

## REFERENCES

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## APPENDIX I

### Total PEV Load calculation:

Data :- 3.3kW charger (Nissan Leaf)

Total number of passenger cars - 672502 by 2015 [38].

Assumptions :- 10% of Passenger cars are replaced with PEVs [2]

Each EV charge once in three days

Each car will charge at night peak time on a day (at 7.00 pm)

$$\text{Total PEV load} = 672502 \times 10\% \times \frac{1}{3} \times 3.3 \text{ kW} = 73975.22 \text{ kW} \approx 74 \text{ MW}$$

\*\* If total number of passenger cars in 2015 are replaced with PEVs night time peak demand of Sri Lankan load curve will rise by 74 MW.

### Fuel cost calculation

Data : Fuel Economy of a Nissan Leaf = 24kWh/135.18km = 0.178kWh/km [22]

Average cost of a kWh = Rs.25 [39]

Fuel Economy of a ICEV = 1/12 l/km = 0.083 l/km [20]

Cost of a petrol liter = Rs.117 [54]

Assumption: PEV is charged within day hours and consumer has three phase electricity connection.

$$\text{Fuel cost per km of a PEV} = \frac{0.178 \text{ kWh}}{\text{km}} \times \text{Rs.} \frac{25}{\text{kWh}} = \text{Rs.} \frac{4.45}{\text{km}}$$

$$\text{Fuel cost per km of an ICEV} = 0.083 \frac{\text{l}}{\text{km}} \times \text{Rs.} \frac{117}{\text{l}} = \text{Rs.} \frac{9.71}{\text{km}}$$

$$\text{Fuel cost saving from ICEV to PEV} = \text{Rs.} 9.71 - \text{Rs.} 4.45 = \text{Rs.} 5.26$$

## APPENDIX II

### Global PEV stock from 2005 to 2015 (in thousands)

| Country        | 2005        | 2006        | 2007        | 2008        | 2009        | 2010         | 2011         | 2012          | 2013          | 2014          | 2015           |
|----------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|---------------|---------------|---------------|----------------|
| Canada         |             |             |             |             |             |              | 0.52         | 2.60          | 5.71          | 10.78         | 18.45          |
| China          |             |             |             |             |             | 1.43         | 6.50         | 16.40         | 31.74         | 104.91        | 312.29         |
| France         | 0.01        | 0.01        | 0.01        | 0.01        | 0.11        | 0.30         | 2.93         | 9.25          | 18.88         | 31.50         | 54.29          |
| Germany        | 0.02        | 0.02        | 0.02        | 0.09        | 0.10        | 0.25         | 2.34         | 6.13          | 13.25         | 26.03         | 49.22          |
| India          |             |             |             | 0.37        | 0.53        | 0.88         | 1.33         | 2.76          | 3.13          | 4.02          | 6.02           |
| Italy          | 0.53        | 0.53        | 0.53        | 0.60        | 0.60        | 0.64         | 0.76         | 1.42          | 2.47          | 3.99          | 6.13           |
| Japan          |             |             |             |             | 1.08        | 3.52         | 16.14        | 40.58         | 69.46         | 101.74        | 126.40         |
| Korea          |             |             |             |             |             | 0.06         | 0.34         | 0.85          | 1.45          | 1.52          | 4.33           |
| Netherlands    |             |             |             | 0.01        | 0.15        | 0.27         | 1.14         | 6.26          | 28.67         | 43.76         | 87.53          |
| Norway         |             |             |             | 0.25        | 0.39        | 0.79         | 2.80         | 7.21          | 15.42         | 35.21         | 70.82          |
| Portugal       |             |             |             |             |             | 0.02         | 0.22         | 0.32          | 0.53          | 0.82          | 2.00           |
| South Africa   |             |             |             |             |             |              |              |               | 0.03          | 0.05          | 0.29           |
| Spain          |             |             |             |             |             | 0.07         | 0.65         | 1.20          | 2.21          | 3.66          | 5.95           |
| Sweden         |             | 0.12        | 0.13        | 0.13        | 0.16        | 0.19         | 0.37         | 1.25          | 2.65          | 7.09          | 14.53          |
| United Kingdom |             |             |             |             | 0.19        | 0.29         | 1.37         | 3.78          | 7.28          | 21.86         | 49.67          |
| United States  | 1.12        | 1.12        | 1.12        | 2.58        | 2.58        | 3.77         | 21.50        | 74.74         | 171.44        | 290.22        | 404.09         |
| Others*        |             |             |             |             |             |              | 1.73         | 4.48          | 8.76          | 19.59         | 44.89          |
| <b>Total</b>   | <b>1.67</b> | <b>1.78</b> | <b>1.79</b> | <b>4.04</b> | <b>5.89</b> | <b>12.48</b> | <b>60.65</b> | <b>179.23</b> | <b>383.09</b> | <b>706.77</b> | <b>1256.90</b> |

\* Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Greece, Hungary, Iceland, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Poland, Romania, Slovak Republic, Slovenia, Switzerland, Turkey.

