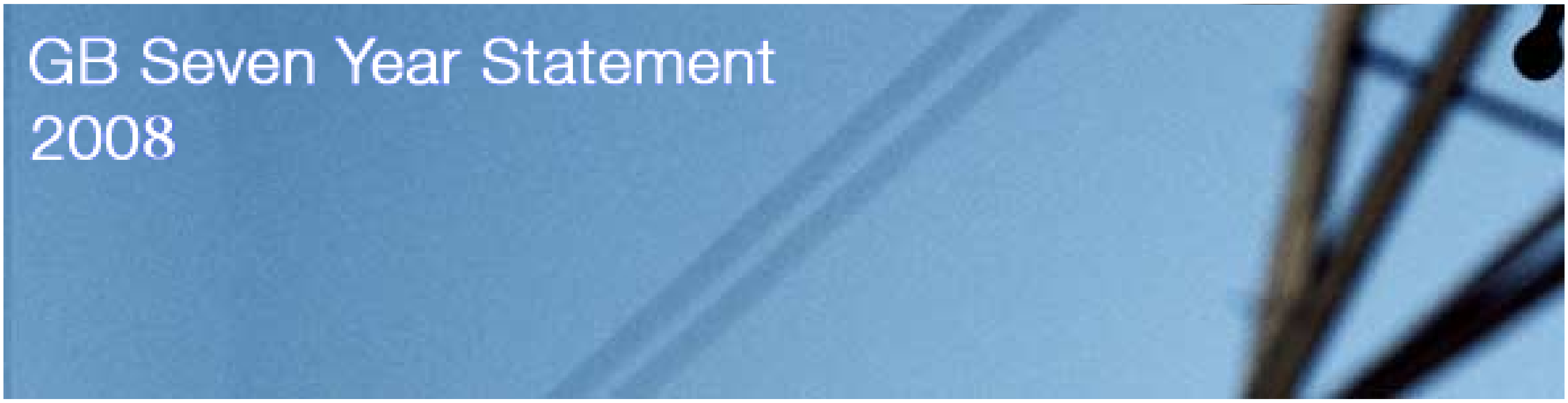
nationalgrid



Introduction to the Executive Summary

This 2008 Great Britain Seven Year Statement (GB SYS) is the fourth Statement to be produced since the British Electricity Trading and Transmission Arrangements (BETTA) came into effect on 1 April 2005.

With the introduction of BETTA, National Grid, in its role as Great Britain System Operator (GBSO), is required to produce a single GB SYS covering the whole of Great Britain on an annual basis. The two Scottish transmission licensees are required to assist National Grid in preparing the Statement pursuant to their licence obligations

This 2008 GB SYS presents a wide range of information relating to the transmission system in Great Britain including information on demand, generation, plant margins, the characteristics of the existing and planned GB transmission system, its expected performance and capability and other related information. Amongst other things, this information should assist existing and prospective new Users of the GB transmission system in assessing the opportunities available to them for making new or further use of the GB transmission system in the competitive electricity market in Great Britain.

This Executive Summary provides a brief description of some of the key points contained in the main text. For a more complete picture on any particular topic, including the terminology used, the reader is advised to consult the relevant section of the main text. In particular, readers unfamiliar with BETTA are advised to refer to the chapter in the main text titled "Market Overview" Market Overview, which provides a high level overview of BETTA and also reports on related issues such as governance, institutional and contractual arrangements. That information is neither repeated nor summarised in this Executive Summary.

The data and results presented in this summary are correct as at 31 December 2007 (the data freeze date) and do not include changes included in the Quarterly Updates which are issued on a regular basis (at intervals of approximately three months). The first Update will be issued soon after the main Statement and will report on changes that have occurred since the data freeze date.

Electricity Demand (See Chapter 2)

The main forecasts of electricity demand to be met from the GB transmission system presented in this Statement are based on information submitted by Customers who take (or propose to take) electricity from the system. However, for comparison, our own view of demand growth is also included. Unlike the 'User' based forecasts, which include details of individual Grid Supply Point demands, the NGET forecasts are national projections for Great Britain.

Unless otherwise stated, all demand forecasts presented are in respect of the Average Cold Spell (ACS) winter peak and include transmission losses, distribution losses and exports to External Systems across External Interconnections. The forecasts are in respect of the time of simultaneous peak on the GB transmission system and are unrestricted (i.e. take no account of demand response/management by customers). This prudent approach in transmission planning is made on the basis that demand response/management by customers cannot be fully relied upon to be enacted at peak times.

User Based Forecasts

Correcting historical actual demands to ACS conditions eliminates the weather effects and gives a better indication of the underlying pattern of annual peak demand. Correcting winter weekday peak demands in 2007/08 to ACS conditions yields a provisional 'unrestricted' peak of 61.4GW; a decline of 400MW on the previous winter's ACS peak.

Half the drop arose from a 200MW reduction in interconnector exports at peak to Northern Ireland. In addition, gas prices have risen sharply in recent years and the pre-dominance of this fuel for electricity generation has resulted in significant increases in electricity prices which have been a major contributory factor behind falls in ACS peak demand seen in the last three winters.

Peak unrestricted demand on the GB transmission system in ACS (average cold spell) conditions, as projected by the system 'Users', increases from the provisionally estimated outturn of 61.4GW in 2007/08 to 67.3GW by 2014/15. This represents a growth rate of 1.3% per annum as indicated in Figure E.1 . Figure E.1 includes recent outturns together with the current User forecasts of ACS peak demand on the GB transmission system.

Figure E.1

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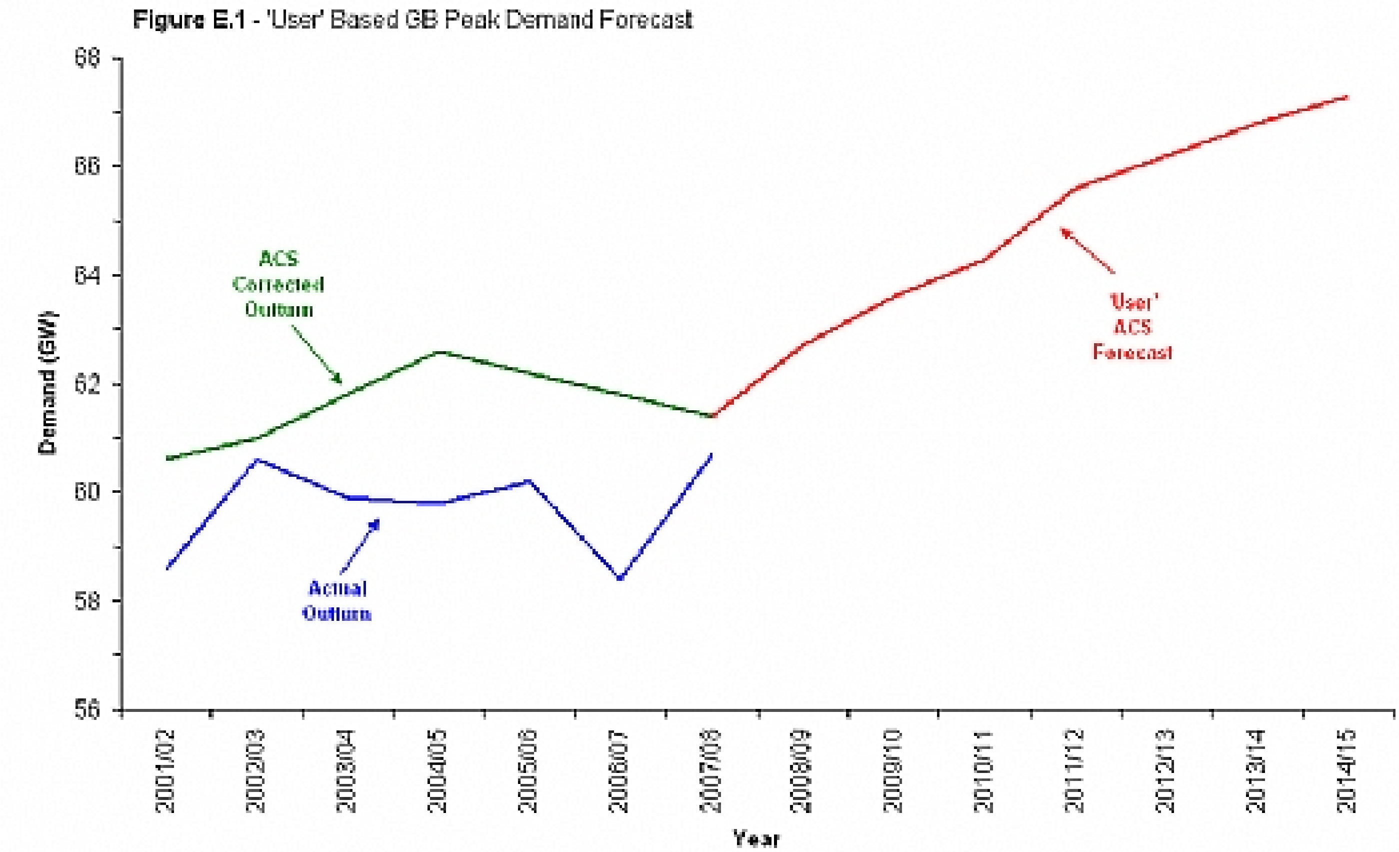

National Grid View of Demand Growth

We have also prepared our own ‘base’ forecast of peak demand and annual electricity requirements, together with 'high' and 'low' transmission system demand scenarios. For the 'high' and 'low' demand scenarios, combinations of favourable and adverse developments are assumed which yield high and low transmission system demands. For example, in the low scenario better progress towards the government's 2010 targets for combined heat and power and renewables is assumed, resulting in stronger growth in embedded generation. In contrast, in the high demand scenario circumstances bring a much slower take-up of such schemes and hence embedded generation. These assumptions, along with variations for other factors such as economic growth, result in a fairly wide range of outcomes for transmission system demand.

Figure E.2 compares our base, high and low demand forecasts with the User based forecasts. Under the ‘base’ forecast the ACS ‘unrestricted’ peak demand increases by 0.7% per annum, from 61.4GW in 2007/08 to 64.7GW in 2014/15.

