

Stephen R. Hall Director, Rates & Regulatory Affairs O: 603-216-3523 E: <u>Stephen.Hall@libertyutilities.com</u>

March 31, 2017

Via ERF and US Mail

Debra A. Howland Executive Director New Hampshire Public Utilities Commission 21 South Fruit Street, Suite 10 Concord, NH 03301



Re: DG 06-107 Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Annual Storm Fund Report – Calendar Year 2016

Dear Ms. Howland:

In accordance with Order No. 24,777 dated July 12, 2007, enclosed for filing in the above mentioned docket please find Liberty Utilities' Annual Storm Fund Report. Please note this report has been filed via the Commission's Electronic Report Filing System.

Thank you for your assistance with this matter. Please do not hesitate to call if you have any questions.

Sincerely,

Stephen R. Hall

Stephen R. Fall

**Enclosure** 

cc: Service List

Kerri-Lyn Gilpatric



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

ANNUAL STORM FUND REPORT CALENDAR YEAR 2016

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# Liberty Utilities (Granite State Electric) Corp. Annual Storm Fund Report Calendar Year 2016

#### Introduction

Liberty Utilities (Granite State Electric) Corp. ("Liberty Utilities" or the "Company") is submitting its Annual Storm Fund Recovery Report for 2016 in compliance with the Settlement Agreement in Docket No. DG 06-107 approved by Order 24,777. Consistent with the Settlement Agreement, this report: (1) provides a description of the one major storm experienced in 2016; (2) provides a summary of the extent of the damage to the distribution system, including the number of outages and length of outages associated with that storm; (3) details the collections credited to the storm fund; and (4) provides the details of any qualifying storm costs that were charged to the fund during calendar year 2016.

#### **Annual Report of Storm Fund Activity**

Included in this report is a preliminary report of the annual storm fund activity, pending final accounting of storm costs incurred during calendar year 2016. This report shows the opening balance of the storm fund, monthly collections, including those in base rates and the Storm Recovery Adjustment Factor, monthly interest applied, preliminary qualifying storm costs charged to the storm fund, and the closing balance of the storm fund in Attachment 1.

Attachment 2 shows the detail of the storm-related charges applied to the storm fund during calendar year 2016 by individual storm event. Detailed descriptions related to these qualifying storm fund storm events are provided in Attachment 3, 4, 5, and 6.

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Attachment 1 – 2016 Summary Storm Fund Accounting

Attachment 2 – 2016 Detailed storm related charges by event

Attachment 3 – Table 1 – April 3<sup>rd</sup> wind storm Event Schneider EEI Table (Pre-stage event)

Table 2 – April 3<sup>rd</sup> wind storm Event Outages

Table 3 – Storm Planning Report – 4-3-2016

Attachment 4 – Table 1 – July 18th thunder storm Event Schneider EEI Table (Pre-stage event)

Table 2 – July 18th thunder storm Event Outage

Table 3 – Storm Planning Report – 7-18-2016

Attachment 5 – Table 1 – July 23<sup>rd</sup> thunder storm Event Schneider EEI Table (Qualifying event)

Table 2 – July 23<sup>rd</sup> thunder storm Event Outages

Attachment 6 – Table 1 – December 29<sup>th</sup> snow storm Schneider Event EEI Table (Pre-stage event)

Table 2 – December 29<sup>th</sup> snow storm Event Outages
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Table 3- Storm Planning Report - 12-29-2016

#### Wind Storm Event-April 3, 2016

#### 1. Description of the Storm

The April 3, 2016, wind storm event impacted 1,028 customers in New Hampshire causing interruptions in 7 of the 21 New Hampshire communities served by the Company. A Schneider Energy Event Index: Threat Level 3 – High Confidence Level for wind/gust (45-55mph) was issued to Liberty Utilities for all

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Electric Operational areas. In response to the Threat Level 3 issued, Liberty Utilities pre-staged personnel at our operational centers and customer call center. There were a total of 11.5 restoration line crews, which included internal line crews and external contractor line crews with supervision. Liberty Utilities also mobilized 6 contractor tree crews and staffed our customer call center with 3 customer service representatives.

#### 2. **Summary of the Extent of the Storm Damage**

Due to the wind gusts and tree related issues, there were 1,028 customer interruptions on April 3rd. Despite the damage and the number of customer interruptions, Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by day end April 3, 2016. Liberty Utilities reviewed the interruption data stored in the Responder Outage Management System and determined that the storm event does not qualify as a major storm, but does qualify as a pre-stage event.

Per PUC definition, "the Company shall be entitled to recover planning and preparation activities in advance of severe weather if the weather forecast for the event shows a Schneider Electric Event Index ("EEI") level 3 or greater with high probability of occurrence."

#### Thunder, Lightning, & Wind Storm Event–July 18, 2016

#### 1. **Description of the Storm**

The July 18, 2016, thunder, lightning, and wind storm event impacted 1,281 customers in New Hampshire causing interruptions in 2 of the 21 New Hampshire communities served by the Company. A Schneider Energy Event Index: Threat Level 3 – High Confidence Level for wind/gust (45-55mph) was issued to Liberty Utilities for the Lebanon/Charlestown Electric Operational areas. In response to the Threat Level 3 issued, Liberty Utilities pre-staged personnel at our operational centers and customer call center. There were a total of 12 restoration line crews, which included internal line crews and external contractor line crews with supervision. Liberty Utilities also mobilized 4 contractor tree crews and staffed our customer call center with 3 customer service representatives.

#### 2. Summary of the Extent of the Storm Damage

A line of severe thunderstorms with high winds and gusts impacted Liberty Utilities electric service territory in the late afternoon/early evening on July 18 causing some damage to the distribution system along with some scattered power outages. Despite the damage and the number of customer interruptions, Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by early morning on July 19, 2016. Liberty Utilities reviewed the interruption data stored in the Responder Outage Management System and determined that the storm event does not qualify as a major storm, but does qualify as a pre-stage event.

Per PUC definition, "the Company shall be entitled to recover planning and preparation activities in advance of severe weather if the weather forecast for the event shows a Schneider Electric Event Index ("EEI") level 3 or greater with high probability of occurrence."

#### 1. Description of the Storm

The July 23, 2016, thunder, lightning, and wind storm event was a large storm that impacted 3,446 customers in New Hampshire causing interruptions in 9 of the 21 New Hampshire communities served by the Company. Despite the damage and large number of customer interruptions, Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by July 25<sup>th</sup>, 2016.

Overnight (Saturday July 23<sup>rd</sup> into Monday July 25<sup>th</sup>), heavy rain and strong winds interrupted service to 3,446 customers in New Hampshire. The strong winds toppled trees bringing down utility poles and power lines. In New Hampshire the outages were concentrated in the communities of Enfield, Hanover, and Lebanon; however, the storm impacted customers in 9 of the 21 New Hampshire communities serviced by Liberty Utilities.

#### 2. Summary of the Extent of the Storm Damage

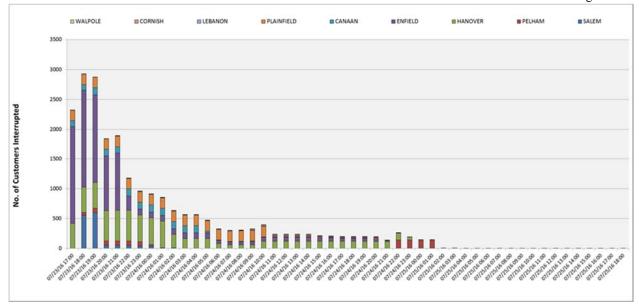
Due to the wind gusts, thunder and lightning, a number of customers were without power from July 23<sup>rd</sup> through July 25<sup>th</sup>. See Figure 1 for peak outages by town.

