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

DE 21-004
2021 Least Cost Integrated Resource Plan

Department of Energy Technical Session Data Requests - Set 1

Date Request Received: 4/27/22 | Date of Response: 5/11/22
Request No. DOE TS 1-3 | Respondent: Carmen Liron-Espana

REQUEST:

Reference Liberty LCIRP January 14, 2021 at Bates 017. Please update the paragraph beginning on line 6 to reflect the differences (or a revised definition) to indicate whether the 2020 value provided (188.5 MW) is an actual value or a weather adjusted value and whether the 2037 forecast value (217.34 MW) is a1-in-10 weather scenario.

RESPONSE:

The 2020 value provided of 188.5 MW is a weather adjusted value. Please see Table 1 at Bates 128.

For consistency, the Company would like to revise the paragraphs starting on line 2 and line 6 at Bates 017 as follows:

(On line 2): *The forecast model projects, under normal weather conditions, an increase in Liberty's summer peak demand from 192.459 megawatts ("MW") in 2021 to 202.6 MW in 2037. This results in an average annual increase of 0.3% prior to any "out of model adjustments" for new load greater than 300 kW.*

(On line 6)*: The Company developed an "extreme weather" forecast of summer peak demands based on a 1-in-10 weather scenario. The extreme weather forecast model projects an increase from 206.994 MW in 2021 to 217.34 MW in 2037. This results in an average annual increase of 0.3%.*

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

DE 21-004
Least Cost Integrated Resource Plan

Staff Data Requests - Set 1

Date Request Received: 4/1/21
Request No. Staff 1-37

Date of Response: 4/15/21
Respondent: Carmen Liron-Espana
Joel Rivera

REQUEST:

Reference Liberty LCIRP, at Bates 14, stating "The extreme weather scenario takes the weather conditions associated with the highest peak day over a 20-year history and applies these extreme conditions to all future years of the forecast. Based on the historical experience, there is only a ten percent probability that actual peak-producing weather will be equal to or more extreme than the extreme weather scenario. That is, the extreme weather forecast is a "1 in 10" case."

a. In the earlier LCIRP submittal, DE 19-120, Attachment 2, Bates 162, Section 8.1 states "As shown in Figure 1 above, the planning process for designing the Distribution System begins with the load forecast. The PSA load forecast is updated annually. The load forecast at the system level is based on econometric models, and is developed on both a weather-normalized and weather-probabilistic basis. Currently, the Liberty distribution system is modeled for a "peak hour" load level that has a 5% probability of occurrence such that those weather conditions are expected to occur once in 20 years. Specific major known or planned load additions are factored into the load forecast." An additional description of Forecasting Methodology and Application for Planning Criteria is described in DE 19-120, Liberty response to Staff Data Request 1-3, as follows "The econometric model is used to simulate the historical and forecasted peak demand for each PSA under normal and extreme weather conditions. The normal weather simulation assumes average weather conditions for each year of the forecast. Normal weather conditions are determined by averaging the weather for the highest peak day of a 20-year historical period. As an average of historical weather, the normal weather forecast becomes a "50/50" case with a 50% probability that actual weather is greater than or less than the forecasted conditions. The extreme weather scenario takes the weather conditions associated with the highest peak day over a 20-year history and applies these conditions to all future years of the forecast. Based on the historical experience, there is only a five percent probability that actual peak-producing weather will be equal to or more extreme than the extreme weather scenario. That is, the extreme weather forecast is a "1 in 20" case."

    i. Please explain why the Company samples the peak days over 20 years and determines that it is a "1 in 10 forecast" or 90/10, rather than follow the methodology of obtaining peak forecasts over a 10 year period (1 in 10).

Docket No. DE 21-004 Request No. Staff 1-37

ii. Please explain whether the Company has used the "historical experience" in the forecasting methodology before as it relates to timeframe in a probabilistic forecast methodology. If not, please explain why it has chosen to do so in this case.

iii. Why does the Company label the 1 in 10 year forecast an "extreme forecast" when, in previous years, the extreme forecast was reserved for a 95/5 or 1 in 20 year forecast?

iv. Utilizing the similar methodology as the 95/5 in the previous 2019 LCIRP (DE 19-120) forecast, please provide the 90/10 or "1 in 10 year".

v. Please provide all communications relating to the forecast submission in this LCIRP between the forecast consultant/vendor and Liberty or its representative

RESPONSE:

a. See the responses below:

i. See Attachment Staff 1-37.a.i.xls for the Company's updated forecast which samples the peak days over 10 years rather than 20 years. Moving forward, Liberty could model its distribution system for a "peak hour" load level that has a 10% probability of occurrence such that those weather conditions are expected to occur once in 10 years. This change was made as part of Docket No. DE 16-383.

ii. The Company calculated its normal and extreme weather scenarios based on historical weather experience in our system territory in the last 20 years.

iii. See the Company's response to i.

iv. See the Company's response to i.

v. See the Company's response to Staff 1-30.a.

