

STCP 16-1 Issue 003 Investment Planning

STC Procedure Document Authorisation

Company	Name of Party Representative	Signature	Date
National Grid Electricity Transmission plc			
SP Transmission Ltd			
Scottish Hydro-Electric Transmission Ltd			
Offshore Transmission Owners			

STC Procedure Change Control History

Issue 001	26/05/2005	First Issue following BETTA Go-Live
Issue 002	25/10/2005	Issue 002 incorporating PA034, PA037 and PA039
Issue 003		Issue 003 incorporating PA048 and Offshore TQ

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Issue 004 - 24/08/10

1 Introduction

1.1 Scope

1.1.1 This procedure applies to NGET and each TO. For the purposes of this document, TOs are:

- SPT; and
- SHETL.
- all Offshore Transmission Licence holders as appointed by the Authority.

1.2 Objectives

1.2.1 This STCP describes the processes and procedures for investment planning and, individual project development across both the NGET -TO and TO -TO interfaces.

2 Key Definitions

2.1 For the purposes of STCP 16-1:

2.1.1.1 **Agreement Date** means the date by which NGET should have suitable agreements in place with the User for the purposes of undertaking the works. The agreement date stipulated by a TO shall be no less than 3 months before the date of commencement of the works

2.1.2 **Distribution Network Operator** means a holder of a Distribution Licence.

2.1.3 **Investment Planning Study Guidelines** means a document agreed between NGET and the TOs that specify various agreed details in relation to updating the Investment Plan, including the programme and assumptions made in the studies.

2.1.4 **Joint Planning Committee (JPC)** means the committee formed under section 4.1.1.

2.1.5 **Joint System Development Liaison group (JSDL)** means the groups formed under section 4.1.2

2.1.6 **Operational Assessment** means an estimate of the system constraint costs against the Project Listings proposed by the relevant TOs.

2.1.7 **Project Listings** means a summary of proposed projects to modify the National Electricity Transmission System corresponding to a set of planning assumptions, i.e. to accommodate new connections, modification to existing connections, and National Electricity Transmission System reinforcements. Each entry on the Project Listing will have referenced a completed Project Listing Document (see Appendix B).

2.1.8 **Project Listing Document (PLD)** means a document describing a specific project or set of projects to modify the National Electricity Transmission System (see Appendix A and A1).

2.1.9 **Relevant Standards** means the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS).

2.1.10 **Week 24 Data Submission** means that data which is submitted to NGET by Users in week 24 (as defined in Grid Code).

3 General Provisions

3.1.1 Nuclear Site Licence Provisions Agreement

When following this process where this may interact with, impact upon or fall within the boundary of a Nuclear Site Licence holder's site, or may otherwise have any form of affect and/or implication for a nuclear power station consideration must be given to the relevant provisions of the applicable Nuclear Site Licence Provisions Agreement, the CUSC Bilateral Connection Agreement for that site, paragraph 6.9.4 of the CUSC and Section G3 of the STC to ensure compliance with all of these obligations.

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4 Procedure

4.1 Committees/Liaison Groups

4.1.1 Joint Planning Committee

4.1.1.1 The Joint Planning Committee (JPC), consisting of named representatives from NGET and each TO, shall facilitate the co-ordination between the Parties of investment planning and the production of the SYS. The JPC will provide the governance and framework for investment planning between the TO companies. The JPC shall meet bi-annually, however the frequency of the meeting can be varied with the agreement of all Parties.

4.1.1.2 It is envisaged that agenda items for consideration at a meeting may include, for example:

- discussion of draft Investment Planning Demand backgrounds and the Investment Planning Ranking Orders by NGET ;
- the agreement of tolerances for the Boundary of Influence studies;
- agreement for the sharing of information and commitment of necessary resources to facilitate the Investment Planning and SYS Models by Parties;
- resolution of modelling issues, including contingencies and tolerances for consistency checking;
- review and consistency checking of the NETS Models for Investment Planning and SYS production;
- the production of Project Listings and supporting Project Listing Documents (PLDs) by all Parties;
- the Operational Assessment performed by NGET ;
- the programme for annual production of Project Listings and supporting PLDs. (NB this is envisaged as an annual process but could be updated on an ad-hoc basis); and review of progress with proposed and issued Grid Code and/or SQSS derogations.

