

# Great Britain Security and Quality of Supply Standard Fundamental Review

## Project Definition Document

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### 1. Introduction

#### 1.1 Background

The Great Britain Security and Quality of Supply Standard (GB SQSS) dated 22 September 2004, sets out criteria and methodologies which the relevant transmission licensees (i.e. NGET, SPT, SHETL and NGET acting in its role as GBSO) are obliged to apply when planning and operating the onshore transmission system in accordance with their transmission licenses.

The GB SQSS, and accordingly the GB transmission system, needs to continually evolve to keep pace with changing requirements placed upon it. The GB SQSS Review Group is charged with the responsibility of ensuring the GB SQSS is modified in a timely fashion such that it continues to meet the challenges arising from developments within the electricity supply industry and from technological advances.

There are a number of reviews of the GB SQSS currently being, or due to be, processed by the GB SQSS Review Group. Several are at an advanced stage whilst others have yet to be addressed. In addition, there are a number of wider developments, each of which has the potential to impact on the GB SQSS. These include;

- The Government believes that there is a greater need to use more renewable energy, given the urgency of tackling climate change and the need to maintain secure domestic energy supplies. The European Union has recently agreed that by 2020 one-fifth of all Europe's energy should come from renewable sources. In line with this agreement, the European Commission has proposed a target whereby 15% of UK energy will be supplied by renewable sources. Achieving this target could require renewable generators to provide between 30% and 40% of our electricity supplies. Over the same period, a significant portion of our existing conventional and nuclear generation capacity will need to be replaced with new lower carbon generation.

The necessary development of transmission infrastructure is one of the critical barriers to providing timely access to the GB transmission system to the high volumes of renewable and other forms of generation. The Transmission System Operational Review Group (TSORG), which was established and chaired by Ofgem and attended by the three transmission licensees (NGET, SPT and SHETL), included amongst its objectives the assessment of the capability limits used when operating and planning the transmission system. The Energy White Paper published in May 2007 announced a joint review by Ofgem and the Department for Business Enterprise and Regulatory Reform (BERR) of the access regime for electricity transmission networks in Great Britain – the Transmission Access Review (TAR). The objective of TAR was to deal with the large (and growing) queue of electricity generators that have been unable to gain access to the transmission system for a number of years.

The common objective of these reviews is to facilitate the connection of renewable generation to meet the Government renewable targets while, at the same time, ensuring effective competition in generation and efficient and economic transmission investment and operation.

- As part of the Ofgem / BERR process to implement a regulatory regime for offshore transmission systems, Ofgem requested that National Grid, under the aegis of the Offshore Transmission Expert Group (OTEG), draft an extended version of the GB SQSS to cover offshore as well as onshore transmission systems. National Grid submitted their change proposals in the form of a redrafted GB SQSS (dated 29 April 2008) to Ofgem. The change proposals currently form part of Ofgem's consultation process.

The scope of the change proposals was limited to Round 1 and Round 2 offshore developments. Ofgem have subsequently explained that the offshore generation connection criteria now require further development to analyse and define the basis for an offshore security standard that can cater for generation projects of the size and location of Round 3 projects. Ofgem has also explained that the offshore generation connection criteria require further development to analyse and define the basis for an offshore security standard that can cater for the connection of External Interconnections (from External Systems) to offshore transmission systems.

## 1.2 Fundamental Review

Each of the reviews discussed in Section 1.1 has the potential to materially impact on the GB SQSS. Given the range and level of interdependencies between them, the GB SQSS Review Group has determined that an holistic approach to the review of the GB SQSS would be more efficient than a piecemeal approach.

Accordingly, the objective of this project is to undertake a 'Fundamental Review' of the GB SQSS and develop appropriate change proposals to address all relevant issues whilst taking due account of interactions. Current reviews being addressed by the GB SQSS Review Group, which are outside the working scope of this Fundamental Review in view of their advanced stage of progress, include:

- Review of need for intermittent generation specific parameters in the GB SQSS (GSR001);
- Review of 'Design of Generation Connections' (GSR003); and
- Review of Infeed Loss Limits (GSR007).

