

Transco



**Transportation
Ten Year
Statement
2001**



Disclaimer

This Statement is produced for the purpose of and in accordance with Transco's obligations in Standard Condition 25 of its Gas Transporters' Licence and Section O 4.1 of its Network Code in reliance on information supplied pursuant to Section O of its Network Code. Section O 1.3 of its Network Code applies to any estimate, forecast or other information contained in this Statement.

Transco's Ten Year Statement is not intended to have any legal force or to imply any legal obligations as regards capacity planning, future investment and the resulting capacity.

Foreword

The 2001 edition of the Transco Ten Year Statement is the sixth produced in accordance with Condition 25 of Transco's Gas Transporters' Licence. This requires that the Ten Year Statement, published annually, shall provide a ten year forecast of transportation system usage and likely system developments that can be used by companies, who are contemplating connecting to the Transco system or entering into transport arrangements, to identify and evaluate opportunities.

The Statement explains our volume forecasts, system reinforcement projects and investment plans. It has been published at the end of the 2001 planning process and follows on from the publication of Transco's "Transporting Britain's Energy Conclusions" document in August 2001.

Changes for 2001

Transco is publishing in parallel with this Statement an initial scoping paper on the particular issues it will be examining in developing the 2002 Ten Year Statement. The aim is to ensure that consultation with the industry covers an appropriate range of outcomes and uncertainties, including possible implications from the current Energy Policy Review.

Compared with the 2000 Ten Year Statement, Transco has removed elements of investment related to metering and replacement. This information is not considered to be core information required for potential customers to assess their connection requirements and allows Transco to focus this document on the drivers for investment in infrastructure that delivers the capacity for transportation services.

Layout

The Statement contains essential information on actual volumes, the process for planning the development of the system, including supply and demand forecasts, system reinforcement projects and associated investment. The main body of the document provides an overview of the key issues, with all the detail contained in the appendices.

I hope you find the 2001 Ten Year Statement both interesting and informative. We always welcome a response from readers, which is why we have attached a feedback form.

I look forward to receiving your views on the Statement, including suggestions as to how it might be further improved.



Chris Bolt, Regulation and Corporate Affairs Director

October 2001



<h1>Contents</h1>	page
1. Executive Summary.....	4
2. Demand	
2.1 Overview.....	6
2.2 Recent Energy Trends	6
2.3 Demand Growth Drivers and Market Uncertainties	10
2.4 Impact of Global Warming.....	16
2.5 Demand Case.....	17
3 Supply	
3.1 Recent Supply Trends and Market Uncertainties	19
3.2 Crude Oil, Gas Prices & Drilling Activity and Reserves	19
3.3 Annual Supply Forecasts.....	22
3.4 Supply Scenarios.....	25
3.5 Peak Supplies.....	28
3.6 Peak Supply Demand Match	29
4 NTS Capacity Provision and Investment	
4.1 Introduction	32
4.2 Long Term Investment Signals	32
4.3 Investment Proposals	33
4.4 NTS Project List – Completed and Approved	34
5 Investment in the LDZ Transportation System	
5.1 LTS Development Plan.....	36
5.2 Below 7 bar Distribution Network.....	37
5.3 Other Investment.....	37
5.4 Capital Investment Forecasts.....	37
6 Way Forward	
6.1 Next Steps	40
Appendices	
1. Process Methodology.....	41
2. Gas Demand & Supply Volume Forecasts.....	47
3. Actual Flows 2000	56
4. Network Code.....	62
5. The Gas Transportation System.....	65
6. Connections to Transco’s System.....	83
7. System Entry	90
8. Glossary	95
9. Conversion Matrix.....	101



Executive Summary

The purpose of this document is to set out Transco's assessment of the future demand and supply position for natural gas in Great Britain, and the consequences for investment in the transmission network.

Market Developments & Impact on Investment

Supply Outlook

Transco has indicated in the last two Ten Year Statements the uncertainties that surround the future gas supply position. The previous forecasts produced by Transco have indicated a significant tightening of gas supply availability from the United Kingdom Continental Shelf (UKCS). The clear message from this year's analysis is that there remains a potential annual supply shortfall after 2004/5. The peak match shows a slightly better situation with a potential peak day deliverability shortfall after 2005/6. However, this potential shortfall could be earlier if new storage developments identified in chapter 4 are delayed or not developed. The position with respect to a severe winter is similar to the peak day, but there could be a combination of circumstances which creates a severe winter deficit as early as this year.

Transco has always planned on the basis that gas supplies will be made available to meet average annual demand, either from new UKCS developments, pipeline imports or LNG, but the exact source of that gas remains uncertain in the latest forecasts. Feedback from the Transco consultation process was generally supportive of Transco's assessment of supplies. However, there was a general opinion that the range of forecasts for St. Fergus, published in the 2000 Ten Year Statement was excessive, notably for the high flow rates for the St. Fergus Expansion scenario.

Transco has developed two revised scenarios to assess the range of impacts on its system which reflect the latest view on the potential range of supplies to be delivered to meet demand. In addition it is expected that the proposed long term capacity arrangements will provide additional information to assist in the assessment of future entry capacity requirements. An added complexity this year is the shift in market conditions, particularly high summer exports to mainland Europe, which has brought about a requirement for higher than expected summer capacity.

Demand Outlook

The situation with respect to demand forecasts is no less uncertain. There have been a number of recent changes in the market place, which have influenced the development of the gas market (Climate Change Levy and a sharp rise in retail gas prices). These create uncertainties about forecasting consumer behaviour, especially in the light of the current unprecedented decline in Local Distribution Zone (LDZ) demand. In a market that has been growing for the last thirty years, this raises questions about how the market will continue to develop.

Investment Planning Issues

At the time of publication of this document there remain uncertainties related to the regulation of Transco's National Transmission System (NTS) transportation activities and the latest stage in the evolution of the daily balancing and capacity booking regimes. This prevents Transco providing specific information in certain areas. The outcome of these matters may change the way NTS capacity is provided into the future, and result in changes to Transco's Gas Transporters' Licence, as applied to the NTS.

In light of this, the statement shows the investment proposals identified in the Ofgem Final Proposals and the currently approved NTS projects only. This includes investment to meet the 1 in 20 peak day requirements plus projects to provide increased summer capacity.

Future Consultation

The production of the Ten Year Statement is essentially the conclusion to the planning process for this planning cycle. As in previous years there are areas of remaining uncertainty, which Transco will address through the impending consultation that will initiate the start of the planning process for 2002. Transco proposes to use the forecasts contained in this 2001 Ten Year Statement as the starting point for this consultation. Detailed questionnaires will be circulated to a range of industry players requesting supply and demand forecast data shortly after publication of this document.

A separate document entitled "Transporting Britain's Energy 2002 – Initial Consultation" is being published in parallel with this one, which seeks to initiate industry debate on the areas that Transco wishes to address through this year's investment planning process.

Transco would like to build on the successes of the Transporting Britain's Energy 2001 consultation and the review of the Base Plan Assumptions consultation process initiated by Transco this year. It is therefore proposed to support the Transporting Britain's Energy 2002 consultation process with workshops similar to those held last year.



Demand

2.1 Overview

The last ten years have seen dramatic growth in the demand for gas within the UK with rates reaching those not seen since the introduction of natural gas in the 1970s. The main drivers behind this growth have been falling gas prices, brought about by a supply surplus and increased gas on gas competition, and the development of gas fired power generation. However, growth rates into the future are unlikely to continue at this level as markets near saturation and gas prices increase due to greater linkage to European prices and a projected supply shortfall. This view is supported by recent evidence, which shows that increases in industrial gas prices during the last six months have reduced gas demand within the traditional industrial markets, particularly the interruptible sector.

2.2 Recent Energy Trends

This section endeavours to put into historical context gas' position within the energy market and to identify the main market drivers supporting recent growth in gas demand.

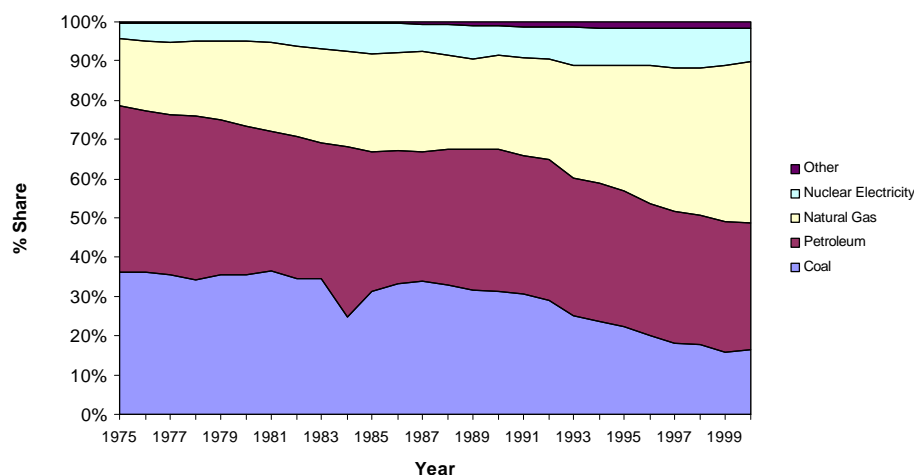
2.2.1 Energy's Position in the Economy

The energy industry currently accounts for only 4% of GDP compared to around twice that ten years ago. This fall in percentage share is attributed to greater productivity and more efficient use of fuel.

2.2.2 Energy Market

Total primary energy consumption in the UK has remained fairly static over the past twenty five years, growing at a rate of 0.5% per annum. As Figure 2.2A illustrates the most significant change during this period has been one of fuel substitution and sectoral change. The gas share of UK primary energy consumption (before conversion and distribution losses) has increased significantly from 17% in 1975 to around 41% at present. If transportation related usage is excluded from primary energy consumption, gas' share increases to 53%.

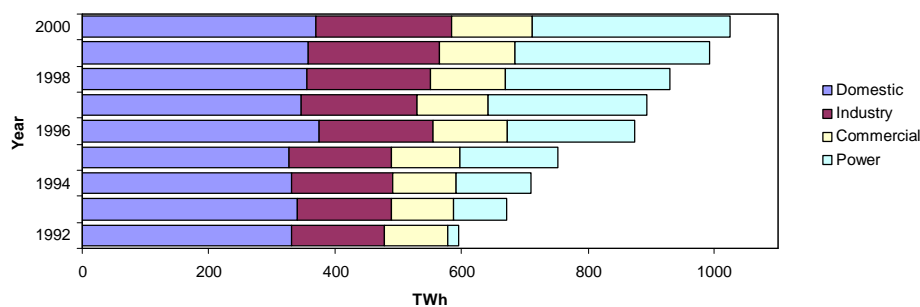
FIGURE 2.2A - Inland Consumption of Primary Fuels
Source –DTI, Digest of UK Energy Statistics (DUKES) 2001



2.2.3 Historical Gas Demand Growth

To obtain a better understanding of why gas' share of the energy market has risen so dramatically in recent years it is important to consider the development of a number of different market sectors. Figure 2.2B illustrates how each of the main market sectors have developed since 1992.

FIGURE 2.2B - Gas Consumption by Sector
Source –DTI, Digest of UK Energy Statistics (DUKES) 2001



Individual sectors will now be discussed in greater detail.