Forecasted Peaks Normal Weather

year	Summer month	Peak Mw	Growth	Winter month	Peak Mw	Growth
2021	7	195.853	3.87%	1	149.116	6.66%
2022	7	196.242	0.20%	1	149.169	0.04%
2023	7	196.698	0.23%	1	149.325	0.10%
2024	7	197.184	0.25%	1	149.517	0.13%
2025	7	197.681	0.25%	1	149.733	0.14%
2026	7	198.17	0.25%	1	149.948	0.14%
2027	7	198.647	0.24%	1	150.149	0.13%
2028	7	199.111	0.23%	1	150.339	0.13%
2029	7	199.564	0.23%	1	150.515	0.12%
2030	7	200.008	0.22%	1	150.682	0.11%
2031	7	200.441	0.22%	1	150.841	0.11%
2032	7	200.86	0.21%	1	150.987	0.10%
2033	7	201.266	0.20%	1	151.116	0.09%
2034	7	201.656	0.19%	1	151.235	0.08%
2035	7	202.037	0.19%	1	151.337	0.07%
2036	7	202.415	0.19%	1	151.435	0.06%
2037	7	202.783	0.18%	1	151.529	0.06%

based on October 2010-September 2020 Average Weather

Forecasted Peaks Normal Weather

year	Summer month	Peak Mw	Growth	Winter month	Peak Mw	Growth
2021	7	192.548	2.11%	1	148.685	6.35%
2022	7	192.934	0.20%	1	148.738	0.04%
2023	7	193.387	0.23%	1	148.894	0.10%
2024	7	193.871	0.25%	1	149.087	0.13%
2025	7	194.365	0.25%	1	149.302	0.14%
2026	7	194.851	0.25%	1	149.517	0.14%
2027	7	195.326	0.24%	1	149.718	0.13%
2028	7	195.787	0.24%	1	149.908	0.13%
2029	7	196.237	0.23%	1	150.084	0.12%
2030	7	196.679	0.23%	1	150.252	0.11%
2031	7	197.11	0.22%	1	150.41	0.11%
2032	7	197.526	0.21%	1	150.556	0.10%
2033	7	197.929	0.20%	1	150.685	0.09%
2034	7	198.317	0.20%	1	150.805	0.08%
2035	7	198.695	0.19%	1	150.906	0.07%
2036	7	199.071	0.19%	1	151.004	0.06%
2037	7	199.435	0.18%	1	151.099	0.06%

based on October 2000-September 2020 Average Weather

Forecasted Peaks Extreme Weather

year	Summer month	Peak Mw	Growth	Winter month	Peak Mw	Growth
2021	7	211.995		1	152.254	
2022	7	212.397	0.19%	1	152.307	0.03%
2023	7	212.865	0.22%	1	152.463	0.10%
2024	7	213.364	0.23%	1	152.656	0.13%
2025	7	213.874	0.24%	1	152.871	0.14%
2026	7	214.376	0.23%	1	153.086	0.14%
2027	7	214.866	0.23%	1	153.287	0.13%
2028	7	215.343	0.22%	1	153.477	0.12%
2029	7	215.809	0.22%	1	153.653	0.11%
2030	7	216.265	0.21%	1	153.821	0.11%
2031	7	216.712	0.21%	1	153.979	0.10%
2032	7	217.143	0.20%	1	154.125	0.09%
2033	7	217.562	0.19%	1	154.254	0.08%
2034	7	217.966	0.19%	1	154.374	0.08%
2035	7	218.359	0.18%	1	154.475	0.07%
2036	7	218.75	0.18%	1	154.573	0.06%
2037	7	219.131	0.17%	1	154.668	0.06%

based on peak weather conditions over the past 10 years

Forecasted Peaks Extreme Weather

year	Summer month	Peak Mw	Growth	Winter month	Peak Mw	Growth
2021	7	207.083		1	151.821	
2022	7	207.481	0.19%	1	151.874	0.03%
2023	7	207.946	0.22%	1	152.029	0.10%
2024	7	208.441	0.24%	1	152.222	0.13%
2025	7	208.947	0.24%	1	152.437	0.14%
2026	7	209.445	0.24%	1	152.653	0.14%
2027	7	209.931	0.23%	1	152.853	0.13%
2028	7	210.404	0.23%	1	153.044	0.12%
2029	7	210.865	0.22%	1	153.22	0.11%
2030	7	211.318	0.21%	1	153.387	0.11%
2031	7	211.761	0.21%	1	153.545	0.10%
2032	7	212.188	0.20%	1	153.691	0.10%
2033	7	212.603	0.20%	1	153.821	0.08%
2034	7	213.003	0.19%	1	153.94	0.08%
2035	7	213.393	0.18%	1	154.041	0.07%
2036	7	213.78	0.18%	1	154.14	0.06%
2037	7	214.156	0.18%	1	154.234	0.06%

based on the average of the 2 peak weather conditions over the past 20 years

	Weather Values Used in Forecast			
Month	Normal WTHI	Extreme WTHI	Normal HDD	Extreme HDD
January	27.3775	21.9	37.99	46.1
February	34.4825	26.995	29.65	37.6
March	39.3305	30.86	22.57	32.6
April	57.135	74.86	7.33	25.1
May	76.588	80.485	0	0
June	80.0975	82.75	0	0
July	82.6875	86.475	0	0
August	80.683	84.61	0	0
September	78.768	81.655	0	0
October	70.5465	73.96	0	0
November	43.767	36.29	17.21	26.4
December	34.989	21.37	29.06	46.4

