# EV Project Electric Vehicle Charging Infrastructure Summary Report

83%

**Region: ALL** 

85%

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 6494

Number of EV Troject vehicles in region. 0494	Desidential	Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Level 2	Level 2	DC Fast	Total
Number of charging units <sup>1</sup>	6,474	415	3,107	100	10,096
Number of charging events <sup>2</sup>	1,861,035	48,705	207,910	71,803	2,189,453
Electricity consumed (AC MWh)	14,630.40	560.98	1,751.87	609.33	17,552.60
Percent of time with a vehicle connected to charging unit	41%	13%	4%	3%	29%
Percent of time with a vehicle drawing power from charging unit	8%	6%	2%	3%	6%

3%

10%

Number of Charge Events

Private Nonresidential Level 2

Publicly Accessible Level 2 Publicly Accessible DC Fast

Residential Level 2

9%



Residential Level 2

Private Nonresidential Level 2

Publicly Accessible Level 2

Publicly Accessible DC Fast

**Charging Unit Utilization** 



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>





-	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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: ALL

Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	1,372,051	488,984	1,861,035	
Electricity consumed (AC MWh)	11,217.75	3,412.65	14,630.40	
Percent of time with a vehicle connected to EVSE	39%	44%	41%	
Percent of time with a vehicle drawing power from EVSE	8%	6%	8%	
Average number of charging events started per EVSE per day	0.85	0.76	0.82	

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: ALL

Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	66%	34%	0%
Percent of electricity consumed	71%	29%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.9	11.9	11.9
Average length of time with vehicle drawing power per charging event (hr)	2.4	2.0	2.3
Average electricity consumed per charging event (AC kWh)	8.2	7.0	7.9





Distribution of Electricity Consumed per Charging Event







## Region: ALL

### Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	40,368	8,337	48,705
Electricity consumed (AC MWh)	448.13	112.86	560.98
Percent of time with a vehicle connected to EVSE	14%	11%	13%
Percent of time with a vehicle drawing power from EVSE	6%	4%	6%
Average number of charging events started per EVSE per day	0.46	0.24	0.40

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: ALL

Report period: January 2013 through December 2013

Vehicles Charged	Car sharing fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	45%	6%	5%	44%
Percent of electricity consumed	61%	4%	3%	32%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		8.0	7.8	7.9
Average length of time with vehicle drawing power per charging event (h	ır)	3.3	4.0	3.4
Average electricity consumed per charging event (AC kWh)		11.1	13.6	11.5

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car sharing fleets in the Oregon, Philadelphia, San Diego, and San Francisco regions use private nonresidential EV Project charging units to charge their grid-connected electric drive vehicles. The use of these charging units by car sharing fleet vehicles is included in this report.



## Region: ALL

Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	169,594	38,316	207,910
Electricity consumed (AC MWh)	1,445.66	306.22	1,751.87
Percent of time with a vehicle connected to EVSE	4%	3%	4%
Percent of time with a vehicle drawing power from EVSE	2%	1%	2%
Average number of charging events started per EVSE per day	0.24	0.14	0.21

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: ALL

Report period: January 2013 through December 2013

Vehicles Charged	Car sharing fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	7%	13%	4%	76%
Percent of electricity consumed	10%	11%	3%	76%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		4.5	3.6	4.4
Average length of time with vehicle drawing power per charging event (h	hr)	2.3	2.1	2.3
Average electricity consumed per charging event (AC kWh)		8.5	8.0	8.4

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car sharing fleets in the Oregon, Philadelphia, San Diego, and San Francisco regions use publicly accessible EV Project charging units to charge their grid-connected electric drive vehicles. The use of these charging units by car sharing fleet vehicles is included in this report.



# DC Fast Chargers

## Region: ALL

### Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	53,035	18,768	71,803
Electricity consumed (AC MWh)	447.51	161.82	609.33
Percent of time with a vehicle connected to EVSE	3%	3%	3%
Percent of time with a vehicle drawing power from EVSE	3%	3%	3%
Average number of charging events started per EVSE per day	2.40	2.13	2.32

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







# **DC Fast Chargers**

### **Region: ALL**

## Report period: January 2013 through December 2013

Vehicles Charged	Car sharing fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	25%	0%	75%
Percent of electricity consumed	0%	24%	0%	76%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (min)		20.8	20.4	20.7
Average length of time with vehicle drawing power per charging event (r	min)	20.8	20.4	20.7
Average electricity consumed per charging event (AC kWh)		8.4	8.6	8.5

Average electricity consumed per charging event (AC kWh)





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



Length of time with vehicle drawing power per charging event (min)

#### **Distribution of Electricity Consumed per Charging Event**



<sup>1</sup> Car sharing fleets in the Oregon, Philadelphia, San Diego, and San Francisco regions use publicly accessible EV Project charging units to charge their grid-connected electric drive vehicles. The use of these charging units by car sharing fleet vehicles is included in this report.



**Project** 

# EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Phoenix, AZ Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 336

Number of EV Project vehicles in region. 550	Desidential	Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	334	36	401	17	788
Number of charging events <sup>2</sup>	95,827	2,842	13,761	5,203	117,633
Electricity consumed (AC MWh)	717.09	19.75	101.82	40.25	878.90
Percent of time with a vehicle connected to charging unit	42%	6%	1%	1%	19%
Percent of time with a vehicle drawing power from charging unit	8%	2%	1%	1%	4%



#### **Charging Unit Utilization**



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>





	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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



## Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	69,298	26,529	95,827
Electricity consumed (AC MWh)	548.67	168.42	717.09
Percent of time with a vehicle connected to EVSE	40%	46%	42%
Percent of time with a vehicle drawing power from EVSE	8%	7%	8%
Average number of charging events started per EVSE per day	0.85	0.81	0.84

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	56%	44%	0%
Percent of electricity consumed	59%	41%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	12.2	11.7	12.1
Average length of time with vehicle drawing power per charging event (hr)	2.4	1.9	2.2
Average electricity consumed per charging event (AC kWh)	7.9	6.3	7.5





Distribution of Electricity Consumed per Charging Event







## Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	2,664	178	2,842	
Electricity consumed (AC MWh)	18.77	0.98	19.75	
Percent of time with a vehicle connected to EVSE	8%	3%	6%	
Percent of time with a vehicle drawing power from EVSE	3%	0%	2%	
Average number of charging events started per EVSE per day	0.33	0.05	0.25	

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	7%	13%	80%
Percent of electricity consumed	8%	13%	80%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	6.1	4.1	6.0
Average length of time with vehicle drawing power per charging event (hr)	2.2	1.7	2.2
Average electricity consumed per charging event (AC kWh)	7.0	5.9	6.9

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





Distribution of Electricity Consumed per Charging Event





## Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	11,645	2,116	13,761	
Electricity consumed (AC MWh)	87.46	14.36	101.82	
Percent of time with a vehicle connected to EVSE	2%	1%	1%	
Percent of time with a vehicle drawing power from EVSE	1%	0%	1%	
Average number of charging events started per EVSE per day	0.12	0.06	0.11	

