# NYSERDA Electric Vehicle Charging Infrastructure Report

# Report period: January 2015 through March 2015 New York State

EVSE Usage - By Access Type	Public	Limited <sup>3</sup>	Private	Total
Number of charging ports <sup>1</sup>	226	80	30	336
Number of charging events <sup>2</sup>	5,518	1,323	628	7,469
Electricity consumed (AC MWh)	36.55	8.45	22.91	67.91
Percent of time with a vehicle connected	4.7%	3.1%	47.8%	8.0%
Percent of time with a vehicle drawing power	2.3%	1.6%	46.1%	6.0%

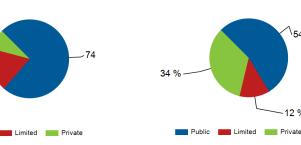
**Electricity Consumed** 

#### Number of Charging Events

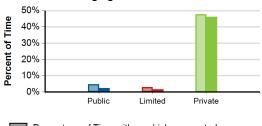
8 %

Public

18 %



#### **Charging Unit Utilization**

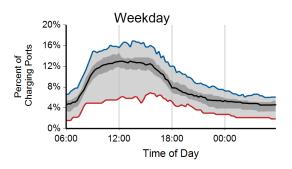


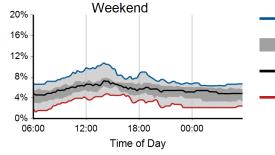
Percentage of Time with a vehicle connected Percentage of Time with a vehicle drawing power

# Charging Availability: Range of Percentage of All Charging Ports with a Vehicle Connected versus Time of Day<sup>4</sup>

2 %

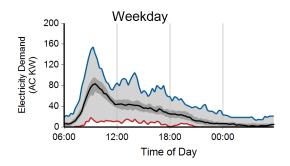
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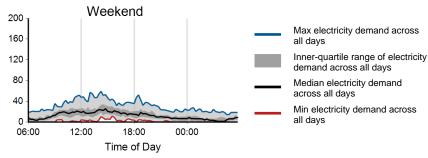




Max percentage of charging units connected across all days Inner-quartile range of charging units connected across all days Median percentage of charging units connected across all days Min percentage of charging units connected across all days

# Charging Demand: Range of Aggregate Electricity Demand versus Time of Day<sup>4</sup> for All Charging Ports





<sup>1</sup> Includes all EVSE ports in use during the reporting period and have reported data to INL.

<sup>2</sup> A charging event is defined as the period when a vehicle is connected to a charging unit, during which power is transferred.

- <sup>3</sup> Limited Access EVSE are primarily for use by employees or tenants (including paying guests at hotels) and are placed where these EV drivers would normally park, but others (such as visitors or customers) may be able to plug in on a more limited basis.
- <sup>4</sup> Weekends start at 6:00am on Saturday and end 6:00am Monday local time.





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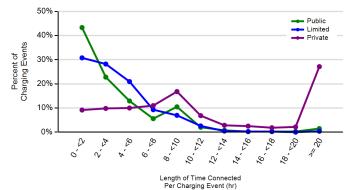
Idaho National Laboratory

# NYSERDA Electric Vehicle Charging Infrastructure Report

Report period: January 2015 through March 2015

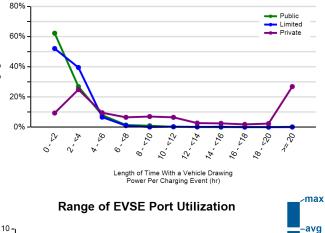
EVSE Usage - By Access Type	Public	Limited <sup>3</sup>	Private
Number of charging ports <sup>1</sup>	226	80	30
Number of charging events <sup>2</sup>	5,518	1,323	628
Charging energy consumed (AC MWh)	36.6	8.4	22.9
Average percent of time with a vehicle connected per charging port	4.7%	3.1%	47.8%
Average percent of time with a vehicle drawing power per charging port	2.3%	1.6%	46.1%
Average number of charging events started per charging port per week	1.9	1.3	1.7
Average electricity consumed per charging port per week (AC KWh)	12.7	8.2	61.8
Average length of time with vehicle connected per charging event (hr)	4.1	4.0	47.5
Average length of time with vehicle drawing power per charging event (hr)	2.1	2.1	45.8
Average electricity consumed per charging event (AC kWh)	6.6	6.4	36.5