based on October 2010-September 2020 Weather

	Weather Values Used in Forecast			
Month	Normal WTHI	Extreme WTHI	Normal HDD	Extreme HDD
January	30.0403	22.1275	35.085	45.55
February	34.3413	27.9425	29.605	37.85
March	39.6418	31.185	22.395	32.3
April	61.4713	77.35	5.7	20.9
May	75.941	81.205	0	0
June	80.2715	84.5175	0	0
July	81.912	85.3225	0	0
August	80.98	84.565	0	0
September	77.978	82.0725	0	0
October	67.549	74.4975	1.305	10
November	47.1588	37.4675	13.435	25.75
December	37.221	26	26.18	41

based on October 2000-September 2020 Weather

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

DE 21-004
2021 Least Cost Integrated Resource Plan

Department of Energy Data Requests - Set 8

Date Request Received: 7/8/22
Request No. DOE 8-4

Date of Response: 7/22/22
Respondent: Heather Tebbetts

REQUEST:

Reference Liberty DOE 7-13. Please provide summary documentation of the Tesla Powerwall pilot project including budget, technical specifications, application procedure, ownership, customer contract terms including cost of maintenance, salvage/removal at end-of-life, service arrangements including potential impact to customers for instances of extended system/component outages, and operating experience. What alternatives were considered for the project?

RESPONSE:

Please see Docket No. DE 17-189 Petition to Approve Battery Storage Pilot Program on the Public Utilities Commission's website for all information requested on the battery storage pilot. https://www.puc.nh.gov/Regulatory/Docketbk/2017/17-189.html

The pilot project objectives were to reduce peak load, provide backup power to customers participating, and learn more about customer behavior through time-of-use rates. Consideration of alternatives was not part of the pilot objectives.

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

DE 21-004
Least Cost Integrated Resource Plan

Staff Data Requests - Set 1

Date Request Received: 4/1/21
Request No. Staff 1-12

Date of Response: 4/15/21
Respondent: Heather Tebbetts
Melissa Samenfeld

REQUEST:

Reference Liberty LCIRP, at Bates 9, stating "The Company develops solutions to the deficiencies in the form of individual project proposals, which are then included in the Company's five-year capital budget based on their priority level and cost considerations."

a. Please provide the aforementioned five year capital budget, and each individual project proposal.

RESPONSE:

a. Please see Attachment Staff 1-12.xlsx.

Project Description	Priority	FY2022	FY2023	FY2024	FY2025	FY2026	2022 - 2026 Filter
GSE-Dist-Land/Land Rights Blanket	2. Mandated	2,000	2,060	2,060	2,122	2,122	10,364
GSE-Dist-Telecomm Blanket	2. Mandated	2,500	2,575	2,575	2,652	2,652	12,955
GSE-Dist-Meter Blanket	2. Mandated	5,000	5,150	5,150	5,305	5,305	25,909
Dist-Transf/Capac Install Blanket	2. Mandated	5,000	5,150	5,150	5,305	5,305	25,909
Security Conversion GSE	2. Mandated	25,000	25,000		25,000	25,000	100,000
01737 GSE-Dist-Subs Blanket	2. Mandated	25,750	26,523	26,523	27,318	27,318	133,431
Distribution Feeder Power Factor Correction	2. Mandated	25,000	50,000	50,000	50,000	50,000	225,000
NN D-Line Work Found by Insp.	2. Mandated	50,000	50,000	50,000	50,000	50,000	250,000
GSE Distributed Generation Blanket	2. Mandated	50,000	50,000	50,000	50,000	50,000	250,000
GSE-Dist-Water Heater Blanket	2. Mandated	-	82,400	82,400	82,400	82,400	329,600
Lebanon Area Low Voltage Mitigation	2. Mandated	175,000	100,000	150,000	100,000	100,000	625,000
GSE-Dist-Load Relief Blanket	2. Mandated	100,000	103,000	103,000	106,090	109,273	521,363
GSE-Dist-St Light Blanket	2. Mandated	125,000	125,000	125,000	128,750	132,613	636,363
GSE-Dist-3rd Party Attach Blanket	2. Mandated	128,750	132,613	132,613	136,591	140,689	671,254
01659 Granite St Meter Purchases	2. Mandated	257,500	265,225	265,225	273,182	281,377	1,342,509
01663 GS Storm Program Proj	2. Mandated	300,000	300,000	300,000	309,000	318,270	1,527,270
GSE-Dist-Asset Replace Blanket	2. Mandated	412,000	424,360	424,360	437,091	450,204	2,148,014
01660 Granite St Transformer Purchases	2. Mandated	432,600	445,578	445,578	458,945	472,714	2,255,415
GSE-Dist-Public Require Blanket	2. Mandated	535,600	551,668	551,668	568,218	585,265	2,792,419
GSE-Dist-Reliability Blanket	2. Mandated	655,636	675,305	675,305	695,564	716,431	3,418,243
Dist-Damage&Failure Blanket	2. Mandated	1,000,000	1,000,000	1,000,000	1,125,509	1,159,274	5,284,783
GSE-Dist-New Bus-Resid Blanket	3. Growth	1,969,640	2,028,730	2,028,730	2,089,592	2,152,279	10,268,970
GSE-Dist-New Bus-Comm Blanket	3. Growth	1,575,712	1,622,984	1,622,984	1,671,673	1,721,823	8,215,176
Golden Rock Substation	3. Growth	-	-	-	50,000	-	50,000
Rockingham Substation	3. Growth	600,000	-				600,000
Rockingham Substation Transmission Supply	3. Growth	6,000,000					6,000,000
Rockingham Distribution Feeders	3. Growth	800,000					800,000
Install 39L4 Feeder Position Slayton Hill	3. Growth			75,000	450,000	-	525,000
Install 39L4 Distribution Slayton Hilll	3. Growth			25,000	290,000	-	315,000
IE - NN Recloser Installations	3. Growth	50,000	50,000	50,000	50,000	50,000	250,000
Install 13L2-9L3 Feeder Tie	3. Growth	-	-				-
Reserve for New Business Residential	3. Growth	-	159,135	159,135	159,135	159,135	636,540