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	16%	11%	74%
Percent of electricity consumed	15%	8%	77%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.2	2.9	3.2
Average length of time with vehicle drawing power per charging event (hr)	2.1	1.8	2.0
Average electricity consumed per charging event (AC kWh)	7.5	6.8	7.4

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





Distribution of Electricity Consumed per Charging Event





# DC Fast Chargers

## Region: Phoenix, AZ Metropolitan Area

## Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	4,266	937	5,203
Electricity consumed (AC MWh)	32.42	7.83	40.25
Percent of time with a vehicle connected to EVSE	1%	1%	1%
Percent of time with a vehicle drawing power from EVSE	1%	1%	1%
Average number of charging events started per EVSE per day	1.07	0.59	0.94

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>



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





all days
Inner-quartile range of electricity demand across all days

Median electricity demand across all days

Min electricity demand across all days



# DC Fast Chargers

### Region: Phoenix, AZ Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	25%	0%	75%
Percent of electricity consumed	25%	0%	75%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (min)	18.6	19.6	18.8
Average length of time with vehicle drawing power per charging event (min)	18.6	19.6	18.8
Average electricity consumed per charging event (AC kWh)	7.6	8.3	7.7





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



Length of time with vehicle drawing power per charging event (min)

#### Distribution of Electricity Consumed per Charging Event





**Project** 

## EV Project Electric Vehicle Charging Infrastructure Summary Report

### Region: Tucson, AZ Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 63

Charging Unit Usage	Residential Level 2	Private Nonresidential Level 2	Accessible Level 2	Publicly Accessible DC Fast	Total
Number of charging units <sup>1</sup>	62	5	68	0	135
Number of charging events <sup>2</sup>	17,330	925	1,390	0	19,645
Electricity consumed (AC MWh)	117.71	4.63	9.23	0.00	131.58
Percent of time with a vehicle connected to charging unit	40%	18%	1%	0%	19%
Percent of time with a vehicle drawing power from charging unit	6%	4%	0%	0%	3%



Private Nonresidential Level 2

Publicly Accessible Level 2 Publicly Accessible DC Fast

Residential Level 2

88%



Residential Level 2

Private Nonresidential Level 2

Publicly Accessible Level 2

Publicly Accessible DC Fast

**Electricity Consumed** 

**Charging Unit Utilization** 



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>



5%



-	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>



<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



## Region: Tucson, AZ Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	12,640	4,690	17,330
Electricity consumed (AC MWh)	88.38	29.33	117.71
Percent of time with a vehicle connected to EVSE	39%	43%	40%
Percent of time with a vehicle drawing power from EVSE	7%	5%	6%
Average number of charging events started per EVSE per day	0.80	0.74	0.78

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Tucson, AZ Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	84%	16%	0%
Percent of electricity consumed	84%	16%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	12.4	12.4	12.4
Average length of time with vehicle drawing power per charging event (hr)	2.0	1.8	1.9
Average electricity consumed per charging event (AC kWh)	7.0	6.3	6.8





Distribution of Electricity Consumed per Charging Event







## Region: Tucson, AZ Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	1,030	360	1,390	
Electricity consumed (AC MWh)	7.03	2.20	9.23	
Percent of time with a vehicle connected to EVSE	1%	0%	1%	
Percent of time with a vehicle drawing power from EVSE	0%	0%	0%	
Average number of charging events started per EVSE per day	0.06	0.05	0.06	

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Tucson, AZ Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	19%	2%	79%
Percent of electricity consumed	16%	1%	83%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	2.4	2.3	2.4
Average length of time with vehicle drawing power per charging event (hr)	2.0	1.7	1.9
Average electricity consumed per charging event (AC kWh)	6.8	6.2	6.6

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





Distribution of Electricity Consumed per Charging Event





# EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Los Angeles, CA Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 624

Number of EV Project vehicles in region. 024	Residential	Private Nonresidential	Publicly Accessible	Publicly Accessible	
Charging Unit Usage	Level 2	Level 2	Level 2	DC Fast	Total
Number of charging units <sup>1</sup>	624	37	321	4	986
Number of charging events <sup>2</sup>	170,317	3,511	35,709	4,135	213,672
Electricity consumed (AC MWh)	1,315.89	31.69	300.61	36.33	1,684.52
Percent of time with a vehicle connected to charging unit	39%	9%	5%	5%	27%
Percent of time with a vehicle drawing power from charging unit	7%	3%	3%	5%	6%





**Electricity Consumed** 

**Charging Unit Utilization** 



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>





-	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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



## Region: Los Angeles, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	123,703	46,614	170,317
Electricity consumed (AC MWh)	998.94	316.95	1,315.89
Percent of time with a vehicle connected to EVSE	37%	42%	39%
Percent of time with a vehicle drawing power from EVSE	8%	6%	7%
Average number of charging events started per EVSE per day	0.80	0.75	0.78

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







## Region: Los Angeles, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	42%	58%	0%
Percent of electricity consumed	47%	53%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	12.0	11.7	11.9
Average length of time with vehicle drawing power per charging event (hr)	2.4	2.0	2.3
Average electricity consumed per charging event (AC kWh)	8.1	6.8	7.7





Distribution of Electricity Consumed per Charging Event







## Region: Los Angeles, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	2,803	708	3,511
Electricity consumed (AC MWh)	24.82	6.86	31.69
Percent of time with a vehicle connected to EVSE	9%	9%	9%
Percent of time with a vehicle drawing power from EVSE	3%	2%	3%
Average number of charging events started per EVSE per day	0.33	0.21	0.30

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Los Angeles, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	9%	1%	90%
Percent of electricity consumed	8%	0%	91%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	7.4	7.8	7.5
Average length of time with vehicle drawing power per charging event (hr)	2.2	2.3	2.3
Average electricity consumed per charging event (AC kWh)	8.8	9.8	9.0

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





Distribution of Electricity Consumed per Charging Event





Region: Los Angeles, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	28,889	6,820	35,709
Electricity consumed (AC MWh)	247.66	52.95	300.61
Percent of time with a vehicle connected to EVSE	6%	3%	5%
Percent of time with a vehicle drawing power from EVSE	4%	2%	3%
Average number of charging events started per EVSE per day	0.40	0.23	0.35

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Los Angeles, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	2%	3%	95%
Percent of electricity consumed	2%	2%	96%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.5	3.1	3.5
Average length of time with vehicle drawing power per charging event (hr)	2.2	2.0	2.2
Average electricity consumed per charging event (AC kWh)	8.6	7.8	8.4

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





Distribution of Electricity Consumed per Charging Event





# EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: San Diego, CA Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 772

Charging Unit Usage	Residential Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	771	89	368	4	1,232
Number of charging events <sup>2</sup>	226,371	24,518	49,650	2,643	303,182
Electricity consumed (AC MWh)	1,838.55	358.64	478.02	22.97	2,698.19
Percent of time with a vehicle connected to charging unit	43%	24%	8%	3%	32%
Percent of time with a vehicle drawing power from charging unit	8%	15%	5%	3%	7%