These three reviews will continue to be conducted in parallel with the Fundamental Review. Their findings, along with the findings of other related reviews (e.g. TAR), will be taken into account and form part of the conclusions of the Fundamental Review; including any resultant change proposals to the GB SQSS.

The starting point for the change proposals arising out of the Fundamental Review will recognise that the development of the GB SQSS to include offshore transmission systems is now at an advanced stage. National Grid has submitted their final change proposals to Ofgem in the form of a redrafted GB SQSS (dated 29 April 2008). Those change proposals currently form part of Ofgem's consultation process on offshore electricity transmission. In view of this advanced stage of development, the draft **GB SQSS, dated 29 April 2008**<sup>1</sup>, rather than the existing GB SQSS dated 2004, will be used as a basis for the change proposals arising out of the Fundamental Review. This will avoid confusion and duplication of work.

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<sup>1</sup> A PDF copy of the 29 April 2008 draft GB SQSS can be accessed from the Ofgem website at the following link: [draft GB SQSS, dated 29 April 2008](#)

It is important that change proposals to the GB SQSS arising out of this Fundamental Review are compatible with current and proposed developments in other Industry Codes and Licenses (e.g. GB Grid Code). Accordingly, any potential incompatibilities identified shall be resolved through close liaison with other relevant groups, external to the Fundamental Review, before change proposals to the GB SQSS are finalised.

It is intended that, following consultation on initial change proposals, final change proposals which will address all relevant issues, will be submitted to Ofgem in December 2009 in the form of a proposed Version 2.0 of the GB SQSS. Thereafter, Ofgem will conduct its own Consultation and Impact Assessment on the necessary License Change which is anticipated will take a further three months. Accordingly, the target for commencement of the new GB SQSS regime is April 2010.

Project Stakeholders are:

- a) National Grid Electricity Transmission plc (NGET);
- b) SP Transmission Ltd (SPT);
- c) Scottish Hydro-Electric Transmission Ltd (SHETL);
- d) The Office of Gas and Electricity Markets (Ofgem);
- e) Distribution Network Operating companies;
- f) Generation companies; and
- g) Supply companies.

High Level Principles of the Fundamental Review are summarised below:

- a) Review levels of security provided and ensure consistency between planning and operational criteria and methodologies as appropriate taking due account of the contribution of current and emerging generation technologies and the ongoing Transmission Access Review.
- b) Review the level of demand security provided by application of the GB SQSS and ensure an appropriate level is provided across the system taking due account of the contribution of current and emerging technologies.
- c) Develop change proposals for offshore transmission systems to include Round 3 offshore developments.

Project Deliverables of the Fundamental Review are summarised below:

- a) An agreed Project Definition Document and high level overall Project Plan.
- b) Establishment of Working Groups.
- c) Establish Industry Review Group.
- d) Detailed Terms of Reference for each Working Group.
- e) A set of Outline Principles Document.
- f) A set of High Level Proposals.
- g) Draft Change Proposals.
- h) Final Change Proposals.
- i) Final Change Proposals consultation
- j) Submission of change proposals to the GB SQSS Review Group in the form of a proposed revision to the GB SQSS for onward submission to Ofgem to seek a License change.

## **2. Work Areas**

The high level principles of the Fundamental Review have been translated into the following agreed work areas. As explained under Section 3.3 of this document, separate Working Groups will address each of these work areas:

1. International Benchmarking  
Conduct an international comparison of planning and operational criteria and methodologies. Of particular relevance is the treatment of high volumes of onshore

