



**TRANSMISSION CONNECTION CHARGING METHODOLOGY STATEMENT**

**14<sup>TH</sup> MARCH 2008**

## TABLE OF CONTENTS

	Page
1 Introduction.....	2
2 Charging Methodology Objectives .....	4
3 Connection Charging Methodology.....	5
4 Connection Assets .....	7
5 Least Cost Technically Acceptable Connection Design.....	8
6 Cost Allocation Rules for Shared Assets.....	9
7 Application Fees.....	10
8 Bonds and Credit Cover .....	11
9 Disconnection, de-energisation and decommissioning charges .....	13
10 Contact details.....	14
11 Definitions .....	15
Appendix A - System Asset / Connection Asset Boundary Illustrations .....	17

## 1 INTRODUCTION

- 1.1 EirGrid plc. (“EirGrid”) is a State owned company and is the Transmission System Operator for the Republic of Ireland. EirGrid is authorised to operate the **Transmission System** to transmit electricity in the State by means of a licence issued by The Commission for Energy Regulation (the “CER”), under Section 14(1)(e) of the Electricity Regulation Act, 1999 (hereinafter referred to as “the Act”), as inserted by Regulation 32 of the European Communities (Internal Market in Electricity) Regulations 2000 (hereinafter referred to as “SI 445 of 2000”) and subject to conditions set out in the licence.
- 1.2 Under its **Transmission System Operator Licence** EirGrid is responsible for operating the **Transmission System** in the Republic of Ireland, a system consisting of some 6,200 circuit kilometres of 110kV, 220kV and 400kV overhead line and underground cable with a maximum demand of about 5,200MW.
- 1.3 EirGrid is the only party entitled to offer terms to enter into a Connection Agreement (or to amend an existing Connection Agreement) for connection (or modification of an existing connection) to the **Transmission System** at entry or exit points on the in the Republic of Ireland for access to the **All Island Transmission Networks**. Such terms are offered following receipt by EirGrid of an application containing all such information as EirGrid may reasonably require for the purpose of formulating the terms of the offer.
- 1.4 In accordance with Condition 5 of its licence, EirGrid, in co-operation with the **Northern Ireland System Operator**, has prepared and obtained the CER’s approval for a statement setting out the basis upon which charges will be made for connection to the **Transmission System** and this statement is published to meet that obligation.
- 1.5 This statement includes:
- 1.5.1 a schedule listing those items (including the carrying out of works and the provision and installation of electric lines or electrical plant or meters) of significant cost liable to be required for the purpose of connection to the **Transmission System** for which connection charges may be made or levied and including (where practicable) indicative charges for each such item and (in other cases) an explanation of the methods by which and the principles on which such charges will be calculated;
  - 1.5.2 the methods by which and the principles on which any charges will be made in respect of extension or reinforcement of the **Transmission System** and as applicable **All-Island Transmission Networks** rendered necessary or appropriate by virtue of providing such connection to the **Transmission System**;
  - 1.5.3 the methods by which and the principles on which connection charges will be made in circumstances where the electric lines or electrical plant to be installed are of greater size or capacity than that required for use of system by the party seeking connection;
  - 1.5.4 the methods by which and the principles on which any charges (including any capitalised charge) will be made for maintenance and repair required of electric lines, electrical plant or meters provided and installed for making a connection to the **Transmission System**;
  - 1.5.5 the methods by which and the principles on which any charges will be made for the provision of special metering or telemetry or data processing equipment by

EirGrid for the purposes of enabling any party which is bound to comply with the **Grid Code** to comply with its obligations in respect of metering thereunder, or for the performance by EirGrid of any service in relation thereto;

- 1.5.6 the methods by which and principles on which any charges will be made for disconnection from the **Transmission System** and the removal of electrical plant, electric lines and ancillary matters following disconnection; and
  - 1.5.7 such other matters as shall be specified in directions issued by the CER from time to time.
- 1.6 This statement is reviewed, in co-operation with the **Northern Ireland System Operator**, at least once in every year in order that the information set out shall continue to be accurate in all material respects.
  - 1.7 Any revisions will be made with the approval of the **CER**.
  - 1.8 A copy of this statement can be obtained from EirGrid's website at [www.eirgrid.com](http://www.eirgrid.com).
  - 1.9 Details on the processes to be followed in applying for a connection to the **Transmission System** can also be found at this website.
  - 1.10 Expressions used in this statement have the definitions given to them in the EirGrid Connection Agreement unless otherwise defined herein and shall be construed accordingly. Terms which are capitalised and in bold type are defined in section 11 of this document.
  - 1.11 Parties being connected to the system will be required to enter into a Connection Agreement with EirGrid setting down the terms and conditions which will apply in providing a connection. In the event of any inconsistency with this statement and the Connection Agreement, the Connection Agreement will take precedence.
  - 1.12 Where the party seeking a connection to the **Transmission System** is not satisfied with the terms offered and agreement with EirGrid cannot be reached within a reasonable time, either party may request a determination of any of the terms and conditions of connection by the CER.

## **2 CHARGING METHODOLOGY OBJECTIVES**

- 2.1 The connection charging methodology is designed to ensure:
- 2.1.1 the recovery of the appropriate proportion of the costs directly or indirectly incurred (or to be incurred) in carrying out the works, extension or reinforcement in question and in providing, installing, maintaining and repairing (and, following disconnection, removing) the electrical lines, electrical plant, meters, special metering, telemetry, data processing equipment or other items in question;
  - 2.1.2 the methodology promotes efficient use of the transmission system by ensuring that charges are cost reflective and that possible anomalies are minimised;
  - 2.1.3 the recovery of a reasonable rate of return on the capital represented by such costs;
  - 2.1.4 that charges and allocation methods are based on clear and transparent rules that avoid arbitrariness and limit administrative overheads: and
  - 2.1.5 that EirGrid does not unduly discriminate between any parties or class or classes of parties.

### 3 CONNECTION CHARGING METHODOLOGY

- 3.1 In order to calculate connection charges, EirGrid categorises assets as either “**Connection Assets**” or “**System Assets**”.
- 3.2 In connecting to the **Transmission System** a new **User’s** connection offer may be to connect to either **Connection Assets** or to **System Assets**, and the connection charge payable will vary in each circumstance.
- 3.3 Any party wishing to enter into a Connection Agreement (or to amend an existing Connection Agreement) for connection (or modification of an existing connection) at entry or exit points on the Transmission System will be required to pay for:
- 3.3.1 the estimated cost of new **Connection Assets**;
  - 3.3.2 a proportion of the estimated cost of any new **Connection Assets** which are to be shared with others who are connecting simultaneously, if any;
  - 3.3.3 a proportion of the cost of any existing **Connection Assets** to be shared with other **Users** who are already connected, if any;
  - 3.3.4 the estimated cost of decommissioning transmission assets resulting from the new or modified connection, if any; and
  - 3.3.5 certain pass-through costs which will be set out in the offer of connection. For example, any environmental planning costs, any costs incurred in acquiring planning consents, any costs incurred in complying with any conditions of planning consents, any external legal costs, any costs incurred in seeking, obtaining and paying for wayleaves or easements and certain costs relating to land conditions and civil works.
- 3.4 As part of the connection offer, EirGrid will provide the estimated connection charge, identifying the costs of the main items of expenditure in the Offer Letter. The **Applicant** will pay this amount irrespective of the outturn cost, subject to any price adjustment mechanism(s), referred to in section 3.3.5 above, specifically set out in the Offer Letter.
- 3.5 Connection Charges will contain elements covering engineering costs and in some circumstances a reasonable rate of return on the capital involved as appropriate.
- 3.6 For connection offers where the connection works are completed over a significant period of time after the acceptance of the connection offer, the connection charge may be adjusted in line with the **Consumer Price Index** or in line with another appropriate index, such as a London Metal Exchange price index. Any price adjustment mechanism will be set out in the Offer Letter.
- 3.7 The work to be done and the connection charge payable will inevitably depend on the requirements of the party seeking the connection and on the planning and security standards applicable and on any other relevant matters.
- 3.8 Where an **Applicant** wishes to connect to a part of the Transmission System that is planned to be constructed, as set out in the **Forecast Statement**, and the **Applicant’s** connection requires that those works must be advanced or altered, the **Applicant** will be liable to pay for any incremental costs incurred by deviating from the original plan, whether for **Connection Assets** or **System Assets**, including any advancement costs.

