,152	\$3,923,397
23	3	March	\$1,835,243	\$31,152	\$836,489	\$497,144	\$492,092	\$92,988	\$1,911	\$3,787,020
24	4	April	\$1,806,785	\$29,374	\$840,549	\$481,853	\$479,793	\$82,025	\$1,820	\$3,722,198
25	5	May	\$1,631,616	\$24,399	\$869,462	\$503,216	\$447,622	\$62,483	\$1,521	\$3,540,319
26	6	June	\$1,796,543	\$23,571	\$957,342	\$515,941	\$475,237	\$55,868	\$1,553	\$3,826,054
27			22,966,732	344,382	10,981,624	6,035,993	5,899,556	917,039	21,771	47,167,097
28	Monthly Target Revenue Per Customer (Monthly RPC)									
29	7	July	\$57.94	\$60.03	\$7,291.19	\$584.80	\$88.76	\$61.02	\$105.88	
30	8	August	\$60.26	\$67.09	\$7,451.83	\$585.09	\$92.62	\$61.29	\$116.78	
31	9	September	\$59.78	\$63.98	\$7,300.39	\$585.78	\$92.89	\$63.74	\$101.20	
32	10	October	\$46.48	\$51.89	\$6,476.16	\$555.48	\$77.99	\$56.35	\$85.46	
33	11	November	\$47.79	\$56.86	\$6,097.44	\$527.26	\$76.30	\$72.99	\$79.79	
34	12	December	\$57.17	\$72.28	\$6,294.06	\$535.83	\$90.22	\$101.72	\$114.16	
35	1	January	\$64.59	\$85.81	\$6,364.45	\$539.39	\$96.39	\$126.33	\$134.57	
36	2	February	\$54.85	\$79.09	\$6,315.72	\$538.61	\$90.71	\$104.27	\$119.54	
37	3	March	\$51.92	\$70.64	\$6,337.04	\$546.31	\$86.77	\$95.37	\$106.15	
38	4	April	\$51.14	\$66.31	\$6,416.41	\$534.80	\$84.35	\$84.82	\$101.09	
39	5	May	\$46.20	\$55.45	\$6,166.40	\$550.56	\$79.23	\$64.55	\$84.52	
40	6	June	\$50.95	\$53.69	\$6,937.26	\$571.36	\$84.29	\$57.77	\$86.28	
41	Actual		Domestic	Domestic -	General TOU	General Long	General	Limited All	Ltd Comm	Total
42			DOD2	D10	G01	G02	G03	T00	V00	
43	Equivalent Bills		Values below are inputs, and represent actual monthly bills adjusted to equivalent bills							
44	7	Jul-21	36,600	440	145	960	5,847	861	16	44,869
45	8	Aug-21	36,431	439	145	966	5,795	861	16	44,653
46	9	Sep-21	37,132	438	146	963	5,839	865	15	45,398
47	10	Oct-21	36,429	436	150	982	5,846	852	15	44,710
48	11	Nov-21	36,551	430	144	951	5,730	861	18	44,685
49	12	Dec-21	36,551	442	151	979	5,839	860	16	44,838
50	1	Jan-22	37,099	441	147	961	5,882	853	16	45,399
51	2	Feb-22	36,867	428	155	982	5,807	859	16	45,114
52	3	Mar-22	37,232	435	156	969	5,926	857	16	45,591
53	4	Apr-22	37,057	461	149	976	5,838	850	15	45,346
54	5	May-22	37,160	439	152	962	5,870	857	17	45,457
55	6	Jun-22	36,878	439	163	1,004	5,875	855	16	45,230
56			441,987	5,268	1,803	11,655	70,094	10,291	192	541,290
57	Distribution Revenues		Values below are inputs, and represent actual monthly billings							
58	7	Jul-21	\$2,254,571	\$29,137	\$969,302	\$512,875	\$501,971	\$54,227	\$1,463	\$4,323,545
59	8	Aug-21	\$2,196,318	\$28,807	\$958,081	\$505,630	\$502,842	\$52,177	\$1,518	\$4,245,373
60	9	Sep-21	\$2,187,207	\$28,509	\$978,870	\$514,568	\$509,303	\$51,318	\$1,106	\$4,270,881
61	10	Oct-21	\$1,713,325	\$21,593	\$899,565	\$491,321	\$431,048	\$44,556	\$923	\$3,602,330
62	11	Nov-21	\$1,773,694	\$23,633	\$828,966	\$474,059	\$413,999	\$57,931	\$1,827	\$3,574,108
63	12	Dec-21	\$2,045,415	\$30,631	\$871,211	\$490,456	\$481,442	\$77,979	\$1,507	\$3,998,641
64	1	Jan-22	\$2,267,135	\$36,491	\$832,036	\$490,680	\$515,261	\$92,368	\$1,677	\$4,235,647
65	2	Feb-22	\$2,236,466	\$35,491	\$822,070	\$506,277	\$537,707	\$97,784	\$2,044	\$4,237,839
66	3	Mar-22	\$2,097,294	\$31,016	\$858,120	\$483,535	\$521,041	\$84,105	\$1,783	\$4,076,894
67	4	Apr-22	\$1,926,314	\$29,191	\$847,178	\$488,788	\$481,706	\$71,688	\$1,382	\$3,846,247
68	5	May-22	\$1,746,532	\$23,409	\$864,662	\$476,194	\$431,935	\$54,192	\$1,394	\$3,598,317
69	6	Jun-22	\$1,857,434	\$22,805	\$907,046	\$511,836	\$450,382	\$45,716	\$1,331	\$3,796,550
70			24,301,705	340,712	10,637,108	5,946,218	5,778,637	784,039	17,954	47,806,373
71	Actual Revenue Per Customer (Actual RPC)									
72	7	Jul-21	\$61.60	\$66.22	\$6,684.84	\$534.24	\$85.85	\$62.98	\$91.41	
73	8	Aug-21	\$60.29	\$65.62	\$6,607.46	\$523.43	\$86.77	\$60.60	\$94.85	
74	9	Sep-21	\$58.90	\$65.09	\$6,704.59	\$534.34	\$87.22	\$59.33	\$73.71	
75	10	Oct-21	\$47.03	\$49.53	\$5,997.10	\$500.33	\$73.73	\$52.30	\$61.51	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Calculation: Year 1 (7/1/2021-6/30/22)

A	B	C	D	E	F	G	H	I	J
11	Nov-21	\$48.53	\$54.96	\$5,756.71	\$498.48	\$72.25	\$67.28	\$101.51	
12	Dec-21	\$55.96	\$69.30	\$5,769.61	\$500.98	\$82.45	\$90.67	\$94.21	
1	Jan-22	\$61.11	\$82.75	\$5,660.11	\$510.59	\$87.60	\$108.29	\$104.79	
2	Feb-22	\$60.66	\$82.92	\$5,303.68	\$515.56	\$92.60	\$113.83	\$127.74	
3	Mar-22	\$56.33	\$71.30	\$5,500.77	\$499.00	\$87.92	\$98.14	\$111.46	
4	Apr-22	\$51.98	\$63.32	\$5,685.76	\$500.81	\$82.51	\$84.34	\$92.13	
5	May-22	\$47.00	\$53.32	\$5,688.57	\$495.00	\$73.58	\$63.23	\$81.97	
6	Jun-22	\$50.37	\$51.95	\$5,564.70	\$509.80	\$76.66	\$53.47	\$83.22	
1	2	3	4	5	6	7	8	9	
A	B	C	D	E	F	G	H	I	J
Decoupling Calculation: Decoupling Year 1		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total Refund / (Charge) to Customers
		DOD2	D10	G01	G02	G03	T00	V00	
Jul-21	Target RPC	\$57.94	\$60.03	\$7,291.19	\$584.80	\$88.76	\$61.02	\$105.88	
7	Actual RPC	\$61.60	\$66.22	\$6,684.84	\$534.24	\$85.85	\$62.98	\$91.41	
	Difference	\$3.6594	\$6.1911	(\$606.3489)	(\$50.5506)	(\$2.9073)	\$1.9635	(\$14.4756)	
	Actual Bills	36,600	440	145	960	5,847	861	16	
	Decoupling	\$133,935	\$2,724	(\$87,921)	(\$48,529)	(\$16,999)	\$1,691	(\$232)	(\$15,331)
Aug-21	Target RPC	\$60.26	\$67.09	\$7,451.83	\$585.09	\$92.62	\$61.29	\$116.78	
8	Actual RPC	\$60.29	\$65.62	\$6,607.46	\$523.43	\$86.77	\$60.60	\$94.85	
	Difference	\$0.0250	(\$1.4750)	(\$844.3749)	(\$61.6633)	(\$5.8464)	(\$0.6861)	(\$21.9355)	
	Actual Bills	36,431	439	145	966	5,795	861	16	
	Decoupling Adjustment	\$911	(\$648)	(\$122,434)	(\$59,567)	(\$33,880)	(\$591)	(\$351)	(\$216,560)
Sep-21	Target RPC	\$59.78	\$63.98	\$7,300.39	\$585.78	\$92.89	\$63.74	\$101.20	
9	Actual RPC	\$58.90	\$65.09	\$6,704.59	\$534.34	\$87.22	\$59.33	\$73.71	
	Difference	(\$0.8740)	\$1.1044	(\$595.7991)	(\$51.4382)	(\$5.6671)	(\$4.4081)	(\$27.4904)	
	Actual Bills	37,132	438	146	963	5,839	865	15	
	Decoupling Adjustment	(\$32,454)	\$484	(\$86,987)	(\$49,535)	(\$33,090)	(\$3,813)	(\$412)	(\$205,807)
Oct-21	Target RPC	\$46.48	\$51.89	\$6,476.16	\$555.48	\$77.99	\$56.35	\$85.46	
10	Actual RPC	\$47.03	\$49.53	\$5,997.10	\$500.33	\$73.73	\$52.30	\$61.51	
	Difference	\$0.5531	(\$2.3610)	(\$479.0596)	(\$55.1541)	(\$4.2551)	(\$4.0534)	(\$23.9513)	
	Actual Bills	36,429	436	150	982	5,846	852	15	
	Decoupling Adjustment	\$20,149	(\$1,029)	(\$71,859)	(\$54,161)	(\$24,875)	(\$3,454)	(\$359)	(\$135,588)
Nov-21	Target RPC	\$47.79	\$56.86	\$6,097.44	\$527.26	\$76.30	\$72.99	\$79.79	
11	Actual RPC	\$48.53	\$54.96	\$5,756.71	\$498.48	\$72.25	\$67.28	\$101.51	
	Difference	\$0.7320	(\$1.8994)	(\$340.7288)	(\$28.7758)	(\$4.0497)	(\$5.7061)	\$21.7180	
	Actual Bills	36,551	430	144	951	5,730	861	18	
	Decoupling Adjustment	\$26,755	(\$817)	(\$49,065)	(\$27,366)	(\$23,205)	(\$4,913)	\$391	(\$78,220)
Dec-21	Target RPC	\$57.17	\$72.28	\$6,294.06	\$535.83	\$90.22	\$101.72	\$114.16	
12	Actual RPC	\$55.96	\$69.30	\$5,769.61	\$500.98	\$82.45	\$90.67	\$94.21	
	Difference	(\$1.2063)	(\$2.9782)	(\$524.4487)	(\$34.8516)	(\$7.7651)	(\$11.0503)	(\$19.9513)	
	Actual Bills	36,551	442	151	979	5,839	860	16	
	Decoupling Adjustment	(\$44,090)	(\$1,316)	(\$79,192)	(\$34,120)	(\$45,340)	(\$9,503)	(\$319)	(\$213,880)
Jan-22	Target RPC	\$64.59	\$85.81	\$6,364.45	\$539.39	\$96.39	\$126.33	\$134.57	
1	Actual RPC	\$61.11	\$82.75	\$5,660.11	\$510.59	\$87.60	\$108.29	\$104.79	
	Difference	(\$3.4763)	(\$3.0639)	(\$704.3399)	(\$28.7983)	(\$8.7938)	(\$18.0486)	(\$29.7859)	
	Actual Bills	37,099	441	147	961	5,882	853	16	
	Decoupling Adjustment	(\$128,966)	(\$1,351)	(\$103,538)	(\$27,675)	(\$51,725)	(\$15,395)	(\$477)	(\$329,127)
Feb-22	Target RPC	\$54.85	\$79.09	\$6,315.72	\$538.61	\$90.71	\$104.27	\$119.54	
2	Actual RPC	\$60.66	\$82.92	\$5,303.68	\$515.56	\$92.60	\$113.83	\$127.74	
	Difference	\$5.8112	\$3.8332	(\$1,012.0351)	(\$23.0505)	\$1.8846	\$9.5645	\$8.1976	
	Actual Bills	36,867	428	155	982	5,807	859	16	
	Decoupling Adjustment	\$214,241	\$1,641	(\$156,865)	(\$22,636)	\$10,944	\$8,216	\$131	\$55,672
Mar-22	Target RPC	\$51.92	\$70.64	\$6,337.04	\$546.31	\$86.77	\$95.37	\$106.15	
3	Actual RPC	\$56.33	\$71.30	\$5,500.77	\$499.00	\$87.92	\$98.14	\$111.46	
	Difference	\$4.4096	\$0.6606	(\$836.2730)	(\$47.3085)	\$1.1510	\$2.7668	\$5.3159	
	Actual Bills	37,232	435	156	969	5,926	857	16	
	Decoupling Adjustment	\$164,180	\$287	(\$130,459)	(\$45,842)	\$6,821	\$2,371	\$85	(\$2,557)
Apr-22	Target RPC	\$51.14	\$66.31	\$6,416.41	\$534.80	\$84.35	\$84.82	\$101.09	
4	Actual RPC	\$51.98	\$63.32	\$5,685.76	\$500.81	\$82.51	\$84.34	\$92.13	
	Difference	\$0.8408	(\$2.9857)	(\$730.6498)	(\$33.9912)	(\$1.8396)	(\$0.4847)	(\$8.9594)	
	Actual Bills	37,057	461	149	976	5,838	850	15	
	Decoupling Adjustment	\$31,157	(\$1,376)	(\$108,867)	(\$33,175)	(\$10,740)	(\$412)	(\$134)	(\$123,547)
May-22	Target RPC	\$46.20	\$55.45	\$6,166.40	\$550.56	\$79.23	\$64.55	\$84.52	
5	Actual RPC	\$47.00	\$53.32	\$5,688.57	\$495.00	\$73.58	\$63.23	\$81.97	
	Difference	\$0.7959	(\$2.1282)	(\$477.8285)	(\$55.5607)	(\$5.6417)	(\$1.3149)	(\$2.5474)	
	Actual Bills	37,160	439	152	962	5,870	857	17	
	Decoupling Adjustment	\$29,576	(\$934)	(\$72,630)	(\$53,449)	(\$33,117)	(\$1,127)	(\$43)	(\$131,724)
Jun-22	Target RPC	\$50.95	\$53.69	\$6,937.26	\$571.36	\$84.29	\$57.77	\$86.28	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Calculation: Year 1 (7/1/2021-6/30/22)

A	B	C	D	E	F	G	H	I	J
6	Actual RPC	\$50.37	\$51.95	\$5,564.70	\$509.80	\$76.66	\$53.47	\$83.22	
	Difference	(\$0.5800)	(\$1.7444)	(\$1,372.5644)	(\$61.5664)	(\$7.6309)	(\$4.3051)	(\$3.0642)	
	Actual Bills	36,878	439	163	1,004	5,875	855	16	
	Decoupling Adjustment	(\$21,389)	(\$766)	(\$223,728)	(\$61,813)	(\$44,831)	(\$3,681)	(\$49)	(\$356,257)
	Annual Total	\$394,005	(\$3,101)	(\$1,293,545)	(\$517,868)	(\$300,037)	(\$30,611)	(\$1,769)	(\$1,752,926)

Annual Deferral Calculation: DY 1									
A	B	C	D	E	F	G	H	I	J
		A + B		C / D			(E - F) or (E - G)	D * H	C - I
Current Year Adjustment	Prior Years' Deferral Balance	Total Adjustment	Total Company Target Revenues	Percent of Total	"Soft" Cap		Amount in excess of Cap %	Amount in excess of Cap \$	Annual Allowed Adjustment
\$ (1,752,926)	\$ -	\$ (1,752,926)	\$ 47,167,097	-3.72%	-3.00%	3.00%	-0.72%	\$ (337,913)	\$ (1,415,013)
								Deferral of excess to next year's calculation	Refund / (Charge) to Customers

Normalized Test Year Revenues (used to spread Annual Allowed Revenues Among the Classes)									
		D-05 & -06	D-10	G-1	G-2	G-3	T	V	Total
Jul-18		\$1,694,413	\$22,074	\$841,222	\$447,540	\$419,271	\$48,672	\$1,582	\$3,474,773
Aug-18		\$1,857,431	\$24,560	\$884,497	\$457,478	\$453,725	\$52,599	\$1,842	\$3,732,132
Sep-18		\$1,678,165	\$23,102	\$836,223	\$423,981	\$418,285	\$46,607	\$1,260	\$3,427,623
Oct-18		\$1,371,371	\$18,950	\$757,938	\$417,729	\$367,687	\$44,713	\$1,206	\$2,979,594
Nov-18		\$1,401,629	\$20,584	\$707,174	\$393,114	\$358,966	\$57,503	\$1,124	\$2,940,094
Dec-18		\$1,688,605	\$26,286	\$756,050	\$400,390	\$426,308	\$80,056	\$1,608	\$3,379,303
Jan-18		\$1,891,081	\$31,136	\$711,780	\$403,946	\$451,098	\$102,669	\$2,007	\$3,593,716
Feb-18		\$1,599,187	\$28,894	\$706,330	\$404,252	\$425,561	\$84,220	\$1,783	\$3,250,227
Mar-18		\$1,520,355	\$25,807	\$692,966	\$411,845	\$407,660	\$77,033	\$1,583	\$3,137,249
Apr-18		\$1,496,779	\$24,334	\$696,329	\$399,178	\$397,471	\$67,951	\$1,507	\$3,083,549
May-18		\$1,351,666	\$20,212	\$720,281	\$416,875	\$370,820	\$51,763	\$1,260	\$2,932,877
Jun-18		\$1,488,295	\$19,526	\$793,083	\$427,417	\$393,696	\$46,282	\$1,287	\$3,169,586
		\$19,038,977	\$285,466	\$9,103,872	\$5,003,744	\$4,890,546	\$760,069	\$18,047	\$39,100,722
	Percent of Total	48.69%	0.73%	23.28%	12.80%	12.51%	1.94%	0.05%	100.00%

Rate Class Allocation	DOD2	D10	G01	G02	G03	T00	V00	Total Refund / (Charge) to Customers Year 1
Class % of Total Test Year Distribution Revenues	48.69%	0.73%	23.28%	12.80%	12.51%	1.94%	0.05%	100.00%
Decoupling Adjustment	\$ (689,000)	\$ (10,331)	\$ (329,459)	\$ (181,080)	\$ (176,984)	\$ (27,506)	\$ (653)	\$ (1,415,013)

Indicative Monthly Bill Impacts		DOD2	D10	G01	G02	G03	T00	V00	Total
Jan 2023-Oct 2023	Monthly kWh	244,849,473	5,728,790	317,237,457	120,152,762	70,066,294	9,659,895	224,386	767,919,056
	\$/kWh	\$ 0.00281	\$ 0.00180	\$ 0.00104	\$ 0.00151	\$ 0.00253	\$ 0.00285	\$ 0.00291	
Monthly Use Per Customer (kWh)		554	1,087	175,950	10,309	1,000	939	1,169	
Monthly Impact		\$ 1.56	\$ 1.96	\$ 182.99	\$ 15.57	\$ 2.53	\$ 2.68	\$ 3.40	

**Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Reconciliation Period November 2022 – October 2023**

Line No	(a)	(b) D	(c) D-10	(d) G-1	(e) G-2	(f) G-3	(g) T	(h) V	(i) Total	(j) Reference
1	RDAF Beginning Balance as of 10/31/22	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Not applicable for first year
2	Prior Period Interest	0	0	0	0	0	0	0	0	Not applicable for first year
3	Total Prior Period RDAF Balance as of 10/31/22	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Line 1 + Line 2
4										
5	Decoupling Year 21/22 Refund/(Charge)	(\$689,000)	(\$10,331)	(\$329,459)	(\$181,080)	(\$176,984)	(\$27,506)	(\$653)	(\$1,415,013)	Attachment MST-2, Line 177
6										
7	Total RDAF Jan 2023 - Oct 2023*	<u>(\$689,000)</u>	<u>(\$10,331)</u>	<u>(\$329,459)</u>	<u>(\$181,080)</u>	<u>(\$176,984)</u>	<u>(\$27,506)</u>	<u>(\$653)</u>	<u>(\$1,415,013)</u>	Line 3 + Line 5
8										
9	kWh Sales Jan 2023 - Oct 2023*	244,849,473	5,728,790	317,237,457	120,152,762	70,066,294	9,659,895	224,386	767,919,056	Company forecast
10										
11	Rate (\$/kWh)	\$0.00281	\$0.00180	\$0.00104	\$0.00151	\$0.00253	\$0.00285	\$0.00291		Line 7 / Line 9
12										
13	*First Year RDAF rate calculation to be recovered over a 10 month period, January 2023 -October 2023. All remaining years to be recovered over a 12-month period.									

Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Reconciliation
Reconciliation Period November 2022 – October 2023

Residential Rate D								
Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
DY 21/22 Deficiency/(Surplus)	\$689,000							
Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0
Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
Jan-23	\$689,000	(\$79,235)	\$609,765	\$649,383	5.50%	31	\$3,033	\$3,033
Feb-23	\$612,799	(\$68,348)	\$544,451	\$578,625	5.50%	28	\$2,441	\$5,475
Mar-23	\$546,892	(\$67,946)	\$478,946	\$512,919	5.50%	31	\$2,396	\$7,871
Apr-23	\$481,342	(\$58,615)	\$422,727	\$452,035	5.50%	30	\$2,043	\$9,914
May-23	\$424,771	(\$59,823)	\$364,948	\$394,859	5.50%	31	\$1,844	\$11,759
Jun-23	\$366,792	(\$68,727)	\$298,065	\$332,429	5.50%	30	\$1,503	\$13,261
Jul-23	\$299,568	(\$81,509)	\$218,059	\$258,814	5.50%	31	\$1,209	\$14,470
Aug-23	\$219,268	(\$78,723)	\$140,546	\$179,907	5.50%	31	\$840	\$15,311
Sep-23	\$141,386	(\$63,980)	\$77,407	\$109,396	5.50%	30	\$495	\$15,805
Oct-23	\$77,901	(\$61,123)	\$16,778	\$47,340	5.50%	31	\$221	\$16,026
Total		(\$688,027)					\$16,026	
Projected Cumulative Collection		(\$688,027)						
Total Approved Collection		\$689,000						
(Over)/Under Collection, excluding interest		\$973						
Cumulative Interest		\$16,026						
Total (Over)/Under Collection, including interest		\$16,999						
Residential Rate D-10 Optional Peak Load Rate								
Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
DY 21/22 Deficiency/(Surplus)	\$10,331							
Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0
Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
Jan-23	\$10,331	(\$1,563)	\$8,767	\$9,549	5.50%	31	\$45	\$45
Feb-23	\$8,812	(\$1,361)	\$7,451	\$8,132	5.50%	28	\$34	\$79
Mar-23	\$7,486	(\$1,261)	\$6,224	\$6,855	5.50%	31	\$32	\$111
Apr-23	\$6,256	(\$942)	\$5,315	\$5,785	5.50%	30	\$26	\$137
May-23	\$5,341	(\$823)	\$4,518	\$4,929	5.50%	31	\$23	\$160
Jun-23	\$4,541	(\$833)	\$3,707	\$4,124	5.50%	30	\$19	\$179
Jul-23	\$3,726	(\$954)	\$2,772	\$3,249	5.50%	31	\$15	\$194
Aug-23	\$2,788	(\$927)	\$1,860	\$2,324	5.50%	31	\$11	\$205
Sep-23	\$1,871	(\$780)	\$1,092	\$1,481	5.50%	30	\$7	\$212
Oct-23	\$1,098	(\$868)	\$230	\$664	5.50%	31	\$3	\$215
Total		(\$10,312)					\$215	
Projected Cumulative Collection		(\$10,312)						
Total Approved Collection		\$10,331						
(Over)/Under Collection, excluding interest		\$19						
Cumulative Interest		\$215						
Total (Over)/Under Collection, including interest		\$233						
General Service Time-of-Use Rate G-1								
Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
DY 21/22 Deficiency/(Surplus)	\$329,459							
Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0
Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
Jan-23	\$329,459	(\$29,551)	\$299,908	\$314,684	5.50%	31	\$1,470	\$1,470
Feb-23	\$301,378	(\$27,649)	\$273,729	\$287,554	5.50%	28	\$1,213	\$2,683
Mar-23	\$274,943	(\$30,190)	\$244,753	\$259,848	5.50%	31	\$1,214	\$3,897
Apr-23	\$245,966	(\$29,710)	\$216,257	\$231,112	5.50%	30	\$1,045	\$4,942
May-23	\$217,301	(\$32,980)	\$184,321	\$200,811	5.50%	31	\$938	\$5,880
Jun-23	\$185,259	(\$34,957)	\$150,303	\$167,781	5.50%	30	\$758	\$6,638
Jul-23	\$151,061	(\$39,103)	\$111,959	\$131,510	5.50%	31	\$614	\$7,253
Aug-23	\$112,573	(\$38,592)	\$73,981	\$93,277	5.50%	31	\$436	\$7,688

* 64	Sep-23	\$74,417	(\$34,586)	\$39,831	\$57,124	5.50%	30	\$258	\$7,947
* 65	Oct-23	\$40,089	(\$32,610)	\$7,479	\$23,784	5.50%	31	\$111	\$8,058
66	Total		(\$329,927)					\$8,058	
67									
68	Projected Cumulative Collection		(\$329,927)						
69	Total Approved Collection		\$329,459						
70	(Over)/Under Collection, excluding interest		(\$468)						
71	Cumulative Interest		\$8,058						
72	Total (Over)/Under Collection, including interest		\$7,590						
73									

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**Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Reconciliation
Reconciliation of Period November 2022 – October 2023**

74	General Long Hour Service Rate G-2								
75	Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
76		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
77	DY 21/22 Deficiency/(Surplus)	\$181,080							
* 78	Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0
* 79	Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
* 80	Jan-23	\$181,080	(\$18,329)	\$162,751	\$171,916	5.50%	31	\$803	\$803
* 81	Feb-23	\$163,554	(\$16,788)	\$146,767	\$155,161	5.50%	28	\$655	\$1,458
* 82	Mar-23	\$147,421	(\$17,860)	\$129,561	\$138,491	5.50%	31	\$647	\$2,105
* 83	Apr-23	\$130,208	(\$16,721)	\$113,488	\$121,848	5.50%	30	\$551	\$2,655
* 84	May-23	\$114,039	(\$17,692)	\$96,347	\$105,193	5.50%	31	\$491	\$3,147
* 85	Jun-23	\$96,838	(\$18,308)	\$78,530	\$87,684	5.50%	30	\$396	\$3,543
* 86	Jul-23	\$78,927	(\$19,777)	\$59,150	\$69,038	5.50%	31	\$322	\$3,866
* 87	Aug-23	\$59,472	(\$19,764)	\$39,708	\$49,590	5.50%	31	\$232	\$4,097
* 88	Sep-23	\$39,940	(\$18,222)	\$21,717	\$30,829	5.50%	30	\$139	\$4,237
* 89	Oct-23	\$21,857	(\$17,971)	\$3,886	\$12,871	5.50%	31	\$60	\$4,297
90	Total		(\$181,431)					\$4,297	
91									
92	Projected Cumulative Collection		(\$181,431)						
93	Total Approved Collection		\$181,080						
94	(Over)/Under Collection, excluding interest		(\$351)						
95	Cumulative Interest		\$4,297						
96	Total (Over)/Under Collection, including interest		\$3,946						
97									
98	General Service Rate G-3								
99	Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
100		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
101	DY 21/22 Deficiency/(Surplus)	\$176,984							
* 102	Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0
* 103	Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
* 104	Jan-23	\$176,984	(\$19,387)	\$157,596	\$167,290	5.50%	31	\$781	\$781
* 105	Feb-23	\$158,378	(\$17,657)	\$140,721	\$149,549	5.50%	28	\$631	\$1,412
* 106	Mar-23	\$141,352	(\$18,168)	\$123,184	\$132,268	5.50%	31	\$618	\$2,030
* 107	Apr-23	\$123,802	(\$16,069)	\$107,733	\$115,767	5.50%	30	\$523	\$2,554
* 108	May-23	\$108,256	(\$16,815)	\$91,441	\$99,848	5.50%	31	\$466	\$3,020
* 109	Jun-23	\$91,907	(\$17,573)	\$74,334	\$83,121	5.50%	30	\$376	\$3,396
* 110	Jul-23	\$74,710	(\$19,586)	\$55,124	\$64,917	5.50%	31	\$303	\$3,699
* 111	Aug-23	\$55,428	(\$19,176)	\$36,252	\$45,840	5.50%	31	\$214	\$3,913
* 112	Sep-23	\$36,466	(\$16,627)	\$19,839	\$28,152	5.50%	30	\$127	\$4,040
* 113	Oct-23	\$19,966	(\$16,210)	\$3,756	\$11,861	5.50%	31	\$55	\$4,096
114	Total		(\$177,268)					\$4,096	
115									
116	Projected Cumulative Collection		(\$177,268)						
117	Total Approved Collection		\$176,984						
118	(Over)/Under Collection, excluding interest		(\$284)						
119	Cumulative Interest		\$4,096						
120	Total (Over)/Under Collection, including interest		\$3,812						
121									
122	Limited Total Electrical Living Rate T								
123	Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
124		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
125	DY 21/22 Deficiency/(Surplus)	\$27,506							
* 126	Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0

* 127	Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
* 128	Jan-23	\$27,506	(\$4,591)	\$22,915	\$25,211	5.50%	31	\$118	\$118
* 129	Feb-23	\$23,033	(\$3,989)	\$19,044	\$21,039	5.50%	28	\$89	\$207
* 130	Mar-23	\$19,133	(\$3,683)	\$15,450	\$17,291	5.50%	31	\$81	\$287
* 131	Apr-23	\$15,531	(\$2,692)	\$12,839	\$14,185	5.50%	30	\$64	\$351
* 132	May-23	\$12,903	(\$2,141)	\$10,762	\$11,832	5.50%	31	\$55	\$407
* 133	Jun-23	\$10,817	(\$1,967)	\$8,850	\$9,833	5.50%	30	\$44	\$451
* 134	Jul-23	\$8,894	(\$2,178)	\$6,716	\$7,805	5.50%	31	\$36	\$488
* 135	Aug-23	\$6,753	(\$2,118)	\$4,635	\$5,694	5.50%	31	\$27	\$514
* 136	Sep-23	\$4,662	(\$1,882)	\$2,779	\$3,720	5.50%	30	\$17	\$531
* 137	Oct-23	\$2,796	(\$2,290)	\$506	\$1,651	5.50%	31	\$8	\$539
138	Total		(\$27,531)					\$539	
139									
140	Projected Cumulative Collection		(\$27,531)						
141	Total Approved Collection		\$27,506						
142	(Over)/Under Collection, excluding interest		(\$25)						
143	Cumulative Interest		\$539						
144	Total (Over)/Under Collection, including interest		\$514						
145									

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Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Reconciliation
Reconciliation Period November 2022 – October 2023

146	Limited Commercial Space Heating Rate V								
147	Month	Beginning Balance	Collections	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
148		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
149	DY 21/22 Deficiency/(Surplus)	\$653							
* 150	Nov-22	\$0	\$0	\$0	\$0	0.00%	30	\$0	\$0
* 151	Dec-22	\$0	\$0	\$0	\$0	0.00%	31	\$0	\$0
* 152	Jan-23	\$653	(\$81)	\$572	\$613	5.50%	31	\$3	\$3
* 153	Feb-23	\$575	(\$76)	\$499	\$537	5.50%	28	\$2	\$5
* 154	Mar-23	\$501	(\$76)	\$425	\$463	5.50%	31	\$2	\$7
* 155	Apr-23	\$427	(\$64)	\$363	\$395	5.50%	30	\$2	\$9
* 156	May-23	\$365	(\$57)	\$307	\$336	5.50%	31	\$2	\$11
* 157	Jun-23	\$309	(\$58)	\$251	\$280	5.50%	30	\$1	\$12
* 158	Jul-23	\$252	(\$68)	\$184	\$218	5.50%	31	\$1	\$13
* 159	Aug-23	\$185	(\$61)	\$123	\$154	5.50%	31	\$1	\$14
* 160	Sep-23	\$124	(\$52)	\$72	\$98	5.50%	30	\$0	\$14
* 161	Oct-23	\$72	(\$58)	\$14	\$43	5.50%	31	\$0	\$14
162	Total		(\$653)					\$14	
163									
164	Projected Cumulative Collection		(\$653)						
165	Total Approved Collection		\$653						
166	(Over)/Under Collection, excluding interest		\$0						
167	Cumulative Interest		\$14						
168	Total (Over)/Under Collection, including interest		\$14						
169									
170	References:								
171	(a)	Attachment MST-2, Line 177							
172	(b)	Company forecast							
173	(c)	Column (a) + Column (b)							
174	(d)	[Column (a) + Column (c)] ÷ 2							
175	(e)	Prime Rate effective first of each month							
176	(f)	Days per month							
177	(g)	[Column (d) x ((Column (e) / 365) * Column (f))]							
178	(h)	Column (g) + Prior Month Column (h)							
179	*	Projected							

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Permanent Rate Design - July 1, 2021 - June 30, 2022 Decoupling Year Adjustment
Rates Effective January 1, 2023

Rate Class	Distribution Rate Component	August 1, 2022	Current	Proposed	Total Distribution Rates
		Current	REP/VMP	January 1, 2023	January 1, 2023
		<u>Rates</u>	<u>Factor</u>	<u>Factor</u>	<u>Rates</u>
		(a)	(b)	(c)	(d)
D	Customer Charge	\$14.74			\$14.74
	All kWh	\$0.05856	0.00001	0.00281	\$0.06138
	16 Hour Off Peak kWh	\$0.05056	0.00001	0.00281	\$0.05338
	Farm kWh	\$0.05527	0.00001	0.00281	\$0.05809
	D-6 kWh	\$0.05150	0.00001	0.00281	\$0.05432
D-10	Customer Charge	\$14.74			\$14.74
	On Peak kWh	\$0.12447	0.00001	0.00180	\$0.12628
	Off Peak kWh	\$0.00167	0.00001	0.00180	\$0.00348
G-1	Customer Charge	\$435.18			\$435.18
	Demand Charge	\$9.22			\$9.22
	On Peak kWh	\$0.00590	0.00001	0.00104	\$0.00695
	Off Peak kWh	\$0.00174	0.00001	0.00104	\$0.00279
	Credit for High Voltage Delivery > 2	(\$0.49)			(\$0.49)
G-2	Customer Charge	\$72.52			\$72.52
	Demand Charge	\$9.27			\$9.27
	All kWh	\$0.00233	0.00001	0.00151	\$0.00385
	Credit for High Voltage Delivery > 2	(\$0.49)			(\$0.49)
G-3	Customer Charge	\$16.66			\$16.66
	All kWh	\$0.05282	0.00001	0.00253	\$0.05536
T	Customer Charge	\$14.74			\$14.74
	All kWh	\$0.04743	0.00001	0.00285	\$0.05029
V	Minimum Charge	\$16.66			\$16.66
	All kWh	\$0.05433	0.00001	0.00291	\$0.05725

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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Bill Calculation - Residential Rate D

Usage	650	kWh	Rate Effective August 1, 2022	January 1, 2023 Proposed Rates	Current Bill	January 1, 2023 Proposed Bill
			(a)	(b)		
Customer Charge			\$14.74	\$14.74	\$14.74	\$14.74
Distribution Charge			\$0.05857	\$0.06138	\$38.07	\$39.90
Storm Recovery Adjustment			\$0.00000	\$0.00000	\$0.00	\$0.00
Transmission Charge			\$0.03635	\$0.03635	\$23.63	\$23.63
Stranded Cost Charge			(\$0.00051)	(\$0.00051)	-\$0.33	-\$0.33
System Benefits Charge			\$0.00792	\$0.00700	\$5.15	\$4.55
Electricity Consumption Tax			\$0.00000	\$0.00000	<u>\$0.00</u>	<u>\$0.00</u>
Subtotal Retail Delivery Services					\$81.25	\$82.48
Energy Service Charge			\$0.22228	\$0.22228	<u>\$144.48</u>	<u>\$144.48</u>
Total Bill					\$225.74	\$226.97
\$ increase in 650 kWh Total Residential Bill						\$1.23
% increase in 650 kWh Total Residential Bill						0.54%