Source: Global EV Outlook 2016, International Energy Agency (IEA) - Table 6





## New vehicle registrations of Sri Lanka in 2015 [38]

| Class of Vehicle | Motor cars |        |          |          |          |             | 3 Wheelers     |                |     |                |        |        | Buses  |         |                |        |        |       | Motor Cycles |                |     |        |       |         | Dual Purpose Vehicles |       |        |        |         |                | Single Cab |        |      |         |                |     | Special Purpose Vehicle |      |         |                |     |        | Motor Lorry |         |                |        |        |      | L.V.Tractors |                |     |        |      |         | Total |
|------------------|------------|--------|----------|----------|----------|-------------|----------------|----------------|-----|----------------|--------|--------|--------|---------|----------------|--------|--------|-------|--------------|----------------|-----|--------|-------|---------|-----------------------|-------|--------|--------|---------|----------------|------------|--------|------|---------|----------------|-----|-------------------------|------|---------|----------------|-----|--------|-------------|---------|----------------|--------|--------|------|--------------|----------------|-----|--------|------|---------|-------|
|                  | Petrol     |        |          | Electric |          |             | Petrol         |                |     | Diesel         |        |        | Petrol |         |                | Diesel |        |       | Petrol       |                |     | Diesel |       |         | Petrol                |       |        | Diesel |         |                | Petrol     |        |      | Diesel  |                |     | Petrol                  |      |         | Diesel         |     |        | Petrol      |         |                | Diesel |        |      |              |                |     |        |      |         |       |
|                  | Die.       | Petrol | Electric | Die.     | Electric | Tricyle Car | Motor Tricycle | Motor Tricycle | Van | Motor Tricycle | Van    | Petrol | Die.   | Tricyle | Motor Tricycle | Van    | Petrol | Die.  | Tricyle      | Motor Tricycle | Van | Petrol | Die.  | Tricyle | Motor Tricycle        | Van   | Petrol | Die.   | Tricyle | Motor Tricycle | Van        | Petrol | Die. | Tricyle | Motor Tricycle | Van | Petrol                  | Die. | Tricyle | Motor Tricycle | Van | Petrol | Die.        | Tricyle | Motor Tricycle | Van    | Petrol | Die. | Tricyle      | Motor Tricycle | Van | Petrol | Die. | Tricyle |       |
| January          | 178        | 2,089  | 4,371    | 15       | 512      | 7,810       | 28             | 744            | 1   | 7              | 30,004 | 578    | 2      | 313     | 1,626          | 37     | 58     | 1     | 373          | 18             | 5   | 1      | 2     | 8       | 478                   | 111   | 164    | 49,545 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| February         | 165        | 2,043  | 2,919    | 14       | 491      | 7,164       | 31             | 2              | 291 | 10             | 25,568 | 550    | 1      | 2       | 313            | 1,668  | 46     | 55    | 376          | 26             | 6   | 1      | 1     | 25      | 323                   | 150   | 157    | 42,347 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| March            | 200        | 3,581  | 2,978    | 29       | 762      | 11,716      | 47             | 5              | 406 | 1              | 7      | 42,171 | 561    | 1       | 2              | 502    | 2,379  | 85    | 76           | 404            | 1   | 34     | 1     | 1       | 23                    | 387   | 223    | 197    | 66,889  |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| April            | 246        | 3,177  | 2,862    | 15       | 749      | 10,063      | 23             | 1              | 180 | 4              | 26,886 | 484    |        | 488     | 1,955          | 69     | 52     | 1     | 302          | 1              | 22  | 1      |       | 11      | 267                   | 313   | 124    | 47,994 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| May              | 156        | 3,475  | 2,731    | 16       | 649      | 10,261      | 34             | 2              | 288 | 3              | 27,574 | 488    |        | 517     | 1,959          | 90     | 96     |       | 905          | 20             | 3   |        | 9     | 494     | 470                   | 159   | 50,760 |        |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| June             | 178        | 4,646  | 3,366    | 21       | 769      | 10,700      | 40             | 256            | 1   | 10             | 30,967 | 590    | 4      | 1       | 567            | 2,334  | 81     | 284   | 1            | 380            | 1   | 19     | 3     | 1       | 28                    | 606   | 294    | 193    | 56,620  |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| July             | 219        | 5,889  | 4,942    | 19       | 825      | 11,464      | 2              | 44             | 3   | 326            | 21     | 33,351 | 631    | 4       | 1              | 590    | 2,393  | 76    | 169          | 2              | 443 | 22     | 5     | 1       | 10                    | 567   | 226    | 210    | 61,839  |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| August           | 168        | 5,425  | 3,866    | 21       | 620      | 9,709       | 1              | 36             | 6   | 345            | 2      | 26,529 | 555    | 6       | 1              | 687    | 2,048  | 92    | 81           | 401            | 30  | 1      | 3     | 18      | 346                   | 262   | 186    | 51,814 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| September        | 315        | 9,182  | 5,016    | 32       | 785      | 11,575      | 1              | 30             | 5   | 337            | 1      | 13     | 30,513 | 669     | 7              | 3      | 737    | 2,471 | 120          | 88             | 488 | 31     | 1     | 2       | 27                    | 284   | 424    | 189    | 63,924  |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| October          | 248        | 6,922  | 3,960    | 15       | 476      | 7,786       | 33             | 4              | 271 | 1              | 17     | 32,176 | 562    | 6       | 2              | 603    | 1,860  | 94    | 65           | 436            | 1   | 18     | 2     | 14      | 574                   | 654   | 161    | 57,496 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| November         | 232        | 6,948  | 3,213    | 10       | 604      | 12,571      | 31             | 2              | 316 | 4              | 16     | 32,380 | 484    | 5       | 420            | 2,586  | 102    | 2     | 81           | 405            | 29  |        | 2     | 17      | 736                   | 588   | 147    | 62,423 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| December         | 183        | 5,415  | 2,220    | 19       | 751      | 10,260      | 39             | 3              | 289 | 2              | 31     | 32,571 | 363    | 2       | 245            | 2,592  | 86     | 100   | 4            | 437            | 1   | 47     | 2     | 20      | 764                   | 416   | 242    | 57,366 |         |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |
| Total            | 2,488      | 58,802 | 40,884   | 216      | 7,983    | 121,099     | 4              | 2              | 416 | 33             | 4,139  | 1      | 12     | 167     | 370,710        | 6,515  | 36     | 14    | 5,992        | 25,917         | 980 | 2      | 1,204 | 0       | 10                    | 5,826 | 4,151  | 2,128  | 668,907 |                |            |        |      |         |                |     |                         |      |         |                |     |        |             |         |                |        |        |      |              |                |     |        |      |         |       |

Source: Department Of Motor Traffic

Note: 21 diesel/electric motor cars are included in the category of petrol/electric motor cars in the month of January 2015