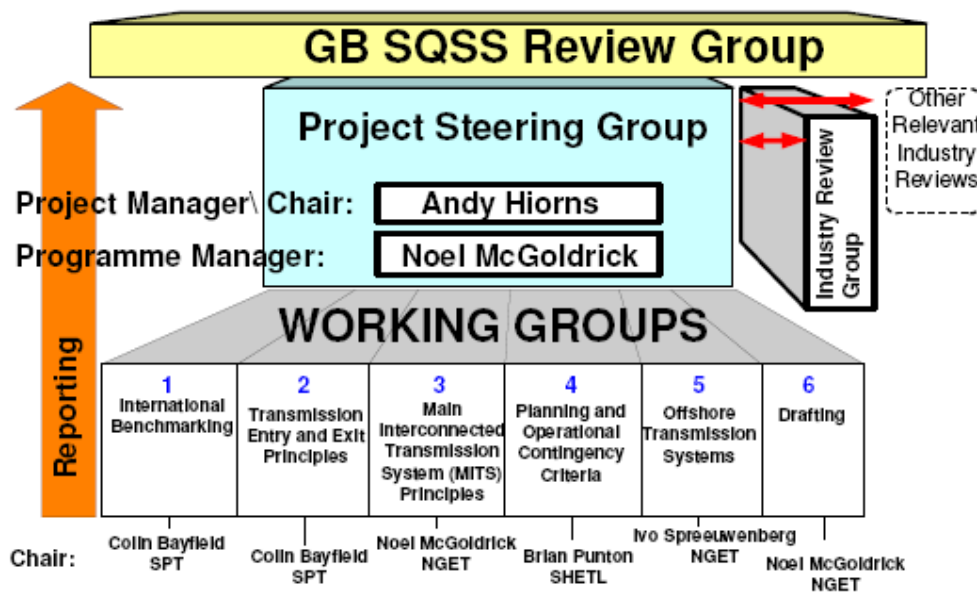
and offshore renewable generation. Deliver a detailed report on the subject to inform the GB SQSS Steering Group and Working Groups of the Fundamental Review.

2. Transmission Entry and Exit Principles  
Review the onshore generation connection and onshore demand connection planning criteria of the GB SQSS and develop change proposals as appropriate taking due account of the impact of the findings of the Transmission Access Review. This review will take due account of the impact of the conclusions of the 'Review of Design of Generation Connections' (GSR003). Offshore generation and demand connection criteria fall within the scope of the Offshore Transmission Systems work area (item 5 below).
3. Main Interconnected Transmission System (MITS) Principles  
Review the criteria and methodologies for planning and operating the MITS (onshore) and develop change proposals as appropriate taking due account of the impact of the findings of the Transmission Access Review. This will include areas relating to onshore demand security and onshore generation access to the MITS and will take due account of the impact of the conclusions of the 'Review of Need for Intermittent Generation Parameters in the GB SQSS' (GSR001).
4. Planning and Operational Contingency Criteria  
Review the onshore contingency criteria used throughout the onshore sections of the GB SQSS (onshore generation connection, onshore demand connection and MITS) and develop change proposals as appropriate. This will include consideration of criteria relating to N – n, voltage, stability and switch faults taking due account of the impact of the conclusions of the 'Review of Infeed Loss Limits' (GSR007).
5. Offshore Transmission Systems  
Review the GB SQSS change proposals for offshore transmission systems which were submitted to Ofgem on 29 April 2008. The current change proposals are based, inter alia, on cost benefit analyses appropriate to Round 1 and Round 2 offshore developments. Ofgem has explained that the offshore generation connection criteria require further development to analyse and define the basis for an offshore security standard that can cater for generation projects of the size and location of Round 3 projects. Ofgem has also explained that the offshore generation connection criteria require further development to analyse and define the basis for an offshore security standard that can cater for the connection of External Interconnections (from External Systems) to offshore transmission systems.
6. Drafting GB SQSS Change Proposals Document  
Produce consolidated drafts, consultation documents and a final change proposals document. Amongst other things, this work will be based on detailed proposals documents reflecting the findings of the five other work areas. Those detailed proposals will be consolidated to provide a unified, internally consistent set of change proposals in the form of a revised GB SQSS for both onshore and offshore transmission systems.

### **3. Project Governance**

The following paragraphs describe the various groups, existing and new, participating in the GB SQSS Fundamental Review, their role and the reporting lines between each group.

