

## Electric Vehicle Charge Point Usage in Scotland – August 2015 and 2016 update

Bhavin Makwana – November 2016

### 1. The ChargePlace Scotland Network

The ChargePlace Scotland scheme is the initiative behind Scotland's free charge point network and was launched in 2010. This scheme also offers funding to install a home charging point for electric vehicles and has three main areas:

1. Domestic charge points – the installation of a home charging point.
2. Commercial Workplace charge points
3. Community Planning Partnerships (CPP)

Charge Your Car (CYC) is the operational provider of the ChargePlace Scotland network. Not all the charge points in the ChargePlace Scotland network are publically accessible as they were installed under the Commercial Workplace scheme. The data analysed refers to both the commercial and public charge point usage. Domestic charge point usage is not considered in the data provided. **ChargePlace Scotland do not record the working status of charge points thus no charge point availability data exists.**

#### Definitions:

- **Charge point**= the physical charging post which is placed at a location. It is assigned an ID code and can have multiple connectors.
- **Charging connector** = the socket into which the charging cable is plugged into to charge an electric vehicle.

### 2. Summary

In August 2015 there were 694 charge points with a total of 1,373 connectors in the ChargePlace Scotland network (this does not include domestic charge points). At the end of August 2016 this had increased to 870 charge points with a total of 1,772 connectors – a rise of 25% and 29% respectively. Of the 1,772 connectors, 456 are rapid (43 - 50kW); a rise of 95% from the year before. In August 2016, 42% of all charging sessions took place at a rapid charge point compared to 36% the year before.

In August 2016 there was a total of 26,119 charging sessions, an increase of over 4,000% from the number of sessions which took place in August 2013 (619). In August 2016, the mean charge duration was 5hrs and 20 mins and there was an average of 51 charging sessions at every used charge point across the network that month. 651 (75%) charge points were used at least once in August 2016 compared to 475 charge points (68%) in August 2015 and 265 (55%) the year before.

The Committee for Climate Change suggests that at least 5% of the car fleet in Scotland should be electric by 2020 in order to reach “critical mass” for a larger roll out - this would mean a total of approximately 120,000 electric vehicles with 27,000 new car sales of electric vehicles a year in 2020<sup>1</sup>. At the end of Q2 2016 the number of licensed vehicles in Scotland which were eligible to receive the plug-in car and van grant was 3,575.

---

<sup>1</sup> Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027.

### 3. ChargePlace Scotland charging network pattern

**Table 3.1: ChargePlace Scotland usage summary**

	Aug-13	Aug-14	Aug-15	Aug-16
<b>Total number of charging sessions</b>	619	2,885	12,939	26,119
- % change from year before		366%	348%	102%
<b>Total number of charge points</b>	-	482*	694	870
- % change from year before			44%	25%
<b>Total number of connectors</b>	-	885	1,373	1,772
- % change from year before			55%	29%
<b>Number of charge points used (% of network)</b>	77	265 (55%)	475 (68%)	651 (75%)
<b>Rapid chargers charge points/connectors</b>			89 /234	161/456
<b>Number of Electric vehicles in Scotland**</b>	362	792	2,050	3,575
- % change from year before		119%	159%	74%
<b>Average number of charging sessions at every charge point used that month.</b>	8	11	36	51
- % change from year before		38%	229%	40%
<b>Average number of charging sessions across the entire network</b>	-	6	19	30
	485:19:00	667:06:00	2015:33:00	1994:04:00
<b>Longest charging session and location (hh:mm:ss)</b>	Bleaching Field Community Centre, Dunbar	Milesmark Depot car park Dunfermline	NHS National Procurement Distribution Centre	Kelso Town Hall
<b>Mean charge duration (hh:mm:ss)</b>	19:16:45	13:00:10	07:12:35	05:20:14
<b>Total electricity used (kWh)</b>	4,717.12	23,175.29	78,295.74	185,404.68
<b>Price of electricity at the average commercial rate for South Scotland (15.02p per kWh***)</b>	£708.51	£3,480.93	£11,760.02	£27,847.78
<b>Mean average electricity used per charging session (kWh)</b>	7.62	8.03	6.09	7.14
<b>The number of miles a 2014 Nissan Leaf**** would be capable of from the average electricity used in a session.</b>	31.75	33.47	25.38	29.75
<b>Total number of miles a 2014 Nissan Leaf would be capable of from all electricity used that month</b>	19,654.65	96,563.70	326,232.25	772,519.51

\*Includes 3 portable charging units without a set location.

\*\*The number of Plug-in-Grant Eligible vehicles in Scotland at the end of Q2 for each year.

\*\*\*Average annual domestic electricity bills for selected towns and cities in the UK and average unit costs (DECC: Annual domestic energy bills, Quarterly Energy Prices 2.2.3)

\*\*\*\*A 2014 Nissan Leaf has an energy consumption of 0.24 kWh/mile and a maximum range of 124 miles from a full charge (NEDC).

#### 4. Licensed Plug-in electric grant vehicles

At the end of Q2 2013 there were 6,226 licensed vehicles eligible to receive the plug-in car and van grant in the UK of which 362 were licensed in Scotland. This had increased to 11,373 licensed vehicles by the end of Q2 2014 of which 792 vehicles were registered in Scotland. By the end of Q2 2016 the number of licensed vehicles which were eligible to receive the plug-in car and van grant had risen sharply to 67,655 of which 3,575 (5%) vehicles were registered in Scotland. Examples of vehicles eligible for the plug-in car grant include the BMW i3, Nissan Leaf and the Mitsubishi Outlander PHEV.

#### 5. ChargePlace Scotland network usage by type of charge point

**Table 5.1: Network usage by type of charge point, August 2015**

<b>Aug 2015</b>	<b>Number of charging sessions</b>	<b>Total kWh</b>	<b>Average kWh</b>	<b>Average of Duration</b>
3kW double outlet, dumb	58	269.83	4.65	25:44
3kW double outlet, smart	47	356.77	7.76	20:22
3kW single outlet, smart	1	-	0.00	0:10
<b>3kW (all)</b>	<b>106</b>	<b>626.60</b>	<b>5.97</b>	<b>23:10</b>
<b>3kW/7kW double outlet, smart</b>	<b>86</b>	<b>493.44</b>	<b>5.81</b>	<b>4:18</b>
7 kw double outlet, smart	61	336.47	5.52	41:10
7kw double outlet smart	57	477.19	8.37	5:28
7kW double outlet, smart	5,261	29,996.4	5.74	10:44
7kW dual outlet	29	195.13	6.73	3:55
7kW single outlet, dumb	13	99.91	7.69	7:54
7kW single outlet, smart	479	2,667.65	5.57	14:46
<b>7kW (all)</b>	<b>5,900</b>	<b>33,772.8</b>	<b>5.77</b>	<b>11:18</b>
22kW double outlet, smart	1,722	9,906.86	5.81	9:19
22kW dual outlet	89	521.33	5.92	12:07
22kW dual outlet, smart	225	1,626.34	7.29	5:13
<b>22kW (all)</b>	<b>2,036</b>	<b>12,054.53</b>	<b>5.98</b>	<b>9:00</b>
50kW CCS triple outlet	1,948	14,920.27	7.69	0:26
50kW DC/CCS/43 kW AC rapid	2,131	11,232.92	5.28	0:15
50kW double outlet, smart, AC/DC	309	2,433.50	7.90	0:30
50kW single outlet, smart, DC	44	386.93	8.79	2:07
50kW triple outlet, smart, AC/DC	286	1,882.52	6.61	0:54
<b>43/50kW (all)</b>	<b>4,718</b>	<b>30,856.14</b>	<b>6.56</b>	<b>0:24</b>
<b>Unknown</b>	<b>93</b>	<b>492.25</b>	<b>5.29</b>	<b>41:12</b>
<b>Total</b>	<b>12,939</b>	<b>78,295.74</b>	<b>6.09</b>	<b>7:12</b>