## APPENDIX IV

### Charging stations' location details in Sri Lanka [25]

| Western Province     |   |   |                              |                                       |
|----------------------|---|---|------------------------------|---------------------------------------|
| Gampaha District     |   |   |                              |                                       |
| Name of the Location | Address                                 | Contact Person                                    | Contact Numbers              |                                       |
| 1                    | Wasana Trading Lanka                    | No. 310, Negombo Road, Welisara, Ragama           | Mr. Viraj                    | 077-2239900, 011-2241333              |
| 2                    | Wasana Speed Service Station            | No.291, Negombo Road, Welisara, Ragama            | Mr. Denesh                   | 077-3833834, 011-2239900              |
| 3                    | S R B Traders                           | No. 305, Negombo Road, Welisara, Ragama           | Mr. M S G B Fernando         | 077-7626217                           |
| 4                    | W M M Fernando & Sons                   | No. 275, Negombo Road, Tudella, Jaela             | Mr. K A K N Jude Perera      | 071-6822709, 011-2231075              |
| 5                    | Chathura Enterprises                    | No. 3/B/3R, National Housing Scheme, Raddolugama  | Mr. S A Nimal                | 072-2774482, 011-2291666              |
| 6                    | Rising Motors                           | No. 53/2/A, Colombo Road, Kattuwa, Negombo        | Mr. Rasika Fernandopulle     | 077-7580380, 031-2277950              |
| 7                    | View Bright Service Center              | No. 07, Negombo Road, Kochchikade                 | Mr. R A Jude Silva           | 077-2392522                           |
| 8                    | Lora Lanka Filling Station              | No. 08, Gampaha Road, Ekala, Jaela                | Mrs. K D M B Lora            | 077-2975238, 011-2236928              |
| 9                    | Lora Lanka Filling Station              | No. 156, Kotugoda, Jaela                          | Mr. K S Kumara Perera        | 077-2975238, 011-2236928              |
| 10                   | Ranathunga Motor Traders                | No. 285 C, Bulathkade Junction, Asgiriya, Gampaha | Mr. J K Mahesh Ranathunga    | 077-0772888                           |
| 11                   | Karunarathna Motors Auto Zoon (Pvt) Ltd | No. 188/1/A, Wilibula, Henegama                   | Mr. Anura Puspakumara        | 077-8710500, 033-2247771              |
| 12                   | Lanka Filling Station                   | No. 65/2, Ovitigama, Pugoda                       | Mr. D H A Gunawardana        | 077-6384343, 011-2404418, 011-2405250 |
| 13                   | Dissanayake Transport & Filling Station | No. 207/4/16, Wilibula, Henegama                  | Mr. D A S S Dissanayake      | 072-2212240, 033-2268935              |
| 14                   | Thilaka Traders                         | No. 571/2, Colombo Road, Nittambuwa               | Mr. K Thilakasiri            | 071-6215655, 033-2287051              |
| 15                   | Kubeeda Wheel Alignment Center          | No. 403 B, Negombo Road, Nittambuwa               | Mr. P K Chandana Wijithasiri | 071-2252563, 033-3555077              |
| 16                   | Jayasingha Auto Engineers               | Marapola, Veyangoda                               | Mr. S A K Jayasingha         | 077-3664246, 033-2289888              |
| 17                   | Lanka Filling Station                   | No. 61/A/8, Kandy Road, Weweldeniya               | Mr. S N Kandanarachchi       | 077-2097533, 033-2284482              |
| 18                   | Lanka Filling Station                   | No. 02, Pohonnaruwa, Mirigama                     | Mr. H A L K Perera           | 077-3479124, 033-2276408              |
| 19                   | K O G Enterprises                       | No. 23, Mary Bisho Mawatha, Gampaha               | Mr. L H Karunanayake         | 077-7266167, 033-2231810              |
| 20                   | Senevirathna & Sons                     | No. 09, Yakkala Road, Gampaha                     | Mr. R V Sarath Henri         | 077-1925694, 033-2222443              |
| 21                   | Jayakody Auto Sale                      | No. 251/A, Colombo Road, Gampaha                  | Mr. Chamath Jayakody         | 077-7755750, 072-2755750              |
| 22                   | Mahara M P C S                          | Mahara Junction, Kandy Road, Mahara, Kadawatha    | General Manager              | 077-2663917, 011-2925213              |
| 23                   | Mahara M P C S                          | Malwathuhiripitiya, Buthpitiya, Gampaha           | General Manager              | 077-7592562, 011-2925213              |
| 24                   | Stephans Filling Station                | No. 534, New Hunupitiya Road, Dalugama, Kelaniya  | Mr. Raja Samarathunga        | 071-4203577, 011-2913803              |

| Colombo District     |                        |  |                                |                          |
|----------------------|------------------------|--|--------------------------------|--------------------------|
| Name of the Location | Address                | Contact Person   | Contact Numbers                |                          |
| 25                   | Miyurasa Hotel & Rest  | No. 1613, Avissawella Road, Ranala, Kaduwela             | Mr. G P Gunawardana            | 077-5357057, 011-2415485 |
| 26                   | Mahagedara Hotel       | No. 121/1, High Level Road, Pahala Kosgama, Kosgama      | Mr. Upul Weligamage            | 071-5965765, 036-2254120 |
| 27                   | Red Chilee Restaurant  | Opposite Linea Aqua, Kapugoda, Hanwella                  | Mrs. I M C Kumari              | 071-4892198, 011-2406907 |
| 28                   | Cool Zoon Auto Mart    | No. 287/E/7, Hokandara Road, Thalawatugoda               | Mrs. Chandrani Wijesiriwardana | 077-7356630, 011-2774147 |
| 29                   | Right Automobiles      | No. 549/B, Kotte Road, Petakotte                         | Mr. Ranjan Pathirage           | 077-4308863, 076-7455144 |
| 30                   | S P Filling Station    | No. 456, Athurugiriya Road, Hokandara Road, Arangala     | Mr. A H Samsan Diyas           | 077-7780527, 011-2185585 |
| 31                   | Machan - Pannipitiya   | No. 179/5, Highlevel Road, Pannipitiya                   | Mr. N D N Coory                | 072-7746025, 011-2746749 |
| 32                   | Mrs. R K C Gunasekara  | No. 159/1, Pitipana Junction, Homagama                   | Mrs. R K C Gunasekara          | 071-6734608, 011-2892581 |
| 33                   | B K S Filling Station  | No. 133, New Galle Road, Moratuwa                        | Mr. B Ajith Sanjeewa           | 072-7850850, 011-2649038 |
| 34                   | Kool Land              | No. 2809, New Galle Road, Egoda Uyana, Moratuwa          | Mr. Keerthi Kumara             | 077-3014620, 011-4213337 |
| 35                   | Panadura EV Center     | No. 101, Main Street, Panadura                           | Mr. Rangana Sampath            | 071-9199696, 038-2246333 |
| 36                   | Auto Care Center       | No. 210, Galle Road, Walana, Panadura                    | Mr. Amila Abeyrathna           | 077-4797155, 038-2238393 |
| 37                   | Ranaweera Trade Center | No. 19 B, Near the Southern Highway, Siripura, Dodangoda | Mr. K K D G Ranaweera          | 071-8209055, 034-2280292 |
| 38                   | Horana EV Center       | No. 479, Panadura Road, Horana                           | Mr. R S Kahaduwa               | 071-9199696              |
| 39                   | K P K Motors           | No. 310 C, Rathnapura Road, Horana                       | Mr. K P Kumarasingha           | 077-7259793, 072-2873893 |
| 40                   | B N C Gest House       | No. 13, Galle Road, Polkatuwa, Beruwala                  | Mr. K N R de Silva             | 077-3580113, 034-2276185 |

