

STCP 16-1 Issue 002 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 | | | |

STC Procedure Change Control History

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

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.

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 **Distribution Network Operator** means a holder of a Distribution Licence.
- 2.1.2 **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.
- 2.1.3 **Joint Planning Committee (JPC)** means the committee formed under section 4.1.1.
- 2.1.4 **Joint System Development Liaison group (JSDL)** means the groups formed under section 4.1.2.
- 2.1.5 **Operational Assessment** means an estimate of the system constraint costs against the Project Listings proposed by the relevant TOs.
- 2.1.6 **Project Listings** means a summary of proposed projects to modify the GB Transmission System corresponding to a set of planning assumptions, i.e. to accommodate new connections, modification to existing connections, and GB Transmission System reinforcements. Each entry on the Project Listing will have referenced a completed Project Listing Document (see Appendix C).
- 2.1.7 **Project Listing Document (PLD)** means a document describing a specific project or set of projects to modify the GB Transmission System (see Appendix B).
- 2.1.8 **Relevant Standards** means the GB Security and Quality of Supply Standard (GB SQSS).
- 2.1.9 **Replacement Notice** is as defined in the CUSC (Section 2.17).
- 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

3.1.2 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.

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 shall meet quarterly, 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:

- the production of draft Investment Planning Demand backgrounds and the Investment Planning Ranking Orders by NGET ;
- the agreement of tolerances for the Boundary of Influence studies;
- the production of Investment Planning and SYS Models by Parties;
- resolution of modelling issues, including contingencies and tolerances for consistency checking;
- review and consistency checking of the GB 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 proposed and issued Grid Code and/or SQSS derogations.

4.1.1.3 The quarterly meetings 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 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;
- Information about Grid Supply Points (DNOs only);
- Information about Outages; or
- Information about general issues.

4.2 Production of Investment Planning Project Listings

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- 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 GB Investment Planning Model and Summer Minimum GB Investment Planning Model in accordance with STCP 22-1 Production of Models for GB 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 will produce a Project Listing, which is a summary of projects that will propose changes to its Transmission System, to make the Transmission System compliant with Relevant Standards.
- 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).
- 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.
- 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 Parties 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.
- 4.2.10 The TOs shall provide NGET with the complete Project Listing, the associated PLDs and complete TO Models representing the changes at this stage. All projects in the Project Listing will be used to form the Transmission Investment Plan or the NGET Investment Plan for each of the Parties.
- 4.2.11 All Parties shall review projects which fall within their Boundary of Influence that have been provided by other Parties in 4.2.9. Parties shall review and provide comments on these projects to consider whether they are co-ordinated, economic, and efficient.
- 4.2.12 NGET shall collate the Project Listings and perform an Operational Assessment.

- 4.2.13 The initial Operational Assessment will be based on the Investment Planning Background with any additional sensitivities agreed by the JPC. 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.
- 4.2.14 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.
- 4.2.15 All Parties shall consider the first draft of their Operational Assessment report and the reviews carried out under 4.2.11. 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.
- 4.2.16 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.
- 4.2.17 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.
- 4.2.18 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.
- 4.2.19 Any updated Project Listing and PLDs will be sent to all relevant Parties by NGET as appropriate.
- 4.2.20 If Parties cannot resolve the dispute, any of the Parties may refer the matter to the Authority, in accordance with the STC.
- 4.2.21 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.
- 4.2.22 NGET shall provide information on longer-term Project Listings on the GB Transmission System 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.
- 4.2.23 NGET shall review the final PLD and identify developments on the GB Transmission System that could impact on Transmission Connection Assets. NGET shall issue a Replacement Notice associated with these projects to Users as soon as reasonably practicable (ideally at least two years ahead of the need to start construction works). The Replacement Notice shall be in the form of a written letter, detailing the key reasoning for the proposals. For the avoidance of doubt, this notice does not place an obligation on the TOs to carry out this work.
- 4.2.24 Following the issue of the Replacement Notice, NGET and the relevant TO shall meet the Users if required to discuss the engineering and economic reasons for the project, and to consider options, programme and costs associated with the replacement.