**Table 5.2: Network usage by type of charge point, August 2016**

<b>Aug 2016</b>	<b>Number of charging sessions</b>	<b>Total kWh</b>	<b>Average kWh</b>	<b>Average of Duration</b>
<b>3kW single outlet, smart</b>	<b>69</b>	<b>482.19</b>	<b>7.09</b>	<b>0:56</b>
<b>3kW/7kW double outlet, smart</b>	<b>195</b>	<b>1,123.67</b>	<b>5.82</b>	<b>7:54</b>
7kW single outlet, smart	550	3,963.63	7.22	26:22
7kW dual outlet, smart	52	436.36	8.39	7:44
7kW dual outlet	19	126.02	6.63	8:28
7kW double outlet, smart	8,642	51,1688.24	6.04	8:52
7kw double outlet smart	142	1,091.57	7.80	8:05
<b>7kW (all)</b>	<b>9,405</b>	<b>57,305.82</b>	<b>6.15</b>	<b>9:53</b>
22kW dual outlet, smart	198	1,443.87	7.29	5:47
22kW double outlet, smart	4,632	33,076.84	7.20	5:42
22kW dual outlet	154	936.58	6.08	9:28
<b>22kW (all)</b>	<b>4,984</b>	<b>35,457.28</b>	<b>7.17</b>	<b>5:49</b>
50kW triple outlet, smart, AC/DC	746	7,224.03	9.68	0:38
50kW single outlet, smart, DC	53	361.18	6.81	3:16
50kW double outlet, smart, AC/DC	82	553.26	6.83	0:24
50kW DC/CCS/43 kW AC rapid	2,472	12,709.71	5.15	0:15
50kW CCS triple outlet	7,323	64,040.89	8.76	0:59
50kw	307	2,661.89	8.70	0:26
<b>43/50kW (all)</b>	<b>10,983</b>	<b>87,550.95</b>	<b>7.98</b>	<b>0:47</b>
<b>Unknown</b>	<b>483</b>	<b>3,484.78</b>	<b>7.35</b>	<b>15:23</b>
<b>Total</b>	<b>26,119</b>	<b>185,404.68</b>	<b>7.14</b>	<b>5:20</b>

In August 2015, 36% of all charging sessions in the ChargePlace Scotland network took place at rapid charge points (43/50kW) with 61% of all sessions taking place at fast charge points (7-22kW). Unsurprisingly, the average charge duration decreases with increased speed of charge. 3kW charge points had an average charge duration of 23hours and 10 mins, 7kW charge points was 11 hours 18mins, 22kW was 9hours and 43/50kW charge points an average charge duration of just 24 minutes.

This trend was intensified a year later in August 2016. In this month, 42% of all charging sessions took place a rapid charge points with 55% of all session taking place at fast charge points. The average charge duration decreased from the year before for all charging speeds except rapid chargers for which the average duration increased from 24mins to 47mins (see section 8 for an in-depth analysis of rapid charge point usage).

## 6. Top ten tables

**Table 6.1: Top ten charging charge points by number of charging sessions, August 2015 and August 2016**

August 2015				August 2016			
Charge point	Charge point type	Number of Sessions	Total electricity used (kWh)	Charge point	Charge point type	Number of Sessions	Total electricity used (kWh)
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	644	3,456.1	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	624	3,422.9
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	542	2,805.7	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	540	2,470.9
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	492	2,493.8	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	525	2,804.7
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	453	2,477.3	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	403	1,954.5
Dundee Ice Arena	50kW CCS triple outlet	316	2,930.5	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	379	2,056.5
Ingliston Park and Ride	50kW CCS triple outlet	234	1,348.2	Dundee Ice Arena	50kW CCS triple outlet	370	3,447.3
Aberdeen Snowsports Centre	50kW CCS triple outlet	216	1,483.3	Queen Street Car Park, Broughty Ferry	50kW CCS triple outlet	355	2,262.3
Findhorn	7kW double outlet, smart	138	741.0	Aberdeen Snowsports Centre	50kW CCS triple outlet	264	2,258.2
<b>Janet Brougham House, Banchory Road</b>	<b>7kW double outlet, smart</b>	<b>129</b>	<b>608.9</b>	Ingliston Park and Ride	50kW CCS triple outlet	244	1,630.8
Drymen Road Car Park Balloch	50kW CCS triple outlet	115	690.0	Halbeath Park & Ride, Halbeath, Dunfermline	50kW CCS triple outlet	223	2,394.3

Bold indicates locations which most likely were not available for public use.

In August 2013, 7 out of the top 10 locations by the number of charging sessions were likely not to have been publically accessible. By August 2016, all charge points in the top ten were those which are publically available and were all rapid charge points. In August 2015, 25% of all charging sessions took place at the top ten most frequented charge points. In August 2016, the top ten most frequented charge points made up just 15% of all charging sessions that month.

In August 2015, 13 charge points were used 100 or times this increased to 43 charge points a year (231% increase). In August 2015, 144 charge points were used between 1 and 4 times. A year later, 129 charge points were used the same amount of times.

**Table 6.2: Top ten locations by longest charging session, August 2015 and August 2016**

August 2015			August 2016		
Charge point	Charge point type	Session duration (hhh:mm)	Charge point	Charge point type	Session duration (hhh:mm)
<b>NHS National Procurement Distribution Centre</b>	<b>Unknown</b>	<b>2015:33</b>	Kelso Town Hall	7kW single outlet, smart	1994:04
<b>Lothian and Borders Police HQ</b>	<b>7 kw double outlet, smart</b>	<b>1735:48</b>	Kelso Town Hall	7kW single outlet, smart	1816:27
<b>Chivas Brothers (Kilmalid)</b>	<b>7kW double outlet, smart</b>	<b>1254:23</b>	Kelso Town Hall	7kW single outlet, smart	1627:54
Halbeath Park & Ride	7kW double outlet, smart	796:56	Kelso Town Hall	7kW single outlet, smart	1579:59
Halbeath Park & Ride	7kW double outlet, smart	678:00	<b>Abertay University</b>	<b>Unknown</b>	<b>665:51</b>
Milesmark Depot car park Dunfermline	7kW double outlet, smart	525:17	South Edinburgh Local Office	7kW double outlet, smart	578:38
<b>Montrose Police Office, George Street, Montrose</b>	<b>7kW single outlet, smart</b>	<b>507:55</b>	Kelso Town Hall	7kW single outlet, smart	542:37
Drumbrae Library	3kW double outlet, dumb	500:00	North Berwick Sports Centre	7kW double outlet, smart	510:17
Queen Margaret University	7kW double outlet, smart	498:50	Bankhead Central	7kW double outlet, smart	502:33
Annan Swimming Pool	22kW double outlet, smart	484:52	Halbeath Park & Ride	7kW double outlet, smart	386:41

Bold indicates locations which are likely not to be or were accessible to the public.