Figure E.2

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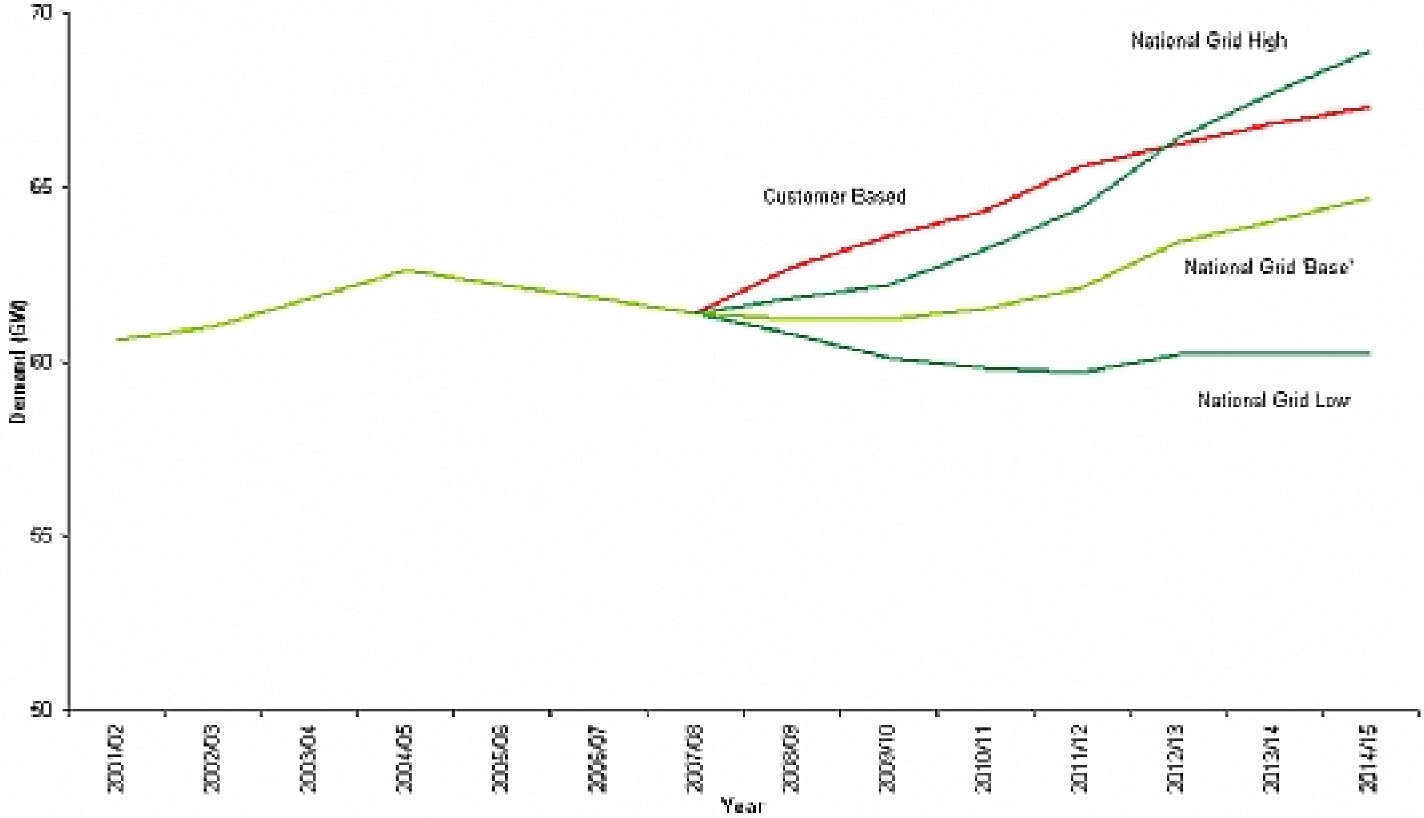
Figure E.2 - Comparison of Customer-Based Forecast and National Grid Projections



Throughout the period covered by this year's forecast, the User based forecast is more optimistic than National Grid's 'Base' forecast and is higher for the first few years than National Grid's High growth scenario projections. In the past, the User based forecasts have tended to underestimate the likely impact of embedded generation on system demand, which results in higher demand forecasts. In addition, it would appear that the User based forecasts do not make allowance for either the current high prices or the forward price curve, which again leads to the User forecasts being higher than those of National Grid, which do make such an allowance. Furthermore, the User based forecasts were submitted last June based on demand seen in 2006/07. The National Grid forecasts benefit from being based on demand seen in 2007/08, when peak demand fell for a third successive year against the background of ongoing high energy prices and a signs of a faltering economic outlook.

In general, the level and location of generation remains the major factor in determining the need for transmission reinforcements. However, in some areas (e.g. where demand exceeds generation) it is demand that can exert the greater influence and as such there is an increasing need for accurate demand forecasts in terms of both level and location.

Generation (See Chapter 3)

Chapter 3 presents information on all sources of generation, which are used to meet the ACS Peak GB Demand. Accordingly, this chapter reports on all power stations directly connected to the GB transmission system, whether they are classified as Large, Medium or Small, all directly connected External Interconnections with External Systems and all Large power stations, which are embedded within a User System (e.g. distribution system).

In recognition of the uncertainties associated with the future, unless otherwise stated the information presented relates to existing generation projects and only those proposed new generation projects which are classified as "transmission contracted".

Figure E.3

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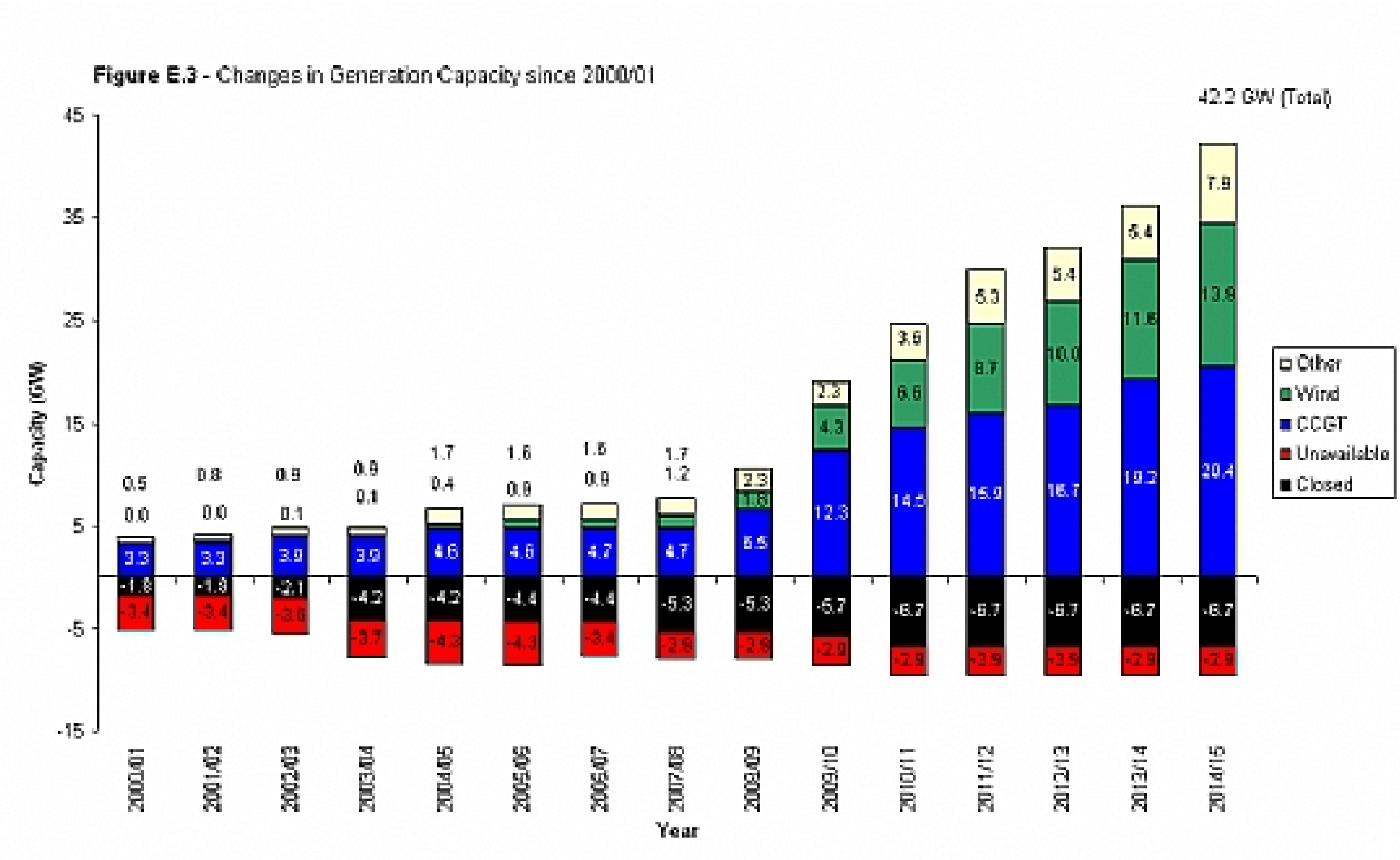

Figure E.3 illustrates the increase in generation capacity of plant since 2000/01. Notified reductions in capacity from plant closures and from plant being placed in reserve have been taken into account.

A feature of the future commissioning stream, shown in Figure E.3, is the relatively high level of activity in relation to capacity increases indicated for the year 2009/10 (8.3GW). In this year some 18% of the new capacity is from Wind generation (mostly onshore) which is to be located in Scotland. Similarly, some 12.6% of the new capacity is from Wind generation (mostly offshore) which is to be located in England & Wales. It is worth remembering, however, that, in the event, there may well be a more graded increase in activity over a number of years. The fact that a project is currently 'transmission contracted' is not an absolute guarantee that the project will proceed to completion since there are other factors, which may also influence that outcome (e.g. financing, fuel prices, planning consents etc.).