(a) Order No. 26,661 July 29, 2022

(b) Rates proposed

date	total	d02	g3	g2	g1s	g1l	d10	m	v	t
1/1/2015	80341595.16	26842158.21	8269929.364	13129712.12	21220526.81	7391468.957	697558.6	455283.6	40538.89	2294418.609
2/1/2015	74185555.62	24155449	7781400.958	12135511.76	19947832.54	6905603.485	662438.6	366498.5	40700.49	2190120.198
3/1/2015	76748912.23	23324643.92	7927856.718	13003085.77	21518446.82	7943231.883	603219.9	403805.4	35012.77	1989608.992
4/1/2015	69088033.44	19238493.84	6887449.539	11949801.74	20471911.03	8392031.943	407482.4	373992.9	22749.88	1344120.133
5/1/2015	73396424	19255061.34	6998734.218	12649686.95	22206773.64	10565806.53	330498.1	371628	19621.92	998613.2933
6/1/2015	76723107.12	21206411.52	7158838.184	12964820.43	22788223.37	10920992.55	330923.4	381455.1	22351.46	949091.0766
7/1/2015	84831794.89	24658185.56	7984204.036	14101058.57	24574874.68	11725470.94	381155.5	359538.6	25489.66	1021817.361
8/1/2015	88369207	26097258.08	8282706.711	14600322.8	25088351.38	12437151.5	394125.9	392217.6	27454.13	1049618.819
9/1/2015	78214673.76	21931956.36	7322839.697	13371341.63	22938363.1	10943612.8	345148.1	390340.2	23303.68	947768.1687
10/1/2015	71756811.72	19419244.17	6772803.247	12404380.38	21798962.01	9536628.666	355061.3	396448.6	19306.26	1053977.08
11/1/2015	69065397.37	20187514.41	6604770.648	11587376.3	20261954.99	8320869.888	416052.9	366995.8	20831.48	1299030.968
12/1/2015	73061809.15	23106151.65	7099933.638	12106399.52	20480216.9	7713264.115	516124.2	378418.4	27357.45	1633943.249
1/1/2016	76383140.63	24296964.96	7675018.014	12966353.38	20924262.58	7657312.301	600691.2	353041.8	30391.54	1879104.883
2/1/2016	71330602.28	21858005.11	7268306.188	12016423.72	19923684.65	7596548.729	557964.4	368733.2	28937.88	1711998.427
3/1/2016	72034452.01	21072560.93	7256592.84	12361218.6	20710196.3	8225470.614	500392.1	358480.6	24592.75	1524947.247
4/1/2016	67618938.32	18660735.53	6644593.461	11719823.72	19964554.07	8605426.927	401444.8	389320.6	18922.82	1214116.449
5/1/2016	71803701.43	19066146.83	6899368.127	12512376.41	21736323.66	9851690.756	346361.5	392307.5	18335.5	980791.19
6/1/2016	77305986.41	21780095.63	7290439.034	1307206.29	22747264.37	10865738.47	343947.7	343829.2	22175.54	905290.1882
7/1/2016	88859023.5	26916339.37	8304149.464	14344717.81	25098799.92	12326895.91	416144.7	386271.5	29737.91	1035966.868
8/1/2016	89471971.76	26891979.76	8375274.472	14547345.49	25556678.01	12231580.65	416761	391681.1	32757.74	1027913.493
9/1/2016	76576284.66	21102548.66	7227171.408	12840100.51	22914022.05	10891980.17	341794.2	354935.7	25825.34	877906.6724
10/1/2016	70973491.46	19313391.41	6859233.985	12108202.03	21616089.53	9266812.878	361860.9	398495.8	24318.18	1025086.729
11/1/2016	69246681.95	20885280.72	6804065.529	11452674.84	20090098.06	7780738.513	450110.4	382241.7	24956.79	1350155.334
12/1/2016	75613594.87	24825490.74	7622166.364	12291877.06	20674996.6	7369723.696	598346.1	375716.1	31970.89	1823307.329
1/1/2017	76742652.83	24913697.21	7829116.894	12462723.47	20819736.73	7816569.756	623961.1	357723.4	34287.99	1884836.262
2/1/2017	68120762.34	21360845.69	6979309.92	11101666.77	18908121.13	7221938.563	535306.4	352477.7	31223.72	1629872.422
3/1/2017	73187524.29	22398103.04	7521922.046	12119666.39	20659322.21	7894101.935	545413	363045.2	33346.23	1652604.199
4/1/2017	67806577.76	19205004.64	6731246.685	11413765.85	20014160.36	8414829.087	402372.4	372802.3	24448.48	1227947.963
5/1/2017	71254406.67	19592636.62	6806108.909	11824977.53	21401531.69	9883721.572	349803.3	391427.3	22516.34	981683.4186
6/1/2017	77002401.78	22306640.48	7185170.79	12440521.76	22809905.02	10632467.36	355310.8	343830	25093.51	903462.0434
7/1/2017	84168939.47	25318621.66	7867353.139	13495466.4	24177117.46	11558292.78	392922.6	379496.9	28806.77	950861.8384
8/1/2017	81060040.55	23401046.79	7604599.823	13133446.52	23807242.4	11449261.05	368180.6	375036.7	26261.55	894965.0528
9/1/2017	74322323.75	20224026.45	6991263.418	12455704.23	22557588.13	10573079.87	327407.8	356532.3	22436	814285.6214
10/1/2017	73096820.7	20011838.4	6859102.577	12203612.06	22246861.28	10088062.95	347511.9	372039.4	22504.69	945287.4429
11/1/2017	70068393.97	21101076.11	6719642.899	11512504.82	20599093.18	7986309.029	463445.1	337390	23996.14	1324936.773
12/1/2017	78690536.21	26683539.21	7854362.406	12531114.57	21259637.4	7306294.58	675220.7	388386	34524.99	1957456.337
1/1/2018	81310992.18	27460653.31	8310183.439	12948871.71	21645783.27	7691498.219	714678.3	378045.6	37551.9	2123726.482
2/1/2018	68598724.48	21373581.13	6983141.03	11224146.53	19515885.34	7012714.871	545628.4	346110.5	28333.16	1569183.524
3/1/2018	72443544.49	21844132.17	7290182.562	12018682.99	21245991.79	7576812.398	532237.8	360754.8	27999.6	1546750.364
4/1/2018	68754821.76	19584401.93	6731540.855	11559208.65	20767331	8076012.085	433646	342455.2	24038.01	1236188.031
5/1/2018	72245136.68	19219397.83	6810839.611	12089880.48	22597187.64	9953817.92	335332.1	349462.9	21352.52	867865.6992
6/1/2018	77153019.68	22308010.34	7133081.612	12612371.88	23316954.86	10268045.85	341944.8	322557.6	25559.7	824493.1041
7/1/2018	90273997.04	28189915.62	8150223.525	14057424.99	26033514.29	12067774.74	411719.2	355129.9	31026.08	977268.7844
8/1/2018	90104451.98	27588508.08	8073725.495	14062860.88	26613653.61	12016068.24	405755.3	356312.2	27584.66	959983.497
9/1/2018	77852790.28	22254157.02	7040123.219	12486390.36	23728774.1	10797801.27	343773.5	32511.7	23531.45	854727.6714
10/1/2018	71955636.47	20098022	6741498.957	11749440.98	22423863.23	9141810.347	375709.3	325010.3	21747.34	1051534.02
11/1/2018	71287481.24	22319553.51	6997187.765	11138230.07	21047824.86	7473005.573	505188.8	310115.8	24665.91	1471708.942
12/1/2018	76407067.65	25341496.87	7666080.104	11838321	21492373.84	7272510.496	614940	347201.5	32312.44	1801831.449
1/1/2019	78674811.44	26121673.25	8070344.356	12183357.22	21847147.14	7479724.635	662279.8	344252.1	35494.49	1930538.4
2/1/2019	71083414.42	22785208.43	7350615.613	11070157.51	20334286.76	6898673.128	587881	304973.6	31948.72	1719669.701
3/1/2019	74274542.92	22627779.12	7562080.895	11712119.25	22129400.6	7687272.448	546402.8	355957.6	33132.65	1620397.531
4/1/2019	67607070.12	18898595.46	6578564.304	10800990.12	21210329.67	8234494.451	395159.8	329385.1	24458.04	1135093.154
5/1/2019	69943380.68	18800644.52	6542814.324	11204771.19	22521099.78	9295834.308	340990.6	319098.7	21382.17	896745.0318
6/1/2019	75302506.98	21335532.64	6856500.184	11752085.62	23625316.58	10234365.19	335496.6	351957.1	24104.4	787148.6469
7/1/2019	88649942.1	27505698.38	7946533.364	13337675.63	26292706.88	11899021.24	399265.2	331824.1	29618.48	907598.8326
8/1/2019	84966597.97	25574917.95	7699265.947	13162708.71	25661806.95	11282536.53	371597.1	327965.5	27777.77	858021.5192
9/1/2019	72283489.87	19609394.98	6621636.954	11781608.29	22895667.96	9956103.621	308011.5	345467.5	21748.62	743850.4908
10/1/2019	70428451.14	19495743.71	6481618.141	11444425.58	22185106.74	9145110.841	349666.6	356393.5	21462.29	948923.7116
11/1/2019	71000435.87	22042979.27	6813233.994	11174728.44	21082651.12	7692691.126	487728.7	327458.3	24210.04	1354754.851
12/1/2019	75672553.42	25291645.09	7446667.668	11769278.16	21384951.76	7188392.856	594580.7	294700.6	28386.53	1673950.054
1/1/2020	76800308.85	25224196.26	7682836.983	12086495.68	21363041.59	7778719.693	617403.9	313038.1	32175.56	1702401.053
2/1/2020	70954750.94	22467063.6	7124012.553	11188548.41	20387474.02	7372263.929	545774.1	317211.6	27928.35	1524474.381
3/1/2020	70334062.54	22603131.89	6676486.33	10528324.98	20620512.7	7667977.59	509251.7	326119.6	24790.21	1377467.536
4/1/2020	63469396.18	21107025.83	5529215.166	8952154.873	18990257.09	7001399.639	437787.1	301888.9	19763.31	1129904.312
5/1/2020	67898545.82	21806488.62	5726386.632	9677786.587	20679607.56	8347822.215	392607.8	333844	16940.35	917062.1012
6/1/2020	77290467.81	25937879.67	6503091.37	10921809.04	22354415.93	10038503.24	398405.8	283873.4	18625.27	833864.151
7/1/2020	90703521.94	31886129.37	7623556.815	12822216.37	25175805.01	11492349.2	482616.7	245107.6	22965.22	952775.6984
8/1/2020	86193209.58	29063470.13	7373810.793	12477209.42	24777153.58	10883373.12	441667.4	267076.8	21669.92	887778.4526

9/1/2020	71002500.85	21398219.15	6279158.805	10917149.46	21957982.73	9074968.885	351796.7	256720.8	16480.51	750023.8088
10/1/2020	70032019.29	20680136.58	6188685.221	10771577.5	22057487.09	8765126.974	400248.3	256110.4	14840.38	897806.8738
11/1/2020	68139409.46	22608376.52	6253491.305	10250482.61	19745389.63	7359768.537	488957.4	242918.6	17305.09	1172719.775
12/1/2020	74956123.88	26834246.26	7022549.018	10956133.86	20318548.76	7381221.744	658411.2	246507.9	22318.26	1516186.95
1/1/2021	77926868.97	27968954.77	7548987.195	11465202.54	20921585.9	7363102.412	734963.9	229996.4	24751.75	1669324.162
2/1/2021	71214006.04	24831515.66	6973964.809	10583524.65	19509728.72	6858463.629	662524.2	234813.3	22758.87	1536712.234
3/1/2021	72912123.78	23733190.19	7059036.485	11192599.39	20870146.46	7850398.437	586482.6	249235.6	21229.96	1349804.655
4/1/2021	65813240.55	19916519.57	6150496.171	10278932.05	19795442.33	8021756.705	433460	223243.6	17741.24	975648.8834
5/1/2021	72058008.21	21767108.76	6547158.874	11207529.4	21794056.59	9230715.106	421330.4	251256.9	18469.6	820382.5451
6/1/2021	78138132.36	25497401.41	6928700.33	11684585.42	22737652.29	9811218.289	459283.8	222642.7	19672.27	776975.799
7/1/2021	85046090	28190091.71	7471939.639	12465595.02	24072487.04	11282017.35	486870.8	225249.3	21676.95	830162.1822
8/1/2021	87175381.53	28515990.13	7639177.338	12820364.69	24366299.86	12240945.7	496539.3	241468.6	22797.54	831798.3307
9/1/2021	75790372.55	23177485.69	6735185.887	11718130.47	22302846.43	10472729.13	404418.7	239215.8	19017.34	721343.144
10/1/2021	70479295.96	20814952.2	6341408.678	11183239.82	21155465.13	9498985.139	416314.5	238499.1	16880.26	813551.1189
11/1/2021	69402772.21	22569906.44	6500632.241	10769002.31	19442659.25	8190708.23	548259.6	242428.5	19495.54	1119680.037
12/1/2021	76003970.96	26799385.24	7410352.024	11872509.95	19934484.29	7549769.97	692464.7	240027.7	24307.21	1480669.914
1/1/2022	80602974.83	29138579.64	8191977.284	12313711.63	20568631.54	7586117.756	802266	230039	30988.93	1740663.015
2/1/2022	71255014.58	24817217.5	7298082.505	10902436.99	18772499.49	7025223.274	677048	227804.6	26708.59	1507993.599
3/1/2022	71633856.78	23562359.47	7164095.169	11257326.27	20054176.17	7409871.127	598222	23759.23	1323189.889	
4/1/2022	65152862.27	20016451.94	6200600.445	10259299.88	18826661.19	8172204.643	457356.5	219406.4	18599.47	982281.8468
5/1/2022	71555409.95	20822459.3	6530571.823	11104750.77	22000791.05	9620722.576	440889.7	239768.1	18101.35	777355.362
6/1/2022	77305627.89	23954417.42	6862023.256	11598926.47	23163627.53	10314994.45	446274.1	231838.3	19034.37	714491.9857
7/1/2022	87312159.13	28419125.43	7659294.833	12532308.96	25384060.58	11753178.6	510710.8	239366.6	23391.63	790721.7143
8/1/2022	85714559.46	27457364.35	7520092.233	12593091.37	25231897.78	11386032.28	496561.4	239169	21497.99	768853.0621
9/1/2022	74758741.62	22331324.24	6535666.777	11591831.39	22825157.04	10123997.32	417616.3	231264.7	18108.42	683775.4579
10/1/2022	71828046.67	21323968.47	6380860.449	11482463.22	22102178.09	8976424.745	464872.5	246706.7	19513.54	831058.9563
11/1/2022	70541220.3	22941772.64	6402680.785	10913519.1	20449030.81	7906875.997	582165.8	230892	20622.36	1093660.765
12/1/2022	77376007.63	27339049.2	7195034.47	11704544.76	21001654.98	7640575.654	769542	238398.8	25619.95	1461587.781
1/1/2023	79158687.79	28197452.55	7663032.05	12138244.53	21209733.56	7204919.686	868468.3	238211.1	27857.65	1610768.294
2/1/2023	71411416.13	24323109.43	6978854.821	11117609.75	19670669.23	6914455.065	755961.8	224940.4	26115.7	1399699.928
3/1/2023	74474675.92	24179926.17	7181010.541	11827822.16	21305952.48	7722951.97	700735.5	237841.2	26134.73	1292301.166
4/1/2023	68571321.19	20859501.89	6351502.716	11073286.03	20145112.39	8422004.566	523223.2	229992.6	22159.76	944538.0657
5/1/2023	72829248.13	21289228.61	6646231.445	11716461.82	22090857.2	9620722.576	457288.6	237478.5	19753.31	751226.0322
6/1/2023	78543248.38	24458024.36	6945977.951	12124438.46	23297035.77	10314994.45	462883.2	229644.9	19973.82	690275.4473
7/1/2023	88998413.11	29006647.14	7741324.686	13097375.26	25845437.78	11753178.6	529785.2	237122.7	23331.46	764210.248
8/1/2023	87307154.3	28015164.51	7579304.574	13088724.33	25721739.48	11386032.28	515097.7	236947.3	21131.16	743012.9501
9/1/2023	76004862.24	22768526.03	6572036.501	12067767.91	23131787.72	10123997.32	433140.8	229135.7	17953	660517.2514
10/1/2023	72965799.4	21751892.22	6407018.434	11901031.75	22379450.23	8976424.745	482205.8	244455.8	19975.17	803345.2646
11/1/2023	71597294.93	23407883.95	6420811.552	11279471	20670232.41	7906875.997	603985.2	228804	21228.01	1058002.838
12/1/2023	78530022.23	27891092.26	7211016.857	12071513.71	21240114.05	7640575.654	798524.4	236261.8	26130.11	1414793.405
1/1/2024	80239110.68	28774198.33	7676389.277	12515914.46	21350817.03	7204919.686	912969.2	236094.3	28226.79	1539681.663
2/1/2024	72660752.98	25060715.57	7119829.26	11455029.11	19777595.58	6831475.065	808122.2	222958.7	26602.21	1358425.258
3/1/2024	75442728.67	24614543.72	7188276.626	12178958.34	21504769.7	7722951.97	736563.5	235763.7	26193.27	1234707.797
4/1/2024	69397206.14	21189250.21	6355799.223	11376131.85	20352034.26	8422004.566	549869.7	228000.6	22335.01	901780.7356
5/1/2024	73539640.2	21580106.26	6649523.273	12000830.27	22235746.73	9620722.576	480527.1	235438.9	20026.82	716718.1662
6/1/2024	79536645.46	24767835.35	6946860.604	12417182.58	23697021.92	10314994.45	486414.9	227689	20271.62	658375.0105
7/1/2024	90302946.14	29347464.77	7724625.543	13440726.25	26492307.37	11753178.6	556781.3	235119.8	23572.09	729170.452
8/1/2024	88960735.48	28348531.58	7562710.786	13591069.1	26565920.19	11386032.28	541335.8	234962.2	21287.86	708885.6495
9/1/2024	77503493.88	23033960.84	6556632.996	12569842.63	23888721.55	10123997.32	455142.3	227231.6	18052.1	629912.5416
10/1/2024	74391782.22	21991125.1	6392973.607	12507346.38	22987994.98	8976424.745	506748.7	242440.7	20072.65	766655.3726
11/1/2024	73012592.06	23642135.01	6405950.37	11969951.54	21194105.53	7906875.997	634833	226933	21344.6	1010463.035
12/1/2024	80099997.87	28154458.19	7195664.413	12934118.46	21723082.29	7640575.654	839441.2	234345.1	26266.03	1352046.564
1/1/2025	81910288.33	29026113.1	7660495.744	13412724.97	21917389.93	7204919.686	957470.4	234194	28363.71	1468616.827
2/1/2025	73670618.27	24960582.97	6968096.034	12244620.08	20226419.69	6914455.065	833327.8	221178.1	26362.86	1275575.651
3/1/2025	76867932.7	24792145.53	7173858.176	12961800.97	22007267.39	7722951.97	772391.3	233895.4	26286.67	1177335.24
4/1/2025	70707200.76	21337376.92	6342420.37	12101254.44	20819766.58	8422004.566	576515.6	226207.7	22410.79	859243.8276
5/1/2025	74896401.01	21735105.61	6636775.977	12727985.62	21735917.63	9620722.576	503764.6	23601.6	20097.06	682430.2819
6/1/2025	80918509.75	24940572.57	6933032.706	13228261.55	24118742.33	10314994.45	509945.4	252925.6	20341.29	626693.846
7/1/2025	91284130.96	29557968.77	7710934.055	14178529.71	26548442.85	11753178.6	583775.9	233312.5	23639.93	694348.6926
8/1/2025	89824061.45	28551198.93	7549470.469	14218878.38	26621414.58	11386032.28	567572.1	233169.6	21349.44	674975.6321
9/1/2025	78097701.02	23193950.11	6544390.594	13005901.1	23909178.55	10123997.32	477141.7	225510.8	18106.12	599524.7362
10/1/2025	74826710.35	22147799.72	6382153.906	12800899.49	22997222.02	8976424.745	531289.2	240618.1	20121.28	730181.8282
11/1/2025	73292682.2	23806021.8	6394429.974	12129488.8	21180421.94	7906875.997	665678.2	225239.5	21387.43	963138.6064
12/1/2025	80303253.59	28355270.77	7184111.898	12979025.97	21715484.75	7640575.654	880355.1	232608.9	26306.35	1289514.238
1/1/2026	82114368.22	29233111.32	7648675.227	13457743.23	21909200.01	7204919.686	1001970	232471.3	28403.42	1397873.785
2/1/2026	73807845.17	25123638.73	6954678.673	12286560.43	20196695.23	6914455.065	872009.2	219562.8	26400.47	1213844.556
3/1/2026	77048451.79	24968376.14	7163246.895	13007085.66	21999867.99	7722951.97	808217.2	232199.3	26323.09	1120183.495
4/1/2026	70847646.01	21484335.7	6332396.762	12144342.89	20797457.49	8422004.566	603159.3	224578.9	22443.05	816927.3409
5/1/2026	75077212.3	21888939.11	6627497.212	12774313.71	22738320.94	9620722.576	526999.8	231931.3	20125.25	648362.3792