**Caution** must be taken when looking at longest time period. The data for average charging time and longest charging time is potentially misleading. The way that the charging units are designed means that a charging session is not ended until the charging socket has been fully closed. Users sometimes fail to close the socket properly which would lead to the charging duration to continue to register until a new users or the maintainer of the charging socket closes it properly. The evidence suggests that users have learnt over time, as the longest charging session in August 2013 lasted 485 hours (20 days)

**Table 6.3: Top ten charging units by electricity used, August 2015 and August 2016**

August 2015				August 2016			
Charge point	Charge point type	Number of Sessions	Total electricity used (kWh)	Charge point	Charge point type	Number of Sessions	Total electricity used (kWh)
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	644	3,456.1	Dundee Ice Arena	50kW CCS triple outlet	370	3,447.3
Dundee Ice Arena	50kW CCS triple outlet	316	2,930.5	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	624	3,422.9
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	542	2,805.7	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	525	2,804.7
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	492	2,493.8	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	540	2,470.9
Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	453	2,477.3	Halbeath Park & Ride, Halbeath, Dunfermline	50kW CCS triple outlet	223	2,394.3
Aberdeen Snowsports Centre	50kW CCS triple outlet	216	1,483.3	Queen Street Car Park, Broughty Ferry	50kW CCS triple outlet	355	2,262.3
Ingliston Park and Ride	50kW CCS triple outlet	234	1,348.2	Aberdeen Snowsports Centre	50kW CCS triple outlet	264	2,258.2
Kinross Park and Ride	50kW CCS triple outlet	76	958.6	Falkirk Stadium	50kW CCS triple outlet	188	2,204.0
Broxden Park & Ride	50kW double outlet, smart, AC/DC	102	808.2	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	379	2,056.5
Brooms Road Car Park	7kW double outlet, smart	84	783.9	Timms Taxis (Dundee Taxis)	50kW DC/CCS/43 kW AC rapid	403	1,954.5

## 7. Usage by Local Authority

**Table 7.1: Charge point usage by Local Authority, August 2015**

<b>Aug 2015</b>	<b>Charge points</b>	<b>Connectors</b>	<b>Charge points used at least once</b>	<b>% of charge points used at least once</b>
<b>Aberdeen City</b>	41	87	29	71%
<b>Aberdeenshire</b>	9	21	7	78%
<b>Angus</b>	13	25	10	77%
<b>Argyll &amp; Bute</b>	16	36	5	31%
<b>Clackmannanshire</b>	7	14	5	71%
<b>Dumfries &amp; Galloway</b>	16	33	6	38%
<b>Dundee City</b>	62	133	45	73%
<b>East Ayrshire</b>	9	20	4	44%
<b>East Lothian</b>	16	28	8	50%
<b>East Renfrewshire</b>	5	11	5	100%
<b>Edinburgh, City of</b>	61	113	47	77%
<b>Eilean Siar</b>	16	34	5	31%
<b>Falkirk</b>	11	21	9	82%
<b>Fife</b>	60	119	48	80%
<b>Glasgow City</b>	66	132	55	83%
<b>Highland</b>	20	36	13	65%
<b>Inverclyde</b>	4	8	4	100%
<b>Midlothian</b>	19	33	11	58%
<b>Moray</b>	14	29	7	50%
<b>North Ayrshire</b>	11	24	3	27%
<b>North Lanarkshire</b>	13	25	9	69%
<b>Orkney Islands</b>	15	31	10	67%
<b>Perth &amp; Kinross</b>	28	61	20	71%
<b>Renfrewshire</b>	23	47	15	65%
<b>Scottish Borders</b>	28	46	15	54%
<b>Shetland Islands</b>	6	13	1	17%
<b>South Ayrshire</b>	10	21	7	70%
<b>South Lanarkshire</b>	58	93	42	72%
<b>Stirling</b>	15	33	12	80%
<b>West Dunbartonshire</b>	12	25	8	67%
<b>West Lothian</b>	10	21	10	100%
<b>Total</b>	694	1373	475	68%



**Table 7.2: Charge point usage by Local Authority, August 2016**

<b>Aug 2016</b>	<b>Charge points</b>	<b>Connectors</b>	<b>Charge points used at least once</b>	<b>% of charge points used at least once</b>
<b>Aberdeen City</b>	44	82	37	84%
<b>Aberdeenshire</b>	18	45	13	72%
<b>Angus</b>	16	28	12	75%
<b>Argyll &amp; Bute</b>	22	54	11	50%
<b>Clackmannanshire</b>	12	25	10	83%
<b>Dumfries &amp; Galloway</b>	20	44	8	40%
<b>Dundee City</b>	70	149	58	83%
<b>East Ayrshire</b>	11	24	6	55%
<b>East Dunbartonshire</b>	4	9	3	75%
<b>East Lothian</b>	19	35	11	58%
<b>East Renfrewshire</b>	5	11	5	100%
<b>Edinburgh, City of</b>	68	128	46	68%
<b>Eilean Siar</b>	17	37	9	53%
<b>Falkirk</b>	15	30	12	80%
<b>Fife</b>	69	138	58	84%
<b>Glasgow City</b>	76	156	68	89%
<b>Highland</b>	45	108	32	71%
<b>Inverclyde</b>	8	18	8	100%
<b>Midlothian</b>	27	47	19	70%
<b>Moray</b>	15	33	10	67%
<b>North Ayrshire</b>	13	28	11	85%
<b>North Lanarkshire</b>	16	30	12	75%
<b>Orkney Islands</b>	19	43	16	84%
<b>Perth &amp; Kinross</b>	35	78	28	80%
<b>Renfrewshire</b>	28	59	21	75%
<b>Scottish Borders</b>	34	61	20	59%
<b>Shetland Islands</b>	11	24	7	64%
<b>South Ayrshire</b>	17	33	12	71%
<b>South Lanarkshire</b>	64	108	46	72%
<b>Stirling</b>	25	53	22	88%
<b>West Dunbartonshire</b>	14	29	10	71%
<b>West Lothian</b>	11	23	8	73%
<b>Location unknown</b>	2	2	2	100%
<b>Total</b>	<b>870</b>	<b>1,772</b>	<b>651</b>	<b>75%</b>

