

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Option 1 - Manual Reads of AMR Meters**

1 Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
2 Units Installed	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3 #Units with Upfront Contribution	100															
4 #Units with Monthly Contribution	900	900	900	900	900	900	900	900	900	900	900	900	900	900	900	
																<b>Total</b>
5 Regional Network System (RNS) Charges	\$640,000	\$665,000	\$685,000	\$705,550	\$726,717	\$748,518	\$770,974	\$794,103	\$817,926	\$793,388	\$769,586	\$746,499	\$724,104	\$702,381	\$681,309	<b>\$10,971,054</b>
6 Local Network System (LNS) Charges	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	\$122,473	<b>\$1,837,101</b>
7 Distribution Circuit Upgrades (Rev Req)	\$0	\$95,633	\$92,428	\$89,342	\$86,367	\$83,494	\$80,716	\$78,025	\$75,415	\$72,819	\$70,223	\$67,626	\$65,030	\$62,434	\$59,837	<b>\$1,079,388</b>
8 Customer Contribution	\$208,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$0	\$0	\$0	\$0	\$0	<b>\$1,180,000</b>
9 Total Benefits	\$970,473	\$991,106	\$1,007,901	\$1,025,365	\$1,043,556	\$1,062,485	\$1,082,163	\$1,102,601	\$1,123,815	\$1,096,680	\$962,282	\$936,598	\$911,607	\$887,288	\$863,620	<b>\$15,067,542</b>
<b>Costs</b>																
10 Revenue Requirement - Batteries	(\$1,196,020)	(\$1,396,442)	(\$1,228,536)	(\$1,085,830)	(\$962,780)	(\$849,382)	(\$764,735)	(\$714,935)	(\$676,876)	(\$637,444)	(\$599,385)	(\$559,953)	(\$521,894)	(\$482,462)	(\$444,403)	<b>(\$12,121,079)</b>
11 Cogsdale Programming Costs	(\$100,000)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	<b>(\$100,000)</b>
12 O&M Cost to read meters each month	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	(\$129,600)	<b>(\$1,944,000)</b>
13 Total Costs	(\$1,425,620)	(\$1,526,042)	(\$1,358,136)	(\$1,215,430)	(\$1,092,380)	(\$978,982)	(\$894,335)	(\$844,535)	(\$806,476)	(\$767,044)	(\$728,985)	(\$689,553)	(\$651,494)	(\$612,062)	(\$574,003)	<b>(\$14,165,079)</b>
14 Net Benefit to All Customers	(\$455,147)	(\$534,936)	(\$350,235)	(\$190,065)	(\$48,823)	\$83,503	\$187,827	\$258,066	\$317,339	\$329,636	\$233,297	\$247,045	\$260,113	\$275,225	\$289,617	<b>\$902,463</b>
<b>Net Present Value Calculation</b>																
15 Required Rate of Return		9.42%														
16 Net Present Value		(\$340,138)														

- 1 Year of installation
- 2 Total units in pilot
- 3 Based on Green Mountain Power's experience of 10% paying upfront
- 4 (2) - (3)
- 5 Calculation as described in testimony
- 6 Calculation as described in testimony
- 7 Page 7
- 8 Customer contribution of \$1000 upfront (100) plus \$10 per month (900)
- 9 Sum of lines 5-8
- 10 Page 3
- 11 Estimated programming costs associated with billing TOU rates
- 12 Based on average cost to read a meter
- 13 Sum of lines 10-12
- 14 (9) - (13)
- 15 As approved in Docket No. DE 16-383

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Option 2 - Cellular Based Metering**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
1 Year	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
2 Units Installed	1,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3 #Units with Upfront Contribution	100															
4 #Units with Monthly Contribution	900	900	900	900	900	900	900	900	900	900						
																<b>Total</b>
5 Regional Network System (RNS) Charges	\$640,000	\$665,000	\$685,000	\$705,550	\$726,717	\$748,518	\$770,974	\$794,103	\$817,926	\$793,388	\$769,586	\$746,499	\$724,104	\$702,381	\$681,309	<b>\$10,971,054</b>
6 Local Network System (LNS) Charges	\$126,148	\$129,932	\$133,830	\$137,845	\$141,980	\$146,240	\$150,627	\$155,146	\$159,800	\$155,006	\$150,356	\$145,845	\$141,470	\$137,226	\$133,109	<b>\$2,144,558</b>
7 Distribution Circuit Upgrades (Rev Req)	\$0	\$95,633	\$92,428	\$89,342	\$86,367	\$83,494	\$80,716	\$78,025	\$75,415	\$72,819	\$70,223	\$67,626	\$65,030	\$62,434	\$59,837	<b>\$1,079,388</b>
8 Customer Contribution	\$208,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$108,000	\$0	\$0	\$0	\$0	\$0	<b>\$1,180,000</b>
9 Total Benefits	\$974,148	\$998,565	\$1,019,258	\$1,040,737	\$1,063,063	\$1,086,251	\$1,110,316	\$1,135,273	\$1,161,141	\$1,129,213	\$990,165	\$959,970	\$930,604	\$902,040	\$874,256	<b>\$15,375,000</b>
<b>Costs</b>																
10 Revenue Requirement - Batteries	(\$1,196,020)	(\$1,396,442)	(\$1,228,536)	(\$1,085,830)	(\$962,780)	(\$849,382)	(\$764,735)	(\$714,935)	(\$676,876)	(\$637,444)	(\$599,385)	(\$559,953)	(\$521,894)	(\$482,462)	(\$444,403)	<b>(\$12,121,079)</b>
11 Revenue Requirement - Cell Based Meters	(\$94,371)	(\$92,514)	(\$90,705)	(\$88,939)	(\$87,215)	(\$85,528)	(\$83,877)	(\$82,258)	(\$80,644)	(\$79,030)	(\$77,416)	(\$75,803)	(\$74,189)	(\$72,575)	(\$70,961)	<b>(\$1,236,024)</b>
12 Cogsdale Programming Costs	(\$100,000)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	<b>(\$100,000)</b>
13 Meter MV-90 Programming Costs	(\$100,000)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	<b>(\$100,000)</b>
14 Total Costs	(\$1,490,392)	(\$1,488,956)	(\$1,319,241)	(\$1,174,769)	(\$1,049,995)	(\$934,910)	(\$848,612)	(\$797,192)	(\$757,520)	(\$716,474)	(\$676,801)	(\$635,756)	(\$596,083)	(\$555,037)	(\$515,365)	<b>(\$13,557,103)</b>
15 Net Benefit to All Customers	(\$516,244)	(\$490,391)	(\$299,983)	(\$134,032)	\$13,069	\$151,341	\$261,704	\$338,081	\$403,622	\$412,739	\$313,364	\$324,214	\$334,521	\$347,003	\$358,891	<b>\$1,817,896</b>
<b>Net Present Value Calculation</b>																
16 Required Rate of Return		9.42%														
17 Net Present Value		\$65,407														

1 Year of installation  
2 Total units in pilot  
3 Based on Green Mountain Power's experience of 10% paying upfront  
4 (2) - (3)  
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8 Customer contribution of \$1000 upfront (100) plus \$10 per month (900)  
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11 Page 5  
12 Estimated programming costs associated with billing TOU rates  
13 Estimated programming costs associated with reading cellular meters  
14 Sum of lines 10-13  
15 (9) - (13)  
16 As approved in Docket No. DE 16-383

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Battery Revenue Requirement**

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Deferred Tax Calculation</b>															
1 Battery Capital Cost	\$7,192,000														
2 Total	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000
3 FEDERAL Vintage Year Tax Depreciation:	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4 Annual Tax Depreciation	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5 Cumulative Tax Depreciation	\$1,027,737	\$2,789,058	\$4,046,939	\$4,945,219	\$5,587,465	\$6,228,991	\$6,871,237	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000
6 STATE Vintage Year Tax Depreciation:	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Annual Tax Depreciation	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Cumulative Tax Depreciation	\$1,027,737	\$2,789,058	\$4,046,939	\$4,945,220	\$5,587,466	\$6,228,992	\$6,871,238	\$7,192,001	\$7,192,001	\$7,192,001	\$7,192,001	\$7,192,001	\$7,192,001	\$7,192,001	\$7,192,001
9 Book Depreciation Rate (a)	5.00%	9.50%	8.55%	7.70%	6.93%	6.23%	5.90%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%	5.90%	5.91%
10 Book Depreciation	\$359,600	\$683,240	\$614,916	\$553,784	\$498,406	\$448,062	\$424,328	\$424,328	\$425,047	\$424,328	\$425,047	\$424,328	\$425,047	\$424,328	\$425,047
11 Cumulative Book Depreciation	\$359,600	\$1,042,840	\$1,657,756	\$2,211,540	\$2,709,946	\$3,158,007	\$3,582,335	\$4,006,663	\$4,431,710	\$4,856,038	\$5,281,086	\$5,705,414	\$6,130,461	\$6,554,789	\$6,979,836
12 Book/Tax Timer (Federal)	\$668,137	\$1,746,218	\$2,389,183	\$2,733,679	\$2,877,519	\$3,070,984	\$3,288,902	\$3,185,337	\$2,760,290	\$2,335,962	\$1,910,915	\$1,486,587	\$1,061,539	\$637,211	\$212,164
13 less: Deferred Tax Reserve (State)	\$54,787	\$143,190	\$195,913	\$224,162	\$235,957	\$251,821	\$269,690	\$261,198	\$226,344	\$191,549	\$156,695	\$121,900	\$87,046	\$52,251	\$17,398
14 Net Book/Tax Timer (Federal)	\$613,350	\$1,603,028	\$2,193,270	\$2,509,518	\$2,641,563	\$2,819,163	\$3,019,212	\$2,924,139	\$2,533,946	\$2,144,413	\$1,754,220	\$1,364,686	\$974,493	\$584,960	\$194,767
15 Effective Tax Rate (Federal)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
16 Deferred Tax Reserve (Federal)	\$128,803	\$336,636	\$460,587	\$526,999	\$554,728	\$592,024	\$634,034	\$614,069	\$532,129	\$450,327	\$368,386	\$286,584	\$204,644	\$122,842	\$40,901
17 Book/Tax Timer (State)	\$668,137	\$1,746,218	\$2,389,183	\$2,733,680	\$2,877,520	\$3,070,985	\$3,288,903	\$3,185,338	\$2,760,291	\$2,335,963	\$1,910,915	\$1,486,587	\$1,061,540	\$637,212	\$212,165
18 Effective Tax Rate (State)	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%
19 Deferred Tax Reserve (State)	\$54,787	\$143,190	\$195,913	\$224,162	\$235,957	\$251,821	\$269,690	\$261,198	\$226,344	\$191,549	\$156,695	\$121,900	\$87,046	\$52,251	\$17,398
20 TOTAL Deferred Tax Reserve	\$183,591	\$479,826	\$656,500	\$751,160	\$790,685	\$843,845	\$903,725	\$875,267	\$758,472	\$641,876	\$525,081	\$408,484	\$291,690	\$175,093	\$58,299
<b>Rate Base Calculation</b>															
21 Plant In Service	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000	\$7,192,000
22 Accumulated Book Depreciation	(\$359,600)	(\$1,042,840)	(\$1,657,756)	(\$2,211,540)	(\$2,709,946)	(\$3,158,007)	(\$3,582,335)	(\$4,006,663)	(\$4,431,710)	(\$4,856,038)	(\$5,281,086)	(\$5,705,414)	(\$6,130,461)	(\$6,554,789)	(\$6,979,836)
23 Deferred Tax Reserve	(\$183,591)	(\$479,826)	(\$656,500)	(\$751,160)	(\$790,685)	(\$843,845)	(\$903,725)	(\$875,267)	(\$758,472)	(\$641,876)	(\$525,081)	(\$408,484)	(\$291,690)	(\$175,093)	(\$58,299)
24 Year End Rate Base	\$6,648,809	\$5,669,334	\$4,877,744	\$4,229,300	\$3,691,370	\$3,190,148	\$2,705,940	\$2,310,070	\$2,001,817	\$1,694,086	\$1,385,833	\$1,078,102	\$769,849	\$462,118	\$153,865
<b>Revenue Requirement Calculation</b>															
25 Year End Rate Base	\$6,648,809	\$5,669,334	\$4,877,744	\$4,229,300	\$3,691,370	\$3,190,148	\$2,705,940	\$2,310,070	\$2,001,817	\$1,694,086	\$1,385,833	\$1,078,102	\$769,849	\$462,118	\$153,865
26 Pre-Tax ROR	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%
27 Return and Taxes	\$627,648	\$535,185	\$460,459	\$399,246	\$348,465	\$301,150	\$255,441	\$218,071	\$188,972	\$159,922	\$130,823	\$101,773	\$72,674	\$43,624	\$14,525
28 Book Depreciation	\$359,600	\$683,240	\$614,916	\$553,784	\$498,406	\$448,062	\$424,328	\$424,328	\$425,047	\$424,328	\$425,047	\$424,328	\$425,047	\$424,328	\$425,047
29 Property Taxes (b)	\$208,773	\$178,017	\$153,161	\$132,800	\$115,909	\$100,171	\$84,967	\$72,536	\$62,857	\$53,194	\$43,515	\$33,852	\$24,173	\$14,511	\$4,831
30 Annual Revenue Requirement	\$1,196,020	\$1,396,442	\$1,228,536	\$1,085,830	\$962,780	\$849,382	\$764,735	\$714,935	\$676,876	\$637,444	\$599,385	\$559,953	\$521,894	\$482,462	\$444,403
<b>Imputed Capital Structure (c)</b>															
	Ratio	Rate	Weighted Rate	Pre Tax											
31 Long Term Debt	50.00%	5.88%	2.94%	2.94%											
32 Common Equity	50.00%	9.40%	4.70%	6.48%											
33	100.00%		7.64%	9.42%											