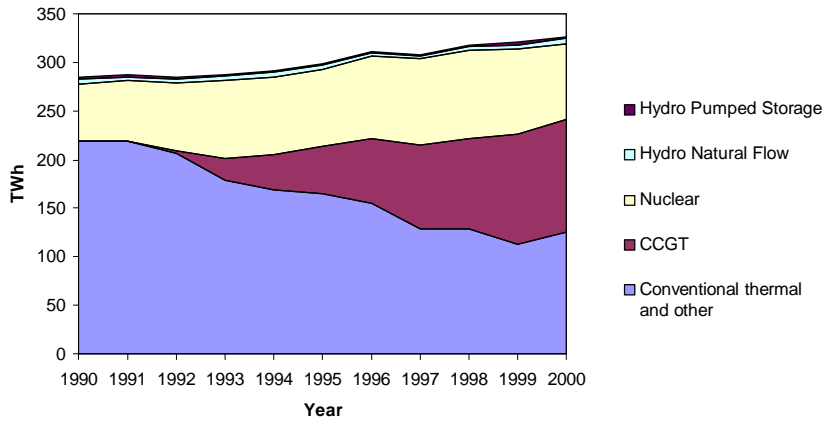
2.2.3.1 Power Generation

The highest growth rates can be found in the relatively new market of power generation where the number of large power stations connected to Transco's NTS has grown from 1 in 1991 to 30 in 2000. This has resulted in gas' share of generation growing to 39%, a figure that is likely to increase following the commissioning of stations currently under construction. Figure 2.2C illustrates the generation mix of power stations operated by major electricity producers in the UK.

In addition to the growth in larger scale power generation, i.e. Combined Cycle Gas Turbine (CCGT) stations, there has been strong growth in the smaller scale embedded

generation and Combined Heat & Power (CHP). This growth has been supported by Government initiatives and the promotion of energy efficiency.

FIGURE 2.2C - Electricity Generated by Major Power Producers in the UK
 Source –DTI, Digest of UK Energy Statistics (DUKES) 2001

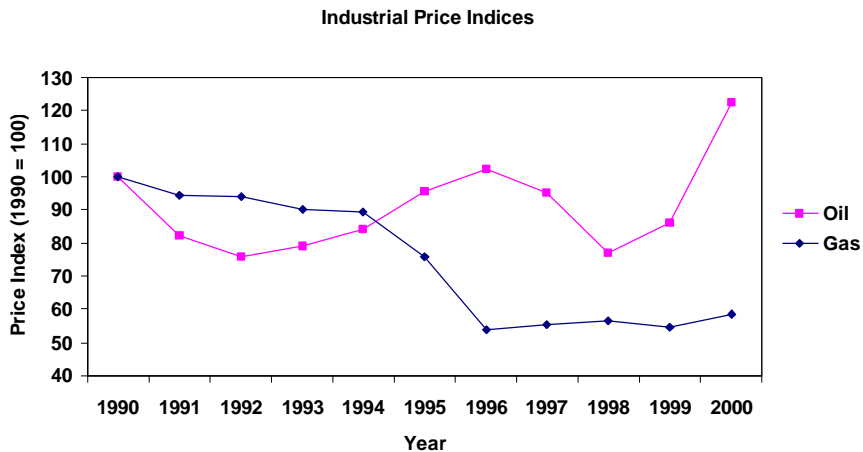


2.2.3.2 Industrial and Commercial

Historically growth in the industrial and commercial sectors has been driven by the economic climate and fuel substitution brought about by the competitive position of gas in relation to other fuels, most notably oil. The level of fuel substitution was supplemented by various environmental initiatives undertaken by, for instance, the chemical industry, which replaced high sulphur content HFO with gas. Coupled with this, demand was further enhanced through the implementation of various development schemes that sought to encourage new industry and investment into economically deprived areas.

Figure 2.2D provides a comparison of how the price of gas to industrial consumers over the last ten years has changed in relationship to changes in the price of oil.

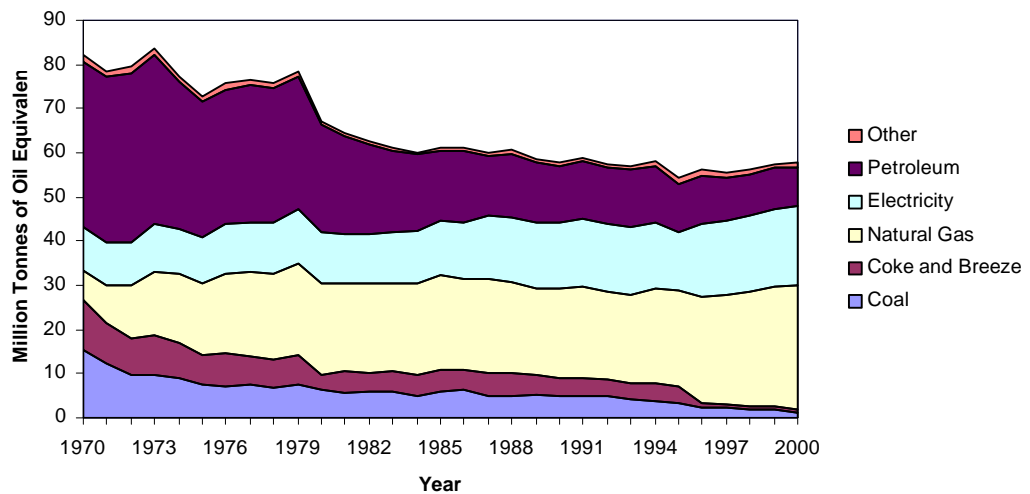
FIGURE 2.2D - Industrial Price Indices
 Source –DTI, Digest of UK Energy Statistics (DUKES) 2001



In more recent times, a favourable economic climate and highly competitive gas prices, brought about by fierce gas on gas competition and rising oil prices, have supported strong growth in the industrial and commercial sectors. Although over the last twelve months gas prices have risen by as much as 40% in the industrial sector as a result of the indexation to UK spot prices which have in turn been influenced by European gas prices which are indexed to oil.

Figure 2.2E illustrates, by fuel type, industrial energy consumption over the last thirty years which highlights gas' growing share of the market for the reasons mentioned above.

FIGURE 2.2E - Industrial & Commercial Energy Consumption
 Source –DTI, Digest of UK Energy Statistics (DUKES) 2001

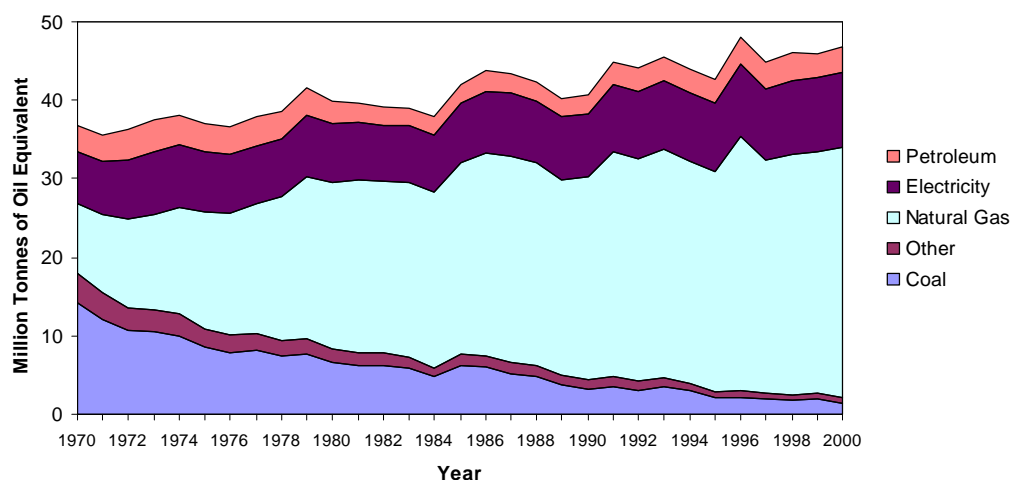


2.2.3.3 Domestic

The growth rate of gas consumption in this sector has fallen slightly in recent years as a result of the near saturation of the domestic energy market. Over 85% of all homes in the UK are currently centrally heated and gas-fired installations account for in excess of 75% of these systems (having risen from a share of only 33% in 1970).

Figure 2.2F illustrates the development of domestic energy consumption and fuel mix over the last thirty years.

FIGURE 2.2F - Domestic Energy Consumption
 Source –DTI, Digest of UK Energy Statistics (DUKES) 2001



2.2.3.4 Exports

The consumption data presented by Figures 2.2B, 2.2E and 2.2F excludes gas that has passed through Transco’s network prior to being exported to Ireland or Europe. Exports to Ireland commenced in 1995 and to Continental Europe in 1998, both markets have grown rapidly and amounted to a total demand of 154TWh in 2000, 14% of total throughput.

2.3 Demand Growth Drivers and Market Uncertainties

An assessment of future growth drivers and their impact on gas volumes is an essential part of the forecasting process. The 2001 Base Plan consultation process provided Transco with the opportunity to discuss key demand growth drivers with the industry prior to preparing the demand forecasts presented by this document.

The volume forecasts have been based on a wide range of factors including; historical trend information, development of new and existing markets for gas, local demand intelligence, contracts with large end users, nomination of new supply points by shippers, general economic factors and the possible effects of taxation.

In particular, the following growth drivers are considered to have a potentially significant effect on the development of gas demand over the forecast period.

2.3.1 Economy & End User Fuel Prices

The volume projections presented in Appendix 2 have been developed from a range of economic and fuel price assumptions based on forecasts obtained from recognised external organisations and Transco’s interpretation of the impact of the supply deficit on UK gas prices into the future.

Assumptions are made in the following general areas:

- Economic growth over the forecast period.
- Price inflation.
- The pattern of economic development and performance of individual industrial sectors.
- Gas price and gas' relationship to competing fuels.

Significant variation of these key economic factors away from Transco's core assumptions will influence demand growth – Transco's assumptions are based over the forecast period and therefore allow for short periods of strong, weak or zero growth. However, sustained periods of either boom or bust could influence the accuracy of the forecasts presented by this document.

Changes in the real price of gas, or its price in relation to alternative fuels, may encourage fuel type switching or drive further fuel efficiency measures.

While there is always variation in the price of oil, recent price fluctuations, from \$10 a barrel in spring 1999 to in excess of \$30 a barrel in summer 2000, has led to greater uncertainty in world energy markets. Such large variations have a number of potential impacts on the demand for gas, the most significant of which may be:

- The price of gas in many European markets is linked to the price of oil. Oil price trends and uncertainties are mirrored in gas markets and influence the volume of gas exported/imported from/to Britain via the European Interconnector pipeline.
- British gas market prices have increasingly become influenced by European gas prices as a result of trading through the European Interconnector. This may result in an erosion of gas' price advantage limiting future growth.
- Higher UK spot gas prices seen over the last year, brought about in part by greater linkage to European prices, are now starting to have an impact on UK end user prices with industrial gas prices 40% higher than they were a year ago.

2.3.2 Energy Trading Regimes

New trading arrangements have now been introduced for both gas and electricity markets (NGTA and NETA respectively), which allow greater on the day bilateral energy trading.

There is considerable uncertainty in the energy industry around the extent to which NETA will influence the power generation market. It is possible that there will be greater interaction between gas and electricity markets which may impact on the amount of arbitrage. Power generators may wish to offer greater flexibility to meet changing demand conditions that in turn could impose a greater burden on Transco's network, possibly requiring additional capital expenditure.

2.3.3 Environmental

The environmental measures introduced under the terms of the Kyoto Protocol specify a range of emission reductions amounting to an overall reduction in carbon based emissions output of about 5.2% for the developed countries at 1990 levels by 2008-2012. This compares to 15% reduction at 1990 levels by 2010 proposed by the European Union as a realistic and achievable target. The potential impact of recent negotiations between the US and the other parties increases the uncertainty around the levels likely to be achieved.

