

Cost Apportionment Factor (CAF)

DNOs maintain Common Connection Charging Methodology Statements setting out principles and examples of how connection charges are calculated. This includes where reinforcement costs are to be apportioned between the connecting customer and the DNO, i.e. work required to connect the customer creates additional capacity above what is required for the customer.

The driver for the reinforcement costs can be thermal, voltage or fault level. The new connection requires reinforcement of the network due to limitations in one or more of these factors.

- 'Security CAF' where the costs are driven by either thermal capacity or voltage (or both), and
- 'Fault Level CAF' where the costs are driven by Fault Level restrictions.

The apportioned costs paid by the customer refers to the requirements of their connection as a proportion of the additional capacity created by the reinforcement:

$$\text{Security CAF} = \frac{\text{Required Capacity}}{\text{New Network Capacity}} \times 100\% \text{ (max 100\%)}$$

$$\text{Fault Level CAF} = 3 \times \frac{\text{Fault Level Contribution from Connection}}{\text{New Fault Level Capacity}} \times 100\% \text{ (max 100\%)}$$

For some schemes there may be interaction between the two rules. In such cases, the 'Security' CAF will be applied to costs that are driven by the security requirement and 'Fault Level CAF' will be applied to costs that are driven by Fault Level requirements.

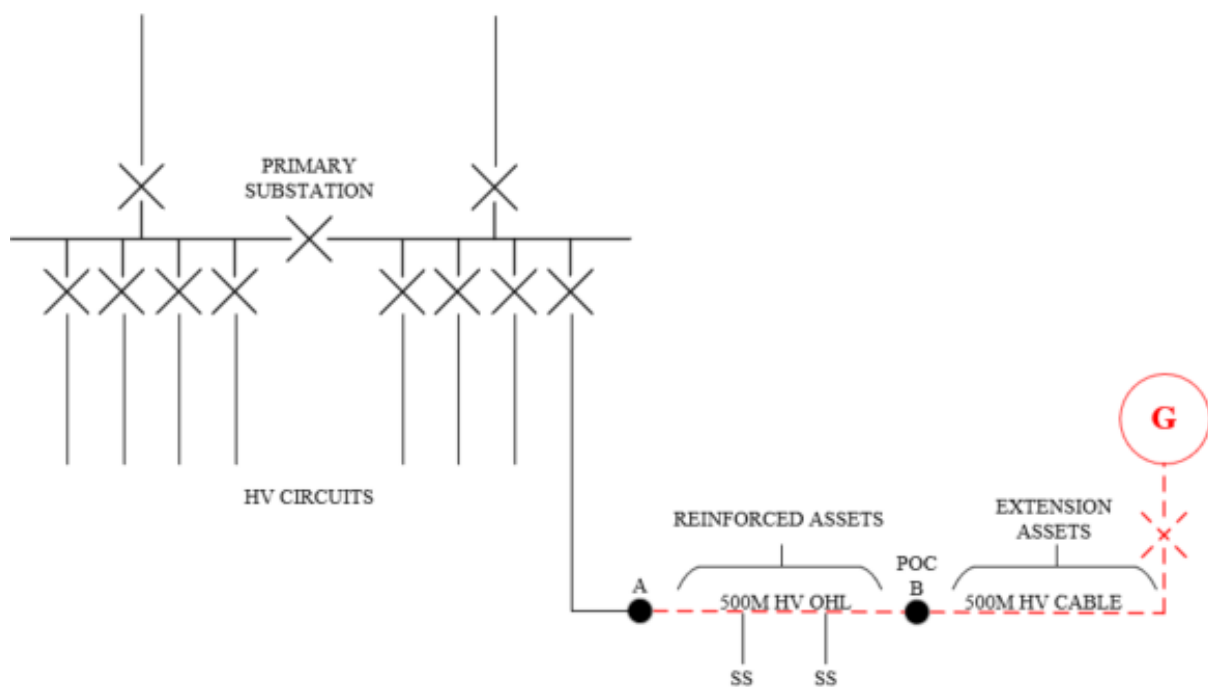
An example from the Common Connections Charging Methodology is shown below to illustrate the use of the Security CAF. Further examples can be found in DCUSA Schedule 22.

Example 11: A new Generation Connection with capacity triggered Reinforcement.

Purpose: To demonstrate the treatment of Reinforcement cost for a Generation Connection which drives Reinforcement using the Security CAF.

A Customer requests a Generation Connection with a Required Capacity for export purposes of 3MW. The Minimum Scheme requires the Reinforcement of 500m of 11kV overhead line between points A and B to provide 7.6MVA of capacity.

The POC is to the existing 11kV network at point B and it is proposed to install 500m of 11kV underground cable from the POC to the Customer's installation and this cable is treated as Extension Assets.


Reinforcement:

The Relevant Section of Network is the 11kV OHL between points A and B and the Security CAF applies. The numerator in the CAF calculation is based upon the Required Capacity of the Customer, i.e. 3MVA and the denominator is based on the New Network Capacity following Reinforcement, i.e. 7.6MVA.

The Connection Charge for this Scheme is calculated as follows:

Reinforcement:	Cost	Apportionment	Customer Contribution
Re-conductor 500m of 11kV overhead line at a higher capacity (7.6MVA)	£60,000	$3/7.6 \times 100\%$ = 39.5%	£23,700
Total Reinforcement Cost	£60,000		£23,700

Extension Assets:	Cost	Apportionment	Customer Contribution
Installation of 500m 11kV cable	£45,000	n/a	£45,000
11kV circuit breaker at Customer's substation	£25,000	n/a	£25,000
Total Extension Asset Cost	£70,000		£70,000

Total cost of the work = £60,000 + £70,000 = **£130,000**

Total Connection Charge to Customer = £23,700 + £70,000 = **£93,700**