Figure E.4

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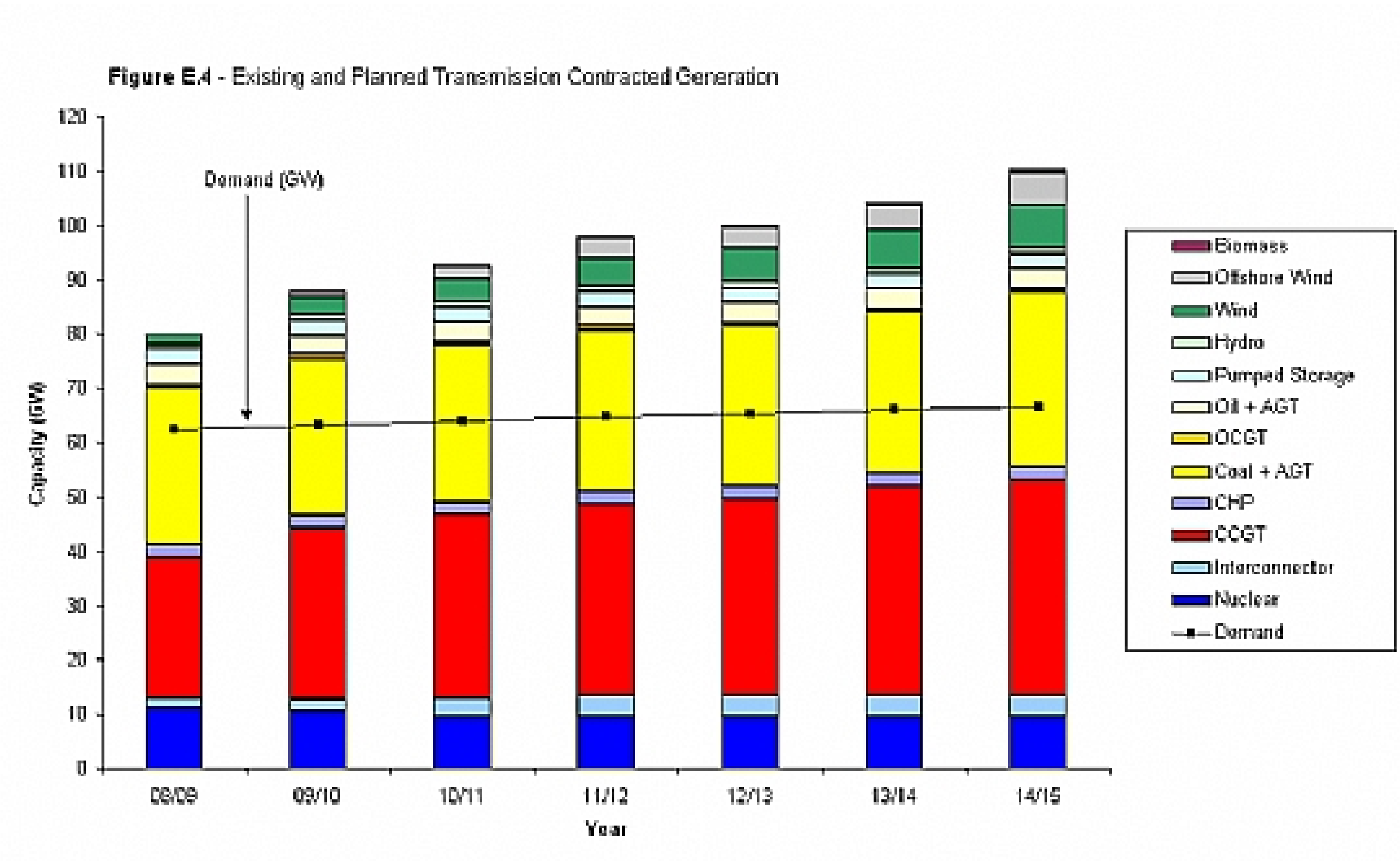

Figure E.4 illustrates the generation mix over the period from 2008/09 to 2014/15 and includes both existing and proposed new transmission contracted generation. The aggregate power station capacity (TEC and/or 'Size of Power Station') rises from 79.9GW in 2008/09 to 110.1GW by 2014/15. This is an overall increase of 37.8% or 30.2GW over the period from the 2008/09 winter peak to the 2014/15 winter peak. This net increase is made of the following:

- an increase of 13.9GW in CCGT capacity (17.4%);
- an increase of 6.2GW in onshore wind generation capacity (7.8%);
- an increase of 5.9GW in offshore wind generation capacity (7.4%);
- an increase of 3.3GW in coal generation capability (4.2%);
- an increase of 1.8GW in new import capability (2.3%);
- an increase of 402MW in Biomass capacity (0.5%);
- an increase of 108MW in Hydro capacity (0.1%); and
- an increase of 108MW in Hydro capacity (0.1%); and
- a decrease of 1.45GW in Nuclear Magnox capacity (1.8%).

The largest change is due to the 13.9GW increase in CCGT plant capacity over the period. On this basis, the capacity of CCGT plant will overtake that of coal by 2009/10. By 2014/15, CCGT capacity will exceed coal capacity by 8.2GW and account for 36.0% of the total transmission contracted installed generation capacity.

The second largest increase is due to the growth in Wind generation, with onshore wind accounting for a 7.8% increase and offshore wind accounting for a 7.4% increase in overall capacity. Wind generation capacity (both onshore and offshore) is set to rise to 15.9GW by 2014/15.

The above capacities do not include the embedded Medium and Small generation and embedded External Interconnections with External Systems. The capacity of such embedded generation sources is the subject of Embedded and Renewable Generation.

It should be remembered that the above figures reflect the current contracted position and take no account of future uncertainty. As mentioned previously, it is reasonable to suppose that further new applications for power station connections will be received and, at the same time, some existing contracts may be modified or terminated and some existing power stations will close.

Embedded and Renewable Generation (See Chapter 4)

The focus of this chapter is on embedded Medium and Small power stations and embedded External Interconnections with External Systems. Embedded Large power stations are reported in the previous chapter.

Much of the existing and future embedded generation is either in the form of combined heat and power (CHP) projects or in the form of renewable projects. This chapter considers these two types of generation source, their growth, the implications for the GB transmission system and other related issues. In so doing, the chapter also reports on non-embedded renewable sources of generation (e.g. wind farms).

Consistent with the Government's drive for growth in renewable generation a high proportion of the 30.2GW of contracted future Large or directly connected generation projects are wind farms, either onshore or offshore. Around half of the projected 12.1GW growth in such wind farm installed capacity is located in Scotland. Overall, wind farm capacity, both embedded and directly connected, is projected to grow from 3.8GW in 2008/09 to 15.9GW by 2014/15.

National Grid recognises the importance of climate change issues and that the government's targets for growth in CHP and renewable generation are likely to lead to a continuing growth in embedded generation. It is important for National Grid to play its part in facilitating this growth by ensuring that any transmission issues arising are appropriately addressed. At present, no insurmountable transmission problems associated with accommodating new embedded generation projects are foreseen. Indeed, the properties of the interconnected transmission system are such as to facilitate embedded generation growth regardless of location.

Nevertheless, this does not preclude the potential need for reinforcements to the GB transmission system, the extent of which would be a function of the system location of the new plant. For example, the extent, and therefore cost, of GB transmission reinforcement would be a function of the volume of offshore wind located off the England and Wales coast or onshore wind located in Scotland.

National Grid's responsibility in the Balancing Mechanism is to balance generation and demand and to resolve transmission constraints. The persistence effect of wind (i.e. its output is naturally subject to fluctuation and unpredictability relative to the more traditional generation technologies) coupled with the expected significant diversity between regional variations in wind output means that, while the balancing task will become more onerous, the task should remain manageable. Provided that the necessary flexible generation and other balancing service providers remain available, there is no immediate technical reason why a large portfolio of wind generation cannot be managed in balancing timescales.

However, balancing costs would be expected to rise in line with the wind portfolio. Our estimation of balancing cost increases is between £5 and £7.50 per MWh of wind production for 2008/09. As the wind portfolio grows in size, we would anticipate these costs to tend towards a level of between £4 and £7 per MWh of wind production due to greater diversity and geographical location of wind generation of a larger wind portfolio. The increase in the estimates of costs from those reported in previous statements is linked to the rises in market prices for balancing services, in particular reserve and response

In the longer term, we do not think it likely that there will be a technical limit on the amount of wind that may be accommodated as a result of short term balancing issues, but economic and market factors will become increasingly important.

Plant Margin (See Chapter 5)

This chapter brings together information on generation capacity and forecast ACS unrestricted peak demand from previous chapters and examines the overall plant/demand balance on the GB transmission system by evaluating a range of potential future plant margins. The chapter concludes with a brief report on the related issue of gas and electricity market interaction.

It is emphasised that none of the plant margins presented in this chapter is intended to represent our forecast or prediction of the future position. The primary purpose is rather to provide sufficient information to enable the readers to make their own more informed judgements on the subject. The plant margins presented have been evaluated on the basis of a range of different backgrounds.

In view of the uncertainties, relating to the future generation position, three generation backgrounds have been considered. Each has been selected in recognition of the different level of certainty relating to whether the proposed new transmission contracted plant will, in the event, proceed to completion.

- Background 1: 'SYS Background' (SYS)

This background includes the existing generation and that proposed new generation for which an appropriate Bilateral Agreement is in place. The fact that a generation project may be classified as 'contracted' does not mean that the particular project is bound to proceed to completion. Nevertheless, the existence of the appropriate signed Bilateral Agreement does provide a useful initial indicator to the likelihood of this occurring.

- Background 2: 'Consents Background' (C)

A second useful indicator is whether plant has already been granted the necessary consents under Section 36 (S36) of the Electricity Act 1989 and Section 14 (S14) of the Energy Act 1976. This background includes all existing plant, that portion of plant under construction that has obtained both S36 and S14 consent where relevant, and planned future plant that has obtained both S36 and S14 consent where relevant. Any 'contracted' generation not already existing that requires S36 and S14 consent but has not obtained both is excluded from this background.

- Background 3: 'Existing or Under Construction Background' (E, UC)

This background is essentially the same as background 2 but excludes all future generation plant not yet under construction.