The Kyoto Protocol allows carbon credits to be traded between countries, for example a less developed country with relatively low volumes of emissions could sell credits to industrial countries allowing them to increase their carbon emissions and hence burn more fossil fuels. The extent to which emissions trading will occur, or the possible participation of individual energy consumers, is difficult to foresee.

The Climate Change Levy (CCL) is a revenue neutral tax on non-transport related energy use by businesses, proposed by the Government to help meet their domestic goal of reducing emissions of carbon dioxide (20% from 1990 levels by 2010) through the promotion of energy efficient technologies. The rate at which CCL is applied may be subject to re-evaluation, as the country's progress towards this goal becomes apparent.

The CCL will be payable on the use of electricity, gas and coal at different rates depending on predominantly the carbon content. However, discounts are available for energy intensive users subject to the achievement of certain efficiency targets. These discounts will be based around agreements negotiated between the Department of the Environment, Trade and Regions (DETR) and trade associations or individual companies (responsibility for these agreements has now passed to DEFRA – Department for the Environment, Food and Rural Affairs).

Total exemption from the CCL will be granted to users of “good quality” CHP and “new” renewable energy sources. The introduction of the CCL will also be accompanied by increased allowances for measures to improve energy efficiency.

Thermal efficiency gains driven by the CCL have the potential to reduce demand growth in certain industrial sectors. However, it may also result in some fuel switching to gas as new plant are installed.

2.3.4 New Technology

The development of new gas utilisation technologies is likely to provide further growth drivers in the later years of the forecast period, but more significantly thereafter. The advancement of small-scale novel power generation technology is expected to be one of the most significant developments in this area. New technology may also introduce additional growth drivers to the domestic sector with domestic CHP and household air conditioning systems providing new methods of burning gas in the home.

There is significant potential for further development of natural gas powered vehicles.

The development of renewable energy sources has the potential to limit future demand for gas. The amount of electricity generated from “renewables”, such as biofuels, hydro and solar energy sources, although relatively small in comparison to more traditional fuels, is growing. Renewable energy sources continue to receive support from the Government, which has set targets of 5% of total electricity generated from renewable energy by 2003 (the Government recently announced that this target has been reduced to 3%) increasing to 10% by 2010.

2.3.5 Gas-Fired Power Generation

In recent years the power generation sector has been one of the most significant drivers of gas demand growth, a factor that is expected to persist during the latest plan period.

There are presently a number of factors, which could impact on the potential volume of additional demand associated with gas-fired power generation, the most significant of which are:

- The degree to which NETA, in particular lower wholesale electricity prices, could influence the economics of new gas-fired power projects – a particularly acute sensitivity if coupled with higher gas prices.
- The future approach taken by the DTI when granting consents for new power generation projects and the degree, if any, of future Government interventions into the development of the power market.
- A shift away from the development of large scale centrally dispatched power stations towards smaller projects, such as CHP developments, embedded within the systems of Public Electricity Suppliers.
- The timetable of nuclear power station closures and/or extensions.
- The development of renewable energy sources.

The contribution made by new power generation loads to the demand forecast presented by this document is based on an assessment of the electricity generation market. From this assessment Transco has derived views of the volume and location of new power stations, dual fired installations and fuel conversions.

Several of the power generation loads predicted by the latest forecast are expected to connect to LDZ systems.

2.3.6 Combined Heat and Power (CHP)

The development of new CHP capacity is expected to be a major driver of LDZ demand growth.

There is a clear link between the economic viability of potential CHP plants and the wholesale price of electricity. Any development that has the potential to exert downward pressure on the price of electricity, such as the implementation of NETA, may influence the volume of new CHP entering the market. It is possible that



developers will choose to defer investment decisions in light of market uncertainties with regard to NETA.

The exemption, subject to the achievement of certain quality criteria, of CHP schemes from the Climate Change Levy (CCL) is considered to be a significant factor in the development of this sector of demand. Additional measures also exist to encourage CHP, including the Transco Feasibility Programme, and it is possible that more may emerge in moving towards the Government's target of 10GWe of capacity by 2010.

2.3.7 Exports

2.3.7.1 Ireland

The Irish interconnector links Transco's network to the transportation systems of Bord Gáis Éireann in Southern Ireland and, via the Scotland to Northern Ireland Pipeline (SNIP) system, Premier Transmission Limited in Northern Ireland. The interconnector pipeline is connected to the NTS at Moffat and it is for this connection point that forecasts of Irish demand are produced.

2.3.7.1.1 Republic of Ireland

Economic Climate & Key Drivers of Demand Growth

Ireland's recent record of impressive economic growth continues to promote substantial increases in the country's energy requirements. As in the UK, gas has been the fuel of choice for many new developments and Irish demand on Transco's network has grown strongly. However, at an overall level gas provides only a quarter of Ireland's primary energy requirements, significantly less than in the UK where gas' share is at around 40%.

In recent years the attraction of foreign investment has played a key part in Ireland's economic success with real GDP growth averaging in excess of 9% per annum in the period from 1996 to 2000. Government forecasters predict that economic growth will slow in 2001, reflecting global demand conditions, although the medium term outlook remains broadly favourable.

At present, power generation accounts for more than half of primary gas consumption and the introduction of new gas-fired power plants is expected to boost the country's generating capacity by around 20% over the next two years. Resultant increases in power generation demand and opportunities for the development of CHP technologies in industrial and commercial sectors combine to present a market with significant growth potential over the forecast period.

Gas Supply Position

The supply position of Ireland's gas market will change considerably in the next few years with the completion of the second interconnector pipeline in 2002 and the commencement of deliveries from the Corrib field towards the end of 2003. Demand on Transco's network is not expected to exceed the level predicted for 2003 until the latter years of the forecast when market growth and a steady reduction in the volume of indigenous supplies will once again increase Ireland's dependence on energy imports.

Supplies from the Kinsale Head field continue to decline as the field approaches depletion. Beyond the medium term, Kinsale Head is not expected to make a significant contribution to Irish energy supplies.

System Expansion

Expansion of the Bord Gáis transmission system will introduce gas as a convenient alternative source of energy to an increasing number of Irish households and businesses although the level of fuel switching will be influenced by the relative economies of competing fuel sources and the capital expenditure associated with obtaining a connection. Domestic gas prices are currently amongst the lowest in Europe.

Pipelines linking the transmission systems of Southern Ireland and Northern Ireland continue to be considered although the prospects for such developments will depend very much on the volume of new demand stimulated along the chosen route and supply contracts secured with major end users. Service levies imposed by the Irish Government may also influence the investment decisions of companies involved in such a project. The cross-border unification of energy infrastructures may promote increased competition in the energy sectors of both countries and improve security of supply.

Environmental Issues

Under the terms of the Kyoto agreement, Ireland was permitted to increase carbon emissions by 13% from the 1990 level by 2010. Although, on first inspection, this would not seem to place too onerous a constraint upon the country, the volume of growth experienced in recent years has the potential to present a serious and expensive problem.

The Irish Government's promotion of the use of gas and consequent substitution of less attractive fossil fuels can be regarded as one of the major factors behind demand growth in the years preceding the current forecast. Moving forward, the possible introduction of environmental energy taxation, similar to the Climate Change Levy in Great Britain, and fuel substitution in the power generation sector may have a significant influence on gas demand as Ireland attempts to satisfy its environmental obligations.

2.3.7.1.2 Northern Ireland

The development of Northern Ireland's economy has tended to be similar to that of the UK in general although in 2000 it outperformed the majority of regions and, given political stability, is expected to continue doing so into the medium term. The latest volumes are based upon an assumption that political stability will endure although it is recognised that this is a potential risk to the accuracy of the forecast.

The planned introduction of CCGT equipment at the existing gas-fired Ballylumford power station in 2002 and resultant thermal efficiency improvements are likely to lead to a temporary reduction in the province's peak gas requirements. However, annual demand is expected to increase as the new plant capitalises on its competitive advantage over other incumbent power generators.

Although the loss of peak load attributable to the replanting of Ballylumford will be partially offset by steady growth in domestic and commercial markets, peak demand will not fully recover until further CCGT developments occur. The proposed conversion of Coolkeeragh power station from oil to gas-firing is likely to provide such growth drivers and the pipeline required to connect the site to the existing gas transmission infrastructure may also promote the development of a number of CHP projects.

2.3.7.2 Europe

The level and direction of flow through the European Interconnector will continue to be determined by differences in UK and continental gas prices. The combination of oil price uncertainty (and hence continental gas prices) and uncertainties around UK gas prices with their seasonality and currency fluctuations complicates the ability to forecast flows. The commencement of the Shearwater Elgin Area Line (SEAL) gas to Bacton in 2001 will exacerbate this difficulty as gas from this offshore pipeline can bypass Transco's system on its way to mainland Europe.

2.3.8 Domestic Markets

The number of housing connections and PGT mains extension projects will be a primary driver of growth in the domestic sector. The domestic "comfort factor" is expected to increase slowly during the forecast period although any resultant increase in demand will be offset by efficiency improvements.

Efficiency gains brought about by improved construction standards and appliance design could lead to average household consumption dropping below historical levels. Given the size of the domestic demand base load a development of this type could prove to have a significant impact on gas demand.

2.4 Impact of Global Warming

In 2000 Transco commissioned an independent study to investigate the impact of "global warming" on long term average weather conditions. The subsequent report concluded that there is evidence to support a potential reduction in LDZ demand, based on a long term average, of up to 5.6%. However, the overall recommendation was for an adjustment of 3.5% based on the trend over the last 35 years and, consequently, this 3.5% correction is applied to each year of the LDZ annual demand forecasts shown in Appendix 2. The rate of warming implied by this trend is consistent with that reported by climate change experts.

With regard to peak demand conditions, independent experts have in the past been unable to conclude to what extent extremes of weather will be affected by "global warming". Consequently, Transco considers it prudent to make no adjustment to its 1 in 20 peak day demand forecast at this stage. This approach is supported by the fact that the coldest day over the last 72 years only occurred 14 years ago.

2.5 Demand Case

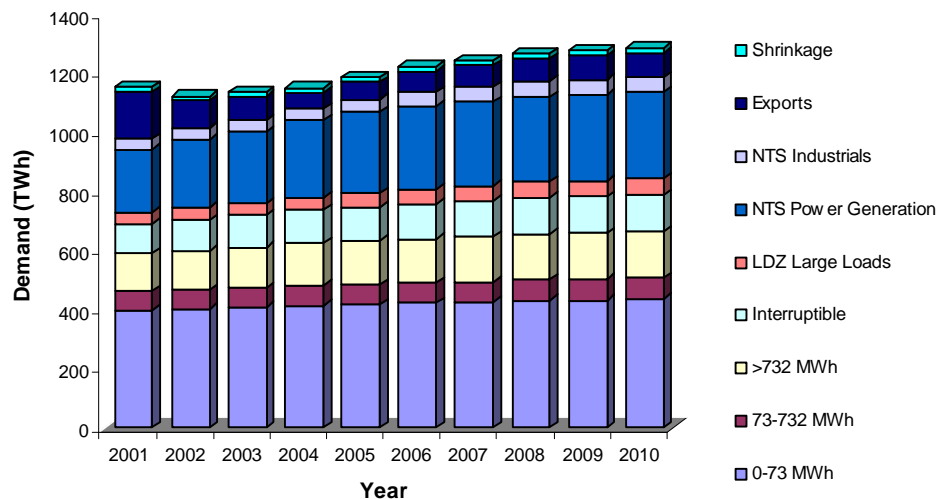
Following this year's Consultation on Gas Volumes 2001 Base Plan, Transco provided feedback to the industry, as part of the Transporting Britain's Energy consultation process, on the responses received and the effect this had on the Transco forecasts.

