Report to the Secretary of State for Energy and Climate Change

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Date 22 March 2010

GAS ACTS 1965 AND 1968
TOWN AND COUNTRY PLANNING ACT 1990
PLANNING (HAZARDOUS SUBSTANCES) ACT 1990
ACQUISITION OF LAND ACT 1981

APPLICATION BY

WINGAS STORAGE UK LTD

FOR

A STORAGE AUTHORISATION ORDER TO STORE NATURAL GAS IN POROUS STRATA UNDERGROUND AT THE SALTFLEETBY GAS FIELD IN LINCOLNSHIRE

DEEMED PLANNING PERMISSION UNDER THE TOWN AND COUNTRY PLANNING ACT 1990

DEEMED CONSENT UNDER THE PLANNING (HAZARDOUS SUBSTANCES) ACT 1990

CONFIRMATION OF THE WINGAS STORAGE UK LTD (SALTFLEETBY GAS STORAGE FACILITY) COMPULSORY PURCHASE ORDER 2009

Inquiry held between 01 December 2009 and 07 January 2010
at Kenwick Park Hotel, Louth, Lincolnshire

File Ref: 91-08-04-05/5C

File Ref: 91-08-04-05/5C - Saltfleetby Gas Storage Facility

- The applications were made by Wingas Storage UK Limited to the Secretary of State for Energy and Climate Change on 24 October 2008.
- The gas storage authorisation order application was made under Section 4 and Schedule 2 Part II of the Gas Act 1965.
- The application for deemed planning permission for the development is under Section 90 of the Town and Country Planning Act 1990.
- The application for deemed hazardous substances consent is under Section 12 of the Planning (Hazardous Substances) Act 1990
- The Compulsory Purchase Order was made under Sections 12 and 13 of the Gas Act 1965 and Section 9 and paragraph 1 of the Third Schedule of the Gas Act 1986 and the Acquisition of Land Act 1981.
- The proposal is for the importation of natural gas from the National Transmission System to be stored in the depleted porous strata of the gas reservoir within the Saltfleetby Gas Field at a minimum depth of 2240 m below ground level. The gas would be subsequently withdrawn, treated and returned to the National Transmission System at times of high demand. Excluding the remaining indigenous gas and the necessary 'cushion gas', the 'working gas' would amount to some 715 million standard cubic metres.
- On the information available to him in June 2009 the Secretary of State particularly wished to be informed on the following matters for the purpose of his consideration of the applications:
  a) *The extent to which the proposed storage is consistent with the objectives of HMG's policy on energy as set out in the Energy White Paper entitled "Our energy future – creating a low carbon economy" (Cm 5761 February 2003), the Energy Review Report 2006 entitled "The Energy Challenge" (Cm 6887 July 2006), the Energy White Paper entitled "Meeting the Energy Challenge" (Cm 7124 May 2007), the Ministerial Written Statement "Energy Statement of Need for Additional Gas Supply Infrastructure" dated 16 May 2006 and Minerals Policy Statement 1 : Planning and Minerals published November 2006;*
  b) *The extent to which the proposed development is consistent with national planning policy statements and guidance including PPS1: Sustainable Development and Climate Change, PPG4: Industrial and Commercial Development and Small Firms, PPS7: Sustainable Development in Rural Areas, PPS9: Biodiversity and Geological Conservation, PPG20: Coastal Planning, PPS23: Planning and Pollution Control and Compliance with PPS25:Development and Flood Risk (to include application of the Sequential and Exception Tests),*
  c) *The extent to which the proposed storage is consistent with the Development Plan for the area comprising the Regional Spatial Strategy for the East Midlands (RSS8) March 2005, the Lincolnshire Structure Plan (2006), the East Lindsey Local Plan Proposal Maps (1995), the East Lindsey Local Plan Alteration Saved Policies 2007 and the Lincolnshire Minerals Local Plan 1991 (saved policies);*
  d) *Whether concerns over safety of the public can be satisfactorily addressed, to include consideration of an expert report by the Health and Safety Executive (HSE) contributing to the Government's Energy Review, 2006 entitled "The Health and Safety Risks and Regulatory Strategy Related to Energy Developments" and the HSE's representations on the Storage Authorisation Order and Hazardous Substances Consent applications 22 December 2008 and 27 February 2009;*
  e) *The main alternatives studied and the reasons for the choice of location for the gas storage facility;*
  f) *Increased road traffic and impact on the local highways during construction;*
  g) *Noise from the proposed development both during construction and operation;*
  h) *The landscape and visual impact of the proposed development;*
  i) *Light pollution from the proposed development;*
  j) *Flood risk and protection of water resources;*

k) Impact on flora and fauna
l) The effect of atmospheric discharges from the proposed development on human health and crops, and;
m) *Impacts on tourism.*

Summary of Recommendations:

1. Storage Authorisation Order

I recommend that the Storage Authorisation Order be made.

2. Deemed Planning Permission

I recommend that a direction be given that deemed planning permission be granted.

3. Deemed Hazardous Substances Consent

I recommend that a direction be given that deemed Hazardous Substances Consent be granted.

4. Compulsory Purchase Order

I recommend that the Wingas Storage UK Ltd (Saltfleetby Gas Storage Facility) Compulsory Purchase Order 2009 be confirmed.

Contents of the Report

1 Procedural Matters

The Applications

1.1 A preliminary submission for a Gas Storage Authorisation Order (SAO) was submitted by Wingas Storage UK Ltd (WSUK) in October 2007 to BERR (now DECC), and the Secretary of State authorised WSUK to proceed with a formal application under the provisions of Schedule 2 of the Gas Act 1965 (CDA1, Vol 2, App 1.2 & WG/PRF/AP6.1).

1.2 The formal application for a SAO was submitted on 24 October 2008 (CDA4) and it was accompanied by:-

- an Environmental Statement and its non-technical summary (CDA1, Vols 1,2 & 3 & CDA2),
- a Notice of Application for a SAO (CDA3),
- an Outline Safety Document (CDA5),
- a Theddethorpe Option Report (CDA6),
- a Planning Statement (CDA7),
- a Statement of Community Involvement (CDA8)
- an application for Hazardous Substances Consent (Form 1) (CDA9),
- a Compulsory Purchase Order (CPO) with its Order Maps and a Statement of Reasons (CDA10, 11 & 12).

Environmental Impact Assessment (EIA)

1.3 The Gas Act 1965 does not require applications for an SAO to be subject to EIA and there are no regulations requiring EIA for an SAO however, at Part ll para 4(4), the Act does require the Minister to have regard to a number of identified environmental considerations. The Environmental Statement (ES) (CDA1, Vols 1,2 & 3 & CDA2) was therefore prepared in accordance with the Town and Country Planning (Environmental Impact Assessment)(England and Wales) Regulations 1999 as advised in para 4.9 of the Guidance on the Gas Act 1965 (WG/PRF/P, para6.6 & WG 1 para 11 & WG22). Scoping, consultation and community engagement was carried out by WSUK (WG22) and the consultation responses are at Document ID/6. No objections were made to the Environmental Statement at the Inquiry.

Compulsory Purchase Order (CPO)

1.4 WSUK is a licensed gas transporter and therefore a statutory undertaker. The purpose of the CPO is to acquire the necessary land and rights in order to implement the SAO for the conversion of the existing Saltfleetby Gas Field for use as a storage facility. More detailed explanation is given in the Statement of Reasons (CDA12). There were a total of 10 objections (ID/3).

Assistant Inspector

1.5 Mr M Kilcullen BEng(Hons) CEng MIET was appointed as my Assistant Inspector and his report, primarily on the plant, safety and operational aspects of the proposals, is at Annex B. I have incorporated his recommendations within my report.

Pre - Inquiry Meeting

1.6 In conjunction with my Assistant Inspector, I held a Pre-Inquiry Meeting on 29 July 2009 at which the procedural and administrative arrangements for the Inquiry were considered (PIM Notes at Doc ID/7).

Inquiry Sittings and Visits

1.7 The Inquiry sat at Kenwick Park Hotel, Louth on 01-04, 08 & 09, 15-18 December 2009 and 05 & 07 January 2010. In addition to several unaccompanied visits, accompanied site visits were undertaken on 07 December 2009 and 06 January 2010.

Glossary of Abbreviations and Terms

1.8 A glossary of the main abbreviations and terms used during the Inquiry is at Annex A.

Schedule of Suggested Conditions

1.9 A schedule of the suggested conditions to be attached to any approvals is given in Annex C

Lists of Appearances and Documents

1.10 Lists of Appearances and Documents are attached to the report.

2 The Proposals

Previous Development of the Saltfleetby Site

2.1 Commercial gas reserves in the Saltfleetby Gas Field were confirmed in 1996 after re-entering an exploration well that had been drilled in 1986. There is a smaller southern element of the overall gas field. The field came on stream in December 1999 as Oilfield Development No 250 with gas being taken initially from the Early Westphalian sandstone in the Carboniferous Formation, followed by the Late Namurian sandstone. Both reservoirs are about 2,300m below ground level (WG/FT/P, para 25). From its inception, the field has produced a total of about 1.7 billion cubic metres (bcm) of gas (WG/FT/P, para 33). It was largely depleted by 2005 but a small volume of occasional production has been achieved since (WG/FT/P, para 21).

2.2 The gas was produced from boreholes drilled from two locations on the gas field, Wellsites A & B (CDA1, Vol 3, Fig 8.2). Wellsite A is adjacent to the junction of North End Lane and Saddleback Road. In addition to the wellheads for the two boreholes, it includes an open engineered platform with a control cabin, a methanol tank with associated above-ground pipework and an injection skid (CDA1, Vol 3, Figs 4.17).

2.3 Wellsite B is about 270m to the south-east of Saddleback Road and is in two parts, separated by a sizeable drainage ditch. The north-westerly section contains the well heads for three boreholes, an open engineered platform with a number of control cabins, a methanol tank and its associated pipework, an injection skid and a manifold skid with pipework and apparatus that includes an approximately 6m high test separator and a slender approximately 8m high vent stack. In addition there are a number of temporary buildings and car parking spaces. Beyond the drainage ditch, the

south-easterly section includes the wellheads for two original boreholes (CDA1, Vol 3, Fig 4.21) and a further borehole drilled in 2008 by WSUK to explore the southern structure of the reservoir (WG/FT/P, paras 27 & 29-31).

2.4 The two wellsites are connected by two 6" diameter high pressure pipelines. After injection of methanol to prevent hydrate formation and corrosion of the line, the combined gas flow is transferred through an approximately 8.1km long 10" diameter pipeline to the ConocoPhilips facility at Theddlethorpe Gas Terminal, where it is supplied to the National Grid (WG/FT/P, para 32).

2.5 There have been a number of planning permissions relating to the existing development of the sites (WG/PRF/App4.1). An application under planning legislation was submitted in 2006 for much the same scheme as is currently proposed under the Gas Acts, but it was withdrawn before a decision was made by the Minerals Planning Authority, Lincolnshire County Council (SOCG, CDB11, 3.1).

The Site and Surroundings
(See CDA1, Vol1, Chapter 3)

2.6 The extent of the gas storage strata is defined by the extent of the licensed Oilfield No 250 which covers some 800ha (WG/PRF/P & CDA, Vol 3, Fig 3.1).

2.7 The site lies within the Lincolnshire Marsh, centred some 4km inland from the coast, approximately 10km north-west of Maplethorpe and about 10km to the east of Louth. The linear settlement of Saltfleetby St Peter is strung out along the B1200 some 1.5km to the south of the proposed Gas Storage Facility (GSF), whilst the villages of South Cockerington, Grimoldby and Manby are about 3km to the west. The small settlement of Skidbrooke is about 3km to the north east (CDA1, Vol 1, Paras 3.3 & 3.4 & WG/PG/P App Figs 1).

2.8 The B1200 joins the main coast road (A1031) to Louth and the A16. Access from the B1200 to the GSF site may be obtained via Tinkle Street through Grimoldby and South Cockerington and then along Marsh Lane and Saddleback Road. Alternatively North End Lane is a more direct route from Saltfleetby St Peter to Saddleback Road (WG/PG/P App Figs 1 & 29 and CDA1, Vol 3, Fig 8.2).

2.9 The area is characterised by flat, low-lying arable land serviced by an extensive system of drains and watercourses centred on the Grayfleet Drain, Long Eau and Old Engine Drain. The area has scattered dwellings and farmsteads, intermittently punctuated by trees and remnants of field hedging. Views are expansive and are typical of those of the Lincolnshire Marsh (CDB11, para 2.2). The nearest property is Beulah Farm some 570m to the south-east of the GSF site (WG32).

2.10 Wellsite A, close to Saddleback Road, has an area of some 0.9ha and is largely screened by planting on perimeter bunds, though there are views through the wire mesh gates of the equipment within the site.

2.11 Wellsite B is about 270m south-east of Saddleback Road, from which it is accessed by a private road. The two parts, which are divided by a drainage ditch, have a total area of about 2.62ha and there is planting on earth bunds along the north-western, the south-eastern and the south-westerly boundaries (CDB11, Paras 2.1-2.5).

The Applicant Company

2.12 Wingas Storage UK Ltd (WSUK) is a 50/50 joint venture between Wingas Holding GmbH and ZMB Gasspeicherholding GmbH. Wingas Holding GmbH is jointly owned by Wintershall Holding AG and Gazprom Germania GmbH whilst Wintershall Holding AG is a wholly owned subsidiary of BASF SE, and ZMB Gasspeicher Holding GmbH is a subsidiary of Gazprom Germania GmbH. Gazprom Germania GmbH is a wholly owned subsidiary of OAO Gazprom Export which in turn is wholly owned by OOO Gazprom, the ultimate holding company of the Gazprom Group (WG/FT/P, Paras 10-13).

2.13 Wintershall and Gazprom have a number of joint ventures to develop and operate gas industry infrastructure in Germany. Gazprom has extensive experience in the design, construction and operation of gas storage and pipeline networks, and operates 25 stores, of which 17 are depleted gas fields. It has stores with a total working gas volume of some 64bcm.

2.14 Wingas GmbH designed, built and operates the largest underground gas store in Western Europe at Rehden near Bremen in Germany, and another at Haidach in Austria. Both are depleted reservoirs, like the proposal for Saltfleetby, and they have a combined working gas volume of some 6.4bcm. This company is also developing a salt cavern store at Jemgum on the River Ems, which will have a fully-developed capacity of about 1.2bcm.

2.15 Wingas GmbH markets transport, storage and fibre-optic capacities and is active in gas distribution trading and procurement in Germany. It also operates directly in France, Austria, Denmark and the Czech Republic and in Belgium, via a subsidiary (WG/FT/P, Paras 14-20 & App A).

2.16 In 2005, Wingas GbmH acquired Roc Oil (UK) Ltd, the then owner and operator of the Saltfleetby Gas Field, for the purpose of converting the field into an underground natural gas storage facility. The Company was renamed Wingas Storage UK Ltd (WSUK) which became a licensed Gas Transporter within the UK under a licence issued on 24 October 2007 (WG/FT/P, Paras 21 & 22).

2.17 The existing Saltfleetby Liaison Committee meets periodically and includes local householders and their Residents' Association, together with representatives from WSUK, the Parish Councils, East Lindsey District Council and their Environmental Health Department, Lincolnshire County Council and the Environment Agency (WG/MT/P, para 14).

The Proposed Scheme

2.18 In essence, the proposal is to take natural gas from the National Transmission System (NTS) at Theddlethorpe and to convey it by means of a new 20" diameter pipeline to a proposed Gas Storage Facility (GSF) at Grayfleet East. There, it would be compressed to a pressure of up to 220barg, as necessary for injection down a series of new boreholes drilled from the existing Wellsites A and B into the depleted reservoir, some 2.4km below ground level. Directional drilling below 800m would permit all parts of the gas field to be reached. The gas would subsequently be withdrawn, treated to remove water and condensate, and returned via the same 20" pipeline to the NTS at times of high demand. The condensate would be transported to the ConocoPhillips facility at Theddlethorpe by means of the

existing 10" diameter pipeline. The water may also be passed to Theddlethorpe, or alternatively re-injected into the gas field through one of the existing boreholes. Both the imported and exported gas would be metered (CDA1, Chapter 4 and Fig 3.1 & CDB11, para 4.2 and WG/FT/P, Apps H & I).

2.19 Whilst in general, gas would be put into the store during the summer and withdrawn in the winter, much shorter flow reversal periods could be involved and withdrawal rates of up to 9 or 10 million standard cubic metres per day (CDA1, Vol 1, para 4.90) may be required. This would probably require the use of nine new wells, though the re-utilisation of some of the existing wells would be considered if found to be technically feasible (WG/FT/P, paras 26 & 38). A considerable volume of 'cushion gas' would be required initially, but the 'working gas' volume, as calculated from commercial and physical parameters, would be some 0.715bcm (WG/FT/P, para 34), though much of the documentation refers to a capacity of between 0.7 and 0.8 bcm.

2.20 The key elements of the scheme therefore comprise:-

- Extension of Wellsite A by some 0.405ha to a total area of about 1.32ha in order to accommodate the drilling of up to four new boreholes and to accommodate additional gas handling and treatment plant, together with associated landscaping (CDB11, paras 4.1 & 4.5 & CDA1, Vol3, Fig 4.18);
- The diversion of the existing drainage ditch that currently bisects Wellsite B with the subsequent filling of the existing ditch thereby providing land for the drilling of up to seven new boreholes and the installation of additional gas handling and treatment plant, together with associated landscaping. The site area would therefore remain about 2.62ha (CDB11, para 4.1 & 4.6 & CDA1, Vol 3, Fig 4.22);
- The proposed Gas Storage Facility (GSF) would be sited more or less to the south of Wellsite B on a parcel of some 7.1ha of arable land adjoining the Grayfleet Drain (CDA1, Vol 3, fig 8.2). It would be accessed by way of a new road from Saddleback Road and there would also be a new road from the GSF to Wellsite B (WG/PG/P, App Fig CCE fig 2), allowing the existing access to Saddleback Road to be closed except for emergencies (CDB11, para 4.12). The total area, including the access roads, bunds and wetland area would be approximately 11.5ha (WG/CDS/P, para 24). Within this, the proposed operational compound would be about 3.1ha in area (CDB11, para 4.3) and would accommodate buildings and plant to:-
  - compress the gas using gas turbine driven compressors (2 duty, one standby);
  - separate the produced well fluids from the gas and provide limited emergency storage for these fluids;
  - remove water vapours and heavy organic components from the gas stream to meet the NTS Trancso dew-point specification,
  - meter the gas flows;
  - provide process control, maintenance, administration and initial fire fighting capability (CDA1, Vol 1, para 4.8);
- The construction of high pressure (220barg) interconnecting pipelines between Wellsites A and B and the GSF (12" and 16" diameter respectively); and

- the construction of an approximately 8.1km long, 70 barg, 20" diameter import-export pipeline more or less along the route of the existing 10" diameter pipeline between the GSF and the National Grid National Transmission System at Theddlethorpe, where the Gas Terminal complex is just off the A1031 coast road (CDB11, para 4.1 & 4.9, & WG/PRF/P, para 5.47).

2.21 Consultation with the local residents has been by way of informal presentation to the Liaison Committee, formal presentations at Theddlethorpe and Saltfleetby Village Halls and at Kenwick Park Hotel, together with mail drops and information on WSUK's web site. This is in addition to the formal consultation and land referencing for the CPO (WG/MT/P, paras 15- 19).

Construction Operations

2.22 Construction and drilling operations would take place over a period of between 30 and 36 months, depending on whether one or two approximately 49.2m high drill rigs were used, and it would involve work on all three sites, currently programmed to start in July 2010 (WG/FT/P, App J). Drilling would be expected to take about 9 months at Wellsite A and about 13 months at Wellsite B (WG/FT/P, para 117 & WG/PRF/P, para 5.38).

2.23 A temporary construction compound would be established adjacent to the GSF site. It would contain two storey temporary offices and it would remain for the duration of the 30 to 36 month construction period. The GSF itself would take about 13 months to complete (WG/FT/P, App J).

2.24 The 8.1 km long 20" diameter pipeline to Theddlethorpe would take about 3 or 4 months to complete and this is currently programmed for the summer of 2011.

Restoration

2.25 No fixed period for the development was given but an operating life of some 25 years was suggested (CDB11, Section 20, Condition 3). Whatever the period may be, at the end of its useful life, all wells would be plugged and abandoned and the land occupied by the GSF, the wellsites and the access roads restored, probably to agriculture, in accordance with a scheme to be approved under a planning condition (WG/PRF/P, para 5.54-5.57 & CDB11, Section 20, Condition 28).

Relationship between the Applications

2.26 As a public gas transporter, WSUK made the Storage Authorisation Order (SAO) application under Section 4(1) of the Gas Act 1965. Section 4(6) of that Act which says that any surface works etc that constitute development for the purposes of the Town and Country Planning Act 1990 shall for the purposes of Section 90 of the 1990 Act be taken to be authorised by the Minister in making the SAO; ie deemed planning permission. Section 90(1) then provides for a deemed permission to be granted subject to conditions (WG 44, paras 6-11).

2.27 Similarly Section 4(3) of the Gas Act 1965 requires the Minister to have regard to the safety of the public. WSUK therefore also seeks a deemed Hazardous Substances Consent, subject to any necessary conditions (WG/MT/P, para 359).

Compulsory Purchase Order (CPO)

2.28 As a public gas transporter, WSUK made the CPO in accordance with Sections 12 and 13 of the Gas Act 1965 and Section 9 and paragraph 1 of the Third Schedule to the Gas Act 1986 and the Acquisition of Land Act 1981 (CDA10 & CDC8) and seeks its confirmation by the Secretary of State.

2.29 The Order would authorise the acquisition of the land required for the GSF, expansion of the two well sites and associated accesses, together with the rights to lay, operate and maintain the pipelines and to plant and maintain off-site landscaping. The boreholes drilled from the well sites would not deviate outside the site boundaries until more than 800m below ground level. The Order would therefore authorise acquisition of the rights to drill below 800m and to the storage of natural gas in the strata between 2,240 and 2,450m below ground level (WG/CDS/P, paras 10 & 21 and CDA12, Part 3).

2.30 The Order Land covers an area of 2,097.6ha, and includes 737 land ownership plots. Five relate to the GSF and the Wellsites, nine to the off-site landscaping, 13 to the Theddlethorpe pipeline and 617 relate to the underground rights (WG/CDS/P, paras 18 – 20 and WG14a). There were 10 objections to the CPO, two of which were withdrawn before the Inquiry (ID/3).

Other Necessary Consents

2.31 Even if the two orders are made/confirmed and the deemed permission and consent are approved, there would still be a significant number of other approvals required before the scheme could be brought into operation (WG42). Most of these approvals/authorisations would be from the HSE or the Environment Agency and there is no reason to suppose that they would not be forthcoming in due course.

2.32 Despite the need to acquire the rights to lay, operate and maintain the pipeline to Theddlethorpe, WSUK intend to construct the pipeline under permitted development rights. All the proposed pipelines are covered by the existing Environmental Statement (ES), but WSUK will still need to submit a separate ES to the Secretary of State under the Public Gas Transporter Pipeline Works (Environmental Impact Assessment) Regulations 1999 in due course (WG34 & WG42).

2.33 During construction, it is proposed to operate a traffic management plan requiring HGVs to be marshalled on part of the former Manby Airfield and then to be escorted in platoons to and from the site, along an authorised route. Temporary planning permission was granted on 6 May 2009 for the use of part of the old airfield for the necessary storage and marshalling operations (WG/PRF/P, para 4.7).

3 Objections

Objections to the Storage Authorisation Order (SAO) (ID/2)

3.1 Thirteen Objections were originally received to the SAO but the objection by Mr B Holbrook was withdrawn unconditionally (ID/5). That from the Environment Agency was withdrawn, subject to conditions (ID/5).

3.2 Objections remain therefore from Oakwell International (Mr F W Webster) (S1), Saltfleetby Residents' Association (S2), G J & J C Williamson (S3), Mr D Morris (S4), Mr & Mrs G J Wain (S5), Mr & Mrs A R Ayres (S7), Skidbrooke cum Saltfleet Haven Parish Council (S8), Saltfleetby Parish Council (S9), Environment Agency (S10), Lincolnshire County Council (S11), Lincolnshire Wildlife Trust (S12) and Mr Gary Marsh (S13).

Objections to the Compulsory Purchase Order (CPO) (ID/3)

3.3 Ten Objections were received to the CPO (ID/3). The objections by Anglian Water (C1) and Mr Frederick W Howell (C8) were withdrawn unconditionally (ID/5).

3.4 Objections therefore remain from the Statutory Objectors Mr Roy Midwood (C2), Mr John and Mrs Linda Cook (C6), Mrs Janice Foster (C9) and Oakwell International (Mr F W Webster) (C10), and from the Non-statutory Objectors Mr Chris Beal (C3), Mrs Jean Delaney (C4), Mr Alan Beavan (C5), Mr D A Marshall & Mrs M Marshall (C7).

Representations from Interested Parties

3.5 Representations were also received from the following interested parties, Theddlethorpe Parish Council (IP/1), Grimoldby and Manby Parish Council (IP/2), Mr P Scarborough (IP/3), Mr J Beckett (IP/4) and ConocoPhillips (IP/5).

4 Policy

National Policies

Energy Policy

4.1 Relevant national energy policy is set out in the following documents:-

- Energy White Paper "Our Energy Future – Creating a New Low Carbon Economy" 2003
- Energy Review Report "The Energy Challenge" 2006
- Energy White Paper "Meeting the Energy Challenge" 2007
- Ministerial Written Statement "Energy Statement of Need for Additional Gas Supply Infrastructure" May 2006

4.2 Relevant emerging national energy policy has recently been set out in:-

- Draft National Policy Statement EN-1: Statement for Energy
- Draft National Policy Statement EN-4: Statement for Gas Supply Infrastructure and Gas and Oil Pipelines

Planning Policies

4.3 Relevant policy is contained in the following Planning Policy Statements and Planning Policy Guidance documents:-

- PPS1 Delivering Sustainable Development
- Supplement to PPS1 Planning and Climate Change
- PPS4 Planning for Sustainable Economic Growth
- PPS7 Sustainable Development in Rural Areas
- PPS9 Biodiversity and Geological Conservation
- PPG13 Transport
- PPG16 Archaeology and Planning
- PPG 20 Coastal Planning
- PPS23 Planning and Pollution Control
- PPG24 Planning and Noise
- PPS25 Development and Flood Risk
- Good Practice Guide on Planning for Tourism May 2006

4.4 Relevant minerals policy is contained in the following documents:-

- MPS1 Planning and Minerals
- MPS2 Controlling and mitigating the environmental effects of mineral extraction in England and Annexes 1 on Dust and 2 on Noise

The Development Plan

4.5 The Development Plan for the area includes the East Midlands Regional Plan (adopted in March 2008) (CDD1), the Lincolnshire Minerals Local Plan Saved Policies (2007) (CDD4), the East Lindsey Local Plan Part 1 Alteration Saved Policies (2007) (CDD2) and the East Lindsey Local Plan Part 2 Proposals Maps (1995)(CDD3) (CDB11, Section 5).

East Midlands Regional Plan (RSS8)

4.6 In the Regional Spatial Strategy (RSS) the most relevant policies are:-

- Policy 1 Regional Core Objectives
- Policy 2 Promoting Better Design
- Policy 3 Distribution of New Development
- Policy 4 Development in the Eastern Sub-area
- Policy 5 Strategy for Lincolnshire Coastal Districts
- Policy 26 Protecting and Enhancing the Region's Natural and Cultural Heritage
- Policy 29 Priorities for Enhancing the Region's Biodiversity
- Policy 30 Regional Priorities for Managing and Increasing Woodland Cover
- Policy 31 Priorities for the Management and Enhancement of the Region's Landscape
- Policy 32 A Regional Approach to Water Resources and Water Quality
- Policy 34 Priorities for the Management of the Lincolnshire Coast
- Policy 35 A Regional Approach to Managing Flood Risk
- Policy 44 Sub-area Transport Objectives

Lincolnshire Minerals Local Plan

4.7 In the Minerals Local Plan saved policies, the most relevant policies are:-

- Policy M8 Archaeology
- Policy M10 Disturbance
- Policy M12 Highways
- Policy M18 Related Industrial Development
- Policy M22 Oil and Gas
- Policy M24 Oil and Gas
- Policy M25 Oil and Gas
- Policy M26 Oil and Gas
- Policy M27 Underground Pipelines

East Lindsey Local Plan Alteration Part 1 Saved Policies 2007

4.8 In the Local Plan saved policies, the most relevant are:-

- Policy A4 Protection of General Amenities
- Policy A5 Quality and Design of the Development
- Policy ENV20 Protection of Habitats
- Policy EMP3 Other Sites for Industry
- Policy TR3 Road Design in New Development
- Policy C14 Coastal Conservation Areas – CCA1 and CCA4

Other Local Policy

4.9 The draft Lincolnshire minerals and waste core strategy issues and options have been published (CDD5), as have the East Lindsey core strategy issues and options (CDD9).

4.10 The landscape of East Lindsey District has been the subject of a Landscape Character Assessment, for which the final report has been published (CDD11).