The reporting structure between groups is intended to encourage open communication, collaboration and demonstrate respect for all participants. The following diagram provides an overview of the reporting structure:



### 3.1 The GB SQSS Review Group

This existing group is governed by the GB SQSS governance arrangements and meets on a quarterly basis. The GB SQSS Review Group is chaired by National Grid and has members from each onshore transmission licensee. The Authority (Ofgem) is also represented. The work for the GB SQSS Fundamental Review has been sanctioned by the GB SQSS Review Group.

In the context of the Fundamental Review, responsibilities include:

- Project Sponsor;
- Ensure openness and inclusiveness; and
- Sign off submissions to Ofgem including the final change proposals arising from the Fundamental Review.

### 3.2 Project Steering Group

The Project Steering Group reports directly to the GB SQSS Review Group and meets on a monthly basis. The Project Steering Group is chaired by the Project Manager and has members from each onshore transmission licensee; Ofgem (as an observer); and invited experts. Current core membership is:

Andy Hiorns	NGET (Chair and Project Manager)
Noel McGoldrick	NGET (Programme Manager and Secretary)
Ian Gilbert/Peter Murphy	NGET
Hedd Roberts	NGET
Chandra Trikha	SHETL
Colin Bayfield	SPT
Goran Strbac	SEDG
Keith Bell	SEDG
Bridget Morgan	Authority (Ofgem – observer)

Responsibilities include:

- Agree Terms of Reference for the Working Groups;
- Provide overview and guidance to Working Groups;
- Establish and liaise with the Industry Review Group;

- Monitor direction and progress of the Working Groups;
- Endorse assumptions of the Working Groups;
- Approval of final drafting of consultation documents;
- Interim approval of final change proposals in the form of a revised GB SQSS for both onshore and offshore transmission systems;
- Submit final change proposals to the GB SQSS Review Group;
- Resource work areas;
- Consult on behalf of the GB SQSS Review Group;
- Monitor, report and liaise, as appropriate, on developments of other relevant industry reviews (e.g. Transmission Access Review);
- Promote good communications between all groups and disseminate results as appropriate; and
- Maintain a Risk and Assumptions Register.

In addition, the Programme Manager will provide regular updates on the progress of each Working Group to the GB SQSS Review Group and ensure that the Working Groups are working to a consistent set of assumptions and programme to deliver the project to required timescales.

### 3.3 Working Groups

Six Working Groups are to be established to address the six work areas identified under Section 2, namely:

1. International Benchmarking;
2. Transmission Entry and Exit Principles;
3. Main Interconnected Transmission System (MITS) Principles;
4. Planning and Operational Contingency Criteria;
5. Offshore Transmission Systems; and
6. Drafting GB SQSS Change Proposals Document.

Working Group membership will be determined by the Project Steering Group and will be drawn from each of the onshore transmission licensees and SEDG as deemed appropriate to the work areas. Chairpersons for each Working Group (WG) are:

WG 1 Chairperson:	Colin Bayfield (SPT)
WG 2 Chairperson:	Colin Bayfield (SPT)
WG 3 Chairperson:	Noel McGoldrick (NGET)
WG 4 Chairperson:	Brian Punton (SHETL)
WG 5 Chairperson:	Ivo Spreeuwenberg (NGET)
WG 6 Chairperson:	Noel McGoldrick (NGET)

Terms of Reference for each Working Group are currently under development. However, at a high level, the responsibilities of each include:

- Report to the Project Steering Group;
- Develop proposals in accordance with the TOR;
- Prepare a Project Plan for the Working Group to align with the overall Project Plan of the Fundamental Review
- Liaise with other Working Groups as appropriate (in recognition of interactions);
- Draft Outline Principles to programme;
- Draft High Level Proposals to programme;
- Draft final Proposals to programme;
- Resolve any potential incompatibilities between change proposals arising and current and proposed developments to other Industry Codes and Licenses (e.g. Grid Code);
- Assist in drafting of consultation documentation and change proposals to the GB SQSS; and

- Maintain a Working Group Risk and Assumptions Register.