This indicated that there is significant uncertainty with respect to the key drivers of demand, particularly in light of the apparent tightening of the UK's supply position and increased gas prices seen over the last year. As a result of this uncertainty Transco has developed a range of demand forecasts but for ease of clarity only one case is presented. This case has been utilised along with two alternative supply scenarios to determine Transco's capacity expansion plans.

2.4.1 Capacity Planning Demand Case

This case assumes growth rates in the LDZ markets, over the medium term, are comparable to those predicted by previous forecasts, although, initially they are lower reflecting higher gas prices. Whilst demand from loads connected to the NTS is more uncertain due to the overall UK supply/demand match, the by-pass of Transco's system at Bacton and Corrib gas entering the Irish market. Details of the annual and peak demand forecasts are shown in Appendix A2.1 split between LDZ and NTS load categories. However, the annual demand forecasts are summarised in Figure 2.5A below.

FIGURE 2.5A - Annual Demand Forecasts



The following points give an overview of the key assumptions utilized in the production of this demand case:

- Economic growth averages 2.7% p.a. over the forecast period with the rate of inflation remaining steady.

- Beach gas prices rise during the forecast period in real terms, leading to a partial erosion of gas' competitive advantage over other fuels.
- The power generation sector continues to grow with 15 new NTS stations adding around 10GWe of new CCGT capacity during the forecast period. CCGT's share of the large scale generation market increases from 36% to 52%. Note that gas' share is approximately 3% higher as some gas is used in non CCGT stations.
- Over the forecast period, the New Electricity Trading Arrangements (NETA) have a neutral effect on the fuel mix of generation although the first gas dates of several new NTS loads (power generation and industrials) are subject to a degree of slippage.
- Flows through the European Interconnector are determined by the price differential between the UK and European markets. Higher UK prices in the early years of the forecast period reduce Interconnector volumes more quickly than previously assumed. In addition to this factor, the development of the SEAL pipeline leads to flows from associated fields by-passing the NTS.
- Strong growth in Irish gas markets, principally due to growth in the power generation sector, is offset by the commencement of supplies from the Corrib field in the fourth quarter of 2003.
- The installed capacity of Combined Heat and Power (CHP) plants continues to increase, reaching about 7.5GWe by 2010 with gas-fired plants expected to account for approximately 85% of the market by this time. (This projection is consistent with the 2000 SD Strong Demand case but falls short of the Government's target of 10GWe of installed capacity in 2010).
- LDZ forecasts reflect the recent downturn in demand, particularly LDZ interruptibles and large firm loads, due to increased gas prices and system by-pass.
- The Climate Change Levy impacts on demand growth in non-domestic markets, leading to a 3% reduction of demand in this category by 2010.
- The number of new housing completions increases slowly over the forecast period, growing from 180,000 p.a. in 2001 to 186,500 p.a. in 2010.
- Average domestic consumption remains stable with improvements in insulation and efficiency offset by higher comfort levels.



Supply

3.1 Recent Supply Trends and Market Uncertainties

The supply forecasts that are developed by Transco provide an assessment of the range of possible sources of gas supply that may be delivered into the UK and the proportion of that gas that will be delivered into the Transco transportation network.

The overall gas supply situation is assessed against the Transco demand forecast (shown in Appendix 2) to create a supply demand match for both annual and peak gas supplies.

The clear message from this analysis is that there remains a potential annual supply shortfall after 2004/5. The peak match shows a slightly better situation with a potential peak day deliverability shortfall after 2005/6. However, this potential shortfall could be earlier if the new storage developments identified in this section are delayed or not developed. The position with respect to a severe winter is similar to the peak day, however there could be a combination of circumstances which creates a severe winter deficit as early as this supply year.

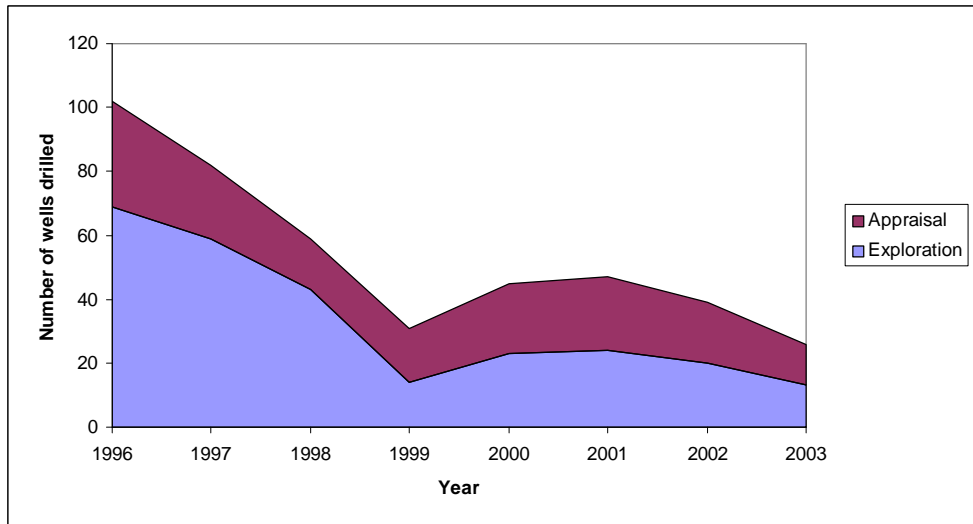
Transco assumes that there will be new supplies, either from the UKCS or imports, to meet the potential shortfall. There is, however, uncertainty about the landing point of this gas and Transco has developed two scenarios to assess the range of impacts on its system. In addition it is expected that the proposed long term capacity auctions will provide additional information to assist in the assessment of future entry capacity requirements.

3.2 Crude Oil, Gas Prices & Drilling Activity and Reserves

Though oil and gas prices have remained relatively high over the past year there is still little sign of increased exploration and appraisal activity on the UKCS. The DTI's 2001 Brown Book (Development of the Oil and Gas Resources of the United Kingdom 2001) reports relatively few new gas developments though there was an increase in

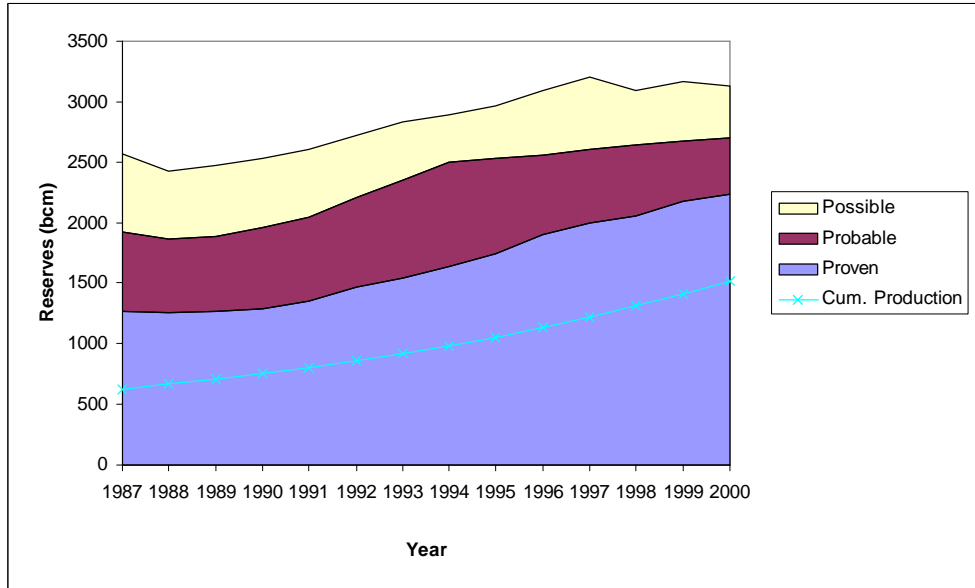
both exploration and appraisal activity. This however was still below the PILOT (successor to the Oil and Gas Industry Task Force) target rate of 50 exploration wells. Reported drilling intentions through to 2003, as shown in Figure 3.2A, show little or no increase in proposed activity.

FIGURE 3.2A - UKCS Exploration and Appraisal Activity



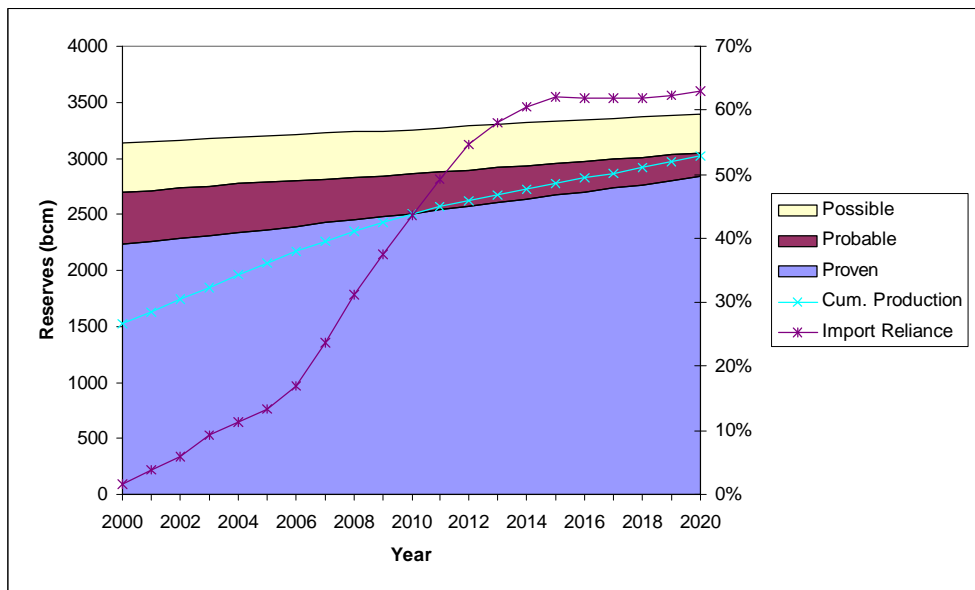
The Brown Book also reports UKCS gas reserves in terms of probability. Whilst proven reserves (which include cumulative production) have increased, probable and possible reserves have both declined since 1997. This levelling off of total reserves as shown in Figure 3.2B, has now been observed for four consecutive years. With increasing UKCS production, the ratio of remaining reserves to production (R/P) has declined from a range of 9 – 23 years in 1997 to 7 -15 years in 2000; where the range reflects proven to possible reserves. If further categories of gas reserves namely, potential additional reserves and undiscovered recoverable reserves are also included in the analysis, the outcome is similar, that is no material increase in reserves but a steady decline in R/P ratios.

FIGURE 3.2B – UKCS Reserves by Supply Category



Using trend analysis on Brown Book data and current supply forecasts, Transco has developed a longer term UKCS supply forecasting capability to assess reserves' projections and future UKCS production. Figure 3.2C shows a scenario based on a low increase in reserve projections with an assessment of import dependency. The data shows a declining level of production from the UKCS and imports reaching 15% in 2005 and 45% in 2010. Even for higher reserve projections the UK could be importing 35% by 2010.