| Southern Province    |                       |  |                          |                          |
|----------------------|-----------------------|--|--------------------------|--------------------------|
| Galle District       |                       |  |                          |                          |
| Name of the Location | Address               | Contact Person   | Contact Numbers          |                          |
| 41                   | Apex Health Care      | No. 500/C, Kahaduwa Watta Junction, Hiribura Road, Galle | Mr. K D Mahinda          | 077-4275776              |
| 42                   | Athula Auto Traders   | No. 34, Godakanda Road, Karapitiya, Galle                | Mr. A B K Weeraman       | 077-7612609, 091-2226047 |
| 43                   | Namal Filling Station | Labuduwa Road, Karapitiya, Galle                         | Mr. G K J Wimaladasa     | 071-4922382, 091-2244819 |
| 44                   | Ranjika Stores        | Akuressa Road, Paragoda, Imaduwa, Galle                  | Mr. Priyantha Rathnayake | 077-7184663              |
| 45                   | Dilmini Stores        | Kadaduwege Watta, kokmaduwa, Weligama                    | Mr. Priyantha Rathnayake | 077-7184663              |

| Matara District      |                         |  |                      |                          |
|----------------------|-------------------------|--|----------------------|--------------------------|
| Name of the Location | Address                 | Contact Person                         | Contact Numbers      |                          |
| 46                   | Sujith Auto Electricals | No. 445, Galle Road, Pamburana, Matara | Mr. Sujith Senaweera | 077-7328336, 041-2229016 |
| 47                   | Sujith Auto Electricals | No. 446, Galle Road, Pamburana, Matara | Mr. Sujith Senaweera | 077-7328336, 041-4935668 |

| Hambantota District  |                          |  |                        |                          |
|----------------------|--------------------------|--|------------------------|--------------------------|
| Name of the Location | Address                  | Contact Person   | Contact Numbers        |                          |
| 48                   | Hotel Chamila            | Kataragama   | Mr. H R K Chandrasena  | 076-7253395, 047-2235217 |
| 49                   | Amaraweera Industries    | Molakepupathana,<br>Tissamaharama                            | Mr. D A Chularathna    | 071-8440962, 047-2239599 |
| 50                   | W K Transport (Pvt) Ltd  | Ratalawewa, 2 <sup>nd</sup> Road,<br>Miriggawila, Hambantota | Mr. D Viswa Kularathna | 071-3364677              |
| 51                   | W K Transport (Pvt) Ltds | Miriggawila, Hambantota                                      | Mr. D Viswa Kularathna | 071-3364677              |
| 52                   | Mr. Dilan Gunawardana    | No. 22, Miriggawila,<br>Hambantota                           | Mr. Dilan Gunawardana  | 077-4610000, 047-2222323 |
| 53                   | Chamila Motors           | Port Access, Hambantota                                      | Mr. Chamila Prashad    | 077-6404088              |
| 54                   | Ruhunu Lanka IOC         | Tangalle Road, Ambalantota                                   | Mr. A A M Nanayakkara  | 077-7909778, 047-2223401 |
| 55                   | Senumi Automobiles       | Tissa Road, Walava,<br>Ambalantota                           | Mrs. Malsha Ravihari   | 077-4610000              |

| North Western Province |                           |  |                         |                          |
|------------------------|---------------------------|--|-------------------------|--------------------------|
| Puttalam District      |                           |  |                         |                          |
| Name of the Location   | Address                   | Contact Person                           | Contact Numbers         |                          |
| 56                     | Binasha Trading (Pvt) Ltd | Nainamadama East,<br>Nainamadama         | Mr. Franklin Fernando   | 077-7554732, 031-2250344 |
| 57                     | Lanka Filling Station     | Chilaw Road, Katuneriya                  | Mr. W W A K J Fernando  | 077-3406810, 031-2245343 |
| 58                     | Premith Service Station   | No. 24/1, New Road,<br>Wennappuwa        | Mr. J Punsiri Jayaweera | 077-6038080              |
| 59                     | Mr. Susil Antony Thisera  | No. 20, Thalawila Church,<br>Thalawila   | Mr. Susil Antony        | 071-1932910              |
| 60                     | Mr. Susil Antony Thisera  | Near the St. Anna's School,<br>Thalawila | Mr. Susil Antony        | 071-1515459              |

| Puttalam District    |                                     |  |                        |  |
|----------------------|-------------------------------------|--|------------------------|--|
| Name of the Location | Address                             | Contact Person   | Contact Numbers        |  |
| 61                   | Lanka Filling Station –<br>Giriulla | Nalla, Mathikade Junction,<br>Giriulla                             | Mr. P M S Pathirage    | 071-6892645, 071-6892651,<br>037-2288777 |
| 62                   | Mr. P V C A Vithanage               | No. 4/18, 'Uthsahaya', Sri<br>Sumangala Mawatha,<br>Polgahawela    | Mr. P V C A Vithanage  | 077-3414173, 037-2241546                 |
| 63                   | New Jayasekara Auto<br>Motors       | No. 209, Wilgoda Circular<br>Road, Kurunegala                      | Mr. Sunil Devasurendra | 071-2769308, 037-2231366                 |
| 64                   | S S Bakers                          | "Ambasevana", Puttalam<br>Road, Kelimunai,<br>Mahakeliya, Maspotha | Mr. N K Arunashantha   | 077-8504273, 037-2239594                 |
| 65                   | Darshana Lanka Battery<br>Center    | Colombo Road, Waduragala,<br>Kurunegala                            | Mr. A D S Puspakumara  | 077-7515990                              |
| 66                   | Duminda AC & Electrical<br>Service  | Katugampala Road,<br>Labuyaya, Kuliyaipitiya                       | Mr. Duminda Nawarathna | 077-2778956, 037-2281764                 |
| 67                   | Wenuja Tyre Mart                    | No. 999, Kurunegala Road,<br>Alawwa                                | Mr. J A A P Jayasuriya | 077-5000633                              |

| Sabaragamuwa Province |                           |   |                       |                          |
|-----------------------|---------------------------|---|-----------------------|--------------------------|
| Kegalle District      |                           |   |                       |                          |
| Name of the Location  | Address                   | Contact Person                                | Contact Numbers       |                          |
| 68                    | Warakapola Tyre Service   | No. 246, Kandy Road,<br>Warakapola            | Mr. R M P Rajapaksha  | 077-6747084, 035-2267383 |
| 69                    | Tilanis Family Restaruant | Kandy Road, Mangalagama,<br>Molagoda, Kegalle | Mr. E H T A Pathirana | 077-2351223, 035-2228961 |
| 70                    | Prasanna Motor Engineers  | No. 204, Kandy Road,<br>Meepitiya, Kegalle    | Mr. A P S Aluthgama   | 077-6588561, 035-2221567 |