5 The Case for Wingas Storage UK Ltd

The Applicant Company

Introduction

5.1 Even though deemed planning permission is sought for the scheme, this is not a planning appeal under the Town and Country Planning Act 1990 but a Storage Authorisation Order (SAO) application under the Gas Act 1965. The Hazardous Substances consent and the Compulsory Purchase Order also depend on the SAO.

5.2 Section 4 of the Gas Act allows the Minister to authorise a gas transporter, such as Wingas Storage UK Ltd (WGUK), to store natural gas in naturally occurring porous underground strata. In determining such an application the Minister must have regard to the safety of the public, the protection of water supplies and the desirability of preserving natural beauty, conserving flora and fauna and geological or physiographical features of special interest and protecting buildings and other objects of architectural interest. Section 4(6) then says that necessary development works under the Planning Act would be deemed to have planning permission under Section 90, even thought there is no 'deemed planning application'.

5.3 Therefore, although the development plan will be a material consideration in the determination of the SAO, Section 38(6) of the Planning and Compulsory Purchase Act 2004 does not apply to that application, although it would to the deemed planning permission. Nevertheless, the applicability of Section 38(6) and therefore the need to determine an application in accordance with the development plan, unless material considerations indicate otherwise is of little relevance.

5.4 In the case of this scheme, the local impacts would be relatively modest having been mitigated by good design, a planning obligation and a package of suggested planning and other conditions. Indeed the County Council objected on one ground only, namely the effect on the character of the countryside and the East Lindsey District Council did not object. There is no objection from the Health and Safety Executive (HSE) or Natural England and the Environment Agency has withdrawn their objection, subject to certain conditions. There have also been very few statutory objectors to either the SAO or the CPO and the applicants have managed to acquire much of the land and many of the rights by agreement (WG 14a).

5.5 Set against this background, the proposed development would be an important piece of national energy infrastructure which would bring very real benefits to the wider public, not just to those with direct gas supplies to their properties because much of the nation's electricity is generated in gas fired power stations.

Wingas Storage UK Limited (WSUK)

5.6 The ultimate holding companies for WSUK are the German BSAF and Russia's Gazprom. The latter is rated 22nd largest company in the world (WG/FT/P, App A). Both companies have extensive experience in

developing and operating underground gas storage facilities and the associated pipelines. It is clear that WSUK have the expertise, funding for the project (in the order of £200m) and the intention to bring forward the scheme in order to contribute to the national requirement for underground gas storage by 2013 (WG/FT/P, paras 191 & 192).

Need for the Scheme

National Policy

5.7 In 2003 the Government's Energy White Paper: Our Energy Future – creating a low carbon economy (CDC11) identified the need to secure reliability of the nation's energy supplies. Amongst other things it said that the Government would take action to increase gas storage through reforms to the planning and licensing regime (CDC11, Para 8.11), which were subsequently implemented by the Planning Act 2008. The Energy Act 2008 introduced a legally binding target to replace 15% of fossil fuels with renewable energy, and the Government's Renewable Energy Strategy of July 2009 aims to replace fossil fuels with renewable energy sources such as offshore wind installations.

5.8 The Secretary of State's 16 May 2006 statement on the 'Need for Additional Gas Supply Infrastructure' (CDC10) encapsulates the policy position. It says that there is a decline in the UK's indigenous gas supplies and an increasing dependence on imported gas. To manage this change, it says new gas supply infrastructure is needed to increase capacity to import, store and transport gas efficiently. It goes on to say that failure to facilitate such infrastructure will, in time, create difficulties in balancing supply and demand, thereby reducing the reliability of our energy supply arrangements, with potentially disastrous consequences for local, regional and national communities and economies.

5.9 The statement notes the limited geological structures in which gas can be stored and also that a balance must be struck between the concerns of local authorities and their residents, and the need for secure national energy supplies which would provide crucial national benefits in which all localities would share.

Context of the Applications

5.10 The SAO application was therefore brought forward in the context of national policy that strongly supports the development of additional gas storage capacity in the UK.

5.11 The 'fuller note' to the 2006 Ministerial Statement says that developers will be best placed to make judgements about the technical feasibility and financial viability of individual projects. It also recognises the role of planning authorities in minimising environmental effects and, if appropriate, putting forward suggestions for local variations. In this case, Lincolnshire County Council went well beyond making 'suggestions' and took it upon themselves to make judgements about the technical feasibility and financial viability of their proposed alternative GSF at Theddlethorpe.

5.12 The County Council's approach that the SAO should be refused in order to make WSUK explore further the possibility of an alternative at Theddlethorpe was just what the Government is concerned about. The

'fuller note' expresses their concerns about supply infrastructure developers being faced with increasing risk through uncertainties over timescales, planning delays and significant process costs which affect the financial viability of some projects and impede delivery of new infrastructure on time. It says that the Government is keen to ensure that, as the market for such projects grows, the market is able to deliver in a timely fashion.

5.13 The May 2006 statement refers throughout to the requirement for 'timely' development of additional capacity and the 'significant need' for additional gas storage capacity in the UK. This is also a prominent feature of the new Draft National Policy Statements. Paragraph 4.4.3 of draft NPS EN-1 (CDC81) makes clear that the need is 'urgent' and this is referred back to in paragraph 1.3.1 of EN-4 (CDC82).

5.14 The Members of the County Council may well have taken a different view of the proposals had the Officer's Report not been misleading in certain respects.

5.15 It indicated that the development would introduce 18ha of industrial development into the countryside (CDB7, para 9.24), whereas the industrial activity on the GSF site, excluding landscaping, wetland and access, would only occupy about 3.1ha.

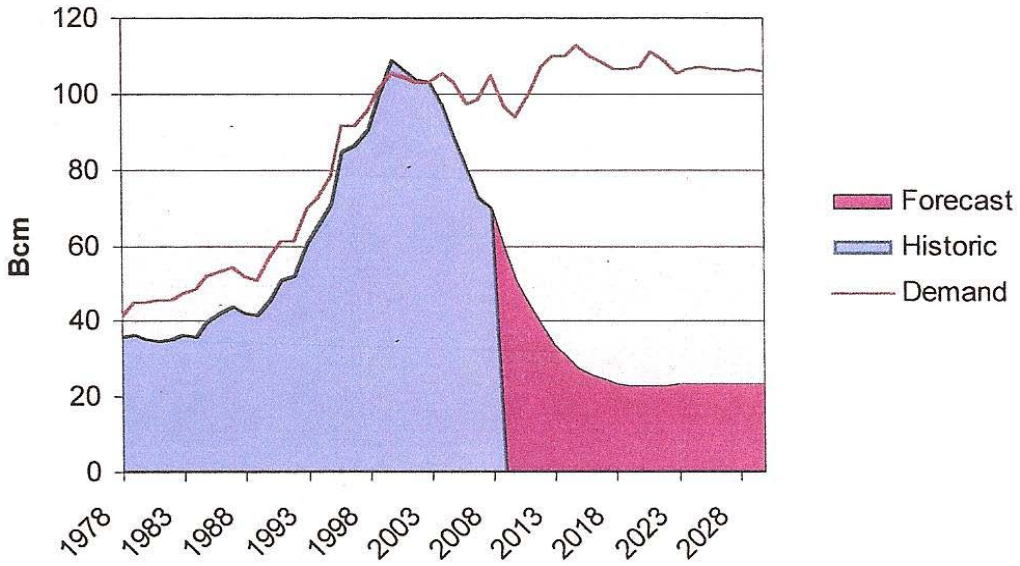
5.16 Members were also advised that a suitable alternative site existed at Theddlethorpe (CDB7, para 10.3), but that was without any technical advice that a GSF could be located there, or indeed the identification of any particular site.

5.17 Furthermore, the Officer's report made no mention of the noise impact of a GSF at Theddlethorpe on the amenities of the nearby local residents, despite their closer proximity than at Grayfleet, and the higher noise levels identified in the ES (CD1, Vol 2, App 5.1, paras 1.89-98).

Need for the Saltfleetby Scheme

5.18 At 41%, natural gas has the highest market share of all the primary energy sources in the UK, much of it now being used for the generation of electricity (WG/JB/P, paras 67 & 70). Currently, 40% of the electricity is produced from gas but that proportion could rise to 60% by 2020 (WG/JB/P, paras 85 & 121).

5.19 The National Grid's 2008 Ten Year Statement illustrates the dramatic reduction that has taken place in the gas supplies from the UK Continental Shelf (UKCS). Production rose from 36bcm in 1983 to 108 bcm in 2000 falling back to around 67 bcm in 2009, and the forecast is for continued decline. In the ten years to 2013, production is likely to have fallen by around 70 bcm/annum, as shown on the graph below.



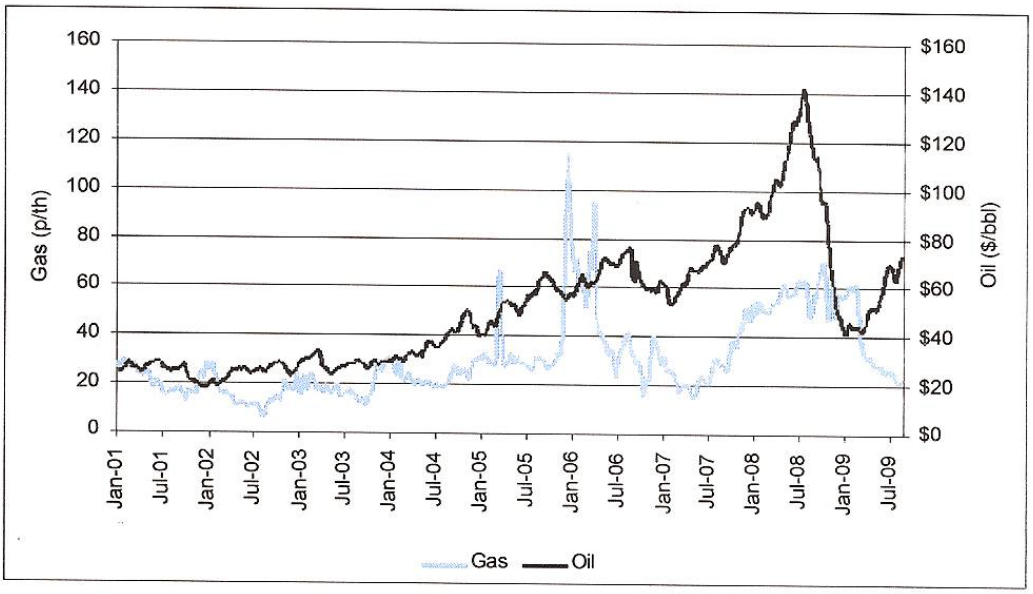
5.20 Although high energy prices and the decline in the UK economy have recently contributed to a drop in the demand for gas, the National Grid's forecast is for 13.6 GW of new Combined Cycle Gas Turbine (CCGT) generating plant to be connected to the NTS by 2018/19, of which 7.5 GW is currently under construction. Taking this into account the forecast is for a 0.4% annual rate of increase from 2009 (WG/JB/P paras 96 & 97).

5.21 The difference between the indigenous supply and the demand gives a current import dependency of about 30%, which could rise to nearer 80% by 2020 (WG/JB/P para 15). The UK is likely to be importing about 60bcm/annum by 2013 (WG/JB/P, para 37). The principal imports are from Norway, liquefied natural gas (LNG) by tanker and gas by pipeline from continental Europe. In the latter case, suppliers face considerable difficulties in securing long term contracts (WG/JB/P, para 117) and there have been cases of disruption in supplies, for example due to disputes between Russia and the Ukraine (WG/JB/P, para 31). Any one of these sources of supply could be disrupted and the National Grid's assessment is that there would start to be an issue for security of supply by 2013/14 (WG/JB/P para 150).

5.22 In the event of a shortage of gas, individual supplies to large consumers can be interrupted, but new contracts from 2011/12 will limit this flexibility (WG/FT/P, paras 109 & 110). If gas supplies to power stations were interrupted, that would immediately reduce demand from domestic consumers as their central heating systems shut down, but adequate supplies would have to be available for the surge when they all came back on again. In the worst case scenario, the gas grid would fail to danger but this could result in a loss of pressure allowing ingress of air, with an explosion risk; a very grave matter (WG/JB/P, para 29).

5.23 The security of energy supply is of paramount importance to the UK economy and the wellbeing of its population, particularly the elderly and the fuel poor. Insufficient annual supplies would drive up the wholesale price of gas which would ultimately have to be passed on to the consumer but, of more immediate effect, supplies to industry and gas fired power stations, which produce about 40% of the electricity would be curtailed. This would have major implications for electricity supplies.

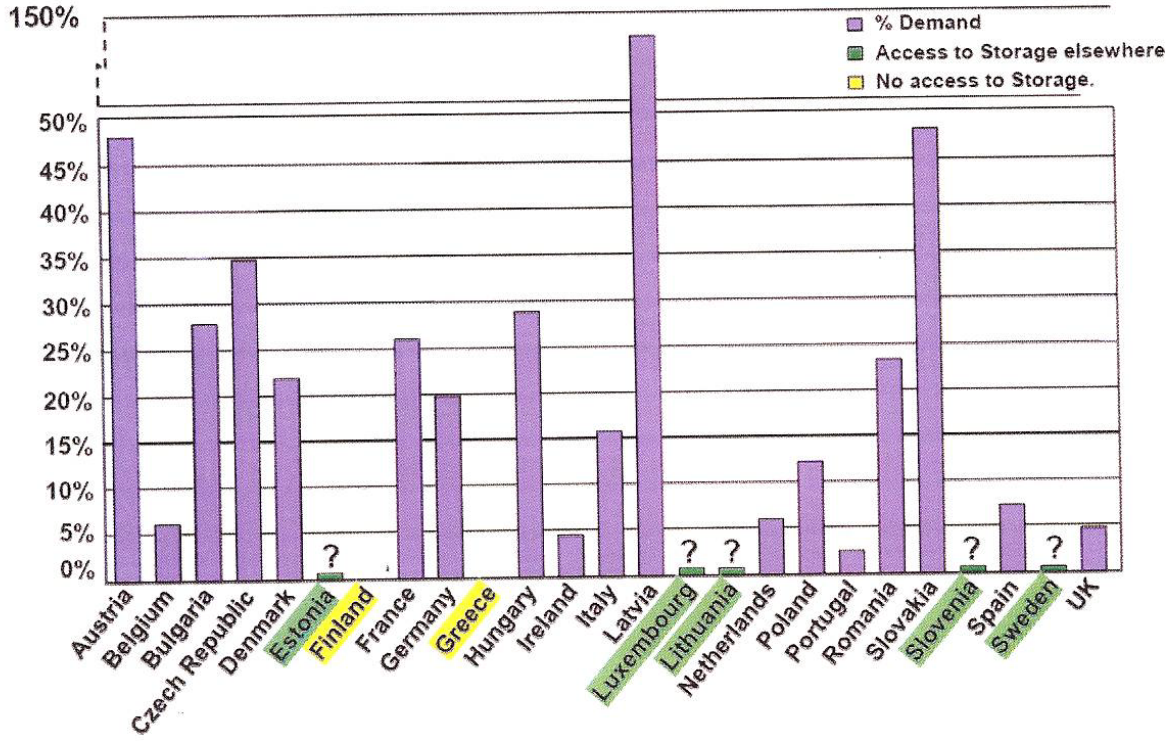
5.24 Not only is gas storage required to provide secure supplies, but it is also required to meet the normal variations in supply and demand. The winter demand is about 2.5 times higher than the summer demand and the price rises accordingly (WG/JB/P, para 48). Storage allows for the import of cheaper gas during the summer time when there is less demand, thereby smoothing out the considerable price fluctuations that currently occur, as shown below;



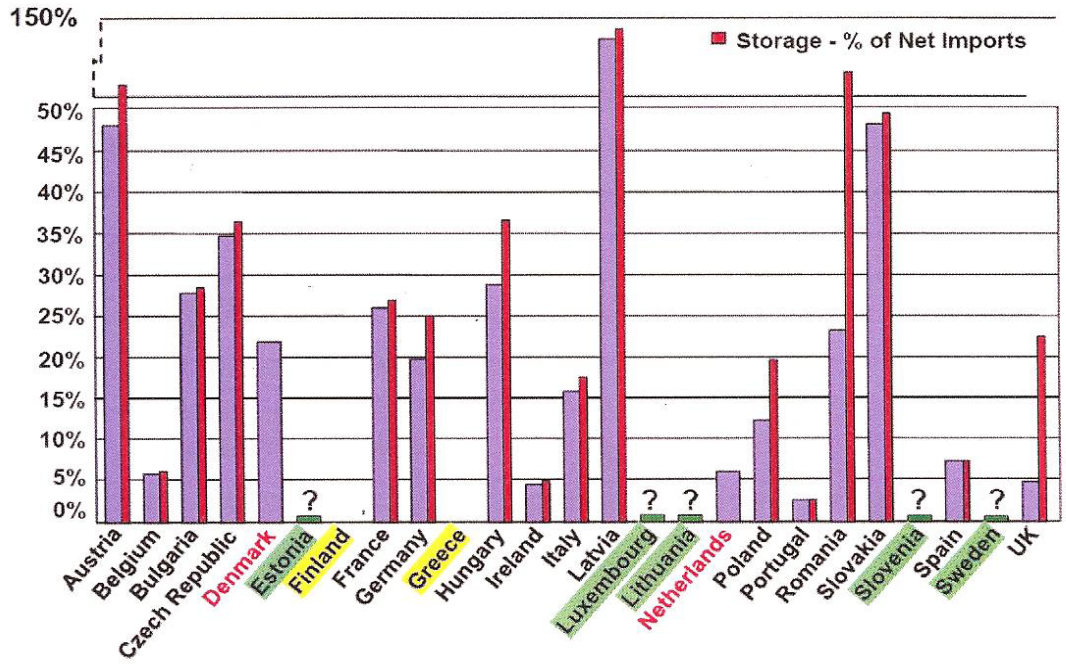
5.25 The legally binding target in the Energy Act 2008 to replace 15% of fossil fuel generation with renewable energy by 2020 has contributed to the Government's strong support for offshore wind generation. But this actually requires increased CCGT capacity because wind turbines only generate for about 30% of the time (WG3) and CCGT stations can be brought on line very quickly when there is insufficient wind.

5.26 Existing UK gas storage space amounts to about 4.34 bcm of which 3.3 bcm is in the Rough storage facility in the North Sea. Some 1.1bcm is under development, and approximately 4.4 bcm (including King Street in Cheshire) has planning consent but with the final investment decision still to be made. This latter requirement is particularly relevant for the 2.1 bcm of offshore capacity which is more expensive and difficult to develop. Including Saltfleetby there is some 1.7bcm of storage for which planning consent is being sought, and another 7.9 bcm would be in projects for which applications have yet to be submitted. In this latter category, 7.2 bcm would be offshore schemes (WG/JB/P paras 73-78).

5.27 As shown on the following chart, with storage capacity equating to only about 5% of demand, the UK is at the bottom of the league of major gas consuming countries when compared for instance with France at 25% and Germany at 20%.



5.28 The following chart shows the UK currently has a significantly better coverage of import levels than it does for total demand because of the residual production from the UKCS. But by about 2015 that percentage would be about half that of France; and France does not rely on gas for power generation because of its nuclear and hydro-electricity capacities.



5.29 There is general political acceptance that storage plays a vital role in reducing the possibility of a supply deficit, with all its major consequences, and it can provide an emergency source of gas in the event of the loss of a major source of supply. The UK clearly needs more gas storage capacity and, quite apart from Government policy, that need is urgent in order to meet the 2013/14 deadline.

5.30 In the light of this need, the Saltfleetby facility would provide a number of clear benefits.

- It would convert the UK's largest onshore gas field into the largest onshore depleted gas field store with space for some 0.715 bcm and that would represent an increase of around 15% in the existing UK volume (WG/JB/P para 122), or 6% of the total consented volume (WG/FT/P, para 109);
- The deliverability of some 9 or 10 million standard cubic metres of gas per day would provide around 2% of the UK peak supply (WG/JB/P para 199);
- Saltfleetby is located within 100 km (60 miles) of around 40% of the UK's CCGTs, a relevant matter because gas travels at only about 50kph (30mph) though the NTS (WG/JB/P, para 30). As such Saltfleetby is well placed to provide some of the flexibility required to deliver gas for intermittent power generation as necessary to back up the low carbon wind power when there is no wind (WG/JB/P para 189-193); and
- Crucially the storage facility could be completed by 2013 which is earlier than other projects such as salt caverns that require a considerable period of salt mining before they can become operational (WG/JB/P para 184 & WG/FT/P paras 106 & 197).

5.31 It can be concluded that there is a clear and overwhelming need for additional gas storage capacity in the UK, that the need is urgent, and that the Saltfleetby facility would make a very substantial contribution towards meeting that need. Furthermore, it could do so in a timescale that is consistent with the urgency of the need.

Compliance with National Energy Policy

5.32 The 16 May 2006 Ministerial Statement (CDC10) summarises a number of important themes in UK national energy policy when it says :-

"In summary, we need timely and appropriately sited gas supply infrastructure to be delivered by the market because:

- Great Britain is becoming increasingly dependent on gas imports, and requires new gas supply infrastructure to help ensure security of supply;
- New projects enable extra supply and storage options if they proceed without avoidable delays;
- There are limited locations currently suitable for much needed gas storage projects;
- Onshore storage is needed to enable slow-moving gas to be available close to the market when consumers require it; and
- New energy projects provide national benefits, shared by all localities."

5.33 The proposed scheme is entirely consistent with these themes in that it:-

- Would be timely in that the design of the project is well advanced; some of the equipment (including compressors) having already been purchased, and it is expected that it would become operational in 2013;
- It is appropriately sited in that it would make use of the largest existing onshore depleted gas field, it is within 100km (60miles) of 40% of the UK CCGT capacity and it is close to the NTS system and would not require reinforcement of that system;
- It would make a very substantial contribution to ensuring security of supply in that it would provide 0.715 bcm of additional storage capacity with a potential delivery rate of up to 9 SMcm/d;
- If consent is forthcoming without avoidable delays imposed by the planning system, then the promoter has indicated a very clear intention to proceed with the project as soon as possible;
- The site is one of the few locations that is currently suitable in the UK;
- The site is close to market when consumers require it in terms of both industrial consumers (especially CCGTs) and domestic consumers in the Midlands and Yorkshire conurbations; and
- The project would deliver very real national benefits in terms of energy security and gas market efficiency.

5.34 The recently published National Planning Policy Statements EN-1 and EN-4 do not set out to change the existing framework of energy policy but instead to codify it in a transparent and understandable way (WG25, para 1.36). Whilst still in draft form, these statements are therefore relevant to the application both in their own right, and as clear restatements of existing Government policy.

5.35 In this respect, draft EN-1 concludes that there is a significant need for new energy infrastructure which will have to be met by projects coming through quickly, bearing in mind the time it takes to bring them on line. It says that new gas storage facilities are required to provide the close-to-source 'swing supply' to help meet peak demand, and that the IPC should expect a small number of significant applications for supply, storage and transmission of gas for which the assessment should start from the basis of a significant need.

5.36 Whilst the County Council sought to challenge the urgency of the need, the 2006 Ministerial Statement calls for gas supply infrastructure to be provided in a *timely* fashion and EN-1 makes it clear that timely means urgent. Paragraph 4.4.3 says "given the urgency of the need for energy infrastructure ….." It also says that the decision maker should consider whether there is a realistic prospect of the alternative delivering the necessary infrastructure in line with the urgency of the need". The very recent decision on the King Street gas storage scheme in Cheshire also said that the need for additional gas storage capacity was urgent (WG26). There can therefore be no doubt that national policy considers there to be an urgent need for additional gas storage capacity of the kind proposed at Saltfleetby.

5.37 Accordingly, the proposed scheme complies in all respects with national energy policy.

Compliance with National Planning Policy

5.38 The proposal would accord with the four broad aims set out in paragraph 4 of **PPS1**; social progress, protection of the environment, prudent use of natural resources and the maintenance of high and stable levels of economic growth and employment. There would be a range of appropriate and effective mitigation measures which would protect the environment and reduce the environmental effects to very modest levels. The scheme would provide up to 115 construction jobs during the peak construction period and permanent employment for up to 16 employees thereafter (WG/PRF/P para 9.4). The development would also assist in reducing gas price spikes which are damaging to both the economy and consumers.

5.39 WSUK have undertaken extensive consultation, as advocated in Paragraphs 11 and 13 of this PPS. The ES has demonstrated that there would be no significant environmental impacts in the medium to long term following implementation of appropriate mitigation measures. An alternative site assessment has also been undertaken as referred to in paragraph 19. Paragraph 23 requires Councils to recognise the wider sub-regional, regional and national benefits of economic development, as in this case.

5.40 **PPS4** and parts of **PPS7** were replaced by the new **PPS4** during the Inquiry. At Policy EC6, this new document seeks to protect the countryside for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife, the wealth of its natural resources and to ensure it may be enjoyed by all. However, the document also states the Government's desire for sustainable economic growth, such as would be supported by the proposed scheme.

5.41 Although the County Council refered to **PPG20**, that relates to coastal planning and has little relevance to the proposed development, though it would be of more relevance to any Theddlethorpe option because of its proximity to a Coastal Conservation Area identified in the East Lindsey Local Plan.

5.42 Paragraph 4.7 of **Annex 4 to MPS1** identifies certain general issues that should be taken into account in relation to proposals for the underground storage of natural gas. It does not set out any specific policy approach but it does note that proposals are a commercial matter for the market. Similarly, paragraph 4.8 calls for environmental impact assessment, where required, and adequate information on the suitability of sites for the secure and safe containment of the gas. These have been provided. Paragraph 160 of the Planning and Minerals Practice Guide simply refers to the Ministerial Statement of 16 May 2006.

5.43 The proposed scheme is therefore fully in accordance with national planning policy.

Compliance with the Development Plan

5.44 WSUK considered that the proposed development was consistent with the Development Plan, despite the County Council's assertions that it would be contrary to Policy 31 of the RSS, saved Policy M26 of the Minerals Local Plan and saved Policies A4, A5 and EMP3 of the District Local Plan.

5.45 **RSS Policy 31** sets out the priorities for the management and enhancement of the Region's Landscape. When read in conjunction with the supporting paragraph 3.3.21, it is clear that AONBs should receive the most rigorous protection followed by other areas of particular character and then everything else. Paragraph 3.3.23 refers to the grazing marshes in Lincolnshire, but it says that they need to be better conserved or enhanced through sensitive development and management. This approach is to be promulgated through criteria-based policies in Local Development Frameworks, but none have so far been put forward. To implement this, such policies should, where appropriate, recognise the value of tranquillity and dark skies, and again there are no such polices, therefore it cannot be said that the development would be contrary to Policy 31. In any case, the proposed GSF has been sensitively sited and would be accommodated within a landscaping scheme designed to mitigate its effect on the local landscape character.

5.46 **Minerals Local Plan Policy M26** deals with central collection facilities in a predominantly rural area. It says that they should only be permitted at such a site if that location is essential and its environmental impact would be acceptable. The proposed GSF would not be a central collection facility in the terms understood by the County Council's planning witness, namely for collecting together oil or gas from several fields ready for onward delivery by road or rail. Even if the policy did apply, the GSF would be essential in the proposed location and its environmental impacts would be acceptable.

5.47 **Local Plan Policy A4** relates to the protection of the general amenities of people living or working nearby. Whilst some other objectors were concerned about residential amenity, the County Council simply considered

there would be harm to the distinctive character of the area. They pointed to paragraph 2.79 which says that the Council will closely examine proposals in this regard, but that would of course be the District Council, and they do not object. In addition however the distinctive character of the area already includes a number of man-made influences, as confirmed by the local Landscape Character Assessment (CDD11 pages 83 & 89).

5.48 **Local Plan Policy A5** is not a landscape policy. It clearly relates to design, which is not an issue between the parties and to which the County Council did not object. The development would not detract from the distinctive character of the area because it would simply be a further man-made influence within a predominantly rural landscape. Indeed the County Council accepted in their opening statement (LCC1, para 2(i)) and in cross-examination of their Landscape witness that the landscape would not become industrial, but would remain 'predominantly rural'.

5.49 **Local Plan Policy EMP3** relates to sites for industry within or adjacent to a settlement, but the proposed development is not adjacent to or within a settlement. That policy is therefore irrelevant to this proposal, regardless of the explanatory paragraph 6.27 (which should have been placed after 6.22) that says major oil and gas proposals will be given special consideration. As it happens, this policy would however apply to any Theddlethorpe development, which would be adjacent to a settlement, and the policy requires developments not to cause harm through noise.

Public Safety

Geology of the Gas Field

5.50 See Annex B paragraphs 3.4 - 3.8.

Sub-surface Safety

5.51 See Annex B, paragraphs 3.9 – 3.12

Surface Safety

5.52 See Annex B, paragraphs 3.13 – 3.17

Crime and Security

5.53 Some objectors raised concerns about an increased risk of criminal activities, but both the existing wellsites are surrounded by 2.2m high security fences and have not been the subject of any recorded damage or attempts to break into them over their approximately 10 year lives.

5.54 Similar 2.2m high security fences would be provided around each of Wellsites A and B and the GSF site and there would be CCTV surveillance from the continuously manned GSF of each site and the interconnecting pipelines. There would be regular monitoring of the route of the pipeline to Theddlethorpe (WG/PRF/P, para 9.67) and other extensive security measures (WG/PRF/P, paras 9.54-9.61). The HSE has not suggested any need for more security measures (WG/PRF/P, para 9.59) and those proposed should be sufficient.