6/1/2026	81136934.47	25111986.86	6922799.853	13276911.16	24136849.75	10314994.45	533473.3	224321.4	20365.8	595231.9537
7/1/2026	91576014.33	29766937.58	7701178.069	14231506.11	26597372.33	11753178.6	610767.6	231667.2	23661.88	659744.9697
8/1/2026	90108783.56	28752406.82	7540036.731	14272624.09	26669689.37	11386032.28	593805.4	231536.5	21369.44	641282.8977
9/1/2026	78301040.83	23352765.46	6535417.794	13055920.54	23922380.95	10123997.32	499137.9	223942	18124.96	569353.8352
10/1/2026	75013345.93	22303375.84	6374470.059	12851032.29	22999196.87	8976424.745	555826.3	238955.6	20139.57	693924.6299
11/1/2026	73456491.53	23968739.38	6386019.964	12177731.31	21159477.99	7906875.997	696519.8	223693.6	21403.95	916029.5518
12/1/2026	80509125.74	28554719.53	7175992.563	13031418.52	21700613.49	7640575.654	921265.2	231023.1	26321.33	1227196.427
1/1/2027	82321549.17	29438725.7	7640456.813	13510454.7	21893857.98	7204919.686	1046467	230896.9	28417.34	1327352.537
2/1/2027	73947232.65	25285502.86	6944525.418	12335426.55	20159801.93	6914455.065	910687.8	218085.6	26413.24	1152334.155
3/1/2027	77231507.36	25143459.35	7155916.87	13059602.66	21985300.91	7722951.97	844040.1	230647.3	26335.6	1063252.56
4/1/2027	70989803.91	21630315.64	6325243.607	12194086.56	20767980.29	8422004.566	629799.9	223087.5	22454.54	774831.2772
5/1/2027	75260093.98	22041794.58	6621170.436	12827566.25	22733557.42	9620722.576	550231.7	230401	21035.61	614514.458
6/1/2027	81357483.25	25282289.7	6915616.26	13332598.37	21477771.87	10314994.45	556997.7	222850.8	20374.85	563989.3337
7/1/2027	91870505.66	29974615.53	7694752.168	14291902.82	26639113.72	11753178.6	637755.7	230158	23669.81	625359.2834
8/1/2027	90395913.02	28952386.06	7533819.711	14333661.93	26710756.52	11386032.28	620034.8	230037.8	21376.48	607807.4464
9/1/2027	78505810.1	23510591.17	6529206.447	13112515.32	23928336.85	10123997.32	521130.1	222501.6	18131.53	539399.8384
10/1/2027	75201179.31	22458025.11	6369433.793	12907553.59	22993924.96	8976424.745	580359.2	237428.1	20146.01	657883.7791
11/1/2027	73620969.53	24130469.12	6380236.743	12231935.11	21131277.28	7906875.997	727357	222572.6	21409.86	869135.8709
12/1/2027	80716082.81	28753015.13	7170773.297	13090092.72	21678470.93	7640575.654	962170.7	22964.5	26326.76	1165093.13
1/1/2028	82380916.16	29643168.76	7635282.791	13536667.25	21741364.26	7204919.686	1090961	229448.1	28422.38	1270681.643
2/1/2028	74424376.5	25755264.31	7073344.662	12383833.07	20051235.61	6831475.065	965492.8	216725.4	26772.27	1120233.324
3/1/2028	77263879.46	25317569.35	7151364.194	13086252.2	21832869.84	7722951.97	879859.3	229217.5	26340.03	1017455.043
4/1/2028	70987148.28	21775464.22	6320522.511	12219566.95	20608079.81	8422004.566	656436.7	221712.9	22458.6	740902.101
5/1/2028	75282783.17	22193818.77	6617346.644	12855086.8	22586035.5	9620722.576	573459.5	228989.8	20139.29	587184.3008
6/1/2028	81408146.68	25451646.66	6911020.828	13361624.51	24007726.13	10314994.45	580517.9	221493.9	20378.09	538744.2294
7/1/2028	91978369.07	30181194.15	7691154.917	14323642.4	26514420.79	11753178.6	664739.5	228765	23672.66	597601.1405
8/1/2028	90496090.59	29151317.93	7530337.691	14365991.19	26585340.75	11386032.28	646259.8	228653.6	21379.01	580778.3541
9/1/2028	78541842.54	23667572.2	6525345.655	13142720.11	23784596.84	10123997.32	543117.7	221170.5	18133.88	515188.3434
10/1/2028	75227320.25	22611882.78	6366652.977	12937939.28	22844565.3	8976424.745	604887.4	236016.1	20148.29	628803.4391
11/1/2028	73638394.22	24291354.14	6376693.751	12261280.49	20970255.86	7906875.997	758189.4	220958.3	21411.96	831374.3802
12/1/2028	80773971.86	28950324.02	7168029.24	13122072.01	21520191.16	7640575.654	1003071	228214.8	26328.69	1115164.931
1/1/2029	82444540.32	29846608.69	7632709.536	13568836.74	21585295.32	7204919.686	1135451	228106.8	28424.18	1214188.185
2/1/2029	73955315.73	25606343.04	6932105.277	12389907.95	19828996.57	6914455.065	988033.9	215465.7	26419.44	1053588.797
3/1/2029	77300096.87	25490844.39	7149188.593	13118513.84	21676855.31	7722951.97	915674.3	227892.7	26341.61	971834.1746
4/1/2029	70987720.88	21919898.69	6317885.184	12250219.97	20444595.51	8422004.566	683069	220438.6	22660.05	707149.2631
5/1/2029	75308984.21	22345128.5	6615668.978	12887999.23	22434930.3	9620722.576	596682.8	227681.1	20140.6	560030.1289
6/1/2029	81462383.07	25620189.76	6908646.824	13396141.87	23864087.83	10314994.45	604033.5	220235	20379.25	513674.5429
7/1/2029	92090191.99	30386826.34	7689987.183	14361184.43	26386133.9	11753178.6	691718.5	227471.9	23673.68	570017.4269
8/1/2029	90600094.6	29349347.36	7529206.856	14404035.67	26456321.24	11386032.28	672479.9	227368.3	21379.92	553923.0883
9/1/2029	78580973.15	23823824.63	6523507.65	13178090.49	23637233.59	10123997.32	565100.3	219934.1	18134.72	491150.3717
10/1/2029	75256394.19	22765057.25	6365814.477	12973355.88	22691582.3	8976424.745	629410.5	234703.8	20149.11	599896.1759
11/1/2029	73658355.95	24451509.32	6375081.906	12295331.82	20805606.07	7906875.997	789016.6	219736.3	21412.71	793785.1889
12/1/2029	80834738.03	29146780	7167420.313	13159022.39	21358275.78	7640575.654	1043967	226959.5	26329.38	1065408.344
1/1/2030	82511322.42	30049180.83	7632381.515	13606096.86	21425651.13	7204919.686	1179937	226858.8	28424.82	1157872.162
2/1/2030	73963687.54	25765578.43	6929118.842	12424422.72	19658218.08	6914455.065	1026700	214293.1	26420.03	1004480.951
3/1/2030	77339128.57	25663395.99	7149068.472	13155579.04	21517257.31	7722951.97	951484.6	226659	26342.18	926389.9551
4/1/2030	70990582.65	22063713.77	6317051.418	12285303.91	20277527.41	8422004.566	709696.7	219251.5	22460.56	673572.7628
5/1/2030	75337722.44	22495818.26	6615850.02	12925533.94	22280241.82	9620722.576	619901.4	226461.4	20141.07	533051.9423
6/1/2030	81519211.68	25788025.88	6908198.485	13435370.29	23716856.97	10314994.45	627544.3	219061.4	20379.66	488780.2741
7/1/2030	92204943.43	30591636.05	7690926.713	14403708.32	26254252.99	11753178.6	718692.6	226266	23674.04	542608.1426
8/1/2030	90706915.89	29546591.94	7530116.952	14446990.83	26323697.96	11386032.28	698694.9	226169.1	21380.24	527241.6489
9/1/2030	78622295.65	23979442.74	6523427.143	13217902.56	23486247.12	10123997.32	587077.8	218780	18135.02	467285.9236
10/1/2030	75287521.7	22917636.68	6366664.56	13013101.51	22534975.95	8976424.745	653928.4	233478.5	20149.4	571161.9907
11/1/2030	73680032.95	24611028.23	6375150.456	12333435.53	20637327.93	7906875.997	819838.5	218595	21412.98	756368.2962
12/1/2030	80897515.52	29342492.11	7168670.316	13200256.51	21192724.76	7640575.654	1084857	225786.6	26329.63	1015823.368
1/1/2031	82580372.68	30250995.64	7634009.65	13647747.63	21262431.73	7204919.686	1224417	225692.3	28425.05	1101733.575
2/1/2031	73973809.97	25924157.19	6927913.841	12462899.52	19483855.7	6914455.065	1065362	213196.7	26420.24	955549.6617
3/1/2031	77380138.11	25835315.38	7150741.753	13196793.13	21354075.86	7722951.97	987290.2	225505.1	26342.38	881122.3854
4/1/2031	70994970.88	22206987.03	6317792.609	12324217.51	20106875.48	8422004.566	736319.5	218140.9	22460.75	640172.5998
5/1/2031	75368205.43	22645965.48	6617655.034	12967066.44	22121970.1	9620722.576	643115	225319.9	20141.23	506249.7409
6/1/2031	81577834.5	25955242.75	6909433.993	13478675.98	23566033.58	10314994.45	651050	217962.5	20379.81	464061.4232
7/1/2031	92321783.81	30795725.13	7693709.77	14450546.73	26118778.1	11753178.6	745661.5	225136.5	23674.17	515373.2875
8/1/2031	90815731.7	29743148.41	7532813.775	14494201.62	26187470.92	11386032.28	724904.7	225045.6	21380.35	500734.0361
9/1/2031	78665070.42	24134504.22	6524886.515	13261566.34	23331637.44	10123997.32	609050	217698.5	18135.12	443594.999
10/1/2031	75319984.24	23069693.75	6368994.91	13056603.57	22374746.21	8976424.745	678440.9	232329.8	20149.5	542600.8826
11/1/2031	73702753.06	24769988.09	6376693.278	12375057.82	20465421.44	7906875.997	850655	217524.7	21413.07	719123.7031
12/1/2031	80961595.62	29537550.45	7171552.002	13245212.44	21023538.09	7640575.654	1125741	224686.4	26329.72	966410.0044
1/1/2032	82650961.84	30452144.43	7637355.858	13693216.21	21095637.07	7204919.686	1268893	224597.7	28425.13	1045772.424
2/1/2032	74489038.43	26416531.42	7066795.383	12528978.75	19362338.46	6831475.065	1122801	212167.6	26774.77	921175.948

3/1/2032	77422438.62	26006678.12	7153992.166	13241619.2	21187310.94	7722951.97	1023091	224421.6	26342.45	836031.4643
4/1/2032	71000258.56	22349782.79	6319919.903	12366467.14	19932639.72	8422004.566	762937.2	217097.7	22460.81	606948.775
5/1/2032	75399781.1	22795634.44	6620889.92	13012083.51	21960115.08	9620722.576	666323.4	224247.3	20141.29	479623.5249
6/1/2032	81637594.37	26121913.26	6912153.179	13525537.68	23411617.63	10314994.45	674550.5	216929.8	20379.86	439517.99
7/1/2032	92440021.09	30999178.19	7698117.861	14501150.24	25979709.23	11753178.6	772625.1	224074.7	23674.21	488312.8618
8/1/2032	90925863.33	29939097.21	7537086.539	14545128.28	26047640.1	11386032.28	751109.2	223989.1	21380.39	474400.2496
9/1/2032	78708686.65	24289073.72	6527705.159	13308595.23	23173404.54	10123997.32	631016.8	216681.1	18135.16	420077.5979
10/1/2032	75353187.97	23221289.02	6372632.458	13103389.34	22210893.12	8976424.745	702947.9	231249	20149.54	514212.8523
11/1/2032	73725960.24	24928453.29	6379538.977	12419757.63	20289886.58	7906875.997	881465.9	216517.3	21413.11	682051.4091
12/1/2032	81026391.53	29732030.18	7175876.256	13293425.45	20850715.79	7640575.654	1166620	223650.5	26329.75	917168.2531
1/1/2033	82707859.23	30652703.49	7642221.818	13716587.84	20925267.19	7204919.686	1313364	223566.9	28425.16	1000802.838
2/1/2033	73982898.34	26239645.24	6930023.523	12526514.65	19124379.31	6914455.065	1142671	211198.2	26420.34	867591.4712
3/1/2033	77449443.54	26177547.43	7158639.242	13264954.02	21016962.56	7722951.97	1058886	223400.8	26342.48	797578.9523
4/1/2033	70989144.21	22492154.93	6323275.562	12388593.66	19754820.14	8422004.566	789549.7	216114.5	22460.84	580170.2915
5/1/2033	75412494.1	22944879.01	6625392.455	13035795.5	21794676.78	9620722.576	689526.7	223236.3	20141.31	458123.5273
6/1/2033	81677318.62	26288098.54	6916188.591	13550361.41	23253609.11	10314994.45	698045.8	215956	20379.88	419684.8606
7/1/2033	92537161.23	31202066.34	7703968.062	14528103.66	25837046.36	11753178.6	799583.5	223073.2	23674.23	466467.256
8/1/2033	91014719.16	30134506.01	7542758.621	14572399.1	25904205.54	11386032.28	777308.3	222992.3	21380.41	453136.6371
9/1/2033	78732296.39	24443205.65	6531731.572	13333911.59	23011548.42	10123997.32	652978.2	215721	18135.17	401067.4363
10/1/2033	75367584.61	23372473.48	6377431.947	13128703.29	22043416.66	8976424.745	727449.4	230228.8	20149.56	491306.6918
11/1/2033	73733134.26	25086478.09	6383543.565	12444063.87	20110723.37	7906875.997	912271.4	215566.2	21413.12	652198.7174
12/1/2033	81076156.28	29925994.72	7181484.083	13319768.31	20674257.86	7640575.654	1207493	222672.2	26329.76	877580.773
1/1/2034	82765452.14	30852737.2	7648440.698	13743208.7	20751322.07	7204919.686	1357830	222593.1	28425.17	955975.2001
2/1/2034	73981097.09	26396675.38	6933007.777	12551144.52	18939265.3	6914455.065	1181317	210282.2	26420.35	828529.2593
3/1/2034	77476946.12	26347976.77	7164530.917	13291373.14	20843030.74	7722951.97	1094676	222435.9	26342.48	763627.7598
4/1/2034	70978206.31	22634149.03	6327726.545	12413573.57	19573416.73	8422004.566	816157.1	215185	22460.85	553532.8785
5/1/2034	75425551.63	23093744.79	6631025.699	13062492.8	21625655.23	9620722.576	712724.7	222280.2	20141.32	436764.318
6/1/2034	81717430.99	26453850.42	6921398.782	13578236.61	23092008.03	10314994.45	721535.8	215035	20379.88	399992.0653
7/1/2034	92634914.63	31404449.81	7711105.756	14558293.25	25690789.49	11753178.6	826536.5	222125.8	23674.24	444761.1938
8/1/2034	91104124.75	30329432.15	7549680.62	14602868.91	25757167.23	11386032.28	803502	222049.1	21380.41	432012.0859
9/1/2034	78756057.58	24596946.2	6536837.513	13362129.69	22846069.09	10123997.32	674934.2	214812.3	18135.18	382196.0934
10/1/2034	75382052.73	23523290.44	6383270.322	13156853.36	21872316.84	8976424.745	751945.5	229262.9	20149.56	468538.9932
11/1/2034	73740167.6	25244108.65	6388584.971	12471032.41	19927931.79	7906875.997	943071.3	214665.5	21413.13	622483.8656
12/1/2034	81125978.36	30119497.98	7188240.604	13348933.31	20494164.28	7640575.654	1248361	221745.7	26329.76	838130.5822
1/1/2035	82823288.6	31052300.35	7655870.833	13772719.52	20573801.7	7204919.686	1402291	221670.6	28425.17	911289.5106
2/1/2035	73979208.32	26553295.21	6937099.584	12578389.34	18750567.4	6914455.065	1219959	209414.2	26420.35	789608.2917
3/1/2035	77504518.34	26518011.69	7171537.899	13320537.93	20665515.43	7722951.97	1130462	221521.5	26342.49	727637.886
4/1/2035	70967053.05	22775803.97	6333159.68	12441094.71	19388429.5	8422004.566	842759.3	214303.9	22460.85	527036.5358
5/1/2035	75438545.15	23242270.7	6637673.102	13091849.98	21453050.39	9620722.576	735917.6	221373.6	20141.32	415545.8969
6/1/2035	81757518.51	26619213.15	6927663.25	13608831.78	22926814.42	10314994.45	745020.5	214161.4	20379.89	380439.6044
7/1/2035	92732845.31	31606380.12	7719399.145	14591368.67	25540938.62	11753178.6	853484.2	221227	23674.24	423194.6749
8/1/2035	91193651.38	30523924.72	7557725.086	14636192.67	25606525.15	11386032.28	829690.3	221154.2	21380.42	411026.5958
9/1/2035	78779583.31	24750334.9	6542913.501	13392937.59	22676966.54	10123997.32	696884.8	213950	18135.18	363463.5694
10/1/2035	75396215.26	23673777	6390042.477	13187535.71	21697593.68	8976424.745	776436.2	228346.1	20149.56	445909.7566
11/1/2035	73746706.34	25401384.51	6394558.836	12500379.03	19741511.85	7906875.997	973865.7	213810.4	21413.13	592906.8525
12/1/2035	81175483.47	30312586.24	7196030.443	13380620.16	20310435.09	7640575.654	1289223	220865.8	26329.76	798817.6814
1/1/2036	82880983.35	31251439.98	7664391.003	13804814.1	20392706.12	7204919.686	1446747	220794.4	28425.18	866745.7699
2/1/2036	74510877.87	27069340	7083396.793	12632345.97	18616099.24	6831475.065	1280030	208589.6	26774.81	762826.3033
3/1/2036	77531794.85	26687691.32	7179549.399	13352159.48	20484416.67	7722951.97	1166242	220652.6	26342.49	691789.3321
4/1/2036	70955349.68	22917153.18	6339477.892	12470890.56	19199858.47	8422004.566	869356.4	213466.6	22460.85	500681.2627
5/1/2036	75451125.46	23390490.25	6645234.64	13123589.01	21276862.3	9620722.576	759105.2	220511.9	20141.33	394468.264
6/1/2036	81797227.98	26784224.81	6934878.519	13641863.59	22758028.23	10314994.45	768500.1	213331	20379.89	361027.4776
7/1/2036	92830580.23	31807901.59	7728735.001	14627030.29	25387493.77	11753178.6	880426.7	220372.3	23674.24	401767.6995
8/1/2036	91282931.93	30718025.97	7566782.473	14672075	25452279.32	11386032.28	855873.3	220303	21380.42	390180.1669
9/1/2036	78802542.08	24903405.86	6549865.365	13426068.14	22504240.77	10123997.32	718830	213129.6	18135.18	344869.8642
10/1/2036	75409748.76	23823965.13	6397657.948	13220489.96	21519247.13	8976424.745	800921.5	227473.8	20149.56	423418.982
11/1/2036	73752446.86	25558339.81	6401375.301	12531859.98	19551463.55	7906875.997	1004655	212996.7	21413.13	563467.679
12/1/2036	81224350.22	30505299.39	7204754.213	13414571.27	20123070.26	7640575.654	1330079	220028.3	26329.77	759642.0697
1/1/2037	82938205.34	31450196.69	7673896.695	13839229.61	20208035.28	7204919.686	1491198	219960.3	28425.18	822343.9771
2/1/2037	73973816.81	26865460.47	6948181.118	12639658.32	18362419.99	6914455.065	1297227	207804.5	26420.35	712190.0912
3/1/2037	77558461.4	26857049.52	7188469.794	13385989.45	20299734.45	7722951.97	1202017	219825.1	26342.49	656082.0973
4/1/2037	70942808.16	23058225.61	6346597.355	12502731.93	19007703.59	8422004.566	895948.3	212668.9	22460.85	474467.0603
5/1/2037	75462991.79	23538432.39	6653623.897	13157470.65	21097090.91	9620722.576	782287.7	219690.9	20141.33	373531.4194
6/1/2037	81836255.15	26948918.43	6942955.134	13677088.05	22585649.51	10314994.45	791974.4	212539.6	20379.89	341755.6851
7/1/2037	92927797.8	32009052.68	7739015.389	14665019.95	25230454.93	11753178.6	907363.9	219557.8	23674.24	380480.2674
8/1/2037	91371649.8	30911772.61	7576757.958	14710261.33	25294429.72	11386032.28	882051	219491.6	21380.42	369472.7991
9/1/2037	78824647.78	25056188.65	6557611.53	13461290.93	22327891.76	10123997.32	740770	212347.5	18135.18	326414.9778
10/1/2037	75422374.13	23973882.65	6406038.352	13255491.48	21337277.23	8976424.745	825401.4	226642	20149.56	401066.6693
11/1/2037	73757126.89	25715004.2	6408956.445	12565264.86	19357786.92	7906875.997	1035438	212220.6	21413.13	534166.3449