(a) Batteries have 15-year life. Utilized MACRS 15-year depreciation rates  
(b) DE 17-043 property tax calculation  
(c) Capital structure per Settlement in Docket No. DE 16-383

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Battery Depreciation Calculation**

	(a) CY 2019	(b) CY 2020	(c) CY 2021	(d) CY 2022	(e) CY 2023	(f) CY 2024	(g) CY 2025	(h) CY 2026	(i) CY 2027	(j) CY 2028	(j) CY 2029	(j) CY 2030	(j) CY 2031	(j) CY 2032	(j) CY 2033
1 <u>Tax Depreciation (Federal)</u>															
2 Plant Additions	\$7,192,000														
3	\$7,192,000														
4 Regional Network System (RNS) Charges	14.290%	24.490%	17.490%	12.490%	8.930%	8.920%	8.930%	4.460%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
5 Remaining Tax Depreciation	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6 <u>Remaining Tax Depreciation (State)</u>															
7 Plant Additions	\$7,192,000														
8	14.290%	24.490%	17.490%	12.490%	8.930%	8.920%	8.930%	4.460%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
9 Remaining Tax Depreciation	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Federal Tax Depreciation	\$ 1,027,737	\$ 1,761,321	\$ 1,257,881	\$ 898,281	\$ 642,246	\$ 641,526	\$ 642,246	\$ 320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 State Tax Depreciation	\$1,027,737	\$1,761,321	\$1,257,881	\$898,281	\$642,246	\$641,526	\$642,246	\$320,763	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Meter Revenue Requirement**

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>
<b>Deferred Tax Calculation</b>															
1 Battery Capital Cost	\$255,600														
2 Total	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600
3 FEDERAL Vintage Year Tax Depreciation:	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
4 Annual Tax Depreciation	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
5 Cumulative Tax Depreciation	\$9,585	\$28,037	\$45,103	\$60,892	\$75,494	\$89,002	\$101,496	\$113,054	\$124,459	\$135,862	\$147,266	\$158,669	\$170,074	\$181,476	\$192,881
6 STATE Vintage Year Tax Depreciation:	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
7 Annual Tax Depreciation	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
8 Cumulative Tax Depreciation	\$9,585	\$28,037	\$45,103	\$60,891	\$75,493	\$89,001	\$101,495	\$113,053	\$124,458	\$135,860	\$147,265	\$158,667	\$170,072	\$181,474	\$192,879
9 Book Depreciation Rate (a)	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%	5.23%
10 Book Depreciation	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368
11 Cumulative Book Depreciation	\$13,368	\$26,736	\$40,104	\$53,472	\$66,839	\$80,207	\$93,575	\$106,943	\$120,311	\$133,679	\$147,047	\$160,415	\$173,782	\$187,150	\$200,518
12 Book/Tax Timer (Federal)	(\$3,783)	\$1,301	\$5,000	\$7,420	\$8,655	\$8,795	\$7,921	\$6,111	\$4,148	\$2,183	\$220	(\$1,746)	(\$3,709)	(\$5,674)	(\$7,637)
13 less: Deferred Tax Reserve (State)	(\$310)	\$107	\$410	\$608	\$710	\$721	\$649	\$501	\$340	\$179	\$18	(\$143)	(\$304)	(\$465)	(\$626)
14 Net Book/Tax Timer (Federal)	(\$3,473)	\$1,194	\$4,590	\$6,812	\$7,945	\$8,074	\$7,272	\$5,610	\$3,808	\$2,004	\$202	(\$1,602)	(\$3,404)	(\$5,209)	(\$7,011)
15 Effective Tax Rate (Federal)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
16 Deferred Tax Reserve (Federal)	(\$729)	\$251	\$964	\$1,430	\$1,668	\$1,696	\$1,527	\$1,178	\$800	\$421	\$42	(\$337)	(\$715)	(\$1,094)	(\$1,472)
17 Book/Tax Timer (State)	(\$3,783)	\$1,301	\$4,999	\$7,419	\$8,654	\$8,794	\$7,920	\$6,110	\$4,147	\$2,181	\$218	(\$1,748)	(\$3,710)	(\$5,676)	(\$7,639)
18 Effective Tax Rate (State)	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%
19 Deferred Tax Reserve (State)	(\$310)	\$107	\$410	\$608	\$710	\$721	\$649	\$501	\$340	\$179	\$18	(\$143)	(\$304)	(\$465)	(\$626)
20 TOTAL Deferred Tax Reserve	(\$1,039)	\$358	\$1,374	\$2,039	\$2,378	\$2,417	\$2,176	\$1,679	\$1,140	\$600	\$60	(\$480)	(\$1,019)	(\$1,559)	(\$2,099)
<b>Rate Base Calculation</b>															
21 Plant In Service	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600
22 Accumulated Book Depreciation	(\$13,368)	(\$26,736)	(\$40,104)	(\$53,472)	(\$66,839)	(\$80,207)	(\$93,575)	(\$106,943)	(\$120,311)	(\$133,679)	(\$147,047)	(\$160,415)	(\$173,782)	(\$187,150)	(\$200,518)
24 Deferred Tax Reserve	\$1,039	(\$358)	(\$1,374)	(\$2,039)	(\$2,378)	(\$2,417)	(\$2,176)	(\$1,679)	(\$1,140)	(\$600)	(\$60)	\$480	\$1,019	\$1,559	\$2,099
25 Year End Rate Base	\$243,272	\$228,507	\$214,123	\$200,090	\$186,383	\$172,976	\$159,848	\$146,978	\$134,149	\$121,322	\$108,493	\$95,665	\$82,837	\$70,009	\$57,181
<b>Revenue Requirement Calculation</b>															
26 Year End Rate Base	\$243,272	\$228,507	\$214,123	\$200,090	\$186,383	\$172,976	\$159,848	\$146,978	\$134,149	\$121,322	\$108,493	\$95,665	\$82,837	\$70,009	\$57,181
28 Pre-Tax ROR	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%	9.44%
29 Return and Taxes	\$22,965	\$21,571	\$20,213	\$18,888	\$17,595	\$16,329	\$15,090	\$13,875	\$12,664	\$11,453	\$10,242	\$9,031	\$7,820	\$6,609	\$5,398
30 Book Depreciation	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368	\$13,368
31 Property Taxes (b) 3.14%	\$7,639	\$7,175	\$6,723	\$6,283	\$5,852	\$5,431	\$5,019	\$4,615	\$4,212	\$3,809	\$3,407	\$3,004	\$2,601	\$2,198	\$1,795
32 Annual Revenue Requirement	\$43,971	\$42,114	\$40,305	\$38,539	\$36,815	\$35,128	\$33,477	\$31,858	\$30,244	\$28,630	\$27,016	\$25,403	\$23,789	\$22,175	\$20,561
<b>Imputed Capital Structure (c)</b>															
	Ratio	Rate	Weighted Rate	Pre Tax											
34 Long Term Debt	50.00%	5.88%	2.94%	2.94%											
35 Common Equity	50.00%	9.40%	4.70%	6.48%											
36	100.00%		7.64%	9.42%											

(a) Approved depreciation rate for FERC Account 370 in Docket No. DE 16-383  
(b) DE 17-043 property tax calculation  
(c) Capital structure per Settlement in Docket No. DE 16-383

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Meter Depreciation Calculation**

	(a) <u>CY 2019</u>	(b) <u>CY 2020</u>	(c) <u>CY 2021</u>	(d) <u>CY 2022</u>	(e) <u>CY 2023</u>	(f) <u>CY 2024</u>	(g) <u>CY 2025</u>	(h) <u>CY 2026</u>	(i) <u>CY 2027</u>	(j) <u>CY 2028</u>	(j) <u>CY 2029</u>	(j) <u>CY 2030</u>	(j) <u>CY 2031</u>	(j) <u>CY 2032</u>	(j) <u>CY 2033</u>
1 <u>Tax Depreciation (Federal)</u>															
2 Plant Additions	\$255,600														
3	\$255,600														
4 Regional Network System (RNS) Charges	3.750%	7.219%	6.677%	6.177%	5.713%	5.285%	4.888%	4.522%	4.462%	4.461%	4.462%	4.461%	4.462%	4.461%	4.462%
5 Remaining Tax Depreciation	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
6 <u>Remaining Tax Depreciation (State)</u>															
7 Plant Additions	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600	\$255,600
8	3.750%	7.219%	6.677%	6.177%	5.713%	5.285%	4.888%	4.522%	4.462%	4.461%	4.462%	4.461%	4.462%	4.461%	4.462%
9 Remaining Tax Depreciation	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
10 Federal Tax Depreciation	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405
11 State Tax Depreciation	\$9,585	\$18,452	\$17,066	\$15,788	\$14,602	\$13,508	\$12,494	\$11,558	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405	\$11,402	\$11,405

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Distribution Circuit Revenue Requirement**

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>
<b>Deferred Tax Calculation</b>															
1	Distribution Circuit Upgrades	\$0	\$640,000												
2	Total	\$0	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000
3	FEDERAL Vintage Year Tax Depreciation:	\$0	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,550
4	Annual Tax Depreciation	\$0	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,550
5	Cumulative Tax Depreciation	\$0	\$24,000	\$70,202	\$112,934	\$152,467	\$189,030	\$222,854	\$254,138	\$283,078	\$311,635	\$340,186	\$368,742	\$397,293	\$425,850
6	STATE Vintage Year Tax Depreciation:	\$0	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,550
7	Annual Tax Depreciation	\$0	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,550
8	Cumulative Tax Depreciation	\$0	\$24,000	\$70,202	\$112,935	\$152,468	\$189,031	\$222,855	\$254,138	\$283,079	\$311,636	\$340,186	\$368,743	\$397,293	\$425,850
9	Book Depreciation Rate (a)	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%	2.76%
10	Book Depreciation	\$0	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683
11	Cumulative Book Depreciation	\$0	\$17,683	\$35,366	\$53,049	\$70,733	\$88,416	\$106,099	\$123,782	\$141,465	\$159,148	\$176,832	\$194,515	\$212,198	\$229,881
12	Book/Tax Timer (Federal)	\$0	\$6,317	\$34,835	\$59,885	\$81,735	\$100,615	\$116,755	\$130,356	\$141,613	\$152,487	\$163,354	\$174,228	\$185,095	\$195,969
13	less: Deferred Tax Reserve (State)	\$0	\$518	\$2,857	\$4,911	\$6,702	\$8,250	\$9,574	\$10,689	\$11,612	\$12,504	\$13,395	\$14,287	\$15,178	\$16,069
14	Net Book/Tax Timer (Federal)	\$0	\$5,799	\$31,979	\$54,974	\$75,032	\$92,364	\$107,181	\$119,666	\$130,001	\$139,983	\$149,959	\$159,941	\$169,917	\$179,899
15	Effective Tax Rate (Federal)	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%
16	Deferred Tax Reserve (Federal)	\$0	\$1,218	\$6,716	\$11,545	\$15,757	\$19,396	\$22,508	\$25,130	\$27,300	\$29,396	\$31,491	\$33,588	\$35,683	\$37,779
17	Book/Tax Timer (State)	\$0	\$6,317	\$34,836	\$59,886	\$81,735	\$100,615	\$116,756	\$130,356	\$141,614	\$152,488	\$163,354	\$174,228	\$185,095	\$195,969
18	Effective Tax Rate (State)	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%	8.20%
19	Deferred Tax Reserve (State)	\$0	\$518	\$2,857	\$4,911	\$6,702	\$8,250	\$9,574	\$10,689	\$11,612	\$12,504	\$13,395	\$14,287	\$15,178	\$16,069
20	TOTAL Deferred Tax Reserve	\$0	\$1,736	\$9,572	\$16,455	\$22,459	\$27,647	\$32,082	\$35,819	\$38,913	\$41,900	\$44,886	\$47,874	\$50,860	\$53,848
<b>Rate Base Calculation</b>															
21	Plant In Service	\$0	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000
22	Accumulated Book Depreciation	\$0	(\$17,683)	(\$35,366)	(\$53,049)	(\$70,733)	(\$88,416)	(\$106,099)	(\$123,782)	(\$141,465)	(\$159,148)	(\$176,832)	(\$194,515)	(\$212,198)	(\$229,881)
23	Deferred Tax Reserve	\$0	(\$1,736)	(\$9,572)	(\$16,455)	(\$22,459)	(\$27,647)	(\$32,082)	(\$35,819)	(\$38,913)	(\$41,900)	(\$44,886)	(\$47,874)	(\$50,860)	(\$53,848)
24	Year End Rate Base	\$0	\$620,581	\$595,062	\$570,495	\$546,808	\$523,937	\$501,819	\$480,399	\$459,622	\$438,951	\$418,282	\$397,611	\$376,942	\$356,271
25		\$0	\$620,581	\$595,062	\$570,495	\$546,808	\$523,937	\$501,819	\$480,399	\$459,622	\$438,951	\$418,282	\$397,611	\$376,942	\$356,271
<b>Revenue Requirement Calculation</b>															
26	Year End Rate Base	\$0	\$620,581	\$595,062	\$570,495	\$546,808	\$523,937	\$501,819	\$480,399	\$459,622	\$438,951	\$418,282	\$397,611	\$376,942	\$356,271
27	Pre-Tax ROR	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%	9.42%
28	Return and Taxes	\$0	\$58,464	\$56,060	\$53,745	\$51,514	\$49,359	\$47,275	\$45,257	\$43,300	\$41,353	\$39,405	\$37,458	\$35,511	\$33,564
29	Book Depreciation	\$0	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683	\$17,683
30	Property Taxes (b)	3.14%	\$0	\$19,486	\$18,685	\$17,914	\$17,170	\$16,452	\$15,757	\$15,085	\$14,432	\$13,783	\$13,134	\$12,485	\$11,836
31	Annual Revenue Requirement	\$0	\$95,633	\$92,428	\$89,342	\$86,367	\$83,494	\$80,716	\$78,025	\$75,415	\$72,819	\$70,223	\$67,626	\$65,030	\$62,434
32		\$0	\$95,633	\$92,428	\$89,342	\$86,367	\$83,494	\$80,716	\$78,025	\$75,415	\$72,819	\$70,223	\$67,626	\$65,030	\$62,434
<b>Imputed Capital Structure (c)</b>															
		Ratio	Rate	Weighted Rate	Pre Tax										
33	Long Term Debt	50.00%	5.88%	2.94%	2.94%										
34	Common Equity	50.00%	9.40%	4.70%	6.48%										
35		100.00%		7.64%	9.42%										

