

Transmission & Distribution Interface Charging Task Force

Action 16: To produce analysis of commonality of approach and principles

Transmission	Distribution	Commentary
CEER Guidelines of Good Practice on Electricity Distribution Network Tariffs		
<p>No similar guidelines with regard to transmission tariffs have been identified.</p>	<p>Seven key principles for distribution network tariff structures</p> <ul style="list-style-type: none"> • Cost reflectivity: For efficient use and development of the grid, as far as practicable, tariffs paid by network users should reflect the cost they impose on the system and give appropriate incentives to avoid future costs; • Non-distortionary: costs should be recovered in ways that avoid distorting decisions around access to and use of the network, and market offers; • Cost recovery: DSOs should be able to recover efficiently incurred costs. As well as tariffs for use of the distribution system, DSOs may also recover costs through connection charges and regulated services; • Non-discriminatory: there should be no undue discrimination among network users; • Transparency: the methodology for calculating tariffs should be transparent and accessible to all stakeholders; • Predictability: it is important that network users can effectively estimate the costs of their use of the distribution system, facilitating efficient long term investment by network users. However, the changing nature of the energy system means network tariffs will need to evolve over time; <p>Simplicity: As far as possible tariffs should be easy to understand and implement. The simpler they are, the easier they are for network users to respond to.</p>	<p>Whilst the CEER Guidelines did not include consideration of transmission tariffs, it stated:</p> <p>“There is a need for a coherent approach across all voltages. Distribution network users’ decisions on where to build new assets, how to dispatch plant and when to consume energy are not made in isolation. The arrangements at transmission level are relevant. Coherence is important and network tariff driven regulatory arbitrage should be avoided.”</p> <p>In addition to the CEER Guidelines the CDCM / EDCM review group also agreed that Flexibility and Commonality need to be considered.</p> <p>These principles need to be considered in conjunction the Licence obligations and relevant objectives in the charging methodology.</p> <p>Whilst all of the principles are important, and not necessarily mutually exclusive, it would be good to try and rank the principles into some useful order to get stakeholder views on whether all principles are equal or whether there should be a priority order. A suggested order of priority is listed below:</p> <ol style="list-style-type: none"> 1. Cost-reflectivity; 2. Predictability; 3. Cost-recovery; 4. Non-discriminatory; 5. Non-distortionary; 6. Transparency;

		<p>7. Simplicity;</p> <p>8. Commonality; and</p> <p>9. Flexibility.</p>
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Analysis of Underling Principles

Cost reflectivity is seen as the most important as it should ensure that there are no discriminatory or distortionary affects. Predictability is also key in that charging methodologies that produce unpredictable outcomes are unlikely to influence behaviour and drive efficient outcomes.

For licensees, cost recovery is key to ensure the outputs of any cost approach is adjusted to allow licensees to recover their allowed revenues. This need to be done in a manner which does not cause distortion and reduces cost reflectivity.

Whilst transparency in approach is essential, transparency in data inputs could expose commercial data to the detriment of customers in the long-run ((eg by exposing underlying costs to licensee contractors).

Whilst simplicity is desirable it may reduce cost reflectivity. However, all models include assumptions and approximations and having complex models populated by estimated and assumed data does not necessarily improve cost reflectivity and merely creates 'spurious precision'.

The models need to be able to be adjusted to take account of changing cost drivers.

Licence Obligation – Use of System		
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<p>Detailed requirements set out in Condition C4 and C5 of the transmission licence. C5 (5) sets of the relevant objectives of the charging methodology.</p>	<p>Detailed requirements set out in Condition 13 of the Licence. Condition 13.3 sets out the relevant objectives of the charging methodology.</p>	<p>There are no material differences in the 'relevant objectives' for Transmission and Distribution charges which form the basis of use of system charging.</p>
<p>5. In paragraphs 1 and 2 "the relevant objectives" shall mean the following objectives:</p> <ul style="list-style-type: none"> (a) that compliance with the use of system charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity; (b) that compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and in accordance with the STC) incurred by transmission licensees in their transmission businesses and which 	<p>13.3 The Relevant Objectives in relation to the Charging Methodology are:</p> <ul style="list-style-type: none"> (a) that compliance with the methodology facilitates the discharge by the licensee of the obligations imposed on it under the Act and by this licence; (b) that compliance with the methodology facilitates competition in the generation and supply of electricity, and does not restrict, distort, or prevent competition in the transmission or distribution of electricity; 	<p>The Distribution Licences contain further detail primarily related to the application of the CDCM and EDCM. Whilst these also contain 'relevant objectives', these are also broadly similar to the wider objectives.</p> <p>Whilst the transmission licence places obligation of the licensee with regard to connect and manage these do not affect the underlying charging methodology.</p>