12/1/2037	81272300.88	30697672.19	7214325.684	13450564.06	19932069.78	7640575.654	1370931	219229.4	26329.77	720603.748
1/1/2038	82994668.43	31648605.83	7684297.21	13875738.89	20019789.22	7204919.686	1535644	219164.5	28425.18	778084.1333
2/1/2038	73969752.67	27021071.44	6954993.576	12673240.23	18162970.47	6914455.065	1335853	207055.3	26420.35	673692.8584
3/1/2038	77584245.95	27026115.76	7198216.005	13421813.01	20111468.77	7722951.97	1237786	219035.4	26342.49	620516.1821
4/1/2038	70929178.99	23199046.44	6354445.204	12536420.41	18811964.9	8422004.566	922535.1	211907.6	22460.85	448393.9276
5/1/2038	75473883.59	23686122.42	6662765.703	13193287.71	20913736.26	9620722.576	805465.1	218907.2	20141.33	352735.363
6/1/2038	81874336.18	27113322.78	6951815.248	13714293.75	22409678.22	10314994.45	815443.6	211784	20379.89	322624.2268
7/1/2038	93024219.12	32209866.93	7750155.038	14705113.91	25069822.1	11753178.6	934296	218779.9	23674.24	359332.3788
8/1/2038	91459530.22	31105196.61	7587568.965	14750530.84	25132976.37	11386032.28	908223.6	218716.7	21380.42	348904.4925
9/1/2038	78845652.09	25208709.12	6566080.934	13498406.05	22147919.56	10123997.32	762704.7	211600.3	18135.18	308098.91
10/1/2038	75433848.84	24123553.8	6415115.355	13292345.19	21151683.96	8976424.745	849876.1	225847.3	20149.56	378852.8188
11/1/2038	73760518.46	25871403.61	6417234.297	12600410.92	19160481.9	7906875.997	1066217	211479	21413.13	505002.8495
12/1/2038	81319093.98	30889734.95	7224669.618	13488405.17	19737433.67	7640575.654	1411777	218465.9	26329.77	681702.7159
1/1/2039	83038976.27	31846698.3	7695513.346	13894430.99	19827967.91	7204919.686	1580085	218403.8	28425.18	742532.3727
2/1/2039	73953856.91	27176404.82	6962554.371	12690519.41	17959937.06	6914455.065	1374475	206339.1	26420.35	642751.8998
3/1/2039	77596628.53	27194915.84	7208715.425	13440331.47	19919619.64	7722951.97	1273551	218280.2	26342.49	591920.2021
4/1/2039	70901308.23	23339637.79	6362957.704	12553916.13	18612642.38	8422004.566	949117	211179.4	22460.85	427392.4266
5/1/2039	75468561.62	2383582.46	6672594.32	13211971.88	20276798.33	9620722.576	828637.4	218157.5	20141.33	335955.8084
6/1/2039	81895276.61	27277463.12	6961390.723	13733788.32	22230114.37	10314994.45	838907.8	211061.1	20379.89	307176.811
7/1/2039	93102645.17	32410373.75	7762079.293	14726212.78	24905595.26	11753178.6	961223	218035.7	23674.24	342272.6201
8/1/2039	91529288.11	31298326.08	7599143.142	14771811.97	24967919.25	11386032.28	934391	217975.1	21380.42	332308.8884
9/1/2039	78849585.72	25360989.96	6575211.261	13518102.98	21964324.15	10123997.32	784634.3	210885.2	18135.18	293305.3428
10/1/2039	75429227.84	24272999.02	6424829.033	13311983.67	20962467.33	8976424.745	874345.6	225086.6	20149.56	360941.3868
11/1/2039	73750054.42	26027560.83	6426149.226	12619215.43	18959548.52	7906875.997	1096990	210769	21413.13	481532.3334
12/1/2039	81352827.65	31081514.4	7235719.965	13508731.14	19539161.92	7640575.654	1452617	217734.8	26329.77	650442.7266
1/1/2040	83082209.3	32044501.3	7707475.572	13915025.97	19632571.37	7204919.686	1624521	217675.3	28425.18	707094.1704
2/1/2040	74501097.96	27716676.93	7114933.421	12734111.49	17812517.98	6831475.065	1437178	205653.1	26774.82	621776.7141
3/1/2040	77607829.25	27363472.49	7219904.251	13460665.63	19724187.06	7722951.97	1309311	217556.8	26342.49	563437.2773
4/1/2040	70872074.8	23480019.09	6372078.823	12573095.95	18409736.05	8422004.566	975693.9	210481.8	22460.85	406503.7818
5/1/2040	75461980.35	23980832.04	6683051.914	13232422.5	20536277.13	9620722.576	851804.8	217439.2	20141.33	319288.8844
6/1/2040	81914985.75	27441361.68	6971621.597	13755093.1	22046957.98	10314994.45	862367	210368.4	20379.89	291841.6624
7/1/2040	93179976.81	32610599.07	7774722.443	14749236.26	24737774.44	11753178.6	988144.9	217322.3	23674.24	325324.4963
8/1/2040	91597916.21	31491185.79	7611416.783	14795000.47	24799258.38	11386032.28	960553.3	217264.2	21380.42	315824.5332
9/1/2040	78852152.49	25513051.2	6584947.632	13539534.33	21777105.5	10123997.32	806558.9	210199.6	18135.18	278622.8306
10/1/2040	75423197.54	24422239.82	6435126.579	13333321.58	20769627.34	8976424.745	898810	224357.2	20149.56	343140.7244
11/1/2040	73738057.99	26183495.98	6435648.649	12639619.18	18754986.79	7906875.997	1127758	210088.1	21413.13	458172.0883
12/1/2040	81385148.08	31273034.08	7247418.479	13530756.49	19337254.55	7640575.654	1493453	217033.7	26329.77	619292.5696
1/1/2041	83124164.55	32242038.84	7720122.528	13937360.71	19433599.59	7204919.686	1668952	216976.5	28425.18	671769.5273
2/1/2041	73918013.51	27486330.15	6979675.335	12730106.87	17543118.61	6914455.065	1451703	204994.9	26420.35	581208.9699
3/1/2041	77617654.6	27531805.78	7231726.124	13482660.71	19525171	7722951.97	1345066	216862.2	26342.49	535067.4084
4/1/2041	70841300.88	23620207.56	6381759.059	12593816.67	18203245.88	8422004.566	1002266	209812.4	22460.85	385727.9927
5/1/2041	75453953.8	24127888.42	6694087.359	13254489.8	20342172.65	9620722.576	874967.3	216749.8	20141.33	302734.591
6/1/2041	81933274.95	27605038.19	6982454.852	13778055.03	21860209.02	10314994.45	885821.3	209703.5	20379.89	276618.7814
7/1/2041	93256014.32	32810565.9	7788026.357	14774022.09	24566359.63	11753178.6	1015062	216637.6	23674.24	308488.0071
8/1/2041	91665217.39	31683797.7	7624333.507	14819935.88	24626993.75	11386032.28	986710.7	216581.7	21380.42	299451.4271
9/1/2041	78853173.92	25664910.59	6595241.44	13562554.61	21586263.64	10123997.32	828478.4	209541.3	18135.18	264051.3733
10/1/2041	75415583.41	24571290.21	6445961.215	13356216.74	20573163.99	8976424.745	923269.5	223656.7	20149.56	325450.8316
11/1/2041	73724364.85	26339226.95	6445685.965	12661488.72	18546796.7	7906875.997	1158521	209434.1	21413.13	434922.1149
12/1/2041	81415881.01	31464314.95	7259713.527	13554339.85	19131711.54	7640575.654	1534283	216360.1	26329.77	588252.2437
1/1/2042	83164662.56	32439332.28	7733399.806	13961290.93	19231052.6	7204919.686	1713378	216305.2	28425.18	636558.4425
2/1/2042	73897717.41	27640961.38	6989130.098	12752137.13	17329333.57	6914455.065	1490310	204362.6	26420.35	550606.9986
3/1/2042	77625933.33	27699933.6	7244131.041	13506179.68	19322571.48	7722951.97	1380817	216195.8	26342.49	506810.5946
4/1/2042	70808829.07	23760218.52	6391954.46	12615951.54	17993171.9	8422004.566	1028833	209169.1	22460.85	365065.06
5/1/2042	75444317.3	24274766.97	6705655.278	13278041.17	20144484.93	9620722.576	898124.9	216087.2	20141.33	286292.9283
6/1/2042	81949977.07	27768510.19	6993843.374	13802538.48	21669867.51	10314994.45	909270.7	209064.3	20379.89	261508.1677
7/1/2042	93330580.55	33010294.68	7801939.369	14800426.41	24391350.82	11753178.6	1041974	215979.2	23674.24	291763.1527
8/1/2042	91731016.88	31876181.37	7637843.189	14846476.01	24451125.36	11386032.28	1012863	215925.5	21380.42	283189.5697
9/1/2042	78852491.68	25816583.96	6606049.452	13587034.84	21391798.56	10123997.32	850393.1	208908.3	18135.18	249590.9711
10/1/2042	75406230.53	24720165.94	6457291.321	13380543.06	20373077.28	8976424.745	947723.9	222983	20149.56	307871.7084
11/1/2042	73708829.19	26494769.64	6456219.711	12684705.67	18334978.25	7906875.997	1189279	208805.1	21413.13	411782.413
12/1/2042	81444871.67	31655375.65	7272559.136	13579355.7	18922532.88	7640575.654	1575109	215712.2	26329.77	557321.75
1/1/2043	83203543.78	32636400.63	7747258.954	13986688.49	19024930.35	7204919.686	1757800	215659.3	28425.18	601460.9168
2/1/2043	73875638.37	27795394.29	6999120.358	12775498.94	17111964.66	6914455.065	1528913	203754.2	26420.35	520118.0233
3/1/2043	77632513.15	27867871.86	7257074.439	13531100.8	19116388.5	7722951.97	1416562	215554	26342.49	478666.8365
4/1/2043	70774519.34	23900065.64	6402625.839	12639387.86	17779514.11	8422004.566	1055396	208550	22460.85	344514.9832
5/1/2043	75432924.15	24421481.41	6717715.18	13302958.59	19943213.91	9620722.576	921277.9	215449.4	20141.33	269963.8961
6/1/2043	81964943.35	27931793.34	7005745.146	13828422.83	21475933.46	10314994.45	932715.4	208449	20379.89	246509.8213
7/1/2043	93403517.92	33209803.68	7816415.388	14828321.21	24212748.03	11753178.6	1068881	215345.4	23674.24	275149.933
8/1/2043	91795159	32068354.28	7651901.088	14874494.26	24271653.21	11386032.28	1039011	215293.6	21380.42	267038.9614

9/1/2043	78849964.69	25968085.47	6617333.08	13612860.11	21193710.25	10123997.32	872302.9	208298.7	18135.18	235241.6239
10/1/2043	75395000.88	24868880.35	6469079.739	13406188.17	20169367.2	8976424.745	972173.6	222334.2	20149.56	290403.3548
11/1/2043	73691321.02	26650138.3	6467212.834	12709164.5	18119531.44	7906875.997	1220033	208199.3	21413.13	388752.982
12/1/2043	81471982.05	31846232.89	7285914.225	13605692.13	18709718.59	7640575.654	1615930	215088.1	26329.77	526501.0877
1/1/2044	83240666.01	32833260.94	7761656.648	14013439.18	18815232.87	7204919.686	1802217	215037.2	28425.18	566476.95
2/1/2044	74446866.48	28360223.11	7156825.62	12824867.42	16951594.66	6831475.065	1594250	203168	26774.82	497688.1929
3/1/2044	77637258.16	28035634.86	7270516.443	13557315.42	18906622.07	7722951.97	1452303	214935.6	26342.49	450636.134
4/1/2044	70738246.63	24039761.16	6413738.121	12664025.03	17562272.48	8422004.566	1081953	207953.3	22460.85	324077.7629
5/1/2044	75419643.45	24568044.02	6730230.826	13329136.74	19738359.61	9620722.576	944426.1	214834.7	20141.33	253747.4945
6/1/2044	81978040.8	28094901.69	7018122.518	13855600.29	21278406.85	10314994.45	956155.4	207856	20379.89	231623.7424
7/1/2044	93474685.45	33409109.3	7831413.111	14857592.1	24030551.22	11753178.6	1095784	214734.4	23674.24	258648.3481
8/1/2044	91857504.57	32260332.09	7666467.118	14903877.45	24088577.32	11386032.28	1065154	214684.5	21380.42	250999.602
9/1/2044	78845466.8	26119427.78	6629057.714	13639927.67	20991998.76	10123997.32	894208	207711	18135.18	221003.3318
10/1/2044	75381770.95	25017445.35	6481293.127	13433051.59	19962033.76	8976424.745	996618.5	221708.6	20149.56	273045.7708
11/1/2044	73671723.93	26805345.73	6478632.069	12734770.8	17900456.28	7906875.997	1250781	207615.1	21413.13	365833.8228
12/1/2044	81497088.59	32036901.67	7299741.922	13633248.97	18493268.68	7640575.654	1656745	214486.2	26329.77	495790.2569
1/1/2045	83275901.77	33029928.51	7776553.999	14041440.64	18601960.16	7204919.686	1846630	214437	28425.18	531606.5415
2/1/2045	73825626.02	28103722.79	7020553.401	12825814.34	16666475.17	6914455.065	1606103	202602.5	26420.35	459479.0601
3/1/2045	77640046.51	28203235.41	7284421.243	13584726.2	18693272.18	7722951.97	1488039	214339	26342.49	442718.4868
4/1/2045	70699898.85	24179316.11	6425259.79	12689772.89	17341447.02	8422004.566	1108507	207377.7	22460.85	303753.3987
5/1/2045	75404357.81	24714465.88	6743169.653	13356481.2	19529922.05	9620722.576	967569.8	214241.6	20141.33	237643.7235
6/1/2045	81989150.21	28257847.9	7030941.657	13883974.23	21077287.68	10314994.45	979590.8	207283.7	20379.89	216849.9309
7/1/2045	93543956.77	33608226.29	7846895.417	14888136.47	23844760.44	11753178.6	1122682	214144.8	23674.24	242258.3978
8/1/2045	91917928.66	32452128.95	7681505.211	14934524.03	23901897.66	11386032.28	1091292	214096.5	21380.42	235071.4916
9/1/2045	78838884.7	26270622.36	6641192.211	13668145.34	20786664.02	10123997.32	916108.5	207143.7	18135.18	206876.0947
10/1/2045	75366429.84	25165871.73	6493901.488	13461043.1	19751076.96	8976424.745	1021059	221104.6	20149.56	255798.9563
11/1/2045	73649933.44	26960403.47	6490447.509	12761439.82	17677752.75	7906875.997	1281525	207051	21413.13	343024.9348
12/1/2045	81520080.27	32227395.51	7314009.035	13661936.28	18273183.12	7640575.654	1697557	213905	26329.77	465189.2579
1/1/2046	83309136.62	33226417.15	7791915.988	14070601.02	18385112.2	7204919.686	1891038	213857.5	28425.18	496849.6919
2/1/2046	73797471.92	28257643.64	7031928.728	12852592.04	16438354.62	6914455.065	1644692	202056.4	26420.35	429329.0724
3/1/2046	77640768.67	28370685.11	7298756.577	13613245.64	18476338.82	7722951.97	1523771	213762.8	26342.49	394913.8953
4/1/2046	70659375.19	24318740.41	6437162.442	12716550.37	17117037.76	8422004.566	1135055	206821.6	22460.85	283541.8903
5/1/2046	75386961.57	24860756.97	6756502.285	13384907.03	19317901.21	9620722.576	990708.9	213668.7	20141.33	221652.5831
6/1/2046	81998164.28	28420643.38	7044172.047	13913457.74	20872575.94	10314994.45	1003022	206730.8	20379.89	202188.3867
7/1/2046	936111218.08	33807167.99	7862828.802	14919862.04	23655375.65	11753178.6	1149576	213575	23674.24	225980.0823
8/1/2046	91976318.83	32643757.58	7696982.822	14966342.67	23711614.22	11386032.28	1117426	213528.4	21380.42	219254.6301
9/1/2046	78830116.41	26421679.54	6653708.469	13697430.11	20577706.07	10123997.32	938004.4	206595.4	18135.18	192859.9126
10/1/2046	75348877.68	25314169.19	6506877.745	13490081.48	19536496.81	8976424.745	1045494	220520.9	20149.56	238662.9115
11/1/2046	73625855.39	27115321.94	6502632.11	12789095.17	17451420.86	7906875.997	1312264	206505.8	21413.13	320326.3183
12/1/2046	81540857.04	32417726.63	7328685.571	13691673	18049461.92	7640575.654	1738363	213342.2	26329.77	434698.0904
1/1/2047	83340267.25	33422739.33	7807710.969	14100837.43	18164689.02	7204919.686	1935442	213297.2	28425.18	462206.4008
2/1/2047	73767090.08	28411417.09	7043703.697	12880346.94	16206650.19	6914455.065	1683276	201528.4	26420.35	399292.0802
3/1/2047	77639325.79	28537994.42	7313493.251	13642794.84	18255822	7722951.97	1559499	213205.7	26342.49	367222.3591
4/1/2047	70616584.66	24458043.1	6449420.382	12744284.36	16889044.66	8422004.566	1161600	206283.9	22460.85	263443.2383
5/1/2047	75367359.39	25006926.31	6770202.16	13414337.59	19102297.13	9620722.576	1013844	213114.6	20141.33	205774.0733
6/1/2047	82004986.12	28583298.48	7057786.064	13943972.33	20664271.66	10314994.45	1026448	206196	20379.89	187639.11
7/1/2047	93676366.59	34005946.45	7879182.938	14952685.43	23462396.88	11753178.6	1176465	213024	23674.24	209813.4014
8/1/2047	92032573.49	32835229.56	7712870.499	14999250.8	23517727.03	11386032.28	1143555	212978.9	21380.42	203549.0175
9/1/2047	78819069.71	26572608.69	6666581.027	13727706.98	20365124.9	10123997.32	959895.8	206065	18135.18	178954.7855
10/1/2047	75329024.07	25462346.57	6520197.357	13520093.29	19318293.28	8976424.745	1069925	219956.2	20149.56	221637.6363
11/1/2047	73599404.6	27270110.6	6515161.373	12817667.86	17221460.62	7906875.997	1342999	205978.3	21413.13	297737.9733
12/1/2047	81559328.44	32607906.14	7343744.355	13722385.87	17822105.1	7640575.654	1779165	212799.6	26329.77	404316.7547
1/1/2048	83369200.28	33618906.39	7823910.248	14132074.98	17940690.59	7204919.686	1979841	212755.1	28425.18	427676.6688
2/1/2048	74360556.71	29001014.29	7206270.639	12934019.6	16033329.29	6831475.065	1751248	201017.4	26774.82	375407.6047
3/1/2048	77635628.46	28705172.88	7328604.818	13673302.4	18031721.73	7722951.97	1595222	212666.4	26342.49	339643.8786
4/1/2048	70571444.91	24597232.33	6462010.293	12772908.68	16657467.76	8422004.566	1188140	205763.5	22460.85	243457.4423
5/1/2048	75345464.88	25152982.14	6784245.175	13444703.52	18883109.74	9620722.576	1036974	212578.2	20141.33	190008.1941
6/1/2048	82009528.01	28745822.59	7071758.641	13975446.97	20452374.84	10314994.45	1049870	205678.3	20379.89	173202.1007
7/1/2048	93739309.26	34204572.67	7895930.322	14986531.16	23265824.13	11753178.6	1203349	212490.4	23674.24	193758.3553
8/1/2048	92086600.57	33026555.38	7729141.485	15033173.68	23320236.09	11386032.28	1169680	212446.7	21380.42	187954.6538
9/1/2048	78805661.1	26723418.33	6679786.766	13758908.05	20148920.51	10123997.32	981782.8	205551.4	18135.18	165160.7134
10/1/2048	73506787.23	25610411.87	6533838.046	13551012.05	19096466.39	8976424.745	1094352	219409.3	20149.56	240723.1306
11/1/2048	73570503.86	27424778.05	6528013.046	12847095.31	16987872.01	7906875.997	1373729	205467.4	21413.13	275259.8994
12/1/2048	81575412.34	32797944.11	7359160.683	13754008.42	17591112.64	7640575.654	1819963	212273.1	26329.77	374045.2508
1/1/2049	83395851	33814928.63	7840487.754	14164245.73	17713116.94	7204919.686	2024237	212229.9	28425.18	393260.4952
2/1/2049	73699309.87	28718560.26	7068350.073	12938523.06	15732489.68	6914455.065	1760432	200522.4	26420.35	339557.0836
3/1/2049	77629595.46	28872229.11	7344067.198	13704703.55	17804038	7722951.97	1630941	212144	26342.49	312178.4534
4/1/2049	70523881.13	24736315.55	6474910.973	12802363.26	16422307.02	8422004.566	1214675	205259.2	22460.85	223584.5026
5/1/2049	75321199.66	25298931.92	6798609.396	13475941.84	18660339.08	9620722.576	1060100	212058.5	20141.33	174354.9454

6/1/2049	82011710.21	28908224.28	7086066.962	14007817.15	20236885.45	10314994.45	1073288	205176.7	20379.89	158877.3587
7/1/2049	93799961.39	34403056.6	7913045.885	15021330.68	23065657.37	11753178.6	1230230	211973.4	23674.24	177814.9439
8/1/2049	92138316.42	33217744.62	7745771.422	15068043.38	23119141.39	11386032.28	1195800	211931	21380.42	172471.5391
9/1/2049	78789814.63	26874116.22	6693304.625	13790971.55	19929092.93	10123997.32	1003665	205053.6	18135.18	151477.6964
10/1/2049	75282092.68	25758372.41	6547779.494	13582777.25	18871016.14	8976424.745	1118775	218879.2	20149.56	187919.3946
11/1/2049	73539082.98	27579332.15	6541166.842	12877320.64	16750655.05	7906875.997	1404455	204972.1	21413.13	252892.0972
12/1/2049	81589034.15	32987849.75	7374912.04	13786480.25	17356484.54	7640575.654	1860756	211762.6	26329.77	343883.5781
1/1/2050	83420142.29	34010815.44	7857419.701	14197287.88	17481968.04	7204919.686	2068628	211720.8	28425.18	358957.8805
2/1/2050	73661763.65	28871947.14	7081175.889	12968826.67	15490033.61	6914455.065	1799003	200042.5	26420.35	309859.0792
3/1/2050	77621152.93	29039171.04	7359858.446	13736939.36	17572770.8	7722951.97	1666655	211637.4	26342.49	284826.0839
4/1/2050	70473825.26	24875299.56	6488103.074	12832593.46	16183562.45	8422004.566	1241207	204770.2	22460.85	203824.4189
5/1/2050	75294492.34	25444782.49	6813274.809	13507995.25	18433985.16	9620722.576	1083222	211554.4	20141.33	158814.3274
6/1/2050	82011460.13	29070511.36	7100690.191	14041024.16	20017803.5	10314994.45	1096702	204690.1	20379.89	144664.8842
7/1/2050	93858246.03	34601407.41	7930506.768	15057021.55	22861896.62	11753178.6	1257106	211471.9	23674.24	161983.1673
8/1/2050	92187644.81	33408806.02	7762738.072	15103798.06	22914442.95	11386032.28	1221917	211430.8	21380.42	157099.6733
9/1/2050	78771461.05	27024709.45	6707115.365	13823841.28	19705642.09	10123997.32	1025544	204570.7	18135.18	137905.7344
10/1/2050	75254872.63	25906234.85	6562003.168	13615333.85	18641942.53	8976424.745	1143193	218364.9	20149.56	171226.428
11/1/2050	73505077.95	27733780.05	6554604.221	12908292.03	16509809.73	7906875.997	1435177	204491.6	21413.13	230634.5661
12/1/2050	81600125.75	33177631.46	7390977.847	13819746.3	17118220.81	7640575.654	1901545	211267.3	26329.77	313831.7373
1/1/2051	83442003.86	34206575.43	7874684.369	14231145.13	17247243.92	7204919.686	2113015	211226.7	28425.18	324768.8248
2/1/2051	73621692.28	29025221.1	7094309.659	12999870.9	15243993.67	6914455.065	1837571	199576.7	26420.35	280274.0705
3/1/2051	77610233.41	29206005.89	7375958.496	13769956.05	17337920.15	7722951.97	1702366	211145.8	26342.49	257586.7697
4/1/2051	70421215.17	25014190.58	6501568.898	12863549.41	15941234.08	8422004.566	1267734	204295.6	22460.85	184177.1916
5/1/2051	75265277.73	25590540.07	6828223.107	13540811.43	18204047.96	9620722.576	1106340	211065.2	20141.33	143386.34
6/1/2051	82008711.54	29232691	7115609.292	14075014.39	19795129	10314994.45	1120111	204217.8	20379.89	130564.677
7/1/2051	93914092.79	34799633.42	7948292.035	15093546.81	22654541.87	11753178.6	1283978	210985.1	23674.24	146263.0253
8/1/2051	92234516.11	33599747.57	7780021.079	15140381.23	22706140.73	11386032.28	1248029	210945.1	21380.42	141839.0565
9/1/2051	78750537.2	27175204.55	6721201.385	13857465.87	19478568.05	10123997.32	1047418	204101.9	18135.18	124444.8274
10/1/2051	75225065.06	26054005.33	6576492.089	13648631.5	18409245.56	8976424.745	1167606	217865.6	20149.56	154644.2312
11/1/2051	73468430.26	27888128.34	6568308.223	12939962.14	16265336.04	7906875.997	1465894	204025.1	21413.13	208487.3066
12/1/2051	81608624.99	33367296.95	7407339.278	13853756.28	16876321.44	7640575.654	1942330	210786.3	26329.77	283889.7281
1/1/2052	83461371.41	34402216.46	7892261.847	14265765.94	17008944.55	7204919.686	2157398	210746.9	28425.18	290693.3274
2/1/2052	74236251.76	29639731.37	7261434.761	13056876.31	15057721.85	6831475.065	1908178	199124.4	26774.82	254934.95
3/1/2052	77596775.23	29372740.27	7392348.948	13803704.48	17099486.04	7722951.97	1738072	210668.2	26342.49	230460.511
4/1/2052	70365994.02	25152994.3	6515292.223	12895185.52	15695321.87	8422004.566	1294257	203834.6	22460.85	164642.8202
5/1/2052	75233496.19	25736210.42	6843437.508	13574342.54	17970527.49	9620722.576	1129453	210590	20141.33	128070.9831
6/1/2052	82003403.73	29394769.75	7130806.776	14109738.79	19568861.94	10314994.45	1143516	203759	20379.89	116576.7372
7/1/2052	93967437.28	34997742.31	7966382.504	15130854.29	22443593.13	11753178.6	1310846	210512.1	23674.24	130654.5181
8/1/2052	92278866.63	33790576.65	7797601.786	15177741.22	22494234.75	11386032.28	1274137	210473.3	21380.42	126689.6886
9/1/2052	78726985.16	27325607.45	6735546.524	13891798.3	19247870.8	10123997.32	1069288	203646.3	18135.18	111094.9755
10/1/2052	75192613.21	26201689.46	6591230.665	13682624.15	18172925.22	8976424.745	1192016	217380.3	20149.56	138172.8039
11/1/2052	73429086.33	28042383.06	6582263.252	12972287.59	16017234	7906875.997	1496607	203571.6	21413.13	186450.3185
12/1/2052	81614474.83	33556853.33	7423979.021	13888464.04	16630786.44	7640575.654	1983110	210318.9	26329.77	254057.5506

SUPPLEMENTAL

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Data Requests - Set 1

Date Request Received: 10/12/23
Request No: DOE 1-3

Date of Response: 11/06/23
Respondent: James Bonner
Pamela Moriarty
Adam Yusuf
Tyler Culbertson

REQUEST:

Ref. Attachment ARMY/TJC-2, p. 4 of 6 (Bates 22).