(a) Book Depreciation Calculation Using 2016 FERC Form 1 Data Filed May 18, 2017  
(b) DE 17-043 property tax calculation  
(c) Capital structure per Settlement in Docket No. DE 16-383

**Liberty Utilities (Granite State Electric) d/b/a Liberty Utilities**  
**Benefit/Cost Analysis**  
**Distribution Circuit Depreciation Calculation**

	(a) <u>CY 2019</u>	(b) <u>CY 2020</u>	(c) <u>CY 2021</u>	(d) <u>CY 2022</u>	(e) <u>CY 2023</u>	(f) <u>CY 2024</u>	(g) <u>CY 2025</u>	(h) <u>CY 2026</u>	(i) <u>CY 2027</u>	(j) <u>CY 2028</u>	(j) <u>CY 2029</u>	(j) <u>CY 2030</u>	(j) <u>CY 2031</u>	(j) <u>CY 2032</u>	(j) <u>CY 2033</u>
3 <u>Tax Depreciation (Federal)</u>															
4 Plant Additions	\$ -	\$640,000													
5	0.000%	3.750%	7.219%	6.677%	6.177%	5.713%	5.285%	4.888%	4.522%	4.462%	4.461%	4.462%	4.461%	4.462%	4.461%
6 Regional Network System (RNS) Charges	\$ -	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,557	\$28,550
7 <u>Remaining Tax Depreciation (State)</u>															
8 Plant Additions	\$ -	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000	\$640,000
9 20 YR MACRS Tax Depreciation Rates	0.000%	3.750%	7.219%	6.677%	6.177%	5.713%	5.285%	4.888%	4.522%	4.462%	4.461%	4.462%	4.461%	4.462%	4.461%
10	\$ -	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,557	\$28,550
11 Federal Tax Depreciation	\$ -	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,557	\$28,550
12 State Tax Depreciation	\$ -	\$24,000	\$46,202	\$42,733	\$39,533	\$36,563	\$33,824	\$31,283	\$28,941	\$28,557	\$28,550	\$28,557	\$28,550	\$28,557	\$28,550



T E S L A

# POWERWALL



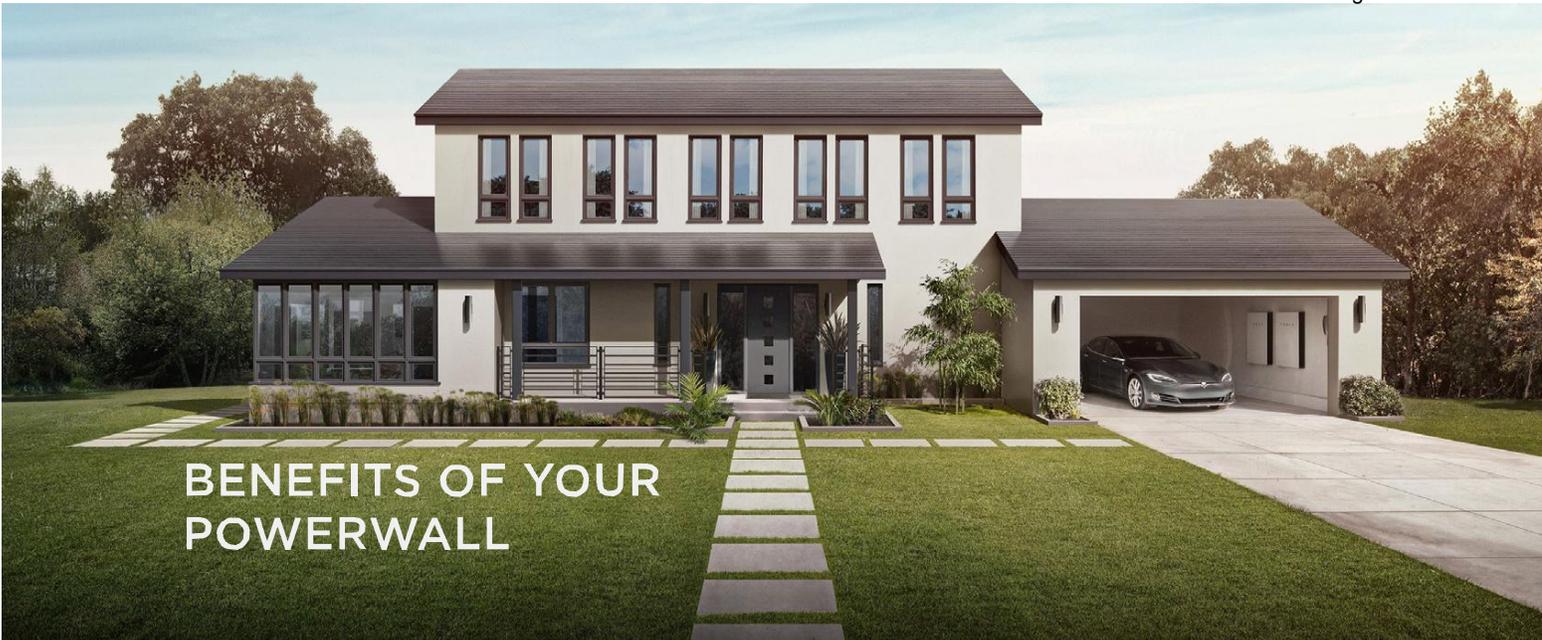
## A SELF-POWERED HOME

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Powerwall is a home battery that stores solar energy so you can use it on demand and self-power your home to reduce your reliance on grid electricity. In the event of a grid outage, Powerwall automatically provides backup power or easily integrates with solar to ensure your home is powered 24/7. With Powerwall, you are assured of energy security and a clean energy lifestyle.

### In this Guide You'll Discover

- The Benefits Of Powerwall
- Installation Overview
- Next Steps



## BENEFITS OF YOUR POWERWALL

Powerwall allows you to store 14 kWh of energy and use that energy to run your home with solar during the day and back up your home in the event of a power outage. Powerwall is compact, safe and includes a built-in battery inverter, which provides easier integration and over-the-air updates for new features and functions.

### **Self-Powered Home**

Use solar and Powerwall to reduce reliance on the grid and run your home off solar day and night

### **Backup Power**

Protect your home from a power outage with seamless and reliable backup power

### **Energy Savings**

Reduce your electricity bill, if your utility offers a time-of-use rate plan\*

### **Home Energy Control**

Manage and control your home energy use in real-time with the Tesla mobile app



## SELF-POWER YOUR HOME WITH SOLAR AND POWERWALL

A self-powered home is one that runs off solar and Powerwall, which gives you the ability to own your energy and reduce your reliance on the grid. With Powerwall you can use more of your solar by storing the excess solar energy and using it at night, which roughly doubles the amount of solar energy harvested and powers your home.

During a grid outage, by combining solar and Powerwall, you can extend your hours of backup power. Solar panels, when installed by themselves, are required to shut down during a power outage for grid safety. However, in combination with a Powerwall system, solar panels can continue to operate during a grid outage, and provide power to your home and also recharge the Powerwall in a longer duration backup.



### Tesla Mobile App

The Tesla mobile app allows you to have full visibility into your self-powered home. You can monitor your home solar generation, battery power flow, and household consumption in real-time from anywhere.

# AUTOMATICALLY BACK UP YOUR HOME DURING AN OUTAGE

Secure your home from a power outage with reliable backup power. Powerwalls are able to detect a grid outage, disconnect from the grid and bring power back to your home in a fraction of a second. That's over 100x faster than typical standby generators, and fast enough to keep your appliances running without interruption. You will not have to reset your clocks or your alarm.

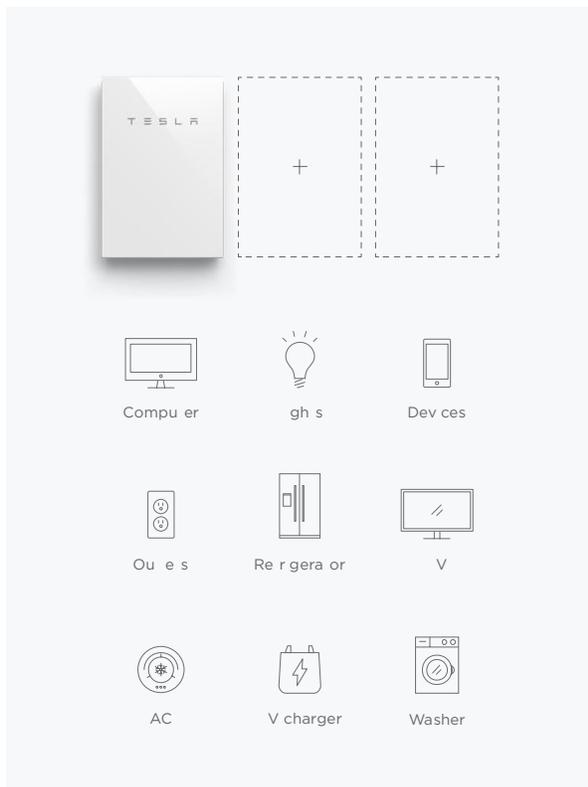
Our goal is to provide backup power to your entire home. However, depending on the type of appliances at your home, we may recommend an essential load backup instead of whole home backup.

## Whole Home Backup

Your entire home is backed up by our recommended number of Powerwalls. In some cases, an upgrade to your electrical panel may be needed and we will advise you if this is the case. You can add more Powerwalls to keep your house operating longer during an outage.

## Essential Load Backup

If your electrical situation doesn't allow for a whole home backup, we can backup select essential loads. Since lights and outlets require less energy, a single Powerwall will typically be sufficient and a secondary electrical panel is usually required.



# POWERWALL INSTALLATION

The Powerwall system consists of Powerwall and an additional supporting component called the Backup Gateway. Powerwall and the Gateway are connected to your home's main electrical panel. The Gateway has built-in intelligence and communications, which feeds into the Tesla app to give you visibility into your home energy usage. Depending on your choice of whole home or partial home backup, your main electrical panel may need to be upgraded.



## NEXT STEPS

### ○ Deposit

Place a \$500 deposit online. We will contact you to learn more about your home energy needs and determine the right Powerwall system for you.

### ○ Home Energy Assessment

To prepare for your installation, we will assess the best location for Powerwall and determine the appropriate supporting hardware. This can either be done over the phone, where we will guide you to take specific photos of your home energy equipment, or we can dispatch an electrician to conduct an in-person site visit.

### ○ Review your Powerwall agreement

Your agreement, sent via email, includes your final hardware and installation pricing for your Powerwall system. A Tesla product specialist will call you to answer any questions and walk you through the pricing details. You can also reach us at 725-333-7731. An email approval is all we need to move forward with your installation.

### ○ Schedule your installation

After you approve your agreement, a specialist will reach out to determine the best time to deliver and install your system.

### ○ Installation

It takes less than a day to install Powerwall. You will need to be home while the installation crew in and be available throughout the day. Your home will lose power for a minimum of four hours during the installation process. This should be one of the last times you have a power outage.

### ○ Download the app

Once the system is installed, you can download the Tesla mobile app to monitor your Powerwall and home energy use in real time anywhere.

### ○ Ongoing Support

Powerwall has a 10-year warranty. We are here to support you with any questions during its lifetime. You can reach us at 877-798-3752.

T E S L A



## POWER WALL

Tesla Powerwall 2 is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, load shifting, backup, and off-grid use.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.



### PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	208 V, 220 V, 230 V, 100/200 V, 120/240 V
Feed-In Type	Single & Split Phase
Grid Frequency	50 and 60 Hz
Total Energy <sup>1</sup>	14 kWh
Usable Energy <sup>1</sup>	13.5 kWh
Real Power, max continuous <sup>2</sup>	5 kW (charge and discharge)
Real Power, peak (10s) <sup>2</sup>	7 kW (discharge only)
Apparent Power, max continuous <sup>2</sup>	5.8 kVA (charge and discharge)
Apparent Power, peak (10s) <sup>2</sup>	7.2 kVA (discharge only)
Imbalance for Single-Phase Loads	100%
Power Factor Output Range	+/- 1.0 adjustable
Power Factor (full-rated power)	+/- 0.85
Depth of Discharge	100%
Internal Battery DC Voltage	50 V
Round Trip Efficiency <sup>1,3</sup>	> 90%
Warranty	10 years

<sup>1</sup>Values provided for 25°C (77°F), 3.3 kW charge/discharge power.

<sup>2</sup>Values region-dependent.

<sup>3</sup>AC to battery to AC, at beginning of life.

### COMPLIANCE INFORMATION

Safety	UL 1642, UL 1741, UL 1973, UL 9540, UN 38.3, IEC 62109-1, IEC 62619, CSA C22.2.107.1
Grid Standards	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003, EN 61000 Class B
Environmental	RoHS Directive 2011/65/EU, WEEE Directive 2012/19/EU, 2006/66/EC
Seismic	AC156, IEEE 693-2005 (high)

### MECHANICAL SPECIFICATIONS

Dimensions	1150 mm x 755 mm x 155 mm (45.3 in x 29.7 in x 6.1 in)
Weight	125 kg (276 lbs)
Mounting options	Floor or wall mount

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Altitude	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

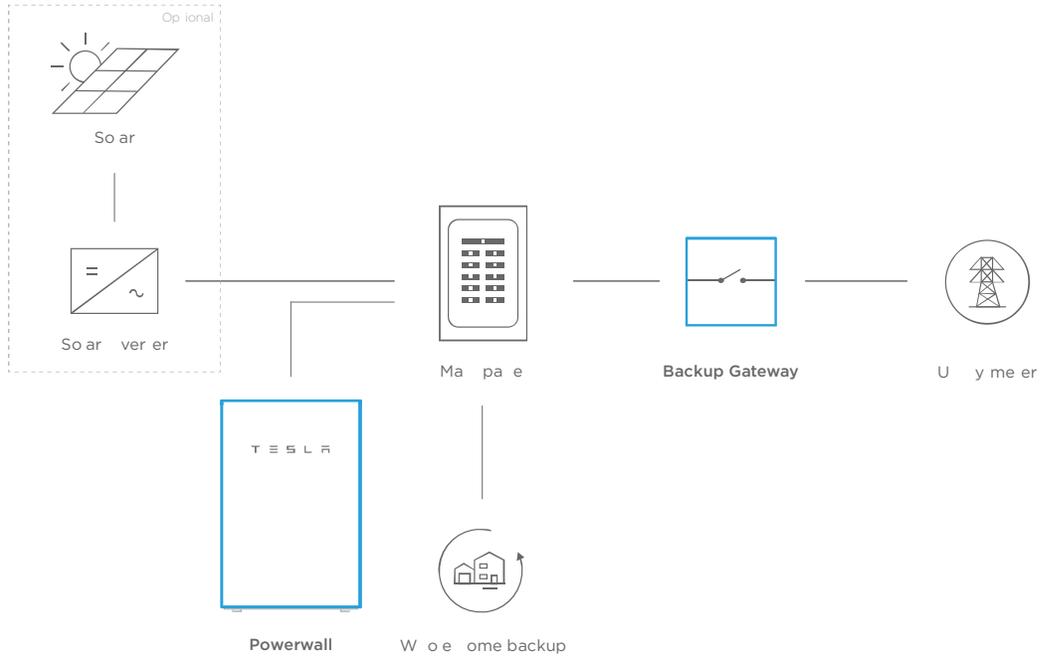
### BACKUP GATEWAY SPECIFICATIONS

Dimensions	691 mm x 378 mm x 129 mm (27.2 in x 14.9 in x 5.1 in)
Weight	16.4 kg (36 lbs)
Disconnect Current	200 A
Enclosure Type	NEMA 3R
Ingress Rating	IP44
Overcurrent Protection Breaker <sup>4</sup>	100-200 A
User Interface	Tesla App
Connectivity	Wi-Fi, Ethernet, 3G <sup>4</sup>
AC Meter	Revenue grade
Operating Modes	Support for solar self-consumption, load shifting, backup, and off-grid use
Backup Operation	Automatic disconnect for seamless backup transition
Modularity	Supports up to 10 AC-coupled Powerwalls

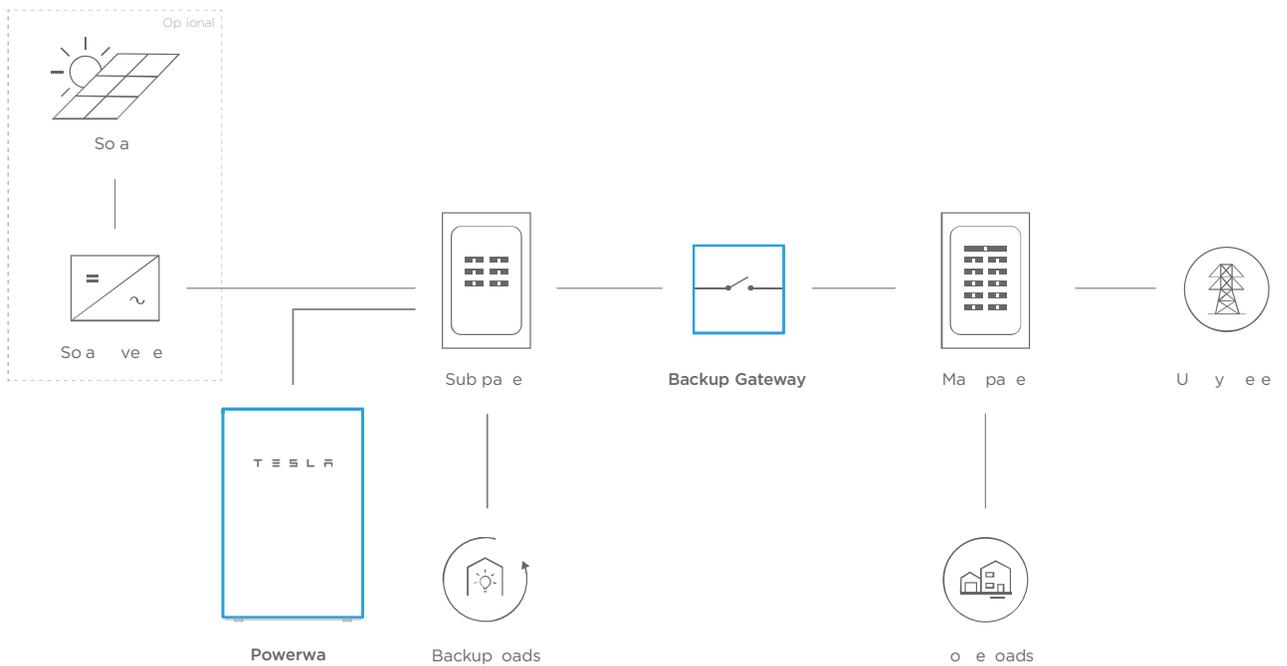
<sup>4</sup>Optional

## TYPICAL SYSTEM LAYOUTS

### WHOLE HOME BACKUP



### PARTIAL HOME BACKUP



**TESLA**



## **Powerwall 2 AC**

Owner's Manual  
Betriebsanleitung  
Manuel du Propriétaire  
Manuale d'uso  
Handleiding

For the latest Powerwall documents in a supported language including the Warranty visit [www.tesla.com/support/powerwall](http://www.tesla.com/support/powerwall)

To secure the full 10-year product warranty Powerwall must be registered by completing the commissioning process and sending system information to Tesla

**Warning** Read this entire document before installing or using Powerwall. Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or can damage Powerwall potentially rendering it inoperable.

#### PRODUCT SPECIFICATIONS

This manual applies to the following products:

- Powerwall 2 AC (1092170-xx-x)
- Gateway (1099752-xx-x)
- Backup Gateway (1118431-xx-x)
- Gateway Meter (1112484-xx-x)

All specifications and descriptions contained in this document are verified to be accurate at the time of printing. However, because continuous improvement is a goal at Tesla, we reserve the right to make product modifications at any time.

The images provided in this document are for demonstration purposes only. Depending on product version and market region, details may appear slightly different.

#### ERRORS OR OMISSIONS

To communicate any inaccuracies or omissions in this manual, send an email to [energy-pubs@tesla.com](mailto:energy-pubs@tesla.com)



#### ELECTRONIC DEVICE: DO NOT THROW AWAY

Proper disposal of batteries is required. Refer to your local codes for disposal requirements.



MADE IN THE USA



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TESLA	TESLA	TESLA		POWERWALL
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## IMPORTANT SAFETY INSTRUCTIONS

### SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

Powerwall installation and service require knowledge of high voltage electricity and should only be performed by a Certified Installer. The installer assumes no liability for injury or property damage due to repairs attempted by unqualified individuals or a failure to properly follow these instructions. These warnings and cautions must be followed when using Powerwall.

### Symbols in this Document

This manual uses the following symbols to highlight important information:

 **WARNING:** Indicates a hazardous situation which, if not avoided, could result in injury or death.

 **CAUTION:** Indicates a hazardous situation which, if not avoided, could result in minor injury or damage to the equipment.

**NOTE:** Indicates an important step or tip that leads to best results, but is not safety or damage related.

### General Information

 **WARNING:** Read this entire document before installing or using Powerwall. Failure to do so or to follow any of the instructions or warnings in this document can result in electrical shock, serious injury, or death, or can damage Powerwall, potentially rendering it inoperable.

 **WARNING:** A battery can present a risk of electrical shock, fire, or explosion from vented gases. Observe proper precautions.

 **WARNING:** Powerwall installation must be carried out only by a Certified Installer who has been trained in dealing with high voltage electricity.

 **WARNING:** Powerwall is heavy. Use of lift equipment is recommended.

 **WARNING:** Use Powerwall only as directed.

 **WARNING:** Do not use Powerwall if it is defective, appears cracked, broken, or otherwise damaged, or fails to operate.

 **WARNING:** Before beginning the wiring portion of the installation, ensure that the Powerwall is switched off, and open any associated circuit breakers and disconnect switches of applicable for the installation.

 **WARNING:** Do not attempt to open, disassemble, repair, tamper with, or modify Powerwall. Powerwall and its components are not user serviceable. Batteries in Powerwall are not replaceable. Contact the Certified Installer who installed the system for any repairs.

 **WARNING:** To protect Powerwall and its components from damage when transporting, handle with care. Do not impact, push, drag, or step on Powerwall. Do not subject Powerwall to any strong force. To help prevent damage, leave Powerwall in its shipping packaging until it is ready to be installed.

 **WARNING:** Do not insert foreign objects into any part of Powerwall.



**⚠ WARNING:** Do not expose Powerwall or its components to direct flame

**⚠ WARNING:** Do not install Powerwall near heating equipment

**⚠ WARNING:** Do not immerse Powerwall or its components in water or other fluids

**⚠ CAUTION:** Do not use cleaning solvents to clean Powerwall, or expose Powerwall to flammable or harsh chemicals or vapors

**⚠ CAUTION:** Do not use fluids, parts, or accessories other than those specified in this manual, including use of non-genuine Tesla parts or accessories, or parts or accessories not purchased directly from Tesla or a Tesla-certified party

**⚠ CAUTION:** Do not place Powerwall in a storage condition for more than one (1) month, or permit the electrical feed on the Powerwall to be severed for more than one (1) month, without placing Powerwall into a storage condition in accordance with Tesla's storage specifications

**⚠ CAUTION:** Do not paint any part of Powerwall, including any internal or external components such as the exterior shell or casing

**⚠ CAUTION:** Do not connect Powerwall directly to photovoltaic (PV) solar wiring

**⚠ CAUTION:** When installing Powerwall in a garage or near vehicles, keep it out of the driving path if possible, install Powerwall on a side wall and/or above the height of vehicle bumpers

### Environmental Conditions

**⚠ WARNING:** Install Powerwall in a location that prevents damage from flooding

**⚠ WARNING:** Operating or storing Powerwall in temperatures outside its specified range might cause damage to Powerwall

**⚠ WARNING:** Do not expose Powerwall to ambient temperatures above 60°C (140°F) or below -30°C (-22°F)

**⚠ CAUTION:** Ensure that no water sources are above or near Powerwall, including downspouts, sprinklers, or faucets

**⚠ CAUTION:** Ensure that snow does not accumulate around Powerwall



## 1. Powerwall Warranty

Each Powerwall comes with a warranty whose term depends on the connection of Powerwall to the internet.

To secure the full 10-year warranty for Powerwall, it must be reliably connected to the internet to allow remote firmware upgrades from Tesla. An internet connection is not established or is interrupted for an extended period, and Tesla is unable to contact you, the warranty may be limited to 4 years.

For more information, refer to the Tesla Powerwall Warranty for your region at [www.tesla.com](http://www.tesla.com).