FIGURE 3.2C – Reserves' Projections





3.3 Annual Supply Forecasts

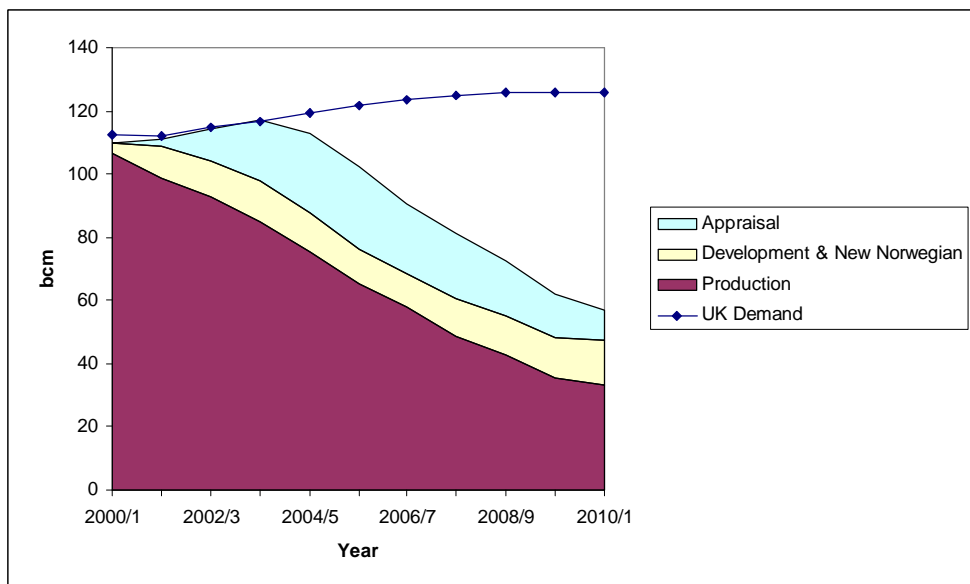
3.3.1 Supply Availability

Based on information received by Transco the short term annual supply position appears well covered. However, the decline of significant UKCS producing fields in the medium to longer term results in a potential supply deficit that can only be met by new UKCS developments, further imports including the possibility of LNG, or even reduced demand (notably at peak) as a consequence of higher gas prices. The sourcing of supplies to meet the supply deficit continues to form the basis of Transco’s supply scenarios for future planning and investment.

In terms of information provision to Transco, responses through the consultation process by producers accounts for approximately 80% (by volume) of the supplies information used. By using field specific information the producer information can be supplemented with commercially available data to capture all known existing and anticipated UKCS developments.

Figure 3.3A shows the annual supply information received by Transco against UK demand (including UK exports) in volume terms. The UK demand is based on Transco forecasts with a fixed allowance for demands to power stations and other large demands that use Transco’s network as a back up supply (approximately 8 bcm per year). Exports include flows to Ireland and the continent including possible by-pass of Transco’s network through the SEAL / Interconnector link (SILK).

FIGURE 3.3A – Annual Supplies by Supply Category, Information Received



The supply information is expressed in terms of supply category. Production is gas from producing fields; this gas could be classified as “firm”. Development and new Norwegian is gas from fields where development approval has been given by the Government (Annex B). This gas is “essentially firm” but the precise start up may be affected by construction / commissioning and even contracting delays etc. This category is dominated by supplies through SEAL (Elgin, Franklin and Shearwater) and

new Norwegian imports. Appraisal gas is gas from fields where producers have given a flow profile for an expected development timescale. These fields do not have Annex B development approval and have greater uncertainty associated with them; they could be classified as “probable”. Though not shown due to limited availability of information, there are other potential supplies that could provide part of the longer term provision of supplies, namely:

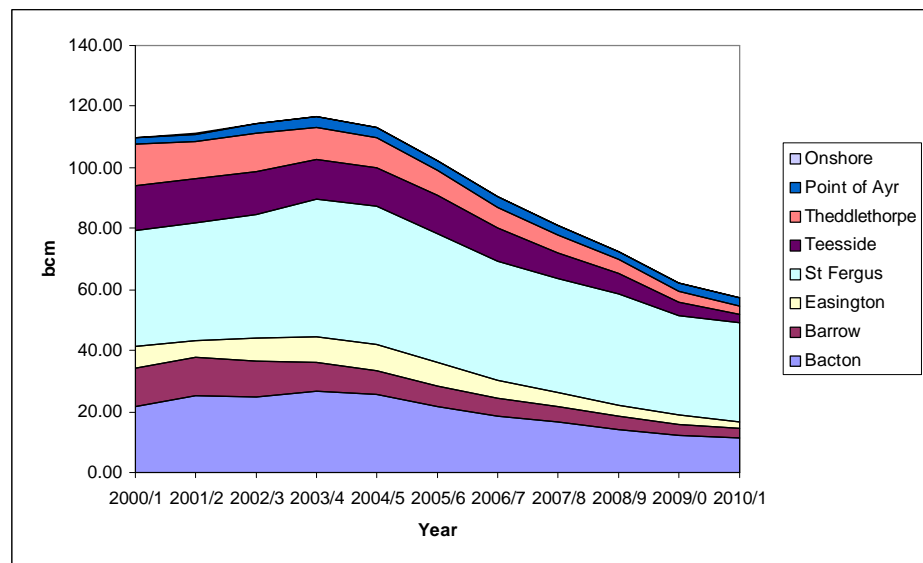
- New discoveries.
- Enhancement to existing supplies (beyond those incremental projects included in the supply forecasts).
- Additional imports (Norway, Continent).
- LNG Imports.

The shortfall between supply and demand beyond 2004/5 highlights the future supply uncertainty. This situation was signalled in the Transco 1999 and 2000 Ten Year Statements, but the extent and proximity in terms of timing make this a greater issue than previously. This is exacerbated by the fact that the data presented includes an increased proportion for new imports.

The supply shortfall will have to be filled with “possible” type supplies from the UKCS or further imports, perhaps LNG. “Possible” supplies include enhanced (further) recovery of producing fields and development of discovered fields (not yet appraised for development) or even fields still to be discovered.

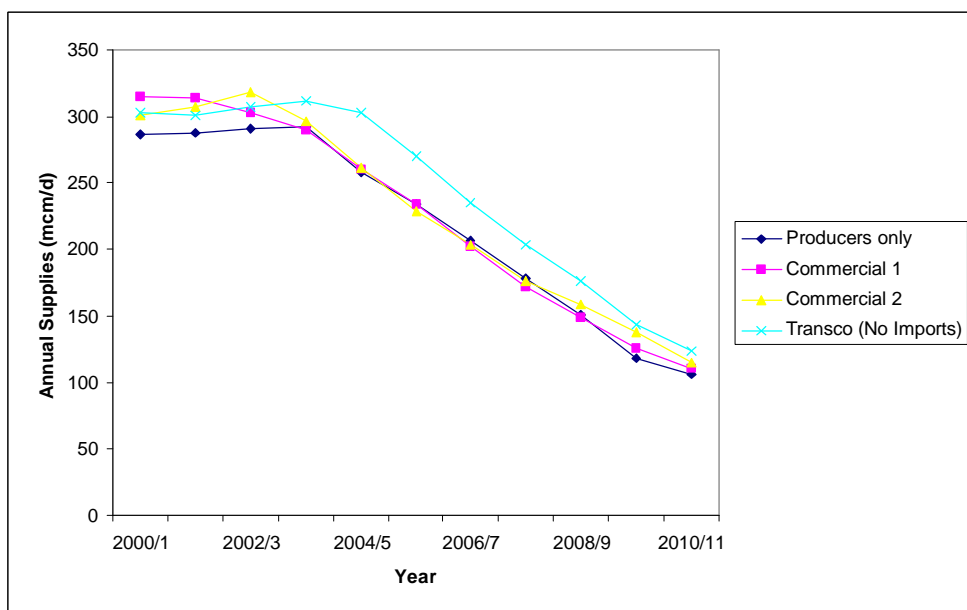
Figure 3.3B below shows the annual supply information received by supply terminal. Only St Fergus with its prolonged production from some large fields supplemented with new Norwegian imports shows sustained production through the 10 year horizon.

FIGURE 3.3B – Annual Supplies by Terminal, Information Received



The supply information that Transco has received through its Base Plan consultation process and uses as the basis for its supply forecasts compares favourably in aggregate (though not so well for specific supply terminals) with commercially available supply data. This is demonstrated in Figure 3.3C, which also shows a breakdown of Transco's information in terms of that provided solely by producers and the resultant information when supplemented with commercially available data. This again highlights the need for Transco to receive field specific data, as without this data Transco's supply forecasts could not be readily supplemented, leading to the possibility of understated supplies.

FIGURE 3.3C – Annual Supplies, Comparison of Data

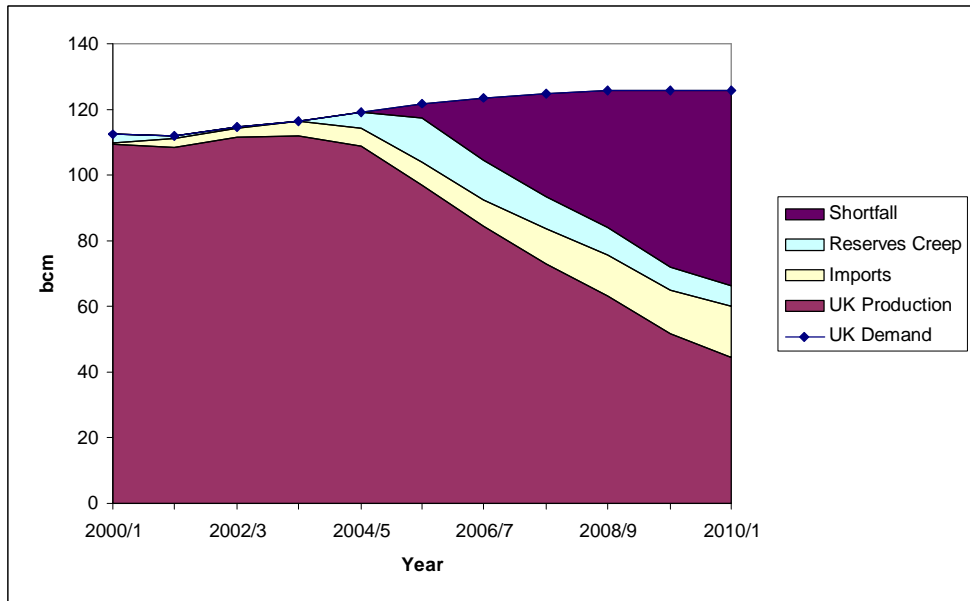


To plan the network Transco continues to match supplies to demand. Transco acknowledges that at times of high demand and as a consequence of high gas prices some load management may materialise. However, as Transco has limited experience of this and has contractual obligations to ensure firm demands can be supplied, it continues to design its network to meet 1 in 20 peak day demand.

In matching supplies to demand it is assumed that known supplies will meet demand, subject to the availability and maximum deliverability of reserves. The level of remaining reserves is increased by typically 10%, over the life of the field, to account for conservative reporting and improvements in technologies for enhanced recovery, known as reserves creep. This may be a conservative assessment as some producers suggest a value of 15%. In adopting this approach, even with this allowance for reserves creep, a supply / demand match cannot be achieved after 2004/5. The potential shortfall of supplies from 2005/6 shown in Figure 3.3D forms the basis of Transco's supply scenarios. Unknown supplies are assumed to meet demand, this provision being essential for the longer term planning of the network.



FIGURE 3.3D – Annual Supplies by Supply Category, Modified for Match



It is assumed that the potential supply shortfall is met by a combination of new UKCS (possibly West of Shetlands) and imports, though the possibility of reduced demand through higher gas prices should not be discounted.

The provision of assumed gas to meet the supply shortfall provides the basis of Transco’s supply scenarios.

3.4 Supply Scenarios

The basis for the supply scenarios centres on the availability of spare offshore pipeline capacity (ullage) and the location of remaining reserves from the UKCS and through imports.