- 3.9 Charges for connection will include an element to provide for the operation and maintenance costs of the connection, known as the Ongoing Service Charge. The Ongoing Services Charge shall be advised to the **User** prior to energisation, is payable annually and is subject to appropriate indexation or adjustment.
- 3.10 The connection charge is normally payable in full in advance of energising the connection. Where a connection is to be commissioned or constructed in phases, payments will be reflective of those phases or key milestones, with full payment details set out in the Offer Letter.
- 3.11 Where the **User** is a load **User**, the charges payable shall be in accordance with approved CER policy which is 50% of the applicable charges subject to section 5.4.

## 4 CONNECTION ASSETS

### 4.1 Connection Assets are:

4.1.1 those assets, which are installed to enable the transfer of the Maximum Export Capacity (MEC) or the Maximum Import Capacity (MIC) of the **User's** facility, to or from, as appropriate, the **Transmission System** for the term of the Connection Agreement in accordance with the **Grid Code** and **Transmission and Distribution System Security and Planning Standards**, subject to sub-paragraph 4.2; and

4.1.2 those assets which are installed as a result of the **User's** effect on fault current levels on the transmission system at the transmission node to which the User connects, but does not include any assets installed at any location other than the transmission node to which the **User** connects.

4.2 In deciding which assets are required to enable the transfers referred to in sub-paragraph 4.1.1, power flows other than those to or from the **User** are disregarded.

4.3 Assets which are not **Connection Assets** are **System Assets** and the costs of these assets are recovered through use of system charges.

### 4.4 Connection Assets may include, as appropriate:

4.4.1 the circuit(s), or those parts of the circuit(s), required to connect the **User** to the existing **Transmission System**;

4.4.2 in addition to assets required under sub-paragraph 4.4.1, any new circuit(s) or enhanced circuit(s) required pursuant to sub-paragraph 4.1.1;

4.4.3 the circuit bay(s) required by the **User**;

4.4.4 an appropriate proportion of common plant (busbars, land, buildings, protection and other common services) associated with the connection, which may or may not provide benefits to another user and, for the avoidance of doubt, this also includes an appropriate proportion of a system station;

4.4.5 any upgraded existing protection or communication equipment required as a direct result of the connection but not changes or additions to protection systems at remote substations (including the provision of communication channels); and

4.4.6 metering, telemetry or data processing equipment supplied by EirGrid.

4.5 Figures 1 through 10 in Appendix A illustrates **Connection Asset / System Asset** boundaries under a number of circumstances.



## 5 LEAST COST TECHNICALLY ACCEPTABLE CONNECTION DESIGN

- 5.1 EirGrid's design objective is to make connection offers on the basis of the "Least Cost Technically Acceptable" or "LCTA" design. The **Least Cost Technically Acceptable** connection is the connection which:
- 5.1.1 complies with the Transmission and Distribution System Security and Planning Standards; and
  - 5.1.2 complies with any other applicable standard, regulation and code; and
  - 5.1.3 takes into account committed developments on the Transmission System including retrials from the system; and
  - 5.1.4 is the least overall cost;
- 5.2 It is likely that EirGrid will evaluate a number of design options before deciding on the preferred design for a new or modified connection to the **Transmission System**. In doing so, there may be occasions where the preferred design is not the **LCTA** connection.
- 5.3 Where EirGrid does not proceed with the **LCTA** connection, whether new or modified, to accommodate a **User** or a group of **Users** then that **User** will only be required to pay for the estimated cost of the **LCTA** connection.
- 5.4 Where an **Applicant** requests a connection offer on the basis of a design which is more expensive than the **LCTA** connection then the Applicant will be required to pay the estimated cost of providing both the **Connection Assets** and additional **System Assets**, if any, required by the **Applicant's** preference.

## 6 COST ALLOCATION RULES FOR SHARED ASSETS

- 6.1 Where a new **User** connects to the **Transmission System** by making use of existing **Connection Assets** which have been funded by an existing **User**, the new **User** will be charged a proportion of the value of equivalent new **Connection Assets** shared with the existing **User**.
- 6.2 If the existing **User** connected within the preceding ten years then the existing **User** will be entitled to receive a partial rebate of the original connection charge from EirGrid, calculated in accordance with sub-paragraph 6.3.
- 6.3 The rebate will take into account:
  - 6.3.1 the original cost of the assets;
  - 6.3.2 depreciation;
  - 6.3.3 annual indexation of the cost of the assets at CPI;
  - 6.3.4 the per MW share of the utilisation of the shared assets; and
  - 6.3.5 the connection charge received from the new **User**
- 6.4 In addition to the charges for use of the shared **Connection Assets** the new **User** will be required to make a payment to EirGrid in respect of reasonable administrative expenses.
- 6.5 Where a number of **Users** connect simultaneously and jointly make use of **Connection Assets** each **User** will be charged a proportion of the estimated cost of the shared **Connection Assets**, calculated on a per MW share of the utilisation of the shared **Connection Assets**.

## 7 APPLICATION FEES

- 7.1 An **Applicant** seeking a connection offer will be required to pay a fee to enable EirGrid to recover the costs of producing the connection offer. The fee is published as Tariff Schedule COP1 in the EirGrid Statement of Charges published on the EirGrid website<sup>1</sup>.

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<sup>1</sup><http://www.eirgrid.com/EirgridPortal/DesktopDefault.aspx?tabid=Use%20of%20System&TreeLinkModID=1445&TreeLinkItemID=48>