| Rathnapura District  |                       |   |                                      |                                       |
|----------------------|-----------------------|---|--------------------------------------|---------------------------------------|
| Name of the Location | Address               | Contact Person                                  | Contact Numbers                      |                                       |
| 71                   | New Lakmini Tyre Mart | No. 207, Haputale Road, Batugedara, Rathnapura  | Mr. K P C Lalindra Karthiarachchi    | 071-6270642, 045-2232980              |
| 72                   | D W Filling Station   | Ganegama, Pelmadulla                            | Mrs. P D Wanniarachchi/Mr. D Charith | 071-1494311, 071-1494249, 045-2274471 |
| 73                   | Sisira Food Cabin     | No. 183/1, Haputale Road, Kiridigala, Balangoda | Mr. N D Sisil                        | 077-7411133, 045-2286660              |

| Central Province     |                        |   |                       |                                       |
|----------------------|------------------------|---|-----------------------|---------------------------------------|
| Kandy District       |                        |   |                       |                                       |
| Name of the Location | Address                | Contact Person  | Contact Numbers       |                                       |
| 74                   | Unic Service Station   | Colombo Road, Pilimathalawa                                   | Mr. L B K Puspadeniya | 071-8286234, 071-3692008              |
| 75                   | Sunimali Brassware     | Gadaladeniya Road, Pilimathalawa                              | Mr. J M G Ekanayaka   | 077-6567884, 081-2577378              |
| 76                   | Lanka Filling Station  | No. 08, B, Kandy Rod, Weligalla, Geliyoa                      | Mr. Harsha Gardihewa  | 077-8332613, 081-2312394              |
| 77                   | Sun Auto Electricals   | No. 138, Kandy Road, Weligalla, Geliyoa                       | Mr. S M Sooriyadasa   | 077-7276797, 081-5624114              |
| 78                   | The Kichan Café        | Nuwaraeliya Road, Store Field, Gampola                        | Mr. S G Jayasingha    | 077-6800783, 081-2350078              |
| 79                   | Meepitiya Motors       | No. 34, Ginigathhena Road, Meepitiya, Nawalapitiya            | Mr. A C A Goffor      | 077-6624615, 054-2222098              |
| 80                   | Single Tree Hotel      | No. 8/1, Opposite Gregory Lake, Haddan Hill Road, Nuwaraeliya | Mr. Krishantha Aruna  | 077-3560116, 072-5166487, 052-2223009 |
| 81                   | Single Tree Restaruant | No. 8, Opposite Gregory Lake, Haddan Hill Road, Nuwaraeliya   | Mr. Krishantha Aruna  | 077-3560116, 072-5166487, 052-2223009 |

| Matale District      |                            |                              |                        |                          |
|----------------------|----------------------------|------------------------------|------------------------|--------------------------|
| Name of the Location | Address                    | Contact Person               | Contact Numbers        |                          |
| 82                   | Marutheluwa Medical Stores | No. 860, Aluviharaya, Matale | Dr. A M L B Abeysingha | 071-3347105, 066-2223776 |

| North Central Province |   |                                       |                          |                                       |
|------------------------|---|---------------------------------------|--------------------------|---------------------------------------|
| Anuradhapura District  |   |                                       |                          |                                       |
| Name of the Location   | Address                                       | Contact Person                        | Contact Numbers          |                                       |
| 83                     | Deepthi Motors                                | No. 334/108, Main Street, Anurdhapura | Mr. Deepthi Uyanwatta    | 077-5123950, 025-2222770              |
| 84                     | Deepthi Filling Station and Service (Pvt) Ltd | Puttalam Road, Anuradhapura           | Miss. Ramesha Uyanwatta  | 078-9392821, 025-2222516, 025-2223934 |
| 85                     | Kold Group (Pvt) Ltd                          | No. 715, 2nd Stage, Anuradhapura      | Mr. L A L H J Abeysingha | 077-7304428, 025-2235595              |

| Polonnaruwa District |                 |   |                     |                                       |
|----------------------|-----------------|---|---------------------|---------------------------------------|
| Name of the Location | Address         | Contact Person                                      | Contact Numbers     |                                       |
| 86                   | Pulathishe Farm | No. 07, Batticaloa Road, Kaduruwela, Polonnaruwa    | Mr. W Shantha       | 077-2225815, 077-8971343, 027-2052257 |
| 87                   | Pulathishe Farm | No. 163/1, Monarathenna, Palugasdamana, Polonnaruwa | Mr. W Shantha       | 077-2225815, 077-8971343, 027-2052257 |
| 88                   | Suja Holiday    | 24 Mile Post, Badiwewa, Jayanthipura, Polonnaruwa   | Mr. A H T Jayatissa | 071-4490245                           |

| Northern Province    |                       |  |   |
|----------------------|-----------------------|--|---|
| Vanni District       |                       |  |   |
| Name of the Location | Address               | Contact Person                               | Contact Numbers                                     |
| 89                   | A M T Service Station | Munrumurippu, Kandy Road, ( A 09 ), Vavuniya | Mr. Chaminda Senanayake<br>024-4925902, 077-2019833 |
| 90                   | A M T Filling Station | Munrumurippu, Kandy Road, ( A 09 ), Vavuniya | Mr. Chaminda Senanayake<br>024-5679570, 077-7666620 |

| Uva Province         |                       |   |  |
|----------------------|-----------------------|---|--|
| Badulla District     |                       |   |  |
| Name of the Location | Address               | Contact Person                                  | Contact Numbers  |
| 91                   | Victory Motor Service | Padiyathalawa Road, Mahiyangana                 | Mr. T A Nawarathna<br>077-1705980, 077-7731115, 055-2257315      |
| 92                   | N S Motors            | No. 01/B, Badulla Road, Mahiyangana             | Mr. H S R Ranjith<br>077-6916887, 055-5612686                    |
| 93                   | T R Engineering       | No. 05, Badulupitiya Road, Badulla              | Mrs. M D C K Wijesingha<br>071-8244918, 071-4467728, 055-2222571 |
| 94                   | W N P Builders        | No. 4/A, Badulla Road, Thanthiriya, Bandarawela | Mr. P S Rajapaksa<br>077-6991378, 057-2225058                    |