The current remaining reserves on the UKCS are located primarily in the Central and Northern North Sea (CNS & NNS) with approximately only 30% in the more mature Southern Basin. If more speculative reserves are also considered - for example, estimates of undiscovered reserves - this figure changes little. Consequently, the pipeline ullage used to determine future supplies for the supply scenarios concentrates on existing pipeline capacity from producing areas where most known remaining reserves are located, namely the CNS and NNS. These pipelines include all those to St Fergus, CATS to Teesside and SEAL to Bacton.

Two supply scenarios are considered; St Fergus Base and St Fergus Expansion.



3.4.1 St Fergus Base

For the St Fergus Base scenario, the flow of assumed supplies through other pipelines to Bacton, Theddlethorpe, Easington and Barrow equates to approximately 30%, consistent with the remaining reserves in the Southern Basin.

3.4.2 St Fergus Expansion

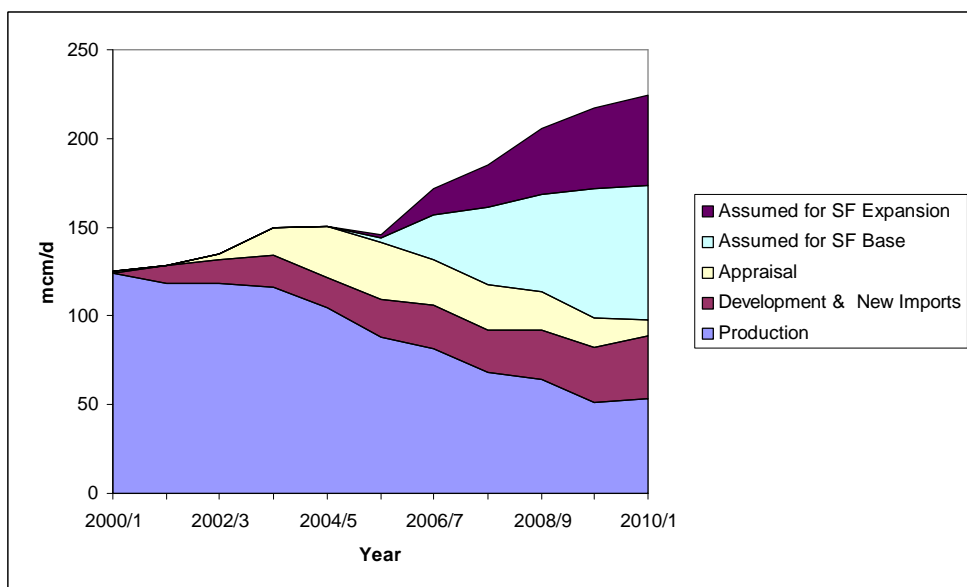
For the St Fergus Expansion scenario there is no flow of assumed supplies through other pipelines to Bacton, Theddlethorpe, Easington and Barrow. However, St Fergus ullage is increased by consideration of two new pipelines in 2005/6 and 2008/9 respectively. Though not identified specifically, these pipelines could relate to full development of the West of Shetland gas reserves and further Norwegian imports through a new link.

For both scenarios the potential for full imports through the continental Interconnector is assumed from 2005/6. As the precise timing of this is unknown and to avoid shocks to the planning of the network a gradual build up of Interconnector imports through to 2005/6 is assumed. If this approach was not used there would be a step increase at Bacton of up to 12 bcm/year (33 mcm/d). Latest information suggests that full Interconnector imports before 2005/6 are unlikely.

New Norwegian imports as detailed by the Norwegians Producers to Transco are included in both supply scenarios. Further Norwegian imports could provide some of the assumed supply requirements, as could a new Interconnector to Bacton, though this would be best considered as a separate supply scenario.

Figure 3.4A below shows peak forecast supplies to St Fergus for the two supply scenarios. Accommodating peak supplies and thus ensuring that peak demand levels can be met, is one of Transco's primary investment drivers, though with an increased requirement for summer flexibility and network resilience this emphasis may change with a requirement to provide entry capacity independent of demand levels.

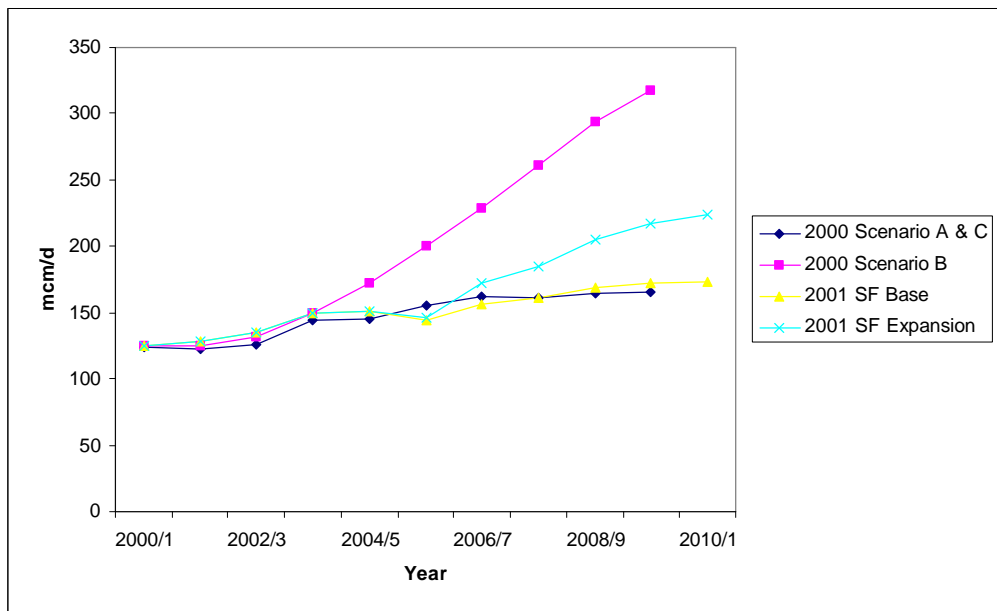
FIGURE 3.4A – Peak St Fergus Supplies



New imports through the Vesterled pipeline connecting the Norwegian offshore infrastructure with the Frigg pipeline are assumed from 2001/2. For St Fergus flows above approximately 130 mcm/d many new developments yet to be approved, though expected, need to materialise. These, based on information received from producers should take St Fergus peak flows to about 150 mcm/d in 2003/4. Flows above 150 mcm/d only occur through the assumptions Transco makes regarding the supply scenarios.

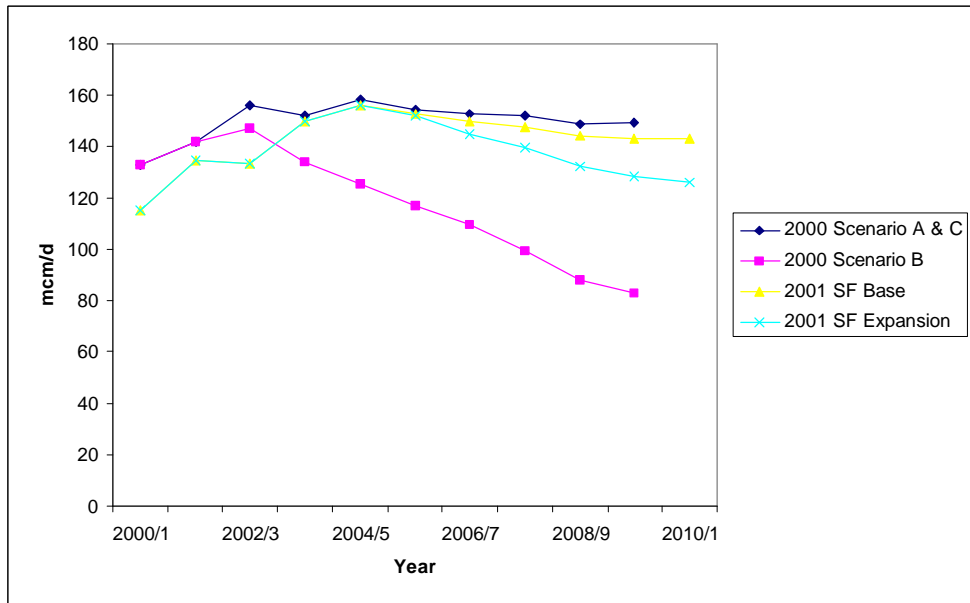
A comparison of the current supply forecasts against the previous supply forecasts for St Fergus, first presented in the 2000 Ten Year Statement and used in the Ofgem capacity matrices, shows an appreciable narrowing of the range of forecasts for St Fergus as a firmer picture of supplies develops. The previous Interconnector Balance and current St Fergus Base scenarios are closely aligned as can be seen in Figure 3.4B.

FIGURE 3.4B–St Fergus Peak Comparison



A comparison of the current supply forecasts against the previous supply forecasts for Bacton first presented in the 2000 Ten Year Statement and used in the Ofgem matrices, is shown in Figure 3.4C, and shows lower Bacton supplies in the near term due to slippage in the expected timing for compression at Zeebrugge from 2004/5 to 2005/6. Both current supply scenarios include compression at Zeebrugge from 2005/6.

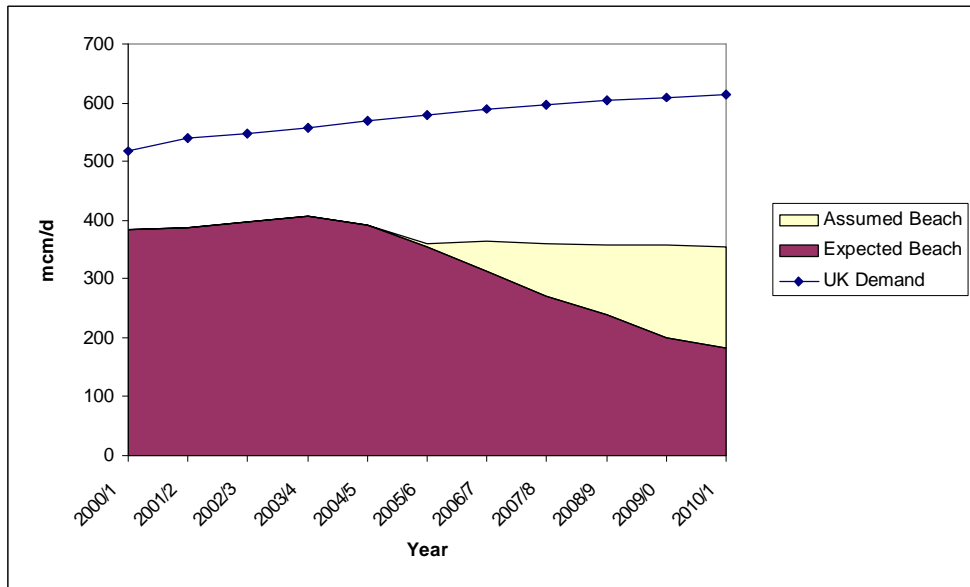
FIGURE 3.4C –Bacton Peak Comparison



3.5 Peak Supplies

Even with inclusion of some imports in the supply forecasts, the supply demand position forecast continues to become tighter. This is due to the assumptions for new supplies, which at best are only maintained at existing levels of beach supply. Under these conditions with forecast for demands still increasing, there will be an increased requirement for storage or demand management to supplement beach supplies to meet demand. This is shown in Figure 3.5A for Transco peak supply demand as opposed to the UK, in terms of an increasing differential between beach supply and peak demand. Any shift in the UK to greater reliance on storage / seasonal supplies / demand management will see the UK gas market becoming more aligned to a “continental type” model. However, the fundamental difference here is that whilst many continental countries have typically 25% of annual gas stored at the commencement of a winter, the UK’s level without significant as yet unplanned developments would be below 5%.