<p>are compatible with standard condition C26 (Requirements of a connect and manage connection);</p> <p>(c) that, so far as is consistent with subparagraphs (a) and (b), the use of system charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses;</p> <p>(d) compliance with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and</p> <p>(e) promoting efficiency in the implementation and administration of the system charging methodology.</p>	<p>(c) that compliance with the methodology results in charges which reflect, as far as is reasonably practicable (taking account of implementation costs), the costs incurred by the licensee in its Distribution Business;</p> <p>(d) that, so far as is consistent with subparagraphs (a), (b), and (c), the methodology, as far as is reasonably practicable, properly takes account of developments in the licensee's Distribution Business; and</p> <p>(e) compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulators.</p> <p>Conditions 13A and 13B contain more specific information with regard to the CDCM and EDCM, in particular the boundary between the two. These conditions also contain relevant objectives for the CDCM and EDCM which are broadly similar to those outlined above.</p>	
Licence Obligation – Connection¹		
<p>Detailed requirements set out in Condition C6 and C7 of the transmission licence. C11 specifies that the relevant objectives are the same as those used for use of system charging.</p>	<p>Detailed requirements set out in Condition 13 of the Licence. Condition 13.3 sets out the relevant objectives of the charging methodology. The Relevant Objectives in relation to the Charging Methodology are the same as set out in 13.3 above.</p> <p>Condition 14 Part I: Sets of specific rules for connection charges in addition to the relevant objectives.</p> <p>14.16 Connection charges relating to the matters specified for the Connection Charging Statement in Part B of the Schedule of</p>	<p>There are no material differences in the 'relevant objectives' for Transmission and Distribution charges which form the basis of connection charging.</p> <p>The Distribution Licences contain further detail on the specific requirements for connection charging that must be reflected in the methodologies in addition to general compliance with the 'relevant objectives'.</p>

¹ Whilst there are also obligations to offer terms, these do not affect the charging principles or methodologies.