Figure E.5 compares plant margins derived from the customer based demand forecast with those derived from our own base view of future demand growth for the above three backgrounds; giving six sensitivities in all.

Figure E.5

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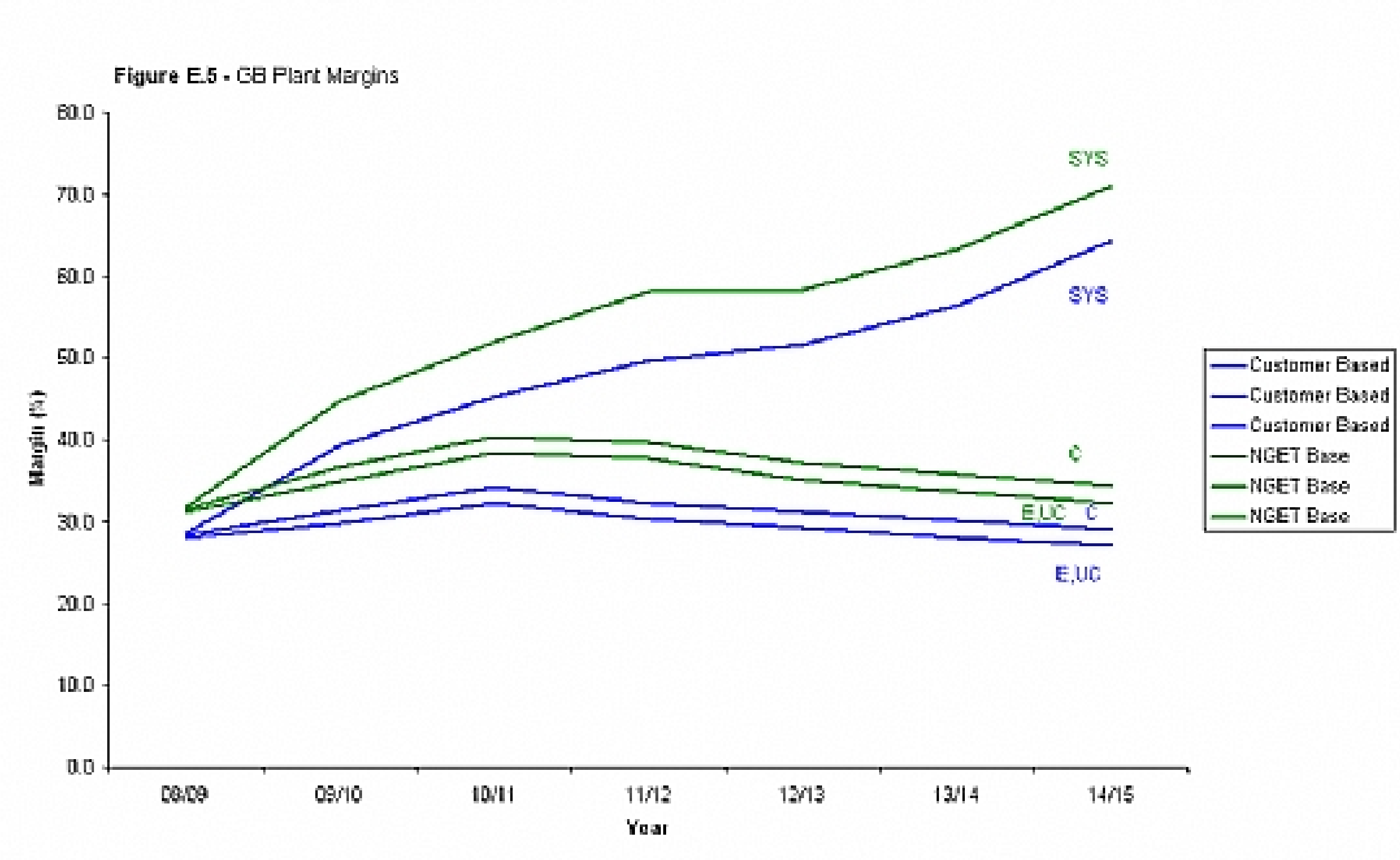

The main text considers a number of other factors, which can influence the value of plant margin. These include: as yet un-notified future generation disconnections (closures); the possible return to service of previously decommissioned plant (or the return to service of plant with TEC currently set at zero). The appropriate contribution towards the plant margin of generation output from wind farms is also considered as is the potential effect on the plant margin of exports (rather than imports) across External Interconnections and the sterilisation of generation capacity by virtue of its location behind a transmission constraint.

To illustrate this last point, additional plant margins have been calculated for a number of arbitrary assumptions relating to the availability of wind generation capacity at the time of the winter peak. Figure E.6 displays plant margins for wind capacity availability assumptions of 40%, 30% and 0%. The SYS background (i.e. with an inherent 100% wind capacity assumption) is also included for comparison.

Figure E.6

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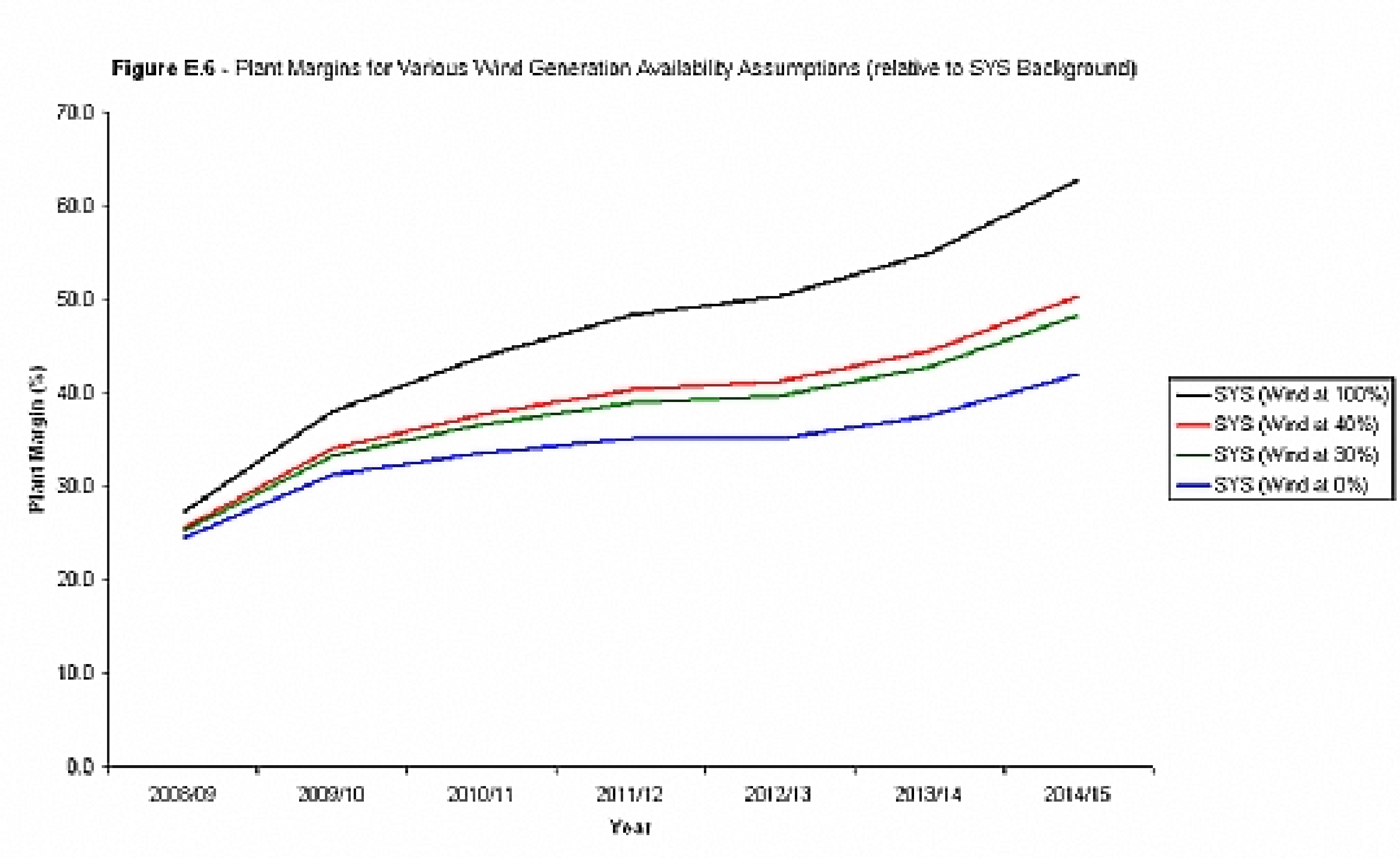

The margins displayed in Figure E.5 and Figure E.6 should not be taken at face value. The net result of the various uncertainties associated with the future plant/demand position is to produce a wide range of possible outcomes. In recognition of this, we have developed our own view of the likely developments into the future, which we consider alongside the SYS based backgrounds when undertaking our investment planning processes.

Transmission System Performance and Capability (See Chapters 6, 7 & 8)

The requirements placed on the transmission system depend on the size and geographical location of both generation and demand. However, it is generation that tends to exert the greater influence.

Figure E.7 summarises the Scotland (SHETL), Scotland (SPT), North, Midlands and South disposition of all transmission contracted generation (both existing and planned) in the years 2008/09 and 2014/15.