Drivato

Number of Charge Events

Residential Level 2

Private Nonresidential Level 2 Publicly Accessible Level 2 Publicly Accessible DC Fast



Charging Unit Utilization

Publicly

Publicly



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

13%

**Electricity Consumed** 





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>



<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



## Region: San Diego, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	168,075	58,296	226,371
Electricity consumed (AC MWh)	1,412.62	425.93	1,838.55
Percent of time with a vehicle connected to EVSE	42%	46%	43%
Percent of time with a vehicle drawing power from EVSE	8%	6%	8%
Average number of charging events started per EVSE per day	0.86	0.75	0.83

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>



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





## Region: San Diego, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	65%	35%	0%
Percent of electricity consumed	69%	31%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	12.4	12.7	12.5
Average length of time with vehicle drawing power per charging event (hr)	2.4	2.1	2.3
Average electricity consumed per charging event (AC kWh)	8.4	7.3	8.1





Distribution of Electricity Consumed per Charging Event



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





## Region: San Diego, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	18,427	6,091	24,518
Electricity consumed (AC MWh)	266.22	92.42	358.64
Percent of time with a vehicle connected to EVSE	24%	23%	24%
Percent of time with a vehicle drawing power from EVSE	15%	13%	15%
Average number of charging events started per EVSE per day	0.84	0.70	0.80

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: San Diego, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Car2Go fleet <sup>1</sup>	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	85%	3%	2%	10%
Percent of electricity consumed	92%	2%	1%	6%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		7.0	8.0	7.2
Average length of time with vehicle drawing power per charging event (h	r)	4.4	4.6	4.4
Average electricity consumed per charging event (AC kWh)		14.4	15.3	14.6

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car2Go operates a car sharing fleet of Smart Fortwo Electric Drive vehicles in this region. Usage of private nonresidential EV Project charging units to charge these vehicles is included in this report.



## Region: San Diego, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	39,174	10,476	49,650
Electricity consumed (AC MWh)	373.25	104.77	478.02
Percent of time with a vehicle connected to EVSE	9%	7%	8%
Percent of time with a vehicle drawing power from EVSE	5%	3%	5%
Average number of charging events started per EVSE per day	0.47	0.32	0.43

## Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>






#### Region: San Diego, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Car2Go fleet <sup>1</sup>	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	27%	11%	4%	58%
Percent of electricity consumed	35%	9%	2%	54%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		4.7	4.4	4.6
Average length of time with vehicle drawing power per charging event (hr)	)	2.6	2.6	2.6
Average electricity consumed per charging event (AC kWh)		9.5	10.0	9.6

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car2Go operates a car sharing fleet of Smart Fortwo Electric Drive vehicles in this region. Usage of publicly accessible EV Project charging units to charge these vehicles is included in this report.



## EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013 Number of EV Project vehicles in region: 1417

cessible	
C Fast Total	
27 1,609	
29,741 389,569	
3,536.69	
6% 32%	
6% 7%	
	Total   ZF Total   27 1,609   9,741 389,569   60.29 3,536.69   6% 32%   6% 7%



#### **Charging Unit Utilization**



#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

6%







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



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	249,405	87,910	337,315
Electricity consumed (AC MWh)	2,383.08	687.44	3,070.52
Percent of time with a vehicle connected to EVSE	34%	36%	35%
Percent of time with a vehicle drawing power from EVSE	8%	6%	7%
Average number of charging events started per EVSE per day	0.70	0.62	0.68

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	100%	0%	0%
Percent of electricity consumed	100%	0%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	12.6	11.9	12.4
Average length of time with vehicle drawing power per charging event (hr)	2.6	2.2	2.5
Average electricity consumed per charging event (AC kWh)	9.6	7.8	9.1





Distribution of Electricity Consumed per Charging Event



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





### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	1,058	106	1,164	
Electricity consumed (AC MWh)	9.85	0.92	10.77	
Percent of time with a vehicle connected to EVSE	6%	3%	5%	
Percent of time with a vehicle drawing power from EVSE	3%	1%	2%	
Average number of charging events started per EVSE per day	0.29	0.07	0.23	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	City CarShare fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	17%	0%	82%
Percent of electricity consumed	0%	12%	0%	88%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		5.5	3.1	5.3
Average length of time with vehicle drawing power per charging event	(hr)	2.6	2.3	2.6
Average electricity consumed per charging event (AC kWh)		9.2	9.5	9.3

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> City CarShare operates a car sharing fleet of Nissan Leaf, Chevrolet Volt, and Mitsubishi i-Miev vehicles in this region. Usage of private nonresidential EV Project charging units to charge these vehicles is included in this report.



### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	19,399	1,950	21,349
Electricity consumed (AC MWh)	181.21	13.91	195.11
Percent of time with a vehicle connected to EVSE	10%	3%	8%
Percent of time with a vehicle drawing power from EVSE	7%	1%	5%
Average number of charging events started per EVSE per day	0.65	0.16	0.51

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	City CarShare fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	9%	0%	91%
Percent of electricity consumed	0%	7%	0%	92%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		3.8	3.2	3.7
Average length of time with vehicle drawing power per charging event (	(hr)	2.4	1.7	2.4
Average electricity consumed per charging event (AC kWh)		9.3	7.2	9.1

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> City CarShare operates a car sharing fleet of Nissan Leaf, Chevrolet Volt, and Mitsubishi i-Miev vehicles in this region. Usage of publicly acccessible EV Project charging units to charge these vehicles is included in this report.



### DC Fast Chargers

#### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	22,667	7,074	29,741
Electricity consumed (AC MWh)	197.55	62.74	260.29
Percent of time with a vehicle connected to EVSE	6%	4%	6%
Percent of time with a vehicle drawing power from EVSE	6%	4%	6%
Average number of charging events started per EVSE per day	3.98	3.11	3.73

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### DC Fast Chargers

#### Region: San Francisco, CA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	City CarShare fleet <sup>1</sup>	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	27%	0%	73%
Percent of electricity consumed	0%	25%	0%	75%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (min	n)	21.7	20.8	21.5
Average length of time with vehicle drawing power per charging event	(min)	21.7	20.8	21.5
Average electricity consumed per charging event (AC kWh)		8.7	8.9	8.8





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



Length of time with vehicle drawing power per charging event (min)

Distribution of Electricity Consumed per Charging Event



<sup>1</sup> City CarShare operates a car sharing fleet of Nissan Leaf, Chevrolet Volt, and Mitsubishi i-Miev vehicles in this region. Usage of publicly accessible EV Project charging units to charge these vehicles is included in this report.