	<p>Contents set out at Appendix 1 are to be set at a level that will enable the licensee to recover:</p> <ul style="list-style-type: none"> (a) the appropriate proportion (to be determined having regard to the factors set out at paragraphs 14.18 to 14.20) of the costs directly or indirectly incurred in carrying out any works for the extension or reinforcement of the licensee's Distribution System, or for the provision and installation, maintenance, repair, replacement, disconnection, or removal following disconnection, of any electric lines or electrical plant; and (b) where the licensee is a Distribution Services Provider operating in its Distribution Services Area, such Margin as the licensee is allowed to charge under Charge Restriction Condition 2K (Margins on licensee's Connection Activities) or (c) where the licensee is not a Distribution Services Provider, or is a Distribution Services Provider operating outside its Distribution Services Area, an Unregulated Margin in the Connection Charges that it makes in relation to its Connection Activities. <p>14.17 Paragraphs 14.18 to 14.20 apply for the purpose of determining the appropriate proportion that the licensee may recover of the costs directly or indirectly incurred in carrying out any of the works mentioned in paragraph 14.16(a) under an agreement for providing, modifying, or retaining a connection.</p> <p>14.18 The licensee must have regard to the benefit (if any) to be obtained or likely in future to be obtained by itself or any other person from the extension of the licensee's Distribution System or the provision of additional Entry</p>	
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	<p>Points or Exit Points on that system as a result of the carrying out of the works in question.</p> <p>14.19 The licensee must have regard to its ability, or its likely future ability, to recover from third parties a proportion of the costs in question.</p> <p>14.20 The licensee must have regard to the principles that connection charges:</p> <p>(a) will not generally take into account Distribution System reinforcement carried out at more than one voltage level above the voltage of the connection;</p> <p>(b) will not generally take into account the costs (including any capitalised charge relating to them) for any maintenance, repair, and replacement required of any electric lines or electrical plant provided and installed for making a connection;</p> <p>(c) may include an amount for reinforcement of the licensee's Distribution System that is based on a proportionate share of the costs of such reinforcement; and</p> <p>(d) will not include any costs that are recovered by Use of System Charges.</p>	
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Connection Charging Methodologies		
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<p>In general, connection assets are defined as those assets solely required to connect an individual User to the National Electricity Transmission System, which are not and would not normally be used by any other connected party (i.e. "single user assets").</p> <p>Connection charges are generally payable as annual charges though customers have the option to pay</p>	<p>In distribution connection charges are split into 3 categories (as detailed in the Common Connection Charging methodology):</p> <ol style="list-style-type: none"> 1. Costs for providing the connection which are to be paid in full 2. Costs for providing the connection which are to be apportioned 3. Costs in respect of works that have previously been constructed or are committed. 	<p>Significant differences in methodologies between Transmission and Distribution with distribution charges containing a far larger locational signal through the connection charge.</p> <p>In distribution the connection charge is generally covered as a one off in advance, whereas in transmission charges are generally recovered on an annual basis. In distribution the connection charging methodology incorporates the requirement to consider funding wholly or partially any required reinforcement</p>
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<p>some or all of the connection asset value to reduce future annual charges.</p> <p>The same methodology applies to all GB users.</p>	<p>Costs are split into:</p> <ol style="list-style-type: none"> 1. Extension Assets - assets installed to connect a party or parties to the existing distribution network but which include Reinforcement assets 2. Reinforcement – assets installed that add capacity to the existing shared use distribution system. <p>The same boundary applies to all types of connection, with some exceptions.</p> <p>Customer are charged for Extension Assets plus a contribution (where relevant) (based on capacity requirements) of the costs of reinforcing the distribution system up to one voltage level above the point of connection.</p> <p>In addition generators will pay reinforcement costs in excess of the high-cost project threshold of £200/kW in full.</p> <p>Connection customers are also liable for the costs associated with necessary work to connect to the transmission system, where NGET has applied charges for these works to the DNO.</p> <p>There are also exclusions particularly relating to LV customers seeking to install equipment at existing premises not being charged for reinforcement where there is no physical change to their supply arrangement. This is particularly relevant for small DG (G83) connections.</p> <p>Charges recovered in advance of energisation.</p>	<p>costs, whereas in transmission connection charges do not include reinforcement costs of the wider system.</p>
<p>Use of System Charging Methodologies</p>		
<p>The TNUoS tariff comprises two separate elements.</p> <ul style="list-style-type: none"> • Firstly, a locationally varying element derived from the DCLF ICRP transport model to reflect the costs of capital investment in, and the maintenance and operation of, a transmission system to provide bulk transport of power to and from different locations. 	<p>Charging split between EDCM for EHV customers (those connected to an EHV/HV substation and above and the CDCM for remain customers.</p> <p>CDCM</p>	<p>The CDCM approach is quite different from the EDCM approach and the Transmission charging approach. The CDCM produces average tariffs (for HV and LV) across all users in DNO areas with no locational component but strong signals reflecting the voltage of connection.</p>

<ul style="list-style-type: none"> Secondly, a non-locationally varying residual charge to ensure the recovery of TO and OFTO allowed revenues. The combination of both these elements forms the TNUoS tariff. <p>For generation TNUoS tariffs the locational element itself is comprised of five separate components. Three wider components –</p> <ul style="list-style-type: none"> Wider Peak Security Component Wider Year Round Not-shared component Wider Year Round component <p>These components reflect the costs of the wider network under the different generation backgrounds set out in the Demand Security Criterion (for Peak Security component) and Economy Criterion (for both Year Round components) of the Security Standard. The two Year Round components reflect the unshared and shared costs of the wider network based on the diversity of generation plant types.</p> <p>Two local components –</p> <ul style="list-style-type: none"> Local substation, and Local circuit <p>These components reflect the costs of the local network.</p> <p>Accordingly, the wider tariff represents the combined effect of the three wider locational tariff components and the residual element; and the local tariff represents the combination of the two local locational tariff components.</p>	<p>Broad approach is a ‘whole network’ long run marginal cost approach using the following three steps</p> <ul style="list-style-type: none"> Analyse costs Allocate costs to customers and tariff components based on typical load characteristics Adjust tariffs to match revenues. <p>Generator tariffs primarily negative demand.</p> <p>EDCM</p> <p>The broad approach is as follows</p> <ul style="list-style-type: none"> Use network modelling to produce a reinforcement charge (LRIC or FCP) Add costs related to sole use and shared site specific assets Scale revenue to match allowed revenues using network use factors. 	<p>The EDCM and Transmission Charging have similar features in identifying long run investment/ marginal cost components. EDCM also picks up an element of sole use charging (only to recover O & M on assets paid for at the time of connection) similar to that reflected in transmission connection charging.</p> <p>There are significant differences in the recovery of residual revenues. In transmission this is merely recovered based on total demand/ generation whereas in distribution the methodology includes significant detail in allocating costs to different users.</p>
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