**Table 7.3: Local authority usage by charge point type, August 2015**

Aug 2015	Charging sessions	Total kWh	Average kWh	Average of Duration (hh:mm)
<b>Aberdeen City</b>	<b>1,061</b>	<b>6,890.4</b>	<b>6.5</b>	<b>10:04</b>
3kW double outlet, dumb	57	259.4	4.6	17:25
3kW/7kW double outlet, smart	2	15.4	7.7	2:11
7kW single outlet, smart	32	146.1	4.6	17:29
7kW double outlet, smart	229	1,393.1	6.1	14:50
22kW double outlet, smart	362	2,333.8	6.5	15:24
50kW CCS triple outlet	379	2,742.7	7.3	0:28
<b>Aberdeenshire</b>	<b>141</b>	<b>829.3</b>	<b>5.9</b>	<b>5:23</b>
7kW double outlet, smart	16	105.6	6.6	40:36
22kW double outlet, smart	17	88.1	5.5	4:12
50kW CCS triple outlet	108	635.6	5.9	0:20
<b>Angus</b>	<b>196</b>	<b>1,506.0</b>	<b>7.7</b>	<b>11:24</b>
7kW single outlet, smart	8	35.9	4.5	89:05
7kW double outlet, smart	64	636.2	10.1	10:45
22kW double outlet, smart	52	314.0	6.0	1:42
22kW dual outlet	39	263.1	6.7	18:43
50kW CCS triple outlet	33	256.9	7.8	0:25
<b>Argyll &amp; Bute</b>	<b>21</b>	<b>194.0</b>	<b>9.2</b>	<b>3:15</b>
3kW/7kW double outlet, smart	1	16.2	16.2	15:53
7kW double outlet, smart	13	125.9	9.7	3:46
50kW triple outlet, smart, AC/DC	1	4.2	4.2	0:18
50kW CCS triple outlet	6	47.7	7.9	0:31
<b>Clackmannanshire</b>	<b>86</b>	<b>456.1</b>	<b>5.4</b>	<b>15:35</b>
7kW single outlet, smart	8	30.3	3.8	1:12
7kW double outlet, smart	68	358.7	5.4	19:03
22kW double outlet, smart	10	67.1	6.7	3:49
<b>Dumfries &amp; Galloway</b>	<b>137</b>	<b>1,198.3</b>	<b>8.9</b>	<b>7:02</b>
7kW double outlet, smart	126	1,135.1	9.2	3:44
22kW double outlet, smart	4	1.8	0.5	121:15
50kW CCS triple outlet	7	61.4	8.8	0:19
<b>Dundee City</b>	<b>3,647</b>	<b>21,074.7</b>	<b>5.8</b>	<b>4:10</b>
3kW/7kW double outlet, smart	25	174.1	7.0	7:43
7kW dual outlet	25	171.7	6.9	4:09
7kW double outlet, smart	936	4,923.1	5.3	12:35
7 kW double outlet, smart	25	209.0	8.4	16:33
22kW double outlet, smart	24	224.0	9.3	9:36
22kW dual outlet, smart	33	330.3	10.0	15:01
50kW DC/CCS/43 kW AC rapid	2,131	11,232.9	5.3	0:15
50kW double outlet, smart, AC/DC	43	326.7	7.6	0:57
50kW CCS triple outlet	370	3,388.8	9.2	0:23
Unknown	35	94.2	2.7	38:16
<b>East Ayrshire</b>	<b>14</b>	<b>77.6</b>	<b>5.5</b>	<b>1:18</b>
7kW double outlet, smart	3	0.0	0.0	0:00
22kW double outlet, smart	11	77.6	7.1	1:39
<b>East Lothian</b>	<b>81</b>	<b>587.1</b>	<b>7.2</b>	<b>12:16</b>
7kW single outlet, smart	30	222.7	7.4	12:25
7kW double outlet, smart	33	259.8	7.9	17:48
7 kW double outlet, smart	9	38.1	4.2	2:53

50kW CCS triple outlet	3	25.2	8.4	0:18
Unknown	6	41.3	6.9	1:04
<b>East Renfrewshire</b>	<b>86</b>	<b>610.1</b>	<b>7.1</b>	<b>1:21</b>
7kW double outlet, smart	39	304.0	7.8	1:42
22kW double outlet, smart	31	216.9	7.0	1:28
50kW CCS triple outlet	16	89.1	5.6	0:21
<b>Edinburgh, City of</b>	<b>1,495</b>	<b>8,859.3</b>	<b>6.0</b>	<b>12:00</b>
3kW double outlet, dumb	1	10.4	10.4	500:00
7kW single outlet, smart	199	1,154.6	5.8	9:34
7kW single outlet, dumb	13	99.9	7.7	7:54
7kW double outlet, smart	392	2,827.8	7.3	14:04
7kw double outlet smart	6	78.3	13.1	9:06
7 kw double outlet, smart	27	89.4	3.3	76:44
22kW double outlet, smart	454	2,153.0	4.8	12:05
50kW triple outlet, smart, AC/DC	142	910.2	6.4	0:36
50kW single outlet, smart, DC	12	186.3	15.5	4:54
50kW CCS triple outlet	237	1,348.2	5.7	0:16
Unknown	12	1.2	0.1	168:01
<b>Eilean Siar</b>	<b>72</b>	<b>622.6</b>	<b>8.8</b>	<b>5:09</b>
7kW double outlet, smart	32	296.5	9.3	7:24
50kW triple outlet, smart, AC/DC	21	133.1	6.7	5:50
50kW CCS triple outlet	19	193.0	10.2	0:37
<b>Falkirk</b>	<b>156</b>	<b>1,119.0</b>	<b>7.2</b>	<b>10:39</b>
7kW single outlet, smart	15	57.8	3.9	38:22
7kW double outlet, smart	64	369.8	5.8	15:53
50kW single outlet, smart, DC	12	92.0	7.7	2:22
50kW CCS triple outlet	65	599.4	9.2	0:29
<b>Fife</b>	<b>797</b>	<b>4,146.2</b>	<b>5.3</b>	<b>14:21</b>
7kW single outlet, smart	1	4.7	4.7	1:16
7kW double outlet, smart	637	3,402.3	5.4	16:26
22kW double outlet, smart	33	128.3	3.9	12:05
22kW dual outlet, smart	123	602.4	5.0	3:31
Unknown	3	8.5	2.8	48:55
<b>Glasgow City</b>	<b>1,706</b>	<b>9,655.7</b>	<b>5.7</b>	<b>6:44</b>
7kW double outlet, smart	1,237	5,729.5	4.7	7:35
7kw double outlet smart	24	273.3	11.4	7:15
22kW double outlet, smart	195	1,071.2	5.6	6:44
22kW dual outlet, smart	63	693.6	11.0	3:48
50kW CCS triple outlet	157	1,587.6	10.1	0:51
Unknown	30	300.6	10.0	9:07
<b>Highland</b>	<b>109</b>	<b>781.1</b>	<b>7.2</b>	<b>4:41</b>
7kW dual outlet	4	23.4	5.9	2:32
7kW double outlet, smart	29	234.3	8.1	15:28
7kw double outlet smart	4	80.4	20.1	4:22
22kW double outlet, smart	44	227.4	5.3	0:27
50kW triple outlet, smart, AC/DC	17	115.9	6.8	0:20
50kW single outlet, smart, DC	11	99.7	9.1	0:29
<b>Inverclyde</b>	<b>29</b>	<b>240.5</b>	<b>8.3</b>	<b>0:43</b>
22kW double outlet, smart	29	240.5	8.3	0:43
<b>Midlothian</b>	<b>174</b>	<b>1,100.1</b>	<b>6.4</b>	<b>17:54</b>
7kW single outlet, smart	31	260.0	8.4	34:23
7kW double outlet, smart	120	794.9	6.7	16:32
7kw double outlet smart	23	45.2	2.0	2:43