4.3 Quarterly Investment Plan Update

- 4.3.1 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.

4.4 Changes to Planning Assumptions

- 4.4.1 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.

4.5 Detailed Option Development

4.5.1 Economic Analysis

- 4.5.1.1 At the discretion of the 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.
- 4.5.1.2 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.
- 4.5.1.3 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.
- 4.5.1.4 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.
- 4.5.1.5 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 project within Project Listings will then be flagged as "firm". At this stage the scheme can still be changed. Any resulting changes in Outages shall be requested in accordance with STCP 11-1 Outage Planning.

4.5.2 Changes to NGET assets

- 4.5.2.1 If changes to NGET assets are required as a result of a TO project, NGET shall consider the necessary works. These works will be added to NGET Project Listings and flagged as "firm".

4.5.3 User Works and changes to Transmission Connection Assets

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

4.5.4 No User Works or changes to Transmission Connection Assets

4.5.4.1 Where the works do not involve changes to Transmission Connection Assets and do not trigger User works, NGET shall confirm that no TO Construction Offer shall be required and the works may proceed.

4.5.5 Changes to Transmission Connection Assets

4.5.5.1 If there are changes to Transmission Connection Assets, NGET shall request a TO Construction Offer, and the TO shall make an offer to NGET using relevant parts of STCP 18-1.

4.5.5.2 If Transmission Connection Assets require replacement, NGET shall make an offer for asset replacement to the User, in accordance with the GB CUSC. This offer shall be issued no sooner than 6 months after the asset Replacement Notice in section 4.2.23.

4.5.6 User works required

4.5.6.1 If User works are required, NGET shall submit a Modification Notification to the User in accordance with the GB CUSC.

4.5.6.2 Upon receipt of the Modification Notification, the User will submit a Modification Application, in accordance with the GB CUSC.

4.5.6.3 Upon receipt of the Modification Application from the User, in accordance with the GB CUSC, NGET shall make a Modification Offer. The process for Modifications is outlined in STCP 18-1 Connection and Modification Application