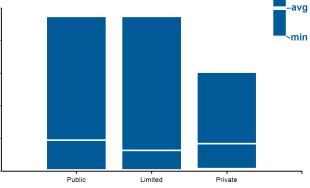
## Distribution of Length of Time with a Vehicle Connected per Charging Event



**Distribution of AC Energy Consumed per Charging Event** 50% - Public Limited 40% Number of Charging Events per Port per Week Private Percent of Charging Events 30% 20% 10% 0% 121 912 D ¢ 20 B 55 Ş N \$ Ň ó ଚ 2 6 2 æ ŝ ŝ

Distribution of Length of Time with a Vehicle Drawing Power per Charging Event





<sup>1</sup> Includes all EVSE ports in use during the reporting period and have reported data to INL.

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Electricity Consumed Per Charging Event (AC kWh)

<sup>2</sup> A charging event is defined as the period when a vehicle is connected to a charging unit, during which power is transferred.

<sup>3</sup> Limited Access EVSE are primarily for use by employees or tenants (including paying guests at hotels) and are placed where these EV drivers would normally park, but others (such as visitors or customers) may be able to plug in on a more limited basis.

Percent of Charging Events

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**NYSERDA** 

**NEW YORK** 

STATE OF OPPORTUNITY.

<sup>1</sup> Includes all EVSE ports in use during the reporting period and have reported data to INL.

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<sup>2</sup> A charging event is defined as the period when a vehicle is connected to a charging unit, during which power is transferred.

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<sup>3</sup> Only includes data from EVSE providing Public or Limited access.

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40%

30%

20%

10%

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Percent of Charging Events

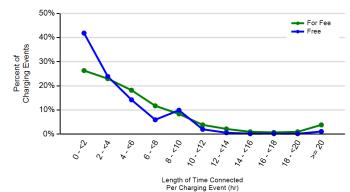
NYSERDA Electric Vehicle Charging Infrastructure Report

Advanced Vehicle Testing Activity

# Report period: January 2015 through March 2015

EVSE Usage - By Required Payment <sup>3</sup>	For Fee	Free
Number of charging ports <sup>1</sup>	51	255
Number of charging events <sup>2</sup>	418	6,423
Charging energy consumed (AC MWh)	5.8	39.2
Average percent of time with a vehicle connected per charging port	2.7%	4.6%
Average percent of time with a vehicle drawing power per charging port	1.2%	2.4%
Average number of charging events started per charging port per week	0.7	2.0
Average electricity consumed per charging port per week (AC KWh)	9.0	12.0
Average length of time with vehicle connected per charging event (hr)	7.1	3.9
Average length of time with vehicle drawing power per charging event (hr)	3.1	2.0
Average electricity consumed per charging event (AC kWh)	13.9	6.1

#### Distribution of Length of Time with a Vehicle Connected per Charging Event



**Distribution of AC Energy Consumed per Charging Event** 50% - For Fee

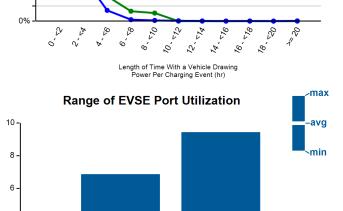
Electricity Consumed Per Charging Event (AC kWh)

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Free

For Fee



80%

60%

40%

20%

Percent of Charging Events

Number of Charging Events per Port per Week

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For Fee

Free



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Electricity Consumed Per Charging Event (AC kWh)

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<sup>2</sup> A charging event is defined as the period when a vehicle is connected to a charging unit, during which power is transferred.

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<sup>3</sup> Only includes data from EVSE providing Public or Limited access.