## 2. Care and Maintenance

### Environmental Requirements

Powerwall's capability of charging and discharging within the operating temperature range specified below. At the extremes of the temperature range, Powerwall may limit charge or discharge power to improve battery lifespan.

For best performance, the average ambient temperature over the system's lifetime should fall within the optimum temperature range specified below.

Operating temperature	20°C to 50°C (4°F to 122°F)
Optimum temperature	0°C to 30°C (32°F to 86°F)

### Care and Cleaning

If the installed outside, keep the sides of Powerwall clear of leaves and other debris to maintain optimum airflow.

**⚠ CAUTION:** Do not lean on, stack anything on top of, or hang anything from Powerwall or from wires or conduit leading to Powerwall.

**⚠ CAUTION:** To clean Powerwall, use a soft, lint-free cloth. If needed, the cloth can be dampened with mild soap and water only.

**⚠ CAUTION:** Do not use cleaning solvents to clean Powerwall, or expose Powerwall to flammable or harsh chemicals or vapors.

### Maintenance

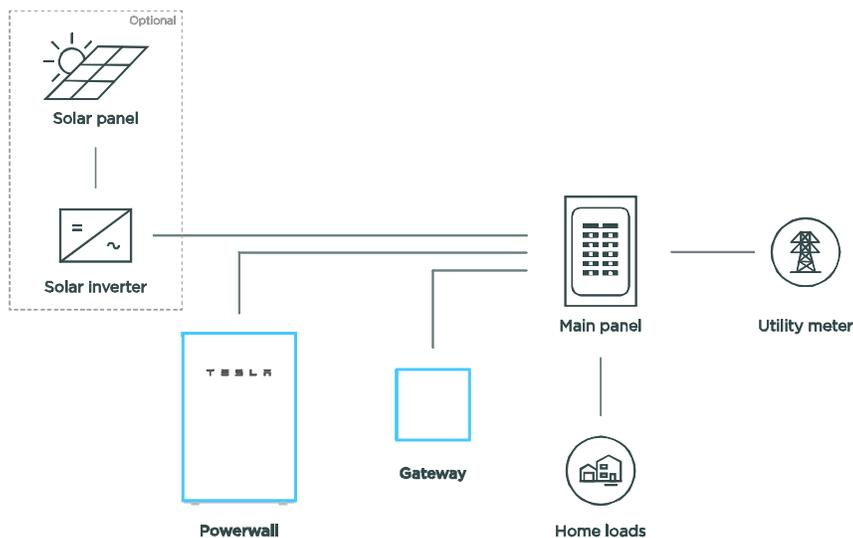
Powerwall and the Gateway do not require pre-scheduled preventative maintenance. The only maintenance required by an owner is to keep the Powerwall unit free and clear of debris, especially around the air intake and exhaust.



### 3. Powerwall System without Backup

#### About Powerwall

Powerwall 2 AC is a fully integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, load shifting, or off-grid use. The Gateway controls the operation of the system and allows remote monitoring of energy usage.



#### Monitoring Your System

Using the Tesla app, you can monitor system operation from your mobile device, including the following:

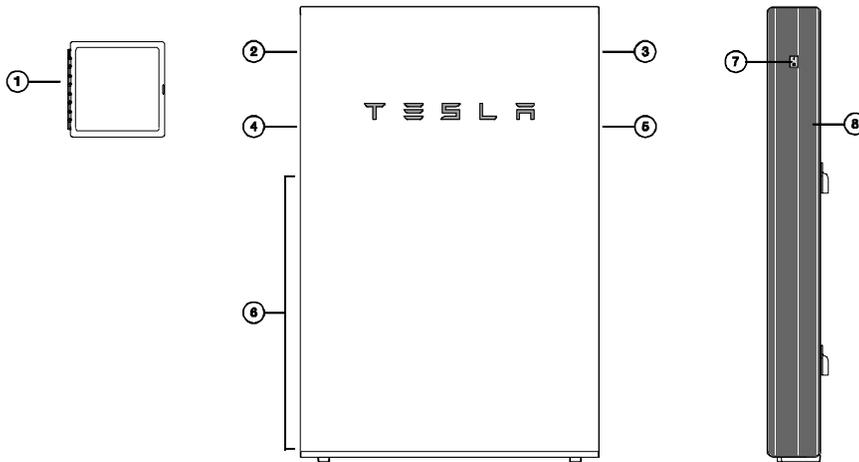
- Real-time power usage
- Energy consumption history
- Relative amounts of energy used from solar, grid, and Powerwall storage

To download the latest version of the Tesla app, visit [www.tesla.com](http://www.tesla.com)



## Overview

A Powerwall 2 AC system includes the following components and features:



Component/Feature	Name
1	Gateway
2	Powerwall Air Intake
3	Powerwall Air Exhaust
4	Powerwall Wiring Compartment
5	Powerwall Inverter Module
6	Powerwall Battery Pack
7	Powerwall On/Off Switch
8	Powerwall LED Indicator

## Operation

The Gateway provides control and monitoring capability through the Tesla app. During normal operation, Powerwall is controlled by the Gateway, and the Powerwall On/Off switch should remain in the ON position. When troubleshooting Powerwall operation, it may be necessary to turn off Powerwall or refer to the LED Indicator to confirm that it is operating properly.

**⚠ WARNING:** Do not operate Powerwall unless all covers are in place.

**⚠ WARNING:** Do not disconnect anything from or add anything to Powerwall.

**⚠ CAUTION:** Do not try to communicate with Powerwall using third-party tools or diagnostic tools between Powerwall and the Gateway.



### troubleshooting

If the system is not working correctly, perform the following steps

**⚠ CAUTION:** Powerwall and the Gateway are not user serviceable and must be repaired by a Tesla Certified Installer

- Check the LED on the right side of Powerwall to determine its status

LED State	Indication
○ (solid)	Powerwall enabled. Communication with Gateway.
○ (flashing)	Powerwall enabled. No communication with Gateway.
○ (pulsing)	Powerwall enabled. A discharge is occurring.
○	Powerwall is disabled or switched off.

- If it is not possible to communicate with the Gateway through the Tesla app, ensure that the home internet connection is working
- If the Gateway and Powerwall are both unresponsive
  - 1 Turn off Powerwall by setting its On/Off switch to the OFF position
  - 2 Turn off the AC breakers for the system (Gateway and Powerwall)
  - 3 Wait for at least one minute
  - 4 Turn the AC breakers back on
  - 5 Turn on Powerwall

**NOTE:** The Gateway's capability of withstanding voltage surges up to 1 kV (measured between line and ground or neutral and ground) if an event such as a lightning strike exceeds this threshold and causes the system to become unresponsive or the Tesla app to lose communication with the system, do the following

- 1 Turn off Powerwall
- 2 Turn off the AC breakers to the Gateway and Powerwall
- 3 Contact Tesla Support for assistance

### Technical Support

If you need further assistance, contact the Tesla Service team at the support phone number for your region. Support numbers for all regions are available at

<https://www.tesla.com/support/powerwall>

Have the following information available when contacting Tesla

- Owner name
- Best way for Tesla to contact you (name, phone number, email)
- Gateway and Powerwall serial numbers (see #6 System Information)
- Brief description of the issue



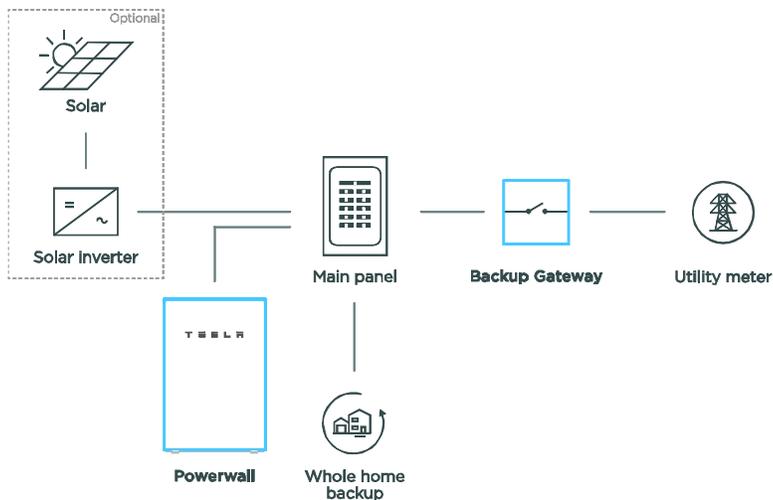
## 4. Powerwall System with Backup

### About Powerwall

Powerwall 2 AC is a fully integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, load shifting, off-grid use, or backup. The Backup Gateway controls the operation of the system, allows remote monitoring of energy usage, and controls interconnection with the electrical grid, automatically managing the transition to and from backup operation.

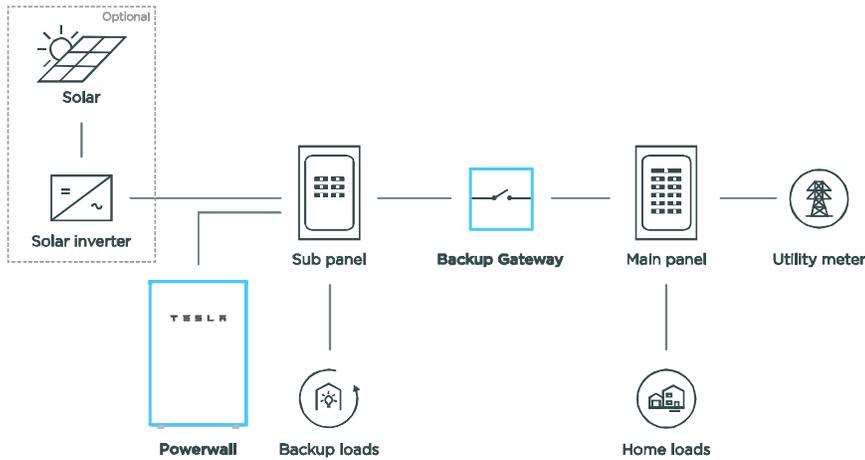
A Powerwall 2 AC Backup system can provide whole home backup or partial backup.

- In a whole home backup system, the Backup Gateway is typically installed between the electrical service entry and the main panel.





- In a partial home backup system, the Backup Gateway is typically installed between the main panel and a subpanel dedicated to essential backup loads



### Monitoring Your System

Using the Tesla app, you can monitor system operation from your mobile device, including the following:

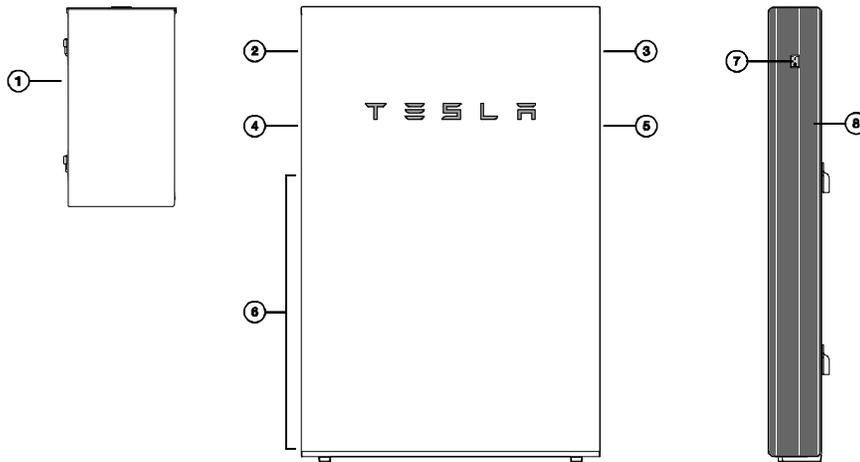
- Real-time power usage
- Energy consumption history
- Energy reserve for backup needs
- Relative amounts of energy used from solar, grid, and Powerwall storage

To download the latest version of the Tesla app, visit [www.tesla.com](http://www.tesla.com)



## Overview

A Powerwall 2 AC Backup system includes the following components and features:



Component/Feature	Name
1	Backup Gateway
2	Powerwall Air Intake
3	Powerwall Air Exhaust
4	Powerwall Wiring Compartment
5	Powerwall Inverter Module
6	Powerwall Battery Pack
7	Powerwall On/Off Switch
8	Powerwall LED Indicator

## Operation

The Backup Gateway provides control and monitoring capability through the Tesla app. During normal operation, Powerwall is controlled by the Backup Gateway, and the Powerwall On/Off switch should remain in the ON position. When troubleshooting Powerwall operation, it may be necessary to turn off Powerwall or refer to the LED Indicator to confirm that it is operating properly.

**⚠ WARNING:** Do not operate Powerwall unless all covers are in place.

**⚠ WARNING:** Do not disconnect anything from or add anything to Powerwall.

**⚠ CAUTION:** Do not try to communicate with Powerwall using third-party tools or diagnostic devices between Powerwall and the Backup Gateway.