99%

## EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Washington, D.C. Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 308

Number of EV Project vehicles in regio	1. 300		Private	Publicly	Publicly	
Charging Unit Usage		Residential Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>		308	13	22	0	343
Number of charging events <sup>2</sup>		104,137	323	1,015	0	105,475
Electricity consumed (AC MWh)		699.33	2.67	8.87	0.00	710.87
Percent of time with a vehicle connected to charge	ging unit	49%	1%	2%	0%	44%
Percent of time with a vehicle drawing power from	n charging unit	9%	1%	1%	0%	8%
Number of Charge Events	Electricity (	Consumed		Charging U	Init Utilization	



#### Charging Unit Utilization



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>





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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Washington, D.C. Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	75,879	28,258	104,137
Electricity consumed (AC MWh)	535.65	163.68	699.33
Percent of time with a vehicle connected to EVSE	46%	56%	49%
Percent of time with a vehicle drawing power from EVSE	9%	7%	9%
Average number of charging events started per EVSE per day	1.00	0.94	0.98

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Washington, D.C. Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	12%	88%	0%
Percent of electricity consumed	14%	86%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.9	12.2	11.9
Average length of time with vehicle drawing power per charging event (hr)	2.2	1.8	2.1
Average electricity consumed per charging event (AC kWh)	7.1	5.8	6.7

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



Distribution of Electricity Consumed per Charging Event



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





### Region: Washington, D.C. Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	221	102	323	
Electricity consumed (AC MWh)	1.84	0.83	2.67	
Percent of time with a vehicle connected to EVSE	1%	1%	1%	
Percent of time with a vehicle drawing power from EVSE	1%	1%	1%	
Average number of charging events started per EVSE per day	0.07	0.08	0.07	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>









#### Region: Washington, D.C. Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	3%	96%
Percent of electricity consumed	0%	1%	99%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.9	2.7	3.5
Average length of time with vehicle drawing power per charging event (hr)	2.1	1.8	2.0
Average electricity consumed per charging event (AC kWh)	8.3	8.1	8.3

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



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

WE



**Distribution of Electricity Consumed per Charging Event** 





Region: Washington, D.C. Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	903	112	1,015	
Electricity consumed (AC MWh)	7.58	1.29	8.87	
Percent of time with a vehicle connected to EVSE	2%	1%	2%	
Percent of time with a vehicle drawing power from EVSE	2%	1%	1%	
Average number of charging events started per EVSE per day	0.17	0.05	0.13	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Washington, D.C. Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	22%	78%
Percent of electricity consumed	0%	11%	88%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.3	3.7	3.3
Average length of time with vehicle drawing power per charging event (hr)	2.2	2.9	2.3
Average electricity consumed per charging event (AC kWh)	8.4	11.7	8.7

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



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



Distribution of Electricity Consumed per Charging Event





## EV Project Electric Vehicle Charging Infrastructure Summary Report

**Region: Oregon** 

81%

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 530

Number of EV Project vehicles in region. 550		Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	529	33	421	19	1,002
Number of charging events <sup>2</sup>	162,997	2,948	23,014	12,838	201,797
Electricity consumed (AC MWh)	1,218.38	23.41	154.41	108.27	1,504.47
Percent of time with a vehicle connected to charging unit	42%	18%	4%	3%	25%
Percent of time with a vehicle drawing power from charging unit	8%	3%	1%	3%	5%

Number of Charge Events

Residential Level 2

Private Nonresidential Level 2

Publicly Accessible Level 2 Publicly Accessible DC Fast

1%

11%





Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>





-	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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



#### Region: Oregon

Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	121,342	41,655	162,997
Electricity consumed (AC MWh)	933.92	284.46	1,218.38
Percent of time with a vehicle connected to EVSE	41%	45%	42%
Percent of time with a vehicle drawing power from EVSE	8%	6%	8%
Average number of charging events started per EVSE per day	0.91	0.78	0.87

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Oregon

Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	70%	30%	0%
Percent of electricity consumed	75%	25%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.6	11.8	11.7
Average length of time with vehicle drawing power per charging event (hr)	2.2	2.0	2.2
Average electricity consumed per charging event (AC kWh)	7.7	6.8	7.5





Distribution of Electricity Consumed per Charging Event



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





#### Region: Oregon

Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	2,616	332	2,948	
Electricity consumed (AC MWh)	19.79	3.63	23.41	
Percent of time with a vehicle connected to EVSE	18%	18%	18%	
Percent of time with a vehicle drawing power from EVSE	4%	2%	3%	
Average number of charging events started per EVSE per day	0.41	0.13	0.33	

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Oregon

Report period: January 2013 through December 2013

Vehicles Charged	Car2Go fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	30%	3%	0%	67%
Percent of electricity consumed	43%	2%	0%	55%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		13.5	8.1	12.9
Average length of time with vehicle drawing power per charging event (hr	)	2.4	2.9	2.4
Average electricity consumed per charging event (AC kWh)		7.6	11.0	7.9

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car2Go operates a car sharing fleet of Smart Fortwo Electric Drive vehicles in this region. Usage of private nonresidential EV Project charging units to charge these vehicles is included in this report.



### Region: Oregon

Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	17,975	5,039	23,014
Electricity consumed (AC MWh)	120.06	34.35	154.41
Percent of time with a vehicle connected to EVSE	4%	4%	4%
Percent of time with a vehicle drawing power from EVSE	2%	1%	1%
Average number of charging events started per EVSE per day	0.18	0.13	0.16

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Oregon

Report period: January 2013 through December 2013

Vehicles Charged	Car2Go fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	2%	22%	3%	73%
Percent of electricity consumed	5%	21%	3%	71%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		6.6	3.8	6.0
Average length of time with vehicle drawing power per charging event (hr)	)	2.1	2.2	2.1
Average electricity consumed per charging event (AC kWh)		6.7	6.8	6.7

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car2Go operates a car sharing fleet of Smart Fortwo Electric Drive vehicles in this region. Usage of publicly accessible EV Project charging units to charge these vehicles is included in this report.



## DC Fast Chargers

### Region: Oregon

#### Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	9,226	3,612	12,838
Electricity consumed (AC MWh)	77.94	30.33	108.27
Percent of time with a vehicle connected to EVSE	3%	3%	3%
Percent of time with a vehicle drawing power from EVSE	3%	3%	3%
Average number of charging events started per EVSE per day	2.11	2.07	2.10

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







Max electricity demand across	
all days	

- Inner-quartile range of electricity demand across all days
- Median electricity demand across all days
- Min electricity demand across all days



## DC Fast Chargers

#### Region: Oregon

### Report period: January 2013 through December 2013

Vehicles Charged	Car2Go fleet 1	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	27%	0%	73%
Percent of electricity consumed	0%	25%	0%	75%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (min)		21.0	20.4	20.9
Average length of time with vehicle drawing power per charging event (mi	n)	21.0	20.4	20.9
Average electricity consumed per charging event (AC kWh)		8.4	8.4	8.4

Average electricity consumed per charging event (AC KWII)





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



Length of time with vehicle drawing power per charging event (min)

Distribution of Electricity Consumed per Charging Event



<sup>1</sup> Car2Go operates a car sharing fleet of Smart Fortwo Electric Drive vehicles in this region. Usage of publicly accessible EV Project charging units to charge these vehicles is included in this report.



## EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Chattanooga, TN Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 57

Number of EV Project vehicles in region. 57		Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	54	0	53	7	114
Number of charging events <sup>2</sup>	16,617	0	895	629	18,141
Electricity consumed (AC MWh)	132.05	0.00	5.57	5.06	142.68
Percent of time with a vehicle connected to charging unit	41%	0%	0%	0%	20%
Percent of time with a vehicle drawing power from charging unit	8%	0%	0%	0%	4%



92%



#### **Charging Unit Utilization**



### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

**Electricity Consumed** 







Charging Demand: Range of Aggregate Electricity Demand versus Time of Day<sup>4</sup>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Chattanooga, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	12,438	4,179	16,617
Electricity consumed (AC MWh)	103.03	29.02	132.05
Percent of time with a vehicle connected to EVSE	40%	44%	41%
Percent of time with a vehicle drawing power from EVSE	9%	6%	8%
Average number of charging events started per EVSE per day	0.91	0.77	0.87

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Chattanooga, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	80%	20%	0%
Percent of electricity consumed	83%	17%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.3	11.5	11.4
Average length of time with vehicle drawing power per charging event (hr)	2.3	2.0	2.3
Average electricity consumed per charging event (AC kWh)	8.3	6.9	7.9





Distribution of Electricity Consumed per Charging Event



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





### Region: Chattanooga, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	642	253	895	
Electricity consumed (AC MWh)	3.97	1.60	5.57	
Percent of time with a vehicle connected to EVSE	1%	0%	0%	
Percent of time with a vehicle drawing power from EVSE	0%	0%	0%	
Average number of charging events started per EVSE per day	0.05	0.05	0.05	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Chattanooga, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	35%	7%	58%
Percent of electricity consumed	25%	6%	69%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	2.5	2.1	2.4
Average length of time with vehicle drawing power per charging event (hr)	1.8	1.6	1.7
Average electricity consumed per charging event (AC kWh)	6.1	6.5	6.2

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



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

WE



**Distribution of Electricity Consumed per Charging Event** 





**Project** 

## EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Knoxville, TN Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 113

Number of EV Project vehicles in region. 113	Posidontial	Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Level 2	Level 2	DC Fast	Total
Number of charging units <sup>1</sup>	112	39	153	3	307
Number of charging events <sup>2</sup>	31,245	2,701	4,872	290	39,108
Electricity consumed (AC MWh)	241.73	20.97	39.41	2.27	304.38
Percent of time with a vehicle connected to charging unit	40%	5%	3%	0%	17%
Percent of time with a vehicle drawing power from charging unit	7%	2%	1%	0%	4%



![](_page_67_Figure_7.jpeg)

**Electricity Consumed** 

![](_page_67_Figure_8.jpeg)

![](_page_67_Figure_9.jpeg)

Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

![](_page_67_Figure_11.jpeg)

![](_page_67_Figure_12.jpeg)

	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>

![](_page_67_Figure_15.jpeg)

<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.

![](_page_67_Picture_21.jpeg)

### Region: Knoxville, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	23,393	7,852	31,245
Electricity consumed (AC MWh)	187.61	54.11	241.73
Percent of time with a vehicle connected to EVSE	39%	44%	40%
Percent of time with a vehicle drawing power from EVSE	8%	6%	7%
Average number of charging events started per EVSE per day	0.85	0.71	0.81

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

![](_page_68_Figure_4.jpeg)

![](_page_68_Figure_6.jpeg)

![](_page_68_Picture_7.jpeg)

### Region: Knoxville, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	69%	31%	0%
Percent of electricity consumed	74%	26%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	12.1	12.0	12.1
Average length of time with vehicle drawing power per charging event (hr)	2.3	2.0	2.2
Average electricity consumed per charging event (AC kWh)	8.0	6.9	7.7

![](_page_69_Figure_3.jpeg)

![](_page_69_Figure_4.jpeg)

Distribution of Electricity Consumed per Charging Event

![](_page_69_Figure_6.jpeg)

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

![](_page_69_Figure_8.jpeg)

![](_page_69_Picture_9.jpeg)

### Region: Knoxville, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	2,627	74	2,701
Electricity consumed (AC MWh)	20.56	0.42	20.97
Percent of time with a vehicle connected to EVSE	7%	1%	5%
Percent of time with a vehicle drawing power from EVSE	3%	0%	2%
Average number of charging events started per EVSE per day	0.27	0.02	0.19

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

![](_page_70_Figure_4.jpeg)

![](_page_70_Figure_6.jpeg)

![](_page_70_Picture_7.jpeg)

### Region: Knoxville, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	7%	3%	91%
Percent of electricity consumed	5%	3%	92%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	6.3	2.4	6.2
Average length of time with vehicle drawing power per charging event (hr)	2.4	1.6	2.4
Average electricity consumed per charging event (AC kWh)	7.8	5.6	7.8

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

![](_page_71_Figure_4.jpeg)

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

![](_page_71_Figure_6.jpeg)

#### Distribution of Electricity Consumed per Charging Event

![](_page_71_Figure_8.jpeg)

![](_page_71_Picture_9.jpeg)
### Region: Knoxville, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	4,248	624	4,872	
Electricity consumed (AC MWh)	35.70	3.71	39.41	
Percent of time with a vehicle connected to EVSE	3%	2%	3%	
Percent of time with a vehicle drawing power from EVSE	1%	0%	1%	
Average number of charging events started per EVSE per day	0.12	0.04	0.10	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Knoxville, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	27%	1%	71%
Percent of electricity consumed	24%	1%	75%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	6.7	5.3	6.5
Average length of time with vehicle drawing power per charging event (hr)	2.5	1.7	2.4
Average electricity consumed per charging event (AC kWh)	8.4	6.1	8.1

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





Distribution of Electricity Consumed per Charging Event





**Project** 

96%

Residential Level 2

### EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Memphis, TN Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 78

Number of EV Project venicles in region: 78	Desidential	Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Level 2	Level 2	DC Fast	Total
Number of charging units <sup>1</sup>	76	1	27	0	104
Number of charging events <sup>2</sup>	21,407	261	645	0	22,313
Electricity consumed (AC MWh)	146.07	2.97	5.84	0.00	154.88
Percent of time with a vehicle connected to charging unit	39%	34%	2%	0%	30%
Percent of time with a vehicle drawing power from charging unit	7%	9%	1%	0%	5%

Number of Charge Events



#### **Charging Unit Utilization**



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

**Electricity Consumed** 





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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Memphis, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	15,944	5,463	21,407
Electricity consumed (AC MWh)	112.89	33.18	146.07
Percent of time with a vehicle connected to EVSE	38%	42%	39%
Percent of time with a vehicle drawing power from EVSE	7%	6%	7%
Average number of charging events started per EVSE per day	0.86	0.74	0.82

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Memphis, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	55%	45%	0%
Percent of electricity consumed	60%	40%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.4	11.3	11.4
Average length of time with vehicle drawing power per charging event (hr)	2.1	1.8	2.0
Average electricity consumed per charging event (AC kWh)	7.1	6.1	6.8