## 8 BONDS AND CREDIT COVER

- 8.1 An **Applicant** seeking to connect to the **Transmission System** must provide security in the form of a number of bonds which are designed to protect other **Users** of the system. Detailed requirements are set out in sub-paragraphs 8.2 - 8.4.
- 8.2 Connection Charges Bond
- 8.2.1 A **User** must post a Connection Charges Bond by the **Consents Issue Date**. This bond will cover any costs incurred during construction of the connection which are not covered under the payments made by the **User**. The bond will be drawn down should the **User** decide not to proceed to completion. The Connection Charges Bond is released upon completion of the connection and final charge payment.
- 8.3 Maximum Export Capacity Bond and Maximum Import Capacity Bond
- 8.3.1 Because of limited capacity on the **Transmission System**, capacity bonds are required of **Applicants** to ensure that **Applicants** seek only an offer solely based their MIC or MEC requirement and that the Applicant is not seeking to hoard capacity or to reserve additional capacity for later development of their facilities.
- 8.3.2 A generation **User** will require an MEC Capacity Bond and a load User will require an MIC Capacity Bond.
- 8.3.3 Once the generator has demonstrated to the satisfaction of EirGrid that it has passed the Capacity Test then the capacity bond is returned. However if the generator has not passed the Capacity Test by the date specified in the Connection Agreement then EirGrid is entitled to draw down on the MEC Capacity Bond.
- 8.3.4 The value of the MEC Capacity Bond is determined in accordance with formulae set out in the General Conditions of the Connection Agreement.
- 8.3.5 EirGrid shall be entitled to draw down under the MIC Capacity Bond under the terms of the Connection Agreement including where the **User** terminates the Connection Agreement and/or fails to pay for the appropriate loss in TUoS revenue.
- 8.3.6 A load User's MIC Capacity Bond is determined in accordance with formulae set out in the General Conditions of the Connection Agreement. The **User** is required to maintain an MIC Capacity Bond for two years.
- 8.3.7 EirGrid shall be entitled to draw down under the MEC Capacity Bond under the terms of the Connection Agreement including where the **User** terminates the Connection Agreement and/or fails to meet the Capacity Test and/or fails to submit a Capacity Certificate.
- 8.4 Decommissioning and Reinstatement Bond
- 8.4.1 A **User** must maintain a Decommissioning and Reinstatement Bond for the duration of their Connection Agreement to cover potential costs arising out of the decommissioning of **Connection Assets** and reinstatement.
- 8.4.2 The Decommissioning and Reinstatement Bond is released in the event that the

assets are not decommissioned. Where the assets are to be decommissioned, the Decommissioning and Reinstatement Bond is released when the Decommissioning and Reinstatement Charge noted in s. 9.2 has been paid by the **User**.

## **9 DISCONNECTION, DE-ENERGISATION AND DECOMMISSIONING CHARGES**

- 9.1 Where a **User** wishes a connection to be de-energised, EirGrid will arrange to de-energise the connection. No charge will be made for this service if carried out during normal working hours and following reasonable notice except, as provided by agreement.
- 9.2 On termination of the Connection Agreement the **User** shall be liable for the estimated cost of decommissioning the **Connection Assets**, removing the **Connection Assets** from the connection site and making good the condition of the connection site.
- 9.3 In the event that the assets are not decommissioned or the site is not reinstated no decommissioning or reinstatement charges, as appropriate, will be payable by the **User**.

## **10 CONTACT DETAILS**

- 10.1 Should you require any further details about the information contained in this document or if you have any comments on how this document might be improved please contact our charging representative at the address below.
- 10.2 As stated previously in the document, additional information on the connection process can be obtained at EirGrid's website – [www.eirgrid.com](http://www.eirgrid.com).

Contact details:

Customer Relations  
EirGrid plc.  
27 Lower Fitzwilliam Street  
Dublin 2

Tel: +353 1 702 6642  
Fax: +353 1 702 6040  
email: [info@eirgrid.com](mailto:info@eirgrid.com)

## 11 DEFINITIONS

<b>“All-Island Transmission Networks”</b>	means the <b>Transmission System</b> and the <b>NI Transmission System</b> taken together;
<b>“Applicant”</b>	means a party, or group of parties as appropriate, who has applied for an offer of terms to enter into an agreement with EirGrid in respect of connection to the <b>Transmission System</b> at entry or exit points on the transmission system but has not yet signed that agreement;
<b>“Connection Assets”</b>	as defined in sub-paragraph 4.1;
<b>“Consents”</b>	means any one or more, as the context requires, of planning and other statutory consents, wayleaves, easements, or other interests in, or rights over, land, or any other consents, approvals, route approvals or permissions of any kind required for the purposes of the Connection Agreement (including a <b>Users</b> 's generation authorisation or licensing arrangements but excluding fuel supply consents, if applicable) granted or issued without any appeals period, unacceptable conditions, judicial review or other legal proceedings pending;
<b>“Consents Issue Date”</b>	means the date on which both EirGrid and the <b>User</b> have obtained the <b>Consents</b> relating to the works for the <b>Connection Assets</b> and the <b>User’s</b> facility and which they are obliged to use prudent and commercial endeavours to obtain;
<b>“Forecast Statement”</b>	means the statement of that name prepared in accordance with Section 38 of the Electricity Regulation Act, 1999;
<b>“Grid Code”</b>	means the code of that name drawn up in accordance with Section 33 of the Electricity Regulation Act, 1999;
<b>“Least Cost Technically Acceptable” or “LCTA”</b>	as defined in sub-paragraph 5.1;
<b>“Northern Ireland Transmission System Operator” or “NI TSO”</b>	means the Transmission System Operator for Northern Ireland as authorised by means of a licence issued by The Department of Enterprise, Trade and Investment, under Article 10(1)(b) of the Electricity (Northern Ireland) Order 1992;
<b>“Northern Ireland Transmission System” or “NI Transmission System”</b>	means the system of electric lines operated by the <b>NI TSO</b> and comprising high voltage lines and electrical plant and meters used for conveying electricity from a generating station to a substation, from one generating station to another, and from one substation to another within Northern Ireland;
<b>“System Assets”</b>	as defined in sub-paragraph 4.3;
<b>“Transmission and Distribution System Security and Planning Standards”</b>	means the standards referred to in Condition 16 of EirGrid's <b>Transmission System Operator Licence</b> or until such a document is approved by the CER, this shall mean the Transmission Planning Criteria as defined in the Grid Code;
<b>“Transmission System”</b>	means the ESB Transmission System as defined in the Connection Agreement;



**“Transmission System Operator Licence”**

A licence issued by The Commission for Energy Regulation (the “CER”), under Section 14(1)(e) of the Electricity Regulation Act, 1999 (hereinafter referred to as “the Act”), as inserted by Regulation 32 of the European Communities (Internal Market in Electricity) Regulations 2000 (hereinafter referred to as “SI 445 of 2000”);