## APPENDIX V

### IEEE 33 node test feeder data:

| Line Number | Sending Bus | Receiving Bus | Real Power (kW) | Reactive Power (kVar) | Resistance (ohm) | Reactance (ohm) |
|-------------|-------------|---------------|-----------------|-----------------------|------------------|-----------------|
| 1           | 1           | 2             | 100             | 60                    | 0.0922           | 0.0477          |
| 2           | 2           | 3             | 90              | 40                    | 0.4930           | 0.2511          |
| 3           | 3           | 4             | 120             | 80                    | 0.3660           | 0.1864          |
| 4           | 4           | 5             | 60              | 30                    | 0.3811           | 0.1941          |
| 5           | 5           | 6             | 60              | 20                    | 0.8190           | 0.7070          |
| 6           | 6           | 7             | 200             | 100                   | 0.1872           | 0.6188          |
| 7           | 7           | 8             | 200             | 100                   | 1.7114           | 1.2531          |
| 8           | 8           | 9             | 60              | 20                    | 1.0300           | 0.7400          |
| 9           | 9           | 10            | 60              | 20                    | 1.0400           | 0.7400          |
| 10          | 10          | 11            | 45              | 30                    | 0.1966           | 0.0650          |
| 11          | 11          | 12            | 60              | 35                    | 0.3744           | 0.1238          |
| 12          | 12          | 13            | 60              | 35                    | 1.4680           | 1.1550          |
| 13          | 13          | 14            | 120             | 80                    | 0.5416           | 0.7129          |
| 14          | 14          | 15            | 60              | 10                    | 0.5910           | 0.5260          |
| 15          | 15          | 16            | 60              | 20                    | 0.7463           | 0.5450          |
| 16          | 16          | 17            | 60              | 20                    | 1.2890           | 1.7210          |
| 17          | 17          | 18            | 90              | 40                    | 0.7320           | 0.5740          |
| 18          | 2           | 19            | 90              | 40                    | 0.1640           | 0.1565          |
| 19          | 19          | 20            | 90              | 40                    | 1.5042           | 1.3554          |
| 20          | 20          | 21            | 90              | 40                    | 0.4095           | 0.4787          |
| 21          | 21          | 22            | 90              | 40                    | 0.7089           | 0.9373          |
| 22          | 3           | 23            | 90              | 50                    | 0.4512           | 0.3083          |
| 23          | 23          | 24            | 420             | 200                   | 0.8980           | 0.7091          |
| 24          | 24          | 25            | 420             | 200                   | 0.8960           | 0.7011          |
| 25          | 6           | 26            | 60              | 25                    | 0.2030           | 0.1034          |
| 26          | 26          | 27            | 60              | 25                    | 0.2842           | 0.1447          |
| 27          | 27          | 28            | 60              | 20                    | 1.0590           | 0.9337          |
| 28          | 28          | 29            | 120             | 70                    | 0.8042           | 0.7006          |
| 29          | 29          | 30            | 200             | 600                   | 0.5075           | 0.2585          |
| 30          | 30          | 31            | 150             | 70                    | 0.9744           | 0.9630          |
| 31          | 31          | 32            | 210             | 100                   | 0.3105           | 0.3619          |
| 32          | 32          | 33            | 60              | 40                    | 0.3410           | 0.5302          |

## APPENDIX VI

### LECO Distribution Feeder Data:

- *Feeder 1* Transformer Details:

|                |   |        |
|----------------|---|--------|
| Transformer ID | : | AZ0202 |
| Capacity (kVA) | : | 160    |
| Base Year      | : | 2015   |
| Location       | : | Kotte  |
| Branch         | : | Kotte  |
| CSC            | : | Kotte  |
| ADMD (KVA)     | : | 0.38   |
| Power Factor   | : | 0.90   |
| Growth (%)     | : | 3      |

| Feeder      | Pole ID | Conductor     | Pole Span (m) | Nos. of connections | Power (kVA) |
|-------------|---------|---------------|---------------|---------------------|-------------|
| <i>F1</i>   |         | <b>ABC 70</b> |               |                     |             |
|             | EN5     |               | 0             | 0                   | 0.000       |
|             | EN5/1   |               | 7             | 8                   | 3.040       |
|             | EN5/2   |               | 36            | 9                   | 3.420       |
|             | EN5/3   |               | 35            | 1                   | 0.380       |
|             | EN5/4   |               | 11            | 9                   | 3.420       |
|             | EN5/5   |               | 39            | 11                  | 4.180       |
|             | EN5/6   |               | 6             | 9                   | 3.420       |
|             | EN5/6-1 |               | 25            | 3                   | 1.140       |
|             | EN5/7   |               | 8             | 3                   | 1.140       |
|             | EN5/7-1 |               | 14            | 11                  | 4.180       |
|             | EN5/8   |               | 11            | 5                   | 1.900       |
|             | EN5/9   |               | 32            | 11                  | 4.180       |
|             | EN5/10  |               | 31            | 7                   | 2.660       |
|             | EN5/11  |               | 37            | 12                  | 4.560       |
|             | EN5/12  |               | 20            | 15                  | 5.700       |
| <i>F1-1</i> |         | <b>ABC 50</b> |               |                     |             |
|             | EN5/8A  |               | 17            | 0                   | 0.000       |
|             | EN5/8B  |               | 11            | 0                   | 0.000       |
| <i>F1-2</i> |         | <b>ABC 50</b> |               |                     |             |
|             | EN5/10A |               | 27            | 5                   | 1.900       |
|             | EN5/10B |               | 12            | 7                   | 2.660       |
|             | EN5/10C |               | 22            | 10                  | 3.800       |
|             | EN5/10D |               | 7             | 0                   | 0.000       |
|             | EN5/10E |               | 13            | 1                   | 0.380       |
| <i>F2</i>   |         | <b>ABC 50</b> |               |                     |             |
|             | EN6     |               | 27            | 16                  | 6.080       |
|             | EN7     |               | 33            | 13                  | 4.940       |
|             | EN7-1   |               | 22            | 1                   | 0.380       |
|             | EN8     |               | 18            | 4                   | 1.520       |