<b>Moray</b>	<b>191</b>	<b>933.2</b>	<b>4.9</b>	<b>6:23</b>
7kW double outlet, smart	176	788.0	4.5	6:34
22kW double outlet, smart	8	71.3	10.2	5:48
50kW double outlet, smart, AC/DC	7	73.9	10.6	0:59
<b>North Ayrshire</b>	<b>72</b>	<b>265.2</b>	<b>3.7</b>	<b>4:37</b>
22kW double outlet, smart	31	94.4	3.0	1:35
22kW dual outlet	39	166.9	4.4	7:18
50kW triple outlet, smart, AC/DC	2	4.0	2.0	0:34
<b>North Lanarkshire</b>	<b>160</b>	<b>750.2</b>	<b>4.7</b>	<b>2:45</b>
3kW/7kW double outlet, smart	33	212.6	6.6	0:35
7kW double outlet, smart	125	537.5	4.3	3:21
50kW single outlet, smart, DC	2	0.0	0.0	0:00
<b>Orkney Islands</b>	<b>237</b>	<b>1,777.2</b>	<b>7.8</b>	<b>6:36</b>
3kW double outlet, smart	47	356.8	7.8	20:22
7kW double outlet, smart	167	1,334.3	8.1	3:26
50kW triple outlet, smart, AC/DC	17	86.1	5.1	0:16
50kW CCS triple outlet	6			
<b>Perth &amp; Kinross</b>	<b>459</b>	<b>3,663.2</b>	<b>8.0</b>	<b>2:37</b>
7kW double outlet, smart	8	-	-	3:56
22kW double outlet, smart	110	680.5	6.2	8:46
22kW dual outlet	11	91.3	8.3	5:22
22kW dual outlet, smart	6	-	-	0:02
50kW double outlet, smart, AC/DC	155	1,213.1	7.9	0:23
50kW CCS triple outlet	169	1,678.3	10.0	0:30
<b>Renfrewshire</b>	<b>467</b>	<b>2,951.1</b>	<b>6.4</b>	<b>7:33</b>
7kW double outlet, smart	346	2,126.7	6.2	10:01
22kW double outlet, smart	35	195.2	5.7	0:47
50kW triple outlet, smart, AC/DC	86	629.2	7.3	0:29
<b>Scottish Borders</b>	<b>235</b>	<b>1,413.9</b>	<b>6.0</b>	<b>2:30</b>
3kW single outlet, smart	1	-	-	0:10
3kW/7kW double outlet, smart	25	75.2	3.0	5:30
7kW single outlet, smart	24	126.3	5.3	2:23
7kW double outlet, smart	21	100.7	4.8	11:21
22kW double outlet, smart	45	253.1	5.6	2:20
50kW single outlet, smart, DC	7	8.9	1.3	0:04
50kW double outlet, smart, AC/DC	12	29.9	2.5	0:15
50kW CCS triple outlet	100	819.8	8.2	0:24
<b>Shetland Islands</b>	<b>11</b>	<b>54.6</b>	<b>5.5</b>	<b>2:27</b>
7kW double outlet, smart	11	54.6	5.5	2:27
<b>South Ayrshire</b>	<b>168</b>	<b>963.2</b>	<b>5.8</b>	<b>4:59</b>
7kW double outlet, smart	56	138.8	2.5	1:01
22kW double outlet, smart	80	738.9	9.4	9:42
50kW CCS triple outlet	32	85.5	2.7	0:18
<b>South Lanarkshire</b>	<b>409</b>	<b>2,441.5</b>	<b>6.0</b>	<b>4:26</b>
7kW single outlet, smart	110	514.1	4.7	11:30
7kW double outlet, smart	170	1,030.4	6.1	2:48
22kW double outlet, smart	30	60.6	2.0	0:18
50kW double outlet, smart, AC/DC	92	790.0	8.6	0:29
Unknown	7	46.5	6.6	2:27
<b>Stirling</b>	<b>150</b>	<b>551.4</b>	<b>3.7</b>	<b>5:03</b>
7kW single outlet, smart	21	115.3	5.5	26:37
7kW double outlet, smart	76	367.2	4.8	2:22
22kW double outlet, smart	13	59.8	4.6	1:09

50kW CCS triple outlet	40	9.1	0.2	0:00
<b>West Dunbartonshire</b>	<b>178</b>	<b>1,346.8</b>	<b>7.6</b>	<b>10:24</b>
7kW double outlet, smart	51	582.2	11.4	36:32
22kW double outlet, smart	12	74.6	6.2	1:37
50kW CCS triple outlet	115	690.0	6.0	0:20
<b>West Lothian</b>	<b>194</b>	<b>1,236.2</b>	<b>6.4</b>	<b>1:23</b>
7kW double outlet, smart	16	39.4	2.6	1:24
22kW double outlet, smart	92	534.9	5.8	2:18
50kW CCS triple outlet	86	661.8	7.7	0:24
<b>Total</b>	<b>12,939</b>	<b>78,295.7</b>	<b>6.1</b>	<b>7:12</b>

**Table 7.4: Local authority usage by charge point type, August 2016**

Aug 2016	Charging sessions	Total kWh	Average kWh	Average of Duration (hh:mm)
<b>Aberdeen City</b>	<b>1,355</b>	<b>9,057.8</b>	<b>6.7</b>	<b>9:53</b>
3kW/7kW double outlet, smart	86	528.3	6.3	11:12
7kW single outlet, smart	38	133.9	3.5	23:36
7kW double outlet, smart	256	1,479.8	5.8	10:00
22kW dual outlet	9	70.9	7.9	31:34
22kW double outlet, smart	418	2,937.0	7.0	12:37
50kW CCS triple outlet	414	3,180.7	7.7	1:35
Unknown	134	727.2	5.6	20:52
<b>Aberdeenshire</b>	<b>480</b>	<b>3,861.1</b>	<b>8.1</b>	<b>2:06</b>
7kW double outlet, smart	38	223.1	6.0	20:30
22kW double outlet, smart	4	17.7	4.4	3:45
50kW triple outlet, smart, AC/DC	116	737.5	6.4	0:27
50kW CCS triple outlet	247	2,185.4	8.8	0:37
50kw	75	697.5	9.3	0:23
<b>Angus</b>	<b>502</b>	<b>4,381.2</b>	<b>8.8</b>	<b>5:32</b>
7kW single outlet, smart	5	40.5	8.1	41:02
7kW dual outlet, smart	52	436.4	8.4	7:44
7kW double outlet, smart	173	1,495.4	8.6	6:23
22kW dual outlet	64	395.5	6.2	10:34
22kW double outlet, smart	49	384.4	8.0	2:54
50kW CCS triple outlet	131	1,253.6	9.6	0:39
Unknown	28	375.5	13.9	5:30
<b>Argyll &amp; Bute</b>	<b>258</b>	<b>1,908.3</b>	<b>7.4</b>	<b>1:24</b>
7kW double outlet, smart	38	262.6	6.9	5:56
22kW double outlet, smart	31	76.8	2.5	0:42
50kW triple outlet, smart, AC/DC	14	67.4	4.8	2:24
50kW CCS triple outlet	157	1,378.6	8.8	0:28
50kw	18	122.9	6.8	0:27
<b>Clackmannanshire</b>	<b>189</b>	<b>1,482.2</b>	<b>7.8</b>	<b>10:46</b>
7kW single outlet, smart	25	169.4	6.8	5:35
7kW double outlet, smart	74	515.3	7.0	23:34
22kW double outlet, smart	60	460.8	7.7	2:10
50kW CCS triple outlet	30	336.7	11.2	0:40
<b>Dumfries &amp; Galloway</b>	<b>121</b>	<b>859.6</b>	<b>7.2</b>	<b>1:59</b>
7kW double outlet, smart	46	318.9	7.1	4:23