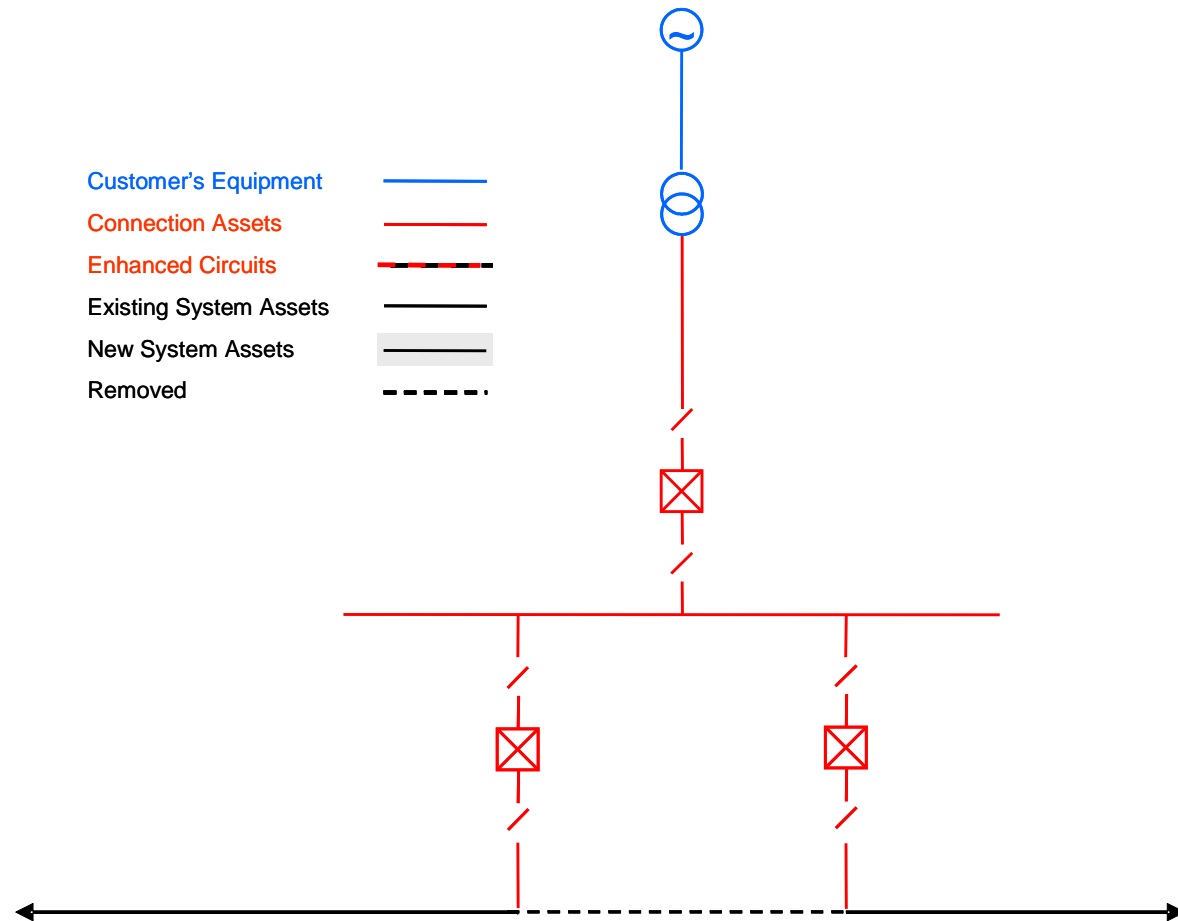
**“User”**

means a party, or a group of parties as appropriate, who has entered into an agreement with EirGrid in respect of connection to the **Transmission System** at entry or exit points on the transmission system.

**APPENDIX A - SYSTEM ASSET / CONNECTION ASSET BOUNDARY ILLUSTRATIONS**

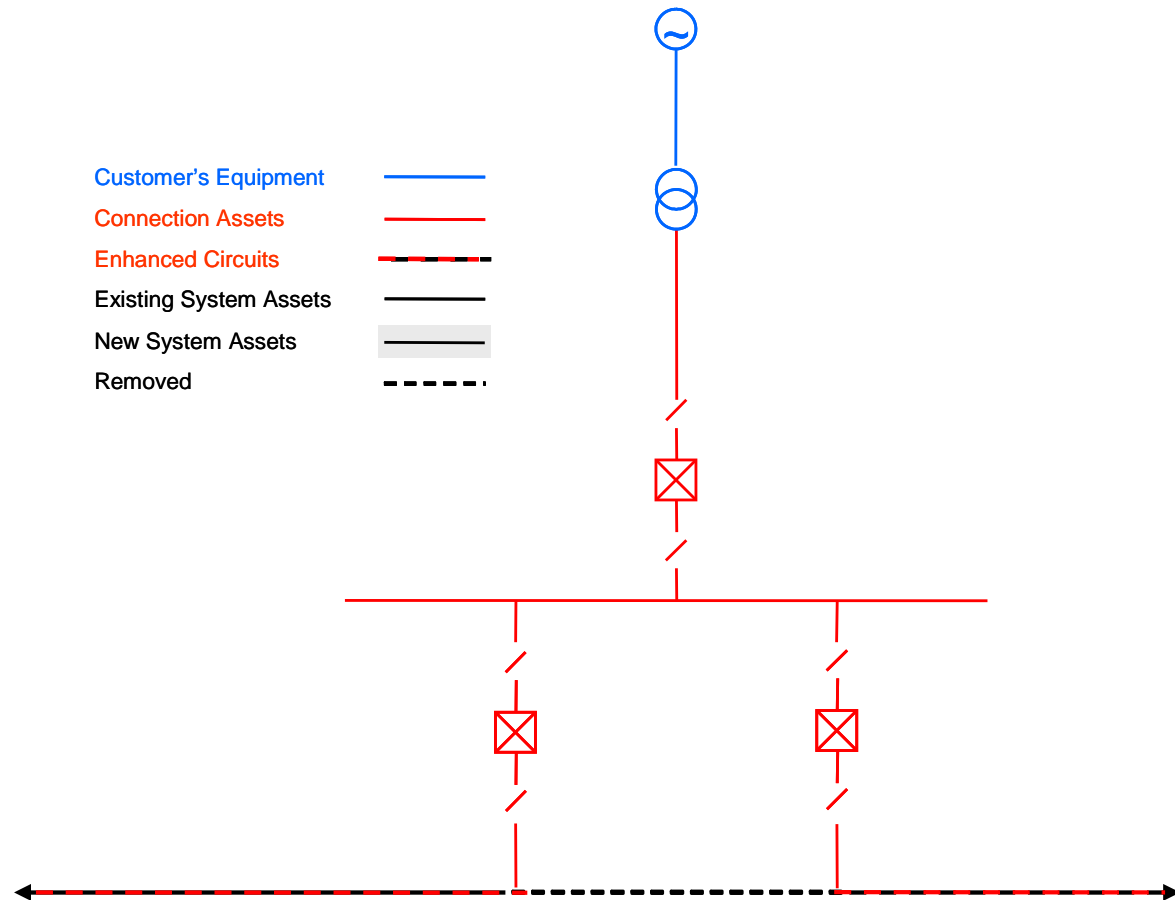
**Figure 1 – Looped Connection Station**

- Existing circuits are sufficient to carry generator output
- User pays the cost of all assets noted in red including the cost of line removal