Reserve for New Business Commercial Unident specific & SC	3. Growth	-	159,135	159,135	159,135	159,135	636,540
Install Vilas Bridge 12L1-12L2 Feeder Tie	5. Discretionary	-	-	-			-
Reserve for Substation Load Relief Specifics	5. Discretionary	-	-	-	-	-	-
NN ERR/Pockets of Poor Perf	5. Discretionary	225,000	550,000	-	-	-	775,000
Install Lebanon 1L2 Feeder Tie - Plainfield	5. Discretionary	-	-	10,000	1,400,000	-	1,410,000
NH ARP Relay & related	5. Discretionary	20,000	20,000	20,000	20,000	20,000	100,000
Pelham-New 14L5 Fdr Distribution Line	5. Discretionary	-	-	25,000	700,000	-	725,000
NH ARP Batts/Chargers Repl Prog	5. Discretionary	25,750	26,523	50,000	50,000	50,000	202,273
23kV Cable Inspection and Replacement Program	5. Discretionary	-	50,000	50,000	50,000	50,000	200,000
IT Systems Allocations - Corporate	5. Discretionary	50,000	50,000	50,000	50,000	50,000	250,000
Reserve for Sub Asset Repl Specifics	5. Discretionary	-	51,500	51,500	51,500	51,500	206,000
GSE-Dist-Genl Equip Blanket	5. Discretionary	50,000	51,500	51,500	53,045	54,636	260,681
Pelham-New 14L5 Fdr Breaker Position	5. Discretionary	-	-	75,000	700,000	-	775,000
IE-NN Dist Transformer upgrades	5. Discretionary	76,500	76,500	76,500	76,500	76,500	382,500
Reserve for Unidenfified Discretionary Projects	5. Discretionary	50,000	100,000	100,000	100,000	100,000	450,000
SCADA Data center upgrades	5. Discretionary	100,000	100,000	100,000	-	-	300,000
Amerductor replacement program	5. Discretionary	100,000	100,000	100,000	100,000	100,000	500,000
PS&I Activity - New Hampshire	5. Discretionary	100,000	100,000	100,000	100,000	100,000	500,000
Substation Security	5. Discretionary		100,000	100,000	100,000	250,000	550,000
Remove 1303 Line - Wilder Junction to Sachem Jct.	5. Discretionary	-		100,000	-	-	100,000
Reserve for Reliability Unidentified Specifics	5. Discretionary	-	103,000	103,000	103,000	103,000	412,000
Reserve for Load Relief Unidentified Specifics	5. Discretionary	-	106,090	106,090	106,090	106,090	424,360
Reserve for Public Requirements Unidentified Specifics	5. Discretionary	-	106,090	106,090	106,090	106,090	424,360
Reserve for Damage/Failure Unidentified Specifics &	5. Discretionary	103,000	106,090	106,090	106,090	106,090	527,360
IT Systems & Equipment Blanket	5. Discretionary	125,000	125,000	125,000	128,750	132,613	636,363
IE-NN UG Structures and Equipment	5. Discretionary	50,000	50,000	150,000	150,000	150,000	550,000
Air Break Switch Upgrade Program	5. Discretionary	150,000	150,000	150,000	150,000	150,000	750,000
Animal Guarding	5. Discretionary		150,000	150,000	150,000	250,000	700,000
Aging Equipment	5. Discretionary		250,000	150,000	150,000	1,000,000	1,550,000
Regulator Repl- NE North NH	5. Discretionary			150,000	150,000	150,000	450,000
Install Lebanon 1L2-1L3 Feeder Tie	5. Discretionary	-		200,000	-	-	200,000
SCADA and Distribution Automation	5. Discretionary	360,000	320,000	220,000	200,000	200,000	1,300,000
Underperforming Feeder Program	5. Discretionary	103,000	225,000	250,000	195,000	195,000	968,000
Feeder Getaway Cable Replacement	5. Discretionary		250,000	375,000	250,000	250,000	1,125,000