Perception of Risk

5.55 It is accepted that the perception of risk is a material consideration, but the evidence shows that the actual risk would be very low and there is no objection from the Head of Emergency Planning for the area (CDB7, para 8.1 and WG/PRF/P, para 9.63). Therefore very little weight should be attached to it in making a decision.

Conclusions on Risk

5.56 Public safety has been properly addressed, and WSUK has a Safety Management System for their own employees (WG/FT/P, paras 132-143). There would be no reason on the grounds of safety to refuse the SAO.

Traffic

5.57 The accident record for the roads that would be affected does not show that they are unsafe, or in need of accident remedial measures (WG/PG/P, para 10.3). Following the production of a Transport Assessment which was subsequently reviewed (CDA1, Vol 1, Section 12 & WG/PG/App A), there was no objection on traffic grounds from the County Council as the Highway Authority (CDB11 para 12.22).

5.58 Nevertheless, many local residents expressed concerns about traffic matters falling under the following headings:-

- The extent to which the project is consistent with transport policies in the Development Plan;
- The increase in road traffic and its impact on the local highway network, particularly Tinkle Street, during construction;
- Traffic regulation orders;
- Deterioration in the condition of local roads; and
- A potential new 2.25km construction access from the B1200.

5.59 In relation to the effects of construction traffic on Tinkle Street in particular, it should be noted that:-

- In accordance with the advice in paragraph 46 of PPG13, WSUK has entered into a planning obligation (WG2b) to route all HGVs via a holding area on the former Manby Airfield (WG/PG/P, Apps, E381/104). From there they would be taken in escorted platoons to the site along the route agreed with the Highway Authority, via Tinkle Street in Gimoldby and South Cockerington villages (WG2b, Sch 2);
- Peak HGV movements of 100 two-way movements a day would only occur for the first two months of construction (WG/PG/P App A, para 4.3.2), thereafter falling off very quickly to only 10 a day by month 10 (WG/PG/P, para 8.43);
- Even during the peak construction traffic period, the numbers of construction vehicles on the local road network would be relatively modest compared with the existing traffic movements (WG/PG/P App A, App 2 Updated Traffic Analysis para 8 and WG/PG/P Apps Figure CCE19). There would probably be two platoons of about 3 or 4 vehicles out and back every hour and, during that time, approximately another 100 vehicles would have used Tickle Street (WG/PG/P, para 8.12);

- No HGVs would be allowed to pass Grimoldby School between 0830-0915 and 1515-1600 (WG2b, Sch 2) and a contribution of £20,000 would be made to improved car parking at the school (WG2b, Sch 1);
- The hours of HGV deliveries would be limited to between 0700-1800 Monday to Friday, 0700-1300 Saturday, with no deliveries on Sundays or Public/Bank holidays (CDB11, Section 18, Condition 15);
- The existing highway geometry has been shown to be acceptable for the proposed 20 tonne rigid HGVs that would be used (WG/PG/P para 8.15); and
- As with most construction projects there would be the occasional need for articulated low-loaders to bring in large plant and machinery, but these would be treated as abnormal loads and escorted accordingly (WG/PG/P, para 8.18).

5.60 There would need to be certain traffic regulation orders, particularly for temporary road closures during the construction of the pipeline to Theddlethorpe, but a programme of such orders would be agreed with the Highway Authority and publicised through the Liaison Committee (WG/PG/P, paras 8.35-37 & Condition 25).

5.61 A Highways Act Section 278 Agreement would be required for the improvements to the C652 (Marsh Lane) from South Cockerington to Elevens Green Fork (WG/PG/P, para 9.2).

5.62 In order to maintain the condition of the local roads, WSUK has agreed to enter into an Indemnity Agreement with the Highway Authority to identify and repair any damage caused to Saddleback Road between Eleven Greens Fork and the site entrance and any damage caused to the approved route for construction traffic (WG/PG/P, para 8.38).

5.63 On the prospect of a 2.25km alternative access route across the fields from the B1200, WSUK wrote to the County Council as Highway Authority setting out their reasons for rejecting the Grimoldby Parish Council's proposed access (WG7). The Highway Authority responded stating that they did not consider the alternative to be viable either economically or environmentally and that they were still of the opinion that the proposed agreed route was the "most sensible option" (WG8).

5.64 With 9 employees on the day shift and 4 on the night shift, and probably about one HGV per day (WG/PG/P App A, para 4.2.1), the operational traffic would be relatively modest. Nevertheless, it would be subject to an operational traffic management plan where again HGVs would be prohibited from passing the Grimoldby School at drop-off and pick-up times (WG/PG/P, para 6.10 and WG2b, Sch 3). Such a plan has been in use for some time for the present operation of the site and has been found to work well after two companies were excluded for breaches. There are no recent complaints in the WSUK Day Book (WG/PG/P, para 8.7 & 8.8).

5.65 There would be no highway or traffic reason to refuse this SAO application.

Noise

5.66 Some local residents objected on the grounds of noise causing harm to their residential amenity, but the County Council "does not object on the basis that the project would cause harm to individual residents or occupiers of property", although they did suggest that "the noise from the GSF contributes to the harmful effect of that industrial development on the countryside" (CDB11, para 13.11). This was an important distinction.

5.67 The County Council advanced no evidence to suggest how either the Inspector or the Secretary of State should assess whether there would be any harmful effect from noise on 'the countryside', as opposed to 'residents living in the countryside'. When asked about this point directly in cross-examination the County Council's noise witness offered no guidance. Whatever else it may be used for he certainly did not claim that BS4142 gave any assistance on how to consider the effect of industrial noise on the countryside itself.

Construction Noise

5.68 Complaints about noise and vibration were made during previous drilling operations, but an Officer of the District Council investigated and reported that any effects could not be attributed to drilling or related activities at the wellsites (WG/ARC/P, para 3.6).

5.69 Quiet rigs would be used for the drilling operations. These have equipment housed in acoustic enclosures and silenced engines (WG/ARC/P, para 4.14). Even so, during drilling operations on Wellsites A and B there would be some minor, but temporary, adverse impact at some of the closer isolated residential locations (WG/ARC/P para 6.6 & ES Vol 1 para 13.113). The highest predicted level would be 37 dB at Willey's Farm, and that was on the assumption of two rigs operating simultaneously on Wellsites A and B (WG12). This would be 15dBA above the agreed 22 dBA_{L90} night time background level but it would be well within the WHO and BS8233 criteria of 45 dBA at the façade (CDA1, Vol 1, Table 13.12). 37 $dBL_{Aeq\ (5\ mins)}$ would also be the specific night time level for all the nearby noise sensitive properties in the agreed conditions (CDB11, Section 18, Condition 10a). Clearly, it would also be well within the 42 $dBL_{Aeq(1hour)}$ limit for daytime work in the same condition. This level of noise would have no significant impact; a point not challenged by the County Council.

5.70 For the GSF, the evidence (WG/ARC/P para 6.3) was that the large distances to residential receptors meant that the construction noise impact would be low at 48-54 $dBL_{Aeq(1hour)}$, which is well within typical acceptable levels of 65-70, and also below the limit of 60 $dBL_{Aeq(1hour)}$ requested by, and agreed with, the District Council for this project. The impact would not be significant, and this was not challenged by the County Council.

5.71 The impact of construction traffic was assessed in the ES (CDA1, Vol 1, paras 13.97 & 13.98). This indicated that there would be a minor adverse impact for residents along Marsh Lane and South Cockerington Road (Tinkle Street) with increases of 1.6 and 1.5 dB respectively (WG/ARC/P para 6.5). For properties along Saddleback Road there would be an increase of 4.2 dB for the initial months of the GSF construction, a slight to

moderate impact, but this would decline as vehicle numbers reduced. The increase would be significant, but of short duration, and this point was not challenged by the County Council.

5.72 Concerns have been expressed about the effects of vibration on the older properties in Tinkle Street from the passage of construction traffic, but vibration is only likely from HGVs passing over potholes or other major surface irregularities in the road. The road surface condition would be monitored and a programme of vibration monitoring set up to ensure the acceptable peak particle velocities were not exceeded (WG/ARC/P, para 8.2).

5.73 The construction of the pipeline would generate local noise levels of 69-73 $dBL_{Aeq(1hr)}$ and would cause moderate adverse effects for the residents of the small groups of houses close to the route of the pipeline. However, this would only last a short time as the excavation equipment passed by, and the levels are anyhow typical of agricultural machinery (WG/ARC/P, para 6.4)

Operational Noise

5.74 The operational noise levels from the proposed GSF were agreed and, even at the closest properties, would only reach a rating level of $38dBL_{Aeq}$ (WG12). This noise would be 'broad band' in nature having no tones or impulses in its character (WG/ARC/P para 6.7). To give an indication of how quiet this noise level is, Table 1.1 of the EA's Horizontal Guidance (H3 Part 2) (CDC56(2)) gives the sound level in the Reading Room of the British Museum as 35dB. The predicted rating level would meet the proposed $43dBL_{Aeq(1hour)}$ sought by Condition 11a for both daytime and night time noise levels. This point was again un-challenged by the County Council who, as stated above, did not object to noise on the basis of any impact on residential amenity.

Comparison with Theddlethorpe

5.75 In this context, the evidence of the County Council was directed solely to a comparison between the noise effects at Grayfleet East and those at Theddlethorpe. That comparison comprised a BS4142 assessment of the operational noise impacts of the GSF on residential properties at night. No evidence was given of daytime noise effects or construction noise effects. The County Council's evidence added absolutely nothing to an assessment of noise on the 'countryside'. Indeed in cross-examination, their planning witness was not exactly sure who would be the receptors in the countryside that the County Council was concerned about. He simply agreed that they might be people "at loose" in the countryside and this category seemed to comprise walkers and cyclists and, possibly, those working the fields. Bearing in mind the County Council's noise assessment was directed at 'night time noise', it was not made clear why such people would be 'at loose' in the countryside at night and, in any event, there are no public rights of way closer to the GSF than the closest dwellings where the noise was assessed.

5.76 There was nothing in this ground of objection that added anything meaningful to the County Council's objection on countryside character.

Landscape and Visual Impact

Preliminary Points

5.77 The County Council's objection to the proposed GSF was made on the basis of a material change to the "character and amenity of the area from predominantly rural to industrial" (CDE15). However they subsequently accepted that the landscape character of the area would remain 'predominantly rural' (LCC1 para 2(i), LCC/DJB/PR, para 1.16 and cross-examination).

5.78 The County Council's landscape character objection was not made on the basis of any impact on 'residential amenity' (cross-examination of the planning and landscape witnesses). As with noise, they said the effect on landscape character would only be objectionable in respect of people "at loose" in the countryside.

5.79 If the Secretary of State decides that WSUK should not have to explore the feasibility of a GSF at Theddlethorpe any further, it was the County Council's case that the SAO application "should" be granted for the GSF at Grayfleet East (CDE15). Thus there was complete acceptance that the 'need' for the development would outweigh any environmental impacts at Grayfleet East.

The Development and its Landscaping

5.80 Wellsite A would be extended into the adjacent farmland to the north-east in order to provide space for the drilling of up to four new wells. The present surrounding planted screen mound and security fencing would be retained on the other sides and replaced to the north-east. Once complete, the site would contain various items of plant and equipment with 6 m high security lights. The highest item would be a heater and its chimney at 8.6m (WG/SD/P, para 4.4 and CDA1, Vol 3, Figs 8.10 & 8.11).

5.81 At Wellsite B, the drain through the middle of the site would be filled in, the existing office and security accommodation would be removed and the site would be redeveloped with new plant and equipment within the existing fencing and screen mounds, apart from some remodelling along the south-western boundary. Again the highest item of plant would be the heaters and their chimneys except for a BT microwave aerial (WG/SD/P, para 4.8 and CDA1, Vol 3, Figs 8.12(revised by plan in SD/PA, App1.2) & 8.13).

5.82 The proposed GSF site would be developed on Greenfield land immediately north of Grayfleet Drain within an approximately 233 x 127m fenced compound. This would contain a range of gas processing plant including large scale industrial structures and site buildings to accommodate security, monitoring, maintenance and administrative functions.

5.83 The principal items would be, a slender vent stack (30m high), a ground flare chimney (10m high), 3 exhaust chimneys (3.3m diameter and 12m high), 3 profiled metal or concrete clad gas compressor houses, 2 desorption heat stacks (11.65m high), 4 dehydration units (10.8m high), a maintenance building (12.2 x 24.6 x 7.5m high), a utilities building (10 x 23 x 7.1m high), an office building (38 x 13 x 6.3m high) and 6m high operational lighting (WG/PRF/P, paras 5.32-5.37, WG/SD/P, para 4.12 and CDA1, Vol 3, Figs 8.8- 8.9A). The three compressor buildings would be the

bulkiest structures each being 13.5 x 20.25 x 8.5m high (WG/SD/P, para 8.9).

5.84 The GSF would be accessed by a new 3.5m wide road from Saddleback Road and this access road would continue on to Wellsite B, with the existing access road as a secondary route to the GSF for emergency vehicles (WG/SD/P, para 4.13 and WG/PG/P, para 4.4).

5.85 New, approximately 1.75m high screen mounds would be formed around the GSF platform and they would be planted with a range of semi-natural trees and shrubs. These mounds would be in keeping with the form of the adjacent embankments to the Grayfleet Drain. They would be continued around a wetland basin for the interception and temporary storage of water from the Grayfleet Drain at times of flood, which would also provide a damp or marshy habitat of nature conservation value for a range of wetland and marginal species (WG/SD/P, para 4.14 & 4.15).

5.86 Including the screening bunds and other landscape works, the GSF site would extend to some 7.1ha (WG/SD/P, para 4.12).

5.87 In addition to the on-site landscaping around Wellsites A and B and the GSF, the proposals include extensive new off-site landscaping in the form of new tree, shrub and hedgerow planting within the local area. This is designed to progressively filter or obstruct views from the local properties, roads and other routes. It would also make a positive contribution to the local landscape (WG/SD/P, paras 4.17-21 & App 1 and CDA1, Vol 3, Figs 8.14A-G and Figs 8.15-8.26C (as modified by WG/SD/PA1, App 1.2)).

5.88 The proposed plant and equipment would be painted a dove grey though a darker colour, as advocated by East Lindsey District Council, could be required by a planning condition (WG/SD/P, paras 8.11 – 8.13 & App 1.4).

Landscape Designation and Character Assessment

5.89 The site of the GSF is not within any 'designated' landscape area. As discussed earlier in relation to the development plan, regional, county and local planning documents recognise a clear hierarchy in terms of landscape quality and it was not challenged by the County Council that the Grayfleet East site falls into the lowest landscape classification, therefore attracting the lowest level of protection. That is important, because the weight to be attached to any landscape objection must reflect the quality of the landscape and the degree of protection to be afforded to it in policy terms. Accordingly, in this case, that weight should be relatively low.

5.90 The District Council recently received a consultant's final report entitled the 'East Lindsay Landscape Character Assessment' (CDD11) and that report is not a part of the Development Plan.

5.91 However, in that assessment Grayfleet East falls within the 'J1 Tetney Lock to Skegness Coastal Outmarsh' landscape character area. The 'key characteristics' of the area are said to include "A predominantly intact and distinctive rural landscape with some man-made influences including a gas terminal, an oil storage facility and several windfarms" (page 83). The GSF would be considerably smaller in scale than much of this existing infrastructure. For instance, the Theddlethorpe Gas Terminal with all its plant and equipment (WG/SD/PA1, App1.1, fig SD5), and the 10 large oil

tanks at Tetney occupy sites of about 24 ha and 20 ha each (WG/SD/P, para 3.7 and WG/SD/PA1, App1.1, figs SD2 & SD3). Closer to the site there are the 20 turbines of the Conisholme Fen Wind Farm (WG/SD/PA1, App1.1, fig SD4) and planning permission has been given for a large new storage building (21.34m x 36.58m x 10.75m high) at Grange Farm South Cockerington only 700m to the west of the proposed GSF site (WG/SD/P, paras 3.8 & 3.10 and WG24).

5.92 The 'landscape forces for change' are said to include "wind farm developments at Conisholme and Trusthorpe and views to the offshore windfarm at Skegness" (page 88). This is therefore a 'working landscape' with numerous large farm storage buildings in the landscape, many of which are far larger than the proposed GSF buildings (WG/SD/PA1, SD7-10). At the Grayfleet East site itself, man-made influences already exist in the form of the Conisholme windfarm and the existing Wellsites A and B; to which Anglian Water has recently added a sewage treatment works some 500m to the south-west of the GSF site (WG/PRF/P,para 4.9). Far from being 'out of character' with the existing landscape, the proposed GSF would in fact be completely consistent with that working landscape character.

5.93 The topography of the area is also important to any understanding of impacts on landscape character. The site of the GSF and its surroundings are very flat. Whilst in Euclidean mathematics a vertical feature on a 'plane' might suggest infinite visibility, the reality is rather different because of intervening structures or landscape features in the foreground of any view. This topography means that the proposed development would not itself be raised or, indeed, looked down upon from any raised vantage point. Whilst this aspect is best understood on a site visit, the montages do demonstrate that it would actually be very difficult to see the proposed GSF from a distance of more than about 1.5 km (WG/SD/PA1, Figs 8.16B-8.25D).

5.94 The proposed comprehensive package of on and off-site landscaping would help to integrate the proposed GSF into the local landscape. That planting would not appear 'alien' and is entirely consistent with the many other 'shelterbelts' noted in the East Lindsay Landscape Character Assessment (CDC11).

County Council's Criticisms of the WSUK Landscape Character Assessment

5.95 Whilst the County Council's Landscape witness made various criticisms of the landscape and visual assessment in the Environmental Statement, he did not produce his own for the proposed development at Grayfleet East. He therefore had no methodology, magnitudes of impact or assessments of significance to compare. In this case, where the County Council's only objection to the proposed development was on the basis of its effect upon the landscape character, it was surprising that they did not feel it necessary to carry out their own assessment.

County Council's views on the Proposed Landscaping Scheme

5.96 The County Council made no criticism of the proposed landscaping scheme; indeed their landscape witness confirmed in cross-examination that the County would want it imposed by condition if the SAO was made,

and deemed planning permission granted. That landscaping would include both on-site (i.e. at the GSF and wellsites) and off-site landscaping. The landscaping scheme can be seen in the ES (CDA1, Vol3, Figs 8.14A-G and the planting schedules in CDA1, Vol 2, App 8.2).

5.97 The County Council objected to WSUK's estimated growth rates for the planting shown in the photomontages. They were based on estimates that after 5-7 years the proposed trees would have achieved about 5m in height and the proposed shrubs some 3.5m (WG/SD/P, para 6.5 & WG31). After some 15 years they would achieve 9-12m and 6m respectively (WG/SD/P, para 6.7). These estimates were based on the witness's very considerable experience of landscape planting in the UK.

5.98 The County Council challenged these figures on the basis of indicative growth rates in an August 2000 German landscape garden catalogue (LCC3), but their witness did not know what climatic conditions or maintenance regime had been assumed in that catalogue. Nevertheless, the heights of the species as indicated broadly supported the WSUK figures. Where they did not, UK experience should be preferred to a German catalogue.

5.99 The County Council also argued that planting on bunds would reduce the growth rates further. It needs to be remembered however that, first, the water table is very high in the Outmarsh area, secondly, much of the proposed landscape planting would not be on bunds and, thirdly, the landscape management plan would be able to specify any special maintenance needed to ensure growth on the bunds (e.g. keeping tree areas weed free – WG19). The on-bund landscaping would also have a head-start in providing a screening effect because the bunds themselves would be 1.75m high.

5.100 Despite the wrong heights for the buildings being quoted in the landscaping proof of evidence, the correct heights were used in the preparation of the montages (WG31).

5.101 It is also a feature of the off-site landscaping that views of the GSF would be intercepted and filtered before the viewer saw the on-site landscaping. This can be seen in a number of the photomontages such as those from Viewpoints 4 and 6 (WG/SD/PA1 Fig 8.19C & ES Fig 8.14A and Fig 8.21B & ES Fig 8.14F). This unusual layered approach to landscaping would produce a more natural and effective landscaping scheme than simply planting around the proposed development itself.

5.102 Whilst there were no montages of winter views, the difference could be assessed through the exercise of judgement based on the summer montages without their leaf cover.

5.103 The photomontages, and in particular the proposed landscaping as shown, gave a good indication of the landscape and visual effects of the proposed development.

Temporary effects

5.104 WSUK did look at the construction effects, but concluded that they would not be 'significant' because they would be temporary. The County Council said that the construction effects should have been identified as

'significant' but then recognised as temporary. This debate should be seen in the context that the County Council's objection related to landscape character and not to visual impact on any residential receptor. Furthermore, the County Council did not object to the development of Wellsites A and B, where the temporary construction impacts would be longest because of the duration of the necessary drilling works. Their objection was just to the GSF where the construction impacts would be for about 13 months, although the construction compound itself would be there for some 36 months. Temporary construction impacts were not ignored by WSUK; just assessed as not being significant in terms of landscape character or visual impact.

Significance

5.105 Significance is only attached to impacts of 'substantial' or 'substantial/moderate' levels – landscape architects have to make judgements about the significance of impacts and that is exactly what was done in a perfectly reasonable way.

5.106 The ES tables 8.5-8.7 (CDA1, Vol 1) do not have a final column for 'significance' though the significance of individual impacts is set out in the text and was added in an updated table (WG32). An assessment of landscape character should be more than just totting up various 'significance' scores. In any case, the County Council's objection was not to the visual impact on residential amenity from any of the identified 'residential receptor' points, but to the change in landscape character for people in the countryside.

Landscape Impact

5.107 The Statement of Common Ground records that potential receptors of the GSF development include residents of 30-35 individual dwellings located near Howdales, residents of Saltfleetby St Peter village (25-30 properties), people using the countryside for recreation on public rights of way and other routes with public access, travellers passing through the area on local roads including the B1200 Manby Road, and workers, both indoor and outdoor that may have some existing views towards part or parts of the site (CDB11, para 8.11).

5.108 WSUK accepted that the proposed GSF would affect the views from some 12 properties in the short term (WG/SD/P, Para 8.61) and have some local effect on landscape character. But they saw this as being confined to a fairly tight area around the proposed GSF site, as seen from the photomontages (WG/SD/PA1, Figs 8.16B-8.25D) which provide views from various different distances and directions. Even if the GSF could be seen at all beyond a distance of about 1.5km, it could not properly be said to have any material effect on the character of the landscape. Even within that distance there are many locations from which views would be effectively screened and there are also no public access points within about 0.5km of the GSF site. In effect therefore, all viewpoints would be relatively long range. Although the GSF would be seen from surrounding public viewpoints (including roads and public footpaths) none of these was identified as particularly heavily used and again, all are at relatively long distances.

5.109 This landscape is capable of accommodating the proposed GSF, which would have no more than a modest and localised impact on the character of the countryside: certainly not sufficient to refuse the SAO application.

Light Pollution

5.110 The area around the GSF site is remote from urban development and is regarded as an intrinsically 'dark landscape'. Nevertheless, there are security/flood lights at several of the residential properties and operational lighting for occasional use at some local farms as well as at the existing Wellsites A and B.

5.111 When the drill rigs are present on Wellsites A and B, they would operate 24 hours a day and would require fixed lighting that would be visible to some of the local residents (WG/SD/P, para 3.13). The maximum intensity of obtrusive light at any property would be 300 candelas (cd) in respect of Wellsite A and 298 cd in respect of Wellsite B, as compared with the maximum permitted value of 2,500cd (CIE 150 guidance). The intensity would therefore be acceptable and in any case would only be for a temporary period (WG/SD/P, para 8.67).

5.112 Whilst a permanent lighting scheme was included in the ES, a revised exterior lighting report was considered at the Inquiry (WG/SD/PA2, app 2.1). That report produced an improved lighting strategy for the GSF taking into account and implementing current best practice. As part of that revised strategy, the external lighting of the GSF would include low level bollard lights and luminaries mounted 6m above the ground, as opposed to the 8m high lights assessed in Chapter 15 of the ES.

5.113 Importantly, the 6m external lighting at the GSF would not be kept on all the time. It would only be activated where and when needed, which is likely to be during any safety incident, or for essential maintenance that for some reason needs to be undertaken at night. The low level bollard lighting would be fully screened by the 1.75m landscape bund and would therefore not be seen from outside the site.

5.114 The lighting assessment (WG/SD/PA2 App 2.1, as updated by WG5) showed that the proposed lighting would present no contribution to 'sky glow'; that 'light spill' would be confined within the site; and the 'source intensity' towards sensitive receptors would be very low indeed (3 cd against a guidance limit for dark areas of 2,500 cd) (WG/SD/PA2 App 2.1, para 1.9.4 and WG5).

5.115 The County Council did not object on the basis of harm to residential amenity from the lighting, but again alleged harm to landscape character. It was not immediately apparent, however, quite who the 'receptor' of this impact would be; if not residents (some of whom have external domestic lighting themselves), then again it must be people out walking in the countryside at night.

5.116 In practice, there would be no material impact on the landscape character from the proposed lighting scheme and WSUK would be willing to accept an appropriate condition concerning external lighting (CDB11, Condition 27).

Water Resources

5.117 The project would be located over a major Chalk aquifer used for public and private water supplies and another major aquifer, the Sandstone, lies below the Chalk. The latter is protected by 15 to 20m of low permeability Glacial Tills which significantly reduce the potential for ground level activities to impact on the ground water (WG/PRF/P, paras 9.108- 9.111).

5.118 The Glacial Tills, the Chalk and the Sandstone aquifers would all be penetrated by the proposed boreholes, but WSUK would follow the best practice drilling techniques to minimise the risk of ground water pollution during the construction work including compliance with the Offshore Installations and Wells (Design and Construction etc) Regulations 1996. A solid casing and a water-based flushing system would be used through the top 60m of the Chalk, the most vulnerable portion. In recognition of this, Anglian Water have withdrawn their objection (ID/5) (WG/PRF/P, paras 9.108- 9.111).

5.119 Reviews of groundwater quality in the Chalk aquifer and the monitoring results from previous drilling works showed concentrations of arsenic, manganese and iron above current drinking water standards, for which Anglian Water treat their abstractions. These concentrations were therefore not related to the previous drilling operations (WG/PRF/P, paras 9.108- 9.111).

5.120 Accordingly, there would be no discernable impact on groundwater quality.

Flooding and Drainage

5.121 As the proposed GSF is within Flood Zone 3a the development must pass the Sequential and Exception Tests set out in PPS25. In undertaking the Sequential Test, plausible locations for the GSF were reviewed against a number of criteria which included flood risk, proximity to dwellings for residential and amenity reasons and the proximity of the existing gas pipeline infrastructure. The proposed location adjacent to the Grayfleet Drain was considered to be the optimal location (WG/PRF/P, paras 9.111).

5.122 The Exception Test requires wider sustainability benefits to the community, the use of previously developed land, unless there is no reasonable alternative site and that the development would be safe without increasing the flood risk elsewhere (PPS25, para D9).

5.123 In this case, the sustainability benefits would include increased employment opportunities and increased prosperity for the region, even though the project would not contribute to reducing the causes of climate change. There are no suitable alternative sites on previously developed land within the licensed oilfield (WG/PRF/P, paras 9.114- 9.115).

5.124 Finally, a detailed assessment of the flood risk was developed and agreed with the Environment Agency and the Lindsey Marsh Drainage Board. There would be an embankment around the GSF with inflatable flood barriers across the access road and compensatory flood water storage within a wetland area on site, from which it would be subsequently discharged at the Greenfield flow rate. Accordingly, the development would be safe from flooding and would not impact on the flood levels elsewhere, thereby passing the Exception Test (WG/PRF/P, paras 9.117).

5.125 The Environment Agency accepted that the development would pass the Sequential and Exception Tests and withdrew their objection, subject to conditions (ID/5). There is therefore no flood risk or drainage reason to refuse the SAO.

Flora and Fauna

5.126 There are no areas of statutory or non-statutory designation for nature conservation within or adjacent to the proposed GSF site, the import/export pipeline or the associated infrastructure, and no protected or notable flora species were identified in the area (WG/RM/P, paras 6.8 & 6.11).

5.127 From the surveys, no significant effects were anticipated on the badger population (WG/RM/P, paras 6.13-6.17) and appropriate mitigation measures are proposed for the local water vole population (WG/RM/P, para 6.24). There would be no loss of bat roosting sites and potentially valuable foraging habitats are generally restricted to the main drains and rivers, riparian habitats and hedgerow/woodland edges, none of which would be lost or damaged. After the temporary construction phase, the lighting scheme would cause very little outspill or upward loss of light. There should therefore be no significant effect on the local bat population (WG/RM/P, paras 6.25-6.29). Otters are known to be in the area of the Great Eau but with directional drilling for the pipeline, there would be no disturbance of the banks or obstruction, and no significant effects are anticipated on the otter population (WG/RM/P, paras 6.30-6.32). The one barn owl nesting box close to the site would be relocated or an alternative box(es) would be provided in a suitable location to avoid disturbance during construction thereby avoiding any significant impact on the barn owl population in the area (WG/RM/P, paras 6.33-6.36).