Figure E.7

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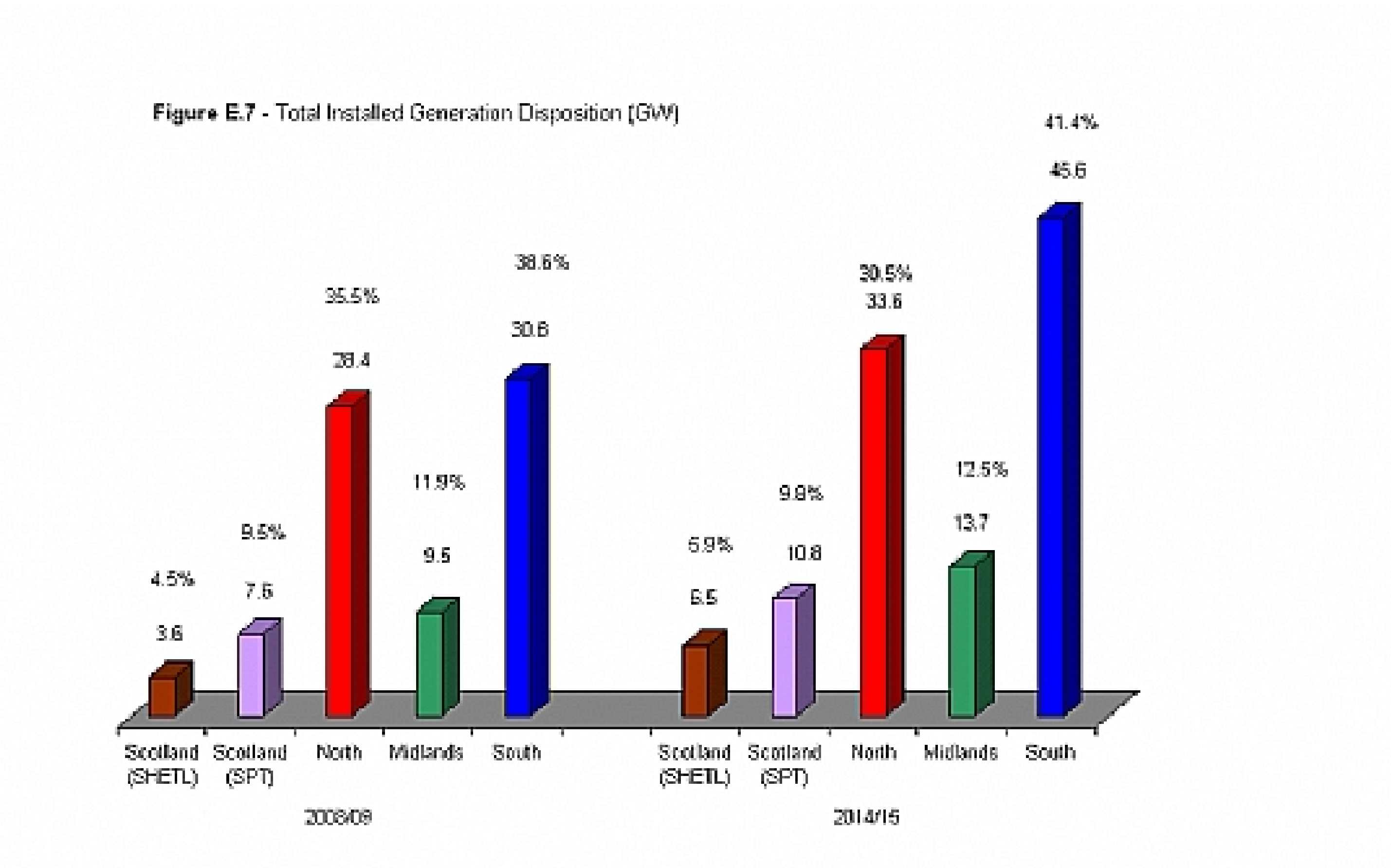

Figure E.7 - Total Installed Generation Disposition (GW)

However, more importantly, it is the generation actually used in meeting the demand on the day, which determines the power flows at any given time. The 'GB Generation Ranking Order', which is explained in GB Transmission System Performance, is used to determine which generation is operated for the study purposes of this Statement.

By way of illustration, Figure E.8 shows the Scotland (SHETL), Scotland (SPT), North, Midlands and South disposition of installed generation (also shown in Figure 3.4) together with the regional ACS peak demand disposition. In both 2008/09 and 2014/15, the installed generation in Scotland (SHETL), Scotland (SPT), North and the Midlands exceeds demand, in some areas by a substantial amount. In the South, there is a more even balance in 2008/09 with demand exceeding installed generation by a small amount. However, by 2014/15 installed generation exceeds demand. Superficially, this would imply only relatively modest power transfers across the system.

Figure E.8

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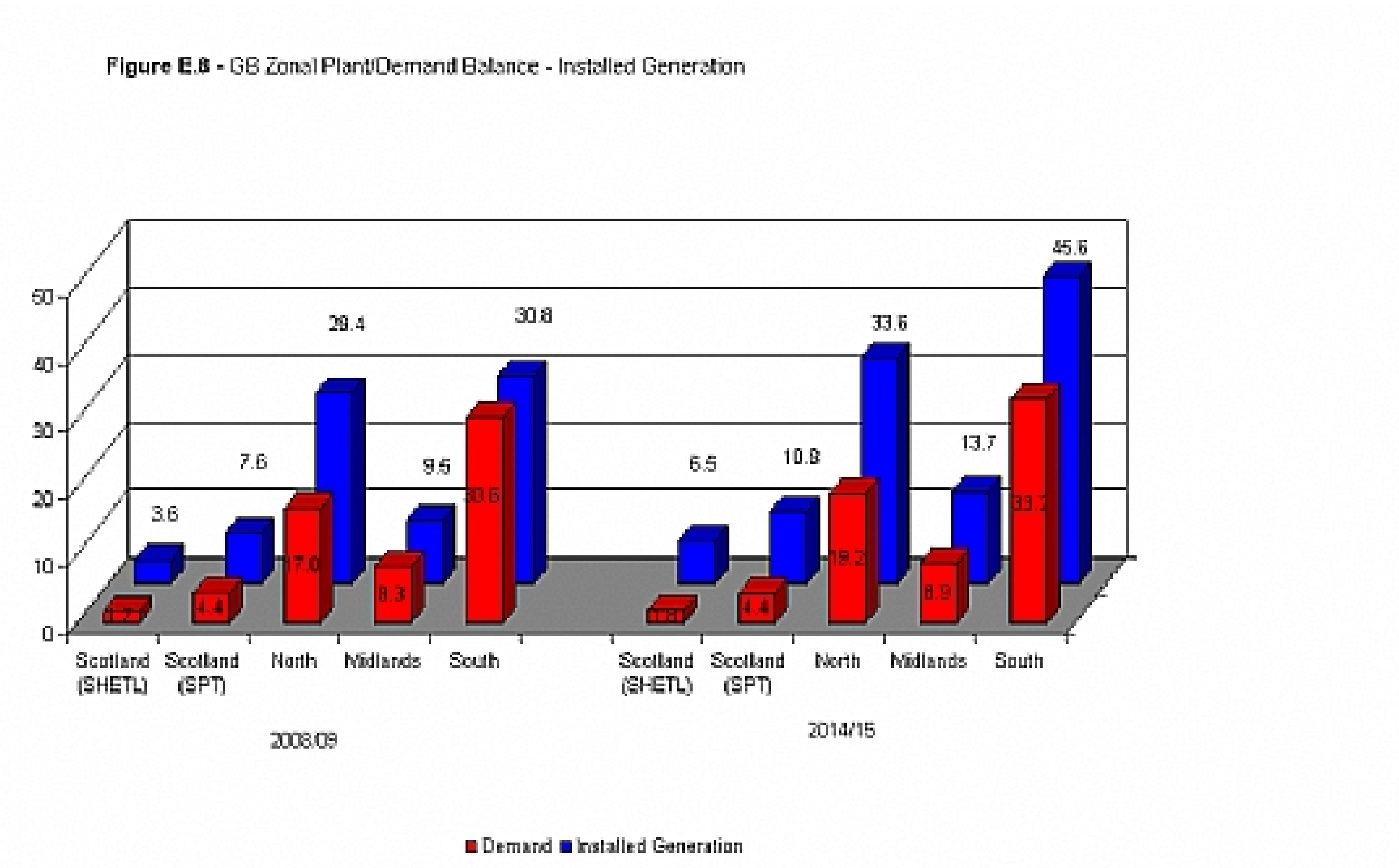

However, when the generation expected to be used to meet the demand is considered, a different picture emerges as illustrated in Figure E.9. Again generation in Scotland (SHETL), Scotland (SPT) and the North exceeds demand in both years. However, in the Midlands and South much of the generation becomes non-contributory (i.e. not used in meeting the demand) such that the demand exceeds generation, by a substantial margin in the South, in both years; implying higher power transfers from the northern parts of the system, through the Midlands to the South. The power transfers at the time of peak under the 'SYS background', are reported in more detail in GB Transmission System Performance.