At the peak, on July 23<sup>rd</sup>, approximately 2,930 customers were interrupted (see Figure 1). In response to these peak outages, additional internal crews were called in and additional external contractor line crews were procured. In response to these peak outages, there were a total of 8 restoration crews, which included internal line crews and external contractor line crews. The external contractor line crews were mobilized by the evening of July 24, 2016. Liberty Utilities also mobilized a peak of 6 contractor tree crews.

In all, Liberty Utilities experienced 3,446 total customers interrupted during the July 23<sup>rd</sup> – 25<sup>th</sup> wind storm. Liberty Utilities reviewed the interruption data stored in the Responder System and determined that the storm event qualified as a major storm since approximately 50 concurrent trouble incidents occurred. Per PUC definition, A "Major Storm" shall be defined as a severe weather event or events causing 30 concurrent troubles and 15% of customers interrupted, or 45 concurrent troubles.

As of December 31, 2016, the Company had not fully reviewed all of the charges for the storm so they do not show up in Attachment 1. Attachment 2, page 5 provides the preliminary costs associated with the storm. The charges are in the process of being reviewed and will be included in the 2017 Storm Fund Report in Attachment 1.





#### December Snow Storm - December 29th - December 30th

#### 1. Description of the Storm

The December 29, 2016, snow storm impacted 900 customers in New Hampshire causing interruptions in 4 of the 21 New Hampshire communities served by the Company. A Schneider Energy Event Index: Threat Level 4 – High Confidence Level for snow for the Monroe/Bath NH Electric Service Territory and a Threat Level 3 – High Confidence Level for snow for the Lebanon/Salem/Charlestown Electric Service Territory. In response to the Threat Level 4 & 3 issued, Liberty Utilities pre-staged personnel at our operational centers and customer call center. There were a total of 22 restoration line crews, which included internal line crews and external contractor line crews with supervision. Liberty Utilities also mobilized 14 contractor tree crews and staffed our customer call center with 6 customer service representatives to work an overnight shift. Also, 11 wires down and 6 damage assessment personnel were pre-staged to report to the Company's operational centers at 6 AM on December 30<sup>th</sup>. The Municipal room was staffed and opened at 6 AM on December 30<sup>th</sup>.

#### 2. Summary of the Extent of the Storm Damage

Overnight (Thursday December 29<sup>th</sup> into Friday December 30<sup>th</sup>), heavy, wet snow and strong winds interrupted service to approximately 900 customers in New Hampshire. The strong winds and heavy, wet snow toppled trees and tree limbs bringing down utility poles and power lines. In New Hampshire the outages were concentrated in the communities of Salem, Pelham, Windham, and Walpole; impacting customers in 4 of the 21 New Hampshire communities serviced by Liberty Utilities.

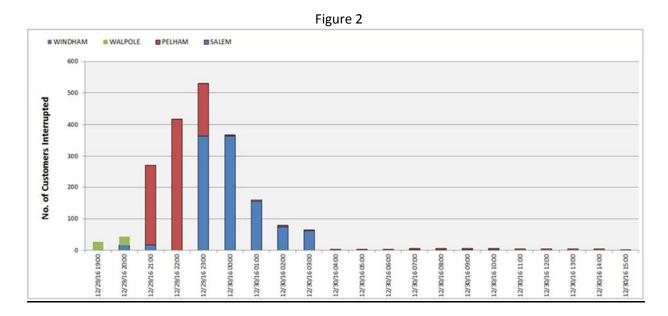
At the peak, on December 30<sup>th</sup>, approximately 531 customers were interrupted (see Figure 2). Ninety percent of customers were restored by December 30<sup>th</sup> at approximately 1:30 AM. All remaining customers were restored by December 30<sup>th</sup> at approximately 3 PM.

In all, Liberty Utilities experienced approximately 900 total customers interrupted during the December 29<sup>th</sup> – December 30<sup>th</sup> snow storm. Despite the damage and the number of customer interruptions,

Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by mid-afternoon on December 30, 2016. Liberty Utilities reviewed the interruption data stored in the Responder Outage Management System and determined that the storm event does not qualify as a major storm, but does qualify as a pre-stage event.

Per PUC definition, "the Company shall be entitled to recover planning and preparation activities in advance of severe weather if the weather forecast for the event shows a Schneider Electric Event Index ("EEI") level 3 or greater with high probability of occurrence."

As of December 31, 2016, the Company had not received all of the charges for the storm so the only portion of the storm is the accrual as shown in Attachment 1. Attachment 2, page 6 provides the preliminary costs associated with the storm. The charges are in the process of being reviewed and will be included in the 2017 Storm Fund Report in Attachment 1.



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Attachment 1 Page 1 of 1

# Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities Annual Storm Fund Accounting For the Year Ended December 31, 2016

				Collections					Storm Costs				Unadjusted	Average		Interest	Adjusted
		Beginning	Base	SRA				Outside	Materials &	Employee			Ending	Monthly	Interest	Expense	Ending
<u>Line</u>		<u>Balance</u>	Rates (1)	Factor (2)	Total	Payroll	Transportation	companies	Supplies	Expenses	Accrual	Total	<u>Balance</u>	<u>Balance</u>	Rate (3)	(Income)	<u>Balance</u>
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)		(1)	(m)	(n)	(o)	(p)	(q)
1 January	2016	\$ (1,399,661.16)	\$ (125,000.00)	\$ (823.50)	\$ (125,823.50)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (1,525,484.66)	\$ (1,462,572.91)	3.25%	\$ (3,961.13)	\$ (1,529,445.80)
2 February	2016	(1,529,445.80)	(125,000.00)	(348.03)	(125,348.03)	-	-	-	-	-	-	-	(1,654,793.83)	(1,592,119.81)	3.25%	(4,311.99)	(1,659,105.82)
3 March	2016	(1,659,105.82)	(125,000.00)	(225.97)	(125,225.97)	-	-	-	-	-	-	-	(1,784,331.79)	(1,721,718.80)	3.25%	(4,662.99)	(1,788,994.78)
4 April	2016	(1,788,994.78)	(125,000.00)	(184.36)	(125,184.36)	10,755.42	-	16,681.35	-	-	-	27,436.77	(1,886,742.37)	(1,837,868.57)	3.50%	(5,360.45)	(1,892,102.82)
5 May	2016	(1,892,102.82)	(125,000.00)	(30.93)	(125,030.93)	-	-	-	-	-	-	-	(2,017,133.75)	(1,954,618.28)	3.50%	(5,700.97)	(2,022,834.72)
6 June	2016	(2,022,834.72)	(125,000.00)	(57.59)	(125,057.59)	-	-	-	-	-	-	-	(2,147,892.31)	(2,085,363.51)	3.50%	(6,082.31)	(2,153,974.62)
7 July	2016	(2,153,974.62)	(125,000.00)	89.18	(124,910.82)	1,911.46	-	-	-	-	-	1,911.46	(2,276,973.98)	(2,215,474.30)	3.50%	(6,461.80)	(2,283,435.78)
8 August	2016	(2,283,435.78)	(125,000.00)	(41.41)	(125,041.41)	-	-	-	-	-	-	-	(2,408,477.19)	(2,345,956.48)	3.50%	(6,842.37)	(2,415,319.56)
9 September	2016	(2,415,319.56)	(125,000.00)	4.30	(124,995.70)	-	-	-	-	-	-	-	(2,540,315.26)	(2,477,817.41)	3.50%	(7,226.97)	(2,547,542.23)
10 October	2016	(2,547,542.23)	(125,000.00)	(5.49)	(125,005.49)	-	-	-	-	-	-	-	(2,672,547.72)	(2,610,044.97)	3.50%	(7,612.63)	(2,680,160.35)
11 November	2016	(2,680,160.35)	(125,000.00)	(32.55)	(125,032.55)	-	-	-	-	-	-	-	(2,805,192.90)	(2,742,676.62)	3.50%	(7,999.47)	(2,813,192.37)
12 December	2016	(2,813,192.37)	(125,000.00)	(6.39)	(125,006.39)	-	-	-	-	105.61	35,782.84	35,888.45	(2,902,310.31)	(2,857,751.34)	3.50%	(8,335.11)	(2,910,645.42) (4)
13																	
14 Totals			\$ (1,500,000.00)	\$ (1,662.74)	\$ (1,501,662.74)	\$ 12,666.88	\$ -	\$ 16,681.35	\$ -	\$ 105.61	\$ 35,782.84	\$ 65,236.68				\$ (74,558.20)	\$ (2,910,700.85)