4.1.1.3 The meetings described above may be supplemented with ad-hoc meetings as required. The JPC does not preclude separate bilateral TO-TO, or TO-NGET meetings.

4.1.1.4 The JPC may appoint other sub-groups as appropriate to consider specific issues. It is envisaged that such sub-groups, for example, may be set up to consider:

- dynamic models of new generators;
- System stability; or
- modelling consistency issues.

4.1.2 Joint System Development Liaison Group

4.1.2.1 A Joint System Development Liaison group (the JSDL) may be formed with a User for the purpose of investment planning co-ordination. Such groups shall be organised by NGET and formed at the request of NGET or a TO.

4.1.2.2 The JSDL shall consist of named representatives from the relevant User, NGET and the relevant TO or TOs. The JSDL shall meet twice a year, although the frequency of the meetings can be varied with the agreement of all members of the JSDL. The agenda at the meeting may include, for example:

- all parties' relevant projects from the Project Listings, including infrastructure and asset replacement projects;

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- Information about Grid Supply Points (DNOs only);
- Information about Outages; or
- Information about general issues.
- Information about embedded generation activity

4.2 Production of Investment Planning Project Listings

- 4.2.1 The JPC shall, at the first meeting of the calendar year, discuss and agree the programme, and key milestones for delivery of, the annual investment plan, which shall be documented in the agreed Investment Planning Study Guidelines.
- 4.2.2 The Parties shall review the Boundaries of Influence and produce the Hybrid **NETS**, Investment Planning Model and Summer Minimum **NETS**, Investment Planning Model in accordance with STCP 22-1 Production of Models for **NETS**, System Planning.
- 4.2.3 Each Party shall perform analysis on these Models based on the requirements of the Relevant Standards, including any sensitivity analysis considered relevant. Both the deterministic and economic requirements of the Relevant Standards shall be taken into account in any analysis.
- 4.2.4 Each Party shall consider future infrastructure reinforcements when considering any non-compliance with the Relevant Standards identified by the security analysis. Each Party shall also consider any new connection or asset replacement projects that are required, and will look to co-ordinate any future infrastructure reinforcements with such projects. Each Party shall also consider enduring changes to the capability of existing assets.
- 4.2.5 Each Party shall provide a Project Listing and associated PLDs to other relevant TOs for each project within their Boundary of Influence to facilitate the co-ordination of TOs' Transmission Investment Plans and the NGET Investment Plan, and Outage planning. This will be in accordance with Section D of the STC.
- 4.2.6 For each Party's projects, that Party shall produce an initial PLD, in such detail as is reasonably practicable and appropriate at the time, which may include the following items:
- project name;
 - brief narrative;
 - any changes to node and line data;
 - schematic diagram;
 - key dates (including commissioning date, date by which stage by stage drawings will be available and date of initial Commissioning Panel meeting); and,
 - outline Outage requirements (circuits, duration, order and Emergency Return to Service Times).
 - and Agreement Date (if applicable)
 - mathematical models in Laplace transform block diagram format to represent any dynamic control schemes present in the Transmission System. For the avoidance of doubt this includes equipment designed to meet the dynamic voltage control requirements of STC Section K, HVDC converter installations and series capacitors.
- 4.2.7 Where a TO identifies a number of options for system reinforcement or modification that meet the deterministic and economic requirements of the Relevant Standards, they may request additional data from NGET in order to complete a more detailed economic comparison of the options. Additional data may include estimates of MWh & MVarh costs, constraint volumes and constraint locations.

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4.2.8 NGET shall provide any data to the TO as reasonably requested in 4.2.7, to facilitate economic comparison of TO options. The data will not however, be detailed about the economics of any particular generator.

4.2.9 Each Party shall provide a Project Listing and associated PLDs to other TOs for each project within their Boundary of Influence to facilitate the co-ordination of Transmission Investment Plans and the NGET Investment Plan, and Outage planning.

4.2.10 All Parties shall review projects which fall within their Boundary of Influence that have been provided by other Parties in 4.2.5. Parties shall review and provide comments on these projects to consider whether they are co-ordinated, economic, and efficient.