5.128 Whilst other birds are the main group of fauna that might be affected, the sites are small in scale when compared with the large areas of similar surrounding habitat. Bearing in mind also the temporary nature of the construction works the impact on such species would be very limited (WG/RM/P, paras 6.38-6.41).

5.129 The County Council did not object to the proposed development in connection with the ecology of the area (CDB11, para 6.15), but East Lindsey District Council considered there to be insufficient mitigation for loss of land available for future conversion to grazing marsh habitats, as identified in the Lincolnshire Coastal Grazing Marsh Project (CDB11, para 6.16). This was not an objection based on the loss of actual grazing marsh – the site is currently intensely farmed arable land – but an objection to the 'chance' to turn it into grazing marsh. In this connection, it should be remembered that the GSF, access and associated landscaping would only amount to some 0.001% of the 7,500ha grazing marsh target area (WG/RM/P, paras 6.47 & 6.48) and the proposed landscape planting would itself be of considerable benefit in terms of habitat creation and enhancement.

5.130 Other parties raised points in relation to the impacts on protected and notable species such as owls, migratory wildfowl, amphibians and orchids and the effect of emissions to the air on the flora and fauna generally.

However, Natural England, Lincolnshire County Council, and the Lincolnshire Wildlife Trust were satisfied that the ES satisfactorily addressed all likely effects on protected and notable species and there has been no significant change since that assessment. Pre-construction monitoring would anyhow be undertaken, and appropriate avoidance or mitigation carried out if necessary. As part of this work, any orchids in the embankment to the Grayfleet Drain could be translocated (WG33).

5.131 The enhancement of biodiversity in relation to development projects is promoted in PPS9, and by RSS Policy 29. The site is also within the area covered by the Lincolnshire Biodiversity Action Plan (CDD16) which seeks to enhance the biodiversity of the area. The project would result in the loss of some 5.5ha of intensively managed arable land of generally low ecological value. However, there would be a gain of approximately 9ha of nature conservation habitat from the proposed wetland, tree and shrub planting, hedgerows and buffer strips (WG/RM/P, para 6.4).

5.132 Whilst there may have been recent concerns about the effects of strong electromagnetic fields on animals (and humans), there would be no strong electromagnetic fields.

5.133 Overall there would be a considerable benefit in nature conservation terms. Natural England did not object and there would be no nature conservation reason to refuse the SAO.

Atmospheric Discharges

5.134 At the GSF site, there would be emissions to the air from:

- the gas turbines (2 duty and one standby) used during both the injection and withdrawal cycles;
- one ground flare used during the withdrawal cycle alternating with the desorption heaters in 15 minute cycles, and;
- two desorption heaters alternating with the ground flare in 15 minute cycles (WG/KH/P, para 33).

5.135 Extensive air quality modelling of the proposed emissions was undertaken on behalf of WSUK using a set of very conservative assumptions about the operation of the facility (CDA1, Vol 1, Section 14 and WG/KH/P, para 54). It assumed that:

- all potential sources were operated continuously 24 hours a day 7 days a week (WG/KH/P, para 34);
- the worst case year meteorological data;
- the stack emissions were continuous at the defined emissions limits;
- all background concentrations of NO_x is NO_2;
- background concentrations are those for 2007 rather than allowing for the predicted reductions;
- maximum predicted concentrations are compared with the environmental assessment levels (EAL) irrespective of whether there would be human exposure at that point; and
- the surrounding banks and trees surrounding the facility are solid walls though no higher than 13m above ground level (WG/KH/P, paras 27 & 54).

5.136 Assuming these conservative assumptions, the emissions from the facility would be well below all relevant air quality thresholds, even at their maximum concentrations some 70m to the north–east of the site. The facility would not therefore have a detrimental impact on local air quality for human health or vegetation (WG/KH/P, para 102). Even so, the Best Practicable Environmental Option (BPEO) and Best Available Techniques (BAT) report assessed the alternatives, including the use of electrically driven compressors, and concluded that in the absence of a suitable available power supply the proposed plant was the BPEO (WG/KH/P, paras 82-87). As part of the environmental permitting process BAT would have to be demonstrated (WG/KH/P, para 100).

5.137 No odours would be emitted from the combustion plant exhausts because the combustion process would be at a sufficiently high temperature to effectively destroy any volatile organic compounds that could be responsible for odours (WG/KH/P, para 88).

5.138 With regard to the matter of carbon dioxide emissions, the facility would come within the scope of the Greenhouse Gas Emissions Trading Scheme Regulations 2005, under which WSUK would be required to purchase carbon permits to operate the plant at a possible cost of about £1m per annum (WG/FT/P para 103 & Evidence in Chief & WG/KH/P paras 86 & 87).

5.139 Measures to mitigate and control construction dust would be included in a site-specific dust management plan based on the advice in Annex 1 of MPS2 (WG/FT/P, para 123).

5.140 The County Council did not object to the proposed development on air quality grounds (CDB11, para 14.13) and there would be no reason to refuse the SAO in connection with atmospheric discharges.

Tourism and the Local Economy

5.141 Bowles Green Ltd, specialist consultants on tourism, produced an assessment of the impact the development would have on tourism and the local economy (WG/PRF/P, App 9.2). In their professional opinion, the proposed development would have a very minor negative impact on tourism during the construction phase, though there would be an effect on the holiday business close to the Grayfleet site. However, they envisaged no negative impact on tourism during operation (WG/PRF/P, paras 9.71 & 9.72).

5.142 At the same time, significant additional economic activity would be generated during the construction and operation of the facility. It was estimated that between 34 and 54 contractors would require accommodation in the local area (some 19,500 bednights) during the 30/36 month construction period. This would generate between £710,600 and £960,000 for the local economy thereby benefiting accommodation providers, pubs, catering outlets and shops (WG/PRF/P, para 9.74). The demand for local accommodation could well offset what would otherwise be harm to the one holiday business close to the Grayfleet site (WG/PRF/P, para 9.72). These conclusions were supported by tourism officers elsewhere in the UK where underground gas storage facilities have been developed (WG/PRF/P, para 9.75).

5.143 12 new fulltime jobs would be created for the operation of the site generating some £360,000 additional local economic activity per annum (WG/PRF/P, para 9.74)

5.144 The County Council did not object to the proposed development on socio-economic (including tourism) grounds (CDB11, para 11.6) and there would be no socio-economic reason for refusing the SAO; indeed, there would be some employment benefits.

Cultural Heritage

5.145 Section 4(4) of the Gas Act requires consideration of the desirability of preserving objects of architectural or historic importance and this matter was covered in the ES (CDA1, Section 7).

5.146 The principal components of the scheme are located so far as possible to avoid any recorded archaeological sites, and the potential adverse effects of the new pipeline would be greatly reduced by utilising the existing pipeline corridor (WG/PRF/P, para 9.99). A detailed archaeological investigation and mitigation scheme has been prepared (WG/PRF/, app 9.3)

5.147 Lincolnshire County Council's Historic Environment Team are satisfied that there would be no undue harm to the historic environment subject to a suitable condition that would require a written mitigation strategy (CDB7, para 8.1 & CDB11, Section 18 Condition 7). Accordingly there is no cultural heritage reason to refuse the application.

Agriculture

5.148 The Provisional Agricultural Land Classification Map issued by MAFF in 1972 shows all the land involved as Grade 3 quality, but detailed field surveys confirmed it as sub-grade 3b due to its wetness and workability limitations. There would therefore be no loss of best and most versatile agricultural land (CDA1, paras 9.18–9.23). In any case, it is intended to restore the sites to agriculture at the end of the useful life of the scheme (WG/PRF/P, para 9.105). There can therefore be no agricultural land objection to the proposal.

Alternatives

The Approach to Alternatives

5.149 Alternatives are a material consideration in this application, but they need to be seen in context. The consideration of alternatives clearly needs to be 'proportionate' to any harm caused by the proposed development. In Trusthouse Forte Hotels v Secretary of State for the Environment (1986) 53 P&CR 293 Simon Brown J put it as follows:

> "In a case where planning objections are sought to be overcome by reference to need, the greater those objections, the more material will be the possibility of meeting that need elsewhere."

5.150 This theme is explored in the more recent Court of Appeal decision in Langley Park School for Girls v London Borough of Bromley [2009] EWCA Civ 734 where Sullivan LJ held as follows:

> "It does not follow that in every case the "mere" possibility that an alternative scheme might do less harm must be given no weight. … There is no "one size fits all" rule. The starting point must be the extent of the harm in planning terms (conflict with policy etc.) that would be caused by the application. If little or no harm would be caused by granting permission there would be no need to consider whether the harm (or the lack of it) might be avoided. The less the harm the more likely it would be (all other things being equal) that the local planning authority would need to be thoroughly persuaded of the merits of avoiding or reducing it by adopting an alternative scheme. At the other end of the spectrum, if a local planning authority considered that a proposed development would do really serious harm it would be entitled to refuse planning permission if it had not been persuaded by the applicant that there was no possibility, whether by adopting an alternative scheme, or otherwise, of avoiding or reducing that harm.
>
> Where any particular application falls within this spectrum; whether there is a need to consider the possibility of avoiding or reducing the planning harm that would be caused by a particular proposal; and if so, how far evidence in support of that possibility, or the lack of it, should have been worked up in detail by the objectors or the applicant for permission; are all matters of planning judgment for the local planning authority [or in this case the Secretary of State]." (emphasis added)

5.151 This 'proportionate' approach to the consideration of alternatives is also reflected in the new draft NPS EN-1 (CDC81) which makes it clear (para 4.4.3) that "given the urgency of the need for energy infrastructure as set out in this NPS, the consideration of alternatives should be carried out in a proportionate manner"; "in view of the need for energy infrastructure set out in this NPS, the IPC should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the necessary infrastructure in line with the urgency of the need" and "where an alternative is put forward by a third party it may be reasonable for the IPC to place the onus on the person proposing the alternative to provide the evidence for it and the IPC should not necessarily expect the applicant to have assessed it." This is entirely consistent with the approach of the Court of Appeal in Langley Park (above).

5.152 The Saltfleetby proposals would fall within the thresholds to be considered as a Nationally Significant Infrastructure Project and EN-1 makes it clear (para 3.9.8) that there is a "significant need" for gas storage infrastructure to be provided. Furthermore, EN-1 also makes it clear (para 1.2.1) that NPSs may be a material consideration in planning applications and, it is suggested by logical extension, Gas Act 1965 applications. Thus it is firmly submitted that the approach to the consideration of alternatives should be 'proportionate'.

5.153 In the present case, the County Council objected only on the grounds of harm to the character of the countryside and WSUK accepted that the proposals would cause some adverse impact to the environment but, in the

context of a major piece of national energy infrastructure, that impact really should be seen to be relatively modest.

5.154 In such circumstances, a decision-maker would have to be satisfied that there really was a very clear advantage in a potential alternative site before refusing consent in order to avoid that impact. This is, of course, a matter for the decision-maker. As Sullivan LJ put it "how far evidence in support of that possibility (i.e. an alternative), or the lack of it, should have been worked up in detail by the objectors or the applicant for permission; are all matters of planning judgment" for the decision-maker.

Alternative Options

5.155 There seems little prospect of reducing gas demand under the present conditions and there are no projects underway that would increase pipeline capacity to the UK (WG/JB/P, paras 172-177).

5.156 Gas storage can be achieved as linepack in the NTS, in gasometers or in storage tanks as liquefied natural gas (LNG). Alternatively, it can be stored underground in a water aquifer, depleted oil and gas reservoirs or caverns created for the purpose in salt strata (CDA1, Vol 1, para 5.2).

5.157 Only limited capacity can be achieved through linepack, gasometers or LNG storage facilities and National Grid do not intend to increase linepack (WG/JB/P, paras 164 & 185). Salt cavern projects are being developed in strata that is suitable, but they require a considerable period for salt mining before they become operational (WG/FT/P, para 106).

5.158 At 3.3bcm the Rough Gas Field in the North Sea provides a large proportion of the UK's current gas storage capacity (WG/JB/P, para 73). Other large schemes could be developed, but the capital costs for offshore developments are much higher than for onshore fields, and particularly with the large quantities of cushion gas that remains in the field, there can be financing difficulties (WG/JB/P, paras 160-163).

Alternative Locations

5.159 See Annex B, paragraphs 3.19-3.22.

The County Council's Position

5.160 See Annex B, paragraphs 3.23 – 3.27

The Theddlethorpe Option

5.161 See Annex B, paragraphs 3.28 – 3.31

Safety Legislation and Guidance

5.162 See Annex B, paragraphs 3.32 – 3.48

Relevance of Safety, Technical and Operational Issues

5.163 See Annex B, paragraphs 3.49 – 3.51

The County Council's Alternative GSF at Theddlethorpe

5.164 See Annex B, paragraphs 3.52 – 3.57

Pipeline Safety

5.165 See Annex B, paragraphs 3.58 – 3.65

Operations

5.166 See Annex B, paragraphs 3.66 – 3.72

Technical

5.167 See Annex B, paragraphs 3.73 – 3.75

Cost

5.168 The County Council accepted that their Theddlethorpe option would impose very significant additional capital costs on any underground gas storage project at Saltfleetby.

5.169 WSUK estimated the additional cost of a second pipeline at about £6m and the cost of a methanol still some £24m (WG/FT/P para 177), and there would also be the additional cost for a large slug catcher. The delay to the project had already cost WSUK some £5m to date and by 2013 this would rise to over £10m (WG/FT/P paras 178 and 184). Yet more delay, whilst WSUK investigates the feasibility of a Theddlethorpe option, would simply cause further cost to the project. There can be no justification for the County Council's claim that WSUK brought the existing costs upon themselves. They have simply been attempting to gain approval, first through a planning application and now through this Gas Act application.

5.170 The County Council's pipelines witness accepted in cross-examination that there would be additional capital cost if the GSF were located at Theddlethorpe and he put this in a range of £10-40m. WSUK agrees with the upper end of this range as a likely outcome, if indeed a Theddlethorpe option is feasible at all.

5.171 With the total cost of proposed surface and sub-surface works put at about £200m (WG/FT/P para 189), an additional cost of up to £40m (20%) would be very serious indeed. WSUK have made no commercial decision to pursue such an alternative project, which would have very different capital costs as well as safety, technical and operational characteristics.

Delay

5.172 Further delay would have consequences for the project in three important respects. Firstly, it would impose additional costs as discussed above; secondly, it would be an additional factor in the ALARP balance; and, thirdly, it would prevent the project satisfying 'need' in a 'timely' fashion.

5.173 If the current application was refused then, before they could even make an application, the promoter would have to identify an acceptable site at Theddlethorpe, design a new pipeline system and GSF plant, identify an acceptable pipeline corridor, develop a pipeline and plant safety case, carry out an Environmental Impact Assessment, and seek to acquire the necessary land and rights by agreement. Even if a feasible scheme could be identified, and even if it was commercially acceptable, on application for the project there could be objections from the HSE, the local planning authority, landowners and local residents (and even from the County Council itself). Such objections would inevitably lead to an Inquiry and yet further delay and uncertainty.

5.174 WSUK's Managing Director's evidence was clear that, if the Secretary of State concluded that the Theddlethorpe option should be considered, the

project would be delayed by over two years and with no certainty that an acceptable solution at Theddlethorpe could be found (WG/FT/P para 173). This would push back the delivery of the project to at least 2015/16 and the Need witness thought that the delay could be even longer.

5.175 In the context of an urgent need for additional gas storage in the UK, the uncertainty and delay caused by a refusal of the present application would be directly contrary to the national interest. This is a very weighty consideration in the determination of this application.

Application of the ALARP Principle

5.176 See Annex B, paragraphs 3.76 – 3.78

Theddlethorpe GSF Feasibility

5.177 See Annex B, paragraphs 3.79 – 3.84

Landscape Impact

5.178 The County Council had not identified a specific site at Theddlethorpe but WSUK accepted that if a GSF could be located either within the Theddlethorpe Gas Terminal complex (TGT), or on the field immediately adjacent and to the west of the TGT, it would be likely to have lesser impacts on countryside character than the Grayfleet East proposal. That would not be the case, however, if any GSF at Theddlethorpe had to breach the tree screen belt further to the west of the TGT, for instance because of any necessary distances between separate COMAH installations. In that case, the effects on landscape character and visual impact would be likely to be far greater than those at Grayfleet East, both because of the proximity of the dwellings and the opening up of views of the existing TGT plant.

5.179 Even if a GSF could be developed on the field to the west of the TGT without breaching the tree screen belt, such a development would not be without any impact on landscape character:-

- The closest dwellings to a GSF located at Theddlethorpe (LCC/DB/AP, App 2 unnumbered visual impact table viewpoint 14 – Harpsbridge House and Olcote House – 400m) would be far closer than the nearest dwellings to the GSF at Grayfleet East (WG32 viewpoint 1 – Beulah Farm – 570m);
- Even the County Council's landscape witness recognised some of the visual effects of a GSF at Theddlethorpe to be 'substantial' or 'moderate' adverse (LCC/DB/AP, App 2 unnumbered visual impact table); and
- Although not itself within the coastal conservation area CCA1 to which Policy C15 of the East Lindsay Local Plan (CDD2 p62) applies (CDD3 and WG16), a GSF at Theddlethorpe would clearly be seen from within that policy area.

5.180 Thus whilst a site for the GSF at Theddlethorpe may be preferred in relation to impact on countryside character alone, both locations would have some modest impact.

Noise

5.181 The County Council's only objection on the issue of noise is that it would contribute to the harmful effect on the countryside (CDB11 para 13.11).

5.182 At section 5 of the ES, WSUK considered the environmental effects of potential alternative locations for the GSF. In Appendix 5.1 (CDA1, Vol 2) the alternative site assessment considered the five options by reference to a number of topic headings. In the noise section (paras 1.89-1.98), it is clear that the nearest community location with the highest predicted noise level is at Theddlethorpe (45 dB) and the nearest community location with the lowest predicted noise level is at Grayfleet East.

5.183 In its Statement of Case (September 2009), WSUK made it clear that they would consider the noise impact if the GSF were to be located at Theddlethorpe (CDB9, para 19). Despite this clear indication, the County Council only produced a noise proof of evidence very shortly before the start of the Inquiry. The County Council's noise evidence was not therefore directed to the issue of the effect on 'countryside character', which was the basis of their objection, but instead to the relative merits of the site at Grayfleet East compared with one at Theddlethorpe.

5.184 The County Council's noise assessment related exclusively to the operational noise effects at night of a GSF at Grayfleet East and at Theddlethorpe, and the noise data was agreed (WG35).

5.185 The remaining issue between the parties was simply one of assessment methodology. In short, the County Council argued that a BS4142 approach should be adopted though, with their lack of objection to residential amenity, it is not clear why a methodology based on the likelihood of complaints would be of any help. In contrast WSUK argued it was more appropriate to look at absolute noise levels.

5.186 When comparing the Grayfleet East and Theddlethorpe sites, an approach based on absolute noise levels would be appropriate for the following reasons:

a. PPG24 (CDC25) makes it clear (Annex 3, para 19), under the heading of 'Noise from industrial and commercial developments', that the likelihood of complaints from industrial development can be assessed using the guidance in BS4142, where the standard is appropriate;
b. Under the same heading, the PPG goes on to state, however, that "In addition, general guidance on acceptable noise levels within buildings can be found in BS8233: 1987 …" (para 19). It is clear, therefore, that the Government accepts that absolute noise levels are an appropriate assessment tool in considering industrial noise. It is also clear that the PPG is directing the reader to "guidance on acceptable noise levels" in BS8233, and not references in that document back to BS4142 (which would be circular);
c. BS4142 (CDC41) makes it clear in its own Foreword that "In general, the likelihood of complaint in response to a noise depends on factors including the margin by which it exceeds the background noise level, its absolute level, time of day, change in the noise environment etc, as well as local attitudes to the premises and the nature of the neighbourhood. This standard is only concerned with the rating of noise of an industrial

nature, based on the margin by which it exceeds a background noise level with an appropriate allowance for the acoustic features present in the noise." It is clear, therefore, that BS4142 itself recognises the importance of absolute noise levels;

d. The BS also recognises that its use may not be suitable when background and rating levels are both very low. The BS notes (Section 1 Scope) that "For the purposes of this standard noise levels below about 30 dB and rating levels below about 35 are considered to be very low." What is below 'about' 30 dB and 'about' 35 dB is clearly a matter of judgement for the acoustic engineer. WSUK's noise witness held the view that the L90 background noise levels and LAeq rating levels for the GSF at Grayfleet East are below 'about' 30 and 'about' 35 dB respectively on the agreed figures (WG35). It was recognised, of course, that at four out of the five receptor locations, one or other of the noise levels would actually be above 30 or 35 dB, but the judgement was that in the circumstances at Grayfleet East, they should all be considered to be below 'about' the relevant levels. In any case, it was agreed between the parties that both the background and rating levels for 'receptor location 2' (Howdales Farm) did fall below 30 and 35 dB;
e. The WHO 'Guidelines for Community Noise' (CDC43) clearly relate to all forms of 'community noise' including industrial noise (CDC43 Introduction p1). The Guideline values in section 4 consider 'sleep disturbance effects' (section 4.2.3) and effects on 'dwellings' (section 4.3.1). The WHO 'guideline values' for 'inside bedrooms' to avoid sleep disturbance are 30 dB during an 8 hour night. Allowing 12 dB attenuation with an open window corresponds to an outside 'free field' noise level of 42 dB. This guidance has then been reflected in BS8233 (CDC42) and the Environment Agency Horizontal Guidance H3 (CDC56);
f. The B8233: 1999 guidance (CDC42) is specifically referred to in PPG24 (see above) in relation to "acceptable noise levels within buildings". Section 7.6.1.2 states that Table 5 relates to "anonymous noise" and, as PPG24 makes clear, these 'acceptable noise levels' are relevant in the context of industrial noise. It was agreed between the parties that the noise from the GSF would not have any audible clicks or bangs. WSUK therefore considered it to be properly described as 'anonymous noise' whereas the County Council considered noise was only 'anonymous' if you didn't know who was making it (thus they considered traffic noise to be anonymous because you wouldn't know the names of the drivers). This is simply wrong and, in any event, inconsistent with paragraph 19 of Annex 3 to PPG24. Thus Table 5 guidance levels are material to industrial noise. It states that for 'reasonable resting / sleeping conditions' in bedrooms, a noise level of 30 dB is 'good', and that corresponds to the WHO 30 dB criterion for avoiding sleep disturbance. This again corresponds to an external free field level with windows open of 42 dB;
g. The Environment Agency's Horizontal Guidance for Noise H3 Part 1 (CDC56(1)) also identifies an absolute noise level to avoid 'sleep disturbance' in its section 2.5.6 on the 'Use of numerical limits'. The guidance (page 17) refers to an external façade 'rating level' of 45 dB at night; which corresponds to a 'free field' level of 42 dB and an internal level of 30 dB; and

h. The H3 guidance (CDC56(1) page 18) also draws attention to the problem of 'creeping' noise levels "as industry expands".

5.187 From the above WSUK concluded that:

a. PPG24 recognises the role of 'absolute noise levels' in considering the effects of industrial noise;
b. BS4142 also recognises the role of absolute noise levels and identifies circumstances where its own use is unsuitable;
c. An absolute night time free field noise level corresponding to 42 dB is recognised in both the WHO guidance, BS8233 and in the EA's H3 as being appropriate to protect against 'sleep disturbance'; and
d. 'Creeping' noise levels can be an issue where there would be industry expansion.

5.188 Applying these principles with reference to the agreed data (WG35):

a. The agreed predicted GSF night time noise levels at Grayfleet East (column 1) would all be lower than the H3 42 dB criterion (column 6), indicating avoidance of any sleep disturbance;
b. The agreed cumulative night time noise levels at Grayfleet East (column 4) would all be lower than the WHO 42 dB criterion (column 7), indicating avoidance of any sleep disturbance;
c. The BS4142 assessment (column 5) at Grayfleet East shows the likelihood of complaint, but this methodology is unsuitable because (i) the noise levels are so low and (ii) the County Council accepted that there was no objection on the basis of residential amenity at Grayfleet East;
d. The agreed predicted GSF night time noise levels at Theddlethorpe (either on or adjoining the TGT) (column 1) are mostly higher than the H3 42 dB criterion (column 6), indicating potential sleep disturbance;
e. The agreed cumulative night time noise levels at Theddlethorpe (either on or adjacent to the TGT) (column 4) are all higher than the WHO 42 dB criterion (column 7), indicating potential sleep disturbance;
f. The BS4142 assessment (column 5) at Theddlethorpe shows no likelihood of complaint, but this methodology is unsuitable as background noise levels are so high that complaint would be likely in any event; and
g. New noise sources should ideally be limited to about 10dBA below the background levels to avoid creeping ambient noise and this would be an issue for expansion of the existing industrial plant at Theddlethorpe (column 8).

5.189 Accordingly, the proposed GSF at Grayfleet East would result in the introduction of an industrial noise source in the locality, but with noise levels that would be so low there would be no potential for sleep disturbance. As such, there was no objection from the County Council regarding an impact on residential amenity.

5.190 In contrast, locating the GSF at Theddlethorpe would exacerbate some very high noise levels which already breach relevant absolute noise level criteria. Whilst there may not be noise complaints from local residents at Theddlethorpe currently, that may simply reflect the longevity of the existing problem and not indicate any willingness to accept an increase in such noise levels.

5.191 Accordingly, the alternative GSF site options at Theddlethorpe would not be acceptable from a noise point of view, because of their close proximity to residential receptors resulting in high levels of noise, and because of the existing levels of noise from the TGT plant (WG/ARC/P, para 10.6).

5.192 The location of the GSF at Grayfleet East would be clearly preferable in noise terms to a site on, or adjacent to, the existing Theddlethorpe Gas Terminal.

Views of Other Parties

5.193 Other parties' representations split along locational lines. Those in the Saltfleetby area who expressed any view on the subject, suggested that the GSF should go to Theddlethorpe, whilst the Theddlethorpe Parish Council, which had not been directly consulted on the Theddlethorpe option, was quite clear that Theddlethorpe was not an appropriate location.

WSUK's Conclusions on Alternatives (including case in Annex B)

5.194 There are overwhelming reasons for rejecting the County Council's Theddlethorpe GSF alternative, including:-

a. It is clear that the proposed import/export pipeline would have a significantly lower risk profile than the various alternatives put forward by the County Council and is the ALARP option (Annex B, para 3.85a);
b. The County Council's alternatives would impose additional operational burdens on the operator, including the need for additional pigging and the increased use of methanol to prevent hydrate formation (Annex B, para 3.85b);
c. Extra equipment would be required including, depending upon which option is considered, additional pipelines, a methanol still and large slug catchers (Annex B, para 3.85c);
d. There would be substantial additional capital cost of up to £40m even on the County Council's own analysis;
e. It is not known whether a new COMAH facility could actually be located on, or immediately adjacent to, the existing TGT, which is itself a 'top tier' COMAH facility (Annex B, para 3.85d);
f. There would be substantial delay to the project whilst the possibility of any alternative was properly investigated and, if feasible, promoted and constructed;
g. The project would certainly not be able to meet the urgent need for more gas storage capacity by 2013/14;
h. The commercial acceptability of any alternative is simply unknown; and
i. The Theddlethorpe option would have a greater noise impact on local residents; and
j. Although the impact on the countryside might be less than at Grayfleet, there would still be a modest impact, which would be greatly increased if there was a need to breach the existing tree screen.

5.195 Indeed, apart from calling evidence on the feasibility of various different pipeline diameters, the County Council produced no evidence to support the contention that there was a 'suitable' and 'feasible' alternative site for the GSF at Theddlethorpe.

5.196 In fact, the County Council's Theddlethorpe option had no substance, and it would be quite wrong to refuse or delay this important energy

infrastructure project on the basis that the operator should have to explore any further the feasibility of such an alternative.

Hazardous Substances Consent

5.197 See Annex B, paragraph 3.86

Compulsory Purchase Order

5.198 The Compulsory Purchase Order land covers an overall area of some 2,097.6 ha and includes 737 plots of land ownership. Most of those plots are, however, strata of land deep underground, where WSUK seeks to acquire the right to drill and to store gas.

5.199 WSUK had made considerable efforts to acquire by agreement the necessary interests in the land and rights. In the case of the underground rights, they are of no commercial value and therefore fall to be valued under Section 5, Rule 3 of the Land Compensation Act 1961 at a nominal value (CDA12, para 8.1). WSUK therefore offered a lump sum cash payment of £550, made up of £50 for the rights, £250 for professional advice and £250 for solicitor's fees. They would also consider higher sums if specially justified. By the end of the Inquiry, legal agreements had been completed with 181 of the 644 land owners (WG14a) and it was perhaps a tribute to those efforts that only eight objectors remained to the Order.

5.200 Many of the matters relevant to these objections are covered in the evidence relating to the SAO above.

5.201 Some of the objections related to concerns about harmful effects on property values and that is a matter covered by compensation, the amount of which is determined by the Lands Tribunal, if not previously agreed between the parties (WG/CDS/P, para 59 - 62). The same goes for local businesses, and WSUK has offered to underwrite the income for the holiday letting business on Saddleback Road for a period of time (5.141).