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# NYSERDA Electric Vehicle Charging Infrastructure Report

Report period: January 2015 through March 2015

EVSE Usage - By Land Use Type <sup>3</sup>	Urban	Suburban	Rural
Number of charging ports <sup>1</sup>	111	168	27
Number of charging events <sup>2</sup>	2,736	3,841	264
Charging energy consumed (AC MWh)	21.5	21.4	2.1
Average percent of time with a vehicle connected per charging port	6.6%	3.1%	2.2%
Average percent of time with a vehicle drawing power per charging port	2.8%	1.9%	1.0%
Average number of charging events started per charging port per week	1.9	1.8	0.8
Average electricity consumed per charging port per week (AC KWh)	15.2	10.0	6.1
Average length of time with vehicle connected per charging event (hr)	5.8	2.9	4.8
Average length of time with vehicle drawing power per charging event (hr)	2.5	1.8	2.3
Average electricity consumed per charging event (AC kWh)	7.8	5.6	8.0

- Urban

Subur Suburban

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Length of Time Connected Per Charging Event (hr)

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Distribution of Length of Time with a

Vehicle Connected per Charging Event

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**Distribution of AC Energy** 

**Consumed per Charging Event** 

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60%

40%

20%

0%

50%

40%

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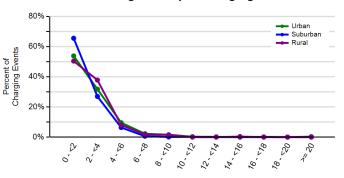
Percent of Charging Events

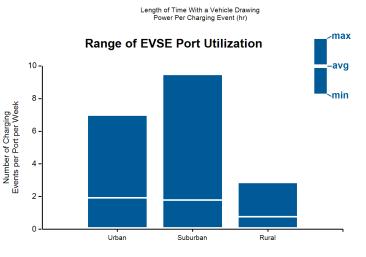
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Percent of Charging Events

### Distribution of Length of Time with a Vehicle Drawing Power per Charging Event







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<sup>2</sup> A charging event is defined as the period when a vehicle is connected to a charging unit, during which power is transferred.

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Electricity Consumed Per Charging Event (AC kWh)

<sup>3</sup> Only includes data from EVSE providing Public or Limited access.

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<sup>4</sup> Regions with less than 10 EVSE ports are not individually represented, and are combined and reported as 'Other'.

<sup>5</sup> Only the 4 regions with the most EVSE ports are individually represented, with the remaining regions combined and shown as 'Other'.

New York City

Hudson Valley

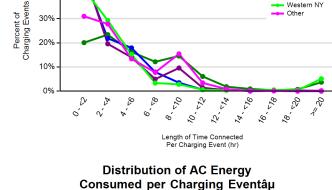
Capital District Western NY

Other

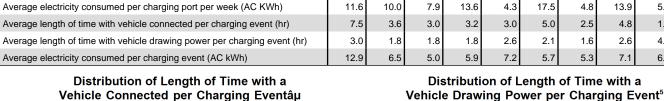
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Vehicle Connected per Charging Eventâµ 50% - New York City Hudson Valley 40% Capital District Western NY



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Number of Charging ents per Port per Week

Events 2 Syracuse/Central

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14

107

0.8

1.1%

0.9%

0.6

Capital District

86

2,559

15.0

4.5%

2.5%

2.3

udson Valley

33

659

3.3

2.8%

1.7%

1.6

79

Island

buc

22

430

2.8

3.3%

1.7%

1.5

47

543

7.0

4.0%

1.6%

0.9

11.6

Rochester/Finger

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27

1,038

9.0%

3.8%

3.1

17.5

6.0

Jorth Country

19

219

1.2

1.4%

0.9%

0.9

48

# Jew York City

# NYSERDA Electric Vehicle Charging Infrastructure Report

# Advanced Vehicle Testing Activity

EVSE Usage - By Region<sup>3</sup>

Charging energy consumed (AC MWh)