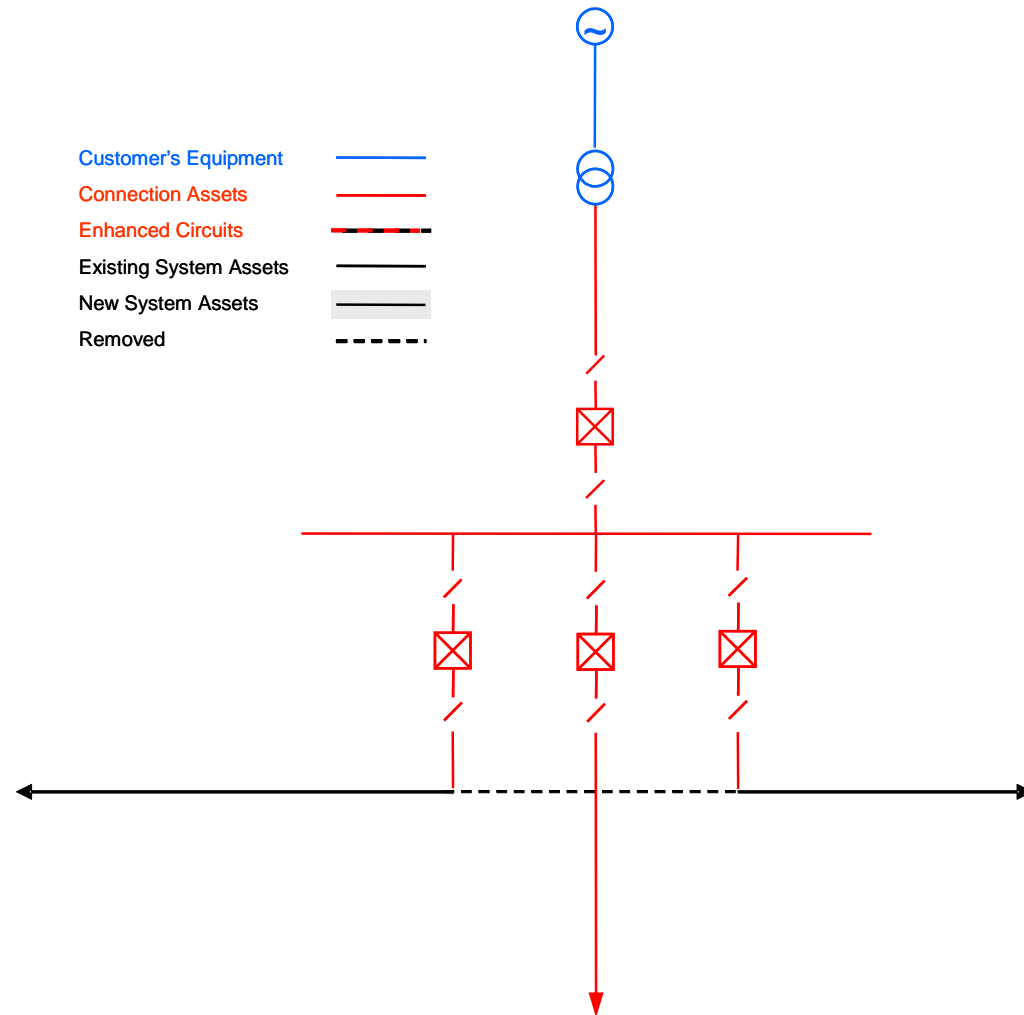
**Figure 2 – Looped Station with enhanced connection circuit(s)**

- Both of the existing circuits require enhancement to carry the generator output
- User pays the cost of assets noted in red including enhanced circuits in red/black and the cost of line removal



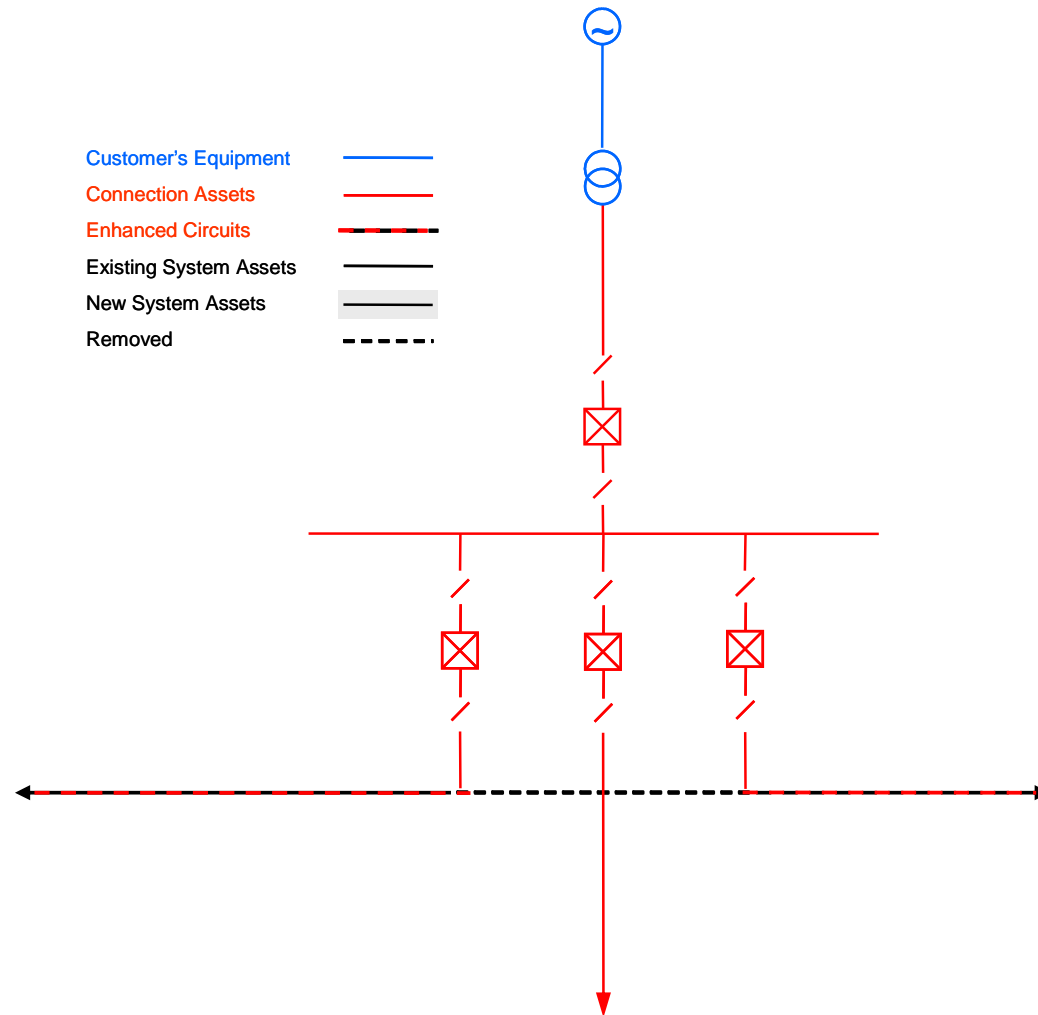
**Figure 3 – Looped Station with an additional connection circuit**

- A third circuit is needed in addition to the existing circuits to carry the output of the generator
- User pays the cost of assets noted in red including the additional circuit and the cost of line removal