15 16

17 (1) Effective 4/1/14, \$1.5 million annually is in base rates (see Settlement Agreement, 10/30/14, DE 13-063, Order No. 25,738 dated 11/26/14)

18

19 (2) Storm Recovery Adjustment Factor (page 68 of GSE tariff) \$.00221per kWh

20 0.00223 as of 1/1/13

21 0.00329 as of 1/1/14

22 0.00221 eff 11/1/14

23 0.00000 eff 11/1/15

24

25 (3) Consistent with the annual storm fund report, interested is calculated each month by taking 1/12th of the annual interest (and not based on the number of days in the month)

26

27 (4) See G/L accounts 8830-2-0000-10-1168-1824; 10-1930-1825; 20-2142-2548; 20-2910-2548

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

2016 Annual Storm Fund Report

Attachment 2

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# Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities Monthly Accounting for Storm Events For the Year Ended December 31, 2016

Line			Vind Storm 4/3/2016	Vind Storm 7/18/2016	ter Storm Fortis 12/29/2016	Total Costs		
(a)	(b)		(c)	(d)	(e)		(i)	
1	January 2016	\$	-	\$ -	\$ -	\$	-	
2	February		-	-	-		-	
3	March		-	-	-		-	
4	April		27,436.77	-	-		27,436.77	
5	May		-	-	-		-	
6	June		-	-	-		-	
7	July		-	1,911.46	-		1,911.46	
8	August		-	-	-		-	
9	September		-	-	-		-	
10	October		-	-	-		-	
11	November		-	-	-		-	
12	December		-	-	35,888.45		35,888.45	
13								
14	Year Ended 12/31/16	\$	27,436.77	\$ 1,911.46	\$ 35,888.45	\$	65,236.68	

Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities 2016 Annual Storm Fund Report Attachment 2

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# Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities Annual Report of All Storm Fund Activity For the Year Ended December 31, 2016

Table 1

Line					To	otal Staging
No.	Description	Apr-16	Jul-16	Dec-16		Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 10,755.42	\$ 1,911.46	\$ -	\$	12,666.88
2						
3	Charges for Transportation on GSE vehicles	-	-	-		-
4						
5	Charges from outside companies	16,681.35	-	-		16,681.35
6						
7	Charges for Materials and Supplies	-	-	-		-
8						
9	Charges for employee expenses	-	-	105.61		105.61
10						
11	Accrual for outside companies	-	-	35,782.84		35,782.84
12						
13	Total	\$ 27,436.77	\$ 1,911.46	\$ 35,888.45	\$	65,236.68

Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities
2016 Annual Storm Fund Report
Attachment 2

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# Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities Total O&M Pre-staging Costs Wind Storm Event April 3, 2016 January 1, 2016 Through December 31, 2016 Table 2

Line			Tota	ll Pre-Staging
No.	Description	Apr-16		Costs
1 2	Payroll charges including payroll overheads for GSE Employees	\$ 10,755.42	\$	10,755.42
3	Charges for Transportation on GSE vehicles	-		-
5 6	Charges from outside companies	16,681.35		16,681.35
7 8	Charges for Materials and Supplies	-		-
9 10	Charges for employee expenses	-		-
11 12	Accrual for outside companies	-		-
13	Total	\$ 27,436.77	\$	27,436.77

Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities
2016 Annual Storm Fund Report
Attachment 2

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# Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities Total O&M Pre-staging Costs Wind Storm Event July 18, 2016 January 1, 2016 Through December 31, 2016 Table 3

Line			Tota	l Pre-Staging
No.	Description	Jul-16		Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 1,911.46	\$	1,911.46
2				
3	Charges for Transportation on GSE vehicles	-		-
4				
5	Charges from outside companies	-		-
6				
7	Charges for Materials and Supplies	-		-
8				
9	Charges for employee expenses	-		-
10				
11	Accrual for outside companies	-		-
12		 		
13	Total	\$ 1,911.46	\$	1,911.46

Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities 2016 Annual Storm Fund Report Attachment 2 Page 5 of 6

# Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities Total O&M Staging Costs Qualifying Storm Event July 23-25, 2016 January 1, 2016 Through December 31, 2016

Table 4

Preliminary Charges to be Reviewed as of December 31, 2016

			•	, 0	 	 · · · · · · · · · · · · · · · · · · ·		
Line							Tc	otal Staging
No.	Description	Jul-16		Aug-16	Sep-16	Oct-16		Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 522.48	\$	25,939.32	\$ -	\$ -	\$	26,461.80
2								
3	Charges for Transportation on GSE vehicles	69.55		5,117.64	-	-		5,187.19
4								
5	Charges from outside companies	-		34,389.86	7,768.05	380.00		42,537.91
6								
7	Charges for Materials and Supplies	857.09		(554.96)	-	-		302.13
8								
9	Charges for employee expenses	-		-	-	-		-
10								
11	Accrual for outside companies	-		-	-	-		-
12								
13	Total	\$ 1,449.12	\$	64,891.86	\$ 7,768.05	\$ 380.00	\$	74,489.03

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

2016 Annual Storm Fund Report

Attachment 2

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# Liberty Utilities (Granite State Electric ) Corp. d/b/a Liberty Utilities Total O&M Pre-staging Costs Storm Event December 29, 2016 January 1, 2016 Through December 31, 2016 Table 5

Line			Tota	ll Pre-Staging
No.	Description	Dec-16		Costs
				_
1	Payroll charges including payroll overheads for GSE Employees	\$ -	\$	-
2				
3	Charges for Transportation on GSE vehicles	-		-
4				
5	Charges from outside companies	-		-
6				
7	Charges for Materials and Supplies	-		-
8				
9	Charges for employee expenses	105.61		105.61
10				
11	Accrual for outside companies	35,782.84		35,782.84
12				
13	Total	\$ 35,888.45	\$	35,888.45

#### Table 1

# **Robert Johnson**

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Friday, April 01, 2016 3:59 PM

**To:** Derek Reguera

**Subject:** Energy Event Index: Threat Level 3

# **Energy Event Index for Liberty Utilities**

Valid Time: April 1, 2016 4:00 PM EDT Forecaster: beth.lewandowski

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	2	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	2	1	3	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	3	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	3	1	1	1	1	1	1	1
	Southern Salem Derry NH	2	1	3	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	3	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	Medium	High	High	High
	Northern Lebanon Hanover NH	Medium	High	High	High	High	High	Medium	High	High	High
	Northwest Monroe Bath NH	Medium	High	High	High	High	High	Medium	High	High	High
	Southern Salem Derry NH	High	High	High	Medium	High	High	Medium	High	High	High
	Western Alstead Charlestown NH	Medium	High	High	Medium	High	High	Medium	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Sep 30)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level								
Low < 30% chance								
Medium	>= 30% to < 60% chance							
High >= 60% chance								