5.202 Whilst the County Council wished to see a development appraisal to support the CPO, it is normal practice for public and private bodies to simply certify that the necessary funds are available. With regard to paragraphs 19-21 of Circular 06/2004, WSUK undoubtedly have the financial resources to acquire the interests in, and rights over, the Order land and to carry out the development project which is currently estimated in the order of £200m, excluding the cushion gas (WG/FT/P, paras 187-193). There was no challenge to that view.

5.203 There is a compelling case in the public interest to confirm the Order and to allow WSUK to acquire the interests and rights identified therein.

Conditions and Obligations

5.204 The Statement of Common Ground (CDB11) sets out a number of agreed and disputed conditions, which were discussed, and in some cases further amendments agreed, in the conditions session.

5.205 WSUK also prepared a unilateral obligation under Section 106 of the 1990 Act and, after comments from the County Council, it was submitted to the Inquiry in its completed form except for the binding in of a plan (WG2a).

The final completed version will be submitted for consideration by the Secretary of State.

Applicant's Overall Conclusions

5.206 Through their evidence, the Applicant demonstrated that there was no proper reason to refuse the application for a Storage Authorisation Order or to refuse to confirm the Compulsory Purchase Order and, in addition, no reason not to direct that deemed planning permission and hazardous substances consent be granted.

5.207 WSUK therefore requested that those Orders be made/confirmed and the necessary directions given relating to planning permission and hazardous substances consent.

6 The Case for Lincolnshire County Council

Overview

6.1 Lincolnshire County Council are the Minerals Planning Authority for the area in which the gas storage scheme is proposed. They objected to the present Wingas proposals on one single ground:

> "That the proposed Gas Storage Facility (GSF) constitutes industrial development in the open countryside which is unacceptable in principle and by reason of its visual, landscape, lighting and noise effect on the countryside. As alternative locations for this element of the development exist at Theddlethorpe there is no justification for the harm caused by the proposed GSF location."

6.2 The County Council had no objection to underground gas storage in the Saltfleetby Gas Field, to the proposals at Wellsites A and B or to the pipeline routes. But the unacceptability of the proposed location for the GSF would be such that the Storage Authorisation Order (SAO) should not be made, and the deemed planning permission should be refused. There would therefore be no justification for the Compulsory Purchase Order. Whilst the County Council had no objection to the hazardous substances consent that should fall with the other decisions.

Matters for Consideration

6.3 There are several legislative duties which must be considered in determining these applications.

6.4 Section 4 of the Gas Act 1965 (CDC8) provides:

> "(3) At all stages in the formulation by a gas transporter of any proposals for the making of a storage authorisation order, and in the consideration by the Minister of any such proposals, the gas transporter or the Minister, as the case may be, shall have regard to the safety of the public and the protection of water resources.
> (4) At all stages in the formulation by a gas transporter of any proposals for the making of a storage authorisation order, and in the

consideration by the Minister of any such proposals, the gas transporter or the Minister, as the case may be, having regard to the desirability of preserving natural beauty, of conserving flora, fauna, and geological or physiographical features of special interest, and of protecting buildings and other objects of architectural or historic interest, shall take into account any effect which the proposals might have on the natural beauty of the countryside or on any such flora, fauna, features, buildings or objects."

6.5 The proposal is subject to Environmental Impact Assessment under the EIA Directive. There is therefore a requirement on the developer to produce, for there to be consultation upon, and for the Secretary of State to consider (under Articles 5, 6 and 8 respectively), the matters identified in Articles 3 and 5 and Annex IV of the Directive. These include:

"the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors" (Annex IV, para 3).

"an outline of the main alternatives studied by the developer and an indication of the main reasons for this choice, taking into account the environmental effects" (Article 5(3), Annex IV, para 2).

6.6 The prevention of major accidents and limiting their consequences is also an objective to be taken into account in land use planning in respect of establishments regulated under the Control of Major Accident Hazards Regulations by Article 12 of the Control of Major Accident Hazards Directive (EC/96/82).

6.7 It was common ground that national, regional and local policy is relevant to the decisions to be taken. The presumption in favour of the Development Plan in section 38(6) of the Planning and Compulsory Purchase Act 2004 does apply. Section 90 of the Town and Country Planning Act 1990, dealing with deemed planning permission provides 'The provisions of this Act (except Part XII) shall apply in relation to any planning permission deemed to be granted by virtue of a direction under this section as if it had been granted by the Secretary of State on an application referred to him under section 77' (section 90(3)). Section 77(4) applies the duty to have regard to the development plan (in section 70(2)) to applications referred under section 77:
'where an application for planning permission is referred to the Secretary of State under this section, sections 70, 72(1) and (5), 73 and 73A shall apply, with any necessary modifications, as they apply to such an application which falls to be determined by the local planning authority'. It is that cross-reference which enables conditions to be imposed on deemed planning permissions, including time conditions. The deemed planning permission is treated as if it arises from a planning application. The section 70(2) duty therefore applies to deemed planning permissions. There is no basis for distinguishing between the content of the permission (such as conditions) and whether the permission is granted (that is, what is considered) as the consideration of whether to grant planning permission

and the imposition of the conditions takes place when the permission is issued.

6.8 As regard is required to be had to the development plan under section 70(2), section 38(6) of the Planning and Compulsory Purchase Act 2004 applies. Nevertheless, this case does not turn on this point.

The Approach to Alternatives

6.9 It was common ground that alternatives had to be considered in this case.

6.10 The need to consider alternatives arose for three reasons:

a. the EIA Directive requires alternatives to be considered. Firstly the alternatives studied must be included in the information submitted by the developer (Article 5(3) and Annex IV para 2 – in English terms the Environmental Statement). These alternatives are then consulted upon (Article 6) and the developer's alternatives and comments upon them (including other alternatives put forward) have to be considered by the decision maker under Article 8;
b. policy provides that the Gas Storage Facility can only be permitted in the countryside if it is essential in that location (Minerals Local Plan (CDD4) Policy M26 on collection facilities, as applied to GSFs by MPS1 Annex 4);
c. under the case law approach to alternatives in planning decisions as significant harm would be caused by the GSF in the proposed location.

6.11 WSUK's opening submissions engaged in an essentially academic debate about the level of detail to which alternatives should be assessed. They made two inconsistent complaints: both that the County Council had not looked into the Theddlethorpe alternatives sufficiently and that they had looked into them too much.

6.12 The duty is to consider the information on alternatives which has been presented in the Environmental Statement, the Theddlethorpe Development Options report, the 2005 and 2007 scoping reports, the J P Kenny report, the proofs of evidence and the oral evidence. The Secretary of State needs to decide whether (a) other options are feasible and (b) whether the Wingas GSF proposal should be refused because one or more Theddlethorpe options would be preferable.

6.13 Feasibility simply requires confidence that the alternative option can be done. It does not require certainty about how it can be done and there is no need for a fully designed alternative scheme.

6.14 The application should be refused if the WSUK proposal would cause a significant degree of harm (in a non-technical, non-EIA sense) and an alternative would be significantly better. The extent of harm from the proposal and the degree of improvement must therefore be the principal factors in the decision. If a proposal is not harmful, or the harm is very limited, then refusal would not be justified even if an alternative was found to be better. Similarly, if a proposal would cause substantial harm, but the alternatives were not much better then there would be no basis for refusing in favour of an alternative.

6.15 In the County Council's view, the WSUK proposal would cause significant harm and the Theddlethorpe options would be significantly better.

The Applicant's Site Selection Exercise

6.16 See Annex B, paragraphs 4.2 - 4.6.

Uncertainty over the Operational Requirements

6.17 See Annex B, paragraphs 4.7 - 4.8

The Theddlethorpe Options

Sites

6.18 See Annex B, paragraphs 4.9 - 4.12

Pipelines

6.19 See Annex B, paragraphs 4.13 - 4.17

Harm from the Proposed GSF and comparison with Theddlethorpe

6.20 The proposed Grayfleet Gas Storage Facility would cause significant harm and the siting of the GSF at Theddlethorpe would be significantly better. The applications should be refused for these reasons.

Countryside

6.21 Paragraph 10 of PPS4 seeks to 'protect the open countryside for the benefit of all'. Siting industrial development, such as the GSF, in the countryside is therefore unacceptable in principle.

6.22 There is a recognition that minerals related development may have a greater need to be in the open countryside and that is reflected in national and local policy. But that policy draws a distinction between elements tied to a locational requirement and those with more flexibility. In the oil and gas industry wellsites for extraction or injection need to be where the oil or gasfield is found. Sites for collecting oil or processing gas have a wider range of potential sites.

6.23 Policy M26 of the Minerals Local Plan (CDD4) consequently requires that applications for central collection facilities situated within a predominantly rural area will only be permitted where the County Council is satisfied that the proposed development is essential in that location and would be acceptable in terms of the impact on the environment and level of traffic movement. MPS1 Annex 4 para 3.14 says 'there is some flexibility in the siting of [gathering stations] ... Gathering stations should not be sited where they would have unacceptable adverse environmental impacts'. Annex 4, para 4.6 says that 'The techniques for exploration and evaluation of the potential for underground storage of gas, and surface development associated with underground gas storage facilities, are similar to those used for oil and gas exploitation, described earlier. Therefore, the same factors for determining other mining operation applications should be applied, as appropriate to applications for underground gas storage.' WSUK's planning witness agreed the gas storage facility should be approached in the same way as the policy on gathering or central collection facilities, both in MPS1 and the Minerals Local Plan. The MPS1 Practice Guide also emphasises that storage facilities should be in 'appropriate locations' (CDC29, para 160).

6.24 Minerals Local Plan Policy M18 and the reasoned justification (CDD4, para 11.43) also creates a general presumption against mineral related industrial development in the countryside unless it is on or adjoining a mineral working site or is essential in that location and would be acceptable in environmental terms.

6.25 WSUK made an attempt in cross-examination to say that the MLP Policies M18 and M26 were not material but they rightly accepted their materiality in the Statement of Common Ground (CDB11, para 5.3) and in their evidence. The particular location needs to be essential and not to have unacceptable environmental impacts. That therefore brings into consideration whether there is a location which is not in the open countryside, or an open countryside location which would not have unacceptable impacts. Any of the Theddlethorpe options would be greatly preferable to the Grayfleet proposal, because they would be seen as part of the existing gas terminal. The proposal must therefore be contrary to Policies M18 and M26.

6.26 The East Lindsey Local Plan (CDD2) also seeks to protect the countryside and focus employment development on the towns and larger villages. Under EMP3 other sites for industry should be within or next to settlements. WSUK's suggestion that because their proposed GSF would be in the open countryside it would not be contrary to this policy simply misses the point (WG/PRF/P, Para 9.48). It would be bizarre to have a restrictive policy on development by settlements but open season for employment development in the middle of the countryside. The reasoned justification does give special consideration to oil and gas developments but it does not change the need to justify the location of such development. There would therefore be a breach of Policy EMP3.

6.27 The proposal would also be contrary to Policies A4 and A5 of the East Lindsey Local Plan. Whilst WSUK argued about whether particular policies were design or landscape policies, the simple question is whether there would be compliance. Policy A4 is concerned with the general amenities of people living or working in an area. This is more than simply an impact on the amenity of the home or a building. The harm covered by the policy includes 'harm to the distinctive character of the area' (CDD2, para 2.79). Siting the GSF in a field at Grayfleet would cause harm to the rural character of the area.

6.28 Policy A5 deals with the effect of the design – including matters such as density and scale – on the character of the locality. The Marshes, which include the Grayfleet site, is an area singled out for protection in the reasoned justification. The extensive discussion of the area shows that whether particular types of development would be acceptable is within the ambit of the policy and not merely a matter of detailed design. Policy 31 of the Regional Spatial Strategy (CDD1, para 3.3.23) recognises that, despite the relative lack of national designations in the grazing marshes, that does not mean there is a lack of landscapes of character that need to be conserved or enhanced. The policy itself includes, where appropriate, the recognition of tranquillity and dark skies. The proposal would harm the landscape and the tranquillity and dark skies of this part of the marshes.

The proposal would therefore be contrary to Policies A4 and A5 of the Local Plan and Policy 31 of the Regional Spatial Strategy.

Visual and Landscape

6.29 The County Council considered that the WSUK proposal to site a GSF at Saltfleetby was unacceptable because its industrial nature would conflict with the predominantly rural character of the area and with local and national policies, and would cause substantial harm in the short, medium and long term.

6.30 The Theddlethorpe option would be much more preferable because the magnitude of the impact would be substantially lower, and the significance of its effect would be less. This is because of the context of the existing gas terminal infrastructure, and because of the existing mature tree belt which screens views of the site.

6.31 WSUK's landscape witness agreed that in principle and, given a choice between Saltfleetby and Theddlethorpe, she would choose Theddlethorpe because it would be a significantly better site. This was because it would be seen as an extension of the existing facility, and it would have the advantage of the existing tree belts for screening purposes.

6.32 WSUK therefore relied upon a conclusion that the Saltfleetby site, although not preferable, would not be unacceptable. However, their evidence for this conclusion was fundamentally flawed in several respects. Three particularly problematic issues were, the mitigatory screening and photomontages, the significance of the visual effect, and the effect upon landscape character.

Mitigatory Screening and Photomontages

6.33 WSUKs plant screening measures relied upon photomontages which were flawed in many respects;

6.34 Firstly, the data for growth rates used to generate the plant heights on the bunds around the GSF in the photomontages lacked transparency and proved to be flawed. In particular:

a. The photomontages appeared to show predicted plant heights of 12m after 15 years though they were said to be produced from a model that would generate a range of 9-12m. These predicted growth rates were not supported by any data, and did not correlate with the data from the Lorenz von Ehren catalogue (2000 Ed.); an authoritative source of growth rates for individual species and the only such document submitted at the Inquiry (WG18);
b. Normal growth rates could be expected for the plants that would provide the layered screening at various distances from the GSF, but the planting around the GSF itself would be on bunds which would further reduce the normal growth rates;
c. Only one of the planned species would exceed 10m in height (10.40m) after 15 years if it were growing at a normal rate, namely Acer pseudoplatanus (sycamore) (WG18). This would anyhow account for only 5% of the species planted. At normal growth rates, 20% of the planned species would be between 8 and 10m and 75% would be below 8m (WG18);

d. Growth rates on the bunds around the GSF would be more like about two thirds the normal, but the photomontages did not appear to take any reduction into account. WSUK's landscape witness accepted in cross-examination that there would be a reduced growth rate on bunds which she assessed at about 80%, bearing in mind the high water table; However, the water table would not affect the growth rate on the bunds because the plant roots would not come down low enough. Two thirds of the normal growth rate would therefore be the correct figure to take;
e. In cross-examination it was established that the photomontages had not distinguished any difference between the growth rates on and off the bunds. But WSUK's witness said that she had in fact taken into account a reduced growth rate of 80% on the bunds, and that this was reflected in her range of 9-12m. This explanation was not contained anywhere in the written evidence and appeared to be retrospective. As such it was unconvincing; and
f. In contrast, on the basis of the normal growth rates in the Von Ehren Catalogue, and taking into account a reduction to 2/3rd and the 1.75m high bunds, the highest point of screening between 5 and 15 years would be 8.75m. It would probably take around 20 years to reach 12m. This conclusion was supported by evidence. The reasoning was more logical and consistent, and as such should be preferred.

6.35 Secondly, winter views had not been taken into account in the photomontages, even though the planting was all proposed to be deciduous. In oral evidence, it was accepted that the photomontages were produced to show full summer leaf cover: a 'best case' situation. Winter views would look substantially different and afford a much clearer view of the site. The construction stage photomontages could not be relied upon to give an impression of early winter views because they showed the development only partially completed. Even so these latter montages did demonstrate the very industrial nature of the development in its early stages (ADA1, Vol 3, Figs 8.18B & 8.19B).

6.36 The explanation put forward for providing only summer views was that the witness had many years of experience in this work and so could take seasonal variation into account in her overall judgment. However, that assumption cannot properly be made on the basis of her evidence:

a. The whole point of producing photomontages is to give a realistic impression of what the site would look like, and as such, the omission of winter views from the photomontages did not give such an impression;
b. If winter views had been taken into account in the overall judgment, one would at least expect this to have been mentioned in the paragraphs of the ES introducing the photomontages (CDA1 Vol 1, paras 8.83-8.85), or in the summary and conclusions (para 8.130-8.145), or indeed in the methodology. But nowhere in the ES or in her proof of evidence did she expressly take account of winter views in reaching her conclusions on the efficacy of the screening. In contrast, the County Council's witness did take winter views into account;
c. The photomontages only started after five years, thereby excluding the initial period when the planting would only just have started to grow, and the screening measures would be their least effective;

d. Certain viewpoints chosen for the photomontages appear to have been selected to minimise the visual impact. For example, Viewpoint 4 (North End Lane) is based on a photograph which appears to have been taken just to the north of a road bridge, whereas if it had been taken from the top of that bridge it would have afforded a direct view of the GSF; and
e. The photomontages were based on incorrect data for the building and bund heights. These figures were corrected during the witness's oral evidence, and then had to be re-corrected after her oral evidence had concluded; on day 10 of the Inquiry (WG31).

Significance of the Effect

6.37 WSUK's landscape witness admitted in cross-examination that her evidence on the significance of the visual effects lacked transparency. In fact, her evidence on this matter not only lacked transparency but proved to be flawed in various respects.

6.38 Firstly, her conclusions on significance were not included in the original tables in the ES, which set out magnitudes of impact for each of the chosen viewpoints. The only conclusions on significance were set out by way of general comments within the accompanying text. When asked to justify this approach, the witness said that perhaps it would have been more transparent if she had included the significance in the tables, but this would not have altered her conclusions. However, a revised set of Tables 8.5-8.8 was submitted on Day 10 of the Inquiry with the significance added (WG32). Whilst these tables may increase the transparency of the approach they also revised the conclusions on the significance of the effects in the long term, for example:

a. In the ES, the only comment pertaining to long term significance of the effects in general is at paragraph 8.123, which states: "In the longer term.... adverse visual impacts in views.... would generally not exceed medium-low levels of magnitude which would not be significant in terms of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. Possible exceptions to this include parts of Fishmere Gate, Long Gate/Salter Gate and the Swallowgate Road, where visual impacts in some views may continue in the long term to be significant...". This general conclusion can at best be described as oblique, and implies that no long term effects are likely; and
b. Revised Table 8.7 shows that for the viewpoints at Long Gate/ Salter Gate, Swallowgate Road and Fishmere Gate, WSUK translated a 'high-medium or medium' magnitude of long-term impact to 'Substantial/moderate' long term significance. This would have 'significant impact' in their methodology.

6.39 Secondly, WSUK's evidence was confused in relation to the temporary effects of the development, specifically:

a. According to their witness's methodology, as set out in the ES, no temporary effects could be classed as significant. She expressly confirmed in her oral evidence that this had been her approach;
b. This approach was obviously problematic because the noise and visual effects of the greatest magnitude would occur during the construction phase, which is due to last up to 3 years. This is a substantial period yet

all of those effects would be excluded from her conclusions on significance. When questioned on this in cross-examination, she admitted that, in principle, temporary effects can be capable of being significant;

c. She then attempted to justify this methodology by saying that she had just taken the form of the table from the GLVIA guidance but, as she later admitted, the GLVIA guidance expressly states that the duration of construction effects should be taken into account;
d. Nevertheless, she maintained in oral evidence that, in her judgment, temporary effects should not be taken into account in this case, justifying this on the basis of the long term nature of the scheme;
e. In contrast, the County Council's evidence was consistent in that temporary construction effects are, and should be, classed as significant, where appropriate; and
f. In the revised Tables 8.5 and 8.6 the significance of the temporary impacts is set out (WG32). Unsurprisingly, the vast majority of impacts in Table 8.5 are deemed to have 'Substantial' or 'Substantial/Moderate' significance. It was not clear whether WSUK still maintained their methodology that temporary effects could not be significant when considering the site as a whole. Such a position would seem to be illogical.

6.40 Thirdly, in arriving at her conclusions on significance of visual effect, WSUK's witness took into account the significance of effects in EIA terms. She asserted that this additional EIA information would be useful for the decision maker. However, this approach contravenes the GLVIA guidance which recommends a best practice approach of assessing the visual sensitivity of the receptor and the magnitude of the visual impact and then coming to a judgment on significance. Furthermore, by applying EIA Regulations to conclude that moderate/substantial effects would be significant served to screen out lower levels of effect, when these matters were not sufficiently covered in the ES.

6.41 Fourthly, there is no clear methodological link between the WSUK findings on magnitude and significance. Under cross-examination, their witness was drawn to the example of Beulah Farm where she had concluded that the short term impact was high or high-medium. She was asked to give her view about the significance of the effect, which she thought would be substantial-moderate. When asked to justify this apparent downgrading of significance, she stated that it was a matter of judgment, not mechanistic application of a formula. It was not clear whether her approach had changed in the revised tables (WG32), where her conclusions on significance were subsequently set out in writing.

6.42 Fifthly, the logic of the methodology for assessing magnitude of visual impact is also unclear. For example, in the original Table 8.5 in the ES (showing magnitude of temporary impacts), the short term impact for The Old Manor House is described as 'high-medium-low'. Under cross-examination, when taken to this example and asked to explain this point, the witness stated that she had grouped a range of properties together with a range of impacts, and she admitted that the impact should perhaps have been better described as a combination of high-medium and low.

However, in the revised Table 8.5 (WG32), she has applied the same description as before.

Effect upon Landscape Character

6.43 The County Council's landscape witness stated in his evidence that the landscape character was predominantly rural, and the landscape sensitivity was medium to high given the coastal grazing marshes area and the qualities such as dark skies which are recognised in the East Lindsey Local Plan, in Policy A5. He concluded that to situate the GSF at Saltfleetby would cause:

a. In the short term (up to 5 years), a high magnitude adverse change, given a medium-high sensitivity leading to a substantial adverse effect;
b. In the medium term (5-15 years), the magnitude of change and significance of effect would not alter significantly because the mitigation planting would not have matured to a sufficient degree to provide significant screening;
c. In the long term (beyond 15 years) the planting would have matured enough to reduce the magnitude of the effect to medium and the level of significance to moderate adverse.

6.44 In contrast, although accepting in evidence that the area is predominantly rural, WSUK characterised the landscape sensitivity as medium. They attached no weight to the coastal grazing marshes area or landscape qualities such as dark skies which are recognised in the East Lindsey Local Plan (Policy A5). Accordingly, in the ES, their witness concluded that:

a. In the short term, the GSF would have a high-medium magnitude of effect because it would be seen to be a new element in the landscape, and it would cause a 'borderline significant' adverse effect upon the landscape character over a distance of 1.5km (CDA1, Vol 1, para. 8.99);
b. In the medium term, the landscape character in the area, up to 1.5km away from the GSF, would have changed because of the mitigatory planting, and so the magnitude of impact would be high-medium or medium, and the significance of effect would be substantial-moderate (significant) or moderate (not significant). In the medium range of 1.5km to 5km from the GSF the magnitude of impact would be reduced to medium or medium-low, with no significant effects (para 8.100); and
c. In the long term, the magnitude of impact would be medium or medium-low, and there would not be any significant effects (para. 8.101).

6.45 It is not clear why WSUK chose to differentiate the magnitude of effect on the basis of the range of distance when considering the medium term only, other than to lead to a conclusion that on average, in the medium term, there would be no significant effect.

6.46 When pressed to give a more detailed description of the character of the area which caused her to assess the sensitivity of the landscape as medium, their witness's description was confused. Under cross-examination, she described the area around Saltfleetby as predominantly rural, intensively farmed with villages, tree cover, a number of large farmsteads with large sheds, and a range of energy infrastructures. However, when prompted to describe it again under re-examination, she then described it as a 'good ordinary working landscape with domestic and industrial or engineered developments', including a wind farm. She

exaggerated the presence of 'industrial elements' in the existing landscape, blurring them with 'engineered developments' such as the nearby wind farm. In contrast, the County Council's witness made the point that the presence of wind farms is commonly associated with open rural areas, and should not be grouped together with other forms of industrial development when assessing landscape character.

6.47 Similarly, her evidence about the relevance of the coastal grazing marsh designation to landscape character, sensitivity and harm was unconvincing. In cross-examination she considered the relevance of the marsh designation to be a matter for the planning witness, but in re-examination said that it was below areas such as AONBs in the hierarchy of landscape designations and that the GSF would not detract from the marsh character. In contrast, the County Council's evidence was clear and more logical. According to PPS7, just because an area is not designated by statute as an AONB or an Area of Great Landscape Value (AGLV), this does mean it is not highly valued, or that it should not be considered an area of high sensitivity. In any event, the marshes do constitute a distinctive character in the area, to which particular attention should be paid under Local Plan Policy A5. Placing the GSF in the marshes area would cause harm to this distinctive character, and this would contravene Local Plan Policy A4. This approach provided a more cogent and convincing evaluation of the relevance of national and local policies to an assessment of landscape character, sensitivity and harm.

6.48 WSUK's evidence was again confused in relation to the industrial impact of the GSF buildings in the context of that landscape character. Their witness initially asserted under cross-examination that some of the structures within the GSF that were of a lower height would look like agricultural buildings. She also suggested that the 30m vent stack would strike people as comparable to telecoms masts and 45m high pylons. However, she later admitted that in fact it was not realistic to separate out the individual buildings in that way, and that the facility as a whole would have an industrial appearance.

6.49 In relation to lighting, WSUK's evidence suggested that there would be no effect at all upon the landscape character. However this assessment did not take into account the policies of the East Lindsey Local Plan which place value upon dark skies. The pitch blackness of the area at night would inevitably change were the GSF to be there. The WSUK lighting evidence is not sufficient to justify a conclusion that there would be no significant effect upon the landscape character at Saltfleetby, particularly given the constant upward glow and the intermittent lighting needed for fixing problems at the site. Given the extensive lighting currently present at Theddlethorpe, the magnitude of change to night time views would be far greater if the GSF were to be located at Grayfleet and on this matter again the County Council's evidence was far more convincing.

6.50 Overall, given the numerous flaws and uncertainties in WSUK's evidence, the evidence from the County Council's witness on landscape and visual effects should be preferred, and the Saltfleetby proposal should be considered unacceptable.

Noise

6.51 Part of the effect of this industrial development on the countryside would be from noise. The GSF would introduce an industrial noise that, although characterless, would be audible to those who are living in, working in and enjoying the countryside and would therefore contribute to the harm caused to the countryside. This is distinct from a noise objection on the basis of harm to residential amenity.

Safety

Approach to Safety in Gas Act Decisions

6.52 See Annex B – paragraphs 4.18 – 4.25

Pipelines

6.53 See Annex B – paragraphs 4.26 – 4.36

The Gas Storage Facility

6.54 See Annex B – paragraphs 4.37 – 4.41

Safety Conclusion

6.55 See Annex B – paragraph 4.42

Operational Issues

6.56 See Annex B – paragraphs 4.43 – 4.51

Cost and Viability

6.57 The viability of the proposals is an issue generally because a compulsory purchase order is proposed. WSUK therefore had to show that the scheme would be likely to proceed in a reasonable time and there were no financial impediments to the scheme (ODPM Circular 06/04, Memorandum, paras 20-22). Their approach to this obligation was unusual. They did not produce a development appraisal seeking to show that an operator would find the scheme to be sufficiently profitable to proceed. Instead, they asserted that the UK company is owned by extremely large and well-resourced companies who intend to carry out the scheme.

6.58 The County Council was content to proceed on the basis of those assurances. It did not therefore invite the Secretary of State to refuse to make the compulsory purchase order on the ground that the likelihood of the scheme proceeding for financial reasons had not been demonstrated. It did however argue that, in the absence of such financial information, there was no basis to conclude that an operator would not find the Theddlethorpe option sufficiently profitable to be worth proceeding. If the Secretary of State were to find, as the County Council invited him to do, that the WSUK proposal was financially viable then he must find that a Theddlethorpe option would also be viable.

6.59 The requirements of producing an acceptable development in planning terms may be more costly than just an initial proposal. That is commonplace – whether it requires more detailed monitoring, a different scheme, more expensive materials or greater mitigation measures. Of course, the planning system should not impose obligations upon developers unless they are justified in the public interest. However, if

those obligations are justified, then it is not an answer to them that they are more expensive, unless that would prevent the benefits of the scheme from being realised.

6.60 The construction cost of the WSUK scheme was estimated at £200 million. A higher pressure, and so thicker walled pipeline, would be more expensive, as would a two pipeline option. Such extra costs would however be modest in the context of the total scheme. WSUK estimated the extra cost of installing a 20" 220 barg pipeline to Theddlethorpe as £6 million, however no breakdown or analysis of these additional costs was presented, therefore the County Council were not in a position to accept these figures. Smaller pipelines, as suggested by the County Council, would have a lower additional cost; albeit not quantified by either party. The County Council's pipeline witness estimated a cost multiplier of between 1.1 and 1.4 for the pipeline works (LCC/MG/P, App 1 Para 2.2 and Oral evidence).

6.61 WSUK initially raised, and then withdrew from, an assertion that a methanol still would be required at Theddlethorpe to remove methanol from the fluids arriving there and to process it for re-use. Since the gas terminal already removes methanol and liquids from the gas extracted from the Saltfleetby gas field it may be that the terminal can already deal with these requirements. The appropriate conclusion is that the extent to which additional equipment would be required, or presently proposed desorption equipment at the GSF would not be required, must be uncertain. The effect of the costs of the project, in the context of £200 million, would be modest and should not be a factor of material weight in determining these proposals.