Figure E.9

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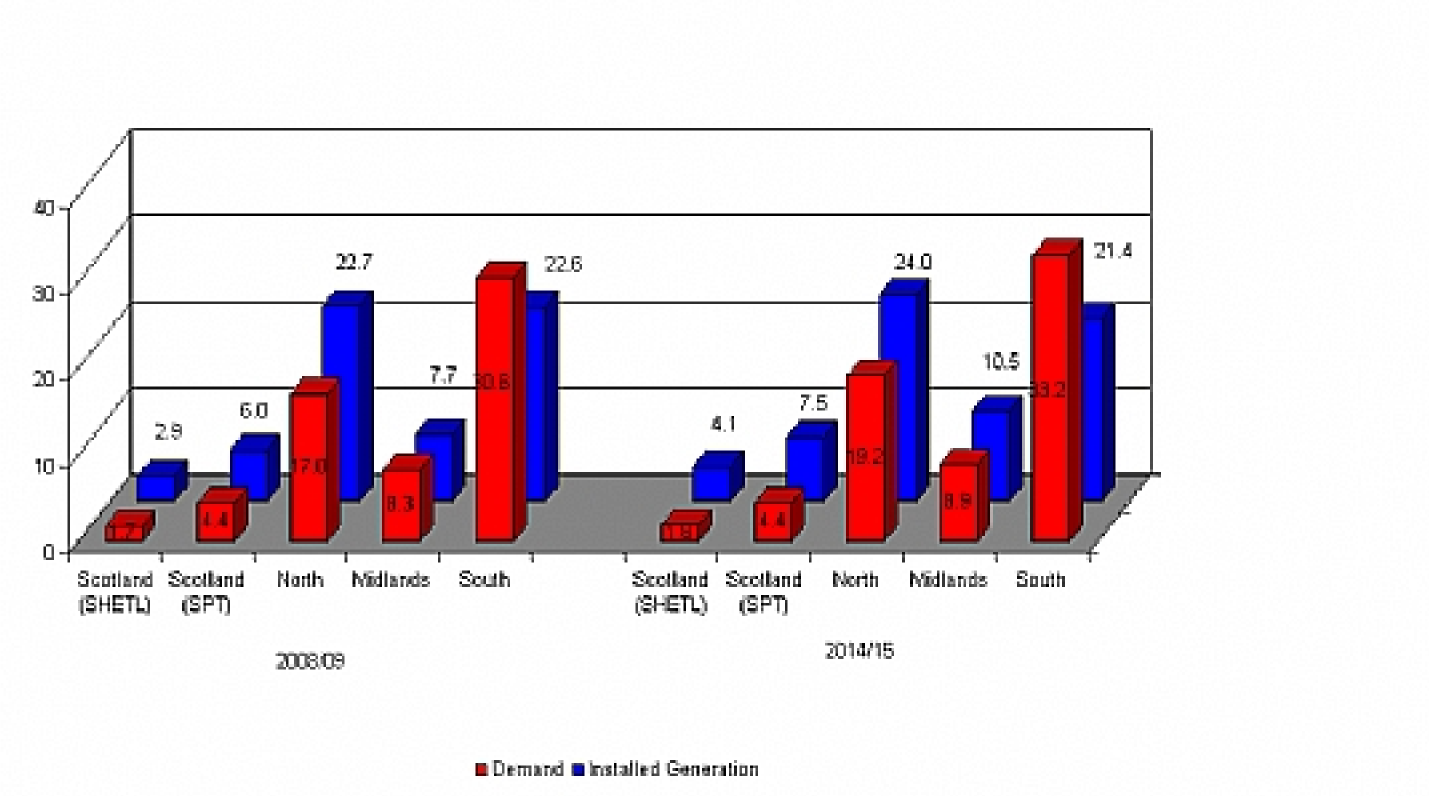
Figure E.9 - GB Zonal Plant/Demand Balance - Studied Generation



There are a number of boundaries on the GB transmission system that serve to illustrate the performance of the system. The main text of this Statement introduces 17 critical boundaries which, amongst other things, are used in determining the need or otherwise for transmission system reinforcement/investment. These boundaries relate to 17 SYS zones, which are also identified in the main text.

It should be noted that the 17 boundaries used in this Seven Year Statement serve as useful indicators of system capability but the apparent capabilities derived are dependent on the precise generation and demand background used. Table 7.3, of the main text, provides a useful reference overview of the power transfers, under the 'SYS background', across each of the 17 main system boundaries. The transfers are based on the expected contributory generation plant rather than installed capacity.

However, it is recognised that the 'SYS background' does not necessarily represent the most likely outturn. There is uncertainty associated with the demand forecasts and in particular with future generation developments. These factors will affect future power transfers, transmission system capabilities, the need or otherwise for transmission system reinforcements and the opportunities for making new or further use of the transmission system.

In view of this, we have presented the 'SYS background' transfers and capabilities against the backdrop of a range of probabilistic transfers. These probabilistic transfers reflect our current views on the likelihood of the various generation and demand uncertainties. This presentation is intended to provide a more meaningful view of future transfers, promote a better appreciation of the future uncertainty we face in planning our system and enable the reader to make more informed judgements on the opportunities for making new or further use of the transmission system.

The main text of this Statement (see Transmission System Capability) includes probabilistic transfers for all 17 boundaries. As an example, the results for two key boundaries are given in Figure E.10 and Figure E.11. With the predominant high north to south power flows seen on our system, these two boundaries (i.e. the SPT to NGET boundary and North East and Yorkshire boundary) are particularly important.

Figure E.10

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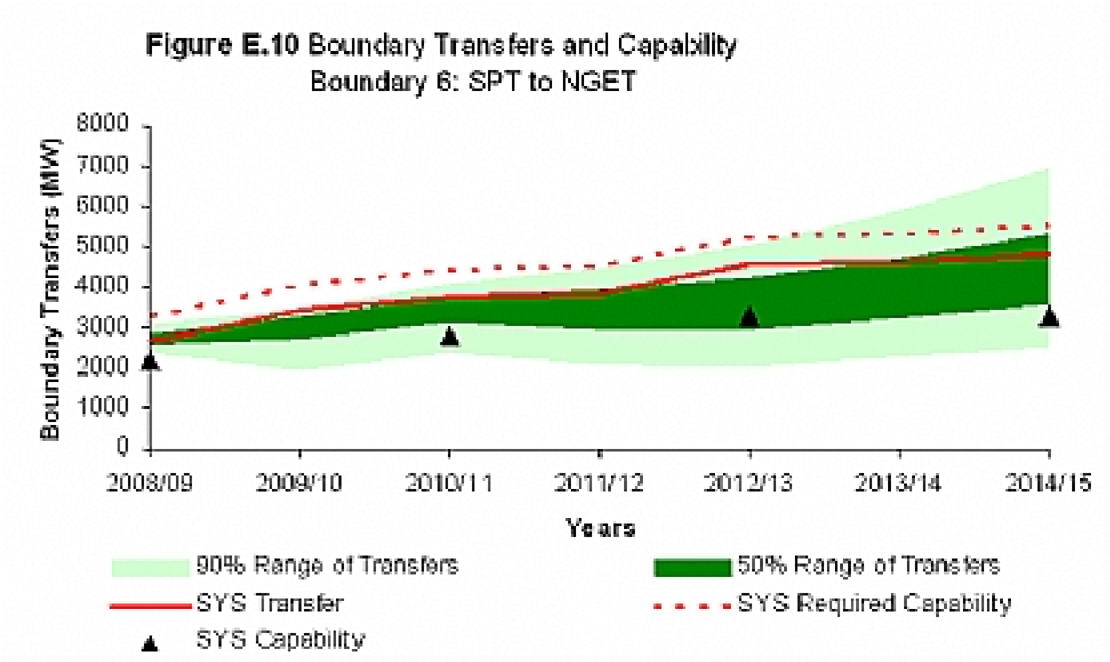

Figure E.11

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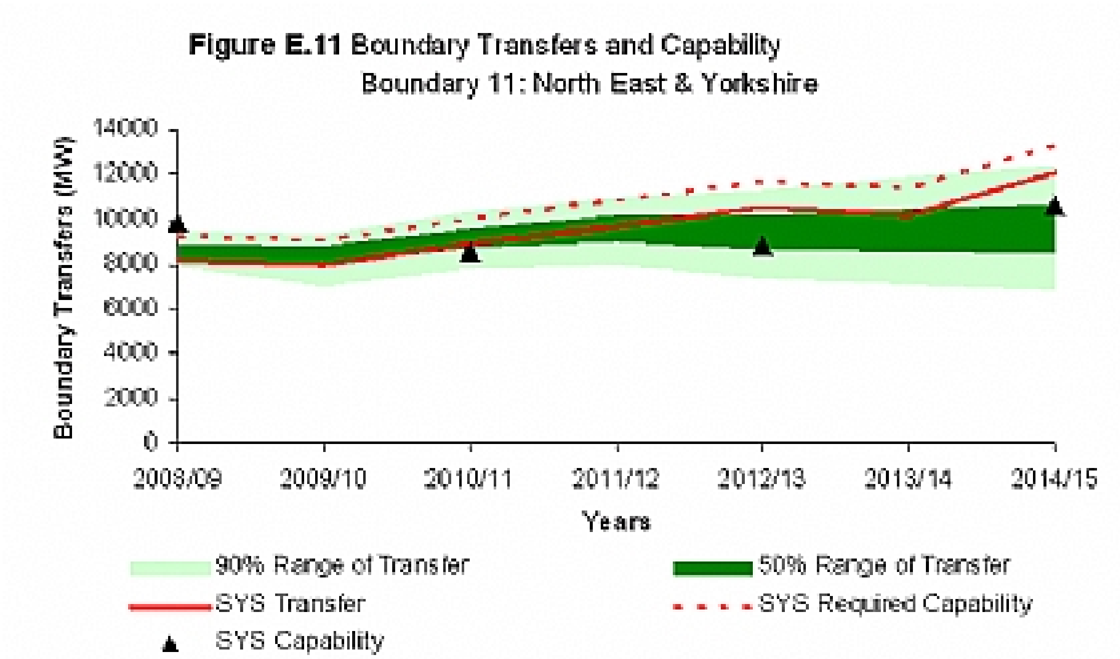


Figure E.10 and Figure E.11 show the boundary transfer (SYS Transfer), required capability (SYS Required Capability) and actual capability (SYS Capability); all derived on the basis of the 'SYS Background'. These are displayed against a backdrop (shaded areas) of our current view of the probable transfer range.

The required capability is simply the boundary transfer enhanced by an allowance for security (referred to as the Interconnection Allowance) to take some account of variations in weather, generating plant availability and demand forecasting error either side of the boundary.

For the SYS Capability, two types of capability have been analysed: thermal and voltage. Where the voltage capability is less than the thermal capability, the voltage capability is given. The boundary capability may be further reduced at other times for stability reasons.

Turning now to the probabilistic transfer ranges (shaded areas); the darker shaded central band extends (on the vertical axis) from the 25th to the 75th percentiles of the range of probabilistically derived transfers, and thus includes 50% of all such transfers across the boundary at the time of system peak. The wider area, encompassed by the lighter shaded bands runs from the 5th to the 95th percentile and thus, together with the dark band, includes 90% of transfers. The remaining 10% lie outside the shaded range. The fan of probabilistically derived transfers can be compared with the deterministic planned transfer for the single deterministic SYS background.

It does not follow that the probabilistic transfer arising from a background considered to be likely will necessarily be captured within the envelope range shown on the diagram. Nor does it follow that all the most commonly occurring transfers have highly probable backgrounds. In our Generation Uncertainty Model (GUM), all backgrounds are equally probable. Nevertheless, the range of transfers displayed in the fan diagram does provide a very useful indicator of the most probable future planned transfer across the boundary given the possible combined effects of the various sources of generation and demand uncertainty. GUM can then be interrogated to reveal the details of any background underlying any transfer (point on the fan diagram) for further detailed analysis.