### **3.4 Industry Review Group**

The Industry Review Group will report directly to the Project Steering Group. Industry Review Group members will comprise all Project Steering Group members together with nominated members (yet to be determined) from industry panels (e.g. GCRP, DCRP, CUSC Panel). The size of the Industry Review Group will be limited to around 15 to 20 members.

The mode of communication between the Industry Review Group and the Project Steering Group will be through 'around the table' discussion rather than through 'industry workshops'. It is anticipated that meetings will be held at quarterly intervals. Amongst other things, the meetings will provide an opportunity for Project Steering Group members to advise the wider industry on proposals as they are being developed and seek their comments. The meetings will provide an opportunity for members of the Industry Review Group to provide feedback from the wider industry at the meeting and afterwards directly to Working Group chairpersons.

The purpose of the Industry Review Group is to:

- Represent industry views;
- Provide input into the Terms of Reference of the Working Groups
- Review progress and provide advice.

## **4. Project Planning, Reporting and Risk Management Process**

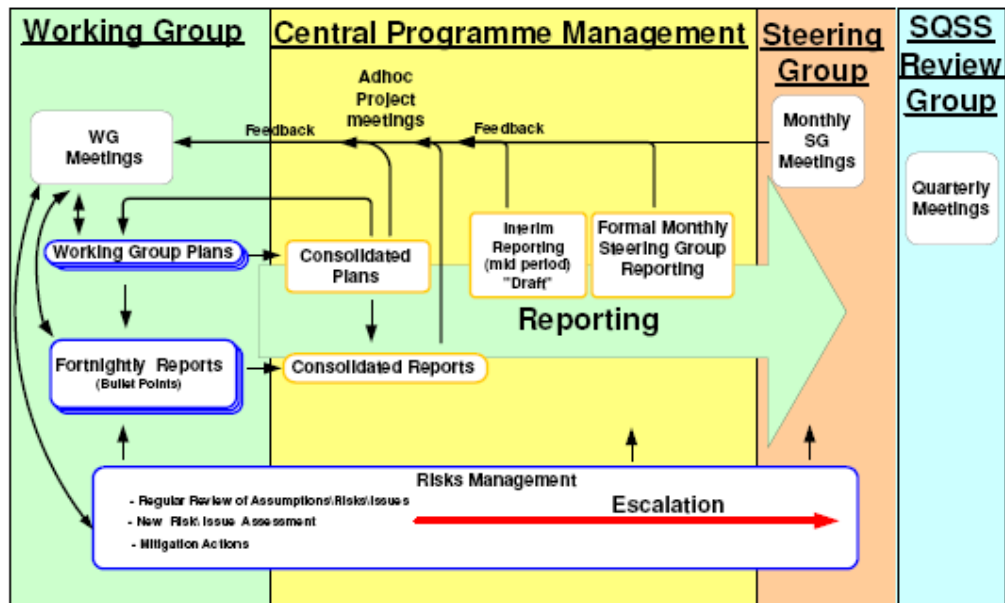
### **4.1 Overview**

The planning and reporting approach adopted is intended to: reflect the Working Group structure; facilitate plan ownership; provide for regular maintenance at the Working Group level; and facilitate reporting and overall control requirements through a cyclical process for overall consolidation. The planning and reporting process is also designed to dovetail with the Risk Management process. The frequency of the planning and reporting cycle will initially be fortnightly in the case of verbal reporting and monthly in the case of written reporting. However, this will be reviewed on an ongoing basis and refined as necessary.

A schedule for individual Working Group plan and reporting submissions will be provided by the Programme Manager.

The following context diagram provides an overview of the relationship between planning, reporting and risk management:

## GBSQSS Planning, Reporting & Risk Mgt Cycle



### 4.2 Project Plans

#### 4.2.1 Working Group Plans

Each Working Group will maintain a separate detailed plan; ideally using MS Project for ease of plan consolidation. However, alternatives such as MS Excel may be used in cases where MS Project is not readily available to the particular Working Group. The detailed plan should cover the scope and deliverables contained within the respective TORs for the Working Group and is to be submitted to the Programme Manager on a monthly basis for consolidation.

