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Schedule 22 Clause 1.24 – Amend the table as follows

New Network Capacity	<p>is either the secure or non-secure capacity of the Relevant Section of Network (RSN) following Reinforcement. Whether secure or non-secure capacity is applicable depends upon the type of capacity that can be provided from the RSN. For example, if the capacity provided to the Customer by the RSN is secure, but the capacity requested by the Customer at the point of connection is non-secure, the secure capacity will be used. See Example 12.</p> <p>The capacity to be used will be based on our assessment of the thermal ratings, voltage changeddrop and upstream restrictions and compliance with our relevant design, planning and security of supply policies. The equipment ratings to be used are the appropriate operational rating at the time of the most onerous operational conditions taking account of seasonal ratings and demand.</p>
Relevant Section of Network (RSN)	<p>is that part or parts of the Distribution System which require(s) Reinforcement. Normally this will comprise:</p> <ul style="list-style-type: none">· the existing assets, at the voltage level that is being reinforced, that would have been used to supply you (so far as they have not been replaced) had sufficient capacity been available to connect you without Reinforcement; and/or· the new assets, at the same voltage level, that are to be provided by way of Reinforcement. <p>Where it is unclear what assets would have supplied the Customer in the event that sufficient capacity had been</p>

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	<p>available, the existing individual assets with the closest rating to the new assets will be used. See Example 13.</p> <p>There may be more than one RSN (e.g. at different voltage levels).</p>
Required Capacity	<p>is the Maximum Capacity agreed with the Customer. In the case of multiple connections (e.g. a housing development) it may be adjusted after consideration of the effects of diversity. Where an existing Customer requests an increase in capacity then it is the increase above their Existing Capacity.</p>
<u>Substantial Asset</u>	<p><u>Assets with a thermal rating at or in excess of the following in relation to the highest operating voltage:</u></p> <p><u>LV: 100kVA</u></p> <p><u>HV and above: 500kVA</u></p>
<u>Complete Asset</u>	<p><u>For teed/spur circuits, means the complete tee/spur from the main line connection to the end of the tee/spur. For main circuits, means an asset installed from the circuit originating substation to the end of the circuit. Where a circuit is interconnected and relies on such interconnection for its compliance with security of supply standards it is the entirety of all dependent interconnected circuits from the originating substation(s).</u></p> <p><u>For substations, means all the assets required to achieve secure capacity, as applicable.</u></p> <p><u>Includes assets that act to release potential capacity from other assets that are interconnected.</u></p>
<u>Demand Dominated Network</u>	<p><u>Where our assessment is that the maximum demand exceeds the maximum generation</u></p>
<u>Number of Customers Threshold</u>	<p><u>Means where the number of customers normally connected to the asset is in excess of:</u></p>

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	<u>LV assets: 10</u> <u>HV and above assets: 20</u>
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1.23 The ‘Security CAF’ is applied, where the costs are driven by either thermal capacity or voltage (or both) as assessed against the relevant standard. This rule determines the proportion of the Reinforcement costs that should be paid by you as detailed below.

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

1.24 For generation connections, where the reinforcement is required to keep the voltage rise within acceptable limits only, the voltage rise limit will be used to calculate the New Network Capacity except where the reinforcement:

- is a Substantial Asset, and
- is a Complete Asset, and
- provides connection to a Demand Dominated Network, and
- normally provides connection to a number of customers in excess of the Number of Customers Threshold

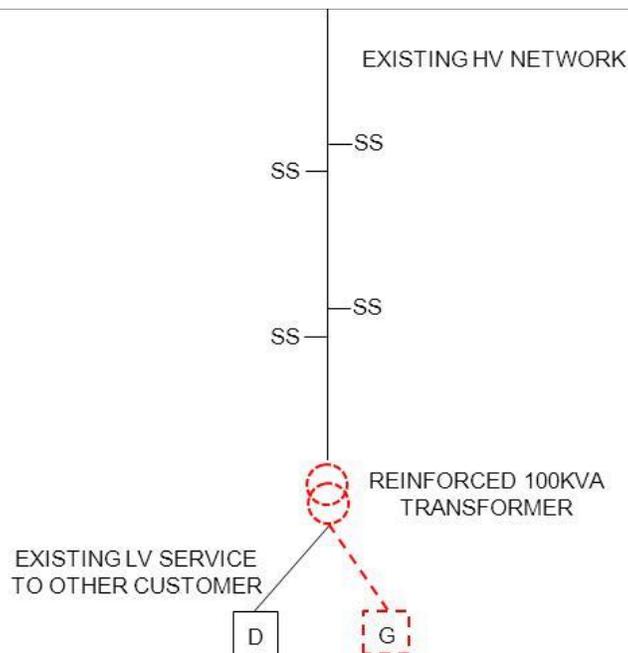
Where all the above 4 conditions are met then the thermal capacity calculation will be used.