Distribution of Electricity Consumed per Charging Event







### Region: Memphis, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	576	69	645	
Electricity consumed (AC MWh)	5.30	0.54	5.84	
Percent of time with a vehicle connected to EVSE	2%	1%	2%	
Percent of time with a vehicle drawing power from EVSE	1%	0%	1%	
Average number of charging events started per EVSE per day	0.09	0.03	0.07	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Memphis, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	39%	39%	22%
Percent of electricity consumed	42%	35%	23%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	6.8	3.6	6.4
Average length of time with vehicle drawing power per charging event (hr)	2.5	2.0	2.5
Average electricity consumed per charging event (AC kWh)	9.2	7.9	9.1

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





Distribution of Electricity Consumed per Charging Event





**Project** 

# EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Nashville, TN Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 602

Number of EV Project vehicles in region. 002	Desidential	Private	Publicly	Publicly	
Charging Unit Usage	Level 2	Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	596	9	241	6	852
Number of charging events <sup>2</sup>	168,070	1,084	13,948	2,400	185,502
Electricity consumed (AC MWh)	1,384.76	9.68	116.78	19.56	1,530.77
Percent of time with a vehicle connected to charging unit	39%	17%	4%	2%	29%
Percent of time with a vehicle drawing power from charging unit	8%	5%	2%	2%	6%

Number of Charge Events

91%



**Charging Unit Utilization** 



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

1%

**Electricity Consumed** 





-	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>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

з Considers the connection status of all charging units every minute

4 Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Nashville, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	123,942	44,128	168,070
Electricity consumed (AC MWh)	1,061.61	323.15	1,384.76
Percent of time with a vehicle connected to EVSE	38%	43%	39%
Percent of time with a vehicle drawing power from EVSE	8%	6%	8%
Average number of charging events started per EVSE per day	0.84	0.75	0.82

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>



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





### Region: Nashville, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	90%	10%	0%
Percent of electricity consumed	92%	8%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.5	11.4	11.5
Average length of time with vehicle drawing power per charging event (hr)	2.4	2.1	2.3
Average electricity consumed per charging event (AC kWh)	8.6	7.3	8.2





Distribution of Electricity Consumed per Charging Event







### Region: Nashville, TN Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	11,464	2,484	13,948	
Electricity consumed (AC MWh)	97.61	19.17	116.78	
Percent of time with a vehicle connected to EVSE	4%	3%	4%	
Percent of time with a vehicle drawing power from EVSE	2%	1%	2%	
Average number of charging events started per EVSE per day	0.20	0.11	0.17	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Nashville, TN Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	41%	2%	57%
Percent of electricity consumed	40%	1%	59%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	5.5	3.5	5.1
Average length of time with vehicle drawing power per charging event (hr)	2.3	1.9	2.2
Average electricity consumed per charging event (AC kWh)	8.5	7.7	8.4

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





Distribution of Electricity Consumed per Charging Event





### EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013 Number of EV Project vehicles in region: 200

	Pesidential	Private Nonresidential	Publicly	Publicly	
Charging Unit Usage	Level 2	Level 2	Level 2	DC Fast	Total
Number of charging units <sup>1</sup>	197	58	252	0	507
Number of charging events <sup>2</sup>	72,849	3,050	6,735	0	82,634
Electricity consumed (AC MWh)	472.62	23.42	52.54	0.00	548.58
Percent of time with a vehicle connected to charging unit	49%	7%	2%	0%	22%
Percent of time with a vehicle drawing power from charging unit	9%	2%	1%	0%	4%



#### Charging Unit Utilization



### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







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



<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	53,196	19,653	72,849
Electricity consumed (AC MWh)	356.96	115.66	472.62
Percent of time with a vehicle connected to EVSE	46%	56%	49%
Percent of time with a vehicle drawing power from EVSE	10%	8%	9%
Average number of charging events started per EVSE per day	1.10	1.02	1.08

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	8%	92%	0%
Percent of electricity consumed	10%	90%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	10.8	11.0	10.9
Average length of time with vehicle drawing power per charging event (hr)	2.1	1.9	2.1
Average electricity consumed per charging event (AC kWh)	6.7	5.9	6.5





Distribution of Electricity Consumed per Charging Event







### Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	2,958	92	3,050	
Electricity consumed (AC MWh)	22.77	0.64	23.42	
Percent of time with a vehicle connected to EVSE	8%	3%	7%	
Percent of time with a vehicle drawing power from EVSE	3%	0%	2%	
Average number of charging events started per EVSE per day	0.30	0.02	0.22	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	44%	56%
Percent of electricity consumed	0%	40%	60%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	7.4	6.6	7.4
Average length of time with vehicle drawing power per charging event (hr)	2.3	2.4	2.3
Average electricity consumed per charging event (AC kWh)	7.7	8.1	7.7

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





Distribution of Electricity Consumed per Charging Event





Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	5,355	1,380	6,735	
Electricity consumed (AC MWh)	41.30	11.23	52.54	
Percent of time with a vehicle connected to EVSE	2%	2%	2%	
Percent of time with a vehicle drawing power from EVSE	1%	1%	1%	
Average number of charging events started per EVSE per day	0.09	0.06	0.08	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Dallas/Ft. Worth, TX Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	5%	11%	84%
Percent of electricity consumed	5%	9%	86%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	6.1	5.6	6.0
Average length of time with vehicle drawing power per charging event (hr)	2.1	2.1	2.1
Average electricity consumed per charging event (AC kWh)	7.7	8.2	7.8

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





Distribution of Electricity Consumed per Charging Event





**Project** 

# EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Houston, TX Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 78

Charging Unit Usage	Residential Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	78	24	131	0	233
Number of charging events <sup>2</sup>	28,042	890	1,441	0	30,373
Electricity consumed (AC MWh)	179.57	6.68	11.26	0.00	197.51
Percent of time with a vehicle connected to charging unit	51%	16%	1%	0%	21%
Percent of time with a vehicle drawing power from charging unit	9%	1%	0%	0%	4%

Number of Charge Events

92%

Residential Level 2

Private Nonresidential Level 2

Publicly Accessible Level 2 Publicly Accessible DC Fast



**Electricity Consumed** 

#### **Charging Unit Utilization**



Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







Charging Demand: Range of Aggregate Electricity Demand versus Time of Day<sup>4</sup>



<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Houston, TX Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	20,548	7,494	28,042
Electricity consumed (AC MWh)	138.07	41.50	179.57
Percent of time with a vehicle connected to EVSE	48%	59%	51%
Percent of time with a vehicle drawing power from EVSE	10%	7%	9%
Average number of charging events started per EVSE per day	1.09	1.00	1.06

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Houston, TX Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	4%	96%	0%
Percent of electricity consumed	5%	95%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.7	11.5	11.6
Average length of time with vehicle drawing power per charging event (hr)	2.2	1.8	2.1
Average electricity consumed per charging event (AC kWh)	6.7	5.5	6.4