#### 4.2.2 Consolidated Plans

Based on the six monthly Working Group Plans, an overall project Schedule will be prepared and maintained by the Programme Manager using MS Project. For presentational purposes, Visio\ MS PowerPoint will be used for a high level overview.

Any issues identified by the Programme Manager, such as misalignment of dependencies, will be fed back to the relevant Working Group/s and points of clarification discussed. When prepared, a view of the consolidated plan will be made available (email circulation) to Working Groups and Project Steering Group circulation. The view will be “filtered” and “summarised” depending on the audience for the report.

#### 4.2.3 Reporting to Project Steering Group

Each month the planning process will feed into the preparation of a report to the Project Steering Group (Section 4.3.3 refers). Information from the current Consolidated Plan will be used to update a high level Project Steering Group view using Visio\ PowerPoint. An intermediate level view using MS Project, summarised as deemed appropriate, will also be made available for reference.

Appendix A presents examples of high level and intermediate level views.



#### 4.2.4 General

At an appropriate early stage in the process, when all plans are in place and aligned and subject to Project Steering Group agreement, the Working Group Plans and the Consolidated Plans will be 'baselined' to facilitate monitoring against an agreed position.

### 4.3 Reporting

#### 4.3.1 Working Group Reports

Working Group written reporting is also on a monthly basis; synchronised with the planning cycle. To minimise the administrative overhead it is intended that routine Working Group reporting will consist mainly of bullet points to address the following aspects:

- a) Progress this period
- b) Forecast next period
- c) New risks\Issues that need highlighting

It is not the intention of the latter category (item (c)) to provide detail (unless the Working Group chairperson wishes to expand on a particular point, perhaps for escalation purposes), but rather to draw attention to any risks and/or issues arising. The detail will be contained in the Risk Register (Section 4.4 and Appendix B refer).

The Working Group chairpersons will submit a report, in bullet point format, on a fortnightly basis to the Programme Manager for consolidation.

The above written reporting process will be complemented by verbal Working Group reporting to the Programme Manager on an intervening fortnightly basis.

#### 4.3.2 Consolidated Reports

Based on the six monthly Working Group written reports (and intervening verbal reports), an overall consolidated report will be prepared and maintained by the Programme Manager. The Consolidated Reports will be made available (email circulation) for Working Group and Project Steering Group meeting circulation.

#### 4.3.3 Reporting to Project Steering Group

On a monthly basis, the monthly written reporting process will feed into the preparation of a consolidated report, prepared by the Programme Manager for consideration by the Project Steering Group, along with the monthly Consolidate Plan (Section 4.2.3 refers).

#### 4.3.4 General

At an appropriate early stage in the process, when aspects of the project such as Scope, Plans, Cost have been agreed the project will be 'baselined', after which an element of traffic light reporting (Red, Amber, Green) may be introduced to help highlight areas where attention needs to be focussed.

### 4.4 Risk Management Process

A central register (using MS Excel) will be managed by the Programme Manager for the capture of assumptions, risks, issues and queries. This register will be structured such that it reflects the Working Group organisation and each Working Group will have ownership of their respective register sheets within the workbook.

Each Working Group will maintain a register of their respective assumptions risks and issues and, on a monthly basis, will submit a reviewed and updated copy to the Programme Manager who will check and consolidate the registers to form an updated central Risk Register. The above monthly written process for risk management will be complemented by

verbal Working Group reporting on new risks as they arise to the Programme Manager on an intervening fortnightly basis. The consolidated register will then be used for reporting and management purposes via a risks and issues matrix.