01757 NN ARP Breakers & Reclosers	5. Discretionary	100,000	375,000	375,000	375,000	375,000	1,600,000
Enhanced Bare Conductor Replacement	5. Discretionary	750,000	590,000	790,000	375,000	375,000	2,880,000
Bare Conductor Replacement Program	5. Discretionary	750,000	1,215,000	1,130,000	1,021,023	1,000,000	5,116,023
Rebuild Lockhaven Rd Enfield	5. Discretionary	-	-	1,400,000			1,400,000
IE-NN URD Cable Replacement	5. Discretionary	1,200,000	1,350,000	1,500,000	550,000	1,500,000	6,100,000
Grid Modernization Program	5. Discretionary	287,523	1,569,851	2,619,851	2,619,851	1,041,928	8,139,004
AMI Placeholder - GSE	5. Discretionary		3,175,286	3,167,603	3,167,603	-	9,510,493
GIS & OMS Electric Upgrade	5. Discretionary	1,278,804	-				1,278,804
Rebuild Lockhaven Rd Enfield Phase 1	5. Discretionary		-				-
Barron Ave#10 Retirement	5. Discretionary	50,000	50,000				100,000
NEN-NH Electric Fence FY10	5. Discretionary		50,000				50,000
Salem Depot#9 Retirement	5. Discretionary	-	100,000				100,000
GSE Facilities Capital Improvements	5. Discretionary	130,000	178,714			130,000	438,714
Purchase and Rennovate New Building - Walpole	5. Discretionary	500,000	515,000				1,015,000
Transportation Fleet & Equip. Blanket	5. Discretionary	100,000	550,000		-	-	650,000
16L1 - 6L3 Goodfellow Rd	5. Discretionary		1,200,000				1,200,000
SAP Placeholder - GSE	5. Discretionary	15,476,633					15,476,633
Rockingham 21L4 Feeder	5. Discretionary				550,000	-	550,000
		37,618,899	**22,677,732**	**22,949,814**	**23,713,118**	**17,232,029**	**124,191,592**

Row Labels	Sum of 2022 - 2026 Filter	
2. Mandated	$	22,585,799.54
3. Growth	$	28,297,226.83
5. Discretionary	$	73,308,565.77
Grand Total	**$**	**124,191,592.14**

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

DE 21-004
Least Cost Integrated Resource Plan

Staff Data Requests - Set 1

Date Request Received: 4/1/21
Request No. Staff 1-1

Date of Response: 4/15/21
Respondent: Joel Rivera

REQUEST:

Reference Grid Needs Assessment Supplemental Filing. Please provide a column in the assessment that includes the projected cost of each planned investment.

RESPONSE:

The table below includes the projected cost of each planned investment. The red text indicates information that was edited or added.

Facility/ Location (1)	System Granularity of Grid Need (1)	Capacity/ Reliability/ Resiliency (2)	Anticipated season or date by which distribution upgrade must be installed (3)	Equipment Rating (4)	Forecasted percentage deficiency above the existing facility/equipment rating 2025 (5)	Additional information:
14L2 Burns Rd, Pelham	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2021	N/A	N/A	Project estimate - $1,000,000
7L1 Route 4, Enfield	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2022	N/A	N/A	Project estimate - $750,000
14L1 Bridge St, Pelham	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2024	N/A	N/A	Project estimate - $600,000
18L3 S Policy St, Salem	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2025	N/A	N/A	Project estimate - $450,000
18L2 S Policy St, Salem	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2023	N/A	N/A	Project estimate - $485,000
14L2 Marsh Rd, Pelham	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2023	N/A	N/A	Project estimate - $430,000
1L3 Mascoma St, Lebanon	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2023	N/A	N/A	Project estimate - $300,000
12L2 Watkins Hill Rd Phase 1, Walpole	Reconductor bare conductors with 1/0 Al. Spacer Cable	Reliability	2022	N/A	N/A	Project estimate - $860,000

Docket No. DE 21-004 Request No. Staff 1-1

Facility/ Location (1)	System Granularity of Grid Need (1)	Capacity/ Reliability/ Resiliency (2)	Anticipated season or date by which distribution upgrade must be installed (3)	Equipment Rating (4)	Forecasted percentage deficiency above the existing facility/equipment rating 2025 (5)	Additional information:
12L2 Watkins Hill Rd Phase 2, Walpole	Reconductor bare conductors with 1/0 Al. Spacer Cable	Reliability	2023	N/A	N/A	Project estimate - $590,000
12L2 Watkins Hill Rd Phase 3, Walpole	Reconductor bare conductors with 1/0 Al. Spacer Cable	Reliability	2024	N/A	N/A	Project estimate - $550,000
9L3 Range Rd - W Shore Rd, Windham	Reconductor bare conductors with 1/0 Al. Spacer Cable	Reliability	2023	N/A	N/A	Project estimate - $590,000
12L1 Rt. 123A, Alstead	Reconductor bare conductors with 1/0 Al. Spacer Cable	Reliability	2024	N/A	N/A	Project estimate - $790,000
39L2 Plainfield Rd Phase 1, Lebanon	Reconductor bare conductors with 1/0 Al. Spacer Cable	Reliability	2025	N/A	N/A	Project estimate - $375,000
6L3 S Main St, Hanover	Reconductor bare conductors with 477 Al. Spacer Cable	Reliability	2024	N/A	N/A	Project estimate - $530,000
1L2 Meriden Rd Phase 2, Plainfield	Reconductor bare conductors with 477 Al. Spacer Cable, create feeder tie and implement DA	Reliability	2025	N/A	N/A	Project estimate - $1,400,000
16L1-6L3 Goodfellow Rd Tie, Hanover	Construct circuit tie 16L1 to 6L3 and implement DA	Reliability / Resiliency	2023	N/A	N/A	Project estimate - $1,200,000
7L1-7L2 Lockehaven Rd Tie, Enfield	Construct circuit tie 7L1 to 7L2 and implement DA	Reliability / Resiliency	2024	N/A	N/A	Project estimate - $1,400,000
21L4 New Feeder, Salem	Construct new 21L4 and implement DA	Reliability / Resiliency	2025	N/A	N/A	Project estimate - $550,000
14L5 New Feeder, Salem	Construct new 14L5 and implement DA	Reliability / Resiliency	2025	N/A	N/A	Project estimate - $1,300,000
12L1 Transformer, Walpole	Construct new 40L2 and circuit tie with 12L1 to mitigate contingency loss of 12L2 feeder	Reliability / Resiliency / Capacity	2025	9.6 MVA	133%	Project estimate - $10,000,000 (investment grade)
12L1 Transformer, Walpole	Add 2nd Transformer and 115 kV T-Line at Michael Ave Station to mitigate contingency loss of Michael Ave Transf #1 (NGrid Owned)	Reliability / Resiliency / Capacity	2025	9.6 MVA	190%	Project estimate - $10,000,000 (investment grade)
16L4 Feeder, Lebanon	Construct new 16L7 to supply new customer expansion.	Resiliency / Capacity	2021	11.7 MVA	116%	Project estimate - $615,000