6.62 The other cost raised by WSUK (WG/FT/P, para 178) was the cost of pre-buying equipment and maintaining consultants and engineering teams (said to be £5 million). That was simply the sum they put at risk, already delayed by their first abortive application. That should not alter any of the judgments to be made in this case.

6.63 In oral evidence, it was suggested that 're-engineering' costs would be 30-40 million Euro. These figures were plucked out of the air – particularly in a context where WSUK did not break down the costs of their project. They simply said that the scheme would cost £200 million to construct and there was no evidence that its viability would be compromised by any of the suggested additional costs (if indeed they were to arise). Any increased costs of the Theddlethorpe option should not therefore affect the judgment to be made by the Secretary of State.

6.64 In his oral evidence, WSUK's Managing Director said that he did not know if WSUK would proceed with a Theddlethorpe scheme if these applications were refused. However, in the absence of detailed viability evidence, there is no reason to think that it would not be similarly commercially attractive to pursue a Theddlethorpe option.

6.65 It is not a justification in public interest terms (including planning terms) for an unacceptable scheme to be allowed because the developer says they would not return with an acceptable scheme. That would subvert the proper consideration of the public interest. Where it is economically

advantageous for a developer to proceed with an amended project, there is no sensible reason for concluding that they would act against their own economic interests and refuse to proceed.

6.66 In any event, the decision whether to proceed with an amended scheme would not be one for WSUK alone. They promoted a compulsory purchase order which would acquire land and rights from hundreds of property owners. They contended that there was a compelling case in the public interest for the compulsory acquisition of that land and those rights. The County Council agreed that if this were considered to be the right scheme there would be such a compelling case.

6.67 It follows that if there is a compelling case to acquire land compulsorily to bring forward an underground gas storage scheme at Saltfleetby, that compelling case would arise against anyone else's interests, as well as those of WSUK. Accordingly, if WSUK refused to bring forward an amended and acceptable scheme, then such a scheme could be brought forward by another operator.

Noise Impacts at the Sites

6.68 Following agreement between the noise witnesses on the figures (WG35), the only difference between the parties lay in their chosen methodology for assessing the noise impact, and their consequent conclusions about the relative merits of situating the GSF at Saltfleetby or Theddlethorpe. Essentially, the issue was whether the correct methodology would be to calculate the new noise level that would be caused by the GSF at each site and to compare it with the background, or with the absolute noise level in each case.

6.69 Given the figures in the agreed tables a methodology based on the absolute values would favour Saltfleetby, whereas a methodology for calculating the relative increase would favour Theddlethorpe due to the existing background levels; particularly industrial noise from the ConocoPhilips gas terminal.

6.70 The County Council's evidence was that:

a. The correct methodology to use for this industrial development was that set out in BS 4142, the British Standard entitled 'Method for Rating industrial noise affecting mixed residential and industrial areas', which is a tool for assessing the noise from the development with the background noise level; and
b. When BS 4142 is applied to the data in this case, it is clear that Saltfleetby is unacceptable in noise terms, whereas Theddlethorpe is acceptable and is to be preferred.

6.71 In contrast WSUK's evidence contended that:

a. BS 4142 'cannot, in practice, be used in many situations', including when both the existing noise is either too low or when it is too high (WG/ARC/PS, paras 1.9 & 1.10);
b. Instead, the Environment Agency's H3 Guidance should be used, which 'requires all new plant to meet 42 dB(A)' (WG/ARC/PS, paras 1.19) by reference to the WHO Guideline; and
c. If this approach is used, Theddlethorpe would be unacceptable in noise terms and Saltfleetby would therefore be preferable.

6.72 The following points can be made in support of the County Council's case:

a. BS 4142 assesses the likelihood of complaints about industrial noise by calculating the difference between the noise from the new development (expressed in terms of the rating level) and the existing background noise. A difference of around 10 dB or higher indicates that complaints are likely, and a difference of around 5 dB is of marginal significance (BS 4142, Section 9);
b. The only circumstances when BS 4142 is not applicable for assessing noise from an industrial development are where the background level of noise (exceeded 90% of the time - LA90) and the rating level of noise are both very low (BS4142, Section 1). Very low is defined in BS 4142 as below about 30dB for background noise, and below about 35 dB for rating level noise (LCC/RW/P, para 3.15);
c. WSUK's witness was clearly wrong to state that BS 4142 should be disapplied when considering the noise impact from Saltfleetby on the basis that '38dB is below about 35dB', when in certain locations the rating level noise is 38db. The words 'below about 35' clearly do not mean 'above 35.' This understanding is supported by one of the examples in the appendices to BS 4142. Example 2 actually uses a rating level of 38 dB and a background level of 33 dB;
d. BS 4142 itself does not suggest any alternative to use for assessing industrial noise when the rating levels are too low, (LCC/RW/P, para 3.15) and neither do the other guidance documents;
e. Neither in BS 4142 itself, nor in any other guidance documents, is there a suggestion that BS 4142 should not be used when the background or rating levels are too high, as suggested by WSUK's witness. There is no upper limit. Indeed, if the WSUK lower and upper limits were applied, there would be few occasions on which the BS would apply, and yet in practice it is often used;
f. PPG 24 sets out the Government's guidance on noise planning generally. In the section on industrial development (CDC25, para 19), it directs that BS 4142 is the primary tool for assessing the likelihood of complaints about noise levels from industrial development. It should be noted that paragraph 19 is headed: 'Noise from industrial and commercial developments', and states: 'The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS 4142: 1990. Annex 3 of PPG 24 is entitled 'Detailed Guidance on The Assessment of Noise from Other Sources' and BS4142 is the only noise standard referred to in the section of Annex 3 which deals with "noise from industrial and commercial developments". At the end of that section, it includes a brief mention of BS 8233 which states: 'In addition, general guidance on acceptable noise levels within buildings can be found in BS 8233.' Thus PPG 24 clearly indicates that the assessor should use BS4142 when assessing new industrial noise sources, (LCC/RW/P, para 3.3) and does not suggest it should be replaced by any other standard, whatever the circumstances of the individual case;
g. BS8233 is another British Standard entitled 'Sound insulation and noise reduction for Buildings'. In section 6.5.2, it also directs that BS4142 should be used where industrial noise affects residential areas (LCC/RW/P, para 3.12). The County Council's noise witness confirmed in

oral evidence that Tables 5 and 6 refer to anonymous noise sources, and are typically used where a new residential development would be near a road traffic source or something of that nature; not for industrial noise, as suggested by WSUK's witness (LCC/RW/P, para 4.23);

h. The Environment Agency's Guidance Note on noise entitled 'Horizontal Guidance for Noise - Regulation and Permitting: Environment Agency 2002' ('H3'), also confirms that BS4142 is the best standard for the purpose of assessing the impact of industrial noise on communities and explains its use in detail. (LCC/RW/PR, para 3.9). H3 Part 1 sets out the IPPC framework. In the section on defining noise levels, it refers to the WHO Guideline, but then applies a different level, suggesting an external specific night time noise level from the development of 45dB (facade) as a starting point for consideration. It then goes on to suggest a criterion of BS4142 Rating Level equal to Background Noise Level (LA90). H3 Part 2, entitled 'Noise Assessment and Control', is intended for use by noise assessors. It gives an overview of all the noise standards including PPG24; BS4142; BS5228' BS7445; and WHO Guidelines for Community Noise. For assessing industrial noise, it directs assessors to BS 4142 (A2.1.2);
i. WSUK's evidence was therefore misleading by omitting any reference to BS 4142, yet contending that H3 should be relied upon for assessing the impact of industrial noise in this case;
j. They were wrong to rely upon the WHO Guideline on Community Noise which recommends a maximum noise level of 42dB (not in fact a rating level) when calculated over a continuous 8 hour period, rather than relying upon BS 4142. The WHO Guideline is intended as a general guideline and does not relate to circumstances where there is industrial noise (LCC/RW/P, para 4.22). In relation to the WHO Guideline on Community Noise, H3 states that "one difficulty with the guidelines is that they assess general outdoor noise and do not focus on the specific issues of industrial noise" (section A2.1.7). Notably, the Foreword to the WHO Guideline acknowledges that 'more than 30% of people [in Europe] are exposed at night to equivalent sound pressure levels exceeding 55 dB(A) which are disturbing to sleep.' The WHO Guidelines are aspirational and for many people, unrealistic. H3 does not apply the WHO Guideline and uses 42dB in the context of specific noise from the installation, rather than a level for all noise;
k. In any event, even if it were appropriate to apply the WHO Guideline methodology to the industrial noise impact for these sites, WSUK's assessment of data in WG13, which purported to show LAeq levels for Saltfleetby, did not conform to the 8 hour measurement figure required by the WHO Guideline. They failed to include the noise levels during the early hours of the morning when traffic noise was high; and
l. WSUK also relied upon the London Mayor's Ambient Noise Strategy in support of an argument that usage of BS 4142 should be minimised in order to avoid background ambient creep. However, nowhere in the Mayor of London's strategy does it advise against the use of BS 4142. Conversely, Section 4E.11 (WG/ARC/P, AppB), refers to an assessment of noise and requires the new noise level to be compared with the existing noise levels. It does not give an absolute noise limit and as

such is similar in approach to BS 4142; therefore contradicting WSUK's argument (LCC/RW/PR, para 4.24).

6.73 It is clear from the points set out above that the County Council's approach is correct, and should be preferred. As such, the agreed data table clearly shows that a GSF at Theddlethorpe would be acceptable in noise terms, and indeed would be better than Saltfleetby.

Compliance with Policy at Theddlethorpe

6.74 Most of the policy issues relating to Theddlethorpe have been considered in the comparative exercise earlier. The WSUK planning proof raised the Local Plan's coastal conservation area Policy C14 as an issue to be addressed (WG/PRF/P, paras 9.79-9.86). This was a late thought because the policy was not mentioned in the statement of common ground (CDB11). Nevertheless, there was no allegation in the proof that there would in fact be a contravention of that policy or harm to the coastal conservation area (CCA).

6.75 The Theddlethorpe option sites would be outside the CCA, although any pipeline route, including the WSUK proposal, would run through it. WSUK suggested that there might be visual, landscape and ecological harm. However, the County Council's visual and landscape assessment of Theddlethorpe options refered to the CCA and was not criticised. In the ecological consideration of Theddlethorpe, the ES considered there to be no significant ecological effects of a Theddlethorpe development (CDA1, Vol 2, App 5.1). Consequently there would be no harm to the coastal conservation area.

Need and Claimed Urgency

6.76 It was agreed that there is a need for gas storage facilities and the County Council was fully supportive of the use of the Saltfleetby Gas Field for underground storage. But the percentages quoted by WSUK ranged from 15% to 6% for increased storage volume and less than 2% of maximum daily flow. These are relatively small figures so, whilst it would be useful to have this proposed development, it would not be a key element in increasing the overall gas storage capacity in the UK. The additional percentage in storage volume from this proposal would be dependent on the outcome of many other schemes currently either under construction or in the planning stage, and this would decrease over the next 5 years as more storage facilities are constructed. Many of the larger proposed developments, of between 3 and 5 times the size of Saltfleetby, would be offshore and entail the use of existing facilities, thereby significantly reducing the potential for planning objections to new facilities.

6.77 WSUK claimed that the location of Saltfleetby would make it highly desirable due to the presence of many gas fired power stations located within 50km. However no evidence has been shown from any party such as the Network Operator (National Grid) that this would be anything more than simply "nice to have". The high pressure gas grid in the UK operates in a dynamic fashion with the ability to start or increase flow at many compressor stations in the network to balance inputs and outputs. In addition, the relatively minor increased flows that would be available from Saltfleetby compared to the maximum gas usage (less than 2%) would

have no significant impact. Taken together, the location cannot be claimed to be such a benefit as to allow this facility now, compared to an acceptable alternative development in the same general area.

6.78 Whilst a Saltfleetby gas storage scheme would be desirable, the urgency is not such as to require an unacceptable development to be approved because it would take too long to prepare and approve an acceptable scheme. This raises some further matters.

6.79 It was an almost unprecedented submission to propose unacceptable development because of the delay involved in getting the scheme right. The conventional response of Government to an unacceptable scheme is to explain why it is unacceptable and to suggest that the developer come back with a better proposal. There is no policy which makes an exception to this for energy projects in general, or gas storage schemes in particular. It was suggested by the developer in the Langley Park case that the effect of delay on the project was a factor in deciding whether to reject a proposal because of an alternative. Of course, the Court was concerned with what might be relevant rather than the weight to be attached to any factor. An argument about the effect of delay could only add to support for a proposal where the potential benefits of an alternative scheme were too marginal to receive much weight.

6.80 There is an absence of any basis to conclude there is an urgent need. It was agreed in cross-examination by the WSUK need witness that there was no Government policy that describes the need for gas storage as being urgent. At the most, there are one or two references to timely provision. Making provision in time is not the same as there being an urgent need for provision. If the Secretary of State considered that there was an urgent need, then he would have been more than capable of putting the word urgent into the policy.

6.81 Very limited weight should be attached to the draft National Policy Statements as they still have to go through public consultation, Parliamentary consideration, sustainability appraisal and Strategic Environmental Assessment. They contain references to be being based on existing policy, but it was agreed that no existing policy says there is an urgent need for gas storage. WSUK relied on a general reference to urgency in paragraph 4.3 of EN-1 which deals with the consideration of alternatives, but that refers to an urgent need set out in the NPS, and no such urgency is set out in the NPS.

6.82 In the King Street decision (WG26) the Secretary of State for Communities and Local Government agreed with his Inspector's view that there was an urgent need for gas storage. That conclusion has to be examined in the light of the submissions and evidence. Firstly, there was no issue in that case about whether the need was urgent or what that degree of urgency was. The developer claimed that there was a risk of power cuts and catastrophic shutdowns in the network (LCC8, paras 7.3.8 & 7.3.9). It appears from the report that the evidence was different to that produced at this Inquiry, and may not therefore have reflected a continually changing position. The Local Planning Authority did not dispute the urgency of the need. It is unsurprising therefore that the Inspector and the Secretary of State accepted the developer's case.

6.83 It was agreed in this Inquiry that there is no realistic chance of safety risks being caused on the distribution network by a shortage of gas. Not only would major users have reductions first in the event of a shortage but electrical blackouts would immediately reduce domestic gas demand as boilers switched off. So one basis for the King Street conclusion is rightly rejected by the newer evidence before this Inquiry.

6.84 Finally, the need for gas storage is not so urgent that a revised scheme cannot be submitted and approved in time. WSUK first conceived the storage proposal in late 2004 and submitted their planning application to the County Council in January 2006 (WG/PRF/P, para 4.2). The scheme therefore took a little over a year to prepare. A resubmission with a Theedlethorpe Gas Storage Facility would be much quicker. The drilling into the reservoir would be unchanged and there would be modest change to the proposals at the wellsites. The pipeline route would be essentially unchanged and a significant amount of work has already been done by WSUK and the County Council on the implications of a Theedlethorpe GSF. It should therefore be quicker to prepare a revised application than the original one.

6.85 Any new application would be made to the Infrastructure Planning Commission under the Planning Act 2008 and that process is intended to be quicker. Additionally a Theddlethorpe proposal should face much less opposition than the current scheme. For a start, the County Council support a Theddlethorpe scheme. The consultation on the Theddlethorpe option in the Environmental Statement and the application, and the public stance of the County Council did not elicited opposition to a Theddlethorpe GSF. The highway concerns which have been expressed about the scheme would be reduced to a degree by the better construction access to a Theddlethorpe site than to Grayfleet East although there would still be construction traffic to the wellsites. Whether or not the examination process under the Planning Act proved to be quicker than an Inquiry, the process should move faster because the scheme would be less contentious.

6.86 The time to be taken preparing a new scheme should be set against the delays which have already been incurred to the project, which were entirely self-inflicted. WSUK submitted a planning application and then withdrew it because it was defective. The red line did not include the underground storage and so planning permission would not have been granted for the material change of use to underground storage. It was not accompanied by a compulsory purchase order so, even if the planning permission had been granted, the storage operation would have trespassed on hundreds of people's properties.

6.87 WSUK then decided to proceed under the Gas Act, having first had to become a gas transporter. Whilst the fundamental procedural errors in the first application have not been repeated, WSUK brought further delay upon themselves. Firstly they ploughed on without a Theddlethorpe scheme, despite knowing of the County Council's objections to a Grayfleet GSF. Secondly they failed to apply for a pipeline consent under the Gas Transporters (Environmental Impact Assessment) (England and Wales) Regulations. That consent would need to be applied for and obtained before works could start on the pipeline. No explanation was provided why

that consent had not been applied for. Since WSUK referred to those regulations and also to permitted development rights, but not to the need for consent, it may be that they had overlooked the terms of the regulations and the basic principle that Environmental Impact Assessment requires a decision maker to consciously decide to grant development consent.

6.88 Whilst WSUK subsequently said that they intended to make an application, the effect on the timescale for the development is unknown. As a communication from DECC explained (WG34), to even be able to make an application the process is complex and contains several steps that have to be taken before the application is submitted. If an application is submitted, it may delay the determination of the current applications. If the application is not submitted before the change over to the Planning Act 2008 regime the application would have to be made to the Infrastructure Planning Commission. Due to the need for pre-application consultation under that Act, and the stages of the examination, it would not be possible for such an application to catch up with the present applications. There would therefore be a significant delay; time that would be better spent designing an acceptable scheme.

6.89 A two year period from commissioning a revised scheme to final approval would be a reasonable estimate (WG/FT/P, para 184) and there would be no materially adverse consequences from taking that further period to get the scheme right.

6.90 In conclusion, the need for gas storage is not so urgent that the present unacceptable scheme should be approved.

County Council's Conclusions

6.91 At the second time of asking, WSUK have failed to bring forward an acceptable scheme. Whilst it would be desirable for gas storage to be carried out in the Saltfleetby Gas Field, the proposed gas storage facility would cause significant harm by reason of being industrial development in the countryside. In particular, this would cause visual and landscape harm and also impacts on the character of the countryside through noise and lighting.

6.92 The Gas Storage Facility could be sited at Theddlethorpe, either within, or adjacent to, the Theddlethorpe Gas Terminal. The impacts of the development, particularly in visual and landscape terms, would be significantly reduced by screening and would be seen as part of the terminal.

6.93 The Grayfleet GSF proposal would be contrary to the Development Plan. As Theddlethorpe is a much better location there are no other material considerations which indicate that the plan should not be followed. Therefore the deemed planning permission should be refused. If the Section 38(6) presumption does not apply, then the harm, including contravention of policy, outweighs the benefits of the scheme, given the existence of a much better alternative. The applications should therefore be refused.

6.94 WSUK ought to bring forward proposals for underground gas storage in the Saltfleetby Gas Field with a gas storage facility at Theddlethorpe. The Secretary of State can be confident that such a scheme would be a considerable improvement on the present harmful scheme and would attract much wider support through the planning process.

7 The Cases for the Other Objectors

Introduction

7.1 The objectors to both the SAO and the CPO are listed in Section 3 of this report and in document ID/3. In this section, I give the gist of the cases for those who appeared at the Inquiry. I report the cases for the other remaining objectors under the heading of written representations in Section 8, and the cases for the interested parties in Section 9.

7.2 **Skidbrooke cum Saltfleet Haven Parish Council** objected because of the visual impact of the huge proposed buildings in this flat outmarsh countryside, where they would be visible for miles around. Their concerns were supported by the recent landscape character assessment which rated the area as having medium to high landscape value. The Star Energy application on the Wolds was refused, yet that was in a far less environmentally sensitive location and did not require huge gas fired compressors. With the very low night time noise levels in the area, they considered there would be noise disturbance for the local residents as well as unacceptable light pollution. Up to 100 HGV movements on the unclassified winding roads would also be unacceptable and dangerous both to drivers and the local population.

7.3 The Parish Council expressed great concerns about the safety of the residents in the area if gas were to be stored under their properties. They said that such onshore facilities could no longer be built within three miles of any habitation in America following an explosion a few years ago. They argued that the bi-annual expansion and contraction of these relatively shallow shale beds might result in the escape of gas away from the site, as happened in the North Sea at far greater depths. In the event of an emergency, the site would be relatively inaccessible and the nearest fire appliances are operated by volunteer fire-fighters. One site in the Humber Estuary recently caught fire. Had this been at Saltfleetby, the local population would have been incinerated.

7.4 They considered that covering 10ha of marsh with compacted stone and buildings would be a permanent interference with the wildlife habitat for such species as water voles, amphibians, bats, birds and orchids. They considered that, if the scheme were to proceed, then more mitigatory off site planting should be required and also a bond for the eventual reinstatement of the land. They argued that some of the surrounding residents' drinking water boreholes were contaminated, or had dried up, during the former Roc Oil drilling operations.

7.5 As an alternative, they advocated the re-use of depleted gas fields in the North Sea, where the necessary infrastructure was already available.

7.6 **Saltfleetby Parish Council** objected on the basis of visual impact in the countryside and to the noise and vibration that would be generated, as well

as to the light pollution and smoke from flaring off gas. They considered such an industrial complex would harm the ecotourism currently being promoted for the area and that once established, there could be further expansion of the site; as currently advocated for Theddlethorpe by the County Council.

7.7 The Parish Council expressed concerns about increased traffic on the B1200, which already had some 12,000 vehicles per day in November 2005, and they claimed, greatly increased traffic flows in the summer months. The settlement had already suffered considerable disruption from a sewerage scheme and previous heavy use of the minor roads. They considered the road infrastructure to be totally inadequate for the additional traffic and noted that in the event of an incident, emergency vehicles from Maplethorpe and Louth would take about 15 minutes to arrive. In that connection, they called for more scientific investigation of the potential dangers from such an installation and questioned the proposed security measures. They argued that alternatives such as North Sea storage or gasometers like the tanks at Tetney should be considered.

7.8 **Saltfleetby and District Residents' Association** acknowledged the contribution the Saltfleetby Gas Field could make to the national need for gas storage. At the same time, they were most concerned about a number of aspects of the WSUK proposal. They relied on the specialist knowledge of others on such matters as flood risk, threats to tourism and ecology, creeping growth of the site and safety in terms of geology, dangers from external sources and human error, together with possible health hazards. They also considered other topics to be arguable; such as light pollution, noise and vibration and pollution of the surrounding residents' private water supplies.

7.9 However, the Association viewed as unarguable the harm that would arise to the appearance of the countryside where the proposed mitigation planting would take many years to be even partially successful. The development would alter the character of the area from a green field to an industrial site. They also considered the local highway system to be completely inadequate for the heavy construction traffic that would use it for several years, thereby damaging the roads and causing danger to people and property. They argued that the emergency services would be inadequate to cope with a major incident, especially with the poor road system.

7.10 Their principal concern was however with the Gas Storage Facility which, in their view, should be located at Theddlethorpe.

7.11 On behalf of **Oakwell International Ltd**, and in relation to the **Storage Authorisation Order**, Mr Webster said that offshore wind farms are now being developed, and there is no reason why the massive storage capacity in depleted North Sea gas fields should not be similarly utilised. That would avoid the unjustified industrial development of agricultural land which, in this case, would only provide about three days gas storage capacity.

7.12 He referred to the 2008 Market Rasen earthquake, the largest in 25 years (O/S1/P, App2), and pointed out that similar earthquakes do from time to

time take place in the UK. He argued that such an event could rupture the underground strata leading to a massive release of the compressed gas and burning infernos of the kind experienced in the San Francisco earthquake. He asserted that WSUK's accounts do not reflect the substantial capital reserves needed to meet the costs of such a catastrophe and there is no statutory requirement for the overseas parent companies to meet these costs.

7.13 Mr Webster supported the various objections made by the Saltfleetby & District Residents' Association. He added his concerns specifically on the effects of light pollution on the ecology of the area and the loss of good agricultural land. Furthermore, he said that the generation of electromagnetic and ultrasound waves from plant such as the GSF had been proved to affect the reproductive functions, eating patterns and hibernation cycles of birds, insects and other wildlife, resulting in harm to the ecology of the area. He advocated that the SAO should therefore be refused on the grounds of harm to the local ecology. At the same time, with two wind farms and the Theddlethorpe Gas Terminal visible from his house, he considered there was no justification for any further energy facilities at Saltfleetby.

7.14 With regard to the **Compulsory Purchase Order**, Mr Webster said that under Article 1 of the First Protocol of the European Convention on Human Rights, as enacted in the UK by the Human Rights Act 1998, every person is entitled to the peaceful enjoyment of his possessions and should only be deprived of them if that would be in the national or public interest. Wingas Storage UK Ltd is not a statutory body, Local Authority or Government Department, but is a privately owned commercial company and should not therefore be allowed to compulsorily purchase rights and land for its own commercial gain. Even worse, it is owned by Russian and German companies who would reap the benefits and who may themselves manipulate gas supplies to their own ends.

7.15 He noted that WSUK said, in their Statement of Reasons, that the underground storage rights had no value but, if that were correct, there would be no reason to apply for a CPO. As at 12 March 2009 there were only 173 voluntary agreements out of 737 plots of land, and this poor take-up demonstrated the strong opposition to the CPO. Furthermore, the storage of gas below an individual's property would depress the market value because of the safety risk, probably by about 20%; although it could well become unsaleable. He also commented that there is no mains gas supply in the area, yet the local people were being asked to permit the commercial exploitation of the ground under their properties for gas storage.

7.16 He advocated that the CPO should not be confirmed because it does not provide for the commercial rate of compensation to each landowner, and because it would facilitate the commercial exploitation of underground gas storage by a privately owned limited company contrary to the national interest.

8 Written Representations

8.1 In this section, I give a summary of the matters raised in the outstanding objections that have not been unconditionally withdrawn and which were not heard at the Inquiry. Some objections to the CPO also include matters relating to the SAO and I have generally included the points under the latter.

Storage Authorisation Order (ID/2)

8.2 For the SAO the remaining objectors were G J & J C Williamson (S3), Mr D Morris (S4), Mr & Mrs G J Wain (S5), Mr & Mrs A R Ayres (S7), The Environment Agency – conditionally withdrawn (S10), Lincolnshire Wildlife Trust (S12) and Mr G Marsh (S13).

Re-use of Existing Boreholes

8.3 Surely the existing boreholes could be re-used rather than new ones having to be drilled, with all their attendant noise, traffic and disturbance.

Visual Impact and Character of the Area

8.4 The proposed development would introduce an area of industry into this rural area right in the middle of the very flat marsh landscape. The proposed planting would have little mitigating effect, at least for many years and even that would be further reduced in the winter. There could be a creeping growth of the site which would further compound this concern. The light pollution from the site would be most visible in this area of night time darkness. The scheme would therefore have a very harmful effect upon the character of the landscape.

Noise

8.5 Some properties already suffer unexplained noise disturbance from the present installation (CPO Objection C4). The proposed permanent operational noise would considerably harm the amenities of the surrounding residents, particularly in view of the very low night time noise levels.

Traffic

8.6 The entire surrounding road network is unsuitable for the likely increase in HGV movements and that applies especially to Tinkle Street in Grimoldby. Additional traffic on Saddleback Road was cited by the District Council's officers as a likely reason why the holiday business on that road would not be allowed to expand (CPO Objection C9). Traffic concerns were given as a reason why experience of the earlier construction work for the original facilities does not inspire confidence in the developer.

Flooding and Water Resources

8.7 The site is in a high flood risk area where flooding could be expected, but the Environment Agency withdrew their objection on the basis that the Sequential and Exception Tests in PPG25 had been met. That withdrawal was conditional upon certain conditions being attached to any subsequent approvals

8.8 There were incidents of contamination of the private water supplies of the nearby residents during the earlier well drilling operations but Anglian Water have withdrawn their objection.

Ecology

8.9 Some objectors said that there would be a significant impact on the wildlife in the area, but the Lincolnshire Wildlife Trust accepted the mitigation measures for such species as badger and water vole, and they particularly welcomed the proposals to gap up the existing hedges. However, they objected on the basis that insufficient consideration has been given to identifying opportunities for the enhancement of biodiversity and that the development would result in the loss of potential grazing marsh in an area targeted for that habitat.

8.10 Concerns were also expressed about the effects of exhaust gases on the crops in the area.

Local Economy and Tourism

8.11 Visitors wish to come to a rural area, not to one polluted by industry or one where gas is stored. The holiday cottage business only about 0.8 km from the GSF would be badly affected (CPO objection C9).

Safety

8.12 The underground strata may not contain the gas safely. In the event of an earthquake similar to the one in 2008, millions of cubic metres of flammable gas could escape and cause death and destruction on a World War II scale.

8.13 The proposed high pressure gas pipelines would be a considerable hazard, especially if there were a escape of gas in the form of a jet. Human error cannot be completely eliminated.

8.14 Exhaust gases could well be harmful to human health.

Security and the Emergency Services

8.15 The local emergency services are inadequate to deal with a major incident and this development could become a terrorist target or be affected by the MOD range at Donna Nook some 9 or 10 km to the north.

Property Blight

8.16 The development would seriously blight the nearby properties because they would be sitting on compressed gas and the amenities of the residents would also be affected by a continuous noise from the development.