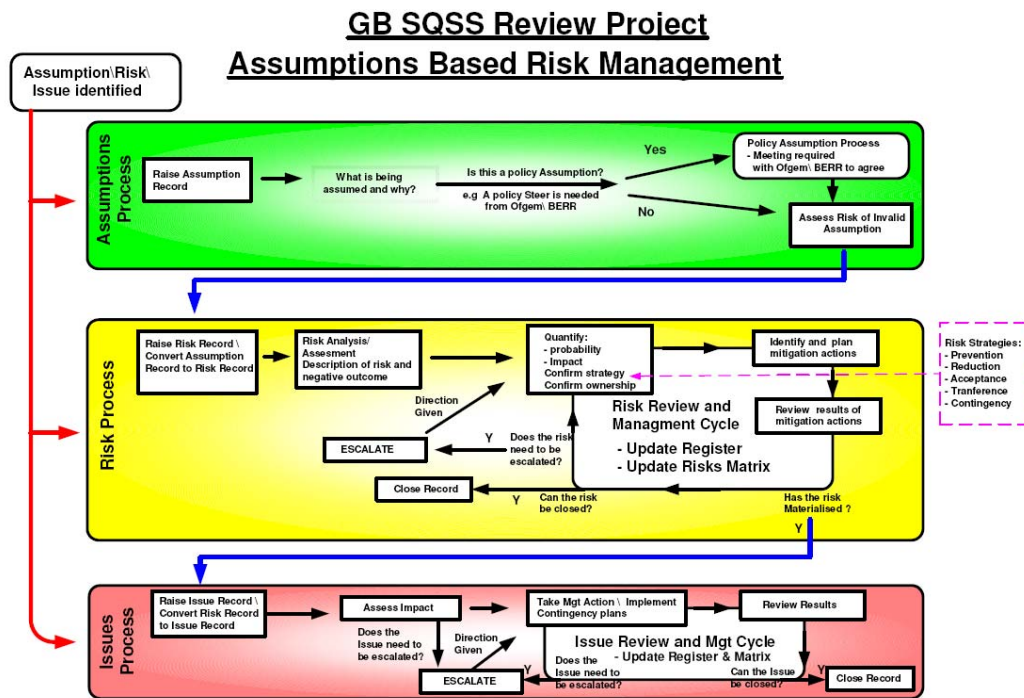
Please refer to Appendix B for an example of the risk register.

Assumptions, Risks and Issues are intrinsically linked and the process needs to cover all these aspects. For the avoidance of doubt, the relationships are as follows:

*For every Assumption, there is a Risk that the assumption may prove to be invalid. Every Risk is considered to have dimensions of probability and impact. Should the Risk materialise, its probability is considered to be 100% and it is now no longer considered a Risk and is instead considered as an Issue.*

This document does not seek to cover the detail associated with Risk Management. Guidance on completion of Working Group Risk Registers will be provided by the Programme Manager.

The following diagram provides an overview of the Assumptions, Risks and Issues process:



The following key risks to the project have been provisionally identified:

Key Risks	
1	The consultation timetable allows little time for post consultation changes. Should material comments arise, there may be insufficient time to address them and meet the April 2010 implementation date.
2	Any significant slippage in the Transmission Access review, which is proceeding in parallel with the GB SQSS Fundamental Review, has the potential to impact on the April 2010 implementation date.
3	The Offshore Round 3 requirements have yet to be scoped. However, transmission connections for Round 3 have the potential to be interconnected rather than radial. The

	complexities and implications with regard to the inter-relationships between the GB SQSS and other Codes and Licenses which are also likely to require change. This may introduce further dependencies and requirements for consultations and consequently has the potential to impact on the April 2010 implementation date.
4	Proposals arising from the International Benchmarking studies have the potential to affect other work areas of the Fundamental Review. The findings may result in the need for further studies in those work areas and this has the potential to impact on the April 2010 implementation date.
5	Change proposals arising from the Fundamental Review may not be compatible with, or may have an adverse impact on, other Industry Codes and Licences. While this aspect will be addressed by each Working Group as appropriate, the risk remains.
6	Any changes to other Industry Codes and Licenses may not be compatible with, or may have an adverse impact on, the GB SQSS. While this aspect will be addressed by each Working Group as appropriate, the risk remains.

## 5. Key Milestones

As explained in Section 4, both detailed and high level Consolidated Project Plans (based on individual Working Group Plans) will be produced on a regular basis throughout the course of the project.

The following table provides an initial generalised overview of key milestones and associated activities, which have been provisionally set. Milestones for individual Working Groups may vary in detail. For such detail, please refer to the relevant Working Terms of Reference.