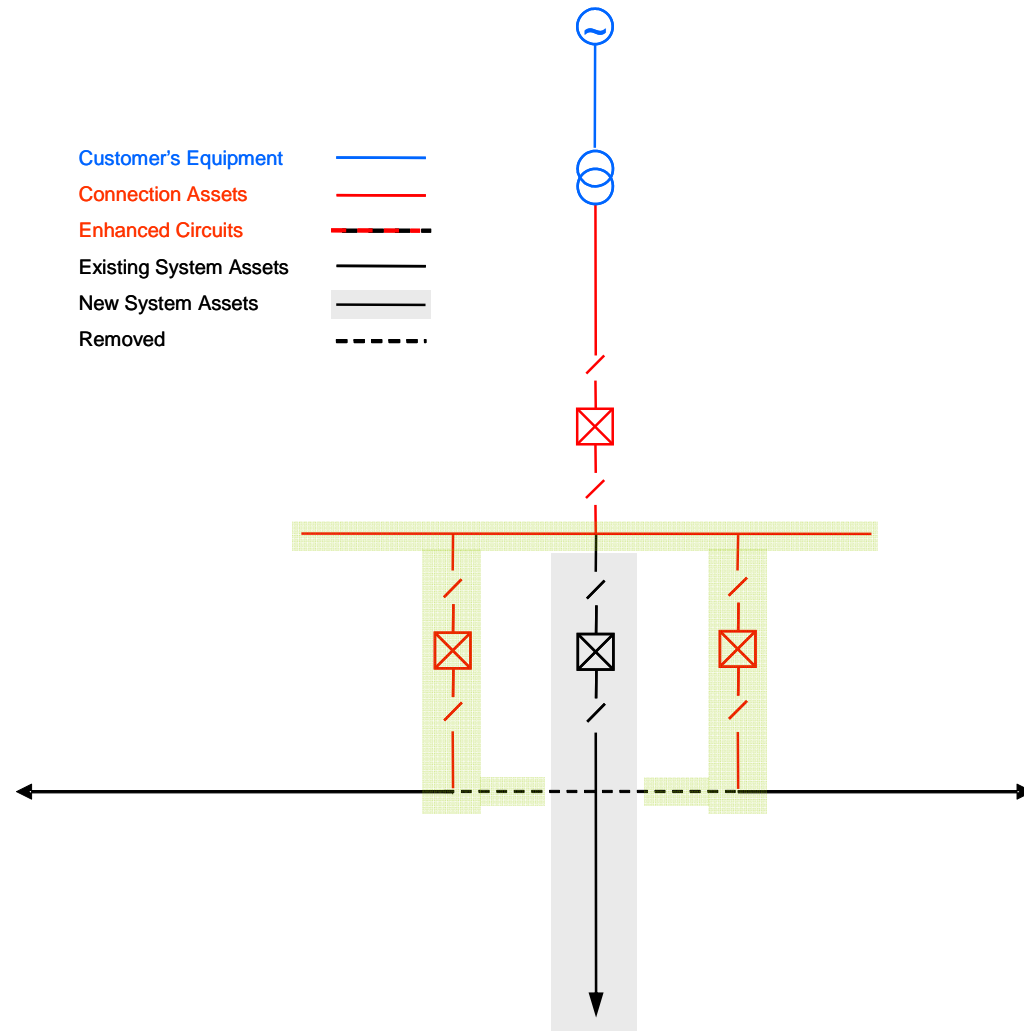
**Figure 4 – Looped Station with an additional connection circuit and enhanced connection circuits**

- In addition to a third circuit, both of the existing circuits requires enhancement to carry the generator output
- User pays the cost of assets noted in red including enhanced circuits in red/black and the cost of line removal



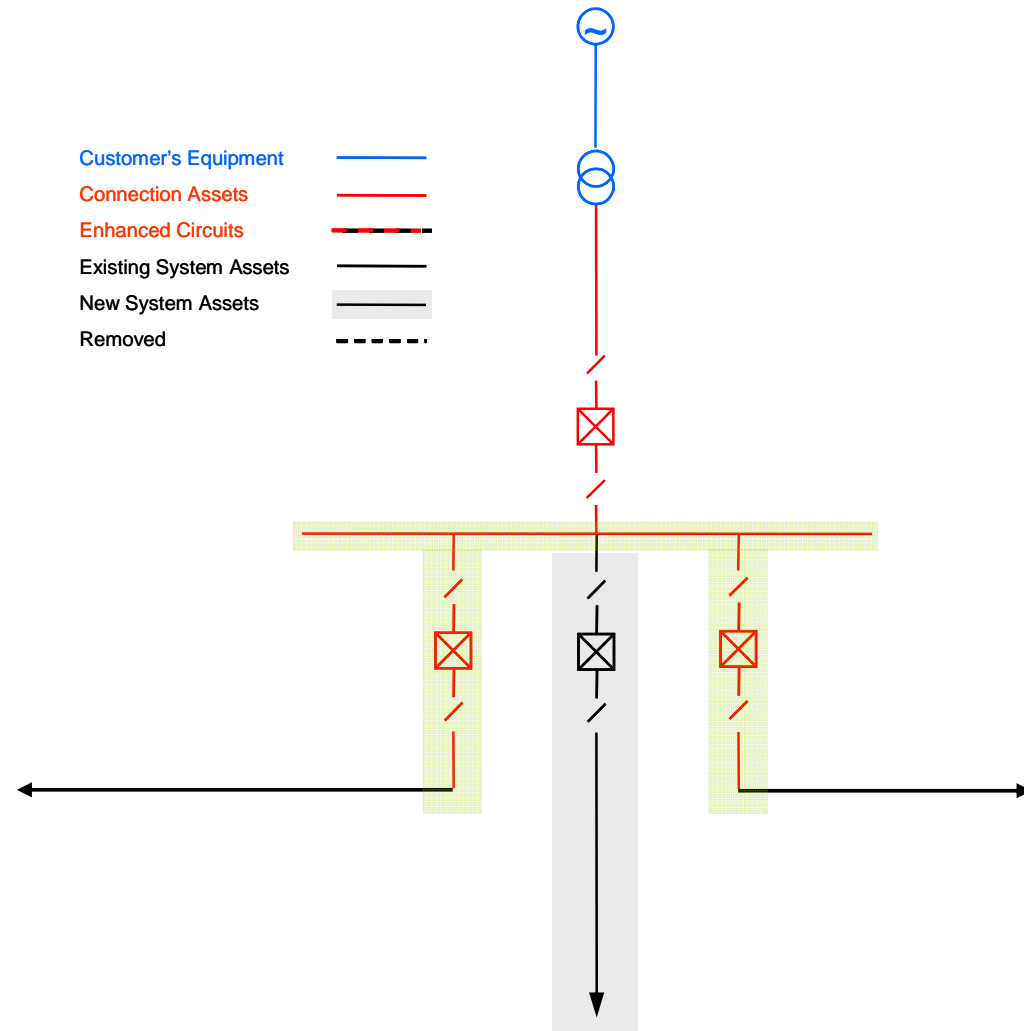
**Figure 5 – Looped Station with an additional system circuit**

- Existing circuits are sufficient to carry the generator output
- A third circuit is added as part of system reinforcements related to the User connecting to the system
- The User pays the cost of assets noted in red and the cost of line removal only
- The User is rebated for use of the connection assets by the system based on an appropriate share of the shared assets noted in light green (e.g.  $2 \div 4$  bays x shared cost).