| <b>Feeder</b> | <b>Pole ID</b> | <b>Conductor</b> | <b>Pole Span (m)</b> | <b>Nos. of connections</b> | <b>Power (kVA)</b> |
|---------------|----------------|------------------|----------------------|----------------------------|--------------------|
| <i>F2-1</i>   |                | <b>ABC 50</b>    |                      |                            |                    |
|               | EN7/1          |                  | 38                   | 6                          | 2.280              |
|               | EN7/2          |                  | 14                   | 3                          | 1.140              |
|               | EN7/3          |                  | 31                   | 3                          | 1.140              |
|               | EN7/4          |                  | 36                   | 5                          | 1.900              |
|               | EN7/5          |                  | 30                   | 5                          | 1.900              |
|               | EN7/6          |                  | 23                   | 8                          | 3.040              |
|               | EN7/7          |                  | 43                   | 6                          | 2.280              |
|               | EN7/8          |                  | 9                    | 8                          | 3.040              |
|               | EN7/9          |                  | 11                   | 2                          | 0.760              |
|               | EN7/10         |                  | 22                   | 8                          | 3.040              |
| <i>F2-2</i>   |                | <b>ABC 50</b>    |                      |                            |                    |
|               | EN8/1          |                  | 2                    | 14                         | 5.320              |
|               | EN8/2          |                  | 24                   | 0                          | 0.000              |
|               | EN8/3          |                  | 29                   | 13                         | 4.940              |
|               |                |                  |                      |                            |                    |
| <i>F3</i>     |                | <b>ABC 50</b>    |                      |                            |                    |
|               | EN4/1          |                  | 25                   | 5                          | 1.900              |
|               | EN4            |                  | 28                   | 6                          | 2.280              |
|               | EN3-1          |                  | 14                   | 8                          | 3.040              |
|               | EN3            |                  | 33                   | 19                         | 7.220              |
|               | EN2-1          |                  | 26                   | 10                         | 3.800              |
|               | EN2            |                  | 20                   | 7                          | 2.660              |
|               | EN1            |                  | 12                   | 8                          | 3.040              |
|               | EN1A           |                  | 10                   | 5                          | 1.900              |
|               | EN1B           |                  | 5                    | 15                         | 5.700              |
|               | EN1C           |                  | 15                   | 3                          | 1.140              |
|               | EN1D           |                  | 19                   | 1                          | 0.380              |
|               | EN1E           |                  | 24                   | 1                          | 0.380              |
|               | EN1F           |                  | 19                   | 0                          | 0.000              |
|               | EN1G           |                  | 23                   | 7                          | 2.660              |
|               | EWA*2          |                  | 27                   | 0                          | 0.000              |
|               | EWA*1          |                  | 15                   | 0                          | 0.000              |
|               | EWA            |                  | 7                    | 0                          | 0.000              |
|               | EN1J           |                  | 37                   | 5                          | 1.900              |
|               | EN1K           |                  | 18                   | 0                          | 0.000              |
|               | EN1L           |                  | 24                   | 11                         | 4.180              |
| <i>F3-1</i>   |                | <b>ABC 50</b>    |                      |                            |                    |
|               | EN1F1          |                  | 24                   | 8                          | 3.040              |
|               | EN1F2          |                  | 24                   | 10                         | 3.800              |
| <i>F3-2</i>   |                | <b>ABC 50</b>    |                      |                            |                    |
|               | EN1H1          |                  | 38                   | 6                          | 2.280              |
| <b>Total</b>  | <b>62</b>      |                  |                      | <b>387</b>                 | <b>147.060</b>     |

- *Feeder 2 Transformer Details:*

Transformer ID : AZ0203  
Capacity (kVA) : 160  
Base Year : 2015  
Location : Kotte  
Branch : Kotte  
CSC : Nawala  
ADMD (kVA) : 0.41  
Power Factor : 0.9  
Growth (%) : 3

| Feeder      | Pole ID  | Conductor     | Pole Span (m) | Nos. of connections | Power (kVA) |
|-------------|----------|---------------|---------------|---------------------|-------------|
| <b>F1</b>   |          | <b>ABC 70</b> |               |                     |             |
|             | EN15     |               | 0             | 2                   | 0.820       |
|             | EN15/1   |               | 12            | 8                   | 3.280       |
|             | EN15/2   |               | 18            | 2                   | 0.820       |
|             | EN15/3   |               | 22            | 1                   | 0.410       |
|             | EN15/4   |               | 24            | 5                   | 2.050       |
|             | EN15/5   |               | 9             | 3                   | 1.230       |
|             | EN15/6   |               | 26            | 7                   | 2.870       |
|             | EN15/7   |               | 33            | 4                   | 1.640       |
|             | EN15/8   |               | 16            | 1                   | 0.410       |
|             | EN15/9   |               | 20            | 7                   | 2.870       |
|             | EN16/1/7 |               | 32            | 0                   | 0.000       |
| <b>F1-1</b> |          | <b>ABC 50</b> |               |                     |             |
|             | EN15/7/1 |               | 6             | 11                  | 4.510       |
|             | EN15/7/2 |               | 24            | 7                   | 2.870       |
| <b>F2</b>   |          | <b>ABC 70</b> |               |                     |             |
|             | EN14-1   |               | 26            | 6                   | 2.460       |
|             | EN14     |               | 18            | 8                   | 3.280       |
|             | EN14/1   |               | 13            | 0                   | 0.000       |
|             | EN14/1/1 |               | 3             | 0                   | 0.000       |
|             | EN13     |               | 9             | 8                   | 3.280       |
|             | EN12     |               | 38            | 2                   | 0.820       |
|             | EN11-2   |               | 7             | 12                  | 4.920       |
|             | EN11-1   |               | 15            | 5                   | 2.050       |
|             | EN11     |               | 22            | 10                  | 4.100       |
|             | EN10     |               | 25            | 4                   | 1.640       |
|             | EN9      |               | 19            | 0                   | 0.000       |
|             | EN8/1    |               | 30            | 0                   | 0.000       |
|             | EN8      |               | 2             | 3                   | 1.230       |
|             | EN8/2    |               | 24            | 0                   | 0.000       |
|             |          |               |               |                     |             |
| <b>F2-2</b> |          | <b>ABC 50</b> |               |                     |             |
|             | EN11-2/1 |               | 42            | 0                   | 0.000       |
|             | EN11-2/2 |               | 13            | 8                   | 3.280       |
|             | EN11-2/3 |               | 26            | 11                  | 4.510       |
|             | EN11-2/4 |               | 7             | 9                   | 3.690       |