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Friday, April 01, 2016 7:59 AM

**To:** Constance Dwyer

**Subject:** Energy Event Index: Threat Level 3

# **Energy Event Index for Liberty Utilities**

Valid Time: April 1, 2016 8:00 AM EDT Forecaster: nathan.hamblin

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	2	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	2	1	3	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	3	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	3	1	1	1	1	1	1	1
	Southern Salem Derry NH	2	1	3	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	3	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	Medium	High	High	High
	Northern Lebanon Hanover NH	Medium	High	High	High	High	High	Medium	High	High	High
	Northwest Monroe Bath NH	Medium	High	High	High	High	High	Medium	High	High	High
	Southern Salem Derry NH	High	High	High	Medium	High	High	Medium	High	High	High
	Western Alstead Charlestown NH	Medium	High	High	Medium	High	High	Medium	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Sep 30)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level							
Low	< 30% chance						
Medium	>= 30% to < 60% chance						
High	>= 60% chance						

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

Sent: Saturday, April 02, 2016 3:59 PM

**To:** Derek Reguera

**Subject:** Energy Event Index: Threat Level 3

# **Energy Event Index for Liberty Utilities**

Valid Time: April 2, 2016 4:00 PM EDT Forecaster: beth.lewandowski

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	2	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	3	2	2	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	3	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	3	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	3	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	3	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	Medium	High	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	High	High	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	High	High	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	Medium	High	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	High	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Sep 30)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level							
Low < 30% chance							
Medium	>= 30% to < 60% chance						
High	>= 60% chance						

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

Sent: Saturday, April 02, 2016 7:59 AM

**To:** Derek Reguera

**Subject:** Energy Event Index: Threat Level 3

# **Energy Event Index for Liberty Utilities**

Valid Time: April 2, 2016 8:00 AM EDT Forecaster: nathan.hamblin

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	2	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	3	2	2	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	3	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	3	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	3	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	3	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	Medium	High	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	High	High	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	High	High	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	Medium	High	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	High	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Sep 30) (summer override)

囯	Wind Speed	Wind/Gust	Snow	Ice
1	< 30 mph	< 35 mph	< 4 in.	< 1/10 in.
2	>= 30 mph	>= 35 mph	>= 4 in.	>= 1/10 in.
3	>= 45 mph	>= 50 mph	>= 6 in.	>= 3/8 in.
4	>= 60 mph	>= 65 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 75 mph	>= 24 in.	>= 1 in.

Confidence Level						
Low	< 30% chance					
Medium	>= 30% to < 60% chance					
High	>= 60% chance					

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Sunday, April 03, 2016 7:59 AM

**To:** Constance Dwyer

**Subject:** Energy Event Index: Threat Level 3

# **Energy Event Index for Liberty Utilities**

Valid Time: April 3, 2016 8:00 AM EDT Forecaster: nathan.hamblin

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	2	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	3	1	1	1	2	2	1	1	1	1
	Northern Lebanon Hanover NH	3	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	3	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	3	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	3	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	Medium	Medium	High	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	Medium	Medium	High	High	High	High
	Southern Salem Derry NH	High	High	High	High	Medium	Medium	High	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	Medium	Medium	High	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Sep 30)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level							
Low < 30% chance							
Medium	>= 30% to < 60% chance						
High	>= 60% chance						

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

Attachment 3
Page 6 of 7

ID	Feeder	Date	Quarter	CI	CMI	Duration (Min)	Cust Serv	SAIDI	SAIFI	Town	Comments	Cause	E2_Exclusion
26482	18L4	4/3/2016	Q2	885	39,550	221	43318	0.9130154	0.0204303	Salem	Olde Trolley 18L4 Circuit Breaker locked out due to fallen tree at P30 Lowell Rd	Tree Fell	None
26484	13L2	4/3/2016	Q2	1	66	66	43318	0.0015236	2.309E-05	Salem	Single Customer Outage - Re-attached service to house at London Rd after tree fell	Tree Fell	Customer Owned
26487	14L1	4/3/2016	Q2	7	273	39	43318	0.0063022	0.0001616	Pelham	Manually opened line fuse P63 Bridge St to make repairs between P2 and P3 Cardinal Dr after tree fell.	Tree Fell	None
26500	7L1	4/3/2016	Q2	11	781	71	43318	0.0180295	0.0002539	Enfield	Blown 25k line fuse P23 Lockehaven Rd due to fallen tree between P24-P25.	Tree Fell	None
26506	12L2	4/3/2016	Q2	43	12771	297	43318	0.2948197	0.0009927	Walpole	Blown 25k line fuse P7 Black Jack Rd due to broken tree limb near P42 Black Jack Rd.	Tree - Broken Limb	None
26508	10L4	4/3/2016	Q2	1	106	106	43318	0.002447	2.309E-05	Salem	Single Customer Outage - Re-attached service to house at Diamond Ave after tree fell	Tree Fell	Customer Owned
26510	7L1	4/3/2016	Q2	41	8159	199	43318	0.1883513	0.0009465	Canaan	Blown 25k line fuse P88-50 South Rd due to fallen tree between P13-P14 Choate Rd	Tree Fell	None
26515	7L1	4/3/2016	Q2	11	2453	223	43318	0.0566277	0.0002539	Enfield	Blown 25k line fuse P23 Lockehaven Rd due to fallen tree limb at P24 which caused the phases to slap together.	Tree - Broken Limb	None
26519	12L1	4/3/2016	Q2	27	8613	319	43318	0.1988319	0.0006233	Acworth	Blown 25k line fuse P50 Forrest Rd due to fallen tree at P46 Thayer Brook Rd.	Tree Fell	None
26520	40L1	4/3/2016	Q2	1	439	439	43318	0.0101344	2.309E-05	Charlestown	Single Customer Outage - Re-attached service and installed new pole to house at David Ave after tree fell.	Tree Fell	Customer Owned



# **STORM PLANNING REPORT**

Wind Storm Event

# DATE: Sunday, April 03, 2016

	DATE. Sunday, April 03, 2010									
	<u>Lebanon</u>	Si	alem_	<u>Cł</u>	narlestown		Comments			
Weather Forecast	Level 3 – Wind High Confidence Level 45-55mph winds	Level 3 – Win Confidence L winds	nd High evel 45-55mph		Wind High ice Level 45-55mph					
Anticipated EERP Event Level	Level 3	L	evel 3		Level 3					
Resources						Totals	3 CSRs with	TT.		
Internal Crews	5 crews	5.5	5 crews		1 crew	11.5	<ul> <li>supervisor to sta</li> <li>Customer Call Ce</li> </ul>			
Contractor Crews	0 crews	3	crews		0	3				
<b>Total Line Crews</b>	5 crews	8.5	crews		1 crew	14.5				
Tree Crews	3 crews	3	crews		0	6				
Wires Down	3 meter techs	3 me	eter techs			6				
Other Support	Customer service will staff Customer Service Center									
EOC/Storm Room Status							tchers and 2 Elect Personnel	tric		
Municipal Room Status										
Customer Outage Count	N/A					Total				
Estimated Date/Time for Total Restoration	Click here to enter a date. Choose an item.		to enter a date. se an item.		ere to enter a date. noose an item.					
Planned Storm Conference Calls										
Notifications with Regulators. NHPUC/NH OEM										
EII Event Index & Storm	Description	າ	GP Expens	se Job	GP Capital Jo	ob	GP VM Job			
Accounting	Level III – High Conf	idence	8830-18002068 8830-180020			69 8	830-18002070			