FIGURE 3.5A - Transco Peak Supply / Demand (simplified)



3.6 Peak Supply Demand Match

In forecasting future supplies Transco includes all new supplies (beach and storage developments) as detailed to Transco. These are essential to achieve a longer term supply demand match. This is best illustrated by considering the peak supply demand requirements for 2005/6 with and without some of the expected supply developments.

Figure 3.6A shows a simplified representation of Transco’s supply demand match for 2005/6 at high demands. Firm demand is shown for severe and average demand conditions in the form of a load duration curve (demands sorted from highest to lowest for the year). It should be noted that interruptible demand is not shown on these diagrams as they relate to firm demand only.

Supplies are built up on a simplified basis to reflect their use in meeting increasing demand. In reality both Interconnector and Rough will be competing with some beach supplies at high demands but this does not alter the overall picture.

Availability of supplies reflect Transco’s planning basis, namely:

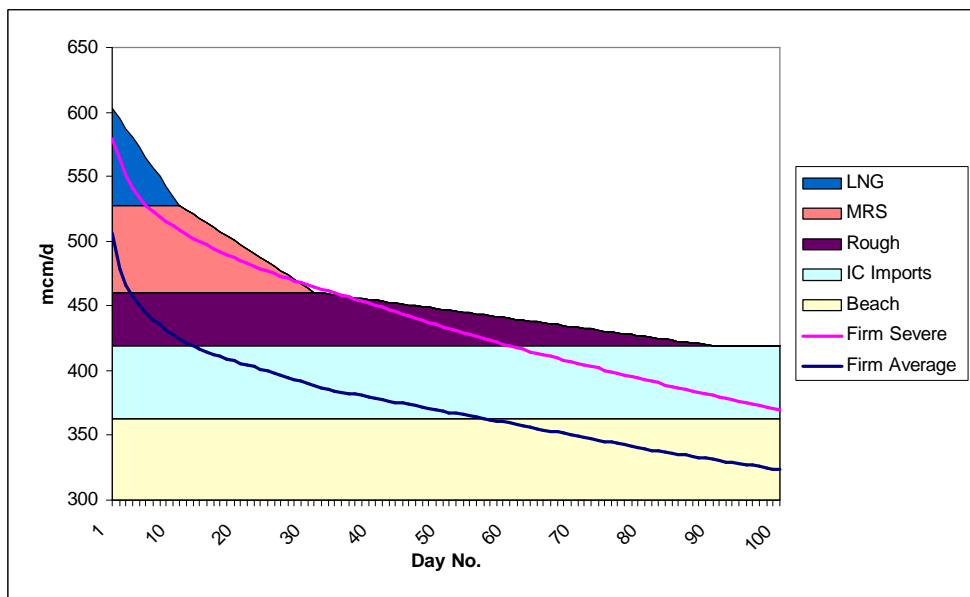
- Approximately 90 mcm/d of new UKCS developments that have yet to be approved.
- 5 mcm/d of assumed supplies for an annual match.
- Compression at Zeebrugge increasing Interconnector imports from about 22 to 55 mcm/d (8 to 20 bcm/year).



- Development of two new significant storage projects – Intergeren’s Aldbrough facility and Scottish Power’s Byley facility.
- Full deliverability of LNG.

For the storage facilities, the area on the charts represents the space or stored gas and the height the deliverability, for example LNG is shown to have a deliverability of approximately 75 mcm/d for up to ten days, equivalent to five days at full rate.

FIGURE 3.6A – Peak Supply Demand 2005/6 (Full Supplies)



Note: Definitions of both severe and average load duration curves can be found in the Glossary (Appendix 8).

Figure 3.6A shows that the firm demand position is relatively well covered for this particular year.

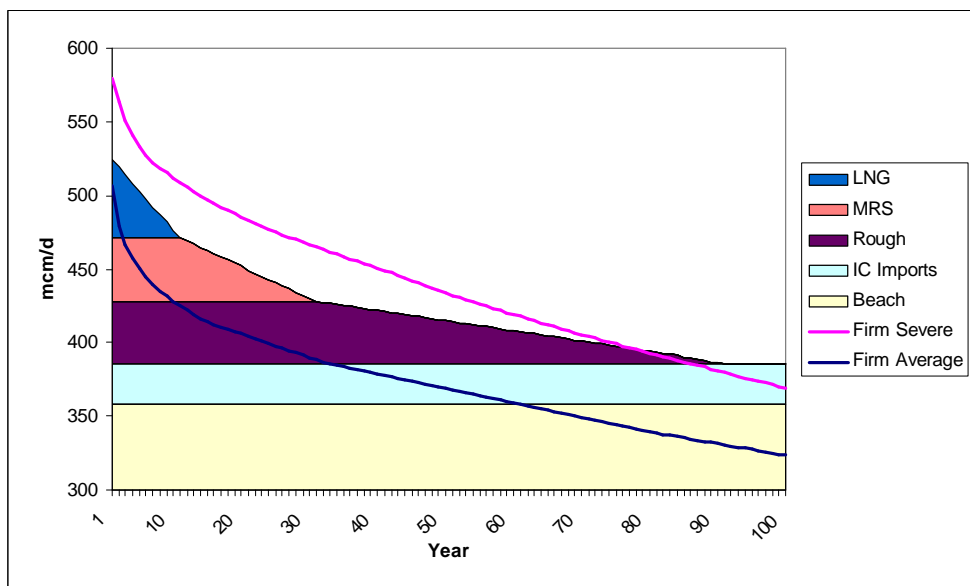
It should be noted that if the supplies through the Interconnector were not used to support interruptible customers, there would be significant interruption required. This would be primarily commercial type interruption rather than Transco led interruption for capacity purposes.

Figure 3.6B shows the same arrangement as the Figure 3.6A but the supplies have been reduced to reflect supply uncertainty, namely:

- Beach supplies are reduced by 5 mcm/d reflecting Transco’s assumed level for an annual match. If the 90 mcm/d of expected offshore developments do not materialise this could be appreciably understated.

- No compression at Zeebrugge with imports at existing levels. In practice with liberalisation of continental markets, the Interconnector could export rather than import or at least import even well below this expectation.
- Only one of the two proposed storage developments is built. Both are still scheduled before 2005/6, but neither is currently being constructed.
- LNG is based on full LNG less Transco’s current booking for Operating Margins. The assumption that shippers and / or the Top-up Manager book any remaining LNG still applies.

FIGURE 3.6B–Peak Supply Demand 2005/6 (Reduced Supplies)



Note: Definitions of both severe and average load duration curves can be found in the Glossary (Appendix 8).

Figure 3.6B shows that the demand position is covered for average conditions but not met for severe demand conditions.

In the severe case there will already have been full interruption of all interruptible demands for the maximum duration.

In average conditions there would be significant periods of interruption, possibly 90 days of partial interruption and 30 days of full interruption. This would be primarily commercial type interruption rather than Transco led interruption for capacity purposes.



NTS Capacity Provision and Investment

4.1 Introduction

The result of the current price control review may change the way NTS capacity is provided into the future, and result in changes to Transco's Gas Transporters' Licence, as applied to the NTS. Such changes may impact on NTS investment. In light of this the statement shows the investment proposals identified in the Ofgem Final Proposals and the currently approved NTS projects only. This includes investment to meet the 1 in 20 peak day requirements plus projects to provide increased summer capacity.

4.2 Long Term Investment Signals

Throughout the price control debate, Ofgem has promoted the use of both long and short term auctions as a means of giving Transco the signals to infer investment decisions on the NTS. Transco is mindful that there is concern within the industry that auctions alone are unlikely to produce a reasonable signal and in June 2001, put forward an alternative proposal in the consultation document "Transporting Britain's Energy". This advocated the use of an enhanced Base Plan Assumptions process as the means of deriving appropriate investment for the future, and a proposal for a one-off investment programme to provide both network security and flexibility, in addition to the current 1 in 20 criterion.

The proposed enhanced Base Plan process is designed to encourage more cooperation and involvement from market players, by: improving the questionnaire; increasing information transparency; and offering a number of potential, but credible, scenarios for comment. This approach should inform the level of investment supported by the industry, and give helpful signals to Transco on where to invest on the NTS. An auction arrangement, yet to be determined, would make an implicit contribution to the investment signals.

4.3 Investment proposals

Ofgem's final proposals considered the two elements of investment as follows:

4.3.1 Statutory

Statutory investment is defined as that required to meet the current 1 in 20 Gas Transporters' Licence condition and is based on the two scenarios, St Fergus Base and St Fergus Expansion, explained in Chapter 3. Ofgem propose to support the St Fergus Base scenario and allow investment of £424m (@ 2000 prices).

Details of the major new project expenditure required in the construction horizon to meet changing supply and demand patterns and demand growth are given below:

2002 (approved for construction)

W	Willington to Steppingley pipeline	2002	21km X 900mm	£19m
X	Cambridge to Matching Green pipeline	2002	46km X 1200mm	£41m
Y	Kings Lynn compressor modifications	2002		£22m

The above projects are shown on the map of the NTS (Figure 4.4A)

2003 - £184m

2004 - £10m

Peak day major new build investment tails off because of the lack of new gas and heavy reliance on existing and planned third party storage.

4.3.2 Flexibility

Flexibility is defined as a one-off investment to enable the NTS to provide close to the peak day entry capacity throughout the year. This would involve investment in a number of pipeline projects in Scotland and the South East, and the modification of a number of key compressor stations to eliminate the need to take compressor stations completely off line for maintenance. Ofgem propose expenditure of £380m to support the following projects:

Northern system support				
	Aberdeen to Lochside pipeline	2004	50km X 1200mm	£50m
	Arbroath to Drumeldrie pipeline	2005	55km X 1200mm	£55m
	Wooler to Guyzance pipeline	2005	47km X 1200mm	£47m
	Moffat compressor modifications	2003		£25m
	Wooler compressor modifications	2004		£30m
Central system support				
	Bishop Auckland compressor mods	2004		£30m
	Hatton compressor modifications	2004		£30m

Southern system support			
Bacton to Whittlesey pipeline	2004	73km X 1200mm	£73m
King's Lynn compressor modifications	2005		£20m
Chelmsford compressor station modifications	2006		£20m

4.4 NTS Project List – Completed and Approved

NTS Projects Completed in 2000

- A. Carnforth to Nether Kellett (2 km x 900mm)
- B. Bridge Farm to Birch Heath (20 km x 900mm)
- C. Shorne to Farningham (16km x 750mm)
- D. Bathgate Parallel Compressor Modification
- E. Churchover Compressor Station Upgrade
- F. Alrewas Compressor Station Upgrade