## troubleshooting

If the system is not working correctly, perform the following steps

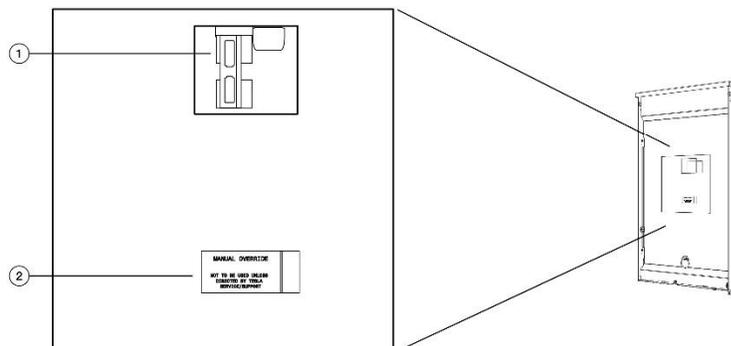
**⚠ CAUTION:** Powerwall and the Backup Gateway are not user serviceable and must be repaired by a Certified Installer

- If a brownout or blackout is experienced during backup operation, reduce the loads and check that the load breakers have not opened
- Check the LED on the right side of Powerwall to determine its status

LED State	Indication
○ (solid)	Powerwall enabled. Continuous Backup Gateway
○ (flashing)	Powerwall enabled. No continuous Backup Gateway
○ (pulsing)	Powerwall enabled. Adcag go dscagg
○	Powerwall disabled. Switched off

- If it is not possible to communicate with the Backup Gateway through the app, ensure that the home internet connection is working
- If the Backup Gateway and Powerwall are both unresponsive
  - 1 Turn off Powerwall by setting its On/Off switch to the OFF position
  - 2 Turn off the AC breaker to Powerwall
  - 3 Turn off the AC breaker to the Backup Gateway for whole home backup systems, this may be a breaker inside the Backup Gateway
  - 4 Wait for at least one minute
  - 5 Turn the AC breakers back on
  - 6 Turn on Powerwall
- If it is necessary to manually disconnect/reconnect to the grid, a Support may direct you to operate the manual override switch in the Backup Gateway

**⚠ CAUTION:** Do not remove the protective cover or operate the manual override switch unless directed to do so by a Support. Improper operation of the manual override switch may damage the unit.



Component	Name
	Backup Gateway circuit breaker (continuous whole home backup systems)
2	Backup Gateway manual override switch



## Technical Support

If you need further assistance, contact the Tesla Service team at the support phone number for your region. Support numbers for all regions are available at

<https://www.tesla.com/support/powerwall>

Have the following information available when contacting Tesla:

- Owner name
- Best way for Tesla to contact you (name, phone number, email)
- Gateway and Powerwall serial numbers (see #6 System Information)
- Brief description of the issue

## 5. What to Do in Case of an Emergency

In the event of any threat to health or safety, always begin with these two steps before addressing the other suggestions below:

- 1 Immediately contact the fire department or other relevant emergency response team
- 2 Notify all people who might be affected and ensure that they can evacuate the area

 **WARNING:** Only perform the suggested actions below if it is safe to do so.

### In case of fire

- Turn off Powerwall, then turn off the AC breaker to Powerwall
  - Turn off the AC breaker to the Gateway
  - Acceptable fire extinguisher types are water, CO<sub>2</sub>, and ABC.
- Avoid type D (flammable metal) extinguishers.**

### In case of flooding

- Stay out of the water if any part of the battery, Gateway, or wiring is submerged
- Turn off Powerwall, then turn off the AC breaker to Powerwall
- Turn off the AC breaker to the Gateway
- If possible, protect the system by finding and stopping the source of the water, and pumping water away
- Let the area dry completely before use

### If there is an unusual odor or smoke

- Turn off Powerwall, then turn off the AC breaker to Powerwall
- Turn off the AC breaker to the Gateway
- Ensure no one is in contact with Powerwall
- Ventilate the room

### If Powerwall is making unusual noises

- Turn off Powerwall, then turn off the AC breaker to Powerwall
- Turn off the AC breaker to the Gateway
- Ensure that no one is in the ventilation thermostat of Powerwall or in the fan



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#### If Powerwall leaks coolant

**⚠ WARNING:** According to the U.S. Environmental Protection Agency, coolant can be absorbed through the skin and cause damage to internal organs. Ensure that it does not touch or enter any part of the body including, but not limited to, skin, eyes, and mouth.

- Turn off Powerwall, then turn off the AC breaker to Powerwall.
- Turn off the AC breaker to the Gateway.
- Ventilate the area.

#### When cleaning up spilled coolant

- Wear safety goggles, rubber gloves, long trousers, and long sleeved shirt, and closed shoes.
- Avoid further coolant spills by putting a bucket under the leak. Powerwall holds up to 23 – 24 qt. of coolant.
- Pour cat litter, sawdust, or other absorbent material on the spilled area. Allow the material to absorb as much of the coolant as possible.
- Use paper towels to collect the used absorbent material and discard the soiled paper towels in a sealed plastic bag. Place the sealed plastic bag into the garbage.
- Clean up anything that remains using soap and warm water.

In all cases, once the situation is stable, contact the local Certified Installer who installed the system.

## 6. System Information

The serial numbers for your system are recorded on the inside back cover of this guide. Keep this information in the event your system requires service.

Component	Ser a Number
Komponente	Ser ennumer
Composant	Numéro de sér e
Componente	Numero d ser e
Component	Ser ennumer

Gateway

Gateway Meter

Powerwa #1

Powerwa #2

Powerwa #3

Powerwa #4

Powerwa #5

Powerwa #6

Powerwa #7

Powerwa #8

Powerwa #9

Powerwa #10



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P/N 1104412-00-F August 21, 2017

# Battery Energy Storage System – Single Sourcing Criteria and Justification

*Prepared for:*

**Liberty Utilities (Granite State Electric) Corp.**



## **New Hampshire Battery Storage Aggregation Program Pilot**

**Submitted to:**

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The purpose of this document is to provide the rationale for Liberty Utilities to consider single sourcing a battery energy storage system for its 1,000 house pilot program deployment in New Hampshire.

## **Single Sourcing Criteria:**

A number of criteria are typically evaluated when considering a sole source procurement for a project of this magnitude. The primary criteria used to justify the sole sourcing approach for the BASP are identified and defined below.

### **Pre-requisite for technological compatibility or proprietary fit:**

- The vendor must have a **proven** residential scale (less than 10kW output at 240VAC) battery storage system solution that is capable of interacting with the grid safely and reliably (charging from and discharging into the grid).
  - The vendor must have a production grade, software based aggregation platform that allows the battery fleet to be remotely controlled and dispatched in order to meet specific objectives as prescribed the grid operator.
- **Scarcity of supply of the specific requirement (goods and / or services) in the marketplace:**
- The vendor must have the required supply chain and manufacturing infrastructure to deliver 1,000 battery storage units within 12-18 months. Given that there are so few market players in this nascent space, finding a reliable supplier with a proven track record of fulfilling large orders is major challenge.
  - The vendor must be able to provide competitive pricing backed by a comprehensive warranty that covers materials and workmanship on BOTH the battery and the installation..
- **A vendor possess specialized and unique products, knowledge, skills, expertise or experience:**
- The vendor must be able to provide an end-to-end, turn-key solution with a fixed price for deployment per house, which includes following :
    - Battery storage system with energy and fleet management software designed to interact with the grid

- Engineering
  - Installation
  - Commissioning
  - Initial Training on the product
  - Product and workmanship Warranty and
  - Experience with integrating the product into the grid.
- **Prevailing strategic alliance:**
- Liberty Utilities is seen as a trusted and reliable supplier of energy services to the New Hampshire region and has developed significant brand equity with its customer base. It is highly desirable for LU to align themselves with an organization that has a similar level of brand awareness and consumer trust to ensure the highest level of customer engagement throughout the course of the project.

### **Single Sourcing Justification:**

The following key points support single sourcing of the residential storage equipment and energy management systems through Tesla.

#### **Pre-requisite for technological compatibility or proprietary fit:**

- The information provided by Tesla strongly indicates that the Powerwall 2 battery storage system meets or exceeds key technical requirements necessary for residential usage. It is grid interactive, remotely controllable and complies with relevant safety standards and codes. It also has a small foot print, can be installed indoors or outside, and has a modular design creating a high level of flexibility for installations. This flexibility, form factor and design will be essential as it will help to ensure that LU can meet its enrollment targets.
- GridLogic is an advanced aggregation software platform that is provided to optimize the dispatch and control of a fleet of Powerwall 2 units. The fact that both the aggregator and the physical assets are produced by the same vendor decreases the risk of interoperability issues. No doubt issues will arise during the rollout of the pilot and Tesla has the resources to assume this risk and favorably resolve issues. Tesla's market capitalization is approximately \$56.5B which provides financial confidence and they have demonstrated a commitment to the battery storage industry by having

recently installed a 100MW battery system, the world's largest, in South Australia. Attachment C  
Page 4 of 5

- **Scarcity of supply of the specific requirement (good and / or services) in the marketplace:**

- Tesla has a large production facility (Giga factory) and an extensive logistical network that is capable of delivering the required battery storage units for the program.
- Product warranty is provided with appropriate clarity.
- Tesla has a field force for both installation and after sales support. They are prepared to provide a workmanship warranty on the installation.

- **A vendor possess specialized and unique products, knowledge, skills, expertise or experience:**

- Tesla is prepared to charge a [REDACTED] for standard installation including engineering and commissioning – which according to Alectra's experience is the lowest cost service available on the market for the type installation being quoted.
- Tesla offers a comprehensive warranty at a reasonable price of [REDACTED]. This helps to protect both Liberty and the ratepayer against escalating installation fees.
- GridLogic training is provided under the initial cost which will allow Liberty to train operators on the use of the aggregated platform. Deploying multiple platforms during the pilot stage complicates the roll-out and operation of the fleet.
- The primary use case being evaluated – namely system level peak reduction – requires extremely tight coupling between the battery hardware and control software. This is to ensure that system level needs are met under adequate performance criteria, and that the battery hardware doesn't exceed any of the physical or electrical tolerances that would compromise its durability. The GridLogic platform is designed specifically to work with the Tesla Powerwall suite of products, and the functionality required is currently being deployed and tested in a neighboring utility under real world conditions. This track record of performance and integrated design has not been proven at a meaningful scale by any other vendor to our knowledge.

- **Prevailing strategic alliance**

- Tesla is a very well established company in the market with positive customer perception attached to their brand.

- o Clear guidelines about customer experience expectation is provided.

## Liberty Utilities Battery Storage Program Customer Agreement

### Introduction.

Liberty Utilities (Granite State Electric) Corp. (“Liberty”) is offering a battery storage Program (the “Program”) that will provide up to 1,000 residential customers the benefits of a battery storage system manufactured by Tesla, Inc. (“Tesla”), and will provide Liberty with access to the batteries at peak times in order to potentially lower Liberty’s transmission and distribution costs, and achieve other system benefits. Participation in the Program is governed by this Battery Storage Program Customer Agreement (“Agreement”), which is between the customer and Liberty. There are also some terms in this Agreement that affect the relationship between the customer and Tesla.

Customers participating in the Program will lease a Tesla battery and related equipment from Liberty, which will be installed at the customer’s home by Tesla or by an authorized Tesla contractor. The customer will have full access to the battery except when Liberty periodically exercises control over the battery during peak energy periods as explained in Section 9 below. The customer cannot intentionally export power from the battery to the grid.

Installation includes a Tesla gateway that provides communication and integration into an energy management platform owned by Tesla and used by both Liberty and Tesla as part of this Program. Communication between the battery system, Liberty, and Tesla is through that platform using the customer’s internet connection or other means.

By signing this Agreement, the customer identified below is making the commitments described in this Agreement to Liberty and to Tesla, and both companies will rely on those commitments in order to perform their roles.

### Agreement.

Liberty Utilities (Granite State Electric) Corp. (“Liberty”), a regulated utility with its principal office at 15 Buttrick Road, Londonderry, NH 03053; and

\_\_\_\_\_  
(Customer Name, Liberty Account Number, and Customer Email Address)

of \_\_\_\_\_, NH (“Home”)  
(Address for Installation)

agree as follows:

.

1. The Parties agree that Tesla is a third-party beneficiary of this Agreement

2. **Equipment:**

Equipment Description	Quantity
Tesla Powerwall 2	

3. **Lease:** Liberty agrees to lease to you, and you agree to lease from Liberty, in the quantity specified above, a Tesla gateway and the 13.5kWh lithium-ion battery with an integrated inverter (together, the “Powerwall”). Liberty will maintain ownership of the Powerwall for the entire term of this Agreement. There is no option for you to buy the Powerwall.

4. **Term:** The term of this Agreement will begin on the date that the Powerwall is installed at your Home and will continue for a period of ten years, or until either you or Liberty terminate this Agreement as described below. You may extend this Agreement for additional five year terms as described in Paragraph 20, but the battery’s limited warranty ends after the initial ten year term.

5. **Eligibility for the Program:** To participate in the Program, you must:

- a. Be a residential customer of Liberty;
- b. Have reliable Internet access;
- c. Be the owner of the Home, or receive the homeowner’s signed consent on this Agreement;
- d. Be and remain current with all payments due to Liberty; and
- e. Take service under Liberty’s time-of-use tariff.

6. **Payment Options:**

- a. There is no security deposit required and there is no amount is due when you sign this Agreement.
- b. Select one of the following two options for Lease Payments:

*Check One:*

\_\_\_\_\_ \$10 per month **per Powerwall** for the entire ten year Term. The monthly charges will appear as a separate line item beginning with the first Liberty bill following the Powerwall installation, and will be due at the same time as the regular utility charges as stated on each bill.