## Table 1

# **Robert Johnson**

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Monday, July 18, 2016 7:58 AM

**To:** Derek Reguera

**Subject:** Energy Event Index: Threat Level 2

# **Energy Event Index for ALGONQUIN POWER**

Valid Time: July 18, 2016 8:00 AM EDT Forecaster: scott.dumblauskas

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	2	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	2	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	2	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	Medium	High	High	High	High	High
	Northern Lebanon Hanover NH	Medium	High	High	High	Medium	High	High	High	High	High
	Northwest Monroe Bath NH	Medium	High	High	High	Medium	High	High	High	High	High
	Southern Salem Derry NH	Medium	High	High	High	Medium	High	High	High	High	High
	Western Alstead Charlestown NH	Medium	High	High	High	Medium	High	High	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Oct 31)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level								
Low < 30% chance								
Medium	>= 30% to < 60% chance							
High	>= 60% chance							

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Monday, July 18, 2016 1:28 PM

**To:** DL NH Londonderry Emergency Dispatch

**Subject:** Energy Event Index: Threat Level 3

# **Energy Event Index for ALGONQUIN POWER**

Valid Time: July 18, 2016 1:00 PM EDT Forecaster: jeremy.rossow

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	3	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	3	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	2	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	3	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	Medium	High	High	High	Medium	High	High	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	Medium	High	High	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	Medium	High	High	High	High	High
	Southern Salem Derry NH	High	High	High	High	Medium	High	High	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	Medium	High	High	High	High	High

# **Energy Event Index Definition**

With Leaves (Apr 1 - Oct 31)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level								
Low < 30% chance								
Medium	>= 30% to < 60% chance							
High	>= 60% chance							

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

Attachment 4
Page 3 of 4

ID	Feeder	Date	Quarter	CI	CMI	Duration	Cust Serv	SAIDI	SAIFI	Town	Comments	Cause	E2_Exclusion
						(Min)							
28317	8L1	7/18/2016	Q3	1214	57058	47	43313	1.3173412	0.0280285	Charlestown	National Grid 46kV Supply Line 4401 failed. Cause unknown	Unknown	Loss of Supply
28326	10L1	7/18/2016	Q3	29	1537	53	43313	0.0354859	0.0006695	Salem	Blown 15k line fuse P11 Hampshire St due to lightning	Lightning	None
28327	13L1	7/18/2016	Q3	8	2024	253	43313	0.0467296	0.0001847	Salem	Manually opened line fuse P103 Shore Rd to make repairs to overhead line after tree fell.	Tree Fell	None
28328	13L1	7/18/2016	Q3	2	40	20	43313	0.0009235	4.618E-05	Salem	Blown fuse P22-1 Settler's Lane due to Lightning.	Lightning	None
28332	13L1	7/18/2016	Q3	4	488	122	43313	0.0112668	9.235E-05	Salem	Blown 15k line fuse P47 East Broadway after tree fell between P4-5 Pacheco Dr	Tree Fell	None
28334	13L3	7/18/2016	Q3	24	5040	210	43313	0.1163623	0.0005541	Salem	Blown 25k line fuse P12 Liberty St due to tree branch contacting primary wires.	Tree - Broken Limb	None

Page 4 of 4



# **STORM PLANNING REPORT**

# DATE: Monday, July 18, 2016

DATE: Wollday, July 18, 2010										
	<u>Lebanon</u>	<u>Sa</u> l	<u>lem</u>	<u>Cha</u>	<u>rlestown</u>		<u>Comments</u>			
Weather Forecast	Thunderstorms with High Winds and Gusts that could reach up to 50 mph. Greatest threat between 2:30 to 3:30 pm EST.	Thundersto High winds that could r 35 mph. Gr threat is be and 6 pm E	and Gusts each up to eatest tween 4	High Win that coul than 50 r	storms with ods and Gusts d reach > mph. Greatest etween 2:30 m EST.					
Anticipated EERP Event Level	Level 3	Lev	vel 2	L	evel 3					
Resources						Totals	Salem will have 2			
Internal Crews	4		2		1	7	crews and a trouble shooter.			
Contractor Crews	5					5	Tree crews will			
Total Line Crews	9		2		1	12	be sent to Charlestown as			
Tree Crews	4					4	needed.			
Wires Down							Customer Service will be staffed			
Other Support	3 or 4 CSR's					after hours.				
EOC/Storm Room Status	Not open at this time									
Municipal Room Status	Not open at this time									
Customer Outage Count	Not applicable					Total				
Estimated Date/Time for Total Restoration	Click here to enter a date. Choose an item.	da	to enter a ate. an item.		re to enter a date. se an item.					
Planned Storm Conference Calls	Not scheduled at this	time								
Notifications with Regulators. NHPUC/NH OEM	Not at this time									
EII Event Index & Storm Accounting	Descriptio Storm Event Ell Lev		GP Exper 8830-18	nse Job 3001297	GP Capital 8830-1800					

## Table 1

# **Robert Johnson**

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Saturday, July 23, 2016 7:59 AM

**To:** DL NH Londonderry Emergency Dispatch

**Subject:** Energy Event Index

# **Energy Event Index for ALGONQUIN POWER**

Valid Time: July 23, 2016 8:00 AM EDT Forecaster: kirsten.halvorson

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	High	High	High
	Northern Lebanon Hanover NH	Medium	High	Medium	High						
	Northwest Monroe Bath NH	Medium	High	Medium	High						
	Southern Salem Derry NH	Medium	High	Medium	High						
	Western Alstead Charlestown NH	Medium	High	Medium	High						

# **Energy Event Index Definition**

With Leaves (Apr 1 - Oct 31)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level							
Low < 30% chance							
Medium	>= 30% to < 60% chance						
High	>= 60% chance						

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Saturday, July 23, 2016 11:59 AM

**To:** DL NH Londonderry Emergency Dispatch

**Subject:** Energy Event Index: Threat Level 2

# **Energy Event Index for ALGONQUIN POWER**

Valid Time: July 23, 2016 11:00 AM EDT Forecaster: gregory.loulis

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	2	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	2	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	2	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	High	High	High
	Northern Lebanon Hanover NH	Medium	High	Medium	High						
	Northwest Monroe Bath NH	Medium	High	Medium	High						
	Southern Salem Derry NH	Medium	High	Medium	High						
	Western Alstead Charlestown NH	Medium	High	Medium	High						

# **Energy Event Index Definition**

With Leaves (Apr 1 - Oct 31)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level								
Low	Low < 30% chance							
Medium	>= 30% to < 60% chance							
High >= 60% chance								

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

**Sent:** Saturday, July 23, 2016 3:59 PM

**To:** DL NH Londonderry Emergency Dispatch

**Subject:** Energy Event Index: Threat Level 2

# **Energy Event Index for ALGONQUIN POWER**

Valid Time: July 23, 2016 4:00 PM EDT Forecaster: gregory.loulis

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	2	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	2	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	2	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	High	High	High
	Northern Lebanon Hanover NH	Medium	High	Medium	High						
	Northwest Monroe Bath NH	Medium	High	Medium	High						
	Southern Salem Derry NH	Medium	High	Medium	High						
	Western Alstead Charlestown NH	Medium	High	Medium	High						

# **Energy Event Index Definition**

With Leaves (Apr 1 - Oct 31)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level							
Low < 30% chance							
Medium	>= 30% to < 60% chance						
High >= 60% chance							

Go to WeatherSentry™ Online for a complete view of the forecast and other business critical weather information.