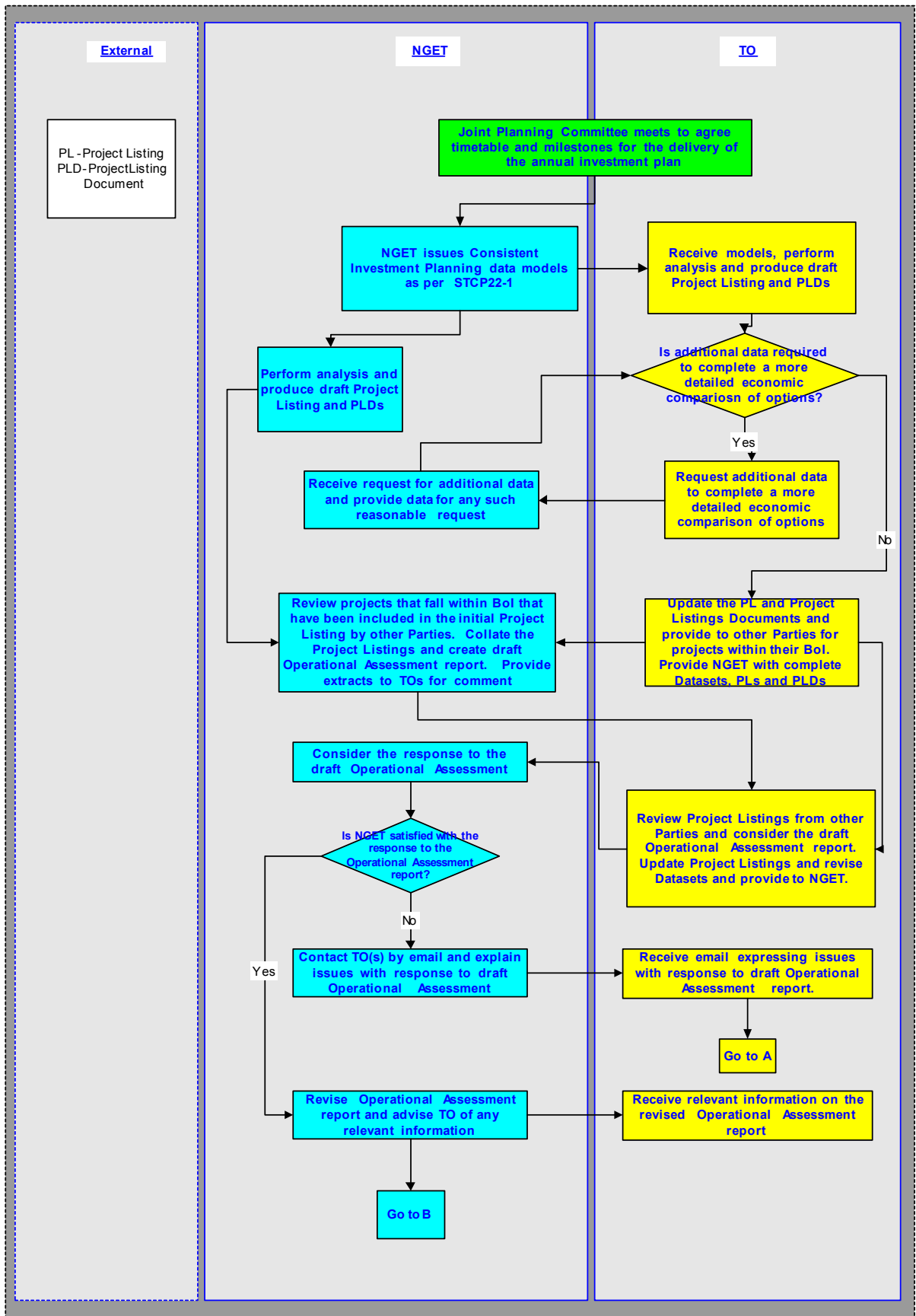
4.5.6.4 Following the signing of the Modification Offer by the User within the offer validity period, NGET shall sign the TO Construction Offer and the TO may proceed with the construction of the project in accordance with STCP 19.2 Construction Process and Scheme Closure.