Climate Change (CPO Objection C5)

8.17 Natural gas is a fossil fuel, and burning it produces just as much carbon dioxide as oil or coal. The development would not be a new fuel source and therefore not produce new energy or tax revenue and the work of compression would actually require a considerable energy input. Any claimed climate change benefits are therefore spurious.

8.18 Whilst the gas field, and therefore the well heads, cannot be moved, it would be possible to site the GSF at Theddlethorpe, where there is an unblemished safety record (CPO Objection C7). This would greatly reduce the harmful effect upon the countryside and significantly reduce the traffic concerns. The only drawback of a Theddlethorpe location would be the additional cost of longer high pressure pipelines. Better still, a depleted off-shore gas field could be used.

Compulsory Purchase Order (ID/3)

8.19 For the CPO, the remaining statutory objectors were Mr Roy Midwood (C2), Mr John and Mrs Linda Cook (C6), Mrs Janice Foster (C9), and Mr F W Webster (C10). The non-statutory objectors are Mr Chris Beal (C3), Mrs Jean Delaney (C4), Mr Alan Beavan (C5), Mr D A Marshall & Mrs M Marshall (C7).

8.20 Some of the CPO objections include matters which have already been covered in the summary of the SAO objections above.

Pre-judging the Planning Process

8.21 Confirming the Compulsory Purchase Order would pre-judge the outcome of the planning process.

Property Blight

8.22 The proposed underground storage of gas has already deterred potential buyers from purchasing properties above the gas field and could indeed render them worthless. The £500 payment from WSUK goes no way towards compensating for this effect, and house insurance would become hard to come by. In these circumstances, the CPO should be for the purchase of the properties themselves so that the occupiers could choose whether to remain or leave.

Facilitating the Gas Storage Scheme

8.23 The only purpose of the CPO is to permit the construction of the gas store which would cause significant environmental harm as identified under the SAO.

9 Interested Parties

9.1 **Theddlethorpe Parish Council (IP/1)** confirmed that they did not object to the applications. Nevertheless, they would consider it very regrettable if the proposed industrial complex were built in this rural area, with its associated disturbance for local residents, particularly as they could not avail themselves of a gas supply.

9.2 When ConocoPhillips developed the Theddlethorpe Gas Terminal, they provided significant community benefits. Even so, if there were a planning application to build the GSF for the Saltfleetby scheme at Theddlethorpe, it is very likely that the Parish Council would strongly oppose the proposal.

9.3 **Grimoldby and Manby Parish Council (IP/2)** objected to the additional traffic, particularly on Tinkle Street in Grimoldby. They complained that they had not received full information about the weights and dimensions of the HGVs that would have to access the site. They expressed concerns

about the safety of both the adults and the children who use the road. In this connection, they referred particularly to the 20-25 old and chronically sick people who live in the Danes Court Complex and the further 20-30 other properties occupied by elderly people. They said the scheme would blight the twilight years of these older residents.

9.4 The Parish Council said this was a busy street, used by people going to schools, playgroups, a shop and post office, an old peoples' home, a church, the doctor's surgery, the Council Offices and a café. Accordingly, there were no particular peak traffic flow periods but rather a continual high level of use throughout the day by residents walking, riding on disability scooters and waiting for local buses. It is also used by horse riders. They pointed out the recent introduction of a 20mph speed limit and no parking zone outside the school, together with the significant number of vehicles that often park on the carriageway. Furthermore they expressed concerns about the effect on the structural stability of the dwellings that line the road, some of which date back to the 12th Century. They concluded that the addition of some 100 HGV additional movements per day in the first two months, with a total of about 8,000 over some of 18 months, would be the proverbial straw that broke the camel's back. They considered the proposed traffic management plan would not overcome their objections and that a temporary road should be provided across the fields, thereby bypassing Tinkle Street altogether. They submitted a petition objecting to the traffic management plan and they said that their case was supported by 'senior transport officials'.

9.5 **Mr P Scarborough (IP/3)** considered the construction traffic of some 50 return trips by heavily loaded HGVs along the proposed route for some 2.5 years would be a disaster for the village of Grimoldby. Not only would this destroy the residents' right to a peaceful village and cause pollution, with its detrimental health effects, it would also substantially damage these minor unclassified roads and cause structural damage to the adjoining buildings. The HGV traffic should be carried on a temporary road laid to the site across the fields from Poplar Farm corner on the B1200, thus avoiding Tinkle Street altogether. At the same time, conditions should prohibit the use of the B1200 outside the hours of 08.00 to 17.00 hrs in order to protect the residents of Manby Meadows and Manby Middlegate which front onto the B1200.

9.6 **Mr J Beckett (IP/4)** said that the Council had once again ridden roughshod over the views of Grimoldby residents. The proposed convoy system for up to 100 lorries a day would have a dramatic harmful effect on the village. This is yet another example of a local council being out of touch with the public they purport to represent.

9.7 **ConocoPhillips (IP/5)** wrote to WSUK on 02 November 2009 in relation to their proposals for a Gas Storage Facility at Theddlethorpe Gas Terminal. They said that detailed engineering studies would be required in order to assess the extent of the impact of any such proposals on their gas terminal operations. They explained that these engineering studies would be needed in order to determine the feasibility of the proposals, including their cost, timing and implications for the existing operations on the site. They pointed out that no such studies had been carried out to date.

10 Obligations and Conditions

Section 106 Unilateral Undertaking (WG2b)

10.1 The applicants submitted a unilateral undertaking under Section 106 of the Town and Country Planning Act 1990 during the Inquiry (WG2a). It was complete apart from the 'School Car Park Plan' referred to in Schedule 1, para 1.1 and some incorrect paragraph numbering within paragraph 7.1. They were permitted to provide a rectified document to the Inspector by 01 February 2010 (WG2b).

10.2 In summary, the undertaking would commit the Owner (Mr Howell) and the Developer (WSUK) to the matters set out in Schedule 1, namely;

- A payment of £20,000 for Grimoldby School car park improvements;
- The operation of both construction and operational management plans;
- Indemnification of the highway authority in respect of damage to certain roads; and
- The funding of the necessary traffic regulation orders.

10.3 The commitment to these matters is however dependent upon the Secretary of State not expressly stating in the decision letter that the undertaking is an immaterial planning consideration, or that no weight can be attached to it (WG2a, para 7.1). Paragraph G of the Background puts it rather differently by saying that the parties do not intend the undertaking to take effect unless and until the Secretary of State determines that the undertaking is necessary to overcome any objection to the grant of the SAO and that the Order would not otherwise be granted (page 3).

Conditions

Introduction

10.4 In the event that the orders and applications were approved, it was common ground between WSUK and the County Council that conditions could be attached to the deemed planning permission, to the storage authorisation order (SAO) and to the hazardous substances consent. It was envisaged that the SAO conditions would make reference to a separate schedule of conditions under Section 16 of the Gas Act 1965 which would be determined at the same time as the application, but which might vary subsequently.

10.5 The Statement of Common Ground (SOCG) (CDB11) includes a schedule of agreed conditions (Section 18) and another of those that were not agreed (Section 20). These were all considered at the Inquiry.

Planning Conditions

10.6 The conditions agreed between WSUK and the County Council are shown in Section 18 of the SOCG.

Condition 3

10.7 The County Council pointed to the 25 year life of the development quoted in the ES (CDA1, Vol 1, para 4.114) and considered that, in the special

circumstances of this countryside location, the permission should be limited to 25 years, with subsequent restoration. They noted also that this time period might well coincide with the need to replace some of the major items of plant.

10.8 Despite the nominal 25 year life envisaged in the ES, WSUK sought a permanent permission which would avoid having to reapply if at the end of a fixed period there was still a requirement for the development. They were entirely happy to restore the site, probably to agriculture, at the end of the life of the development, whenever that occurred.

Condition 5

10.9 The list of plans to be considered as the Application Plans in Condition 5 is given in document WG20.

Condition 9b

10.10 It was agreed that a condition prohibiting construction work outside normal working hours, except for drilling operations, would be appropriate, but there was disagreement over the definition of emergency in 9b(a). This was subsequently agreed as work 'that is necessary in the interests of health and safety' (LCC10).

Condition 9c

10.11 It was agreed that construction noise levels should be controlled by a condition, but the County Council sought a limit of 55 $dBL_{Aeq\ (1\ hour)}$ not less than 4m from the façade of any residence. That was on the basis of the highest quoted noise level of 54dB(A) in Table 13.3 of the ES and in WSUK's noise witness's proof, the very low ambient noise levels in the area. They also noted the long construction period which would be very different to say an 8 week bund construction period.

10.12 WSUK pointed out that typical acceptable construction noise levels were in the region of 65-70 dB(A) and, in this case, the District Council sought 60$dBL_{Aeq(1hr)}$, which should be adopted.

Condition 10a

10.13 Whilst agreeing that a condition should limit the specific noise generated from the drilling operations, the County Council wished the position at each property to be specified, whereas WSUK considered that to be a matter for determination in the noise monitoring programme.

Condition 11a

10.14 Similarly to Condition 10a the County Council wished to see the distance from the façade of the properties stated, but WSUK pointed out that this would be covered by compliance with BS4142.

10.15 The County Council sought a definition of emergency which was subsequently agreed as noted under Condition 9b above.

Condition 12

10.16 Again the definition of emergency was subsequently agreed.

Condition 15

10.17 Although this condition was previously agreed, it was pointed out that the movement of HGVs associated with the construction works was not covered in Condition 15; but it should be.

Condition 24

10.18 Whilst agreeing the general need for a condition for the minimisation of construction waste, the County Council sought the addition of a requirement to demonstrate that as far as reasonably practicable, the maximum use was being made of the materials. WSUK considered this too onerous for a planning condition and also difficult to enforce.

Conditions 28 & 29

10.19 The County Council only saw the requirement for a condition relating to a restoration plan and the removal of all plant and buildings as realistic if Condition 3 was in place; but WSUK did not accept Condition 3.

SAO and Gas Act 1965 Section 16 Conditions

10.20 The suggested SAO and Section 16 conditions were agreed (WG43) in much the same form as those in the Caythorpe SAO decision (WG40). In that case, they were imposed for the reasons given in paragraph 11.106 of the Inspector's Report, namely the Secretary of State's duty under Section 4 of the Gas Act 1965 (WG41).

Hazardous Substances Consent Conditions

10.21 Similarly, the suggested Hazardous Substances Consent conditions were agreed and follow much the same form as those attached to the Caythorpe consent (WG40, 41 & 43).

11 Conclusions

NB. The figures in brackets (…) *indicate the paragraphs from which the evidence is taken.*

The Applications

11.1 The principal application is for a Gas Storage Authorisation Order (SAO) under the Gas Act 1965 for authorisation to store natural gas in the depleted Saltfleetby Gas Field. There was no formal planning application, but instead both deemed planning permission, and deemed hazardous substances consent are sought for the development. Coupled with these, there is also an application for the confirmation of a Compulsory Purchase Order (CPO) for the acquisition of the necessary land and rights to carry out the scheme (2.26, 2.27, 2.28, 2.29).

The Proposals

11.2 In essence the scheme is to take natural gas from the National Transmission System (NTS) at Theddlethorpe and to convey it by pipeline to a new Gas Storage Facility (GSF) at Saltfleetby where it would be compressed to the necessary pressure for injection down new boreholes at the two existing wellsites into the depleted gas reservoir some 2.4 km below ground. The gas would subsequently be withdrawn, treated at the GSF and returned to the NTS in the winter, or at other times of high demand (2.18, 2.19).

11.3 The proposals allow for the drilling of up to four new boreholes on Wellsite A and up to seven on Wellsite B, but it is envisaged that a total of nine would probably be required and the re-utilisation of some existing wells would be considered, if found technically feasible (2.19, 2.20, 8.3).

Environmental Impact Assessment

11.4 Whilst the Gas Act 1965 does not require SAO applications to be the subject of Environmental Impact Assessment (EIA), this is required by the EIA Directive (6.5) and an Environmental Statement (ES) was submitted in accordance with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 (1.3). I have taken into account all the environmental information.

Main Considerations

11.5 In June 2009, the Secretary of State set out the matters on which, at the time, he wished to be informed (CDB12 and Preamble). In essence, they were:-

- Compliance with National Energy Policy;
- Compliance with National Planning Policy;
- Compliance with the Development Plan;
- Public safety;
- Highway safety;
- Noise;
- Landscape and visual impact;
- Light pollution;

- Flood risk and water resources;
- Flora and fauna;
- Atmospheric discharges;
- Tourism, and
- Comparison with the main alternatives.

I will consider all the above matters, together with the effects upon the cultural heritage of the area and agricultural land.

Approach to the Decision

11.6 Wingas Storage UK Ltd (WSUK) are a licensed gas transporter and therefore eligible to make the SAO application under Section 4 of Part II of the Gas Act 1965 (2.16, 5.2).

11.7 Although there is no separate 'deemed planning application', deemed planning consent for the necessary development to carry out the scheme is sought under Section 90 of the Town and Country Planning Act 1990. Section 90(3) of that Act applies Section 77 of the same Act where in sub-section (4), it then applies Section 70, and Section 70(2) states that the Authority (ie the Secretary of State in this case) shall have regard to the provisions of the development plan, so far as they are material to the application, and to any other material considerations. In the Planning and Compulsory Purchase Act 2004, Section 38(6) then states that 'if regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts, the determination must be made in accordance with the plan unless material considerations indicate otherwise.'(5.2, 5.3, 6.7, 6.7).

11.8 I therefore consider there to be a requirement to determine the deemed planning permission in accordance with the development plan, unless material considerations indicate otherwise. In practice, this should also apply to the SAO because the two are so interdependent.

11.9 I will therefore consider the Applicants' scheme against the policies of the development plan before turning to the other material considerations such as national energy policy and possible alternatives.

The Applicants' Scheme

Public Safety

Geology and Sub-surface Safety

11.10 There is a comprehensive regime of regulations and standards in place to ensure the safe construction, operation and decommissioning of the underground storage reservoir and the proposed surface compression and processing facility (GSF) at Grayfleet East. Underground gas storage in depleted gas fields is well understood and WSUK's parent company has experience of operating similar storage facilities elsewhere within Europe and Russia. The geological reports provide assurance about the integrity of the reservoir and a condition is proposed to survey soil gas levels to provide further assurance. Furthermore, the prospect of an underground explosion is extremely unlikely because of the lack of oxygen within the reservoir. Working on the accepted basis that the other regulatory

regimes should be assumed to operate effectively, there should be no undue below-ground safety risks from the proposal (7.3, 7.12, 8.12, 8.23 & Annex B, paras 5.1 & 5.2).

Plant and Pipeline Safety

11.11 Whilst it is not possible to completely rule out human error (7.8), the plant would be subject to the Control of Major Accident Hazards (COMAH) regulations and other relevant regulations and standards which should ensure the safe operation of the proposed plant and pipelines which would be under the supervision of the Health and Safety Executive (HSE). When consulted, the HSE concluded that there were no significant reasons, on safety grounds, for refusing Hazardous Substances consent and, as Hazardous Substances Authority, Lincolnshire County Council also raised no objections (8.13 & Annex B paras 5.3 & 5.17).

Crime, Terrorism, MOD and the Emergency Services

11.12 Some objectors raised concerns about an increased risk of crime, terrorist attack, proximity to the MOD range at Donna Nook and the inadequacy of the emergency services in the event of a major incident (7.7, 7.8, 7.9, 8.15).

11.13 Wellsites A and B have been there for some 10 years and have not been the subject of any vandalism or terrorist attack. They are surrounded by 2.2m high security fences, as proposed for the GSF site but, in addition, there would be CCTV surveillance of the two wellsites and the interconnecting pipelines from the continuously manned GSF site, as well as other security measures such as regular monitoring of the pipeline to Theddlethorpe (5.53, 5.54). Extraordinary measures would be required to foil a determined terrorist attack, which seems unlikely, and the proposed security measures appear adequate. The MOD range at Donna Nook is about 9 or 10 km to the north and therefore far enough away to cause little risk of an incident at Saltfleetby.

11.14 It may be that, in the event of an incident, the emergency services would have to come from some distance away, but there would at least be some initial fire fighting capacity on the site (2.20). In any case, the Head of Emergency Planning for the area has raised no objection (5.55).

11.15 I conclude that there would be no material risk from crime, terrorism or from an inadequacy of the emergency services likely response.

Perception of Risk

11.16 As noted above, several objectors perceived various forms of risk from the proposals (11.10, 11.11, 11.12). I have assessed the level in each case to be very low and accordingly conclude that the perception of risk should carry little weight in determining the applications.

Traffic

Construction Traffic

11.17 Despite an adequate safety record (5.57), a number of objectors considered the construction traffic to be unacceptable on the surrounding road network and, in particular, on Tinkle Street in Grimoldby. They stressed the busy nature of Tinkle Street and its use by vulnerable people

and, as a result, they feared for road safety conditions (7.2, 7.7, 7.9, 8.6, 9.3, 9.5, 9.6).

11.18 With the relatively poor standard of much of the road network around the site, significant additional construction traffic could be unacceptable on some of the minor roads (5.57). The Applicants therefore committed themselves in a legal obligation to a Construction Traffic Management Plan that would require all HGVs to report initially to a holding area on part of the former Manby Airfield, from which point they would be escorted to and from the site in platoons along a specified route that includes Tinkle Street (5.59).

11.19 Whilst some of the route is relatively narrow, the highway geometry is acceptable for the proposed HGVs (5.59), and the Applicants would carry out certain highway improvements to Marsh Lane (5.61). They would also indemnify the Highway Authority against damage to the roads along the specified route (5.61, 5.62).

11.20 The Traffic Management Plan would also prohibit HGVs passing Grimoldby School at the times that children would be dropped off and picked up, and the Applicants have also committed themselves to providing £20,000 for improvements to the school car park (5.59, 10.2). Furthermore, a suggested condition would limit the hours before which, and after which, HGVs could enter and leave the site (10.17).

11.21 From the Transport Assessment, the HGV traffic to and from the site would be about 100 two-way movements per day for the first two months of construction, thereafter falling to only about 10 a day by the tenth month, though there would also be the occasional abnormal load (5.57, 5.59).

11.22 Even during the peak period, the number of construction vehicles would be modest compared with the other traffic using Tinkle Street. It is expected that there would be two platoons of about 3 or 4 HGVs in and out per hour compared with about 100 other vehicular movements on the road during that same period (5.59).

11.23 An escorted platoon of 3 or 4 HGVs every 15 minutes or so passing along Tinkle Street would certainly be noticeable to the local people. With the prospect of cars being parked in places along this two lane carriageway (9.4) there would probably be some congestion, but the highest construction traffic flow would be for only a few months and the Highway Authority has raised no objection (5.57). Accordingly, with the measures that would be put in place, I consider the construction traffic to be acceptable and that it would not cause undue road safety hazards. I certainly do not consider a temporary access road across the fields, with all its financial and ecological costs, would be justified (5.63, 9.4, 9.5).

11.24 Concerns were also expressed that vibration from the additional heavy vehicles might cause harm to the structural stability of the old properties fronting Tinkle Street (9.4). However the kind of vibrations that might affect these properties would arise from HGVs passing over potholes or other rough surfaces and, in this case, the road surface condition would be monitored and a programme of vibration monitoring set up (5.72). I am therefore satisfied that there should be no harm from such vibrations.

Operational Traffic

11.25 With the traffic generated by some 13 employees and perhaps one HGV per day, the operational traffic would be very modest compared with the construction traffic but, even so, it would be controlled under a traffic management plan (5.64) and should cause no significant highway impacts.

Lorry Routeing

11.26 Both the construction and operational traffic management plans include a prescribed route to and from the site (5.59, 5.64). Whilst such a plan cannot restrict free access to the public highway, the Applicants would have control over their own employees and suppliers, and should therefore be able to control the route used to the site. Such a routeing scheme has been in place for some time for the present use of Wellsites A & B and, after two companies were excluded, it seems to have been successful (5.64). There is therefore no reason to suppose the routeing agreement would not be effective in the future.

Noise

Construction Noise

11.27 At its peak, construction traffic would increase noise levels for residents of Marsh Lane and Tinkle Street by about 1.6 and 1.5 dB respectively, and for Saddleback Road by about 4.2dB. The former would be hardly noticeable but the latter would be noticeable, though it would soon reduce as the construction traffic declined (5.71).

11.28 Drilling operations would be continuous for 24 hours a day for about 9 months at Wellsite A, and for some 12 months at Wellsite B (2.22). But quiet drill rigs would be used and, even assuming concurrent drilling operations at both sites, the highest predicted specific noise level would be 37dB(A) at Willey's Farm. This would be 15 dBA above the very quiet mean night time background level of 22 dBL_{A90}, and BS4142 says that, with a difference of 10dB or more, complaints would be likely (6.72a). There is a warning in the BS that this approach may not be applicable at very low noise levels which are defined as about 30dB for background, and 35 dB for rating noise levels (5.186d, 6.72b). Bearing in mind the logarithmic scale for noise measurements, I consider this increase would be noticeable, though its low absolute value would limit the effect upon those people who might be out and about at night.

11.29 I would expect those who were sleeping to be indoors, where WHO guidelines recommend 30dB in a bedroom to avoid sleep disturbance (5.186e). Allowing the accepted 12 dB attenuation for an open window, this equates to an outside free field noise level of 42 dB, and this seems to be generally in line with both BS8233 and the Environment Agency's Horizontal Guidance H3 (5.186e). Therefore, providing the drilling operations were the subject of the proposed noise condition with a limit of 37$dBL_{Aeq(5min)}$ (5.69), I do not consider they would interfere with the sleep of the nearby local residents.

11.30 Noise levels of between 48 and 54 $dBL_{Aeq(1hour)}$ were predicted during the approximately 13 month construction period for the GSF (2.23, 5.70) and these would undoubtedly be noticeable in this generally quiet area, but

that would be during the daytime only if the suggested working hours condition were attached (10.11). Daytime noise levels of up to 65 or 70 dBA are sometimes acceptable from minerals sites, and the level could be restricted by condition to the 60dB(A) agreed with the District Council, or to the lesser value sought by the County Council (10.12). I will consider the actual value in the section on Conditions below.

11.31 Construction of the pipeline to Theddlethorpe would generate local noise levels of 69-73 $dBL_{Aeq(1hour)}$ at some properties along the route, but these would be for only short daytime periods while the construction activity passed by and, in any case, they would not be dissimilar to those from modern agricultural machinery (5.73).

11.32 I conclude that there would be some limited noise disturbance for the local people during the construction phase.

Operational Noise

11.33 The GSF would operate 24 hours a day, but the operational noise would be characterless and broadband in nature with no tones or impulses (6.51). The noise would only reach a rating level of $38dBL_{Aeq}$ at the nearest properties, Willey's Farm and Beulah Farm, and this is only about 3dB higher than the level in the British Museum Reading Room (5.74). Despite the fears of a number of objectors (7.6, 7.8, 8.5), during the daytime, this noise would have no material impact on either the amenities of the local residents, or on the character of the countryside. Indeed, the condition sought by the District Council would set a higher limit of 43 $dBL_{Aeq\ (1\ hour)}$ (5.74).

11.34 Several of the objectors, including the County Council, were much more concerned about the night time noise levels (5.181, 6.51, 7.8, 8.5). The noise level would be the same at night as during the daytime giving a rating level of $38dBL_{Aeq}$ at the nearest properties. This is very nearly the same as the noise level from the drilling operations, which I have already considered (11.28) and concluded would be acceptable. I do not therefore consider this noise would materially affect the residential amenities of the nearby residents.

11.35 The County Council's objection was limited to the effect of the operational noise upon the countryside at night (5.181, 5.184, 6.51). As identified above, the noise level would be $38dBL_{Aeq}$ at the nearest properties, Beulah Farm being about 570m from the GSF site, and there are no public access points much closer than that (5.75). Clearly, $38dBL_{Aeq}$ would be considerably higher than the agreed background night time noise level of 22 dBL_{A90}. As for the drilling noise, it would be noticeable to anyone out and about at night, but I would expect there to be only a few such people to hear it, and the general impact on the rural character of the area to be quite limited.

11.36 One objector to the Compulsory Purchase Order complained of unexplained noise disturbance, apparently coming from the existing operations (5.68, 8.5), but I have taken into account above all the identified noise sources for the proposed development.

Landscape Character

11.37 A number of objectors considered the visual impact of the proposed GSF would be unacceptable in this rural location (7.2, 7.9, 8.4) and the County Council in particular objected to the effect it would have on the character of the countryside (5.78, 6.1).

Visual Impact - Construction Phase

11.38 During the construction phase, Wellsite A would be extended, the drain through Wellsite B would be diverted and new boreholes would be drilled on both sites using approximately 49.2m high drill rigs. In addition, a new access would be formed, a temporary construction compound with two storey offices would be set up and the new plant and buildings erected on the GSF site, which itself would be surrounded by bunds. Furthermore, the new pipeline would be laid to Theddlethorpe (2.20, 2.22, 2.23, 2.24, 5.80, 5.81, 5.82).

11.39 Borehole drilling would only last about 9 and 12 months on Wellsites A and B respectively, and the GSF would take about 13 months to complete, but the construction compound would remain for the full 30 to 36 month construction period (2.22, 2.23, 5.104). All this construction activity would undoubtedly harm the visual appearance of this generally flat open countryside location for a significant, if temporary, period when seen from the identified public viewpoints on the surrounding roads (2.7, 5.87 6.1, 6.35, 6.39b).

Visual Impact - Operational Phase

11.40 Even after the construction period, the on and off-site landscape planting (5.96) would take a significant period to become an established feature of the landscape (6.43). During this time, large parts of the buildings and plant within the 3.1ha GSF site, the highest being a slender 30m high vent stack (5.83, 6.48), would be clearly visible above the 1.75m high bunds. This stage of the scheme was not shown on the photomontages (2.20, 5.83, 5.85, 5.87, 6.36c) but, particularly with the associated plant, I do not consider the buildings would be taken for a farm complex (5.92, 6.48). In the shorter term, there would be harmful effects on the views from about 12 properties (5.108).

11.41 Photomontages were provided for five and fifteen years after completion (6.34, 6.36) and they showed that the layered landscape planting would progressively filter and obstruct views of this industrial-style development from the local properties and public viewpoints (5.87). Nevertheless, parts of the plant and buildings would still be visible from public viewpoints up to a distance of about 1.5km away (5.93). The resulting visual impact would only be mitigated to some extent by the choice of colour (5.88). There would remain significant impacts from the viewpoints on Long Gate, close to Beulah Farm (Viewpoint 3), and along Saddleback Road (Viewpoints 5, 6 & 9) all of which are some 0.5km or more away from the GSF (5.108).

11.42 Whilst the photomontages were generally representative of the likely public views, there would be significantly greater visibility of the site if Viewpoint 4 had been taken from the top of the adjoining road bridge over the Grayfleet Drain (6.36d). Whilst excessive tree heights might interfere with

atmospheric dispersion (5.135), the montages do appear to show rather optimistic growth rates for the planting, particularly on the bunds, (5.97, 6.34) and all montages showed full summer leaf cover, whereas the proposed deciduous planting would of course have less effect in the winter months (5.102, 6.35). Taking these matters into account, the visual impact from the surrounding public viewpoints would be rather greater than shown. But, in such a flat landscape that offers no raised vantage points, the approximately 1.5km radius of that impact would remain (5.93).

Light Pollution

11.43 During drilling operations, the 49.2m high drill rigs would operate 24 hours a day and require fixed lighting that would be clearly visible in the landscape. This would create a maximum light intensity at any property of about 300 candelas (cd) compared with a permitted value of 2,500 cd in a dark area (5.111). Whilst this level of intensity would not generally harm the amenities of the residents, they would be well aware of the light sources, and it would have some impact on the character of the area (5.115).

11.44 Once completed, the normal night time lighting at the GSF would be by means of low level bollards that would be effectively screened by the surrounding 1.75m high bunds and their developing vegetation (5.112, 5.113). Only for safety incidents, or for essential night time maintenance, would sections of the 6m high external lighting be switched on (5.113). When on, this would produce a light intensity of only about 3 cd towards sensitive receptors, compared with the 2,500 cd permitted in a dark area (5.114). Even so the lights would be visible to some extent to people out and about at night and, despite the Applicant's claims, under certain atmospheric conditions, I would expect a degree of sky glow (5.114, 6.49). Nevertheless, there would be absolutely no comparison with the highly visible lighting of the Theddlethorpe Gas Terminal (6.49).

11.45 Like on the GSF site, the fixed 6m high lighting at Wellsites A & B would only be used in emergencies, or for essential maintenance work, and would in any case be better screened by the existing mainly quite mature vegetation (5.80, 5.110).

11.46 Despite some objectors' fears (7.6, 7.8, 7.13, 8.4), I do not consider the proposed lighting would have any significant effect upon their amenities.

11.47 This is however a dark area at night and, even taking into account the security/flood lights at some of the surrounding properties (5.110, 6.49), there would be a small adverse effect from the lighting on the landscape character of the area.

Noise

11.48 I have concluded above, that there would be only limited impact from night time noise on the character of the area (11.35).