22kW double outlet, smart	8	29.3	3.7	0:39
50kW CCS triple outlet	67	511.4	7.6	0:32
<b>Dundee City</b>	<b>5,678</b>	<b>34,750.6</b>	<b>6.1</b>	<b>4:32</b>
7kW single outlet, smart	31	134.7	4.5	21:24
7kW dual outlet	12	99.6	8.3	12:23
7kW double outlet, smart	1,874	11,656.8	6.3	10:11
22kW double outlet, smart	276	1,827.0	6.6	7:18
50kW DC/CCS/43 kW AC rapid	2,472	12,709.7	5.1	0:15
50kW CCS triple outlet	927	7,618.5	8.2	0:40
Unknown	86	704.3	8.4	31:05
<b>East Ayrshire</b>	<b>245</b>	<b>1,735.1</b>	<b>7.2</b>	<b>2:55</b>
7kW double outlet, smart	48	392.4	8.3	6:22
22kW double outlet, smart	75	649.7	8.9	5:03
50kW CCS triple outlet	122	693.0	5.7	0:18
<b>East Dunbartonshire</b>	<b>36</b>	<b>380.9</b>	<b>11.2</b>	<b>1:34</b>
22kW double outlet, smart	20	158.3	8.8	2:07
50kW CCS triple outlet	16	222.6	13.9	0:57
<b>East Lothian</b>	<b>625</b>	<b>4,253.6</b>	<b>6.9</b>	<b>4:35</b>
7kW single outlet, smart	26	346.4	13.3	16:17
7kW double outlet, smart	115	280.1	2.5	15:27
22kW double outlet, smart	40	148.3	3.9	8:20
50kW CCS triple outlet	282	2,338.5	8.3	0:23
50kw	116	1,020.8	8.9	0:33
Unknown	46	119.7	2.6	4:22
<b>East Renfrewshire</b>	<b>302</b>	<b>2,547.2</b>	<b>8.4</b>	<b>1:23</b>
7kW double outlet, smart	53	431.0	8.1	4:17
22kW double outlet, smart	83	336.8	4.1	1:23
50kW CCS triple outlet	166	1,779.4	10.7	0:27
<b>Edinburgh, City of</b>	<b>2,018</b>	<b>13,817.0</b>	<b>6.9</b>	<b>6:30</b>
7kW single outlet, smart	142	1,200.1	8.5	5:31
7kW double outlet, smart	435	2,769.94	6.4	12:28
7kw double outlet smart	53	452.3	8.7	8:14
22kW double outlet, smart	731	4,571.9	6.3	8:17
50kW triple outlet, smart, AC/DC	73	528.2	7.2	0:31
50kW CCS triple outlet	565	4,098.1	7.3	0:27
Unknown	19	196.5	10.3	6:58
<b>Eilean Siar</b>	<b>166</b>	<b>1,418.9</b>	<b>8.5</b>	<b>2:35</b>
7kW double outlet, smart	33	243.6	7.4	6:04
50kW single outlet, smart, DC	52	356.1	6.8	3:13
50kW triple outlet, smart, AC/DC	81	819.2	10.1	0:46
<b>Falkirk</b>	<b>409</b>	<b>4,188.0</b>	<b>10.3</b>	<b>3:34</b>
7kW single outlet, smart	15	159.0	10.6	34:15
7kW double outlet, smart	40	309.3	7.9	12:51
22kW dual outlet, smart	2	21.3	10.7	1:07
22kW double outlet, smart	36	239.7	6.7	4:49
50kW single outlet, smart, DC	1	5.0	5.0	6:02
50kW CCS triple outlet	315	3,453.6	11.0	0:50
<b>Fife</b>	<b>1,927</b>	<b>13,030.7</b>	<b>6.8</b>	<b>9:13</b>
7kW double outlet, smart	1,269	7,221.6	5.8	12:19
7kw double outlet smart	2	3.7	1.9	0:17
22kW dual outlet, smart	136	730.2	5.4	6:53
22kW double outlet, smart	70	476.0	6.9	6:03
50kW CCS triple outlet	440	4,537.5	10.3	0:33

NA	10	61.6	6.2	58:37
<b>Glasgow City</b>	<b>2,851</b>	<b>17,871.2</b>	<b>6.3</b>	<b>5:49</b>
7kW single outlet, smart	55	641.8	11.7	4:58
7kW double outlet, smart	1,924	10,179.6	5.3	6:42
7kw double outlet smart	52	475.3	9.3	10:36
22kW dual outlet, smart	58	685.9	11.8	3:31
22kW double outlet, smart	543	4,063.6	7.5	4:23
50kW CCS triple outlet	218	1,825.0	8.4	1:17
Unknown	1	-	-	1:09
<b>Highland</b>	<b>828</b>	<b>9,010.0</b>	<b>10.9</b>	<b>1:01</b>
7kW dual outlet	7	26.4	3.8	1:45
7kW double outlet, smart	34	290.1	8.5	2:21
7kw double outlet smart	12	104.7	8.7	5:41
22kW double outlet, smart	12	10.6	0.9	0:16
50kW triple outlet, smart, AC/DC	55	736.1	13.4	0:31
50kW CCS triple outlet	665	7,416.4	11.2	0:37
Unknown	43	425.8	9.9	5:23
<b>Inverclyde</b>	<b>301</b>	<b>2,064.2</b>	<b>6.9</b>	<b>3:26</b>
7kW double outlet, smart	40	189.2	4.9	14:51
22kW double outlet, smart	119	620.5	5.2	3:16
50kW triple outlet, smart, AC/DC	82	736.9	9.0	0:27
50kW CCS triple outlet	60	517.5	8.6	0:27
<b>Midlothian</b>	<b>562</b>	<b>3,967.6</b>	<b>7.1</b>	<b>5:12</b>
7kW single outlet, smart	52	249.0	4.8	8:03
7kW double outlet, smart	195	1,557.7	8.2	10:43
7kw double outlet smart	23	55.7	2.4	4:05
22kW double outlet, smart	47	291.2	6.2	3:43
50kW CCS triple outlet	245	1,814.0	7.4	0:40
<b>Moray</b>	<b>161</b>	<b>915.9</b>	<b>5.8</b>	<b>6:53</b>
7kW double outlet, smart	135	612.0	4.6	8:01
22kW double outlet, smart	9	73.8	8.2	1:19
50kW double outlet, smart, AC/DC	15	220.5	14.7	0:54
50kW CCS triple outlet	2	9.5	4.8	0:45
<b>North Ayrshire</b>	<b>494</b>	<b>2,585.4</b>	<b>5.3</b>	<b>2:46</b>
7kW double outlet, smart	13	38.7	3.0	0:42
22kW dual outlet	58	280.8	4.8	7:32
22kW double outlet, smart	228	975.4	4.4	3:26
50kW triple outlet, smart, AC/DC	19	223.8	11.8	1:41
50kW CCS triple outlet	176	1,066.7	6.1	0:38
<b>North Lanarkshire</b>	<b>295</b>	<b>1,791.8</b>	<b>6.1</b>	<b>4:54</b>
3kW/7kW double outlet, smart	54	246.9	4.6	1:12
7kW double outlet, smart	164	961.0	5.9	7:17
22kW double outlet, smart	55	476.6	8.7	1:32
Unknown	22	107.3	4.9	4:52
<b>Orkney Islands</b>	<b>872</b>	<b>6,719.4</b>	<b>7.7</b>	<b>2:30</b>
3kW/7kW double outlet, smart	50	324.6	6.5	10:14
7kW double outlet, smart	236	1,749.2	7.4	3:29
22kW double outlet, smart	212	1,552.1	7.5	3:08
50kW triple outlet, smart, AC/DC	6	12.0	2.0	0:08
50kW CCS triple outlet	368	3,081.6	8.4	0:31
<b>Perth &amp; Kinross</b>	<b>1,128</b>	<b>10,992.6</b>	<b>9.8</b>	<b>2:47</b>
7kW double outlet, smart	80	1,407.0	17.6	7:10
22kW dual outlet, smart	2	6.4	3.2	1:06