\_\_\_\_\_ A one-time payment of \$1,000 **per Powerwall**. The one-time charge will appear as a separate line item on the first Liberty bill following the Powerwall installation and will be due at the same time as the regular utility charges as stated on that bill.

- c. The above Powerwall charges are in addition to all other Liberty charges related to your electricity service. Failure to make timely payment for Powerwall charges will not be grounds for disconnection of electrical service, but will be a Default as described in Paragraph 13, and will authorize Liberty and Tesla to take the steps described in Paragraph 12.

**7. Required Disclosures:**

<b>Amount Due at Lease Signing:</b>	<b>Monthly Payments to Liberty</b>	<b>Other Charges</b>	<b>Total Payments to Liberty (the amount you will have paid at Lease end)</b>
\$0.00	\$10.00 per month per Powerwall on your regular Liberty monthly bill	See Paragraph 10 for early termination fees.	\$1,000.00 per Powerwall

*This disclosure does not apply if you selected the one-time payment in Section 6(b).*

- 8. Right to Cancel:** At any time prior to the installation of the Powerwall, you may cancel this Agreement with no further financial obligation by notifying Liberty.
- 9. Liberty’s Use of the Powerwall.** You will have full access to the Powerwall except when Liberty predicts a peak demand event. When Liberty predicts a peak demand event, Liberty will notify you the day before that a peak may occur and that your access to the Powerwall will be limited. Liberty will then assert control over Powerwall beginning the day before the peak to ensure it is charged. On the peak day, Liberty may discharge your Powerwall’s energy to the grid. You will be credited for the energy that Liberty discharges from your Powerwall under the terms of Liberty’s net metering tariff effective September 1, 2017. Liberty’s discharge of the battery will reduce the energy in your battery to as low as 20% of its rated capacity. In the unlikely event that a grid outage were to occur during or immediately following a peak event, the Powerwall’s capacity to provide backup power will be diminished.
- 10. Your Use of the Powerwall.** For all times other than the peak events described in Paragraph 9, you will have full access to use the Powerwall as a backup generator during short-duration power outages (the duration of backup power will depend on the amount of energy stored in the Powerwall at the time of outage). Subject to the availability of Tesla operating modes, you may charge the Powerwall in the off-peak period when rates are low and dispatch the Powerwall during the critical peak period when rates are high; or you may use the Powerwall to maximize the benefits of your distributed generation system, if you have one. You will have access to the data collected from your Powerwall; and you will have access to the aggregated data and subsequent study that Liberty performs to learn how batteries interact with its distribution system, how to efficiently use the stored energy, and the overall savings realized.

**BECAUSE THE POWERWALL MAY BE DEPLETED AT ANY TIME, YOU SHOULD NOT RELY EXCLUSIVELY ON THE POWERWALL TO POWER LIFE-SUPPORTING EQUIPMENT.**

**11. Termination by You:**

- a. You may cancel the Agreement and withdraw from the Program at any time prior to the end of the Term by providing Notice to Liberty (“Early Termination”). You must then

surrender the Powerwall to Liberty, Tesla, or an authorized contractor in the same condition it was in at the time of installation, ordinary wear and tear excepted.

- b. If Early Termination occurs, a disconnection charge of \$450 will be added to your next Liberty bill after termination.
- c. If you do not permit Liberty, Tesla, or an authorized contractor to remove the Powerwall from the Home within thirty days after Early Termination, a \$7,000 per Powerwall equipment charge will be added to your next Liberty bill issued after the thirty days has elapsed.
- d. If you pre-paid for participation in the Program as described in Paragraph 6, then you will receive a pro-rated credit on your Liberty monthly bill for the remaining term of the Agreement.
- e. You will be responsible for repairing any cosmetic damage to your home resulting from the removal of the Powerwall.

#### **12. Termination by Liberty:**

- a. Liberty may terminate this Agreement or the Program in its sole discretion for any reason.
- b. Liberty may also terminate this Agreement if you are in Default as described in Paragraph 13, which includes your failure to pay the charges described in Paragraph 6.
- c. If termination is the result of Liberty's decision to terminate this Agreement or the Program under subparagraph (a) above, then Liberty, Tesla, or an approved contractor will remove the Powerwall from the Home at no charge within thirty days of sending you a Notice of Termination.
- d. If Liberty terminates as a result of your Default, then a disconnection charge of \$450 will be added to your next Liberty bill after termination, and Liberty, Tesla, or an approved contractor will remove the Powerwall from the Home within thirty days of sending a Notice of Termination to you.
- e. In either case, if you do not permit the removal of the Powerwall from the home, a \$7,000 equipment charge will be added to your next Liberty bill after the thirty days has elapsed.
- f. If you pre-paid for participation in the Program as described in paragraph 6, then you will receive a pro-rated credit on your Liberty monthly bill for the for the remaining term of the Agreement.
- g. You will be responsible for repairing any cosmetic damage to your home resulting from removal of the Powerwall.

**13. Default:** You are in default under this Agreement if you fail to make any required payment when due or within thirty days of the due date, or if you fail to meet any other material obligations under this Agreement, and such failure is not cured within ten days written notice by Liberty or Tesla to you (each a “Default”). An uncured Default will authorize Liberty to terminate the Agreement and take the steps and impose the charges described in Paragraph 12.

**14. Installation:**

- a. Liberty and Tesla will work with you to schedule installation of the Powerwall and any associated equipment. You give Liberty, Tesla, and its approved contractors and agents permission to enter the Home to perform the installation and any maintenance, repair, or removal activities during the Term of this Lease. Failing or refusing to allow reasonable access will be a Default.
- b. Participation in the Program includes materials and labor associated with a typical installation of the Powerwall. Atypical installation costs may, at Tesla’s election, be your responsibility. Atypical installation costs could include main panel upgrades, trenching, additional work to improve the aesthetics of the installation or work to relocate circuits from remote electrical panels. All atypical costs will be communicated in writing to you for approval prior to commencement of the installation. You may terminate this Agreement in the event of increased costs due to atypical installation, prior to installation, with no further obligation to Liberty or Tesla.
- c. Liberty and Tesla are not responsible for upgrading, repairing, or maintaining any electrical panel, wiring, siting, support, foundation, or any other matter that was not a part of the installation of the Powerwall, including any work performed by an electrician to ensure the Home’s electrical service can support the Powerwall. Liberty and Tesla are not responsible and bear no liability for the malfunctioning of existing electrical equipment at the Home, including but not limited to the main electrical service panel, any major electrical devices, or any other fuses or similar devices. Any damage to your Home or property during installation caused by Liberty, Tesla, or its installers shall be repaired or paid for by Liberty or Tesla, subject to the limit of liability in Section 22.

**15. Powerwall Communication:** In order to make the Powerwall fully accessible by Liberty or Tesla for purposes of the Program, you agree to:

- a. Provide a working and reliable Wi-Fi network in your Home that is positioned to communicate reliably with each Powerwall;
- b. Maintain functional internet connectivity with Wi-Fi capabilities for the duration of this Agreement;
- c. Provide a user account for each Powerwall where applicable;
- d. Provide other system elements that may be specified as required by the manufacturer of any of the equipment (i.e. smart phone apps);

- e. Ensure that you have all required system elements and that such elements are compatible and properly configured;
- f. Be responsible for all fees charged by your internet service provider (“ISP”) in connection with participation in the Program, if any.
- g. Comply with all applicable agreements, terms of use and service, and other policies of each device manufacturer and your ISP.

**16. Lack of Device Communication:** If Liberty or Tesla is unable to access the Powerwall and such access is not restored within 30 days of receiving notice from Liberty or Tesla, Liberty may consider this to be an Early Termination, subject to the terms of Paragraph 11.

**17. Powerwall Access:** Your access to the Powerwall is described in Paragraph 10. In addition to Liberty’s access to the Powerwall described in Paragraph 9, Liberty and Tesla will also have access to your Home and the Powerwall for the purposes of operation, maintenance, and support in accordance with the manufacturer’s specifications and warranty for the entire period of installation. You agree to permit Liberty and Tesla to have such access with reasonable notice, and you agree to permit all software and system upgrades as required by Tesla.

**18. Warranty and Maintenance:** Liberty has secured Tesla’s commitment to warranty the Powerwall to you as set forth on the Limited Warranty, attached as Exhibit A for informational purposes only (the “Limited Warranty”). Liberty will be responsible for maintenance and warranty issues of the Powerwall and you should contact Liberty for any maintenance or warranty concerns. Tesla or a Tesla certified installer shall be provided access to the Powerwall for the purposes of operation, maintenance and support in accordance with the manufacturer's specifications and warranty for the entire period of installation.

**19. Care and Maintenance Obligations:** You are responsible to comply with all warranty requirements relating to the Powerwall, and you agree not to tamper with the Powerwall and to permit only Tesla certified installers to work on the Powerwall. You agree not to permit the removal, relocation, alteration, or repair of, or tampering with the Powerwall without the written permission of Liberty. You agree not to permit the Powerwall to be abused or damaged and not to permit the nameplate identifying the Powerwall as the property of Liberty to be defaced or removed. Costs for repairs that are the result of abuse or damage to the Powerwall are not covered by the payments under this Agreement. You will be separately responsible for all such repairs.

**20. Lease End Procedures:** At the end of the ten year Term, you have no further financial obligation to Liberty. The Powerwall may remain in place for your use as described in Paragraph 10 for an additional five years, with Liberty’s ability to access the Powerwall as described in Paragraph 9 retained. Liberty will continue to own the Powerwall and will continue to be responsible for all maintenance under the terms of this Agreement. Alternatively, you may request removal of the Powerwall at the end of the Term. The Powerwall will be removed by Liberty and recycled at no cost to you.

**21. Your Acknowledgements:** By initialing below, you expressly acknowledge the following:

- a. I acknowledge that Liberty or Tesla may control the charge and discharge of the Powerwall installed in my Home as described in Paragraph 9. I agree that Liberty and Tesla may access my Powerwall remotely for that purpose, and to monitor performance, perform diagnostics, and upgrade firmware.
- b. I acknowledge that Liberty's use of the battery during peak events will reduce the energy in the battery to as low as 20% of its rated capacity. In the unlikely event that a grid outage were to occur during or immediately following a peak event, the Powerwall's capacity to provide backup power will be diminished.
- c. I acknowledge that Tesla owns all intellectual property rights associated with the Powerwall and its firmware, and any Tesla-provided software to be used in the Program. I understand that as part of this Program, I will be required to provide certain information, including personally identifiable information, to both Liberty and the third-party manufacturers of the Devices (including Tesla). By providing this information and agreeing to participate in the Program, I consent to this information, as well as other information related to energy usage, being shared between Liberty, Tesla, and other third parties responsible for the management of the Grid. Information obtained by Liberty or provided to Liberty by Tesla shall be used in accordance with Liberty's Privacy Policy, which is available on request. Information provided to Tesla will be subject to Tesla's Privacy Policy found at [www.tesla.com/legal](http://www.tesla.com/legal).
- d. I acknowledge that to enroll in this Program, I will need to review and approve Tesla's "Customer Privacy" terms, which will be delivered to me when the Powerwall is installed in my Home.

(Your initials)\_\_\_\_\_

22. **Liability:** To the fullest extent allowed by law, except for claims covered by the Limited Warranty, neither Liberty nor Tesla shall be liable for any direct, indirect, special, or consequential damages to any persons or property resulting from or arising out of any use, repair, delay in repairing, replacement of, or modification to the Powerwall. You hereby agree that your sole remedy is the repair or replacement of the Powerwall as provided by the Limited Warranty. In no instance shall Liberty or Tesla be liable for any damages in excess of ten thousand dollars.
23. **Indemnification:** You acknowledge that the Powerwall could fail or malfunction in such a way as to cause damage to property and person. You agree to indemnify and hold harmless Liberty and Tesla for any injury or damage to any persons or property arising from access and use of the Powerwall caused by any breach of this Agreement by you, by the negligence of you or your household members, agents, servants, employees, tenants, licensees, invitees, tenant's invitees, or independent contractors.
24. **Risk of Loss: Insurance.** You bear the entire risk of loss, theft, or damage to the Powerwall from any cause during the term of this Agreement. Liberty recommends obtaining or ensuring that the Powerwall is covered under your homeowner's insurance. Liberty does not sell such insurance.
25. **Miscellaneous:**
  - a. This Agreement shall be governed by the laws of the State of New Hampshire.

- b. Except for the privacy policies referenced in Paragraph 21(b) and (c), this Agreement is the entire agreement between Liberty and you pertaining to the Program and supersedes any and all prior agreements, understandings, representations, and statements between the parties, whether oral or written. Any change to the terms of this Agreement must be in a writing signed by you and by Liberty.
- c. The parties agree that any dispute arising out of this Agreement shall be brought before a State or Federal court in the State of New Hampshire.

**26. Change in Home Ownership:**

- a. You acknowledge that you are required to own the Home where the Powerwall is installed. By signing below, you represent that you own the Home where the Powerwall is installed.
- b. In the event of a sale of the Home where the Powerwall is installed, you will provide Liberty with 30 days advance notice of the sale. After such notice, Liberty will provide you with information to share with the buyer of the Home about assuming this Agreement. Both you and the buyer must execute an Assignment of Agreement provided by Liberty which will be contingent on the consummation of the sale of the Home (“Closing”), and which must be returned to Liberty prior to the Closing. If the buyer of the Home does not agree to assume the Agreement in writing, the sale shall be considered an Early Termination, and is subject to the terms described in Paragraph 11. You must then arrange for removal of the Powerwall prior to the Closing or will be assessed the \$7,000 equipment fee described in Paragraph 11.