Docket No. DE 21-004 Request No. Staff 1-1

Facility/ Location (1)	System Granularity of Grid Need (1)	Capacity/ Reliability/ Resiliency (2)	Anticipated season or date by which distribution upgrade must be installed (3)	Equipment Rating (4)	Forecasted percentage deficiency above the existing facility/equipment rating 2025 (5)	Additional information:
11L1 Feeder, West Lebanon	Construct new 39L4 to resolve forecasted overload from new spot load addition	Resiliency / Capacity	2025	10.9 MVA	105%	Project estimate - $740,000

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

DE 21-004
Least Cost Integrated Resource Plan

Staff Data Requests - Set 1

Date Request Received: 4/1/21
Request No. Staff 1-25

Date of Response: 4/15/21
Respondent: Joel Rivera
Heather Tebbetts

REQUEST:

Reference Liberty LCIRP, at Bates 65, describing the Grid Needs Assessment as "exclude[ing] projects that are needed due to asset condition." Please explain how the Company interprets the requirement that the assessment "shall describe all forecasted grid needs related to distribution system capital investment of $250,000 or more over a five-year planning horizon at the circuit level," as excluding planned projects needed due to "asset condition."

RESPONSE:

The Company interpreted grid needs related to distribution system capital investments as those listed in the LCIRP under section (2) at Bates 065, Lines 14 and 15, "Distribution service required: capacity, reliability, and resiliency." As such, the Company did not include projects needed due to asset condition. The Salem Area projects to be completed after 2021 were inadvertently left off the Grid Needs Assessment at Liberty LCIRP, Bates 065. These projects are needed for capacity, resiliency, and asset condition.

The Company provides the following list of additional projects, programs, or blankets that are needed due to asset condition.

Docket No. DE 21-004 Request No. Staff 1-25

Facility/ Location (1)	System Granularity of Grid Need (1)	Capacity/ Reliability/ Resiliency (2)	Anticipated season or date by which distribution upgrade must be installed (3)	Equipment Rating (4)	Forecasted percentage deficiency above the existing facility/equipment rating 2025 (5)
IE-NN URD Cable Replacement	Refer to DAS 014 - URD UCD Cable Strategy	Asset	Annual Program	N/A	N/A
GSE-Dist-Asset Replace Blanket	Blanket Program - Asset Replacement Program	Asset	Annual Program	N/A	N/A
Feeder Getaway Cable Replacement	Refer to DAS 013 - UG Getaways Program	Asset	Annual Program	N/A	N/A
01757 NN ARP Breakers & Reclosers	Breaker Replacement Program	Asset	Annual Program	N/A	N/A
Amerductor replacement program	Refer to DAS 008 - Small Wire Program	Asset	Annual Program	N/A	N/A
Rockingham Substation	Refer to Salem Area Study	Capacity / Resiliency / Asset	2021	Refer to Salem Area Study	Refer to Salem Area Study
Rockingham Substation Transmission Supply	Refer to Salem Area Study	Capacity / Resiliency / Asset	2021	Refer to Salem Area Study	Refer to Salem Area Study
Rockingham Distribution Feeders	Refer to Salem Area Study	Capacity / Resiliency / Asset	2021	Refer to Salem Area Study	Refer to Salem Area Study
Golden Rock 19L2 Distribution Feeder	Refer to Salem Area Study	Capacity / Resiliency	2022	Refer to Salem Area Study	Refer to Salem Area Study
Damage Failure Blanket	Blanket Program - Damage/Failure	Capacity / Resiliency / Asset	Annual Program	N/A	N/A

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

DE 21-004
Least Cost Integrated Resource Plan

Staff Data Requests - Set 1

Date Request Received: 4/1/21
Request No. Staff 1-21

Date of Response: 4/15/21
Respondent: Heather Tebbetts
Melissa Samenfeld

REQUEST:

Reference Liberty LCIRP, Bates 57, Figure 4.7, Summarizing the Company's 5-Year Capital Investment Plan

a. Please provide the Company's 5-Year Capital Investment Plan, including all supporting materials and business case justifications for the proposed discretionary projects.

b. Please explain why the five year capital plan for this January 2021 LCIRP appears to address only projects filed in 2022-2026, and does not cover projects planned for 2021.