22kW dual outlet	23	189.4	8.2	2:38
22kW double outlet, smart	693	6,577.0	9.6	3:19
50kW double outlet, smart, AC/DC	54	162.9	3.1	0:10
50kW CCS triple outlet	238	2,338.2	9.8	0:38
50kw	32	243.3	7.6	0:19
Unknown	6	68.5	11.4	5:57
<b>Renfrewshire</b>	<b>1,075</b>	<b>7,368.2</b>	<b>6.9</b>	<b>5:23</b>
7kW double outlet, smart	382	1,551.9	4.1	7:03
22kW double outlet, smart	199	1,550.2	7.8	12:18
50kW triple outlet, smart, AC/DC	180	1,688.9	9.4	0:39
50kW CCS triple outlet	314	2,577.3	8.2	1:44
<b>Scottish Borders</b>	<b>435</b>	<b>3,757.5</b>	<b>8.7</b>	<b>22:16</b>
3kW single outlet, smart	69	482.2	7.1	0:56
3kW/7kW double outlet, smart	5	23.9	4.8	1:13
7kW single outlet, smart	35	273.1	7.8	254:10
7kW double outlet, smart	67	329.1	5.0	6:26
22kW double outlet, smart	55	359.3	6.5	2:49
50kW double outlet, smart, AC/DC	13	169.9	13.1	0:46
50kW triple outlet, smart, AC/DC	52	835.8	16.1	0:29
50kW CCS triple outlet	73	706.9	9.7	0:33
50kw	66	577.4	8.7	0:18
<b>Shetland Islands</b>	<b>75</b>	<b>432.4</b>	<b>5.8</b>	<b>1:54</b>
7kW double outlet, smart	41	184.4	4.5	2:29
22kW double outlet, smart	10	61.7	6.2	2:50
50kW CCS triple outlet	24	186.4	7.8	0:32
<b>South Ayrshire</b>	<b>465</b>	<b>3,634.7</b>	<b>7.8</b>	<b>6:00</b>
7kW single outlet, smart	27	42.2	1.6	0:33
7kW double outlet, smart	20	57.5	2.9	1:11
22kW double outlet, smart	137	975.2	7.2	3:40
50kW CCS triple outlet	281	2,559.7	9.1	7:59
<b>South Lanarkshire</b>	<b>922</b>	<b>5,811.3</b>	<b>6.4</b>	<b>2:47</b>
7kW single outlet, smart	99	573.5	5.8	12:51
7kW double outlet, smart	412	2,282.6	5.6	2:33
22kW double outlet, smart	89	592.7	6.7	1:08
50kW CCS triple outlet	318	2,353.8	7.4	0:25
Unknown	4	8.7	2.2	1:19
<b>Stirling</b>	<b>812</b>	<b>6,991.3</b>	<b>8.6</b>	<b>3:49</b>
7kW double outlet, smart	225	1,556.2	6.9	8:12
22kW double outlet, smart	87	792.5	9.1	5:23
50kW triple outlet, smart, AC/DC	68	838.4	12.3	0:38
50kW CCS triple outlet	363	3,148.2	8.7	0:34
Unknown	69	656.0	9.6	7:45
<b>West Dunbartonshire</b>	<b>194</b>	<b>1,453.8</b>	<b>7.6</b>	<b>5:40</b>
7kW double outlet, smart	47	298.6	6.6	17:54
22kW double outlet, smart	48	303.1	6.3	4:24
50kW CCS triple outlet	99	852.1	8.7	0:39
<b>West Lothian</b>	<b>323</b>	<b>2,331.3</b>	<b>7.3</b>	<b>3:31</b>
7kW double outlet, smart	135	843.7	6.2	4:23
22kW double outlet, smart	188	1,487.6	8.0	2:54
<b>Location Unknown</b>	<b>15</b>	<b>33.9</b>	<b>2.3</b>	<b>0:52</b>
<b>Total</b>	<b>26,119</b>	<b>185,404.7</b>	<b>7.1</b>	<b>5:20</b>



Tables 7.1 - 7.4 shows the breakdown of charging usage by local authorities in which charging sessions for August 2015 and August 2016 took place. The local authority with the greatest number of charging sessions was the Dundee City (5,678; up 56% from August 2015), Glasgow City (2,851; up 67%) followed by City of Edinburgh (2,018; up 35%) in August 2016.

In August 2015 68% of charge points were used at least once in that month, this proportion rises to 75% for August 2016. Tables 7.1 and 7.2 show the number of charge points which were used at least once for local authorities where charge points were used. In August 2015, all charge points were used at least once in 3 local authorities (East Renfrewshire, Inverclyde and West Lothian). The authorities with the lowest percentage of charge point used at least once were Shetland Islands (17%), North Ayrshire (27%), Argyll & Bute and Eilean Siar (31% each). In total there were 6 authorities where less than half of the charge points were used at least once in August 2016. A year later, in August 2016, there was only one authority in which less than half the charge points were used at least once (Dumfries and Galloway at 40%).

## 8. Rapid charge point usage, August 2016

Figure 8.1 shows the location of all the rapid charge points (43/50kW) in August 2016. The rapid charge points are located across Scotland to support Transport Scotland's plan to introduce rapid chargers at 35 mile intervals along Scottish truck roads<sup>2</sup>. Table 6.1 indicates that all of the top 10 most frequented charge points were all rapid chargers in August 2016. In this month almost half of all charging sessions (42%) took place at a rapid charge point compared to 36% the year before. This is despite the fact that rapid chargers only make up 19% (13% in August 2015) of charge points in the ChargePlace Scotland network. Table 5.2 shows that the average charging duration at a rapid charge point was 47 minutes which is in line with how a network of rapid chargers may be used – a Nissan Leaf is able to charge to 80% in 30 minutes using a rapid charger<sup>3</sup>. However, a closer look at the usage data for rapid charger shows that there were a number of locations which unusually large (greater than 5 hours) average charging duration for a rapid charge point. If these sites are excluded from the analysis, the average duration at a rapid charge point falls to just 30 minutes. Table 8.1 indicates that a 2014 Nissan Leaf would have been able to travel 33.3 miles on the average amount of electricity consumed by rapid charge points in August 2016 – approximately 6 miles short from being able to drive from Edinburgh Airport to Glasgow city centre on just the average charge alone.