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4.3 Operational Assessment

4.3.1 NGET shall collate the Project Listings and perform an Operational Assessment.

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4.3.2 The initial Operational Assessment will be based on the Investment Planning Background with any additional sensitivities agreed by the JPC and the appropriate JPC sub group. The Operational Assessment shall be based on node and line data and include:

- a calculation of constraint costs during the construction phase, based on the Outage information provided in the PLDs; and,
- an estimate of enduring constraint costs, based on average circuit availabilities and plausible planned Outage scenarios.

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4.3.3 NGET shall prepare separate Operational Assessment reports for each TO based on the results of the Operational Assessment. NGET shall send to the TO a first draft of its Operational Assessment report. The Operational Assessment report will make suggestions and comments on:

- problematic Outages and Outage combinations;
- problematic transmission reinforcements;
- operational complexity issues; and
- outages that impact on Users.

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4.3.4 All Parties shall consider the first draft of their Operational Assessment report and the reviews carried out under 4.2.10. Where suggested changes to the timing of Outages can be accommodated without a detrimental impact on the TOs capital programme, the relevant PLD will be updated, and revised TO Models, Project Listing and revised PLDs provided to NGET, by the TOs.

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4.3.5 If required, NGET shall re-perform the Operational Assessment to reflect any agreed changes to the PLD(s). Where necessary, NGET shall then revise and send to the relevant TO its Operational Assessment report.

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4.3.6 If NGET is not satisfied that the comments made in the draft Operational Assessment report have been properly considered by a TO, NGET can contact the TO to set out the concerns.

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4.3.7 Affected Parties can hold a meeting in order to try and resolve any disagreement. If the disagreement is resolved, then the TO shall update their PLDs and Project Listing or NGET acknowledge the TO's final Project Listings.

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4.3.8 Any updated Project Listing and PLDs will be sent to all relevant Parties by NGET as appropriate.

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4.3.9 If Parties cannot resolve the dispute, any of the Parties may refer the matter to the Authority, in accordance with the STC.

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4.3.10 Based on the determination of the Authority, any changes required to the TOs Project Listing and PLDs will be re-issued to all affected Parties as appropriate.

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4.4 Customer Impacts

- 4.4.1 NGET shall provide information on longer-term Project Listings on the NETS that could affect Users as part of the JSDLs' regular meetings. The information will be provided in the same form that it appears in the final PLD.
- 4.4.2 NGET shall review the final PLD and identify developments on the NETS that could impact on Transmission Connection Assets.
- 4.4.3 NGET shall follow appropriate CUSC processes to gain agreement with the affected User(s) prior to the commencement of works and in accordance with 4.7.3. and 4.7.4. of this document.

4.5 Quarterly Investment Plan Update

- 4.5.1 Each TO shall make a formal update to its Investment Plan every quarter (including Project Listing, any changed PLDs and appropriate TO Models). Any material changes in between the quarterly updates (including schemes changing status from planned to firm and new schemes being added to the plan) shall be notified as soon as possible via an email to NGET and the appropriate TO if within Boundary of Influence. Any Party may request further details about proposed changes, e.g. updated models or PLDs if required.

4.6 Changes to Planning Assumptions

- 4.6.1 At any time, NGET may produce new Planning Assumptions either as a consequence of a TO requesting additional information from NGET (this may follow the TO receiving notification from NGET of a disconnection notice), or if NGET decides it is appropriate to produce new Planning Assumptions. In such cases, the Parties shall agree which parts of the process in section 4.2 shall be followed to produce revised Project Listings and their associated revised or new Project Listing Documents.

4.7 Detailed Option Development

4.7.1 Economic Analysis

- 4.7.1.1 At the discretion of the relevant TO, the TO shall work up an option in detail, using the consistent data Models. This will include detailed analysis of the chosen option against the latest Investment Planning Ranking Orders and Investment Planning Demand background, and will enable the production of a more detailed Outage programme.
- 4.7.1.2 Should the TO wish to carry out further economic analysis, NGET shall provide economic data at the request of the TO. For the avoidance of doubt, the data will not be detailed about the economics of any particular User.
- 4.7.1.3 Based on the options available for the project, the relevant TO shall confirm the preferred solution to address a particular need. This will enable a firm assessment of the Outage proposals for the project to be undertaken by the TO, and an assessment of the Outage plan to be undertaken by NGET. The TO shall also assess the impact of the project on other projects in its licensed area.
- 4.7.1.4 NGET shall provide comments on the project to the relevant TO. This will include for example:
- minor changes to timing to enable best fit with other projects;
 - changes to design to minimise constraints;
 - any impact on NGET assets; and
 - estimate of impact, if any, on User assets.
- 4.7.1.5 Following receipt of any comments from NGET, the TO shall assess NGET's comments, and revise the project accordingly. At the TO's discretion the status of the