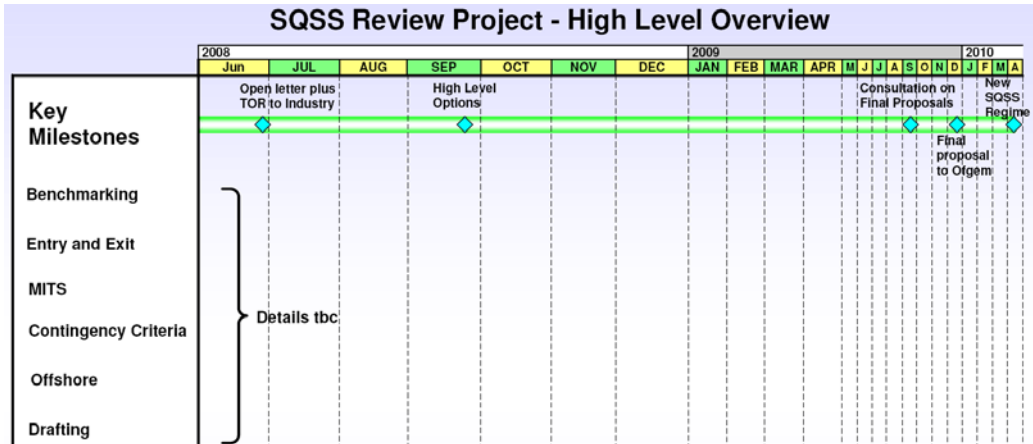
**Current Key Milestones/Activities are:**

Target Completion Date	Activity
July 2008	<b>Working Groups Established and TORs Agreed.</b>
15 October 2008	<b>Outline Principles Document Issued.</b> Each Working Group reports on issues being addressed, approach adopted to address issues, progress to date and likely outcome where reasonably known. A consolidated document of Outline Principles is prepared and submitted to the Project Steering Group for comment.
December 2008	<b>High Level Working Group Proposals Issued</b> Each Working Group reports on progress in the form of high level proposals to address issues. The high level proposals are submitted to the Project Steering Group for comment.
January 2009	<b>High Level Proposals Document Issued</b> A consolidated document of high level proposals together with options (where appropriate), based on the Working Group proposals and Project Steering Group comment.
May 2009	<b>Draft Change Proposals Issued</b> Working Groups issue detailed proposals.

	Detailed proposals are translated into consolidated draft change proposals to the GB SQSS (i.e. in the form of draft amendments to the GB SQSS). Draft change proposals are submitted to the Project Steering Group for comment.
August 2009	<b>Final Change Proposals Developed</b> Working Groups develop and issue final detailed change proposals taking account of comments received on draft change proposals. The final detailed change proposals are translated into consolidated change proposals to the GB SQSS (i.e. in the form of draft amendments to the GB SQSS).
September 2009 – October 2009	<b>Final Change Proposals Consultation (First Consultation)</b> The Project Steering Group conducts a targeted consultation on the final change proposals with participants of the Industry Review Group.
October 2009 – December 2009	<b>Working Group Drafting</b> The GB SQSS Drafting Working Group, with input assistance of the other Working Groups, finalise the consolidated change proposals to the GB SQSS (i.e. in the form of draft amendments to the GB SQSS) taking due account of the results of the First Consultation exercise. The Project Steering Group submit the final change proposals to the GB SQSS Review Group for sign-off.
December 2009	<b>Final Change Proposals to Ofgem</b> The Project Steering Group, on behalf of the GB SQSS Review Group, submit the change proposals to the GB SQSS (in the form of draft amendments to the GB SQSS) as modified by the GB SQSS Review Group to Ofgem for approval.
January 2010 – March 2010	<b>Second Consultation</b> Ofgem conduct the second consultation impact assessment on the proposed License changes.
April 2010	<b>New GB SQSS Regime Commencement</b>

## Appendix A: Examples of High Level and Intermediate Level Plans

### A1 Example High Level Plan



### A2 Example Intermediate Level Plan (MS Project)