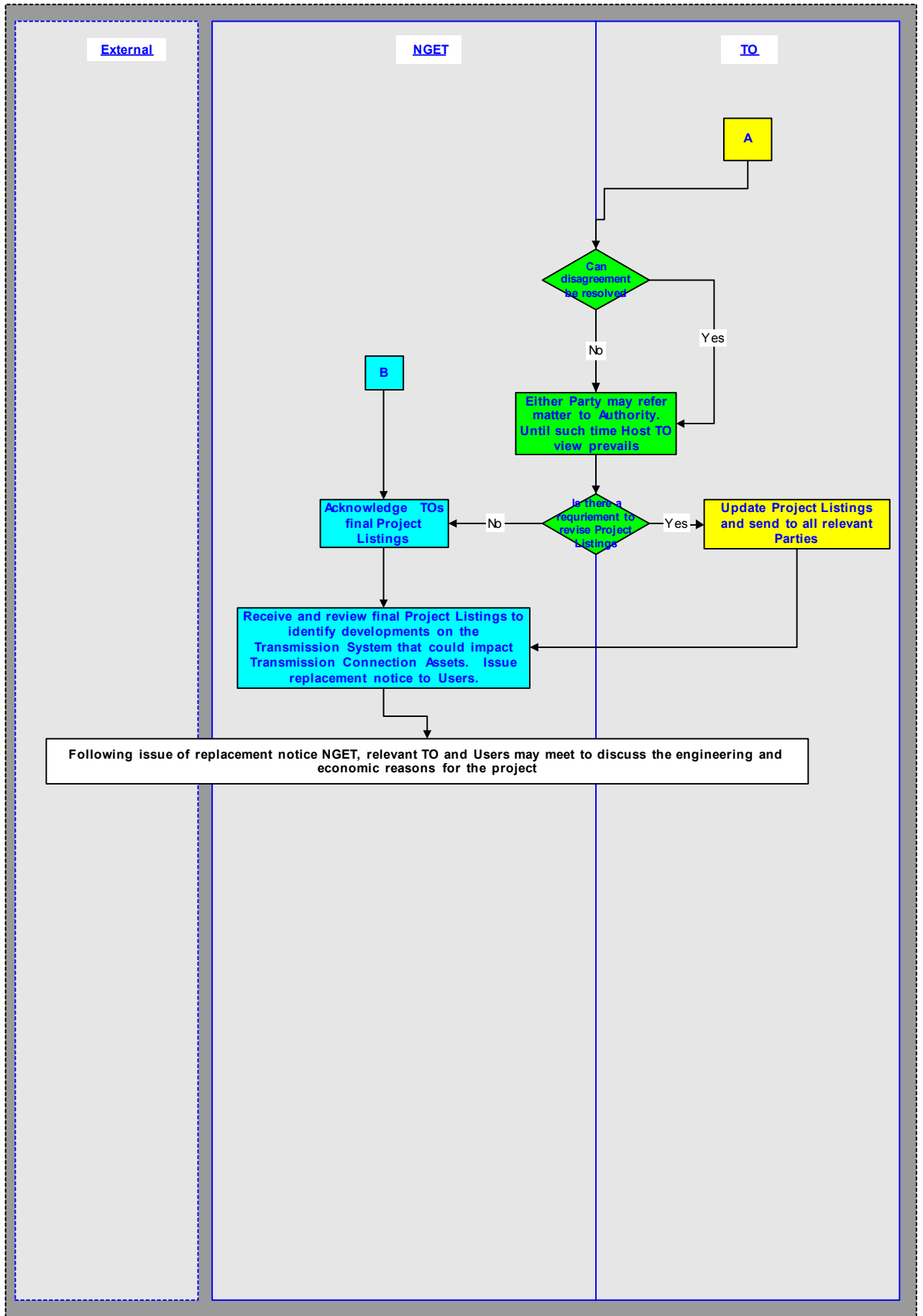
4.5.6.5 Should the User not sign the Modification Offer within the offer validity period, the works cannot proceed and the User or NGET (with the agreement of the TO) can take the application to the Authority to settle any dispute under the terms of the CUSC.