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



#### Distribution of Electricity Consumed per Charging Event







### Region: Houston, TX Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	843	47	890	
Electricity consumed (AC MWh)	6.02	0.66	6.68	
Percent of time with a vehicle connected to EVSE	16%	16%	16%	
Percent of time with a vehicle drawing power from EVSE	2%	0%	1%	
Average number of charging events started per EVSE per day	0.22	0.03	0.17	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Houston, TX Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	10%	90%
Percent of electricity consumed	0%	7%	93%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	23.7	27.7	23.9
Average length of time with vehicle drawing power per charging event (hr)	2.0	3.0	2.1
Average electricity consumed per charging event (AC kWh)	7.2	13.1	7.5

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





Distribution of Electricity Consumed per Charging Event





### Region: Houston, TX Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	1,080	361	1,441	
Electricity consumed (AC MWh)	8.80	2.45	11.26	
Percent of time with a vehicle connected to EVSE	1%	0%	1%	
Percent of time with a vehicle drawing power from EVSE	0%	0%	0%	
Average number of charging events started per EVSE per day	0.04	0.03	0.04	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>



Time of Day







### Region: Houston, TX Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	13%	87%
Percent of electricity consumed	0%	9%	91%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.1	3.8	3.2
Average length of time with vehicle drawing power per charging event (hr)	1.9	1.6	1.8
Average electricity consumed per charging event (AC kWh)	8.1	6.8	7.8

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



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

WE



#### **Distribution of Electricity Consumed per Charging Event**





### EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Washington State

88%

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 875

Charging Unit Usage	Residential Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	870	30	322	13	1,235
Number of charging events <sup>2</sup>	268,633	1,770	21,426	13,924	305,753
Electricity consumed (AC MWh)	2,076.82	16.86	156.57	114.33	2,364.58
Percent of time with a vehicle connected to charging unit	43%	14%	3%	6%	32%
Percent of time with a vehicle drawing power from charging unit	8%	2%	2%	6%	6%

Number of Charge Events



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Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>

**Electricity Consumed** 





-	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>



<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



### Region: Washington State

#### Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	199,985	68,648	268,633
Electricity consumed (AC MWh)	1,583.99	492.82	2,076.82
Percent of time with a vehicle connected to EVSE	41%	47%	43%
Percent of time with a vehicle drawing power from EVSE	9%	7%	8%
Average number of charging events started per EVSE per day	0.92	0.79	0.88

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Washington State Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	78%	22%	0%
Percent of electricity consumed	82%	18%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.6	12.0	11.7
Average length of time with vehicle drawing power per charging event (hr)	2.2	2.0	2.2
Average electricity consumed per charging event (AC kWh)	7.9	7.2	7.7





Distribution of Electricity Consumed per Charging Event







### Region: Washington State

### Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	1,487	283	1,770	
Electricity consumed (AC MWh)	14.22	2.64	16.86	
Percent of time with a vehicle connected to EVSE	15%	13%	14%	
Percent of time with a vehicle drawing power from EVSE	3%	1%	2%	
Average number of charging events started per EVSE per day	0.23	0.11	0.20	

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### Region: Washington State

Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	13%	0%	87%
Percent of electricity consumed	9%	0%	91%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	19.2	9.0	17.5
Average length of time with vehicle drawing power per charging event (hr)	2.7	2.5	2.7
Average electricity consumed per charging event (AC kWh)	9.6	9.3	9.5





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



Distribution of Electricity Consumed per Charging Event





#### Region: Washington State

Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	16,913	4,513	21,426
Electricity consumed (AC MWh)	126.74	29.83	156.57
Percent of time with a vehicle connected to EVSE	4%	3%	3%
Percent of time with a vehicle drawing power from EVSE	2%	1%	2%
Average number of charging events started per EVSE per day	0.23	0.15	0.21

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







### **Region: Washington State** Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	13%	3%	84%
Percent of electricity consumed	11%	3%	86%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	4.4	2.4	4.0
Average length of time with vehicle drawing power per charging event (hr)	1.9	1.6	1.9
Average electricity consumed per charging event (AC kWh)	7.5	6.7	7.3

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



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

WE



#### **Distribution of Electricity Consumed per Charging Event**





### DC Fast Chargers

#### Region: Washington State

#### Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	9,658	4,266	13,924
Electricity consumed (AC MWh)	78.78	35.55	114.33
Percent of time with a vehicle connected to EVSE	6%	7%	6%
Percent of time with a vehicle drawing power from EVSE	6%	7%	6%
Average number of charging events started per EVSE per day	4.26	4.71	4.39

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







Iviax elect	ricity demand across
all days	
Inner-qua	rtile range of electricit

- Inner-quartile range of electricity demand across all days
- Median electricity demand across all days
- Min electricity demand across all days



### **DC Fast Chargers**

#### Region: Washington State

#### Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	23%	0%	77%
Percent of electricity consumed	21%	0%	79%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (min)	20.8	20.3	20.7
Average length of time with vehicle drawing power per charging event (min)	20.8	20.3	20.7
Average electricity consumed per charging event (AC kWh)	8.2	8.3	8.2





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



Length of time with vehicle drawing power per charging event (min)

#### Distribution of Electricity Consumed per Charging Event





**Project** 

### EV Project Electric Vehicle Charging Infrastructure Summary Report

### Region: Chicago, IL Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 150

Charging Unit Usage	Residential Level 2	Private Nonresidential Level 2	Publicly Accessible Level 2	Publicly Accessible DC Fast	Total
Number of charging units <sup>1</sup>	151	0	19	0	170
Number of charging events <sup>2</sup>	54,276	0	907	0	55,183
Electricity consumed (AC MWh)	358.10	0.00	7.91	0.00	366.01
Percent of time with a vehicle connected to charging	unit 48%	0%	3%	0%	44%
Percent of time with a vehicle drawing power from ch	arging unit 9%	0%	2%	0%	8%
Number of Charge Events	Electricity Consumed		Charging U	Init Utilization	





#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







Charging Demand: Range of Aggregate Electricity Demand versus Time of Day<sup>4</sup>



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.