| Feeder        | Pole ID     | Conductor     | Pole Span (m) | Nos. of connections | Power (kVA)   |
|---------------|-------------|---------------|---------------|---------------------|---------------|
|               | EN11-2/5    |               | 29            | 6                   | 2.460         |
|               | EN11-2/6    |               | 31            | 2                   | 0.820         |
|               | EN11-2/6/1  |               | 29            | 2                   | 0.820         |
|               | EN11-2/6/2  |               | 6             | 0                   | 0.000         |
|               | EN11-2/6/3  |               | 20            | 9                   | 3.690         |
|               | EN11-2/6/4  |               | 21            | 6                   | 2.460         |
|               | EN11-2/6/5  |               | 40            | 4                   | 1.640         |
| <b>F2-2-1</b> |             | <b>ABC 50</b> |               |                     |               |
|               | EN11-2/3/1  |               | 28            | 11                  | 4.510         |
| <b>F2-2-2</b> |             | <b>ABC 50</b> |               |                     |               |
|               | EN11-2/5/1  |               | 27            | 6                   | 2.460         |
|               | EN11-2/5/2  |               | 27            | 0                   | 0.000         |
| <b>F2-2-3</b> |             | <b>ABC 50</b> |               |                     |               |
|               | EN11-2/7    |               | 10            | 8                   | 3.280         |
| <b>F2-2-4</b> |             | <b>ABC 50</b> |               |                     |               |
|               | EN11-2/6/2A |               | 13            | 4                   | 1.640         |
|               | EN11-2/6/2B |               | 34            | 3                   | 1.230         |
|               | EN11-2/6/2C |               | 34            | 3                   | 1.230         |
|               | EN11-2/6/2D |               | 7             | 6                   | 2.460         |
| <b>F2-3</b>   |             | <b>ABC 50</b> |               |                     |               |
|               | EN9A        |               | 12            | 7                   | 2.870         |
|               | EN9B        |               | 28            | 1                   | 0.410         |
|               | EN9C        |               | 15            | 5                   | 2.050         |
| <b>F3</b>     |             | <b>ABC 70</b> |               |                     |               |
|               | EN15-1      |               | 14            | 3                   | 1.230         |
|               | EN16        |               | 35            | 9                   | 3.690         |
|               | EN16/1      |               | 17            | 6                   | 2.460         |
|               | EN16/2      |               | 11            | 9                   | 3.690         |
|               | EN17        |               | 15            | 2                   | 0.820         |
| <b>F3-1</b>   |             | <b>ABC 50</b> |               |                     |               |
|               | EN16A       |               | 14            | 10                  | 4.100         |
|               | EN16B       |               | 36            | 5                   | 2.050         |
|               | EN16C       |               | 38            | 7                   | 2.870         |
| <b>Total</b>  | <b>57</b>   |               |               | <b>278</b>          | <b>113.98</b> |

- *Feeder 3 Transformer Details:*

Transformer ID : AZ0221  
 Capacity (kVA) : 250  
 Base Year : 2015  
 Location : Pitakotte  
 Branch : Kotte  
 CSC : Kotte  
 ADMD (KVA) : 0.45  
 Power Factor : 0.90  
 Growth (%) : 3

| Feeder      | Pole ID   | Conductor     | Pole Span (m) | Nos. of connections | Power (kVA) |
|-------------|-----------|---------------|---------------|---------------------|-------------|
| <b>F1</b>   |           | <b>ABC 50</b> |               |                     |             |
|             | EN45      |               | 0             | 8                   | 3.600       |
|             | EN45-1    |               | 34            | 5                   | 2.250       |
|             | EN46      |               | 12            | 23                  | 10.350      |
|             | EN46-1    |               | 17            | 14                  | 6.300       |
|             | EN47      |               | 26            | 10                  | 4.500       |
|             | EN47-1    |               | 29            | 7                   | 3.150       |
|             | EN48      |               | 31            | 2                   | 0.900       |
| <b>F1-1</b> |           | <b>ABC 50</b> |               |                     |             |
|             | EN45-1A   |               | 17            | 1                   | 0.450       |
|             | EN45-1B   |               | 38            | 7                   | 3.150       |
| <b>F1-2</b> |           | <b>ABC 50</b> |               |                     |             |
|             | EN47A     |               | 9             | 3                   | 1.350       |
|             | EN47B     |               | 28            | 3                   | 1.350       |
|             | EN47C     |               | 33            | 9                   | 4.050       |
|             | EN47D     |               | 36            | 10                  | 4.500       |
|             | EN47E     |               | 27            | 18                  | 8.100       |
|             | EN46F     |               | 24            | 14                  | 6.300       |
| <b>F1-3</b> |           | <b>ABC 50</b> |               |                     |             |
|             | EN47-1/1  |               | 26            | 10                  | 4.500       |
|             | EN47-1/2  |               | 30            | 2                   | 0.900       |
|             | EN47-1/3  |               | 19            | 10                  | 4.500       |
|             | EN47-1/4  |               | 20            | 17                  | 7.650       |
|             | EN47-1/5  |               | 35            | 7                   | 3.150       |
|             | EN47-1/6  |               | 21            | 3                   | 1.350       |
|             | EN47-1/7  |               | 13            | 5                   | 2.250       |
|             | EN47-1/8  |               | 33            | 3                   | 1.350       |
| <b>F1-4</b> |           | <b>ABC 50</b> |               |                     |             |
|             | EN47-1/5A |               | 24            | 0                   | 0.000       |
| <b>F2</b>   |           | <b>ABC 70</b> |               |                     |             |
|             | EN44-1    |               | 26            | 14                  | 6.300       |
|             | EN44      |               | 20            | 21                  | 9.450       |
|             | EN43      |               | 24            | 1                   | 0.450       |
|             | EN42      |               | 29            | 16                  | 7.200       |
|             | EN41      |               | 26            | 5                   | 2.250       |
|             | EN40      |               | 37            | 1                   | 0.450       |
| <b>F2-1</b> |           | <b>ABC 50</b> |               |                     |             |
|             | EN44-1/1  |               | 5             | 0                   | 0.000       |
|             | BUILD2    |               | 5             | 0                   | 0.000       |
| <b>F2-2</b> |           | <b>ABC 50</b> |               |                     |             |
|             | EN42A     |               | 19            | 1                   | 0.450       |
|             | EN42B     |               | 34            | 7                   | 3.150       |
|             | EN42C     |               | 33            | 1                   | 0.450       |
|             | EN42D     |               | 28            | 2                   | 0.900       |
|             | EN42E     |               | 21            | 5                   | 2.250       |
|             | EN42F     |               | 11            | 3                   | 1.350       |
|             | EN42G     |               | 26            | 9                   | 4.050       |
|             | EN42H     |               | 18            | 1                   | 0.450       |
|             | EN42J     |               | 22            | 5                   | 2.250       |
|             | EN42K     |               | 41            | 3                   | 1.350       |

| Feeder       | Pole ID   | Conductor     | Pole Span (m) | Nos. of connections | Power (kVA)    |
|--------------|-----------|---------------|---------------|---------------------|----------------|
|              | EN42L     |               | 16            | 1                   | 0.450          |
| <b>F2-3</b>  |           | <b>ABC 70</b> |               |                     |                |
|              | EN41/1    |               | 48            | 0                   | 0.000          |
|              | EN41/2    |               | 7             | 11                  | 4.950          |
|              | EN41/3    |               | 37            | 4                   | 1.800          |
|              | EN41/4    |               | 33            | 8                   | 3.600          |
|              | EN41/5    |               | 12            | 2                   | 0.900          |
|              | EN41/6    |               | 18            | 5                   | 2.250          |
|              | EN41/7    |               | 14            | 11                  | 4.950          |
| <b>F2-4</b>  |           | <b>ABC 50</b> |               |                     |                |
|              | EN40A     |               | 13            | 0                   | 0.000          |
| <b>Total</b> | <b>51</b> |               |               | <b>328</b>          | <b>147.600</b> |