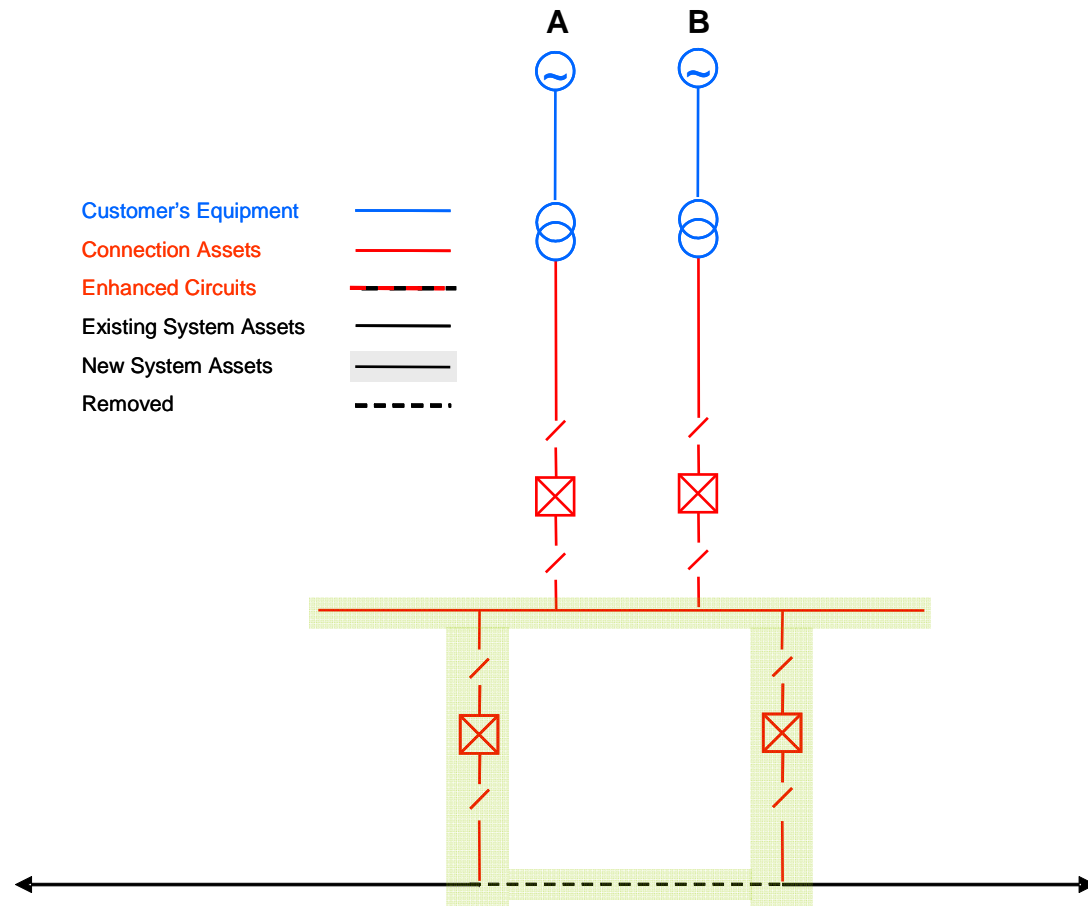
**Figure 6 – Existing Looped Station with an additional system circuit**

- Existing connection station, where the existing circuits were sufficient to carry generator output at the time of connection
- A third circuit is added as part of an unrelated system reinforcement
- The User is rebated based on a per bay share of the shared assets noted in green at the CPI indexed original cost of the assets less depreciation (e.g. 2 ÷ 4 bays x [indexed cost – depreciation]).



**Figure 6 – New Looped Station with 2 Users connecting simultaneously**

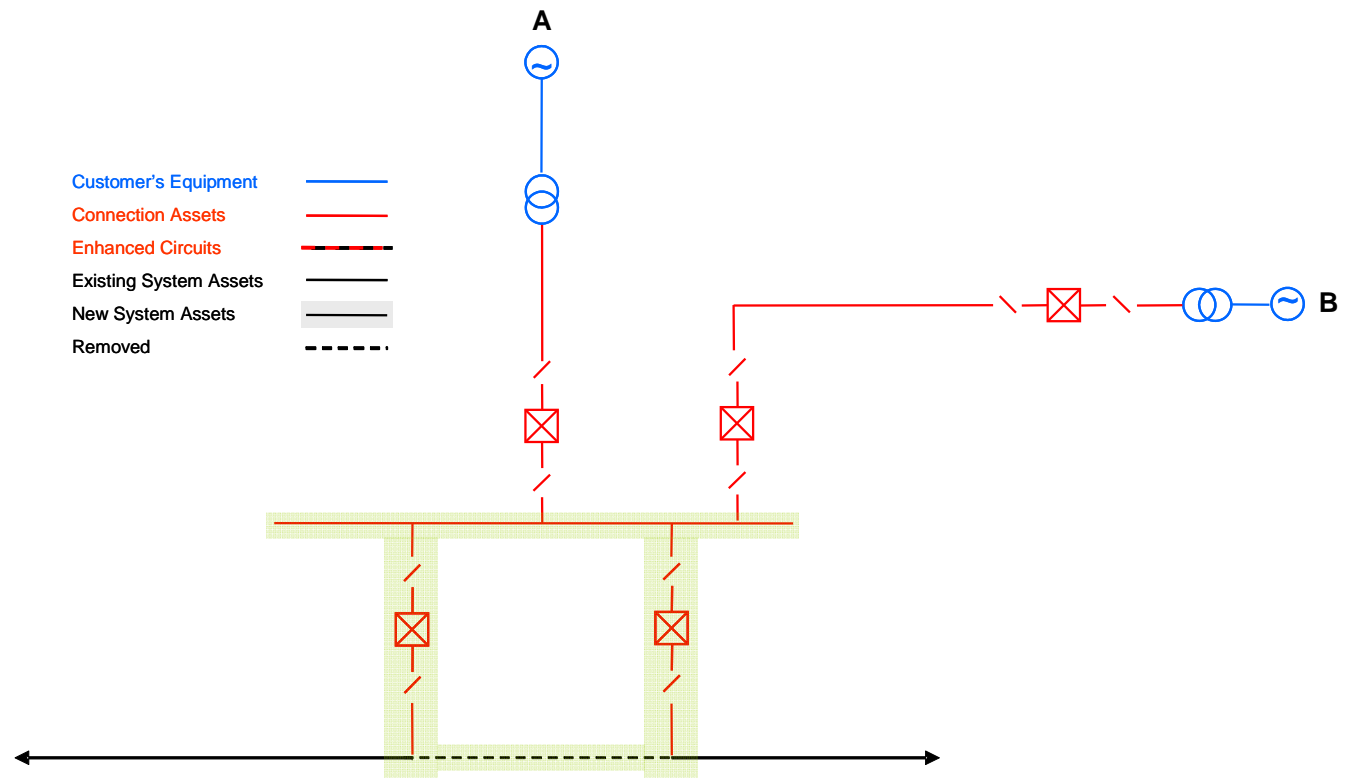
- Existing circuits are sufficient to carry the output of both generators
- Each pays for their own connection bay and line to their HV Trafo bushing
- Each pays their per MW of MEC share of the cost of the Loop Station and the cost of line removal – the Shared Assets in light green. For example: if A is 50 MW and B is 25 MW then A pays  $50 \div 75 \times$  shared cost and B pays  $25 \div 75 \times$  shared cost