ID	Feeder	Date	Quarter	CI	CMI	Duration	Cust Serv	SAIDI	SAIFI	Town	Comments	Cause	Page 4 of E2_Exclusion
						(Min)							
28406	14L2	7/23/2016	Q3	37	5476	148	43313	0.1264286	0.0008542	Pelham	Blown 40k line fuse P28 Sherburne Rd due to tree contact.	Tree Growth	None
28447	6L3	7/23/2016	Q3	62	20212	326	43313	0.4666497	0.0014314	Hanover	Blown 40k line fuse P1 Dunster Rd due to fallen tree at Cambridge Place and Claflin Circle.	Tree Fell	PUC MED
28451	7L2	7/23/2016	Q3	743	197638	266	43313	4.563018	0.0171542	Enfield	Pole top recloser P8 South St locked out due to large tree falling and making contact with all three phases	Tree Fell	PUC MED
28455	6L3	7/23/2016	Q3	221	105638	478	43313	2.4389444	0.0051024	Hanover	Blown 100k fuse P1 Verona Ave due to fallen tree at P2 Willow Springs.	Tree Fell	PUC MED
28476	1L2	7/23/2016	Q3	883	134751	1717	43313	3.1110983	0.0203865	Enfield	Pole top recloser P6 Route 4A locked out due to fallen tree and multiple sections of wires down	Tree Fell	PUC MED
28486	7L1	7/23/2016	Q3	5	6270	1254	43313	0.1447602	0.0001154	Canaan	Blown 25k line fuse P159 Gristmill Rd due to fallen tree limbs between P5-6 that twisted primary and neutral wires together.	Tree - Broken Limb	PUC MED
28499	7L1	7/23/2016	Q3	93	62589	673	43313	1.4450396	0.0021472	Canaan	Blown 40k line fuse P16 South Rd after tree fell and took down primary wires and transformer at P91.	Tree Fell	PUC MED
28500	13L1	7/23/2016	Q3	548	19180	35	43313	0.4428232	0.0126521	Salem	Pole top recloser P58 East Broadway locked out due to tree contact.	Tree Growth	PUC MED
28502	13L2	7/23/2016	Q3	30	9030	301	43313	0.2084824	0.0006926	Salem	Blown 50k fuse at P15 Shadow Lake Rd due to fallen tree Doiron Rd which caused broken pole and multiple sections of downed wires.	Tree Fell	PUC MED
28505	7L1	7/23/2016	Q3	42	56994	1357	43313	1.3158636	0.0009697	Enfield	Blown 25k line fuse P76 Potato Rd due to fallen tree at Grafton Pond Rd	Tree Fell	PUC MED
28515	9L1	7/23/2016	Q3	12	2256	188	43313	0.052086	0.0002771	Salem	Blown 40k fuses (2 of 3) P87 Broadway. Cause unknown	Unknown	PUC MED
28526	39L2	7/23/2016	Q3	16	25776	1611	43313	0.59511	0.0003694	Plainfield	Blown 25k line fuse P14 Beauty Hill Rd due to fallen tree limb at P16 Old County Rd	Tree - Broken Limb	PUC MED
28537	14L1	7/23/2016	Q3	47	9541	203	43313	0.2202803	0.0010851	Pelham	Blown line fuse P35 Jericho Rd due to fallen tree between P1-2 and between P15-16 Westview Ter	Tree Fell	PUC MED
28540	16L1	7/24/2016	Q3	45	44685	993	43313	1.0316764	0.0010389	Hanover	Blown 25k line fuse P150 Hanover Center Rd due to fallen tree at P91 Dogford Rd	Tree - Broken Limb	PUC MED
28548	13L3	7/23/2016	Q3	1	451	451	43313	0.0104126	2.309E-05	Salem	Disconnected service wires to remove fallen tree at School St	Tree Fell	PUC MED

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28549	6L3	7/23/2016	Q3	12	18840	1570	43313	0.4349733	0.0002771	Hanover	Blown transformer fuse P12 Woodmore Dr due to fallen tree limb	Tree - Broken Limb	Page 5 of PUC MED
28556	14L2	7/23/2016	Q3	26	8398	323	43313	0.193891	0.0006003	Pelham	Blown line fuse P63 Mammoth Rd due to fallen tree near P13 Gumpas Hill Rd	Tree Fell	PUC MED
28566	7L1	7/23/2016	Q3	16	9504	594	43313	0.219426	0.0003694	Enfield	Blown 15k line fuse P109 Potato Rd due to broken tree limb at Grafton Pond Rd	Tree - Broken Limb	PUC MED
28576	9L3	7/23/2016	Q3	8	3888	486	43313	0.0897652	0.0001847	Salem	Blown line fuse P8 Lake Shore Rd due to fallen tree at P8-2 Goodridge Ave	Tree Fell	PUC MED
28584	7L2	7/23/2016	Q3	1	1735	1735	43313	0.0400573	2.309E-05	Enfield	Replaced service wires Ricky Lane due to fallen tree	Tree Fell	PUC MED
28588	39L2	7/24/2016	Q3	2	1132	566	43313	0.0261353	4.618E-05	Lebanon	Blown 25k fuses P10 Plainfield Rd due to fallen tree.	Tree Fell	PUC MED
28590	6L3	7/23/2016	Q3	61	15860	260	43313	0.3661718	0.0014084	Hanover	Blown 100k line fuse P20 Valley Rd Ext due to fallen tree between P12-13	Tree Fell	PUC MED
28593	7L1	7/23/2016	Q3	21	13104	624	43313	0.302542	0.0004848	Canaan	Blown 65k line fuse P179 Goose Pond due to fallen tree at P40-7	Tree Fell	PUC MED
28596	14L1	7/24/2016	Q3	1	694	694	43313	0.0160229	2.309E-05	Pelham	Replaced service wires at Lori Lane due to fallen tree.	Tree Fell	PUC MED
28600	7L1	7/23/2016	Q3	41	17261	421	43313	0.3985178	0.0009466	Enfield	Blown 25k line fuse P88.5 South Rd due to fallen tree limb at Choate Rd	Tree - Broken Limb	PUC MED
28603	16L1	7/23/2016	Q3	1	2056	2056	43313	0.0474684	2.309E-05	Hanover	Re-spliced primary wires to transformer P14 Ferson Rd. Cause Unknown	Unknown	PUC MED
28604	16L1	7/23/2016	Q3	2	2628	1314	43313	0.0606746	4.618E-05	Hanover	Blown 40k fuse P52 Dogford Rd due to fallen tree	Tree Fell	PUC MED
28605	16L1	7/23/2016	Q3	85	61285	721	43313	1.4149332	0.0019625	Hanover	Blown 40k line fuse P151 Hanover Center Rd due to falen tree	Tree Fell	PUC MED
28617	16L1	7/23/2016	Q3	7	5418	774	43313	0.1250895	0.0001616	Hanover	Blown line fuse Rennie Rd due to fallen tree	Tree Fell	PUC MED
28620	39L2	7/23/2016	Q3	6	13206	2201	43313	0.3048969	0.0001385	Lebanon	Blown transformer fuse P35 Trues Brook Rd due to fallen tree	Tree Fell	PUC MED
28638	1L2	7/23/2016	Q3	159	169176	1064	43313	3.9058943	0.003671	Plainfield	Blown 40k line fuse P247 Rt 120 due to fallen tree between poles 268-269.	Tree Fell	PUC MED
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28642	7L2	7/24/2016	Q3	1	413	413	43313	0.0095352	2.309E-05	Enfield	Replaced service wires Lake St due to fallen tree	Tree Fell	Page 6 of PUC MED
28643	12L2	7/24/2016	Q3	2	1488	744	43313	0.0343546	4.618E-05	Walpole	Blown transformer fuse P20 Farnum Rd due to fallen tree limbs	Tree - Broken Limb	PUC MED
28644	6L3	7/24/2016	Q3	60	42240	704	43313	0.9752268	0.0013853	Hanover	Blown 25k line fuse P1 River Rd due to fallen tree.	Tree Fell	PUC MED
28645	7L2	7/24/2016	Q3	7	2450	350	43313	0.056565	0.0001616	Enfield	Blown transformer fuse Lake St due to fallen tree.	Tree Fell	PUC MED
28648	7L1	7/24/2016	Q3	1	371	371	43313	0.0085656	2.309E-05	Canaan	Replaced service wires South Rd due to fallen tree.	Tree Fell	PUC MED
28654	7L1	7/24/2016	Q3	8	2752	344	43313	0.0635375	0.0001847	Enfield	Blown transformer fuse P7 Goose Pond Rd after tree fell.	Tree Fell	PUC MED
28670	1L2	7/23/2016	Q3	17	5885	989	43313	0.1358714	0.0003925	Cornish	Manually opened 40k fuse P23 Hopkins due to fallen tree between P9-10 Burr Rd	Tree Fell	PUC MED
28671	7L1	7/24/2016	Q3	1	456	456	43313	0.010528	2.309E-05	Canaan	Replaced service wires at River Rd due to fallen tree.	Tree Fell	PUC MED
28676	7L1	7/24/2016	Q3	1	185	185	43313	0.0042712	2.309E-05	Enfield	Primary tap came off fuse at P2 Goose Pond Rd due to fallen tree	Tree Fell	PUC MED
28678	16L1	7/24/2016	Q3	1	804	804	43313	0.0185626	2.309E-05	Hanover	Blown 3-10k fuses P1 Lebanon St due to fallen tree limb on wires.	Tree - Broken Limb	PUC MED
28681	7L2	7/24/2016	Q3	1	146	146	43313	0.0033708	2.309E-05	Enfield	Manually disconnected wires to remove tree at Livingstonelodge Rd	Tree - Broken Limb	PUC MED
28685	14L3	7/24/2016	Q3	141	21291	151	43313	0.4915614	0.0032554	Pelham	Blown fuses Simpson Rd due to motor vehicle accident.	Vehicle	PUC MED
28688	6L3	7/25/2016	Q3	1	121	121	43313	0.0027936	2.309E-05	Hanover	Repaired service wires at River Rd due to fallen tree	Tree Fell	PUC MED
28689	14L3	7/25/2016	Q3	1	129	129	43313	0.0029783	2.309E-05	Pelham	Repaired service wires at Simpson Rd due to fallen tree	Tree Fell	PUC MED
28700	6L3	7/25/2016	Q3	1	94	94	43313	0.0021702	2.309E-05	Hanover	Repaired service wires at Curtis Rd due to fallen tree limbs.	Tree - Broken Limb	PUC MED
28705	6L3	7/25/2016	Q3	1	119	119	43313	0.0027474	2.309E-05	Hanover	Repaired service wires at Claflin Cir due to fallen tree.	Tree Fell	PUC MED
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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
2016 Storm Fund Report
Attachment 5
Page 7 of 7

