

Attachment 5 – CCCM Examples Summary

Worked Examples Illustrating the Application of the Connection Charging Methodology

Index of Examples

Example	Description	Purpose	Summary	Cross reference to current Examples
1	A new connection at LV	To show extension assets are charged in full to the connecting customer.	Updated costs and format only	1
2	New connections at HV	To show LV and HV extension assets are fully charged to the connecting customer.	Updated costs and format only	2A
3	A new connection on a domestic housing development with interconnection requested by customer	To illustrate Exception 2 where the interconnection is treated as Extension Assets and are fully charged to the connecting customer.	Updated costs and format only	2B(a)
4	A new connection with interconnection requested by us	To illustrate Exception 1 where LV and HV extension assets are fully charged to the connecting customer, but the interconnection is paid in full by us.	Change in principle from current approach	2B(b)
5	A new connection where the Minimum Scheme is a new substation teed onto the existing HV network.	Simple example of a commercial connection, extension assets only, so full cost to Customer.	Updated costs and format only	3a
6	A new connection where the Minimum Scheme is a new substation looped into existing HV network.	Simple example of looped connection, extension assets only so full cost to Customer.	Updated costs and format only	3d

Example	Description	Purpose	Summary	Cross reference to current Examples
7	A new connection where the Minimum Scheme is as for Example 5 but the Customer requests an enhanced connection arrangement where the substation is looped into existing HV network.	Shows that for a customer requested Enhanced Scheme that the Customer pays costs above the Minimum Scheme plus O&M.	Updated costs and format only	3b
8	A new connection where the Minimum Scheme is as for Example 5 but we request an Enhanced Scheme where the substation is looped into the existing HV network.	Shows that for a DNO requested Enhanced Scheme that the DNO pays for all costs above Minimum Scheme.	Updated costs and format only	3c
9	Additional load application requiring a new connection from the HV network and reinforcement.	To demonstrate the treatment of reinforcement cost for a Demand Connection that drives reinforcement.	Change in principle from current approach	4
10	A new connection that results in a Point of Connection further away than the nearest network.	To show that the Minimum Scheme may result in a Point of Connection that is further away than the nearest network and may result in increased extension assets costs that are fully chargeable to the Customer.	New example	New
11	A new Generation Connection with capacity triggered Reinforcement.	To demonstrate the treatment of reinforcement cost for a Generation Connection which drives reinforcement using the security CAF.	Change in principle from current approach	New
12	A new Generation Connection with Fault Level-Triggered Reinforcement.	To demonstrate how the Fault Level CAF calculation is applied.	Updated costs and format only	7A
13	A new Generation Connection that requires Reinforcement involving both Security and Fault Level CAFs.	To demonstrate reinforcement charging principles for a Generation Connection where both security CAF and Fault Level CAF are applicable.	Updated costs and format only	5

Example	Description	Purpose	Summary	Cross reference to current Examples
14	A Generation Connection with reinforcement at a voltage above that of the Point of Connection.	To illustrate that a Generation Connection does not contribute to reinforcement costs at a voltage level above the connection voltage.	Change in principle from current approach	New
15	A new Generation Connection where switchgear extension is not possible	Illustrate Exception 4, if switchgear extension not possible, then treated as Extension Assets and Customer pays in full.	Updated costs and format only	7B
16	New Storage Connection to a Demand Connection that triggers reinforcement	To illustrate that when connected behind the meter of a Demand Connection, and where the connection is treated as a Demand Connection, Storage is therefore treated as a Demand Connection for the purposes of charging and any reinforcement at the same voltage of the POC will be not charged, irrespective if due to the import or the export.	New example	New
17	Connection of housing development	To demonstrate the application of Exception 5.	New example	New
18	Connection of a housing development	To demonstrate the application of Exception 6.	TBC	8B
19	Connection with remote network Reinforcement	To show treatment where capacity is created on a different part of the network and a load transfer is required to allow the connection. Example again demonstrates which elements are Reinforcement and which are Extension Assets.	Changed from Demand to Generation Connection	8C
20	Connection with load transfer	Variation to Example 19 where a load transfer is required to free up capacity but no new capacity is created. Demonstrates why elements become Extension Assets.	Updated costs and format only	8D
21	A new Generation Connection with an Enhanced Scheme at the DNO's request.	To show how the Security CAF calculation is applied where the DNO requests an Enhanced Scheme.	New example	New

Example	Description	Purpose	Summary	Cross reference to current Examples
22	A new Generation Connection on a meshed HV distribution system requiring Reinforcement.	To show that a contribution is required where reinforcement is carried out at the same voltage as the point of connection for a Generator Connection.	Updated costs and format only	10
23	A non-secure Generation Connection with non-secure Reinforcement.	To show that a contribution is required where reinforcement is carried out at the same voltage as the point of connection for a Generation Connection in relation to a non-secure system.	Updated costs and format only	11
24	A new non-secure Generation Connection with secure Reinforcement.	To show the application of the apportionment rule where secure Reinforcement is provided but the connection for a Generation Connection is non-secure.	Changed from Demand to Generation Connection	12
25	A new Generation Connection with voltage rise triggered Reinforcement.	To show that a Generation Connection pays for reinforcement at the voltage level of connection based on the CAF.	Updated costs and format only	15
26	A new Generation Connection with voltage rise triggered Reinforcement.	To show that if voltage rise reinforcement is tailored so that just the amount of network is upgraded to meet the customer requirements, the CAF is 100% for a Generation Connection.	Updated costs and format only	16
27	A new Generation Connection with Fault Level Triggered Reinforcement and transmission works.	To show how the Fault Level CAF calculation is applied and how the cost of transmission works are treated for a Generation Connection.	New example	New
28	A new Generation Connection with Fault Level Triggered Reinforcement and transmission works.	To show the treatment of Reinforcement costs at more than one voltage level above the POC and the cost of transmission works for a Generation Connection.	New example	New
29	A new Demand Connection that has reinforcement above the high-cost project threshold.	To show how the Demand high-cost project threshold is applied.	New example	New

Example	Description	Purpose	Summary	Cross reference to current Examples
30	A new Generation Connection that has reinforcement above the high-cost project threshold.	To show how a Generation Connection that triggers the Generation high-cost project threshold is charged when the reinforcement required is at the same voltage of connection.	New example	New
31	Customer requirements for supply characteristics greater than minimum scheme.	To illustrate that the customer specifically requesting a three phase connection where the existing network is not of a sufficient number of phases pays for any reinforcement.	New example	New

Current examples which are not used

Example	Description	Summary
2Bc	The LV interconnection is requested by us but there is little prospect of the capacity created being used (Exception 1).	Policy changed and therefore outcome is similar to new example 4
6	Connection of Mixed Housing and Commercial Development	Would be no charge for reinforcement so same policy as example 9
8A	Connection of housing development with network Reinforcement	Would be no charge for reinforcement so same policy as example 9
9a	The Minimum Scheme is to provide a new service cable and to replace the 300kVA transformer at the local substation with a 500kVA transformer.	Would be no charge for reinforcement so same policy as example 9
9b	However the DNO wishes to carry out an Enhanced Scheme to install a 1000kVA transformer at the local substation and install a new LV main that will connect to and pick up load from an adjacent LV network.	New example 21 to illustrate principle
9c	If, however under the proposed DNO Scheme the transformer cost was £25,000 then the resultant Connection Charge would be considered as follows:	New example 21 to illustrate principle
13	Secure Connection with Secure Reinforcement	Policy changed and therefore outcome is similar to new example 17