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Insert New Example X: New 25kVA Generation Connection, Voltage Rise Triggered Reinforcement

An existing Customer wishes to connect a new generator with a Required Capacity of 25kVA. The connection of the generator will require the local 25kVA pole mounted transformer to be reinforced with a 100kVA split phase transformer in order to keep voltage rise within acceptable limits. A new 95mm service cable is to be installed to the premises.

The Minimum Scheme is to provide a new service cable and to replace the 25kVA transformer at the local substation with a 100kVA transformer.



Reinforcement:

The RSN for the Reinforcement is the HV/LV transformer.

Security CAF calculation: the numerator in the CAF calculation is based upon the Required Capacity of the Customer, i.e. 25kVA. The denominator is based on the New Network Capacity following Reinforcement, this being the maximum generation that could be connected whilst keeping the voltage rise within acceptable limits i.e. 40kVA in this case. The voltage rise method is used because the reinforcement; is not a Substantial Asset, does not provide connection to a Schedule 22

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Demand Dominated Network, and does not provide connection to a number of customers in excess of the Number of Customers Threshold.

Fault Level CAF calculation: This scheme does not have any significant Fault Level contribution to the existing shared use distribution network and Fault Level CAF is therefore not applicable here.

The Connection Charge for this Scheme is calculated as follows:

Reinforcement:

	Cost	Apportionment	Customer Contribution
Non Contestable Work			
Replacement 100kVA transformer	£15,000	$25/40 \times 100\% = 62.5\%$	£9,375
Total Reinforcement Cost	£15,000		£9,375

Extension Assets:

	Cost	Apportionment	Customer Contribution
Contestable Work			
Provision and installation of LV service cable	£1,500	n/a	£1,500
Non-Contestable Work			
LV joints to network	£500	n/a	£500
Total Extension Asset Cost	£2,000		£2,000
CIC Charges			£200

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Total Connection Charge = £9,375 + £2,000 = £11,375

(Note – for clarity the generation £200/kW rule has been ignored in this example but would apply in respect of the costs illustrated. Refer paragraph 1.15.)

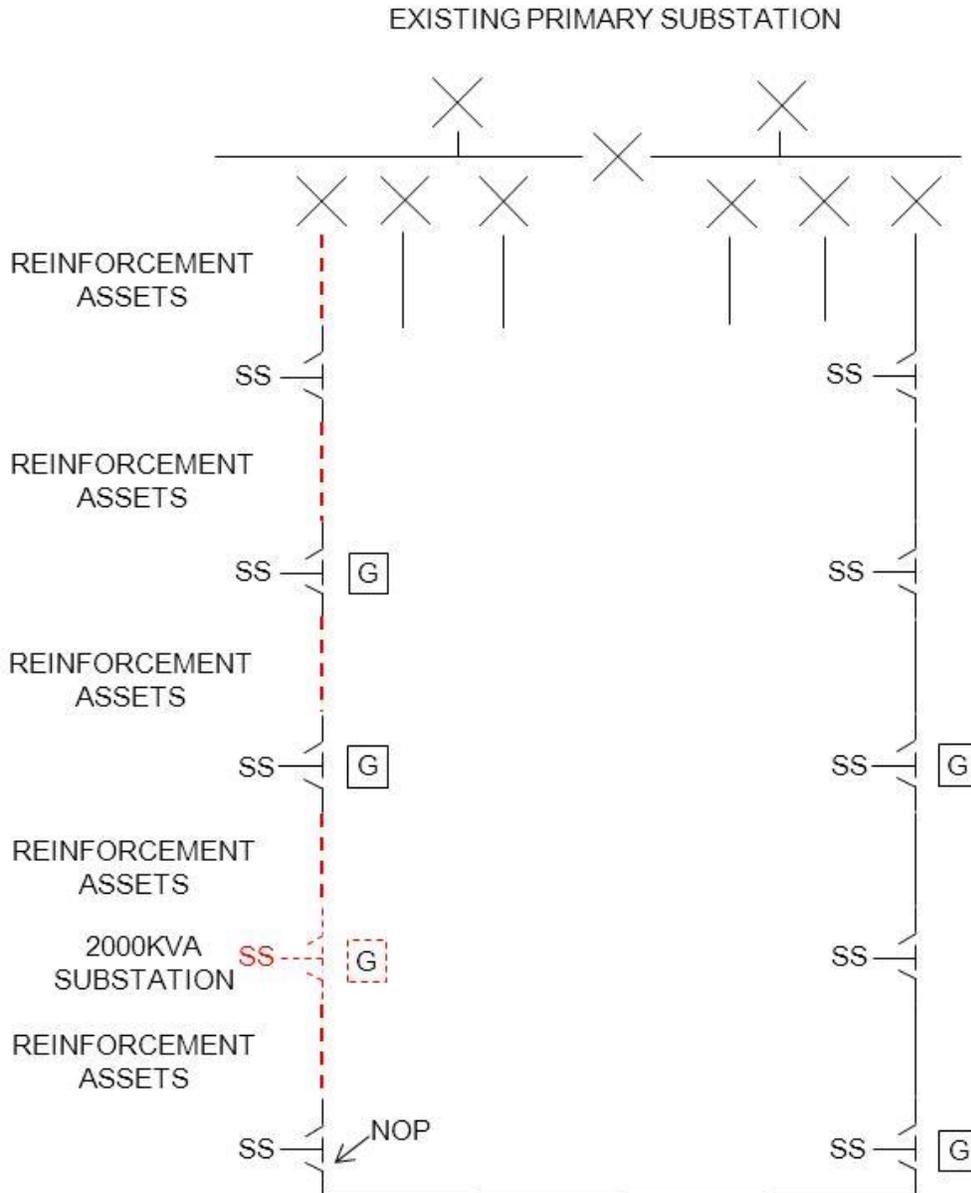
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Insert New Example Y: New 2MVA Generation Connection, Voltage Rise Triggered Reinforcement