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4.7.2.1 If changes to **NGET assets** are required as a result of a TO project, NGET shall consider the necessary works in accordance with its Investment Planning process. Should these be considered appropriate, NGET may include them within the NGET Project Listings. **These works will be added to NGET Project Listings and flagged as “firm”**

4.7.3.1 Where changes to Transmission Connection Assets identified in the PLD by the TO are due to asset life expiry, NGET shall issue a Replacement Notice to the User in accordance with the CUSC. NGET shall request a TO Construction Offer from the TO, in accordance with STCP 18-1.

4.7.3.2 Where changes to Transmission Connection Assets identified in the PLD by the TO are triggered by the increased capability of the NETS Transmission System (i.e. change in supply voltage, increase in fault levels, etc), NGET shall issue a Modification Notification to the User, in accordance with the CUSC. Following receipt of a Modification Application from the User, NGET shall request a Construction Offer from the TO in accordance with STCP 18-1. This offer shall be issued no sooner than 6 months after the Asset Replacement Notice in section 4.7.3.1.

4.7.3.3 For the avoidance of doubt, and subject to sub-paragraph 4.7.3.4, a TO shall not undertake any Modification unless and until NGET has notified such TO that NGET has either agreed such Modification with the affected User or that any dispute between NGET and the User in relation to such Modification has been determined by the Authority pursuant to the CUSC.

4.7.3.4 Each TO shall take all reasonable steps to avoid exercising its rights pursuant to this sub-paragraph 4.7.3.4 but, in the event that it has reasonable grounds to believe, given its Transmission Licence and statutory duties, that a Transmission Connection Asset should be replaced prior to notice being received pursuant to sub-paragraph 4.7.3.2, the TO shall consult with NGET as far as reasonably practicable but shall be entitled to replace such Transmission Connection Asset.

4.7.4.1 If User works are identified by the TO and notified in the PLD, NGET shall submit a Modification Notification to the User in accordance with the CUSC. In the event that a Modification Application is received from the User, NGET shall submit a Modification Application to the TO in accordance with STCP 18-1

4.7.4.2 For the avoidance of doubt, and subject to sub-paragraph 4.7.4.3, a TO shall not undertake any Modification unless and until NGET has notified such TO that NGET has either agreed such Modification with the affected User or that any dispute between NGET and the User in relation to such Modification has been determined by the Authority pursuant to the CUSC.

4.7.4.3 Each TO shall take all reasonable steps to avoid exercising its rights pursuant to this sub-paragraph 4.7.4.4 but, in the event that it has reasonable grounds to believe, given its Transmission Licence and statutory duties, that a Transmission Connection Asset should be replaced prior to notice being received pursuant to sub-paragraph 4.7.4.2, the TO shall inform NGET and consult with NGET as far as reasonably practicable but shall be entitled to replace such Transmission Connection Asset.

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Appendix A: Project Listing Document.

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Appendix B: Project Listing

Project Listing

Planning Background	SYS 20Oct2010
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Last Updated	19/May/2010
Comments	

Project Number	Project Name	Company	Material Impact	Scheme Driver	Commissioning Date	Project Status	Version	Last Updated	Replacement?	User Works?

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Appendix C: Abbreviations & Definitions

Abbreviations

DNO	Distribution Network Operator
NETS SQSS	NETS Security and Quality of Supply Standard
JPC	Joint Planning Committee
JSDL	Joint System Development Liaison Group
PLD	Project Listing Document
SHETL	Scottish Hydro-Electric Transmission Ltd
SPT	SP Transmission Ltd
SRS	Site Responsibility Schedules
STC	System Operator Transmission Owner Code
SYS	Seven Year Statement
TO	Transmission Owner

Definitions

STC definitions Used:

Authority
CUSC
Customer
Distribution Licence
Emergency Return To Service
National Electricity Transmission System
Grid Code
Modification
NGET
NGET Investment Plan
Offshore Transmission Owner
Outage
Party
Seven Year Statement
Transmission Connection Assets
Transmission Investment Plan
TO Construction Offer
TO Construction Agreement
Transmission Investment Plan
User

Grid Code Definitions Used:

Grid Supply Points

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CUSC Definitions Used:

Bilateral Agreement

Modification Notification

Modification Application

Modification Offer

Replacement Notice

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Definitions used in the document that are covered in other STCPs:

Boundary of Influence – as defined in STCP 22-1.