**27. Electronic Communication and Recurring Payment:** As a participant in the Program, you consent to receive communications from Liberty electronically. You agree that any agreements, notices, disclosures, or other correspondence provided by Liberty in electronic format satisfy any legal requirement that such communications be in writing. After signing this Agreement, you will be enrolled in Liberty’s e-billing and recurring payment services and shall provide the necessary information to Liberty to facilitate electronic bill payment via ACH transactions. You may elect to dis-enroll from e-billing and electronic ACH bill payment at any time during the Term of this Agreement.

**28. Concerns and Notice:** Liberty appreciates your participation in the Program and we are committed to providing you with a great customer experience. If you experience an issue with the Powerwall, have any questions about its operation or the Program, or wish to obtain detailed payment history information, please contact the Liberty Services Team at (phone number TBD).

Liberty will send to you any Notice required under this Agreement at the following email address: \_\_\_\_\_@\_\_\_\_\_. You are responsible for notifying Liberty if this email address changes.

Liberty Utilities (Granite State Electric) Corp.

Customer

\_\_\_\_\_  
Authorized Representative

\_\_\_\_\_

Date: \_\_\_\_\_

Exhibit A

**TESLA POWERWALL LIMITED WARRANTY (USA)**

**Effective Date: May 24, 2017**

**Applies to:**

13.5 kWh Powerwall 2 AC	Part Number 1108567-xx-x
Gateway	Part Number 1099752-xx-x
Backup Gateway	Part Number 1118431-xx-x
Gateway Meter	Part Number 1112484-xx-x

**Ten Year Limited Warranty**

Tesla, Inc. warrants that:

- (1) Your Powerwall will be free from defects for ten years following its initial installation date; and
- (2) Your Powerwall will have an energy capacity of 13.5 kWh on its initial installation date, and will retain energy capacity as shown in the table below.

Application	Energy Retention <sup>1</sup>	Operating Limitation
Solar self-consumption/ backup only <sup>2</sup>	70% at 10 years following initial installation date	Unlimited cycles
Any other application or combination of applications	70% at 10 years following initial installation date	37.8 MWh of aggregate throughput <sup>3</sup>

Note that this Limited Warranty (including its duration) is subject to a number of important exclusions and limitations, which are set out in detail below.

**Remedies**

If your Powerwall fails to comply with the above Limited Warranty, Tesla will, in its sole discretion, either repair your Powerwall (using new or refurbished parts), replace your Powerwall with an equivalent product (new or refurbished), or refund you the market price of an equivalent product at the time of the warranty claim. If your Powerwall is repaired or replaced under this Limited Warranty, the remainder of the original warranty period will apply to the repaired or replacement product. Under no circumstances will the original warranty period be extended as a result of your Powerwall being repaired or replaced.

<sup>1</sup> Expressed as a % of 13.5 kWh rated capacity.

<sup>2</sup> Storing solar energy generated by an onsite array, and using that stored solar energy (i) for daily self-consumption and/or (ii) for use as backup power.

<sup>3</sup> Measured at the battery AC output.

### **What Products are Covered?**

This Limited Warranty applies to any Tesla Powerwall that (1) was purchased from Tesla or a Tesla certified installer in the United States of America; (2) has one of the part numbers referenced above; and (3) is installed in the United States of America. Please contact Tesla if you have any concerns regarding whether you purchased your Powerwall from a Tesla certified installer.

### **Who Can Make a Claim?**

Limited Warranty claims can be made by or on behalf of the end user who acquired and put the Powerwall into use for the first time. A subsequent owner of the Powerwall who provides proof of ownership is also entitled to make Limited Warranty claims.

**Agreement to Arbitrate.** Please read this provision carefully.

In the event of a concern or dispute between us, please send Tesla written Notice to [energyresolutions@tesla.com](mailto:energyresolutions@tesla.com) describing the nature of the dispute and the relief sought.

If it is not resolved within 60 days, Tesla and you agree that any dispute arising out of or relating to any aspect of the relationship between us will not be decided by a judge or jury but instead by a single arbitrator in an arbitration administered by the American Arbitration Association (AAA). This includes claims arising before this Agreement, including claims related to statements about our products. Alternatively, you may opt out of arbitration as described below.

The AAA Consumer Arbitration Rules will apply. We will pay all AAA fees for any arbitration. The arbitration will be held in a location most convenient to your residence. To learn more about the Rules and how to begin an arbitration, you may call any AAA office or go to [www.adr.org](http://www.adr.org).

The arbitrator may only resolve disputes between you and Tesla on an individual basis. The arbitrator cannot award relief for anyone who is not a party and may not consolidate claims. In other words, you and Tesla may bring claims against the other only in your or its individual capacity and not as a plaintiff or class member in any class or representative action. If a court or arbitrator decides that any of this section's limitations cannot be enforced as to a particular claim for relief, then that claim (and only that claim) must be severed from the arbitration and may be brought in court.

If you prefer, you may instead take your individual dispute to small claims court.

You may opt out within 30 days after accepting the terms of this Limited Warranty by sending a letter to P.O. Box 15430, Fremont, CA 94539-7970, stating your name and intent to opt out of the arbitration provision.

### **Limitations and Disclaimer**

**THIS LIMITED WARRANTY IS THE ONLY EXPRESS WARRANTY MADE IN CONNECTION WITH YOUR POWERWALL.** Any other warranties, remedies and conditions, whether oral, written, statutory, express or implied (including any warranties of merchantability and fitness for purpose, and any warranties against latent or hidden defects) are expressly disclaimed. If such warranties cannot be disclaimed, Tesla limits the duration of and remedies for such warranties to the durations and remedies described in this Limited Warranty.

### **Relationship with Applicable Law**

This Limited Warranty gives you specific legal rights. You may also have other legal rights, which vary from state to state. For example, some states do not allow limitations on how long an implied warranty lasts, meaning the limitations in the "Limitations and Disclaimer" section above may not apply to you. The terms of this Limited Warranty will apply to the extent permitted by applicable law. For a full description of your legal rights you should refer to the laws applicable in your jurisdiction.

### **General Exclusions**

This Limited Warranty does not apply to any defect or energy capacity shortfall resulting from any of the following, each of which may result in your Limited Warranty being voided: (i) abuse, misuse or negligence, (ii) accidents or force majeure events, including but not limited to lightning, flood, earthquake, fire, or other events outside the reasonable control of Tesla; (iii) storage, installation, commissioning, modification or repair of your Powerwall, or opening of the external casing of your Powerwall, that is performed by anyone other than Tesla or a Tesla certified installer; (iv) failure to operate or maintain your Powerwall in accordance with the Owner's Manual; (v) any attempt to modify your Powerwall, whether by physical means, programming or otherwise, without the express written consent of Tesla; or (vi) removal and reinstallation of your Powerwall at a location other than the original installation location, without the express written consent of Tesla.

In addition, this Limited Warranty does not cover (a) normal wear and tear or deterioration, or superficial defects, dents or marks that do not impact the performance of your Powerwall; (b) noise or vibration that is not excessive or uncharacteristic and does not impact your Powerwall's performance; (c) damage or deterioration that occurs after the expiration or voiding of the warranty period; or (d) theft of your Powerwall or any of its components.

### **Exclusion for Failure to Connect to the Internet or Failure to Register your Powerwall**

In order to provide this Limited Warranty for the full ten year warranty period, Tesla requires the ability to update your Powerwall through remote firmware upgrades. Installation of these remote upgrades may interrupt the operation of your Powerwall for a short period. By installing your Powerwall and connecting it to the Internet, you consent to Tesla updating your Powerwall through these remote upgrades from time to time, without further notice to you. If your Powerwall is not connected to the Internet for an extended period, or has not been registered with Tesla, we may not be able to provide important remote firmware upgrades. In these circumstances, we may not be able to honor your full ten year Limited Warranty. We would prefer to avoid this, so will try to contact you if your Powerwall's Internet connection is interrupted for an extended period. If you did not purchase your Powerwall directly from Tesla or our affiliate, **please register your Powerwall with Tesla**<sup>4</sup> so we are able to contact you, if necessary. Even if we can't honor your full ten year Limited Warranty for the above reasons, we will always honor your Limited Warranty for at least four years following the date your Powerwall was installed for the first time, subject to the exclusions and limitations set out in this Limited Warranty.

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<sup>4</sup> The Tesla certified installer who sold you your Powerwall should give you an opportunity to register your Powerwall during the commissioning process. In order to register, you will need to accept the Tesla Customer Privacy Policy ([www.tesla.com/legal](http://www.tesla.com/legal)). If you do not register at the time of installation, you can do so later by contacting us at the email address or telephone numbers listed at the end of this Limited Warranty.

### **California Proposition 65 Warning**

We are required to advise you that lithium-ion batteries may contain chemicals known to the State of California to cause cancer, birth defects and reproductive harm. We don't expect you to come into contact with any part of your Powerwall other than the external casing. If you do, please wash your hands afterwards.

### **Modifications and Waivers**

No person or entity, including a Tesla employee or authorized representative, can modify or waive any part of this Limited Warranty. Tesla may occasionally offer to pay some or all of the cost of certain repairs that are not covered by this Limited Warranty, either for specific Powerwall models or on an ad hoc, case-by-case basis. Tesla reserves the right to do the above at any time without incurring any obligation to make a similar payment to other Powerwall owners.

### **Limitation of Liability**

**TESLA SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, SPECIAL, EXEMPLARY OR PUNITIVE DAMAGES ARISING OUT OF OR RELATED TO THIS LIMITED WARRANTY, REGARDLESS OF THE FORM OF ACTION AND REGARDLESS OF WHETHER TESLA HAS BEEN INFORMED OF, OR OTHERWISE MIGHT HAVE ANTICIPATED, THE POSSIBILITY OF SUCH DAMAGES. TESLA'S LIABILITY ARISING OUT OF A CLAIM UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE AMOUNT YOU PAID FOR YOUR POWERWALL.**

**SOME STATES DO NOT ALLOW, OR RESTRICT, THE EXCLUSION OR LIMITATION OF DAMAGES, INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU, OR MAY ONLY APPLY TO A LIMITED EXTENT.**

### **Limitation on Use**

**YOUR POWERWALL IS NOT INTENDED FOR USE AS A PRIMARY OR BACKUP POWER SOURCE FOR LIFE-SUPPORT SYSTEMS, OTHER MEDICAL EQUIPMENT, OR ANY OTHER USE WHERE PRODUCT FAILURE COULD LEAD TO INJURY TO PERSONS OR LOSS OF LIFE OR CATASTROPHIC PROPERTY DAMAGE. TESLA DISCLAIMS ANY AND ALL LIABILITY ARISING OUT OF ANY SUCH USE OF YOUR POWERWALL. FURTHER, TESLA RESERVES THE RIGHT TO REFUSE TO SERVICE ANY POWERWALL USED FOR THESE PURPOSES AND DISCLAIMS ANY AND ALL LIABILITY ARISING OUT OF TESLA'S SERVICE OR REFUSAL TO SERVICE YOUR POWERWALL IN SUCH CIRCUMSTANCES.**

### **Governing Law**

This Limited Warranty shall be governed by the laws of the state where your Powerwall is installed, except to the extent inconsistent with or pre-empted by federal law. The application of the United Nations Convention on Contracts for the International Sale of Goods is expressly excluded.

## **Claims Process**

In order to make a claim under this Limited Warranty, please contact the Tesla certified installer who sold you your Powerwall. If you are unable to contact the Tesla certified installer who sold you your Powerwall, or if you purchased your Powerwall directly from Tesla, you should contact Tesla at the address, email address or telephone numbers identified below. For a warranty claim to be processed, it must include (i) proof of the original purchase of your Powerwall and any subsequent transfers of ownership, (ii) a description of the alleged defect(s), and (iii) your Powerwall's serial number and original installation date. Prior to returning any Product to Tesla, you should obtain an RMA (Return Merchandise Authorization) number from Tesla by submitting a Service Request Form at the link indicated below.

## **Tesla Contact Details**

- **Tesla website for submitting a Service Request Form:**  
[www.tesla.com/support/powerwall](http://www.tesla.com/support/powerwall)
- **Tesla email:** [powerwallsupport@tesla.com](mailto:powerwallsupport@tesla.com)
- **Tesla address:** 3500 Deer Creek Road, Palo Alto, California 94304,  
Attn: Powerwall Warranty Claims
- **Tesla telephone numbers:**
  - Australia: +61 1 800 294431
  - Austria: +43 800 80 2480
  - Belgium: +32 800 26614
  - Canada: +1 (877) 798-3752
  - France: +33 18 288 5096
  - Germany: +49 800 724 4529
  - Ireland: +44 800 098 8064
  - Italy: +39 800 59 6849
  - Luxembourg: +35 280 08 0921
  - Netherlands: +31 800 3837301
  - New Zealand: +64 800 99 5020
  - Portugal: +35 180 018 0397
  - South Africa: +27 87 550 3480
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