A Customer wishes to connect a new generator with a Required Capacity for export purposes of 2MVA. The local 11kV feeder has a large amount of generation already connected and will need to be reinforced in order to keep voltage rise within acceptable limits. It is proposed to reinforce the existing 185mm 11kV underground cable with 300mm underground cable and install a new substation for connection of the 2MVA export capacity. The total length of the reinforced cable is 2km. The thermal rating of the 300mm underground cable is 8MVA. The 11kV underground cable on the other side of the normal open point is already 300mm and does not require to be reinforced.

The Minimum Scheme is to provide a new substation and to replace the 185mm 11kV cable with a 300mm cable.

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Reinforcement:

The RSN for the Reinforcement is the 11kV feeder.

Security CAF calculation: the numerator in the CAF calculation is based upon the Required Capacity of the Customer, i.e. 2MVA. The denominator is based on the New Network Capacity following Reinforcement, this being the secure thermal capacity of the network i.e. 8MVA in this case. The thermal capacity method is used because the reinforcement; is a Substantial Asset,

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is a Complete Asset, provides connection to a Demand Dominated Network, and provides connection to a number of customers in excess of the Number of Customers Threshold.

Fault Level CAF calculation: This scheme does not have any significant Fault Level contribution to the existing shared use distribution network and Fault Level CAF is therefore not applicable here.

The Connection Charge for this Scheme is calculated as follows:

Reinforcement:

	Cost	Apportionment	Customer Contribution
Non Contestable Work			
2km 300mm 11kV cable	£200,000	2/8 x 100% = 25%	£50,000
Total Reinforcement Cost	£200,000		£50,000

Extension Assets:

	Cost	Apportionment	Customer Contribution
Contestable Work			
2MVA 11kV substation	£40,000	n/a	£40,000
Non-Contestable Work			
2 by 11kV closing joints	£5,000	n/a	£5,000
Total Extension Asset Cost	£45,000		£45,000
CIC Charges			£200