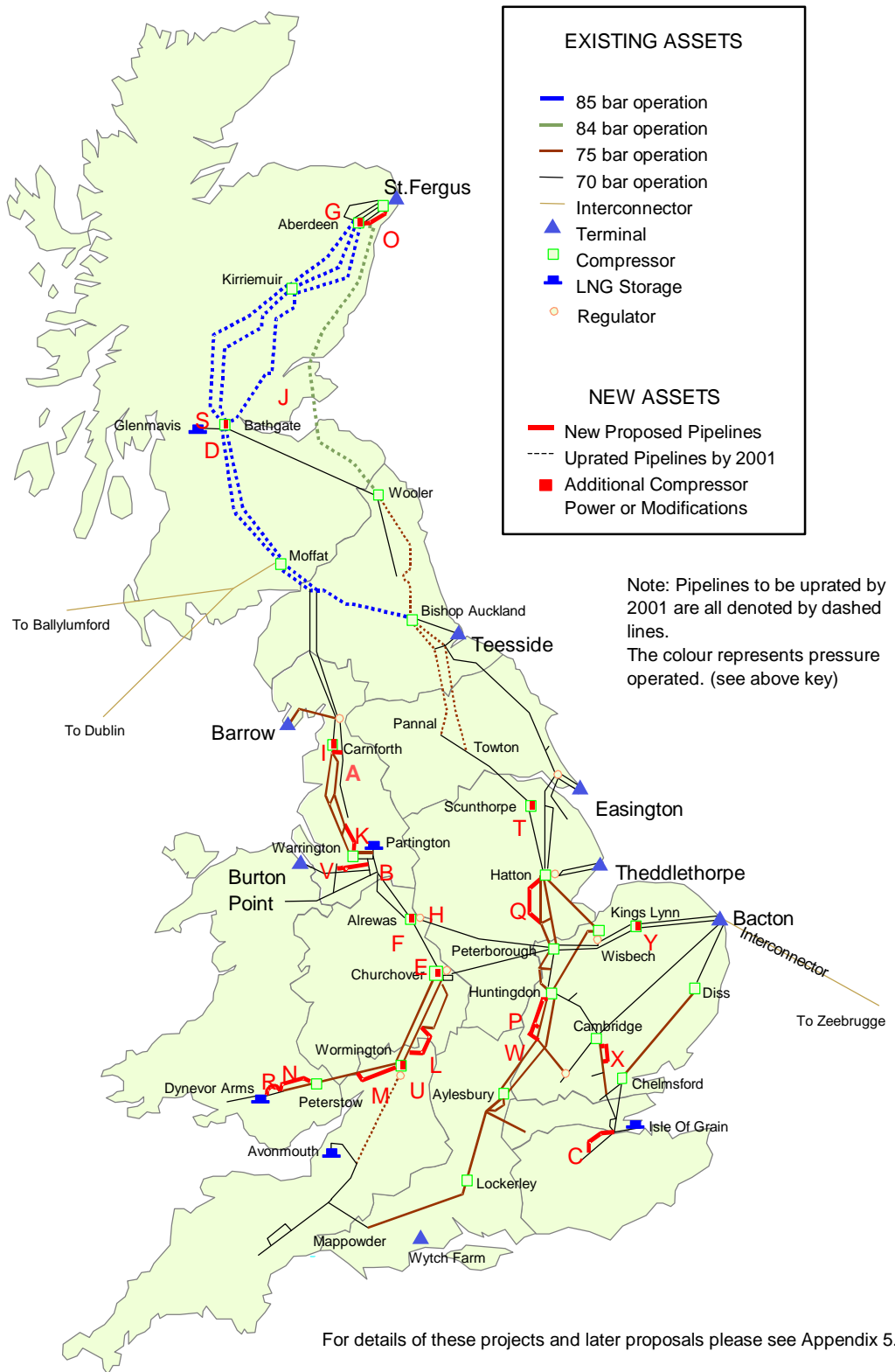
2001 Approved Projects

- G. Aberdeen Compressor Station – Third Unit
- H. Alrewas Compressor Station New Unit
- I. Nether Kellett Compressor Station
- J. Uprating of 1150 km of NTS pipelines
- K. Mawdesley to Warrington (40 km x 1050mm)
- L. Newbold Pacey to Honeybourne (26 km x 900mm)
- M. Wormington to Tirley (30 km x 900mm)
- N. Peterstow to Llanvetherine (26 km x 600mm)
- O. St Fergus to Aberdeen (70 km x 1200mm) – As a number of Compulsory Purchase Orders (CPO) remain outstanding in August 2001 it is unlikely that this pipeline will be completed in 2001.
- P. Huntingdon to Willington (24 km x 900mm)
- Q. Hatton to Silk Willoughby (45 km x 1200mm)
- R. Llanvetherine to Gilwern (19 km x 900mm) – As a CPO remains outstanding in August 2001 it is unlikely this pipeline will be completed in 2001.
- S. Bathgate Compressor Rewheel
- T. Scunthorpe Compressor Rewheel
- U. Wormington Compressor Rewheel
- V. Birch Heath to Mickle Trafford (14km x 900mm) – Due to on-going access difficulty resulting from Foot and Mouth disease it is unlikely that this pipeline will be completed in 2001.

2002 Approved Projects

- W. Willington to Steppingley (21 km x 900mm)
- X. Cambridge to Matching Green (46 km x 1200mm)
- Y. Kings Lynn compressor modifications

FIGURE 4.4A - NTS Projects Completed and Approved





Investment in the LDZ Transportation System

Transco continues to invest in the lower pressure tiers of its transportation network to meet customer's requirements for a safe and efficient network and their forecast growth for firm transportation services. Significant investment is in the following areas:

5.1 LTS Development Plan

The LTS system is designed for transmission and storage on the basis of ensuring maintenance of the 1 in 20 gas security standard. The system is developed, based on supply/demand forecasts, to ensure that this capability is maintained. LTS projects tend to be numerous and of lower value than NTS projects. The following major projects (greater than £2 million) have been approved for 2001 and 2002.

5.1.1 2001 Approved Projects

- | | |
|-----------------|---|
| North East (NE) | - Keighley to Burley Bank Reinforcement |
| North West (NW) | - Salmesbury to Helmshore |
| Wales (WN & WS) | - Pontyates to Bancyfelin |
| South East (SE) | - Farningham to High Halden |
| Southern (SO) | - Newbury Reinforcement |
| South West (SW) | - Maudlin to Indian Queens |
| | - Nailsea to Weston-Super-Mare |
| | - Eastern Grey to Minety |

5.1.2 2002 Approved Projects

North East (NE) - West Hull Reinforcement

Wales (WN & WS) - Gilwern to Hafodyrynys

Remaining projects are smaller and typically cost less than £2m.

Appendix 5 provides schematic diagrams of the LTS networks and is intended to give an indication of the extent of the networks within each LDZ. Networks operating below 7 bar are not shown.

5.2 Below 7 bar Distribution Network

The Transco below 7 bar network is constrained to operate between levels of pressure defined by statute, regulation and safe working practices.

Transco continues to develop its below 7 bar distribution network, investing in mains, services and associated plant and machinery to meet both the needs of providing capacity to customers wishing to connect to Transco's network and other Gas Transporters' requests for transportation services.

Transco's distribution networks are designed and reinforced to meet a peak six minute (pk6) demand level, which is the maximum demand level (averaged over a six minute period) that can be experienced in a network under cold winter conditions.

5.3 Other Investment

Transco also continues to invest in new and replacement meters and in the replacement of its transportation network assets, such as LTS, mains and services. This investment is not covered within this document.

5.4 Capital Investment Forecasts

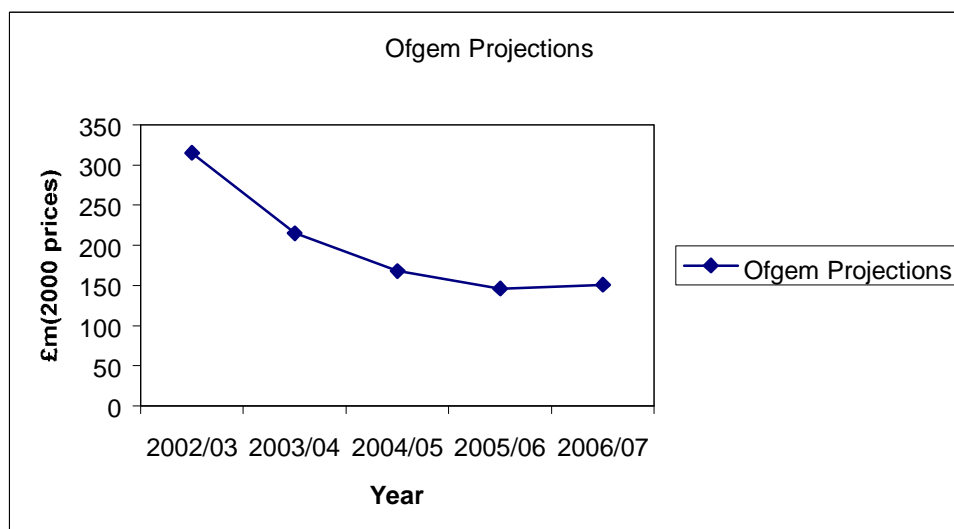
As part of the Periodic Review process, on 26 September 2001 Ofgem published its final proposals for the five year period from April 2002. Figures 5.4A and 5.4B detail Ofgem's proposals for Investment in the LDZ Transportation system over this period excluding replacement, meters, IS and vehicles.

FIGURE 5.4A - Transportation System Related Investment 2002/03 to 2006/07

£M (2000 prices)	2002/03	2003/04	2004/05	2005/06	2006/07	Totals
LDZ Gross Capital Expenditure	315	215	168	146	151	996

Projected costs extracted from 'Review of Transco's Price Control from 2002 – Final Proposals' September 2001, table 4.12 and are on a Formula Year basis i.e. April to March.

FIGURE 5.4B - LDZ Gross Capital Investment Forecast 2002/3 to 2006/07



This investment is associated with the delivery of a number of output measures, as detailed below:

FIGURE 5.4C - Capacity – peak day firm demand assumptions

GWh/day	2002/03	2003/04	2004/05	2005/06	2006/07
Total LDZ	4669	4720	4760	4793	4825

Table extracted from 'Review of Transco's Price Control from 2002 – Final Proposals' September 2001, Appendix 4, Paragraph 5. These figures relate to Supply Years i.e. October to September.

These peak day demand forecasts are consistent with those published in last year's Ten Year Statement and are therefore different from those presented in Appendix A2.1.

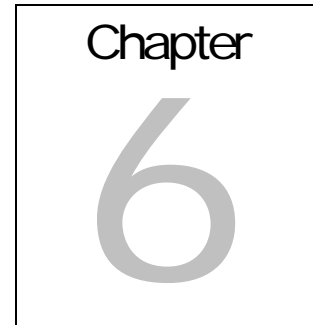
FIGURE 5.4D LDZ Connections - the following numbers of connections have been assumed

Number	2002/03	2003/04	2004/05	2005/06	2006/07
Existing Housing	83023	80165	70825	55711	48903
New Housing	32240	23754	18915	17053	15746
I & C	11222	10981	10741	10502	10260
Total	126485	114900	100481	83266	74909

Table extracted from 'Review of Transco's Price Control from 2002 – Final Proposals' September 2001, Appendix 4, Paragraph 6. These forecasts are on a Formula Year basis i.e. April to March.

The volume of connections forecast for the five year period reflects Transco's share of the total connections market i.e. it excludes any third party connections to the gas network.

It should be noted that, whilst the stated output measures represent Ofgem's current view, these are still being developed in discussion with Transco working towards a proposed implementation in 2004.



Way Forward

6.1 Next Steps

The production of the Ten Year Statement is essentially the conclusion to the planning process for this planning cycle. As in previous years there will be areas of remaining uncertainty, which Transco will address through the impending consultation that will initiate the start of the planning process for 2002. A separate document entitled “Transporting Britain’s Energy 2002 – Initial Consultation” will be published in parallel to this one, which seeks to initiate industry debate on the areas that Transco wish to address through this years investment planning process.

Some preparatory work has already been completed by holding two industry workshops to review the way that Transco gathers information from the industry to support its investment planning process. The outcome of these workshops is summarised in the separate document mentioned above.

The proposed programme for this year’s plan is as follows:

- Receive responses to initial TBE consultation – November 2001
- Circulate 2002 questionnaires – November 2001
- Receive responses to questionnaires – December 2001
- Hold consultation meetings – January to February 2002
- Provide feedback on responses received via the Internet – ongoing from early January 2002
- Produce outline investment proposals and publish industry consultation on investment options – May 2002
- Provide feedback on the consultation – July 2002
- Publish 10 Year Statement – September 2002