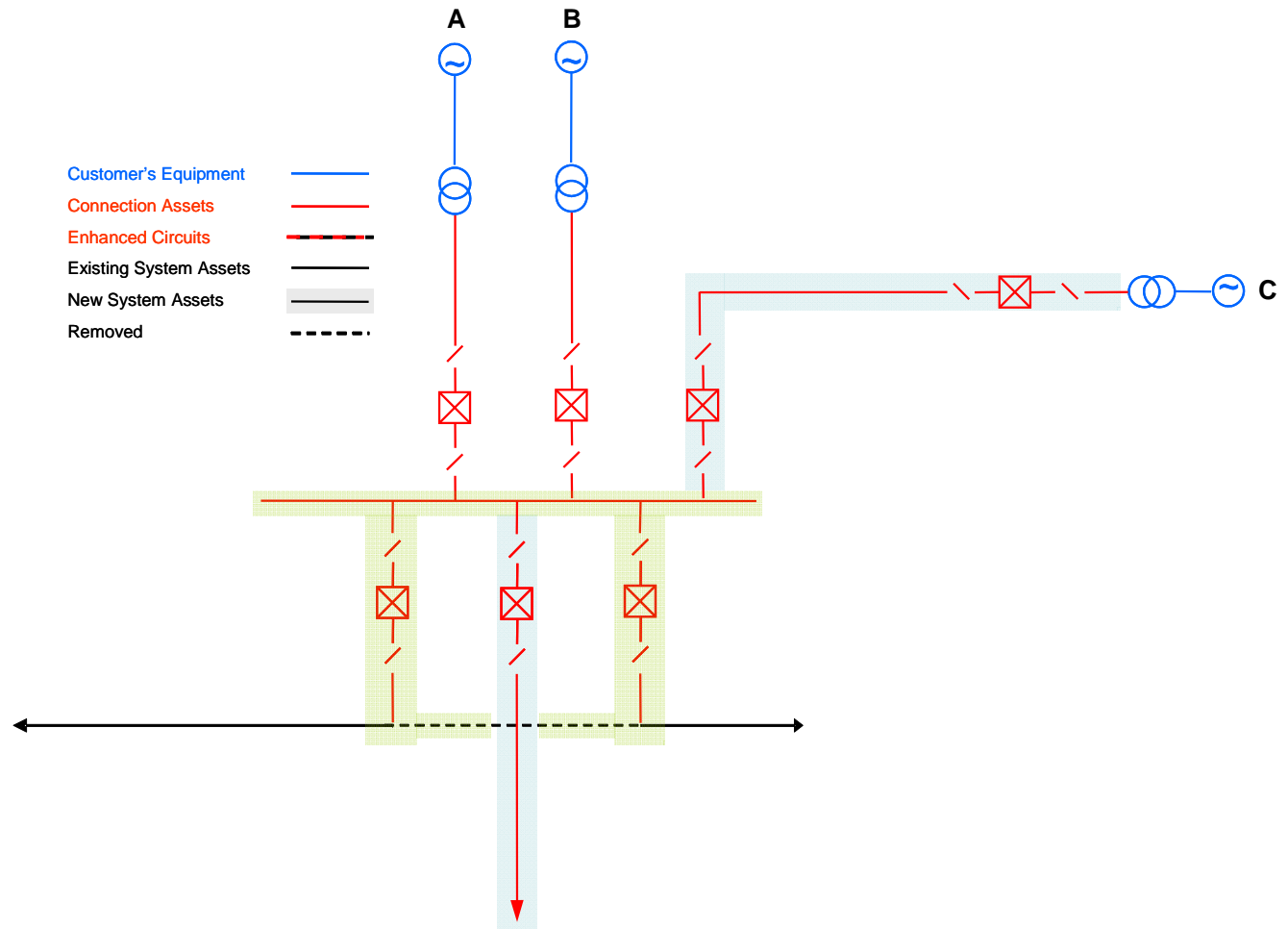
**Figure 7 – Tail Fed Station from a new Looped Station**

- Existing circuits are sufficient to carry the output of the 2nd generator and the 1st generator
- Each pays the cost of a connection bay and line to their HV Trafo bushing
- 2nd generator pays the cost of a Tail Station
- Each pays their per MW of MEC share of the cost of the Loop Station and the cost of line removal – the Shared Assets in light green. For Example: if A is 50 MW and B is 25 MW then A pays  $50 \div 75 \times$  shared cost and B pays  $25 \div 75 \times$  shared cost



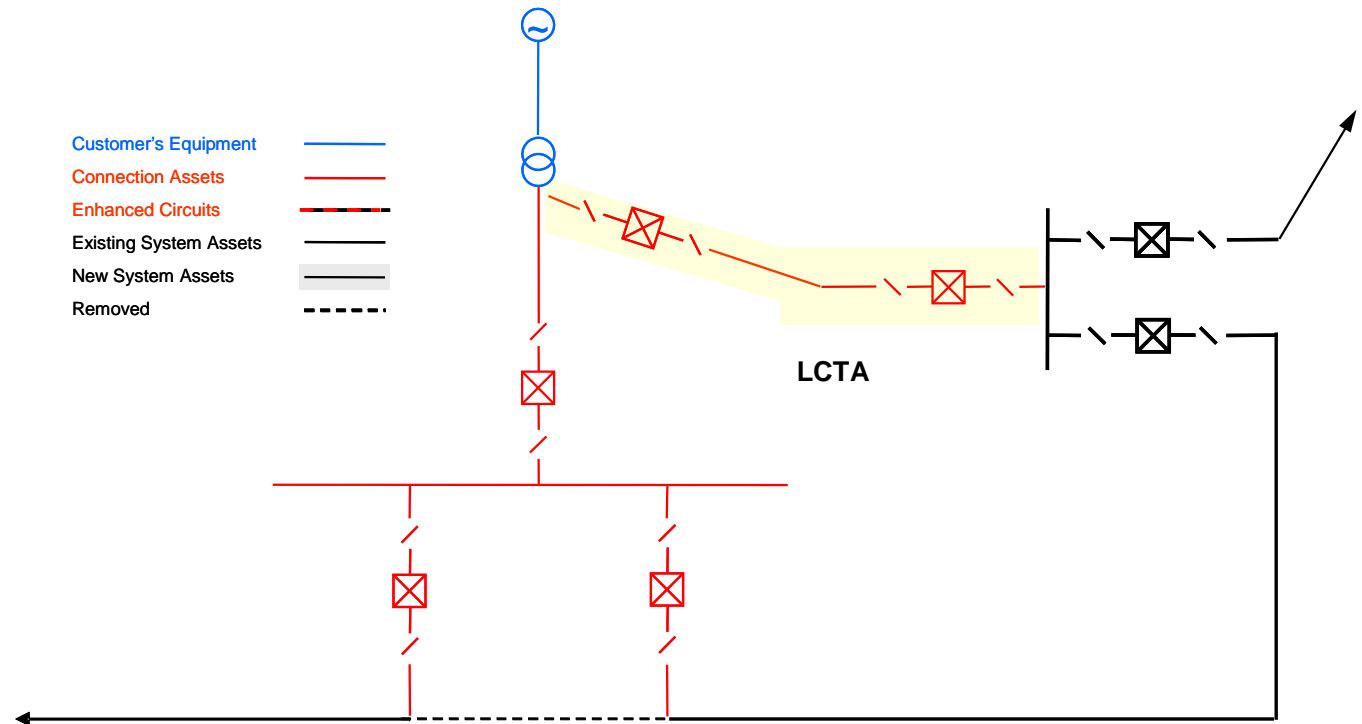
**Figure 8 – Tail Fed Station from existing shared Looped Station**

- Existing circuits were sufficient for the output of the two original generators; A, 50MW and B, 25MW.
- For a third user; C, 75MW, a 3rd line into the station is required to carry the generator's output
- User C pays for connection assts noted in light blue (bay, line to their HV Trafo bushing and 3rd line).
- User C pays their per MW of MEC share of the Shared Assets in light green as though these were new assts. For example  $75 \div 150 \times$  shared as new.
- Users A and B are rebated based on their per MW of MEC share of the CPI indexed original cost of the shared assets less depreciation. For example  $25 \div 150$  and  $50 \div 150 \times$  [indexed shared cost – depreciation].



**Figure 9 – Deviation from LCTA by the TSO**

- LCTA is a Tail Fed Station from an existing station
- For system reasons the TSO prefers to connect the User using a loop station at a different point
- The User pays based on the cost of the LCTA connection noted in yellow



**Figure 10 – Deviation from LCTA by the User**

- LCTA to connect the user is a looped station and a third circuit, instead of enhancements to existing circuits which were more expensive.
- The User elects to proceed with enhancements to existing circuits as they believe the new circuit will be extremely difficult to obtain planning consents
- User pays the cost of the option selected over the LCTA:
- A new looped station, line removal costs, and the cost of the circuit enhancements – the assets noted in red and red/black but not the third line highlighted in yellow