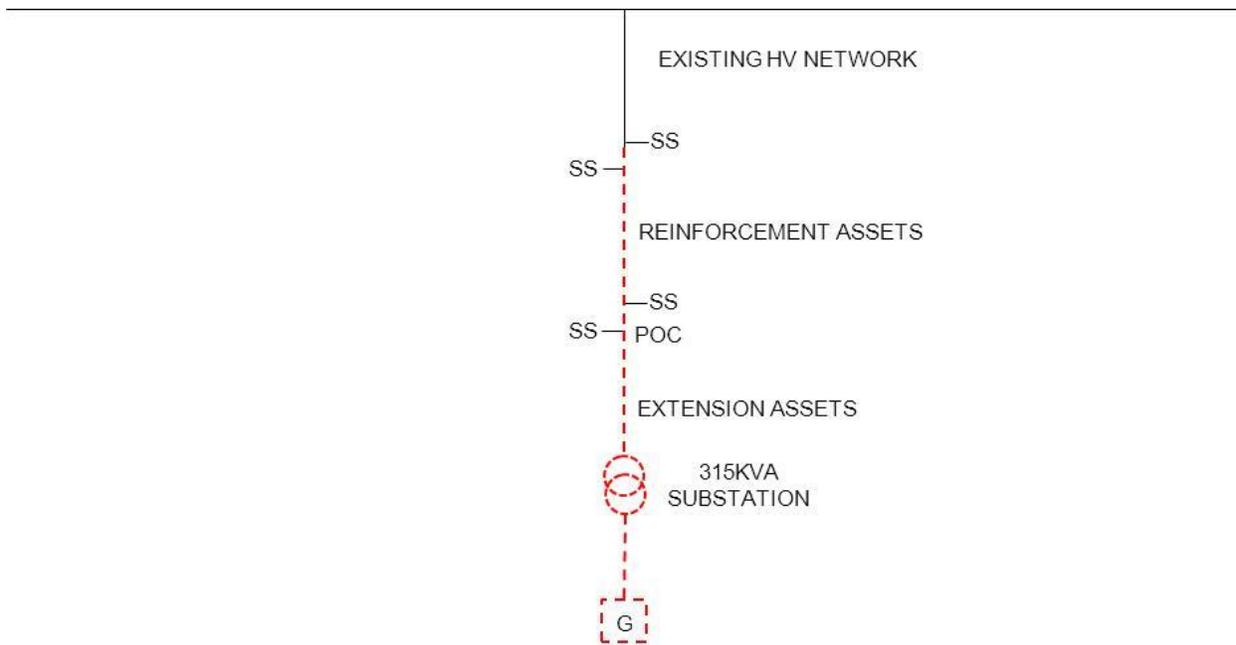
Total Connection Charge = £50,000 + £45,000 = £95,000

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Insert New Example Z: New 250kVA Generation Connection, Voltage Rise Triggered Reinforcement

A Customer wishes to connect a new generator with a Required Capacity of 250kVA. The connection of the generator will require the local 11kV overhead line to be reinforced with 100mm conductor over part of its length in order to keep voltage rise within acceptable limits. The thermal capacity of the 100mm overhead line is 5MVA. The thermal capacity of the original 50mm overhead line is 3MVA. A new 315kVA ground mounted substation is to be installed at the premises. The overhead line is 1km in length but only 500m is required to be reinforced in order to keep voltage rise within acceptable limits.

The Minimum Scheme is to provide a new ground mounted substation and to replace part of the existing overhead line with 100mm conductor.



Reinforcement:

The RSN for the Reinforcement is the 11kV overhead line.

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Security CAF calculation: the numerator in the CAF calculation is based upon the Required Capacity of the Customer, i.e. 250kVA. The denominator is based on the New Network Capacity following Reinforcement, this being the maximum generation that could be connected whilst keeping the voltage rise within acceptable limits. As the length of overhead line to be reinforced has been determined to accommodate the 250kVA requirement only, then this is also 250kVA in this case. The voltage rise method is used because the reinforcement; is not a Complete Asset, does not provide connection to a Demand Dominated Network, and does not provide connection to a number of customers in excess of the Number of Customers Threshold.

Fault Level CAF calculation: This scheme does not have any significant Fault Level contribution to the existing shared use distribution network and Fault Level CAF is therefore not applicable here.

The Connection Charge for this Scheme is calculated as follows:

Reinforcement:

	Cost	Apportionment	Customer Contribution
Non Contestable Work			
Replacement 11kV overhead line conductor	£25,000	$250/250 \times 100\%$ = 100%	£25,000
Total Reinforcement Cost	£25,000		£25,000

Extension Assets:

	Cost	Apportionment	Customer Contribution
Contestable Work			
Provision and installation of 315kVA substation	£50,000	n/a	£50,000

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Non-Contestable Work			
11kV joint to network	£1,000	n/a	£1,000
Total Extension Asset Cost	£51,000		£51,000
CIC Charges			£200

Total Connection Charge = £25,000 + £51,000 = £76,000