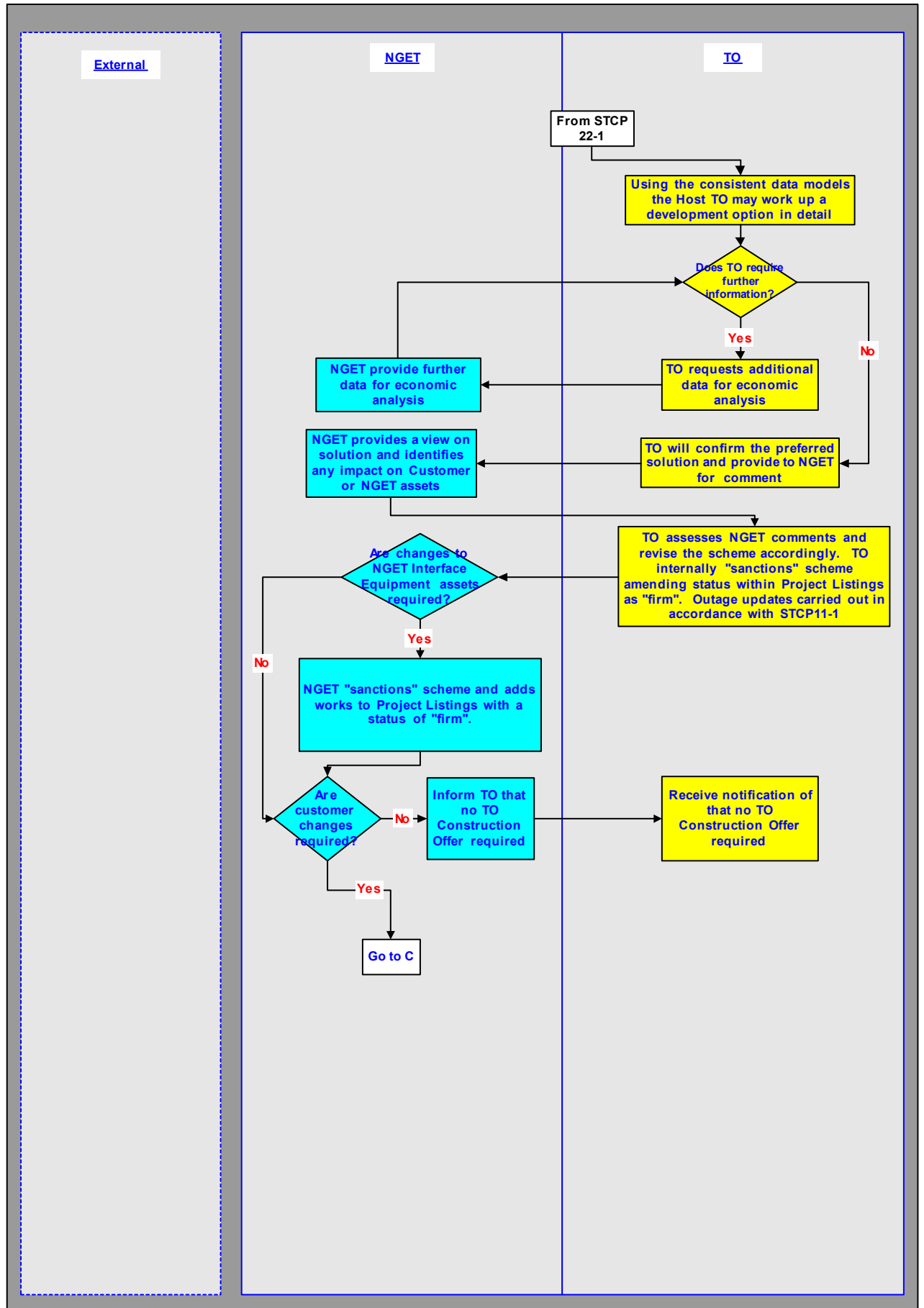
4.5.6.6 Notwithstanding paragraphs 4.5.3.1 to 4.5.6.5, in the event of either a failure of a TO asset in situ, or an urgent safety issue, NGET and the TO shall consult with the User(s) as far as reasonably practicable prior to the replacement of the affected asset. NGET shall advise the User of the change, 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.