Commissioning Panel – as defined in STCP19-4

Host TO – as defined in STCP18-1

Hybrid GB Investment Planning Model - as defined in STCP 22-1

Investment Planning – as defined in STCP22-1

Summer Minimum GB Investment Planning Model - as defined in STCP 22-1

TO Model - as defined in STCP 22-1

Ranking Order – as defined in STCP 22-1

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or, in the case of an Offshore TO, an initial complete set of node and line data for a new Offshore Transmission System;

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impact on Transmission Connection Assets;
indication of user works (if applicable);

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estimate of impact, if any, on User assets

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Where a TO has identified an impact on Transmission Connection Assets, or the potential requirement for User Works, the TO shall notify NGET with an agreement date.

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Each Offshore TO shall make a formal update to its PLDs to NGET without delay following any changes (or anticipated changes) to the design or improvement in data items (i.e. design parameters replacing typical parameters or tested parameters replacing design values).

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Onshore and offshore relevant here

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NGET assets

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User Works and changes to Transmission Connection Assets

NGET

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shall identify if there are changes to Transmission Connection Assets or a requirement for User works.

No User Works or changes to Transmission Connection Assets

Where the project does not involve changes to Transmission Connection Assets and does not trigger User works, NGET

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shall confirm that no TO Construction Offer shall be required and the project

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and the TO shall make an offer to NGET

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using the relevant parts of

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STCP

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NGET shall subsequently progress agreement with the User in accordance with the GB CUSC.

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require replacement,

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the TO shall provide a Modification Request to NGET and NGET shall follow the GB CUSC to obtain User agreement.

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Subject to paragraph 4.7.7.1, the TO shall not progress changes to Transmission Connection Assets until NGET has obtained appropriate agreement with the affected User or any dispute has been determined by the Authority pursuant to the GB CUSC.

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consult

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OR

4.7.3.3 Notwithstanding paragraphs 4.7.3.1 and 4.7.3.2, in the event of either a failure of a TO asset in situ, or an urgent safety issue, NGET and the TO shall consult with the User(s) as far as reasonably practicable prior to the replacement of the affected asset. NGET shall advise the User of the change, and as soon as possible make an offer for the replacement, which may be accepted or referred to the Authority, in accordance with the CUSC.

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The TO shall take all reasonable steps to avoid exercising its rights pursuant to this sub-paragraph 4.7.5.3, but in the event that the TO has reasonable grounds to believe that a Transmission Connection Asset should be replaced prior to agreement with the User, the TO shall consult with NGET as far as reasonably practicable but shall be entitled to replace such Transmission Connection Asset.

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progress discussions with

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This may result in the following process outlined in STCP18-1 (Connection and Modification Application).

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Existing wording correctly reflects the obligations on NGET in accordance with the CUSC and should remain unchanged. Section 6.9.3.1 states that where Modifications are proposed by NGET, NGET shall submit a Modification Notification to the User.

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4.7.6.2

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Page 8: [64] Deleted Subject to paragraph 4.7.6.4, s	amanda.may	16/06/2010 12:47:00
Page 8: [65] Deleted ould agreement withShould the User not be obtained, the works	amanda.may	16/06/2010 12:47:00
Page 8: [66] Deleted shall not proceed and the User or NGET (with the agreement of the TO) can take the application to the Authority to settle any dispute under the terms of the GB CUSC.	amanda.may	16/06/2010 12:47:00
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OR

4.7.4.3 Notwithstanding paragraphs 4.7.4.1 and 4.7.4.2 to , in the event of either a failure of a TO asset in situ, or an urgent safety issue, NGET and the TO shall consult with the User(s) as far as reasonably practicable prior to the replacement of the affected asset. NGET shall advise the User of the change, and as soon as possible make an offer for the replacement, which may be accepted or referred to the Authority, in accordance with the CUSC.