#### Region: Chicago, IL Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	39,480	14,796	54,276
Electricity consumed (AC MWh)	270.89	87.22	358.10
Percent of time with a vehicle connected to EVSE	45%	54%	48%
Percent of time with a vehicle drawing power from EVSE	9%	8%	9%
Average number of charging events started per EVSE per day	1.06	0.99	1.04

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Chicago, IL Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	14%	86%	0%
Percent of electricity consumed	18%	82%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.0	11.4	11.1
Average length of time with vehicle drawing power per charging event (hr)	2.2	1.8	2.1
Average electricity consumed per charging event (AC kWh)	6.9	5.9	6.6

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



#### Distribution of Electricity Consumed per Charging Event







#### Region: Chicago, IL Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	830	77	907	
Electricity consumed (AC MWh)	7.40	0.51	7.91	
Percent of time with a vehicle connected to EVSE	4%	0%	3%	
Percent of time with a vehicle drawing power from EVSE	2%	0%	2%	
Average number of charging events started per EVSE per day	0.22	0.05	0.17	

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Chicago, IL Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	2%	22%	76%
Percent of electricity consumed	1%	16%	83%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	4.7	1.9	4.5
Average length of time with vehicle drawing power per charging event (hr)	2.6	1.6	2.5
Average electricity consumed per charging event (AC kWh)	8.9	6.6	8.7

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



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

WE



**Distribution of Electricity Consumed per Charging Event** 





### EV Project Electric Vehicle Charging Infrastructure Summary Report

#### Region: Atlanta, GA Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 220

Charging Unit Usage	Residential Level 2	Nonresidential Level 2	Accessible Level 2	Accessible DC Fast	Total
Number of charging units <sup>1</sup>	220	19	107	0	346
Number of charging events <sup>2</sup>	62,052	2,717	9,593	0	74,362
Electricity consumed (AC MWh)	495.79	28.82	90.21	0.00	614.82
Percent of time with a vehicle connected to charging unit	39%	13%	5%	0%	30%
Percent of time with a vehicle drawing power from charging unit	8%	9%	4%	0%	7%

5%

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#### **Charging Unit Utilization**

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#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







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



Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

A charging event is defined as the period when a vehicle is connected to a charging unit, during which period some power is transferred

Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



#### Region: Atlanta, GA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	45,261	16,791	62,052
Electricity consumed (AC MWh)	375.35	120.44	495.79
Percent of time with a vehicle connected to EVSE	37%	43%	39%
Percent of time with a vehicle drawing power from EVSE	8%	7%	8%
Average number of charging events started per EVSE per day	0.85	0.79	0.83

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Atlanta, GA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	66%	34%	0%
Percent of electricity consumed	71%	29%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.3	11.2	11.3
Average length of time with vehicle drawing power per charging event (hr)	2.4	2.1	2.3
Average electricity consumed per charging event (AC kWh)	8.3	7.2	8.0





Distribution of Electricity Consumed per Charging Event







#### Region: Atlanta, GA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	2,648	69	2,717	
Electricity consumed (AC MWh)	28.11	0.71	28.82	
Percent of time with a vehicle connected to EVSE	18%	2%	13%	
Percent of time with a vehicle drawing power from EVSE	13%	1%	9%	
Average number of charging events started per EVSE per day	1.19	0.08	0.87	

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Atlanta, GA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	0%	1%	99%
Percent of electricity consumed	0%	1%	99%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.6	4.3	3.6
Average length of time with vehicle drawing power per charging event (hr)	2.6	3.3	2.6
Average electricity consumed per charging event (AC kWh)	10.6	11.1	10.6

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





Distribution of Electricity Consumed per Charging Event





#### Region: Atlanta, GA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	8,250	1,343	9,593	
Electricity consumed (AC MWh)	80.66	9.55	90.21	
Percent of time with a vehicle connected to EVSE	7%	2%	5%	
Percent of time with a vehicle drawing power from EVSE	5%	1%	4%	
Average number of charging events started per EVSE per day	0.49	0.20	0.40	

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Atlanta, GA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	4%	2%	94%
Percent of electricity consumed	4%	1%	95%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	3.3	2.4	3.2
Average length of time with vehicle drawing power per charging event (hr)	2.5	1.9	2.4
Average electricity consumed per charging event (AC kWh)	9.7	7.6	9.4

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





Distribution of Electricity Consumed per Charging Event





**Project** 

## EV Project Electric Vehicle Charging Infrastructure Summary Report

Region: Philadelphia, PA Metropolitan Area

Report period: January 2013 through December 2013

Number of EV Project vehicles in region: 76

Charging Unit Usage	Residential Level 2	Private Nonresidential Level 2	Publicly Accessible Level 2	Publicly Accessible DC Fast	Total
Number of charging units <sup>1</sup>	75	1	57	0	133
Number of charging events <sup>2</sup>	23,550	1	1,560	0	25,111
Electricity consumed (AC MWh)	165.43	0.01	17.74	0.00	183.17
Percent of time with a vehicle connected to charging unit	45%	0%	4%	0%	31%
Percent of time with a vehicle drawing power from charging unit	8%	0%	1%	0%	6%
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#### **Charging Unit Utilization**



#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







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



<sup>1</sup> Includes charging units that reported at least one use during the reporting period. Some residential charging units are excluded due to incomplete data.

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

<sup>3</sup> Considers the connection status of all charging units every minute

Based on 15 minute rolling average power output from all charging units

Note: throughout this report, weekdays are defined as the period from Monday 6:00 AM until Saturday 6:00 AM. The weekend is defined as the period from Saturday 6:00 AM until Monday 6:00 AM.



#### Region: Philadelphia, PA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall
Number of charging events	17,522	6,028	23,550
Electricity consumed (AC MWh)	126.08	39.35	165.43
Percent of time with a vehicle connected to EVSE	43%	50%	45%
Percent of time with a vehicle drawing power from EVSE	9%	7%	8%
Average number of charging events started per EVSE per day	0.97	0.84	0.93

### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Philadelphia, PA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	28%	72%	0%
Percent of electricity consumed	33%	67%	0%
Individual Charging Event Statistics	Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)	11.3	12.3	11.6
Average length of time with vehicle drawing power per charging event (hr)	2.2	2.0	2.1
Average electricity consumed per charging event (AC kWh)	7.2	6.5	7.0

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



#### Distribution of Electricity Consumed per Charging Event







#### Region: Philadelphia, PA Metropolitan Area Report period: January 2013 through December 2013

EVSE Usage	Weekday	Weekend	Overall	
Number of charging events	1,221	339	1,560	
Electricity consumed (AC MWh)	13.94	3.80	17.74	
Percent of time with a vehicle connected to EVSE	4%	4%	4%	
Percent of time with a vehicle drawing power from EVSE	2%	1%	1%	
Average number of charging events started per EVSE per day	0.13	0.09	0.12	

#### Charging Availability: Range of Percent of Charging Units with a Vehicle Connected versus Time of Day<sup>3</sup>







#### Region: Philadelphia, PA Metropolitan Area Report period: January 2013 through December 2013

Vehicles Charged	PhillyCarShare fleet	Nissan Leaf	Chevrolet Volt	Unknown
Percent of charging events	21%	0%	14%	65%
Percent of electricity consumed	17%	0%	4%	79%
Individual Charging Event Statistics		Weekday (WD)	Weekend (WE)	Overall
Average length of time with vehicle connected per charging event (hr)		8.6	8.7	8.6
Average length of time with vehicle drawing power per charging event	(hr)	2.9	2.6	2.8
Average electricity consumed per charging event (AC kWh)		11.5	10.8	11.4

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



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



Distribution of Electricity Consumed per Charging Event



<sup>1</sup> PhillyCarShare operates a car sharing fleet of Chevrolet Volts in this region. Usage of publicly accessible EV Project charging units to charge these vehicles is included in this report.