In the example given in Figure E.10, the SYS Planned Transfer lies towards the top of the probabilistic range of Planned Transfers while the SYS capability is in the lower part. There is hence a chance of lower peak flows than suggested by the SYS background; however, significant reinforcements will nevertheless be required in the very near future to facilitate even the lower parts of the range of probabilistic transfers.

In the example given in Figure E.11, over the latter part of the planned period, the SYS Planned Transfer lies well within the range of the probabilistic transfers. At the same time, the SYS capability falls to the lower end of the probabilistic range which indicates a high probability of further reinforcements being required.

This presentation, which is reported in detail in the chapter on Transmission System Capability in the main text, is useful for demonstrating the inadvisability of committing transmission reinforcements too far ahead of need and also for illustrating future opportunities. Please note that, whilst the 'SYS capabilities' displayed on Figure E.10 and Figure E.11 are appropriate for the 'SYS background' and 'SYS transfers', they do not necessarily correspond to the backgrounds covered by the probabilistic transfer range. Each background captured within the probabilistic analyses will have a unique set of boundary transfers and boundary capabilities.

The following provides a summary of the key indications for the future development of the GB transmission system taking account of both the probabilistic transfer levels and the boundary flows for the 'SYS background':

- The major north to south boundaries B1 (SHETL North West Export), B2 (North to South SHETL), B4 (SHETL to SPT), B5 (North to South SPT), B6 (SPT – NGET), B7 (Upper North), B11 (Northeast & Yorkshire) and B16 (Northeast, Trent & Yorkshire) all show large increases in power transfers during the period of the SYS. This increased power export through Scotland and into England is primarily due to contracted renewable energy developments throughout Scotland;
- For B8 (North to Midlands) and B9 (Midlands to South), power transfers gradually increase as new generation connects in the North East;

- Central London import (B14) show a trend of steadily increasing transfers reflecting the increasing demands and lack of new generation projects within this zones;
- West Midlands import (B17) show very little change due to few generation changes and gradually increasing demand;

There is a general trend with reducing transfers across South & Southwest import (B12), the South Coast import (B10) and South West import (B13) throughout the SYS period, reflecting new plant that might be expected to commission in the South and Southwest in line with present contractual positions.

In view of the uncertainty associated with the 'SYS background', the timing of the construction of infrastructure reinforcements is managed such that investments are made to well defined system requirements. This means that, generally, construction is deferred as far as is practicable to avoid undertaking investments that may turn out to be unnecessary, e.g. where transmission contracted generation does not in the event proceed. At the same time, in recognition of the individual TOs' obligations relating to the facilitation of competition, flexibility is planned into the GB transmission system such that it does not unduly inhibit the development of future projects. However, we do ensure that we can provide an efficient, co-ordinated and economic system, compliant with the security standards, as required by the Electricity Act 1989 and the Transmission Licences.

A number of significant connection and infrastructure reinforcements to the GB transmission system are currently planned. In addition to the construction of new overhead lines and substations, these include the use of devices that not only maximise the use of the existing transmission system thereby limiting environmental impact, but also enable rapid network modifications to meet changing system requirements. To this end we use, amongst other things, quadrature boosters, which are capable of being relocated at a later date together with Relocatable Static Var Compensators (RSVCs). We have also authorised the reprofiling (i.e. retensioning of the overhead line circuits to reduce the sag between towers) of strategic overhead line circuits to increase the permitted operating temperature and thereby increase their load carrying capability.

By exploiting the capability of the existing transmission system through the installation of quadrature boosters and reactive compensation and overhead line conductor re-profiling, we will continue to maximise the use of our existing lines.

Opportunities for New Generation and Demand (See Chapter 9)

Generation Opportunities

In the generation context, opportunities are interpreted as the ability to connect new generation without an associated need for major transmission reinforcement, which could in turn lead to delays caused by the need for Planning Consent and possible Public Inquiries.

Figure E.12 separates the 17 SYS Study Zones into five opportunity groups, namely: VERY LOW, LOW, MEDIUM, HIGH and VERY HIGH. The figure also provides an indication of the capacity of new generation that can be accepted in the individual zones of each opportunity group without the need for major transmission reinforcement.

It does not follow that all the generation capacity within an opportunity group could be located at one site within a zone. In some zones, for example the London Zones, a considerable spread would be necessary. Nor does it follow that the capacities indicated for each zone within an opportunity group could be accepted together. Moreover, please note that there is little opportunity for further connections in the northern zones.

Whilst levels of opportunity have been attributed to the five opportunity groups, it does not follow that the full opportunity capacity indicated could be used up without further detailed consideration. For instance, whilst the Central South Coast (zone 16) falls into the 'medium opportunity category, any additional development might require major transmission reinforcement.

The proposed connection of a significant volume of new transmission contracted generation in the SHETL area, substantially made up of wind farms, is dependant on the completion of transmission reinforcements, including the proposed Beauly/ Denny transmission reinforcement. The Beauly/Denny reinforcement is included as part of the SYS background for commissioning by 2012/13. However, elements of this reinforcement are currently the subject of a Public Inquiry and, consequently, the final commissioning date may vary, which would impact the opportunities.

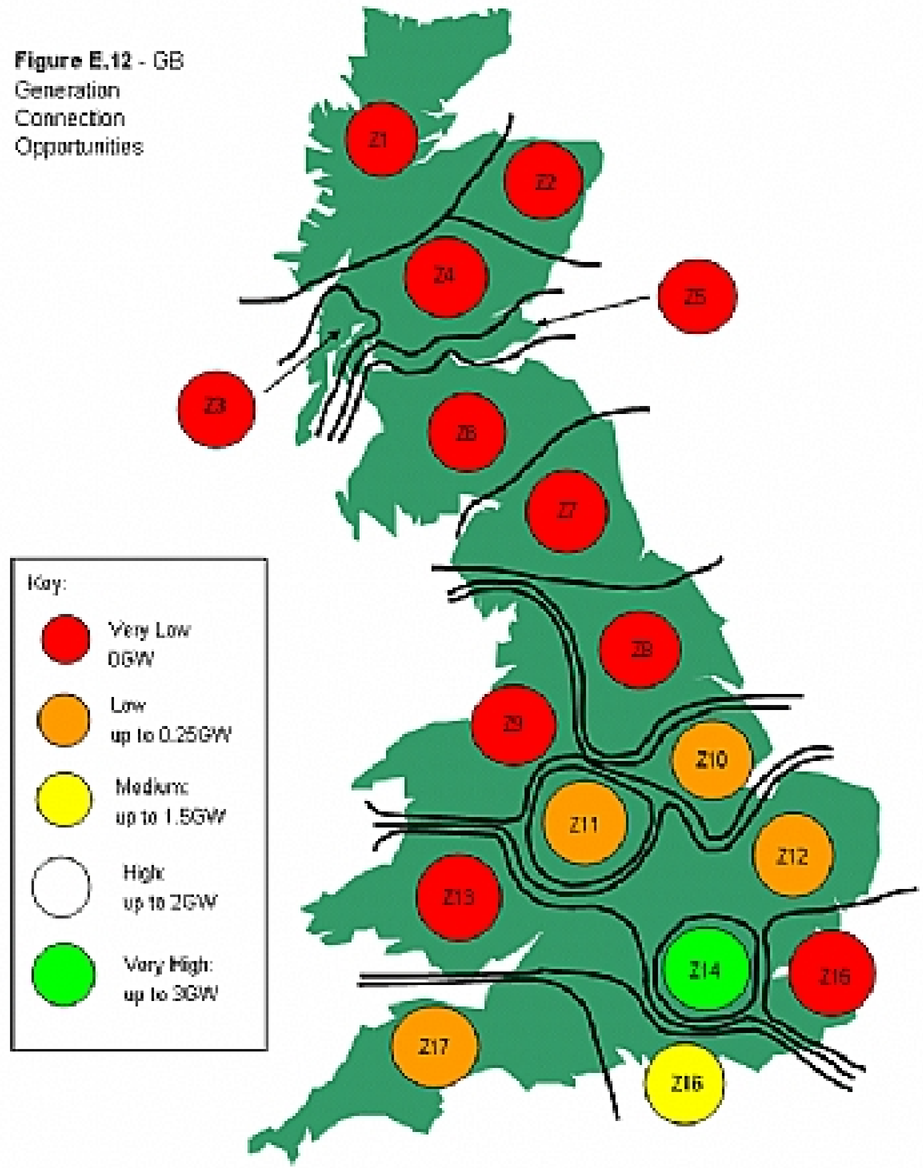
The analyses of boundary power transfers show that, with the material increase in new generation (30.2GW) planned for the next seven years, the resultant power flows through the Scottish and English grid systems to the South would require significant reinforcement. On this basis, it would be unlikely that any new applications for generation projects in Scotland or the north of England can be accommodated within the seven year period covered by this Statement. However, the proposed new transmission access rules (see below) are expected to change the emphasis by providing an opportunity for earlier transmission access for new generation projects.

The above guidance is necessarily general and emphasises the need to consider individual prospective generation developments on their merits at the time of application. A message arising from the guidance is that new generation located in the South is less likely to incur the need for major inter zonal transmission reinforcement and possible time delays than generation located in the North.

Notwithstanding the above opportunity messages, we will continue to comply with our licence obligations to make offers and will endeavour to meet our customers requirements including those relating to timescales.

Figure E.12

Click to load a larger version of FigureE.12 image



Transmission Access Review

The current transmission access review is also relevant in the context of future opportunities for generation access to the GB transmission system.

This review was announced in the Government's Energy White Paper 2007 and is being led by Ofgem and the Department for Business, Enterprise and Regulatory Reform (BERR). The review covers the present technical, commercial and regulatory framework for the delivery of new transmission infrastructure and the management of the existing grid capacity to ensure that they remain fit for purpose as the proportion of renewable generation on the system grows.

Access to the GB transmission system is provided through arrangements with National Grid, acting as GBSO, under the Connection and Use of System Code (CUSC). The CUSC sets out the contractual framework for connection to, and use of, the GB transmission system. The CUSC has applied across the whole of Great Britain since BETTA was introduced on 1 April 2005.