													Page 7 of 7
28711	16L1	7/25/2016	Q3	1	160	160	43313	0.003694	2.309E-05	Hanover	Blown 6k fuse P7 Elm Rd due to fallen tree	Tree Fell	Page 7 of 7 PUC MED
28712	1L2	7/25/2016	Q3	1	337	337	43313	0.0077806	2.309E-05	Enfield	Repaired service wires Route 4A due to fallen tree.	Tree Fell	PUC MED
28720	7L1	7/25/2016	Q3	1	30	30	43313	0.0006926	2.309E-05	Canaan	Manually de-energized line P36 Back Bay Rd to make repairs to service wires after tree fell.	Tree Fell	PUC MED
28723	16L1	7/25/2016	Q3	7	1813	259	43313	0.0418581	0.0001616	Hanover	Blown 25k line fuse P1 Rennie Rd due to fallen tree limbs between P1-2.	Tree - Broken Limb	None
28727	1L2	7/23/2016	Q3	1	300	300	43313	0.0069263	2.309E-05	Enfield	Repaired service wires at Shaker Blvd due to fallen tree. Reconnected on 7/26 after customer repairs	Tree Fell	PUC MED

Page 1 of 6

## **Robert Johnson**

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

Sent:Wednesday, December 28, 2016 7:58 AMTo:DL NH Londonderry Emergency DispatchSubject:Energy Event Index: Threat Level 3

# **Energy Event Index for ALGONQUIN POWER**

Your forecast administrator: robert.mercier@libertyutilities.com

Valid Time: December 28, 2016 8:00 AM EST Forecaster: cody.fishman

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
1	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	2	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	2	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	3	2	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	3	2	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	3	2	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	2	2	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	Medium	Medium	High	High
	Northern Lebanon Hanover NH	High	Medium	Medium	High	High	High	Medium	Medium	High	High
	Northwest Monroe Bath NH	High	High	Medium	High	High	High	Medium	Medium	High	High
	Southern Salem Derry NH	High	High	High	High	High	High	Medium	Medium	High	High
	Western Alstead Charlestown NH	High	Medium	Medium	High	High	High	Medium	Medium	High	High

# **Energy Event Index Definition**

No Leaves (Nov 1 - Mar 31)

囯	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level							
Low < 30% chance							
Medium	Medium >= 30% to < 60% chance						
High >= 60% chance							

Go to WeatherSentry® Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

Sent:Wednesday, December 28, 2016 3:58 PMTo:DL NH Londonderry Emergency DispatchSubject:Energy Event Index: Threat Level 4

# **Energy Event Index for ALGONQUIN POWER**

Your forecast administrator: robert.mercier@libertyutilities.com

Valid Time: December 28, 2016 4:00 PM EST Forecaster: brad.nelson

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	2	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	2	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	3	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	4	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	3	1	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	Medium	Medium	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	High	Medium	Medium	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	High	Medium	Medium	High	High
	Southern Salem Derry NH	High	Medium	High	High	High	High	Medium	Medium	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	Medium	Medium	High	High

## **Energy Event Index Definition**

No Leaves (Nov 1 - Mar 31)

囯	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level								
Low < 30% chance								
Medium	>= 30% to < 60% chance							
High	>= 60% chance							

Go to WeatherSentry® Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

Sent:Thursday, December 29, 2016 7:58 AMTo:DL NH Londonderry Emergency DispatchSubject:Energy Event Index: Threat Level 4

# **Energy Event Index for ALGONQUIN POWER**

Your forecast administrator: robert.mercier@libertyutilities.com

Valid Time: December 29, 2016 8:00 AM EST Forecaster: kyle.koval

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH		1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH			1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	2	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	2	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	4	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	4	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	3	1	1	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	Medium	High	High	High	High	Medium	High	High	High
	Northern Lebanon Hanover NH	Medium	High	High	High	High	High	Medium	High	High	High
	Northwest Monroe Bath NH	Medium	High	High	High	High	High	Medium	High	High	High
	Southern Salem Derry NH	Medium	Medium	High	High	High	High	Medium	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	Medium	High	High	High

## **Energy Event Index Definition**

No Leaves (Nov 1 - Mar 31)

囯	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level								
Low < 30% chance								
Medium	>= 30% to < 60% chance							
High	>= 60% chance							

Go to WeatherSentry® Online for a complete view of the forecast and other business critical weather information.