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The TO shall take all reasonable steps to avoid exercising its rights pursuant to this subparagraph 4.7.6.4, but in the event that the TO has reasonable grounds to believe that a Transmission Connection Asset should be replaced prior to agreement with the User, the TO shall consult with NGET as far as reasonably practicable but shall be entitled to replace such Transmission Connection Asset.

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Failure of Asset or Urgent Safety Issue

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Notwithstanding paragraphs 4.7.3.1 to 4.7.6.2, in the event of either a failure of a TO asset in situ, or an urgent safety issue, NGET and the TO shall consult with the User(s) as far as reasonably practicable prior to the replacement of the affected asset. NGET shall advise the User of the change and progress the agreement in accordance with the GB CUSC.

End of Section

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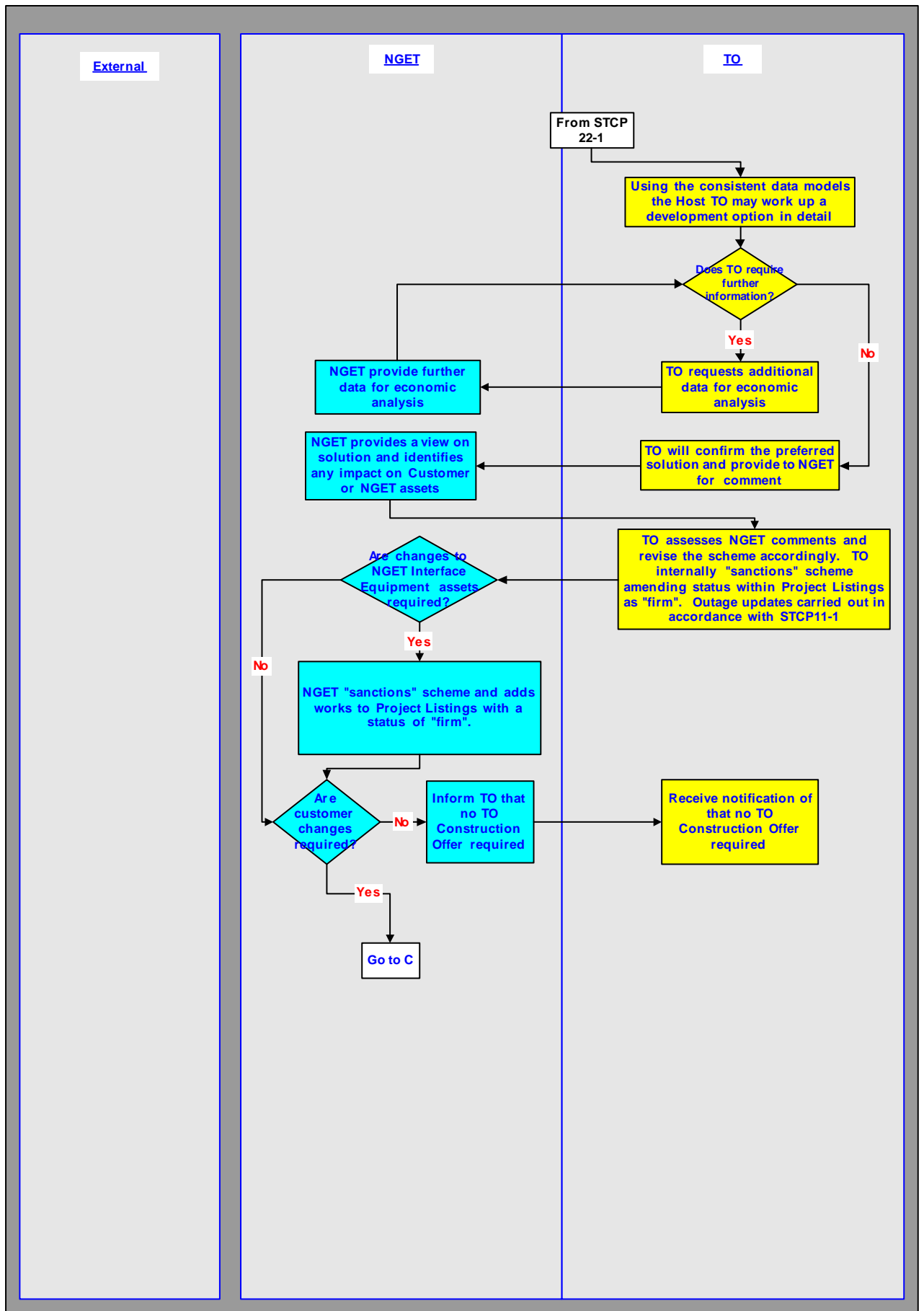
Appendix A: Flow Diagram