- a. Please explain the source of the distribution revenue inputs as well as the equivalent bill inputs.
- b. Please provide live Excel sheets showing all sources of data used to determine the distribution revenue and equivalent bill inputs on Bates p. 22.
- c. Are any of the inputs for either the distribution revenues or the equivalent bills based on estimates? If so, please list all inputs that are based on estimates, as well as the basis for the estimate.
- d. Were there any changes to the customer charge for each class during Decoupling Year 2? If so, please list the changes and explain how they were incorporated into the equivalent bill calculations.
- e. Does the Company use any methods other than equivalent bills to determine customer counts for each class? If so, why were equivalent bills used in this case? Are there any filings where the Company uses a different method to determine customer counts?
- f. At the prehearing conference on October 10, 2023, the Company explained that in equivalent bill math, the numbers have always varied widely for a number of reasons in that process. Please explain the different reasons why numbers may vary when calculating equivalent bills.

RESPONSE:

- a. The source of the distribution revenue inputs will be the Bills and Volumes reports for Cogsdale (Legacy program through September 2022) and the Revenue Reports for SAP (October 2022-current).

Docket No. DE 23-081 Request No. DOE 1-3 (Supplemental)

- b. Please see Attachment 23-081 DR 1.3.b.zip which will be submitted through the State of New Hampshire Secure File Exchange Server due to the size of the data sources.
- c. For the month of September 2022, there were two billing cycles (Cycle 19 and MV-90) during the end of the month that were based on estimates. The Distribution Revenues and Equivalent Bill Counts for those two cycles were derived from the actual September 2021 data. Please refer to the Company's response to Audit Request #5 for further details.
- d. Yes, there were changes to charges to rates G-1, G-2, G-3, T, and V throughout the Decoupling Year 2. These changes do not impact Equivalent Bill Calculation.
- e. Yes, the monthly revenue reports use the "ActvLog" to determine customer counts. Equivalent bill counts are used in this filing per the approved tariff.
- f. Please see the Company's Response to DOE 1-1.

SUPPLEMENTAL RESPONSE:

- a. The source of the distribution revenue **and equivalent bill** inputs is the Bills and Volumes reports for Cogsdale (Legacy program through September 2022) and the Revenue Reports for SAP (October 2022-current). The company is providing an updated Attachment 23-081 DR 1.3.b.zip which includes the Optional Demand Revenues previously omitted, and excludes the Cycle 19 and MV-90 data that was estimated and initially included (see Response DOE 1-3(c)).
- b. During the RDAF audit, it was determined that the optional demand revenues were omitted from the G-1 and G-2 rate classes for October 2022 through January 2023. Please see Supplemental Attachment 23-081 DR 1.3.b.zip which contains the live Excel workbooks for the applicable months and amended RDAF schedules.
- c. No other inputs were based on estimates.
- e. As mentioned in DOE1-7(a), Attachment KMJ/DSD/GHT-TEMP-5 (Settlement) in Docket No. DE 23-039 utilized a normalized calendar month estimate for billing determinants including equivalent bill counts. The Company doesn't use a different method in any other filings.

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Data Requests - Set 1

Date Request Received: 10/12/23
Request No: DOE 1-9

Date of Response: 10/23/23
Respondent: Adam Yusuf

REQUEST:

Ref. Attachment ARMY/TJC-2 p. 6 of 6 (Bates 24).

Does the prior year's deferral balance of \$337,913 (undercollection) in column B include any interest or carrying charges? If not, please explain why.

RESPONSE:

The prior year's deferral balance of \$337,913 incorrectly omitted interest. Please see Attachment 23-081 DOE 1-9.xlsx for the calculation of interest on the prior year's deferral balance. This Attachment will be included with subsequent RDAF filings as Attachment ARMY/TJC-5. Additionally, Attachment ARMY/TJC-2 Page 6, included with the response to DOE 1-23 now reflects the correct balance of \$360,276. This correction does not have an impact on the proposed RDAF rates.

Liberty Utilities (Granite State) Corp. d/b/a Liberty
Revenue Decoupling Reconciliation
Deferred Balance Interest Calculation

Deferred Balance from Decoupling Year 1									
Month	Beginning Balance	Deferred	Approved for Recovery	(Over)/Under Ending Balance	Balance Subject to Interest	Interest Rate	Days per Month	Interest	Cumulative Interest
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
DY 21/22 Deficiency/(Surplus)									
Nov-22	\$0			\$0	\$0	6.25%	30	\$0	\$0
Dec-22	\$0			\$0	\$0	7.00%	31	\$0	\$0
Jan-23	\$0	(\$337,913)		(\$337,913)	(\$168,957)	7.50%	31	(\$1,076)	(\$1,076)
Feb-23	(\$338,989)			(\$338,989)	(\$338,989)	7.75%	28	(\$2,015)	(\$3,092)
Mar-23	(\$341,005)			(\$341,005)	(\$341,005)	7.75%	31	(\$2,245)	(\$5,336)
Apr-23	(\$343,249)			(\$343,249)	(\$343,249)	8.00%	30	(\$2,257)	(\$7,593)
May-23	(\$345,506)			(\$345,506)	(\$345,506)	8.00%	31	(\$2,348)	(\$9,941)
Jun-23	(\$347,854)			(\$347,854)	(\$347,854)	8.25%	30	(\$2,359)	(\$12,299)
Jul-23	(\$350,212)			(\$350,212)	(\$350,212)	8.25%	31	(\$2,454)	(\$14,753)
Aug-23	(\$352,666)			(\$352,666)	(\$352,666)	8.50%	31	(\$2,546)	(\$17,299)
Sep-23	(\$355,212)			(\$355,212)	(\$355,212)	8.50%	30	(\$2,482)	(\$19,781)
Oct-23	(\$357,694)			(\$357,694)	(\$357,694)	8.50%	31	(\$2,582)	(\$22,363)
Total								(\$22,363)	

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Data Requests - Set 1

Date Request Received: 10/12/23
Request No: DOE 1-17

Date of Response: 10/24/23
Respondent: Adam Yusuf

REQUEST:

Reference Attachment ARMY/TJC-2 p. 6 (Bates 24), line 155, Column J, please explain how this is calculated, and provide the provision in the tariff for such calculation.

RESPONSE:

The full detail of this calculation is provided in the Company's tariff, original page 139, under the section labeled "Calculation of Annual Allowed Revenue Decoupling Adjustment".

In responding to this data request, the Company identified an error in the Excel formula for the Annual Allowed Adjustment referenced above. Specifically, the formula omitted the Prior Years' Deferral Balance which did not exist previously. This correction did not impact the proposed rates.

Please see Attachment 23-081 DOE 1-23.xlsx for the amended calculation.

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 12/5/23
Request No: DOE TS 1-5

Date of Response: 12/22/23
Respondent: Adam Yusuf
Jim Bonner

REQUEST:



DE 23-081 DOE TS
Data Requests Attach

Ref. Attachment ARMY/TJC-2 Pages 2-4 of 6 (Bates 20-22) and Attachment 23-081 DOE 1-19.xlsx

Please provide the reasons for the following discrepancies between Attachment ARMY/TJC-2 and Attachment 23-081 DOE 1-19.xlsx.

- a. The 2018 equivalent bill numbers provided in Attachment DOE 1-19 appear to match those on page 3 of Attachment ARMY/TJC-2. However, the 2018 revenues in Attachment DOE 1-19 do not match the 2018 revenues that appear on page 2 of Attachment ARMY/TJC-2.
- b. The equivalent bill numbers and revenues for the decoupling year (July 2022 - June 2023) do not appear consistent between Attachment DOE 1-19 and page 4 of Attachment ARMY/TJC-2. For example, the Rate D equivalent bill numbers for July 2022-December 2022 do not match between the two attachments, but the Rate D equivalent bill numbers for January 2023-June 2023 do match between the two attachments. The reverse is true for revenues. The Rate D revenues for July 2022-December 2022 appear to match between the two attachments, while the Rate D revenues for January 2023-June 2023 do not match. The Rate D September 2022 equivalent bill and revenue numbers provided in the supplemental response to DOE 1-3 do not match either of the other two attachments (ARMY/TJC-2 or DOE 1-19). Please see the attached Excel sheet, with highlighted cells to represent numbers that differ between Attachment DOE 1-19 and ARMY/TJC-2 (numbers that were corrected in the supplemental DOE 1-3 response that now match the ARMY/TJC-2 numbers are not highlighted).

RESPONSE:

- a. The bills and revenue data in Attachment DOE 1-19 are the actual accounting month bills and billed revenue data from the Company's billing system. The bills and revenue data

on Attachment ARMY/TJC-2, p. 3, are the normalized accounting month bills and revenue data from the Docket DE 19-064 general rate case. The equivalent bills match because the normalization process used for the rate case did not alter them, but the revenues do not because they were affected by normalization process.

- b. Please see Attachment 23-081 DOE TS 1-5.1.xlsx for the comparison described above and explanations of the variances.

Please see Attachment 23-081 DOE TS 1.5.2.xlsx for the September Revenue omitted from ARMY/TJC-2 and referenced in the variance explanations in Attachment 23-081 DOE TS 1-5.1.xlsx.

Actual	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
	DOD2	D10	G01	G02	G03	T00	V00	
Attachment ARMY/TIC-2, Page 4 of 6								
Dist. Revenues								
Jul-22	\$ 2,207,329	\$ 26,615	\$ 913,135	\$ 521,444	\$ 492,235	\$ 52,190	\$ 1,490	\$ 4,214,438
Aug-22	\$ 2,397,174	\$ 31,057	\$ 953,770	\$ 493,175	\$ 522,907	\$ 52,797	\$ 1,720	\$ 4,452,601
Sep-22	\$ 1,747,984	\$ 24,150	\$ 759,197	\$ 502,929	\$ 465,136	\$ 34,774	\$ 1,424	\$ 3,535,595
Oct-22	\$ 1,875,712	\$ 19,694	\$ 501,424	\$ 402,815	\$ 384,895	\$ 50,252	\$ 1,070	\$ 3,235,863
Nov-22	\$ 1,664,998	\$ 22,413	\$ 528,119	\$ 513,268	\$ 406,216	\$ 44,840	\$ 994	\$ 3,180,858
Dec-22	\$ 1,827,360	\$ 23,738	\$ 1,214,006	\$ 461,517	\$ 413,838	\$ 46,365	\$ 1,410	\$ 3,988,234
Jan-23	\$ 2,133,410	\$ 30,678	\$ 910,614	\$ 525,388	\$ 529,792	\$ 91,118	\$ 1,242	\$ 4,222,242
Feb-23	\$ 2,153,318	\$ 34,257	\$ 983,552	\$ 546,011	\$ 525,831	\$ 100,761	\$ 1,649	\$ 4,345,379
Mar-23	\$ 1,912,779	\$ 28,174	\$ 864,222	\$ 503,799	\$ 472,573	\$ 74,561	\$ 1,587	\$ 3,857,694
Apr-23	\$ 1,699,655	\$ 24,315	\$ 943,032	\$ 444,129	\$ 425,432	\$ 50,216	\$ 1,316	\$ 3,588,106
May-23	\$ 1,529,453	\$ 21,777	\$ 854,618	\$ 458,535	\$ 384,606	\$ 51,984	\$ 966	\$ 3,301,939
Jun-23	\$ 1,566,497	\$ 21,411	\$ 820,098	\$ 476,662	\$ 414,391	\$ 37,738	\$ 1,036	\$ 3,337,832
	\$ 22,715,679	\$ 308,279	\$ 10,245,789	\$ 5,849,673	\$ 5,437,851	\$ 687,606	\$ 15,905	\$ 45,260,762
Attachment 23-081 DOE 1-19								
Jul-22	\$ 2,206,831	\$ 26,404	\$ 845,907	\$ 518,847	\$ 489,182	\$ 52,190	\$ 1,490	\$ 4,140,850
Aug-22	\$ 2,397,672	\$ 31,268	\$ 1,020,998	\$ 495,773	\$ 525,960	\$ 52,797	\$ 1,720	\$ 4,526,189
Sep-22	\$ 1,755,676	\$ 24,150	\$ 759,197	\$ 502,929	\$ 466,309	\$ 35,001	\$ 1,424	\$ 3,544,687
Oct-22	\$ 1,875,712	\$ 19,694	\$ 501,424	\$ 402,815	\$ 384,895	\$ 50,252	\$ 1,070	\$ 3,235,863
Nov-22	\$ 1,664,998	\$ 22,413	\$ 528,119	\$ 513,268	\$ 405,384	\$ 44,840	\$ 994	\$ 3,180,026
Dec-22	\$ 1,827,360	\$ 23,738	\$ 1,214,006	\$ 461,517	\$ 413,421	\$ 46,365	\$ 1,410	\$ 3,987,818
Jan-23	\$ 2,163,279	\$ 31,016	\$ 916,453	\$ 531,395	\$ 536,106	\$ 92,343	\$ 1,261	\$ 4,271,852
Feb-23	\$ 2,225,250	\$ 35,279	\$ 1,010,996	\$ 562,944	\$ 544,068	\$ 105,289	\$ 1,718	\$ 4,485,544
Mar-23	\$ 1,979,498	\$ 29,108	\$ 892,589	\$ 521,006	\$ 490,231	\$ 78,327	\$ 1,659	\$ 3,992,417
Apr-23	\$ 1,757,937	\$ 25,075	\$ 972,391	\$ 400,729	\$ 441,532	\$ 52,652	\$ 1,375	\$ 3,711,691
May-23	\$ 1,579,060	\$ 22,375	\$ 882,918	\$ 473,548	\$ 398,770	\$ 54,436	\$ 1,005	\$ 3,412,112
Jun-23	\$ 1,619,346	\$ 21,957	\$ 849,010	\$ 493,166	\$ 429,860	\$ 39,413	\$ 1,078	\$ 3,453,829
	\$ 23,052,618	\$ 312,479	\$ 10,394,009	\$ 5,937,936	\$ 5,525,718	\$ 703,915	\$ 16,204	\$ 45,942,878
Variance								
Jul-22	498	211	67,228	2,598	3,053	-	-	73,588
Aug-22	(498)	(211)	(67,228)	(2,598)	(3,053)	-	-	(73,588)
Sep-22	(7,692)	-	-	-	(1,173)	(227)	-	(9,092)
Oct-22	-	-	-	-	-	-	-	-
Nov-22	-	-	-	-	832	-	-	832
Dec-22	-	-	-	-	616	-	-	616
Jan-23	(29,869)	(338)	(5,840)	(6,007)	(6,313)	(1,225)	(19)	(49,610)
Feb-23	(71,932)	(1,022)	(27,444)	(16,933)	(18,237)	(4,528)	(69)	(140,165)
Mar-23	(66,719)	(935)	(28,367)	(17,207)	(17,658)	(3,766)	(72)	(134,723)
Apr-23	(58,272)	(760)	(29,358)	(16,599)	(16,101)	(2,436)	(58)	(123,585)
May-23	(68,607)	(599)	(28,300)	(15,013)	(14,153)	(2,452)	(39)	(110,172)
Jun-23	(52,849)	(547)	(28,912)	(16,504)	(15,469)	(1,675)	(42)	(115,997)
	(336,939)	(4,201)	(148,220)	(88,263)	(87,867)	(16,309)	(299)	(682,096)

See Attachment 23-081 AR 8.zip, GSE 2022_07 Bills&Volume (E13V5C).xlsx,RateCLRev tab, Column T, Rows 7:16, for updated amounts.

See Attachment 23-081 AR 8.zip, GSE 2022_08 Bills&Volume (E13V5C).xlsx,RateCLRev tab, Column T, Rows 7:16, for updated amounts.

See Attachment 23-081 AR 8.zip, GSE 2022_08 Bills&Volume (E13V5C).xlsx,RateCLRev tab, Column T, Rows 7:16, for updated amounts.

7/2022 Cycle 18 posted late on 8/1/22. Data manually moved from Aug to July. ARMY/TIC-2 is correct.

7/2022 Cycle 18 posted late on 8/1/22. Data manually moved from Aug to July. ARMY/TIC-2 is correct.

Revenue data omitted from ARMY/TIC-2. DOE 1-19 is correct. See Attachment 23-081 DOE-TS 1-5.2.xlsx for 9/2022 Supplemental Revenue Report.

Difference associated with L2 revenues that should be excluded. See Response to Audit Request 9.

Difference associated with L2 revenues that should be excluded. See Response to Audit Request 9.

Variances are primarily due to the inclusion of RDAF recoveries in revenues beginning January 2023. See RDAF Year 1 for the recovery amounts.

They are included in the system revenues and correctly excluded from the revenues reported in Attachment ARMY/TIC-2, Page 4 of 6.

Additionally, \$3,710.09 of L2 revenues were inadvertently included in the G-3 rate class in ARMY/TIC-2.

Actual	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
	DOD2	D18	G01	G02	G03	T08	V08	
Attachment ARMY/TIC-2, Page 4 of 6								
Equivalent Bills								
Jul-22	37,035	437	148	953	5,835	859	16	45,283
Aug-22	36,819	438	155	938	5,832	842	16	45,040
Sep-22	33,235	418	162	958	5,408	613	16	40,810
Oct-22	39,550	412	104	851	5,735	967	16	47,635
Nov-22	38,229	457	137	1,022	6,101	830	16	46,792
Dec-22	37,442	409	147	1,015	5,905	732	17	45,667
Jan-23	38,705	461	182	992	6,169	927	15	47,451
Feb-23	39,051	486	162	1,071	6,171	982	17	47,940
Mar-23	37,381	440	179	1,015	5,940	838	16	45,809
Apr-23	36,729	429	168	970	5,774	757	16	44,843
May-23	37,730	462	147	994	5,958	869	16	46,176
Jun-23	35,257	444	141	1,008	5,862	732	16	43,460
	447,163	5,293	1,832	11,787	70,690	9,948	193	546,906
Attachment 23-081 DOE 1-19								
Jul-22	37,024	434	142	949	5,822	859	16	45,246
Aug-22	36,830	441	161	942	5,845	842	16	45,077
Sep-22	33,360	418	162	958	5,429	619	16	40,962
Oct-22	39,645	410	103	851	5,736	966	16	47,727
Nov-22	38,461	460	137	1,024	6,108	830	16	47,036
Dec-22	35,898	397	143	964	5,612	699	16	43,729
Jan-23	38,705	461	182	992	6,169	927	15	47,451
Feb-23	39,051	486	162	1,071	6,171	982	17	47,940
Mar-23	37,381	440	179	1,015	5,940	838	16	45,809
Apr-23	36,729	429	168	970	5,774	757	16	44,843
May-23	37,730	462	147	994	5,958	869	16	46,176
Jun-23	35,257	444	141	1,008	5,862	732	16	43,460
	446,071	5,282	1,827	11,738	70,426	9,920	192	545,456
Variance								
Jul-22	11	3	6	4	13	-	-	37
Aug-22	(11)	(3)	(6)	(4)	(13)	-	-	(37)
Sep-22	(125)	-	-	-	(21)	(6)	-	(152)
Oct-22	(95)	2	1	-	(1)	1	-	(92)
Nov-22	(232)	(3)	-	(2)	(7)	-	-	(244)
Dec-22	1,544	12	4	51	293	33	1	1,938
Jan-23	-	-	-	-	-	-	-	-
Feb-23	-	-	-	-	-	-	-	-
Mar-23	-	-	-	-	-	-	-	-
Apr-23	-	-	-	-	-	-	-	-
May-23	-	-	-	-	-	-	-	-
Jun-23	-	-	-	-	-	-	-	-
	1,092	11	5	49	264	28	1	1,450

7/2022 Cycle 18 posted late on 8/1/22. Data manually moved from Aug to July. ARMY/TIC-2 is correct.