Number of charging ports

60%

40%

20%

0%

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Charging Events

Percent of

Number of charging events<sup>2</sup>

Report period: January 2015 through March 2015

Average percent of time with a vehicle connected per charging port

Average percent of time with a vehicle drawing power per charging port

Average number of charging events started per charging port per week

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45

1,132

8.1

5.6%

3.0%

2.0

13.9

4.8

2.6

7.1

Idaho National Laboratory

Vestern NY

Other<sup>4</sup>

13

154

0.9

2.4%

1.0%

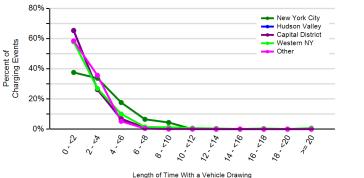
0.9

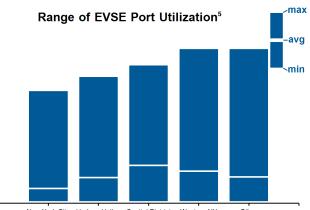
55

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4.3

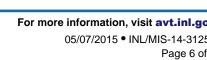
6.0





Power Per Charging Event (hr)

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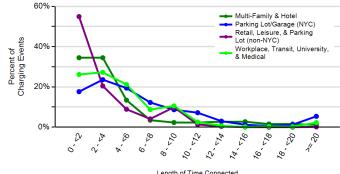
**NYSERDA** 

# NYSERDA Electric Vehicle Charging Infrastructure Report

# Report period: January 2015 through March 2015

EVSE Usage - By Venue <sup>3</sup>	Parking Lot/Garage (non-NYC)	Parking Lot/Garage (NYC)	Retail Location	Workplace	Hotel	University or Medical Campus	Leisure Destination	Transit Station
Number of charging ports <sup>1</sup>	40	39	60	49	27	61	13	13
Number of charging events <sup>2</sup>	1,466	335	1,761	952	243	1,728	296	42
Charging energy consumed (AC MWh)	8.2	5.9	8.0	6.7	2.4	11.5	1.8	0.2
Average percent of time with a vehicle connected per charging port	7.3%	3.5%	2.2%	5.9%	1.9%	5.6%	4.3%	0.8%
Average percent of time with a vehicle drawing power per charging port	3.4%	1.5%	1.8%	2.5%	1.2%	2.8%	2.0%	0.6%
Average number of charging events started per charging port per week	2.9	0.7	2.3	1.5	0.7	2.2	1.8	0.3
Average electricity consumed per charging port per week (AC KWh)	16.3	11.9	10.4	10.6	7.1	14.6	10.7	1.3
Average length of time with vehicle connected per charging event (hr)	4.3	8.7	1.6	6.5	4.6	4.2	4.0	5.3
Average length of time with vehicle drawing power per charging event (hr)	2.0	3.6	1.3	2.8	2.9	2.1	1.9	3.6
Average electricity consumed per charging event (AC kWh)	5.6	17.7	4.6	7.0	10.1	6.6	6.1	5.1

### Distribution of Length of Time with a Vehicle Connected per Charging Event

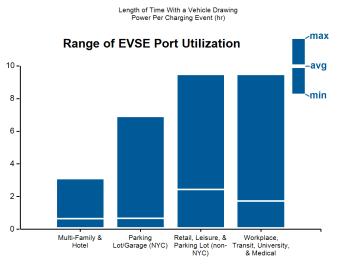


Length of Time Connected Per Charging Event (hr)

**Distribution of AC Energy Consumed per Charging Event** 60% Multi-Family & Hotel Parking Lot/Garage (NYC) Number of Charging Events per Port per Week Retail, Leisure, & Parking Percent of Charging Events Lot (non-NYC) 40% Workplace, Transit, University & Medica 20% 0% 8, <sup>57</sup>2 | 912 20 ð ĉ 20 20 ĉ ŝ 5 B ó N 2 6 2 æ ŝ æ N Electricity Consumed Per Charging Event (AC kWh)

#### Distribution of Length of Time with a Vehicle Drawing Power per Charging Event





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<sup>2</sup> A charging event is defined as the period when a vehicle is connected to a charging unit, during which power is transferred.

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