The review includes the consideration of different models of transmission access, and to support this part of the review, National Grid has raised a suite of CUSC amendments and charging methodology modifications which could be used as building blocks to implement a number of different access models. Each of these models could be expected to provide an opportunity for earlier transmission access to new generation projects.

Demand Opportunities

New demand of up to 150MW could be connected within most zones without requiring major transmission reinforcement.

An exception might be the introduction of such a step-change of load at certain points within or around some southern areas. For example, the London area has a large demand; approaching one tenth of the GB system peak demand. The London boundary is close to its thermal limit although planned work will ensure continued compliance. A large step-change in demand might, dependent on exact location, require major reinforcement. Each case again needs to be considered on its own merits.

Figure 3.4 - Total Installed Generation Disposition (GW)

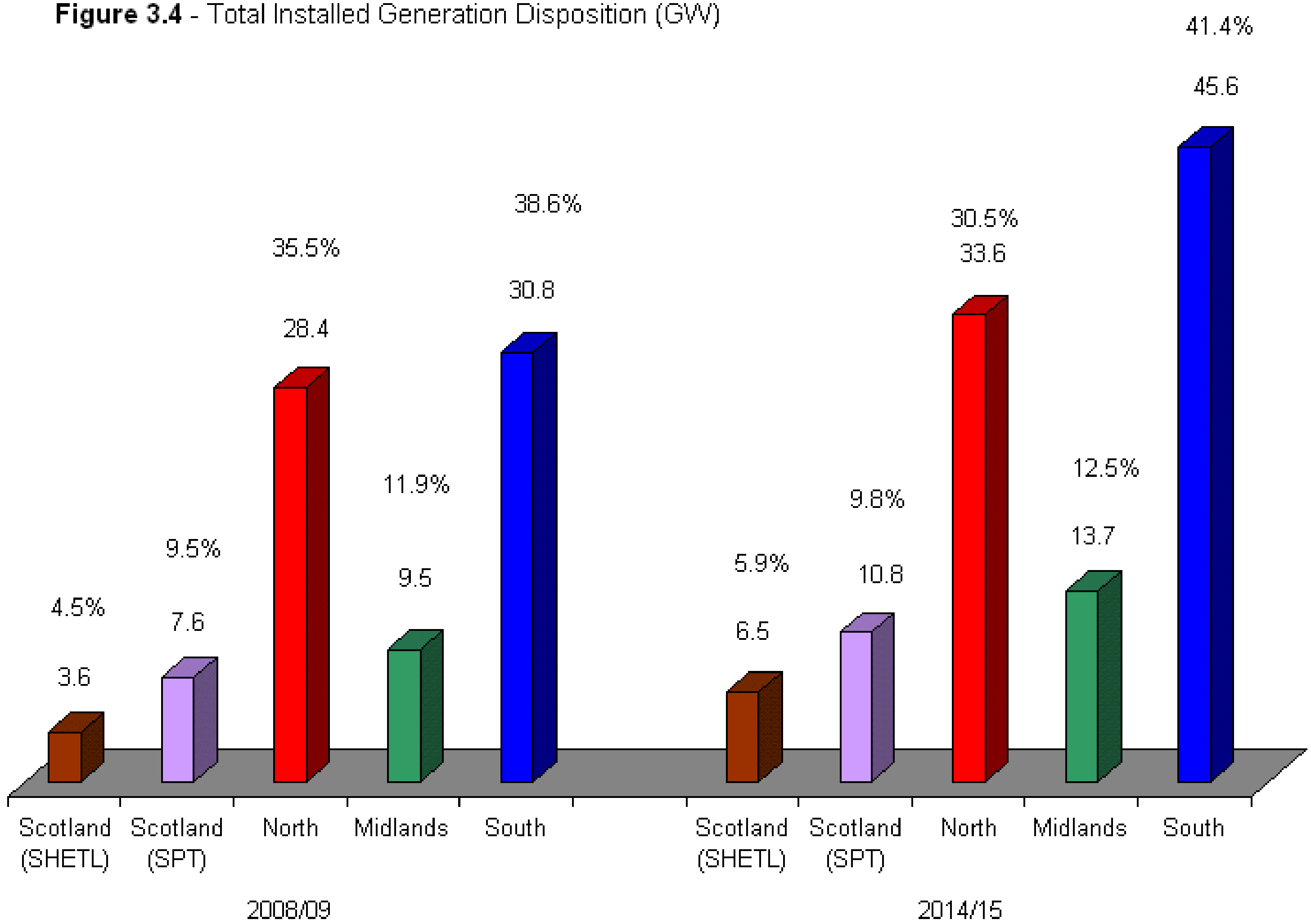


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Table 7.3 - Studied Boundary Generation, Demand and Transfer (MW)

Boundary	Boundary NAme	Quantity	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
B1	SHETL North West	Effective Generation	914	1045.4	1034.9	911.5	1264.4	1366.4	1624.7
B1	SHETL North West	Demand	531.4	568.8	569.9	544.9	511.3	524.6	534.2
B1	SHETL North West	Planned Transfer	382.6	476.6	465	366.6	753.1	841.8	1090.5
B2	SHETL North - South	Effective Generation	2214.7	2327.6	2303.7	2177.6	2584	2719.7	3125.4
B2	SHETL North - South	Demand	1113.9	1160	1168.1	1144.8	1118.4	1139.7	1162.5
B2	SHETL North - South	Planned Transfer	1100.8	1167.6	1135.6	1032.8	1465.6	1580	1962.9
B3	Sloy	Effective Generation	275.8	316.1	312.9	254.1	365.4	330.3	330.6
B3	Sloy	Demand	66.4	68.8	69.9	70.3	73.2	75	74.9
B3	Sloy	Planned Transfer	209.4	247.3	243	183.8	292.2	255.3	255.7

B4	SHETL - SPT	Effective Generation	2822.8	2971.3	3074.1	2888.1	3412.5	3567.8	3954.3
B4	SHETL - SPT	Demand	1651.5	1682.9	1705.1	1711.2	1723	1754.3	1790.9
B4	SHETL - SPT	Planned Transfer	1171.3	1288.4	1369	1176.9	1689.5	1813.5	2163.4
B5	SPT North - South	Effective Generation	5191	5351	5470	5184	5629	5693	5978
B5	SPT North - South	Demand	2889	2931	2959	2974	2994	3031	3084
B5	SPT North - South	Planned Transfer	2302	2420	2511	2210	2635	2662	2894
B6	SPT - NGET	Effective Generation	8705	9544	9941	10072	10827	10947	11234
B6	SPT - NGET	Demand	6062	6131	6182	6210	6271	6331	6421
B6	SPT - NGET	Planned Transfer	2643	3413	3759	3862	4556	4616	4813
B7	Upper North	Effective Generation	11731	12120	13034	13809	14641	14798	17089
B7	Upper North	Demand	9163	9256	9369	9418	9568	9675	9990
B7	Upper North	Planned Transfer	2568	2864	3665	4391	5073	5123	7099
B8	North - Midlands	Effective Generation	31627	30868	31576	32370	33914	33753	35555
B8	North - Midlands	Demand	23126	23326	23672	24604	24850	25132	25598
B8	North - Midlands	Planned Transfer	8501	7542	7904	7766	9064	8621	9957
B9E	Midlands - South (Export)	Effective Generation	39358	40596	41839	43218	44952	44682	46072
B9E	Midlands - South (Export)	Demand	31436	31692	32193	33203	33554	33879	34446
B9E	Midlands - South (Export)	Planned Transfer	7922	8904	9646	10015	11398	10803	11626
B9I	Midlands - South (Import)	Effective Generation	22652	22246	21875	22126	21153	22100	21546
B9I	Midlands - South (Import)	Demand	30576	31149	31519	32139	32554	32901	33176

B9I	Midlands - South (Import)	Planned Transfer	-7924	-8903	-9644	-10013	-11401	-10801	-11630
B10	South Coast	Effective Generation	2734	2867	2922	2892	2942	2913	3748
B10	South Coast	Demand	7077	7194	7265	7336	7389	7451	7499
B10	South Coast	Planned Transfer	-4343	-4327	-4343	-4444	-4447	-4538	-3751
B11	North East & Yorkshire	Effective Generation	23259	23189	24315	25450	26484	26311	28571
B11	North East & Yorkshire	Demand	15083	15209	15379	15730	15936	16082	16482
B11	North East & Yorkshire	Planned Transfer	8176	7980	8936	9720	10548	10229	12089
B12	South & South West	Effective Generation	9036	10828	11375	11707	10489	11248	11828
B12	South & South West	Demand	12450	12605	12741	12877	12990	13152	13278
B12	South & South West	Planned Transfer	-3414	-1777	-1366	-1170	-2501	-1904	-1450
B13	South West	Effective Generation	1774	1704	1737	1719	1749	1731	2570
B13	South West	Demand	2802	2882	2912	2944	2966	2994	3017
B13	South West	Planned Transfer	-1028	-1178	-1175	-1225	-1217	-1263	-447
B14	London	Effective Generation	1726	1181	1204	1192	896	888	885
B14	London	Demand	10175	10409	10546	10816	11014	11118	11217
B14	London	Planned Transfer	-8449	-9228	-9342	-9624	-10118	-10230	-10332
B15	Thames Estuary	Effective Generation	8276	6751	5562	4209	4279	4241	3768
B15	Thames Estuary	Demand	2180	2758	2273	2876	2880	2906	2357
B15	Thames Estuary	Planned Transfer	6096	3993	3289	1333	1399	1335	1411
B16	North East, Trent & Yorkshire	Effective Generation	27559	28655	30234	31999	33148	32909	35152
B16	North East, Trent & Yorkshire	Demand	15706	15847	16033	16401	16630	16771	17206

B16	North East, Trent & Yorkshire	Planned Transfer	11853	12808	14201	15598	16518	16138	17946
B17	Midlands	Effective Generation	3431	4262	4344	4299	4374	4331	3936
B17	Midlands	Demand	7687	7728	7867	7928	8010	8058	8124
B17	Midlands	Planned Transfer	-4256	-3466	-3523	-3629	-3636	-3727	-4188