7/2022 Cycle 18 posted late on 8/1/22. Data manually moved from Aug to July. ARMY/TIC-2 is correct.

Missing 9/2022 data not included in ARMY/TIC-2. DOE 1-19 is correct. Issue not detected until 1/2023. See Attachment 23-081 DOE-TS 1-5-2.xlsx for 9/2022 Supplemental Revenue Report.

Incorrect data field used for Equivalent bills. DOE 1-19 is correct. Revenues were not affected by this. Within the Bills and Volume Report, equivalent bills were pulled using "sum of Billing_Qty_Adj" instead of "Billing_Quantity" field.

RECOVERY OF REVENUE DECOUPLING YEAR 1

	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
	D	D-10	G-1 & G1H	G-2 & G2H	G-3 / G3H / L2	T	V	
1 RDAF Rate	\$ 0.00281	\$ 0.00180	\$ 0.00104	\$ 0.00151	\$ 0.00253	\$ 0.00285	\$ 0.00291	
January 2023	10,629,525	187,781	5,615,018	3,977,328	2,659,925	429,794	6,393	23,506,262
Recovery	\$ 29,868.97	\$ 338.01	\$ 5,839.62	\$ 6,006.52	\$ 6,729.61	\$ 1,224.91	\$ 18.60	\$ 50,026.24
2 Feb-23	25,598,433	568,014	26,388,273	11,213,686	7,372,836	1,988,857	23,781	72,743,639
Recovery	\$ 71,931.60	\$ 1,022.43	\$ 27,443.80	\$ 16,932.67	\$ 18,653.28	\$ 4,528.24	\$ 69.20	\$ 140,555.31
3 March 2023	23,743,417	519,279	27,275,723	11,396,437	7,144,090	1,321,276	24,642	71,413,623
Recovery	\$ 66,719.00	\$ 934.70	\$ 28,366.75	\$ 17,207.11	\$ 18,074.55	\$ 3,765.64	\$ 71.71	\$ 135,113.55
4 April 2023	20,737,289	422,327	26,226,254	10,992,994	6,523,805	854,697	20,022	67,770,147
Recovery	\$ 58,271.78	\$ 760.19	\$ 29,358.42	\$ 16,599.42	\$ 16,595.23	\$ 2,435.89	\$ 58.26	\$ 123,963.28
5 May 2023	17,653,603	332,589	27,211,476	9,942,325	5,758,868	860,272	13,399	61,761,491
Recovery	\$ 49,606.62	\$ 598.68	\$ 28,299.94	\$ 15,012.91	\$ 14,567.91	\$ 2,451.78	\$ 38.99	\$ 110,550.90
6 Jun 2023	18,807,435	303,687	27,799,630	10,929,779	6,273,933	587,763	14,520	64,706,506
Recovery	\$ 52,848.89	\$ 546.64	\$ 28,911.62	\$ 16,503.97	\$ 15,873.05	\$ 1,675.12	\$ 42.25	\$ 116,375.63
TOTAL	\$ 329,246.86	\$ 4,200.63	\$ 148,220.15	\$ 88,262.60	\$ 90,403.63	\$ 16,081.58	\$ 299.01	
Revenue Variance	\$ (329,246.86)	\$ (4,200.63)	\$ (148,220.15)	\$ (88,262.60)	\$ (87,942.11)	\$ (16,081.58)	\$ (299.01)	
	\$ -	\$ -	\$ (0.00)	\$ -	\$ 2,461.52	\$ (0.00)	\$ -	

SOURCE of KWH: W:\Finance\Book Closing Entries-2023\2023 Granite State Electric 3071\GSE Accounting Close\DECOUPLING\Monthly Support - 2023
Egy_BillByCalMo\Dev_SAP_v2_YYYYMM - Delivery Service by Rate Class.xlsx

Beginning Balance \$ 1,415,013.00

	Recovery	Current Balance
Jan-23	\$ 50,026.24	\$ 1,364,986.76
Feb-23	140,555.31	1,224,431.45
Mar-23	135,113.55	1,089,317.90
Apr-23	123,963.28	965,354.62
May-23	110,550.90	854,803.72
Jun-23	116,375.63	738,298.54
Jul-23		
Aug-23		
Sep-23		
Oct-23		

RECOVERY OF REVENUE DECOUPLING YEAR 1 MINUS L2

	Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
	D	D-10	G-1 & G1H	G-2 & G2H	G-3 / G3H	T	V	
1 RDAF Rate	\$ 0.00281	\$ 0.00180	\$ 0.00104	\$ 0.00151	\$ 0.00253	\$ 0.00285	\$ 0.00291	
January 2023	10,629,525	187,781	5,615,018	3,977,328	2,659,925	429,794	6,393	23,506,262
Recovery	\$ 29,868.97	\$ 338.01	\$ 5,839.62	\$ 6,006.52	\$ 6,729.61	\$ 1,224.91	\$ 18.60	\$ 50,026.24
2 Feb-23	25,598,433	568,014	26,388,273	11,213,686	7,362,595	1,988,857	23,781	72,743,639
Recovery	\$ 71,931.60	\$ 1,022.43	\$ 27,443.80	\$ 16,932.67	\$ 18,627.37	\$ 4,528.24	\$ 69.20	\$ 140,555.31
3 March 2023	23,743,417	519,279	27,275,723	11,396,437	7,133,849	1,321,276	24,642	71,413,623
Recovery	\$ 66,719.00	\$ 934.70	\$ 28,366.75	\$ 17,207.11	\$ 18,048.64	\$ 3,765.64	\$ 71.71	\$ 135,113.55
4 April 2023	20,737,289	422,327	26,226,254	10,992,994	6,513,564	854,697	20,022	67,770,147
Recovery	\$ 58,271.78	\$ 760.19	\$ 29,358.42	\$ 16,599.42	\$ 16,479.32	\$ 2,435.89	\$ 58.26	\$ 123,963.28
5 May 2023	17,653,603	332,589	27,211,476	9,942,325	5,747,827	860,272	13,399	61,761,491
Recovery	\$ 49,606.62	\$ 598.68	\$ 28,299.94	\$ 15,012.91	\$ 14,542.00	\$ 2,451.78	\$ 38.99	\$ 110,550.90
6 Jun 2023	18,807,435	303,687	27,799,630	10,929,779	6,263,692	587,763	14,520	64,706,506
Recovery	\$ 52,848.89	\$ 546.64	\$ 28,911.62	\$ 16,503.97	\$ 15,847.14	\$ 1,675.12	\$ 42.25	\$ 116,375.63
TOTAL	\$ 329,246.86	\$ 4,200.63	\$ 148,220.15	\$ 88,262.60	\$ 90,274.08	\$ 16,081.58	\$ 299.01	

SOURCE of KWH: W:\Finance\Book Closing Entries-2023\2023 Granite State Electric 3071\GSE Accounting Close\DECOUPLING\Monthly Support - 2023
Egy_BillByCalMo\Dev_SAP_v2_YYYYMM - Delivery Service by Rate Class.xlsx

Beginning Balance \$ 1,415,013.00

	Recovery	Current Balance	Recovery Variance	CB Variance
Jan-23	\$ 50,026.24	\$ 1,364,986.76	\$ -	\$ -
Feb-23	140,555.31	1,224,431.45	\$ (25.91)	\$ 25.91
Mar-23	135,113.55	1,089,317.90	\$ (25.91)	\$ 51.82
Apr-23	123,963.28	965,354.62	\$ (25.91)	\$ 77.73
May-23	110,550.90	854,803.72	\$ (25.91)	\$ 103.64
Jun-23	116,375.63	738,298.54	\$ (25.91)	\$ 129.55
Jul-23				
Aug-23				
Sep-23				
Oct-23				

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 12/5/23
Request No: DOE TS 1-12

Date of Response: 12/19/23
Respondent: Tyler Culbertson
Gregg Therrien

REQUEST:

Ref. DE 23-081, Bates 5-6 and Attachment ARMY/TJC-2 Bates 23

Per DE 23-081, Attachment ARMY/TJC-2 Bates 23, Line 150, Column J, there was a total revenue shortfall of \$3,406,450 from total company target revenues of \$46,020,950 in the decoupling year from July 2022-June 2023, as calculated on a revenue per customer basis. If the shortfall were to be subtracted from the target revenue number, it would show revenues of \$42,614,500, as opposed to the actual distribution revenues of \$45,871,886 shown on Line 73 of Bates 22. If the shortfall were to be added to the actual revenues shown on Bates 22, the sum would be \$49,278,336.

- a. Please explain whether and to what extent the July 2022-June 2023 decoupling year shows a decline in sales per customer since the 2018 Test Year.
- b. Please explain whether the Company believes the \$42,614,500 number is indicative of a decline in sales per customer since the 2018 Test Year.
- c. Please explain how, if at all, the Company believes the \$49,278,336 number represents the revenue the Company should have collected in the July 2022-June 2023 decoupling year if there had been no decline in sales since the 2018 Test Year.
- d. Please explain to what extent the Company believes the revenue per customer shortfall from the July 2022-June 2023 decoupling year reflects a downward trend of kWh usage per customer since the 2018 Test Year.
- e. Did the Company take the demonstrated revenue per customer shortfall in Dockets No. DE 22-052 and/or DE 23-081, including the monthly shortfall amounts, into account in the rate design and revenue requirement calculations as part of the Company's requested rate increase in Docket No. DE 23-039? If so, please explain how these were taken into account. If not, please explain why they were not taken into account.
- f. Bates pp. 4-5 of the testimony filed in this docket states, "[r]evenue decoupling allows a utility to recover the base revenue requirement approved in its most recent base rate proceeding - no more and no less- despite fluctuations or reductions in sales due to conservation or other factors outside of the utility's control." Given that the sum of the

total decoupling shortfall and the actual revenue collected for the July 2022-June 2023 decoupling year is greater than any of the revenue requirements in place during the decoupling year (as shown on Bates 19 and 20), please explain whether collection of the shortfall is consistent with the Company recovering no more than the base revenue requirement approved in its most recent base rate proceeding.

RESPONSE:

- a. Please see Attachment 23-081 DOE TS 1-10.xlsx. The tab labeled “pvtDist” contains the monthly Use Per Bill (kWh/Bill) for the periods referenced.
- b. The DOE’s calculation to reach \$42,614,500 (sum of monthly target revenues less sum of monthly revenue shortfall) is flawed, and therefore, not indicative of anything. The monthly revenue shortfall is the difference between the target revenue per customer (“RPC”) and the actual RPC times the current number of equivalent bills. The monthly target revenue is the amount of revenue based on the 2018 Test Year equivalent bills.
- c. The Company believes the \$49,278,336 number represents the revenue the Company should have collected in the July 2022-June 2023 decoupling year based on the simple mechanics of the decoupling calculation. The fact that, when compared to 2018 levels, this adjustment exceeds \$3 million should not be surprising given the purposeful inclusion of the *growth aspect* of the revenue-per-customer (“RPC”) decoupling construct.

GSE’s annual bills grew by 30,405 bills (or approximately 2,500 new customers) from 2018 to 2023. Consistent with the RPC methodology, GSE receives incremental revenues at the class average RPC for each new customer added to compensate for the increase in revenue requirements associated with adding these new customers to the distribution system. In this case, based on multiplying the class-specific increase in customers times the allowed RPC yields an annual change of \$3,406,452.

The primary driver of this customer growth is the build-out of Tuscan Village, among other customer additions. Since 2018 GSE has invested over \$30 million in capital investments to connect and serve these new customers, whom the Company has an obligation to serve under New Hampshire law. RSA 374:1; Order No. 24,575 at 3 (Jan. 6, 2006) (“The franchise right and associated obligation to serve necessarily include operation of [a utility’s system] within the franchise”). Arguably, the additional \$3.4 million in decoupling revenue attributable to customer growth is insufficient to cover the revenue requirements of this new investment; however, the Company believes that the decoupling mechanism is performing correctly and provides revenue relief consistent with the approved decoupling methodology and tariff in effect since 2018. Proof of revenues and a breakdown between growth and non-growth decoupling revenues is provided in Attachment 23-081 DOE TS 1-12.xlsx.

- d. The amount of the decoupling adjustment attributable to declining use per customer is minimal (approximately \$149,000) based on the sales results shown in part a. above and supported through the decoupling revenues analysis described in part c. above.

- e. Decoupling revenues are not specifically taken into account when preparing a rate case. However, the new rate case will reflect billing determinants at Test Year levels, which reflect changes in use per customer and customer counts, which are also captured in prior year decoupling calculations.
- f. Yes. Please see the responses to parts c., d. and e. above.

Attachment 23-081 DOE TS 1-12
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)
Compared to Decoupling Targets Established in Docket No. 19-064

Line No.

A	B	C	D	E	F	G	H	I	J
Decoupling Targets from DN DE 19-064		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
2018 Calendar Test Year		DOD2	D10	G01	G02	G03	T00	V00	
Bills	(Test Year Equivalent Bills)								
7	Jul-18	35,232	443	139	922	5,691	961	18	43,406
8	Aug-18	37,134	441	143	942	5,902	1,034	19	45,615
9	Sep-18	33,822	435	138	872	5,425	881	15	41,588
10	Oct-18	35,547	440	141	906	5,680	956	17	43,687
11	Nov-18	35,400	437	140	900	5,679	951	17	43,524
12	Dec-18	35,656	439	145	902	5,704	950	17	43,813
1	Jan-18	35,344	438	135	904	5,649	981	18	43,469
2	Feb-18	35,193	441	135	906	5,663	975	18	43,331
3	Mar-18	35,347	441	132	910	5,671	975	18	43,494
4	Apr-18	35,329	443	131	901	5,688	967	18	43,477
5	May-18	35,313	440	141	914	5,650	968	18	43,444
6	Jun-18	35,263	439	138	903	5,638	967	18	43,366
		424,580	5,277	1,658	10,882	68,040	11,566	211	522,214
Distribution Revenues	Allowed								
7	Jul-18	\$2,045,352	\$26,645	\$1,015,451	\$540,232	\$506,108	\$58,752	\$1,910	\$4,194,451
8	Aug-18	\$2,197,519	\$29,056	\$1,046,444	\$541,241	\$536,800	\$62,230	\$2,179	\$4,415,469
9	Sep-18	\$1,985,430	\$27,332	\$989,332	\$501,610	\$494,871	\$55,141	\$1,491	\$4,055,206
10	Oct-18	\$1,622,463	\$22,419	\$896,713	\$494,213	\$435,009	\$52,900	\$1,427	\$3,525,144
11	Nov-18	\$1,658,261	\$24,353	\$836,655	\$465,092	\$424,691	\$68,032	\$1,329	\$3,478,413
12	Dec-18	\$1,997,781	\$31,099	\$894,479	\$473,699	\$504,363	\$94,714	\$1,902	\$3,998,038
1	Jan-18	\$2,237,329	\$36,837	\$842,104	\$477,907	\$533,692	\$121,468	\$2,374	\$4,251,710
2	Feb-18	\$1,891,992	\$34,185	\$835,656	\$478,268	\$503,479	\$99,640	\$2,109	\$3,845,329
3	Mar-18	\$1,746,318	\$29,643	\$795,958	\$473,056	\$468,249	\$88,482	\$1,818	\$3,603,524
4	Apr-18	\$1,719,239	\$27,951	\$799,821	\$458,506	\$456,545	\$78,050	\$1,731	\$3,541,843
5	May-18	\$1,552,558	\$23,216	\$827,333	\$478,833	\$425,933	\$59,456	\$1,448	\$3,368,777
6	Jun-18	\$1,757,566	\$23,059	\$936,572	\$504,747	\$464,926	\$54,656	\$1,519	\$3,743,046
		\$22,411,807	\$335,796	\$10,716,519	\$5,887,405	\$5,754,665	\$893,521	\$21,237	\$46,020,950
Monthly Target Revenue Per Customer (Target RPC)									
7	Jul-18	\$58.05	\$60.15	\$7,305.40	\$585.94	\$88.93	\$61.14	\$106.09	\$96.63
8	Aug-18	\$59.18	\$65.89	\$7,317.79	\$574.57	\$90.95	\$60.18	\$114.68	\$96.80
9	Sep-18	\$58.70	\$62.83	\$7,169.07	\$575.24	\$91.22	\$62.59	\$99.38	\$97.51
10	Oct-18	\$45.64	\$50.95	\$6,359.67	\$545.49	\$76.59	\$55.34	\$83.92	\$80.69
11	Nov-18	\$46.84	\$55.73	\$5,976.11	\$516.77	\$74.78	\$71.54	\$78.20	\$79.92
12	Dec-18	\$56.03	\$70.84	\$6,168.82	\$525.17	\$88.42	\$99.70	\$111.89	\$91.25
1	Jan-18	\$63.30	\$84.10	\$6,237.81	\$528.66	\$94.48	\$123.82	\$131.90	\$97.81
2	Feb-18	\$53.76	\$77.52	\$6,190.04	\$527.89	\$88.91	\$102.20	\$117.16	\$88.74
3	Mar-18	\$49.40	\$67.22	\$6,029.98	\$519.84	\$82.57	\$90.75	\$101.00	\$82.85
4	Apr-18	\$48.66	\$63.09	\$6,105.51	\$508.89	\$80.26	\$80.71	\$96.19	\$81.46
5	May-18	\$43.97	\$52.76	\$5,867.61	\$523.89	\$75.39	\$61.42	\$80.43	\$77.54
6	Jun-18	\$49.84	\$52.53	\$6,786.75	\$558.97	\$82.46	\$56.52	\$84.41	\$86.31
		\$52.79	\$63.63	\$6,463.52	\$541.02	\$84.58	\$77.25	\$100.65	\$88.13

Decoupling Year 2: 7/1/2022 - 6/30/2023		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
Bills	Actual								
7	Jul-22	37,035	437	148	953	5,835	859	16	45,283
8	Aug-22	36,819	438	155	938	5,832	842	16	45,040
9	Sep-22	38,099	446	165	1,006	5,938	853	16	46,523
10	Oct-22	39,550	412	104	851	5,735	967	16	47,635
11	Nov-22	38,229	457	137	1,022	6,101	830	16	46,792
12	Dec-22	37,442	409	147	1,015	5,905	732	17	45,667
1	Jan-23	38,705	461	182	992	6,169	927	15	47,451
2	Feb-23	39,051	486	162	1,071	6,171	982	17	47,940
3	Mar-23	37,381	440	179	1,015	5,940	838	16	45,809
4	Apr-23	36,729	429	168	970	5,774	757	16	44,843
5	May-23	37,730	462	147	994	5,958	869	16	46,176
6	Jun-23	35,257	444	141	1,008	5,862	732	16	43,460
		452,027	5,321	1,835	11,835	71,220	10,188	193	552,619
Distribution Revenues	Actual								
7	Jul-22	\$2,207,329	\$26,615	\$913,135	\$521,444	\$492,235	\$52,190	\$1,490	\$4,214,438
8	Aug-22	\$2,397,174	\$31,057	\$953,770	\$493,175	\$522,907	\$52,797	\$1,720	\$4,452,601
9	Sep-22	\$2,092,380	\$25,987	\$986,854	\$534,834	\$498,479	\$47,752	\$1,424	\$4,187,710
10	Oct-22	\$1,875,712	\$19,694	\$493,309	\$402,008	\$384,895	\$50,252	\$1,070	\$3,226,941
11	Nov-22	\$1,664,998	\$22,413	\$528,119	\$509,527	\$406,216	\$44,849	\$994	\$3,177,117
12	Dec-22	\$1,827,360	\$23,738	\$1,214,006	\$458,946	\$413,838	\$46,365	\$1,410	\$3,985,663
1	Jan-23	\$2,133,410	\$30,678	\$887,329	\$522,897	\$529,792	\$91,118	\$1,242	\$4,196,466
2	Feb-23	\$2,153,318	\$34,257	\$983,552	\$546,011	\$525,831	\$100,761	\$1,649	\$4,345,379
3	Mar-23	\$1,912,779	\$28,174	\$864,222	\$503,799	\$472,573	\$74,561	\$1,587	\$3,857,694
4	Apr-23	\$1,699,665	\$24,315	\$943,032	\$444,129	\$425,432	\$50,216	\$1,316	\$3,588,106
5	May-23	\$1,529,453	\$21,777	\$854,618	\$458,535	\$384,606	\$51,984	\$966	\$3,301,939
6	Jun-23	\$1,566,497	\$21,411	\$820,098	\$476,662	\$414,391	\$37,738	\$1,036	\$3,337,832
		\$23,060,075	\$310,116	\$10,442,046	\$5,871,967	\$5,471,194	\$700,584	\$15,905	\$45,871,886
Monthly Actual Revenue Per Customer (Actual RPC)									
7	Jul-22	\$59.60	\$60.90	\$6,169.83	\$547.16	\$84.36	\$60.76	\$93.13	
8	Aug-22	\$65.11	\$70.91	\$6,153.36	\$525.77	\$89.66	\$62.70	\$107.52	
9	Sep-22	\$54.92	\$58.27	\$5,980.93	\$531.64	\$83.95	\$55.98	\$89.02	
10	Oct-22	\$47.43	\$47.80	\$4,743.36	\$472.39	\$67.11	\$51.97	\$66.89	

Attachment 23-081 DOE TS 1-12
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)
Compared to Decoupling Targets Established in Docket No. 19-064

Line No.