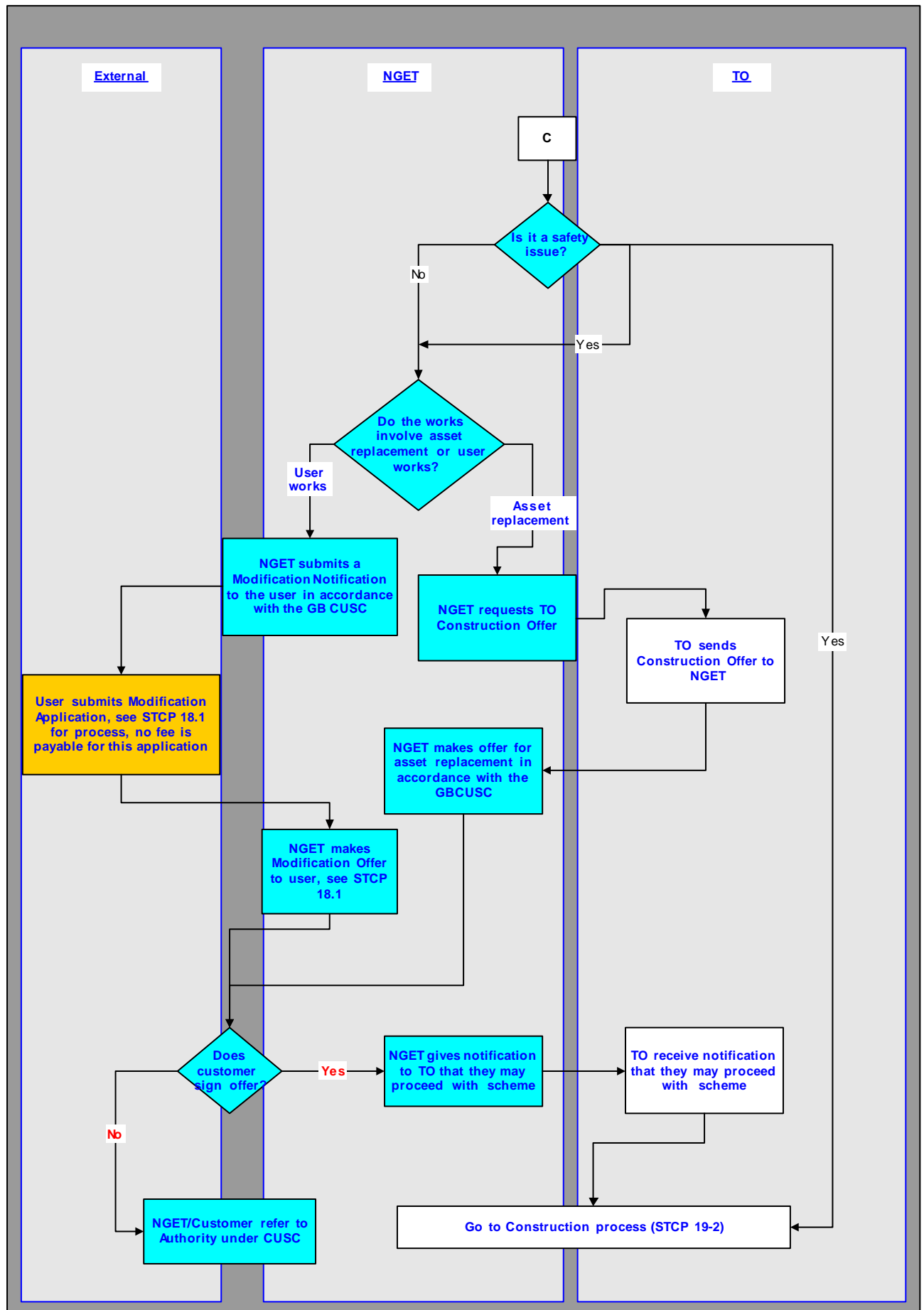
Note that the Process Diagrams shown in this Appendix A are for information only. In the event of any contradiction between the process represented in this Appendix and the process described elsewhere in this STCP, then the t

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