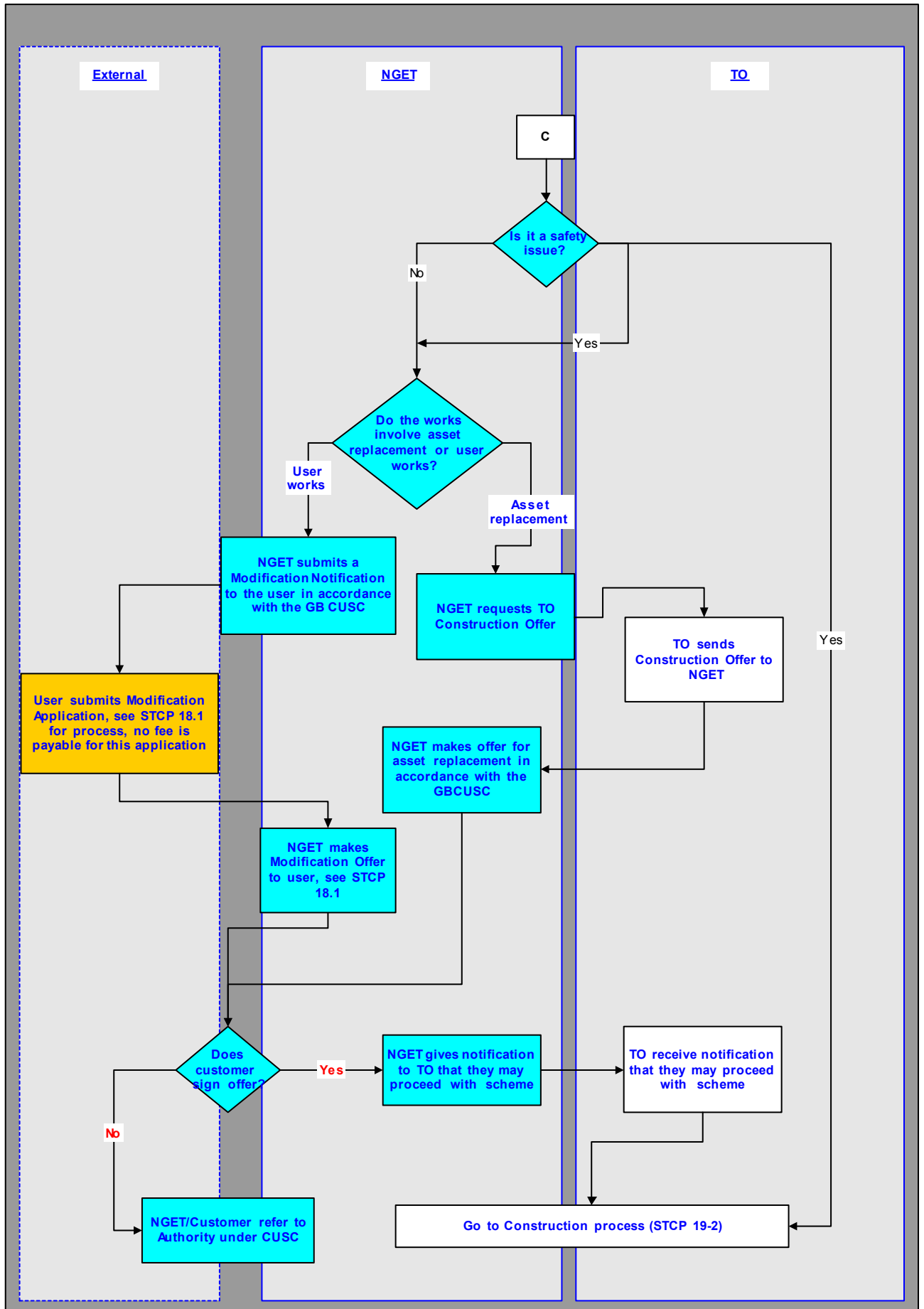
Appendix A: Flow Diagram

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 text elsewhere in this STCP shall prevail.









Appendix C: Project Listing

| Project Listing | |
|------------------------|---------------|
| Planning Background | SYS 20Oct2004 |
| Version | 1 |
| Last Updated | 19/May/2005 |
| Comments | |

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

Appendix D: Abbreviations & Definitions

Abbreviations

| | |
|---------|--|
| DNO | Distribution Network Operator |
| GB SQSS | GB 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
GB
GB Transmission System
Grid Code
Modification
NGET
NGET Investment Plan
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

CUSC Definitions Used:

Bilateral Agreement

Modification Notification

Modification Application

Modification Offer

Replacement Notice

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