From: Schneider Electric <EnergyEventIndex@TelventDTN.com>

Sent:Thursday, December 29, 2016 3:58 PMTo:DL NH Londonderry Emergency DispatchSubject:Energy Event Index: Threat Level 4

# **Energy Event Index for ALGONQUIN POWER**

Your forecast administrator: robert.mercier@libertyutilities.com

Valid Time: December 29, 2016 4:00 PM EST Forecaster: brad.nelson

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
1	Northern Lebanon Hanover NH		1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	2	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH		1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	4	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	3	1	1	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	Medium	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	High	Medium	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	High	Medium	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	High	Medium	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	Medium	High	High	High

## **Energy Event Index Definition**

No Leaves (Nov 1 - Mar 31)

囯	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level									
Low < 30% chance									
Medium	>= 30% to < 60% chance								
High	>= 60% chance								

Go to WeatherSentry® Online for a complete view of the forecast and other business critical weather information.

ID	Feeder	Date	Quarter	CI	CMI	Duration (Min)	Cust Serv	SAIDI	SAIFI	Town	Comments	Cause	E2_Exclusion
31446	9L2	12/29/2016	Q4	8	792	99	43672	0.0181352	0.0001832	Salem	Blown 15k transformer fuse P15 Main St due to failed lightning arrester.		
31447	1L2	12/29/2016	Q4	103	44084	428	43672	1.009434	0.0023585	Lebanon	Police/Fire request to manually open 40k fuse P8 School St due to structure fire.	Device Failed	None
												Fire on Company Equipment	Fire/Police Request
31456	12L2	12/29/2016	Q4	27	2916	108	43672	0.0667705	0.0006182	Walpole	Blown 10k line fuse P4 March Hill Rd due to fallen tree limb between P61-P62.		
21.450	107.4	12/20/2016	0.4	17	1207	71	43672	0.0276270	0.0003893	0.1	DI 251 II C DOLL DI I	Tree - Broken Limb	None
31459	10L4	12/29/2016	Q4	17	1207	/1	436/2	0.02/63/8	0.0003893	Salem	Blown 25k line fuse P81 Lawrence Rd due to fallen tree limb at P82.	T D I I' I	N
31477	14L2	12/29/2016	O4	112	8176	73	43672	0.1872138	0.0025646	Pelham	Blown 65k line fuse P128 Mammoth Rd due to	Tree - Broken Limb	None
31177	11122	12/2//2010	Ų.		0170	,,,	13072	0.1072130	0.0025010	Temani	fallen tree limb between P2-3 Valley Hill Rd	Tree - Broken Limb	None
31492	9L3	12/29/2016	Q4	1	239	239	43672	0.0054726	2.29E-05	Windham	Replaced service wires at Range Rd due to fallen tree limb.	irec - Biokeli Elillo	Ivone
												Tree - Broken Limb	Customer Owned
31517	13L2	12/29/2016	Q4	1	314	314	43672	0.00719	2.29E-05	Salem	Service wires damaged at Samoset due to fallen tree.		
												Tree Fell	Customer Owned
31529	14L1	12/29/2016	Q4	137	23054	62	43672	0.5278897	0.003137	Pelham	Blown 65k line fuse(2 of 3) P35 Marsh Rd due to fallen tree limb at P37.		
31535	10L4	12/30/2016	O4	155	22320	144	43672	0 5110826	0.0035492	Salem	10L4 circuit breaker locked out due to downed	Tree - Broken Limb	None
31333	TOL-4	12/30/2010	QŦ	155	22320	144	43072	0.5110020	0.0033432	Salem	wire after a tree limb fell at P2 Pattee Rd. Loop scheme operated correctly.	Tree - Broken Limb	None
31555	13L1	12/29/2016	Q4	207	23184	112	43672	0.5308665	0.0047399	Salem	65k trip saver (10f3) locked out P2 Atkinson Rd due to fallen tree limb P61 Haverhill Rd.	Dioxen Linie	Trone
												Tree - Broken Limb	None
31558	14L3	12/29/2016	Q4	163	16300	100	43672	0.3732369	0.0037324	Pelham	Blown 65k line fuses (2of3) P184 Mammoth Rd due to fallen tree limbs at P187, 194 and 196.		
31580	13L2	12/30/2016	Q4	13	559	43	43672	0.0128	0.0002977	Salem	Blown 15k transformer fuse P8 Scotland Ave	Tree - Broken Limb	None
31360	13L2	12/30/2010	Q4	15	339	43	43072	0.0128	0.0002977	Salem	due to fallen tree limb.	Torre Dorley Line	Nama
31589	14L2	12/30/2016	O4	60	3900	65	43672	0.0893021	0.0013739	Salem	Blown 40k line fuse P4 Westfall Rd due to fallen	Tree - Broken Limb	None
			ζ.								tree at P9.	Tree Fell	None
31594	14L3	12/30/2016	Q4	1	469	469	43672	0.0107391	2.29E-05	Pelham	Service wires damaged at Castle Hill due to fallen tree limb.	no ren	TOHE
												Tree - Broken Limb	Customer Owned
31596	18L4	12/30/2016	Q4	1	165	165	43672	0.0037782	2.29E-05	Salem	Replaced service wires at Brookdale Rd due to fallen tree between P2-3.		
												Tree Fell	Customer Owned
31604	14L2	12/29/2016	Q4	4	3580	895	43672	0.0819747	9.159E-05	Pelham	Replaced transformer and pole at P2 Allard Dr due to fallen tree.		
												Tree Fell	None



# **STORM PLANNING REPORT**

Winter Storm Fortis

# **DATE: Thursday, December 29, 2016**

	DATE: Thursday, December 29, 2010										
	<u>Lebanon</u>	Sa	alem_	<u>Cł</u>	narlestown		Comments				
Weather Forecast	Snow will begin in the early afternoon of 12/29 with 10" to 16" expected. Snow will begin as wet and changing to Normal Consistency over night. Snow is expected to last until Friday Morning with winds picking up to 30 to 40 mph.	afternoon of 5" expected. as wet chang Consistency of is expected to Morning with	gin in the early 12/29 with 3" to Snow will begin ing to Normal overnight. Snow to last until Friday winds picking ls of >45 mph.	afternoo to 16" ex begin as Normal C expected Morning	I begin in the early n of 12/29 with 10" rected. Snow will wet and changing to consistency. Snow is I to last until Friday with winds picking to 40 mph.	be in the the day o	The temperatures are expected to be in the high 20's to low 30's for the day on Thursday, dropping into the low to mid-teens over night.				
Anticipated EERP Event Level	Level 3	Le	evel 3		Level 3						
Resources						Totals	We will have a troubleshooter in the				
Internal Crews	3 crews	4	crews		1 crew	8	Lebanon and Salem area's as well. We will				
Contractor Crews	11 crews	6	crews			17	also have a Tree Crew				
<b>Total Line Crews</b>	11 crews	10	crews		1 crew	22	supervisor on property in Salem.				
Tree Crews	10 crews	3	crews		1 crew	14	Bob Mostone will have 3 techs in Lebanon and 5				
Wires Down	6 meter Techs	6 Me	eter tech			11	in Salem during the day and will have 5 techs				
Other Support	Customer service will staff Thursday evening and Overnight into Friday						available overnight.				
EOC/Storm Room Status	The EOC will open Thursday, 12/29 in the AM										
Municipal Room Status	The Muni room will open in Salem at 6:00 am Friday 12/30 and will be available to open in Lebanon if needed.										
Customer Outage Count	N/A					Total					
Estimated Date/Time for Total Restoration	Click here to enter a date. Choose an item.										
Planned Storm Conference Calls	Next Call at 5:00 PM 12/28 wi Next call at 10:00 AM 12/29.										
Notifications with Regulators. NHPUC/NH OEM											
EII Event Index & Storm Accounting	Description		GP Expens		GP Capital Jo						
recounting	Level III – High Conf	iderice	8830-180	U2U08	8830-180020	830-18002070					