RESPONSE:

a. Please see the Company's response to Staff 1-12 for the 5-Year Capital Investment Plan. The budget is preliminary and, as such, business cases and other related materials have not yet been created. The five-year investment plan is prepared to allow the Company to plan for upcoming capital outlays, and then the more detailed annual budget process is undertaken. Business cases are created after the annual budget is approved, usually in December of the prior year. For example, the 2022 capital budget is expected to be approved in December 2021. For projects such as those guiding the increased load for Tuscan Village, the Salem Area Study provides the information for future year investments such as the second 115 kV supply line, as the in service date is in 2022.

b. The five-year capital plan does not include 2021 investments because the 2021 capital budget was approved in 2020. The Company considered that the last full LCIRP filing was made on January 15, 2016, and an order in that docket was received July 10, 2017, or 18 months after the filing. With a similar adjudicative proceeding here, the 2021 investments will likely be in service by the time this docket is completed, thus including it in the five-year capital plan would not be logical.

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

DE 21-004
2021 Least Cost Integrated Resource Plan

Department of Energy Technical Session Data Requests - Set 2

Date Request Received: 7/29/22 | Date of Response: 8/12/22
Request No. DOE TS 2-1 | Respondent: Heather Tebbetts

REQUEST:

Please provide an updated response to Request DOE 5-1 in this proceeding.

Request DOE 5-1 asked:

> Please update CONFIDENTIAL_21-004_res_staff_2_6_att_c_i_liberty.xlsx for all current customer requests for service. For each customer listed, please include Liberty's assessment of the probability that each customer will take service at or near the projected load.

RESPONSE:

Please see Confidential Attachment DOE TS 2-1.1.xlsx for an update to Confidential Attachment DOE 5-1.xlsx. The Company has updated the revenues to reflect rates effective August 1, 2022. The Company is also including a map of the south parcel to show what has been completed, what is in construction, and what has plans pending per Tuscan Village in Confidential Attachment DOE TS 2-1.2.

Confidential Attachment DOE 5-1.xlsx included twenty-eight tabs calculating the revenues, and the update to that response now includes thirty tabs. Line 37 Central Village continues to be tab "Att 13." Tab "Att 29" is now Line 35 which breaks out Central Village building 1400 and the de-watering system from the original Central Village tab "Att 13." Tab "Att 30" is the new apartments on Line 36.

In Confidential Attachment DOE 5-1.xlsx, lines 35 through 37 were a high-level calculation of load for Tuscan. The Company has received better information recently and has made updates. These updates are found in lines 36 through 39. The breakdown to those lines encompasses the following items.

- Line 33
    a. Building 2000 Hotel – should be taking permanent power in the fall 2022
        i. Waiting for transformer delivery

Docket No. DE 21-004 Request No. DOE TS 2-1

- Line 36
    a. Building 4100 – Added to plans with four floors of apartments
- Line 37
    a. Building 1200 – Increased to three floors @ 120,000 sq ft
    b. Building 1300 – New L shape – bottom floor will have 35,000 sq ft grocery and five floors of apartments above

Confidential Attachment DOE TS 2-1.1.xlsx and Confidential Attachment DOE TS 2-1.2 contain "individual customer data … that can identify, singly or in combination, that specific customer," RSA 363:37, I, and is thus protected from disclosure by RSA 363:38 and RSA 91-A:5, IV. Therefore, pursuant to Puc 203.08(d), the Company has a good faith basis to seek confidential treatment of this information and will submit a motion seeking confidential treatment prior to the final hearing in this docket. Note that a redacted version of Confidential Attachment DOE TS 2-1.2, the map of the south parcel of Tuscan Village, is not being provided as is not feasible to redact that document.

	D	G-3	G-2
Customer Charge	$ 14.74	$ 17.03	$ 72.52
All kWh	$ 0.05857	$ 0.05283	$ 0.00234
kW			9.27

	G-1
Customer Charge	$ 435.18
On Peak kWh	$ 0.00591
Off Peak kWh	$ 0.00175
kW	$ 9.22