---

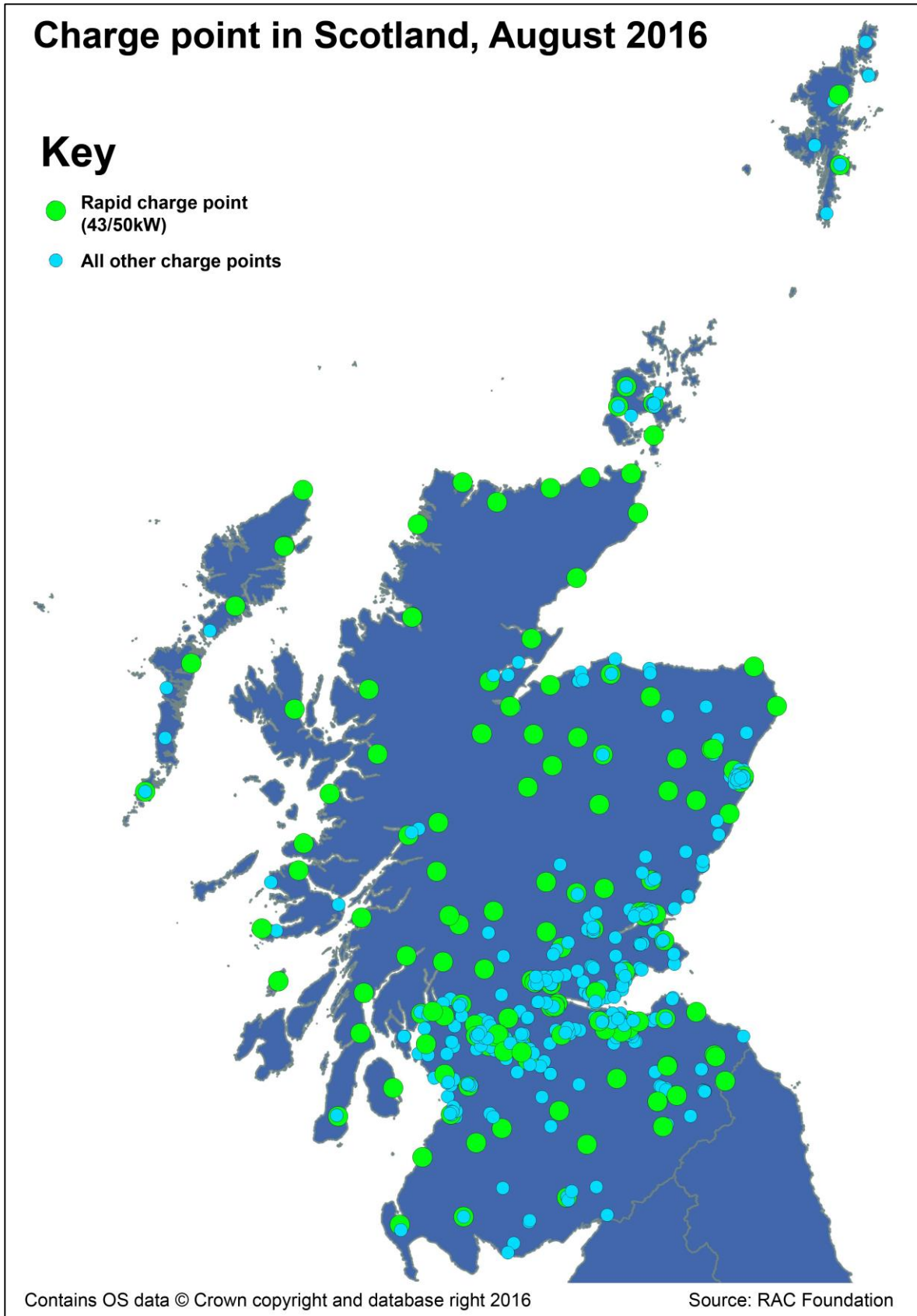
<sup>2</sup>Transport Scotland (2013). Plans to introduce further electric vehicle rapid charging infrastructure have been welcomed. <http://www.transport.gov.scot/news/plans-introduce-further-electric-vehicle-rapid-charging-infrastructure-have-been-welcomed>

<sup>3</sup> Nissan UK (2016). <https://www.nissan.co.uk/vehicles/new-vehicles/leaf/charging-range.html>

**Table 8.1 Breakdown rapid charge point (43/50kW) usage by local authority for August 2016.**

Aug 2016	Number of charging sessions	Total kWh	Average kWh	Average of Duration (hh:mm)	Max Duration (hh:mm)
<b>Aberdeen City</b>	414	3,180.7	7.7	1:35	100:13
<b>Aberdeenshire</b>	438	3,620.4	8.3	0:32	6:43
<b>Angus</b>	131	1,253.6	9.6	0:39	3:53
<b>Argyll &amp; Bute</b>	189	1,569.0	8.3	0:36	11:15
<b>Clackmannanshire</b>	30	336.7	11.2	0:40	1:47
<b>Dumfries &amp; Galloway</b>	67	511.4	7.6	0:32	2:33
<b>Dundee City</b>	3,399	20,328.2	6.0	0:22	139:54
<b>East Ayrshire</b>	122	693.0	5.7	0:18	0:52
<b>East Dunbartonshire</b>	16	222.6	13.9	0:57	2:08
<b>East Lothian</b>	398	3,359.2	8.5	0:26	2:54
<b>East Renfrewshire</b>	166	1,779.4	10.7	0:27	1:33
<b>Edinburgh, City of</b>	638	4,626.3	7.3	0:28	9:27
<b>Eilean Siar</b>	133	1,175.3	8.8	1:43	14:33
<b>Falkirk</b>	316	3,458.6	10.9	0:51	8:19
<b>Fife</b>	440	4,537.5	10.3	0:33	4:34
<b>Glasgow City</b>	218	1,825.0	8.4	1:17	12:22
<b>Highland</b>	720	8,152.4	11.3	0:37	13:55
<b>Inverclyde</b>	142	1,254.5	8.8	0:27	4:02
<b>Midlothian</b>	245	1,814.0	7.4	0:40	12:15
<b>Moray</b>	17	230.0	13.5	0:53	2:11
<b>North Ayrshire</b>	195	1,290.5	6.6	0:44	16:07
<b>Orkney Islands</b>	374	3,093.6	8.3	0:31	4:02
<b>Perth &amp; Kinross</b>	324	2,744.4	8.5	0:31	14:30
<b>Renfrewshire</b>	494	4,266.1	8.6	1:21	45:19
<b>Scottish Borders</b>	204	2,290.0	11.2	0:28	2:54
<b>Shetland Islands</b>	24	186.4	7.8	0:32	1:00
<b>South Ayrshire</b>	281	2,559.7	9.1	7:59	115:40
<b>South Lanarkshire</b>	318	2,353.8	7.4	0:25	7:49
<b>Stirling</b>	431	3,986.6	9.2	0:35	5:58
<b>West Dunbartonshire</b>	99	852.1	8.7	0:39	4:16
<b>All rapid charge points</b>	<b>10,983</b>	<b>87,551.0</b>	<b>8.0</b>	<b>0:47</b>	<b>139:54</b>

Figure 8.1: Rapid charge point (43/50kW) locations in Scotland of August 2016.



## 9. Conclusions

There has been a large increase in the use of the ChargePlace Scotland charging network between August 2013 and August 2016. The number of charging sessions increased by over 4000% (619 to 26,119 sessions). The percentage of the ChargePlace Scotland network where charge points were used at least once has increased year on year from 55% in August 2014 to 75% in August 2016.

There has been an 888% rise in the number of plug-in car and van grant licensed vehicles the end of Q2 2013 and Q2 2016. At the end of Q2 2013 there were 6,226 licensed vehicles which were eligible to receive the plug-in car and van grant in the UK of which 362 were licensed in Scotland. By the end of Q2 2016 the number of licensed vehicles which were eligible to receive the plug-in car and van grant had risen sharply to 67,655. Of these 3,575 (5%) vehicles were registered in Scotland compared to 60,815 in England and 1,717 in Wales.

Overall, the ChargePlace Scotland network experienced large growth in usage between August 2013 and August 2015. In particular there has been large growth in the use of rapid charge points. In August 2016 almost half of all charging sessions (42%) took place at a rapid charge point compared to 36% the year before. This is despite the fact that rapid chargers only make up 19% (13% in August 2015) of charge points in the ChargePlace Scotland network. The average charging duration has fallen between August 2013 and August 2016 which is likely to be to the increased use of fast and rapid charge points (rapid charge points had an average charging duration of just 47 minutes in August 2016).