	A	B	C	D	E	F	G	H	I	J
82	11	Nov-22	\$43.55	\$49.04	\$3,854.89	\$498.56	\$66.58	\$54.04	\$62.11	
83	12	Dec-22	\$48.81	\$58.04	\$8,258.54	\$452.16	\$70.08	\$63.34	\$82.92	
84	1	Jan-23	\$55.12	\$66.55	\$4,875.43	\$527.11	\$85.88	\$98.29	\$82.82	
85	2	Feb-23	\$55.14	\$70.49	\$6,071.31	\$509.81	\$85.21	\$102.61	\$96.98	
86	3	Mar-23	\$51.17	\$64.03	\$4,828.06	\$496.35	\$79.56	\$88.97	\$99.18	
87	4	Apr-23	\$46.28	\$56.68	\$5,613.29	\$457.87	\$73.68	\$66.34	\$82.27	
88	5	May-23	\$40.54	\$47.14	\$5,813.73	\$461.30	\$64.55	\$59.82	\$60.40	
89	6	Jun-23	\$44.43	\$48.22	\$5,816.30	\$472.88	\$70.69	\$51.55	\$64.73	
90			\$51.01	\$58.28	\$5,690.49	\$496.15	\$76.82	\$68.77	\$82.41	\$83.01

Variance from 2018									
Decoupling Year 2: 7/1/2022 - 6/30/2023		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total
		DOD2	D10	G01	G02	G03	T00	V00	
Bills									
7	July	1,803	(6)	9	31	144	(102)	(2)	1,877
8	August	(315)	(3)	12	(4)	(70)	(192)	(3)	(575)
9	September	4,277	11	27	134	513	(28)	1	4,935
10	October	4,003	(28)	(37)	(55)	55	11	(1)	3,948
11	November	2,829	20	(3)	122	422	(121)	(1)	3,268
12	December	1,786	(30)	2	113	201	(218)	-	1,854
1	January	3,361	23	47	88	520	(54)	(3)	3,982
2	February	3,858	45	27	165	508	7	(1)	4,609
3	March	2,034	(1)	47	105	269	(137)	(2)	2,315
4	April	1,400	(14)	37	69	86	(210)	(2)	1,366
5	May	2,417	22	6	80	308	(99)	(2)	2,732
6	June	(6)	5	3	105	224	(235)	(2)	94
		27,447	44	177	953	3,180	(1,378)	(18)	30,405
Monthly Revenue Per Customer (Monthly)		Actual (Higher) / Lower than 2018 Target							
7	July	(\$1.55)	(\$0.76)	\$1,135.57	\$38.77	\$4.57	\$0.38	\$12.96	
8	August	(\$5.93)	(\$5.02)	\$1,164.43	\$48.79	\$1.29	(\$2.52)	\$7.16	
9	September	\$3.78	\$4.57	\$1,188.14	\$43.60	\$7.27	\$6.61	\$10.36	
10	October	(\$1.78)	\$3.15	\$1,616.31	\$73.09	\$9.47	\$3.37	\$17.03	
11	November	\$3.29	\$6.68	\$2,121.22	\$18.21	\$8.20	\$17.50	\$16.08	
12	December	\$7.22	\$12.80	(\$2,089.72)	\$73.00	\$18.34	\$36.36	\$28.97	
1	January	\$8.18	\$17.56	\$1,362.37	\$1.54	\$8.60	\$25.53	\$49.08	
2	February	(\$1.38)	\$7.03	\$118.73	\$18.08	\$3.70	(\$0.41)	\$20.18	
3	March	(\$1.76)	\$3.19	\$1,201.93	\$23.49	\$3.01	\$1.78	\$1.82	
4	April	\$2.39	\$6.42	\$492.22	\$51.02	\$6.58	\$14.38	\$13.92	
5	May	\$3.43	\$5.63	\$53.88	\$62.58	\$10.83	\$1.60	\$20.03	
6	June	\$5.41	\$4.30	\$970.46	\$86.09	\$11.77	\$4.97	\$19.69	

Resulting Decoupling Revenues by Category										
Decoupling Year 2: 7/1/2022 - 6/30/2023		Domestic	Domestic - Opt. Peak	General TOU	General Long Hour	General Service	Limited All Electric	Ltd Comm Space Heating	Total	
		DOD2	D10	G01	G02	G03	T00	V00		
Decoupling Revenues: Growth		Variance in Monthly Bills times Target RPC								
7	Jul-22	\$104,671	(\$361)	\$65,749	\$18,164	\$12,806	(\$6,236)	(\$212)	\$194,581	
8	Aug-22	(\$18,641)	(\$198)	\$87,814	(\$2,298)	(\$6,367)	(\$11,555)	(\$344)	\$48,411	
9	Sep-22	\$251,070	\$691	\$193,565	\$77,082	\$46,796	(\$1,752)	\$99	\$567,551	
10	Oct-22	\$182,708	(\$1,427)	(\$235,308)	(\$30,002)	\$4,212	\$609	(\$84)	(\$79,291)	
11	Nov-22	\$132,520	\$1,115	(\$17,928)	\$63,046	\$31,558	(\$8,656)	(\$78)	\$201,577	
12	Dec-22	\$100,068	(\$2,125)	\$12,338	\$59,344	\$17,773	(\$21,734)	\$0	\$165,663	
1	Jan-23	\$212,756	\$1,934	\$293,177	\$46,522	\$49,127	(\$6,686)	(\$396)	\$596,435	
2	Feb-23	\$207,408	\$3,488	\$167,131	\$87,102	\$45,165	\$715	(\$117)	\$510,892	
3	Mar-23	\$100,490	(\$67)	\$283,409	\$54,583	\$22,211	(\$12,433)	(\$202)	\$447,991	
4	Apr-23	\$68,129	(\$883)	\$225,904	\$35,113	\$6,903	(\$16,950)	(\$192)	\$318,023	
5	May-23	\$106,265	\$1,161	\$35,206	\$41,911	\$23,219	(\$6,081)	(\$161)	\$201,520	
6	Jun-23	(\$299)	\$263	\$20,360	\$58,692	\$18,472	(\$13,282)	(\$169)	\$84,036	
		\$1,447,145	\$3,591	\$1,131,416	\$509,258	\$271,875	(\$104,042)	(\$1,856)	\$3,257,387	

Decoupling Revenues: RPC			Allowed Revenues minus Actual Revenues							
7	Jul-22	(\$161,978)	\$31	\$102,316	\$18,788	\$13,873	\$6,562	\$420	(\$19,988)	
8	Aug-22	(\$199,655)	(\$2,001)	\$92,674	\$48,066	\$13,893	\$9,433	\$459	(\$37,132)	
9	Sep-22	(\$106,950)	\$1,345	\$2,478	(\$33,224)	(\$3,608)	\$7,389	\$66	(\$132,503)	
10	Oct-22	(\$253,250)	\$2,725	\$403,404	\$92,205	\$50,114	\$2,648	\$356	\$298,204	
11	Nov-22	(\$6,737)	\$1,940	\$308,536	(\$44,435)	\$18,475	\$23,182	\$336	\$301,296	
12	Dec-22	\$170,422	\$7,361	(\$319,527)	\$14,753	\$90,526	\$48,349	\$493	\$12,376	
1	Jan-23	\$103,920	\$6,159	(\$45,225)	(\$44,990)	\$3,899	\$30,350	\$1,132	\$55,245	
2	Feb-23	(\$261,327)	(\$72)	(\$147,896)	(\$67,743)	(\$22,352)	(\$1,121)	\$460	(\$500,050)	
3	Mar-23	(\$166,461)	\$1,469	(\$68,265)	(\$30,743)	(\$4,324)	\$13,921	\$231	(\$254,171)	
4	Apr-23	\$19,573	\$3,636	(\$143,211)	\$14,376	\$31,113	\$27,834	\$415	(\$46,263)	
5	May-23	\$23,104	\$1,440	(\$27,285)	\$20,298	\$41,326	\$7,472	\$481	\$66,837	
6	Jun-23	\$191,069	\$1,648	\$116,474	\$28,085	\$50,535	\$16,918	\$484	\$405,214	
		(\$648,268)	\$25,680	\$274,473	\$15,438	\$283,471	\$192,938	\$5,333	\$149,064	

Total Decoupling Revenues			Growth plus RPC Adjustments							
7	Jul-22	(\$57,307)	(\$330)	\$168,065	\$36,952	\$26,679	\$326	\$207	\$174,593	
8	Aug-22	(\$218,296)	(\$2,198)	\$180,487	\$45,768	\$7,526	(\$2,122)	\$115	\$11,278	
9	Sep-22	\$144,120	\$2,037	\$196,043	\$43,858	\$43,188	\$5,636	\$166	\$435,048	
10	Oct-22	(\$70,542)	\$1,299	\$168,096	\$62,203	\$54,326	\$3,257	\$273	\$218,912	
11	Nov-22	\$125,783	\$3,054	\$290,607	\$18,611	\$50,033	\$14,526	\$257	\$502,872	

Attachment 23-081 DOE TS 1-12
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty
Revenue Decoupling Adjustment Factor (RDAF)
Revenue Decoupling Adjustment Calculation: Year 2 (7/1/2022-6/30/2023)
Compared to Decoupling Targets Established in Docket No. 19-064

Line No.

	A	B	C	D	E	F	G	H	I	J
164	12	Dec-22	\$270,490	\$5,236	(\$307,189)	\$74,097	\$108,298	\$26,615	\$493	\$178,039
165	1	Jan-23	\$316,676	\$8,093	\$247,952	\$1,532	\$53,026	\$23,664	\$736	\$651,680
166	2	Feb-23	(\$53,919)	\$3,416	\$19,235	\$19,359	\$22,813	(\$406)	\$343	\$10,842
167	3	Mar-23	(\$65,971)	\$1,402	\$215,145	\$23,840	\$17,887	\$1,489	\$29	\$193,821
168	4	Apr-23	\$87,703	\$2,752	\$82,693	\$49,489	\$38,016	\$10,884	\$223	\$271,760
169	5	May-23	\$129,369	\$2,601	\$7,921	\$62,209	\$64,545	\$1,391	\$320	\$268,357
170	6	Jun-23	\$190,770	\$1,911	\$136,834	\$86,777	\$69,007	\$3,636	\$315	\$489,250
171			\$798,877	\$29,271	\$1,405,889	\$524,696	\$555,346	\$88,896	\$3,477	\$3,406,452
174										
175	Total Decoupling Revenues: Check		RPC Variance Times Actual Bills							
176	7	Jul-22	(\$57,307)	(\$330)	\$168,065	\$36,952	\$26,679	\$326	\$207	\$174,593
177	8	Aug-22	(\$218,296)	(\$2,198)	\$180,487	\$45,768	\$7,526	(\$2,122)	\$115	\$11,278
178	9	Sep-22	\$144,120	\$2,037	\$196,043	\$43,858	\$43,188	\$5,636	\$166	\$435,048
179	10	Oct-22	(\$70,542)	\$1,299	\$168,096	\$62,203	\$54,326	\$3,257	\$273	\$218,912
180	11	Nov-22	\$125,783	\$3,054	\$290,607	\$18,611	\$50,033	\$14,526	\$257	\$502,872
181	12	Dec-22	\$270,490	\$5,236	(\$307,189)	\$74,097	\$108,298	\$26,615	\$493	\$178,039
182	1	Jan-23	\$316,676	\$8,093	\$247,952	\$1,532	\$53,026	\$23,664	\$736	\$651,680
183	2	Feb-23	(\$53,919)	\$3,416	\$19,235	\$19,359	\$22,813	(\$406)	\$343	\$10,842
184	3	Mar-23	(\$65,971)	\$1,402	\$215,145	\$23,840	\$17,887	\$1,489	\$29	\$193,821
185	4	Apr-23	\$87,703	\$2,752	\$82,693	\$49,489	\$38,016	\$10,884	\$223	\$271,760
186	5	May-23	\$129,369	\$2,601	\$7,921	\$62,209	\$64,545	\$1,391	\$320	\$268,357
187	6	Jun-23	\$190,770	\$1,911	\$136,834	\$86,777	\$69,007	\$3,636	\$315	\$489,250
188			\$798,877	\$29,271	\$1,405,889	\$524,696	\$555,346	\$88,896	\$3,477	\$3,406,452
189		check	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
190										
191	Total Allowed Decoupling Revenues		Actual Revenues Plus Decoupling Adjustment							
192	7	Jul-22	\$2,150,023	\$26,284	\$1,081,200	\$558,396	\$518,914	\$52,516	\$1,697	\$4,389,032
193	8	Aug-22	\$2,178,877	\$28,859	\$1,134,258	\$538,942	\$530,433	\$50,675	\$1,835	\$4,463,879
194	9	Sep-22	\$2,236,500	\$28,023	\$1,182,897	\$578,692	\$541,667	\$53,388	\$1,590	\$4,622,758
195	10	Oct-22	\$1,805,171	\$20,993	\$661,406	\$464,211	\$439,221	\$53,509	\$1,343	\$3,445,853
196	11	Nov-22	\$1,790,781	\$25,468	\$818,727	\$528,138	\$456,249	\$59,376	\$1,251	\$3,679,989
197	12	Dec-22	\$2,097,850	\$28,974	\$906,817	\$533,043	\$522,136	\$72,980	\$1,902	\$4,163,702
198	1	Jan-23	\$2,450,086	\$38,771	\$1,135,281	\$524,429	\$582,819	\$114,781	\$1,978	\$4,848,145
199	2	Feb-23	\$2,099,400	\$37,673	\$1,002,787	\$565,370	\$548,644	\$100,356	\$1,992	\$4,356,221
200	3	Mar-23	\$1,846,808	\$29,576	\$1,079,367	\$527,639	\$490,460	\$76,050	\$1,616	\$4,051,515
201	4	Apr-23	\$1,787,368	\$27,068	\$1,025,725	\$493,619	\$463,448	\$61,100	\$1,539	\$3,859,866
202	5	May-23	\$1,658,822	\$24,377	\$862,538	\$520,744	\$449,152	\$53,375	\$1,287	\$3,570,296
203	6	Jun-23	\$1,757,267	\$23,322	\$956,932	\$563,439	\$483,398	\$41,373	\$1,351	\$3,827,082
204			\$23,858,952	\$339,387	\$11,847,935	\$6,396,663	\$6,026,540	\$789,479	\$19,381	\$49,278,338

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 12/5/23
Request No: DOE TS 1-14

Date of Response: 12/19/23
Respondent: Jim Bonner
Tyler Culbertson

REQUEST:

Ref. Attachment ARMY/TJC-2, Bates 20 and 23.

The percentage of the decoupling year revenue shortfall contributed by each class on Bates 23 is not proportionate to the class revenue allocation percentage found on Bates 20 and used in the rate class allocation on Bates 24. For example, Rate D makes up 48.69% of revenue allocations on Bates 20 but only 23.45% of the decoupling year shortfall. Rate G-1, however, makes up 23.28% of the allocator on Bates 20 but 41.27% of the decoupling year revenue shortfall.

- a. Please explain whether the Company is aware of any class-specific factors that may contribute to the discrepancy described above.
- b. Please explain whether there has been any change in the method in which demand charge revenues are calculated and/or measured since the 2018 Test Year - including, but not limited to, adjustments to meter cycles, changes in monthly peak calculations, timing of when demand charges are calculated vs. when they are included on a customer bill, etc.
- c. Please explain whether the Company believes that the fact that ~80% of the Rate G-1 revenue requirement is based on demand-related revenue contributed to the disproportionate revenue shortfall experienced for Rate G-1 in the decoupling year, as described above.

RESPONSE:

- a. The combination of disproportional customer growth plus disproportional decline in billed revenue per customer contributed to the observed discrepancy. During the 4-1/2 years since Test Year 2018, the total number of equivalent bills has increased by 30,405 (5.82%) on an annual basis. The growth by rate class, however, was not proportional. The growth in Rate D equivalent bills since the Test Year was 6.46%, Rate G-1 was 10.68%, Rate G-2 was 8.76%, and Rate G-3 was 4.67%.

Further, billed distribution revenue per equivalent bill declined disproportionately for all rate classes since the Test Year. Rate D changed by -3.36%, Rate G-1 by -11.96%, Rate G-2 by -8.29% and Rate G-3 by -9.17%.

- b. No changes have been made to the method in which demand charge revenues are calculated and/or measured since the 2018 Test Year.
- c. No, the Company does not believe that the fact that ~80% of the Rate G-1 revenue requirement is based on demand-related revenue contributed to the disproportionate revenue shortfall experienced for Rate G-1 in the decoupling year. Generally, a demand charge is more stable and less volatile than equivalent energy charges. In addition, if the demand charge is subject to a significant ratchet which, in fact, is the case for Rate G-1, the volatility of demand charge revenues is further reduced.

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty

DE 23-081

2022-2023 Revenue Decoupling Adjustment Factor- Decoupling Year 2

Department of Energy Data Requests - Set 1

Date Request Received: 10/12/23
Request No: DOE 1-22

Date of Response: 10/26/23
Respondent: Tyler Culbertson
Gregg Therrien

REQUEST:

Ref. Attachment ARMY/TJC-2, p. 3 of 6 (Bates 21), and DE 19-064 Tab 59, Settlement Agreement Bates 13 and Settlement Agreement Attachment 9 p. 3 of 6 (Bates 114).

Bates 13 of the DE 19-064 Settlement Agreement describes the monthly target revenues per customer amounts, and section (a)(i) says they will be determined in part by, “allocating each years’ allowed revenue requirement to each rate class, by month, in proportion to the test year...”

The normalized test year revenue allocator reflected in Settlement Agreement Attachment 9, Bates 114, which is included in Attachment ARMY/TJC-2 on Bates 20 of this docket and used to calculate monthly target revenues on Bates 21, assumed that the revenue requirement would be constant throughout the decoupling year, which was not the case in this docket.

Please explain why the total revenue for a given rate and month does not match the normalized test year revenue allocator for the total revenue requirement for the year. For example, in the table on Bates 21 in this filing, column C, Line 18 reflects a monthly revenue of \$2,045,352 for July 2022 for Rate D, which represents 8.90% of the total target revenues listed on Bates 20, Line 7 for Rate D. However, \$2,045,352 represents approximately 11%, not 8.90%, of the decoupling year total target revenues of \$22,411,807 for Rate D listed on Bates 21, Column C, Line 30.

Please cite the specific provision that explains how to calculate the normalized revenue if the revenue requirement changes throughout the year.

RESPONSE:

The total revenue for a given rate and month does not match the normalized test year revenue allocator for the total revenue listed on Bates 21, Line 30 because the approved revenue requirement changed throughout the year. The percentages would match had the approved

Docket No. DE 23-081 Request No. DOE 1-22

revenue requirement remained constant throughout the decoupling year. Of note, \$2,045,352 represents approximately 9.13% of \$22,411,807, as opposed to the 11% stated in the request.

The settlement agreement on page 13, Section I.3.a.i. states:

“As shown in the Monthly Decoupling Calculation page of Attachment 9, the monthly target revenues per customer (“Monthly Target RPC”) amounts will be determined for each of the Company’s rate classes by: allocating each years’ allowed revenue requirement to each rate class, by month, in proportion to the test year with the following exceptions”

This language is also contained in the Company’s tariff on page 140.