8/1/2022 Rates

Line	Phase	End Use	Anticipated kW Demand	Tuscan	Current Status	Load Data Info Attachment #	Revenue Attachment	CIAC	Annual Distribution Revenue
1	1	[redacted]	1216	North	Complete	1-3.b.14	14	$0	$133,011
2	1		340	North	Complete	1-3.b.1	1	$0	$53,472
3	1		96	North	Complete	1-3.b.17	17	$0	$12,735
4	1		667	North	Complete	1-3.b.21	21	$111,814	$80,466
5	1		87	North	Complete	1-3.b.16	16	$0	$8,478
6	1		80	North	Complete	1-3.b.16	16	$0	see line 5
7	1	MB Retail 3	71	North	Complete, no tenant due to COVID	1-3.b.16	16	$0	see line 5
8	1	MB Retail 4	56	North	Complete, no tenant due to COVID	1-3.b.16	16	$0	see line 5
9	1	[redacted]	53	North	Complete	1-3.b.25	25	$0	$7,097
10	1		30	North	1 Tenant, 3 storefronts without tenants	1-3.b.21	21	$0	$1,520
11	1	Restaurant 1	87	North	2023/2024 redevelopment ongoing	N/A	n/a	N/A	N/A
12	1	Restaurant 2	127	North	2023/2024 redevelopment ongoing	N/A	n/a	NA	N/A
13	N/A	[redacted]	378	North	redevelopment ongoing	N/A	n/a	N/A	N/A
14	N/A		1547	North	redevelopment ongoing	1-3.b.28	28	TBD	$185,858
15	1A		1661	South	Complete	1-3.b.18	18	$21,020	$219,921
16	1A		315	South	Complete	1-3.b.19	19	$0	$38,978
17	1A	Street Lights	10	South	Complete	1-3.b.26	26	$13,460	$2,487
18	1A	Street lights & well	16	South	Complete	1-3.b.27	27	$7,710	$4,340
19	1A	OMJ Buildings (Maintenance Buildings)	172	South	In progress, 2023	1-3.b.23	23	$0	$21,451
20	1A	[redacted]	74	South	Complete	1-3.b.24	24	$3,963	$9,684
21	1B		1233	South	*Complete*	1-3.b.22	22	*$35,866*	$155,119
22	1C		245	South	3 of 4 tenants moved in	1-3.b.2	2	$34,391	$36,478
23	1C		317	South	3 of 4 tenants moved in	1-3.b.3	3	$0	$45,861
24	1C	Building 300 (5.2)	109	South	Energized, signed tenant - move in end of 2022	1-3.b.4	4	$8,035	$13,950
25	1C	[redacted]	188	South	6 of 7 tenants moved in	1-3.b.5	5	$27,124	$23,412
26	1C		135	South	Complete	1-3.b.6	6	$8,486	$17,262
27	1C		44	South	Complete, plus level 2 EV charger	1-3.b.7	7	$11,600	$6,083
28	1C		386	South	Complete	1-3.b.8	8	$9,302	$53,938
29	1C		80	South	Complete	1-3.b.9	9	$0	$10,780
30	1C		73	South	Complete	1-3.b-10	10	$0	$14,240
31	1C		28	South	Complete	1-3.b-11	11	$15,370	$4,204
32	1C	Drive Custom Fit (Gym)	107	South	Complete	1-3.b-12	12	$0	$18,162
33	2	Hotel/Conf/Retail Building 2000	1800	South	In progress, 2022-2023	1-3.b.13	13 Hotel	$0	$244,547
34	2	[redacted]	937	South	In progress, 2022-2023	1-3.b.15	15	$0	$132,834
35	2A	Central Village Building 1400 & de-water (was within line 35)	2650	South	Redesign of Resi Village, Office Spaces, over 55+ & retail - 660,414 sf mixed use	Att 29	29	$36,640	$235,522
36	2B	[redacted]	2008	South	retail, residential and garage with solar	Att 30	30	$0	$92,023
37	2B	Central Village Building 1000-1500, 4000	4431	South	redesigned and densifying 2 buildings	Att 13	13 Central Village	TBD	$357,558
38	2C	Drug Manufacturer/Office Park/Garage/Multi Tenant	4000	South	Redesign of Resi Village, Office Spaces, over 55+ & retail - 660,414 sf mixed use	1-3.b.20	20	TBD	$736,486
~~39~~	~~2C~~	~~Parking garage~~ –moved to line 38	~~0~~	~~South~~	~~Redesign of Resi Village, Office Spaces, over 55+ & retail - 660,414 sf mixed use~~	~~TBD~~	~~n/a~~	~~TBD~~	~~TBD~~
			Total					$344,781	$2,977,957

Total North	**4,835**
Total South	**21,019**
Total Tuscan Village	**25,854**

Total Tuscan Village Completed	**6,701**
Total Tuscan Village In Progress/No Tenant	**5,614**
Total Tuscan Village not developed	**13,539**
	25,854

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

DE 21-004
2021 Least Cost Integrated Resource Plan

Department of Energy Data Requests - Set 5

Date Request Received: 1/28/22
Request No. DOE 5-3

Date of Response: 2/11/22
Respondent: Anthony Strabone

REQUEST:

Please Update Attachment Staff 3-1. a. to show the most recent available budget, estimated, and actual costs.

RESPONSE:

Please see attachment DOE 5-3.xlxs for the most recent budget, estimated, and actual costs. The Company is providing a summary comparing Staff 3-1.a to DOE 5-3 below.

Staff 3-1.a Total	$ 39,014,827
DOE 5-3 Total	$ 36,858,827
Difference	$ 2,156,000

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

DE 21-004
2021 Least Cost Integrated Resource Plan

Department of Energy Data Requests - Set 7

Date Request Received: 6/6/22
Request No. DOE 7-11

Date of Response: 6/20/22
Respondent: Michael Cooper

REQUEST:

Please identify the annual incremental changes in each reliability statistic expected from the proposed $550,000 capital expenditure on the 12L2 circuit reconductoring solution.

RESPONSE:

In Appendix F, the proposed $550,000 reconductoring project was only for Watkins Hill Phase 3, which is approximately 25% of the total project. With that, the annual incremental changes at that time with those costs, were an 8% reduction in frequency, a 4% reduction in duration, $2,999 per change in customers interrupted, and $23.50 per change in customer minutes interrupted.