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## Fletcher Fold - EV Charging Cost Appraisal

### Approved Document S: Infrastructure for the charging of electric vehicles

Requirement S1 and regulation 44D: Electric Vehicle Charging provisions for new residential buildings

#### A. Introduction

Approved Document S outlines that the connection cost for installing an electric vehicle charge point is the extra cost of the incoming electrical supply per electric vehicle charge point connection compared to the cost without electric vehicle charge points.

Where the connection cost is greater than **£3600 per electric vehicle charge point connection**, the maximum number of electric vehicle charge points should be installed before the extra grid connection costs exceed £3600 per electric vehicle charge point connection.

On a site where multiple new dwellings are planned (for example, where they are within the same notice/plans) an average connection cost may be used

Section 1, Clause 1.7 of AD:S states the following:

- 1.7 *To show that the connection cost is greater than £3600 at least two formal quotes should be given to the building control body during the notice/plans stage as follows.*
- a. At least one quote should be from a distribution network operator.*
  - b. Quotes should clearly show all of the following.*
    - i. The total connection costs for electrical infrastructure without electric vehicle charge points for all dwellings, as an average cost per dwelling.*
    - ii. The total connection costs with electric vehicle charge points for all dwellings, as an average cost per dwelling.*
    - iii. The average additional connection costs per electric vehicle charge point per dwelling if electric vehicle charge points are installed for all dwellings with associated parking spaces.*
    - iv. The maximum number of electric vehicle charge points that can be installed before the extra grid connections costs exceed £3600 per charge point per dwelling.*

*NOTE: For new dwellings where there is no requirement to install an electric vehicle charge point, cable routes may be required; see paragraph 1.2.*



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## B. Project Context

During discussions between the project engineers and Aptus, the maximum available load for the site was confirmed as **155kVA without the need for a sub-station**.

This load is divided as follows;

- 135kVA for all dwellings (39No. Apartments and 4No. Bungalows at 3.15KVA each)
- 20kVA for the landlord supply.

The landlord supply of 20 kVA will cover the following;

- 2No. Passenger Lifts
- Lighting and power within communal areas
- Panel heaters serving communal areas
- 1No. Standalone EV Charger

Regarding EV chargers, this 155kVA load contains 1No. 7.4kW EVC for each bungalow (4No. total), fed from their respective supplies, and 1No. 7.4kW EVC supplying the apartment block, bringing the development total up to 5No. EVCs.

For the apartment block, there are a total of 20 parking spaces, which would be deemed as associated parking spaces for the development under Approved Document S.

To provide each of these extra 19 spaces with a 7.4kW EVC, an additional load of approximately **156kVA** would be required, which would increase the overall load of the development to **311kVA** which is in excess of the available load and would require a substation.

In addition to this, having even one additional EVC would require a substation to be provided, as all of the available 155kVA is being used and there is no capacity for additional EVCs.

## C. Obtained Quotes

In accordance with Requirement S1 and Regulation 44D of Building Regulations Part S, 2No. quotations have been acquired from Aptus, one for 155kVA and one for a 500kVA substation, which is the smallest substation that can be provided.

The split electrical quotations break down to:

|                                |                    |
|--------------------------------|--------------------|
| <b>Quote 1:</b> 155 kVA supply | <b>£67,315.30</b>  |
| <b>Quote 2:</b> 500 kVA supply | <b>£153,009.81</b> |

Therefore, the difference between these quotes is

- **£85,694.51** to provide a further 19No. EV Charging Bays



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#### D. EV Charger Calculation

- i. The total connection costs for all dwellings, as an average cost **per proposed parking space** (19 proposed spaces)

500kVA supply cost difference: **£85,694.51**

Cost per parking space (19): **£4,510.24** per space (19 spaces)

**Exceeds the £3600 limit**

- ii. The total connection costs for all dwellings, as an average cost **for 1No. additional EVC** (as this will still require a substation to be provided)

500kVA supply cost difference: **£85,694.51**

Cost per parking space (1): **£85,694.51**

**Exceeds the £3600 limit**

The above calculations are based solely on the costs quoted by Aptus and do not include the additional builders work costs that will need to be provided by the main contractor on site, this includes but is not limited to the construction of the substation enclosure and necessary civils works (excavation, duct lay, sand surround and reinstatement).

#### E. Future Proofing

As outlined within the Approved Document Part S, an allowance has been made for providing EV charging cable ducts to the additional apartment EV chargers, which constitutes of the remaining 19 apartment spaces on this development.

At the present time the power capacity is limited to 155kVA but should additional capacity be provided at a future date then it may be possible to retrospectively add the charging units.

This would need to be based on studies by an appointed MEP consultant, in discussion with utility providers and procurement of new quotations.



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## **F. Conclusion**

The calculations presented in this document are based upon the received quotes from Aptus in July 2026. As stated in section B, providing an extra 19No. chargers would require an additional load of 156kVA. This is calculated by using the calculation:

$$kVA = kW / PF$$

For this particular scheme, this works out as:

$$kVA = (7.4 \times 19) / 0.9$$

So therefore:

$$kVA = 156.222$$

Providing additional EV chargers to the remaining 19 apartment spaces would then trigger the uplift of £85,694.51, bringing the quote value from £67,315.30 up to £153,009.81.

Our calculations outline that providing any additional EV Chargers would far exceed the £3600 per space cost as outlined in Part S and therefore the option to provide EV charging cable ducts to the remaining 19 apartment spaces is the most cost effective yet compliant option.

The design and proposals have sought to make future provision through installation of below ground ducting should capacity become available in the local area, in the future.