Landscape Character Assessment

11.49 The site falls within the J1 Tetney Lock to Skegness Coastal Outmarsh landscape character area in the East Lindsey Landscape Character Assessment, for which the consultant's final report has been received

(5.90, 5.91). That character area is described as being a predominantly intact and distinctive rural landscape with some man-made influences, including the Theddlethorpe Gas Terminal, an oil storage facility at Tetney and several windfarms (5.91). However, these are mostly some distance from the site, where the principal nearby man-made features are the 20 turbines of the Conisholme Fen Wind Farm just to the north, the existing Wellsites A and B and a new sewage treatment works some 500 m to the south-west (5.92). Even so, the wellsites are now quite well screened by vegetation and the treatment works is primarily lagoons which have very limited visual impact on the landscape. Planning permission has also been given for a large new storage building as part of the Grange Farm complex only about 700m to the west of the GSF site (5.91).

11.50 This is not an area specially designated for its landscape quality (5.89, 6.47) and is undoubtedly a working landscape (5.92, 6.46) but, from my earlier assessment of the visual impact, I consider the proposed industrial-type development would have a considerable adverse impact on the open rural character of the immediate area for a significant number of years.

11.51 This harmful visual impact would be in addition to the limited effects upon the landscape from lighting and noise, as identified earlier (11.35, 11.47, 11.48).

11.52 Whilst some objectors feared the possibility of creeping growth of the site (7.8, 8.4), any further expansion would require planning permission and any application would have to be treated on its merits.

Water Resources

11.53 Objectors argued that some of the local residents' private drinking water supplies, which are taken from the underlying aquifer, had either dried up or become contaminated during earlier borehole drilling operations (7.4, 7.8, 8.8). There was no strong evidence on this point, but there are raised concentrations of certain substances in the groundwater that require treatment for public supply purposes (5.119).

11.54 Whilst the site is situated over an aquifer which is used for both public and private water supplies, the boreholes would be designed and constructed in accordance with the relevant regulations. Special precautions would be taken to avoid harm to the quality of the groundwater in the aquifer and, on that basis, Anglian Water, the statutory water company for the area, withdrew their objection (5.118). I am therefore satisfied that there should be no undue harm to the private water supplies in the area.

Flooding and Drainage

11.55 Flooding was raised as an issue by several objectors (7.8, 8.7).

11.56 The proposed GSF site is within Flood Zone 3a (5.121) where there is a high risk of flooding and, in accordance with PPS25, any development would need to pass both the sequential and exceptions tests.

11.57 If the GSF needs to be at or about the proposed location for operational and environmental reasons (5.121), then the sequential test is passed because there is no other identified site outside Flood Zone 3.

11.58 The exception test requires wider sustainability benefits, the use of previously developed land, where possible, and a development that would be safe without increasing flood risk elsewhere (5.122). In this case, accepting for the time being that the GSF needs to be in the general vicinity of the proposed site, there is no viable previously developed land. There would be increased local employment, the site has been designed to be safe at times of flooding and not to increase flood risk elsewhere (5.123, 5.124). On that basis, the Environment Agency withdrew their objection, subject to conditions (5.125). I am also satisfied that the exceptions test is met and that there is no reason to refuse the SAO on the grounds of flooding. As the discharge from the site would be at the greenfield rate (5.124), there is also no drainage reason to refuse.

Ecology

11.59 A number of objectors considered the proposals would unduly harm the flora and fauna in the area (7.4, 7.13, 8.9).

11.60 There are no designated nature conservation sites within, or to adjacent to, the GSF site, the route of the pipeline or the associated infrastructure. Also, no protected or notable flora species were identified in the area (5.126), though any orchids that might subsequently be located on the Grayfleet Drain embankments would be translocated (5.130, 7.4).

11.61 Suitable mitigation measures have been identified to avoid harm to the badgers, water voles, bats, otters and barn owls that may be in the area (5.127). Other birds may use the land from time to time, but there is a very large area of similar surrounding habitat (5.128). Whilst one objector was concerned about the effects of strong electromagnetic fields on wildlife, there would be no strong electromagnetic fields (5.132, 7.13). The Lincolnshire Biodiversity Action Plan seeks to enhance biodiversity in the area and, overall, the project would result in the loss of some 5.5ha of intensively managed arable land of generally low ecological value, but in due course produce approximately 9ha of new mixed conservation habitat types (5.85, 5.131). Natural England, the County Council and Lincolnshire Wildlife Trust were all satisfied that there would be no undue harm to the present ecology of the area (5.130, 8.9), a point on which I agree.

11.62 The Wildlife Trust and East Lindsey District Council were however concerned that there would be insufficient mitigation for the loss of land for the prospective conversion to grazing marsh habitat. This land use conversion is advocated in the Lincolnshire Coastal Grazing Marsh Project with a target area of some of the 7,500ha. The development would cause a loss of only about 0.001% of that area, and then only until it was restored at some future date (5.129, 8.9). I do not consider the loss of this relatively small proportion of possible grazing marsh to be particularly significant.

Atmospheric Discharges and Climate Change

11.63 Some objectors raised concerns about the discharges to the atmosphere in terms of their effects on human health, the ecology of the area and climate change (7.8, 8.17).

11.64 Air quality modelling has been carried out using very conservative assumptions. This showed that the maximum concentrations of exhaust gases would occur some 70m to the north-east of the site and no air quality thresholds would be exceeded, therefore causing no detrimental impacts on human health or vegetation (5.135, 5.136).

11.65 The combustion process would be at a sufficiently high temperature to avoid smoke and to destroy any volatile organic compounds that might otherwise have created odours (5.137), and there would be a dust management plan to control dust emissions during construction (5.139).

11.66 The facility would generate greenhouse gases and therefore may not contribute to reducing the causes of climate change (5.123), but the Applicants would be required to purchase carbon credits under the Greenhouse Gas Emissions Trading Scheme, at a possible cost of about £1m per annum (5.138). Furthermore, if gas is to be stored in this underground reservoir, the proposed scheme has been shown to be the Best Practicable Environmental Option (BPEO) (5.136).

11.67 I am satisfied that there would be no harm to human health or to the ecology of the area from atmospheric discharges, and that although not reducing the effects of climate change, the greenhouse emissions would be properly controlled.

Tourism and the Local Economy

11.68 Objections were raised on the grounds of harm to the local tourist industry and the economy of the area (7.6, 7.8, 8.11).

11.69 It seems very likely that there would be a harmful effect upon the holiday cottage business just to the north of the GSF site, at least during the construction phase (5.141, 8.11). Other than that, a specialist tourism consultant's report concluded that there would be only a minor negative impact during construction, and none thereafter (5.141).

11.70 The construction work would be likely to generate something in the order of 115 jobs at the peak time (5.38), putting some £700-900,000 into the local economy and thereby benefiting a range of local businesses. This would continue, to a lesser degree, when the site was operational and employing some 12 to 16 fulltime employees. The County Council raised no socio-economic reason to refuse the applications (5.38, 5.142, 5.143, 5.144).

11.71 I conclude that there would be some limited harm to the tourism industry in the local area during the construction period but that there would also be economic benefits to the local community from both the construction and operation of the scheme.

Cultural Heritage

11.72 The Gas Act requires consideration of the impacts on the cultural heritage of the area. But, subject to an appropriate archaeological condition, the County Council's Historic Environment Team are content on this point (5.145, 5.146, 5.147); and so am I.

Agriculture

11.73 The GSF site is sub-grade 3b agricultural land and there would not therefore be any loss of best and most versatile agricultural land, as defined in paragraph 28 of PPS7 (5.148, 7.13). Accordingly, there is no objection in terms of national policy relating to agricultural land.

Compliance with the Development Plan

11.74 The Development Plan for the area includes the East Midlands Regional Plan (adopted in March 2008), the Lincolnshire Minerals Local Plan saved policies (2007), the East Lindsey Local Plan Part 1 Alteration Saved Policies (2007) and the East Lindsey Local Plan Part 2 Proposals Maps (1995)(4.5).

11.75 I have concluded above that the proposals would cause no material harm to **water resources, flooding, drainage, ecology, cultural heritage or agricultural land**, or cause harm though **atmospheric discharges.** Whilst there would be some short term harm to **tourism**, there would also be some benefits to the local **economy**, as well as to the range of **wildlife habitats** in the area (11.54, 11.58, 11.61, 11.67, 11.71, 11.72, 11.73).

Traffic

11.76 Local Plan Policy TR3 and Minerals Local Plan Policy M12 seek to ensure highway safety (4.7, 4.8). In this connection, I have concluded that, during the earlier part of the construction period in particular there would be a noticeable increase in HGV movements on Tinkle Street and some increased congestion, but there would be no undue harm to highway safety (11.23).

Public Safety

11.77 Explanatory paragraph 2.79 to Local Plan Policy A4 includes risk to the security of nearby premises and the safety of residents as matters to be considered as part of 'General Amenities'

11.78 I have already concluded that there would be no undue underground, plant or pipeline safety risks (11.10, 11.11). In addition, I have concluded that there would be no material risk from crime, terrorism or lack of response from the emergency services (11.15). Whilst the public's perception of risk remains a material consideration, in the light of the above conclusions, it should carry little very little weight (11.16).

Noise

11.79 Minerals Local Plan Policy M10(f) aims to limit noise, and Local Plan Policy A4 seeks to avoid harm to the general amenities of people living or working nearby (4.7, 4.8, 5.47). I have already concluded that there would be some limited harm to the amenities of the local people through noise disturbance during the construction phase, but not once the development became operational (11.32, 11.34). There would therefore be some conflict with Local Plan Policy A4.

11.80 I will consider the noise impact on the character of the landscape below.

Landscape Character

Development Plan Policies

11.81 In the **Regional Spatial Strategy**, Policy 31 sets out the priorities for the protection and enhancement of the Region's landscape and calls for LDF policies to ensure that developments would respect the intrinsic character of the landscape including, where appropriate, tranquillity and dark skies (4.6, 5.45, 6.28).

11.82 In the **Local Plan**, Policy A4 seeks to protect the general amenities of the area and its supporting paragraph 2.79 explains that this includes the distinctive character of the area (4.8, 5.47, 6.27). Policy A5 deals with design matters, but it does say that a development should be integrated within a landscaping scheme appropriate to its setting. Explanatory paragraph 2.84 says that particular attention will be paid to this matter in defined areas which include 'the Fens and Marshes', where the GSF site is located (4.8, 5.48, 6.28). Policy EMP3 specifically says that it applies to sites 'Within or next to a settlement', whereas the proposed development is not. Accordingly this latter policy is not particularly relevant to these proposals (4.8, 5.49, 6.26).

11.83 In the **Minerals Local Plan**, Policy M18 aims to limit mineral related industrial development to locations on or adjoining a mineral working site and, in effect, the explanatory paragraph 11.43 says that such development will only be permitted in the open countryside if it is essential in that location. Policy M26 makes very much the same point about central collection facilities (4.7, 5.46, 6.23, 6.24, 6.25).

Visual Impact

11.84 The construction operations would undoubtedly harm the visual appearance of the area for some time (11.39). The layered landscape planting would, over time, filter and obstruct the views of this industrial style development, but some visual impact would remain for many years (11.41, 11.42).

Light Pollution

11.85 Even taking into account the other lighting in the area, during the drilling operations, the necessary lights would have an impact on the darkness of the area, and so would the operational lighting, but to a much lesser extent (11.43, 11.47).

Noise

11.86 There would be only limited impact from night time noise on the character of the area (11.48)

Impact on the Landscape Character

11.87 Despite the lack of any high level landscape character designation (5.45) and the localised effects of certain man-made influences, this is a predominantly intact rural landscape that would be significantly harmed for a considerable period by the visual impact of this industrial-type complex (11.49,11.50). There would also be some limited additional harm to the landscape character from the effects of the noise and lighting (11.84, 11.85).

Conclusions on the Development Plan

11.88 As explained above, the proposed development would conflict to some extent with Policy A4 of the Local Plan because of noise considerations (11.79). It would also harm the character of the landscape, contrary to RSS Policy 31, and Local Plan Policies A4 and A5. Whilst the GSF is not strictly a central collection facility, as envisaged in Policy M26 of the Minerals Local Plan, it is clear that the purpose of both that policy and Policy M18 is to protect the landscape from harm: therefore introducing some further conflict.

Other Material Considerations

Other Local Planning Policies

11.89 The draft Lincolnshire Minerals and Waste Core Strategy Issues and Options have been published and also the East Lindsey Core Strategy Issues and Options (4.9). These are however at a very early stage and add little to the policies of the current Development Plan.

11.90 The final report of the East Lindsey Landscape Character Assessment has been received (4.10) and taken into account as necessary (11.49).

National Planning Policy

11.91 In general, the relevant Development Plan policies take into account the relevant national planning policies set out in PPGs, PPSs and MPSs (4.3, 4.4).

11.92 A new PPS4 was however issued during the Inquiry. In effect, it continues the previous national policy that seeks to protect the countryside for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife, the wealth of its natural resources and to ensure it may be enjoyed by all. This document also reiterates the desire for sustainable economic growth (5.40).

11.93 Annex 4 to MPS1 specifically addresses the underground storage of natural gas and calls for its safe and secure containment (5.42).

National Energy Policy

11.94 The 2003 Energy White Paper identified the need to secure reliable energy supplies for the nation (5.7) and the Ministerial Statement of May 2006 entitled 'Energy Statement of Need for Additional Gas Supply Infrastructure' encapsulates the need for additional gas supply infrastructure (5.8). It notes the decline in the UK's indigenous gas supplies and an increasing dependency on imported gas. It then says that new gas supply infrastructure, including storage, is needed to manage this change and that without it, in time, there would be difficulties in balancing the supply and demand. Failure to do so would reduce the reliability of the national energy supply arrangements, with potentially disastrous consequences locally, regionally and nationally (5.8). The statement also notes the limited geological structures where gas storage can be achieved (5.9).

11.95 Draft National Policy Statements on Energy (EN-1) and Gas Supply Infrastructure (EN-4) have been published (4.2). Whilst only in draft form for consultation purposes, they largely confirm the thrust of the existing

policy such as that in the Energy White Papers of 2003 and 2007 and the Ministerial Written Statement of May 2006 (4.1, 5.34).

National Need for Additional Gas Storage

11.96 After a slight drop due to high prices and the recession, the demand for natural gas in the UK is forecast to rise at an annual rate of 0.4% (5.20). Natural gas is already used for the generation of some 41% of the UK's electricity and that may rise to 60% (5.18). Part of that demand is for gas to supply the Combined Cycle Gas Turbine (CCGT) plants which can be brought on line very quickly to generate electricity when there is insufficient wind for turbines to generate effectively. Off shore turbines in particular are strongly supported by the Government in order to achieve the statutory 15% replacement of fossil fuel generation under the Energy Act 2008, but they only generate for about 30% of the time (5.25).

11.97 Whilst the national demand for gas is increasing slightly, the supplies from the UK Continental Shelf (UKCS) have been declining for some time. From the 108bcm produced in the year 2000, they are likely to fall by about 70bcm/annum by 2013 (5.19). The difference between the demand and UKCS supplies must be made up through imports by pipeline from Norway and continental Europe or by LNG tanker supplies (5.21). The current import dependency is about 30%, but that is likely to rise to more like 80% by 2020 (5.21).

11.98 Gas suppliers face considerable difficulties in securing long term contracts in Europe and there have been supply disruptions, for instance as a result of disputes between Russia and the Ukraine. With disruption of any one of the main sources of supply, such as the loss of the Norwegian pipeline, the National Grid considers there would start to be issues for the security of the national supplies by 2013/14 (5.21).

11.99 In the event of shortages, gas can be taken from storage and the supplies to large consumers can be interrupted but, in the latter case, the introduction of new contracts from 2011/12 will reduce that flexibility. Power station supplies could be interrupted, with severe consequences for electricity supplies and, in the very worst case scenario, the gas grid would fail to danger with considerable safety risks (5.22). However, interruption of gas fired power station supplies, and therefore electricity cuts, would greatly depress gas demand because domestic gas fired boilers would also shut down (6.83).

11.100 Gas storage facilities therefore help to meet the normal summer/winter variations in demand of up to 2.5 times (5.24) and also to guard against the loss of imported supplies. Furthermore, they also have the effect of reducing the price of gas to the consumer by allowing for the import of cheaper gas in the summer when the demand is lower (5.24). Not only does this benefit the UK economy as a whole, but also particularly the fuel poor (5.23).

11.101 The existing UK gas storage capacity of 4.34bcm amounts to about 5% of demand compared with 20% in Germany and 25% in France, though the percentages against imports are much closer. Nevertheless, by 2015 the latter percentage would be about half that of France, where they do not rely on gas for electricity generation (5.27, 5.28).

11.102 The Ministerial Statement of 16 May 2006 recognised that Great Britain is becoming increasingly dependent on gas imports and advocated the timely provision of new gas supply infrastructure to help ensure security of supply. It referred to the need for new storage projects and noted that there are only limited suitable locations for such schemes (5.32). At paragraph 3.9.8, draft NPS EN-1 also makes it clear that the IPC should start its assessment of gas supply, storage and transmission applications on the basis that there is a significant need for this infrastructure to be provided (5.152).

11.103 Against this strong national need for additional gas storage capacity, some 1.1bcm is currently under development. About 4.4bcm also has planning consent, but without final investment approval. In any case, approximately 2.1bcm of this latter category would be offshore, where it is much more expensive to develop than an onshore facility such as Saltfleetby (5.26).

11.104 There was little dispute at the Inquiry about the need for additional UK storage capacity and the social and economic benefits it would bring to the nation. However, the way in which it should be provided was disputed, and is covered in the section on alternatives below.

Saltfleetby's Contribution to the National Need

11.105 Saltfleetby is the UK's largest onshore gas field and, if converted as proposed, it would provide some 0.715bcm of additional gas storage capacity. This would represent an increase of about 15% in the existing UK storage capacity, or 6% of the total consented capacity. At the same time, the possible extraction rate of some 9 or 10 million standard cubic metres per day would provide about 2% of the peak UK supply. Furthermore, Saltfleetby is well placed to respond quickly to the additional supply of gas to CCGTs when wind turbines cannot generate. It is within about 100km of around 40% of the country's CCGT stations; a useful advantage given the relatively slow velocity of gas in the NTS, which in this case would have sufficient capacity without reinforcement (5.30, 5.33, 6.76, 6.77).

11.106 Even if the proposed scheme would only provide about 3 days additional storage for the country as a whole (7.11), an increase of 6% or 15% of the present or planned storage respectively would still be a very valuable asset in helping to maintain the security of supply and price stability (5.31).

Urgency

11.107 The Ministerial Statement of May 2006 identifies the need for 'timely' gas infrastructure projects (5.13, 5.32, 5.36) and, although only a draft document, paragraph 4.4.3 of NPS EN-1 does refer to an 'urgent' need for energy infrastructure, though that is not specific to gas storage schemes (5.13, 6.81, 6.85). Paragraph 1.3.1 of EN-4 says that EN-1 covers the need and urgency for such infrastructure. Whilst there may be no government statement that actually says the need for additional gas storage is urgent (6.80), the whole tone of the 2006 Statement is very much one of encouraging early development of such schemes. For instance, it refers to a new procedure to speed up consents which has now been implemented with the establishment of the Infrastructure Planning

Commission (IPC). Furthermore, as noted above, the National Grid anticipate issues for the security of supplies from 2013/14 onwards (11.98) and additional storage capacity would help to alleviate those concerns.

11.108 There may not have been any issue over the urgency of the need in the recent King Street gas storage decision (6.82). But, on the basis of the evidence before me, I conclude that there is an urgent need to approve more UK gas storage capacity so that it can preferably be in service by about 2013/14. Not only would the Saltfleetby scheme provide a valuable amount of additional storage, it could well meet the 2013/14 timescale (5.30).

Compliance with National Energy Policy

11.109 From the above, it can be seen that I consider the scheme would help to fulfil an urgent need for additional gas storage in the UK and that it would be in accordance with national energy policy.

Alternatives

11.110 It was common ground between the parties that there was a need to consider alternatives in this case (5.149, 6.9) and I also consider that to be a requirement.

Alternative Options

11.111 The County Council accepted the use of the Saltfleetby strata for the storage of gas (6.2), but several of the objectors advocated storage in the depleted North Sea gas fields, or in gasometers (7.7, 7.11, 8.18). Some limited storage can also be provided in linepack (5.156).

11.112 There is no planned increase in linepack (5.157) and gasometer storage would provide very limited storage capacity in comparison to the magnitude of the need, or to the magnitude of the proposed scheme (5.157). Large North Sea gas field schemes would be much more expensive to develop, and accordingly that much less likely to proceed than the Saltfleetby scheme (5.158). I do not therefore consider these options to be realistic alternatives to the proposed scheme.

11.113 Significant storage capacity can be obtained in salt caverns, but they require a considerable period of salt mining before they can become operational (5.157), and would fail to meet the urgent need for additional storage capacity.

Alternative Sites for the Saltfleetby Development

11.114 Clearly there is a need to access the gas field. The necessary boreholes can realistically only be drilled from above and at least some of the existing boreholes may be re-used (2.19). Therefore, the re-use of the established Wellsites A and B, would be appropriate.

11.115 There would be rather more flexibility in the siting of the GSF, but it was recognised that 220barg pipelines would be required from the GSF to the wellsites and that these high pressure lines should ideally be kept as short as possible. Four alternative sites were identified on the gas field that were generally more than 600m away from dwellings and the option of

locating the GSF at Theddlethorpe was the subject of a separate Development Option Report (5.159).

11.116 There was a comparative exercise between the on-field options and it was not suggested at the Inquiry that any other of these sites would, overall, be any better than the proposed Grayfleet East site.

Theddlethorpe Option

11.117 The Theddlethorpe Option Report considered some possible locations for a GSF and did not rule out locating it at Theddlethorpe, though this was before the COMAH regulations applied to the GSF (Annex B, para 3.29). As such, the County Council, and a number of other objectors, advocated refusal of the SAO in order to promote more detailed assessment of an alternative site at Theddlethorpe (5.12, 6.15, 7.10, 8.18). ConocoPhillips made it very clear that none of the detailed studies necessary to determine the acceptability of such a scheme had been carried out (9.7). As a result, no firm sites had been identified but the Inquiry assumed a comparable area to the Grayfleet East proposals and considered general locations either inside the ConocoPhillips perimeter, or on the agricultural land to the west, or the south-west, of the present Theddlethorpe Gas Terminal (TGT) complex (5.178, 6.18).

Landscape and Visual Impact

11.118 With no specific proposals, ConocoPhillips have not agreed to a GSF within their site, or even adjacent to it (5.177). Following earlier considerations, both the existing and the proposed developments would now be covered by the COMAH regulations which may require a significant separation distance that could rule out a GSF within the existing complex (5.177, Annex B, para 5.14). From outside, no obvious vacant area of sufficient size was apparent inside the perimeter fence.

11.119 There would certainly be sufficient open land to the west and south-west of the complex within the established tree screen, though whether that would meet the necessary separation distance is not clear (Annex B, para 5.14).

11.120 Assuming that safety considerations did not preclude it, a GSF on the land to the west or south-west of the existing complex, but within the tree screen, would cause materially less harm to the landscape than the proposed scheme at Grayfleet East (5.179, 6.30). Such views as there might be would no doubt appear to be part of the larger development (6.31) and would not greatly harm views from the nearby Coastal Conservation Area (5.179, 6.75). Nevertheless, there would still be some landscape impact and, at a distance of about 400m away, it would be closer to residential property than the Grayfleet East site, where Beulah Farm would be approximately 570m away (5.179).

11.121 In the event that the separation distances required the GSF to breach the existing tree screen, then this would greatly increase the harm to the landscape (5.178).

11.122 With the uncertainties over the separation distances, it is difficult to be precise, but it seems to me that there is a reasonable prospect that there would be less landscape harm from a GSF at Theddlethorpe than on the proposed site at Grayfleet East.

Light Pollution

11.123 As I have already identified there would be only a slight night time lighting effect from the proposed scheme (11.47). In contrast, I saw for myself the considerable light pollution at night from the existing Theddlethorpe complex (6.49). Accordingly, any likely increase from a GSF within the tree screen would be insignificant.

Noise

11.124 The noise issues at both the proposed Saltfleetby site and at Theddlethorpe relate to night time noise levels as they would be perceived either in the countryside in general, or by local residents in their properties (5.184).

11.125 BS4142 is referred to in PPG24 for the assessment of noise (5.186a, 6.72f). It says that the introduction of a new sound source that would cause a difference of 10dB or more indicates that complaints would be likely and a difference of 5dB would be of marginal significance (5.186d, 6.72a). However, the BS also warns against using this approach where the background and the rating noise levels are both very low; defined as below about 30dB and 35dB respectively (6.72b).

11.126 This would mostly be the case at the proposed Saltfleetby site. Bearing this, and the absolute sound levels, in mind I have already concluded that there would be some limited noise disturbance during the drilling operations, but very little thereafter (11.35).

11.127 At Theddlethorpe the background noise and the predicted noise levels are generally above the BS4142 'low level threshold' and the difference should therefore be taken into account (5.188). The difference between the two is minimal, indicating no likelihood of complaints (5.188f). With this small difference, there would also be little change to the noise experienced within the surrounding dwellings, for instance in bedrooms at night (5.188d). Whilst it may be desirable to limit a new noise source to about 10dBA below the background to avoid the ambient noise level creeping up, in this case there would be only a limited effect on the creeping ambient noise levels in the area (5.188g, 6.72).

11.128 Even accepting the higher background noise levels at Theddlethorpe, there would be only limited harm to the noise environment for the local people: as indeed would be the case at Saltfleetby.

Traffic

11.129 The existing Theddlethorpe Gas Terminal has good access to the A1031 coast road, and so would any of the possible nearby GSF sites (2.20). Whilst vehicles would still have to access Wellsites A & B, at least the GSF traffic would be removed from the minor roads around the Grayfleet East site, including Tinkle Street (6.85). Despite my earlier conclusion that this traffic would not be particularly harmful, its reduction would be of some benefit to the local people.

Safety

The Gas Storage Facility

11.130 I have already concluded that the Saltfleetby GSF would be safe, and the COMAH regulations would apply just as much to a GSF at Theddelthorpe (11.11 & Annex B, para 5.14). Their need to avoid a 'domino effect' could require specific separation distances from the existing complex, but whatever was determined would ensure the safety of the public (Annex B para 5.14).

Pipelines

11.131 There is a duty to reduce risk as low as reasonably practicable (ALARP) and the WSUK scheme is probably ALARP if considered environmentally acceptable (Annex B, paras 5.8 & 5.9). Particularly because of the unprecedented on-shore gas pressures, the County Council's alternative pipeline proposals would have a somewhat greater risk profile than the proposed scheme. Nevertheless, the absolute value of that risk would still be within the range that people regard as insignificant or trivial in their daily lives and might not therefore preclude such an arrangement (Annex B, paras 5.8 & 5.9).

Technical and Operational Considerations

11.132 With a single pipeline, the time required for pigging whenever there was a change from export to storage modes would be a significant drawback, though that could be overcome with the County Council's two/three pipeline proposal (Annex B, paras 5.10 & 5.11). The latter would require a wider easement (Annex B, para 5.11) with no doubt additional temporary effects on the landscape. In either case, there would have to be a slug catcher and very likely a methanol still at Theddlethorpe (Annex B, paras 5.12 & 5.13). There is little evidence to show that there would be any significant synergies with the existing Theddlethorpe plant, for instance there are no compressors to pressurise the gas; probably the most basic aspect of the GSF (Annex B, para 5.15). Accordingly, there would be technical and operational issues that carry significant weight against a Theddlethorpe option (Annex B, para 5.16).

Cost and Viability

11.133 Although no breakdown was provided, the total cost of the proposed scheme was estimated at about £200m (5.171, 6.60) and, without any design work, the additional costs of a Theddlethorpe scheme were far from precise. However, WSUK estimated the additional costs of a 20" 220barg single pipeline to Theddlethorpe at about £6m (6.60) and, despite the present treatment facilities at the gas terminal (6.61), they also envisaged the possible need for a methanol still at about £24m and a sizeable slug catcher (5.169). There would also be re-design costs (6.63) over and above the project costs to date, which were put at about £5m (6.62). They therefore accepted the top end of the County Council's range of £10-40m as the likely cost increase (5.169) and argued that a 20% increase could well have a major effect on the viability of the project (5.171). There is little certainty about the additional costs (6.63), but quite clearly,

some additional cost would be incurred for a higher pressure pipeline and the re-design of both the pipeline and the plant.

11.134 Whilst the County Council's proposal for a two pipeline scheme would use rather smaller diameter pipes, I very much doubt if that would reduce the total cost. With two pipelines rather than the one, I would expect the costs to be more or less in line with the figures quoted above (6.60).

11.135 WSUK did not commit themselves to undertake such a scheme, indeed, they specifically said that they did not wish to operate a 200barg pipeline (Annex B, para 3.59). That could of course be just because their proposal would be less expensive and easier to operate.

11.136 Without a financial appraisal (6.57), it is simply not possible to decide if these additional costs would render the scheme unviable (6.58, 6.64). It can however be concluded that it would be less profitable than the proposed scheme and, to that extent, less likely to proceed, particularly if there were uncertainties about the future. The same must be true for any developer not just WSUK (6.67). In this connection, the fuller note to the Ministerial Statement of May 2006 says that developers will be best placed to make judgements about the technical feasibility and financial viability of individual projects (5.11).

11.137 That does not of course mean that an unacceptable scheme should be permitted simply on the grounds of the cost of producing an acceptable scheme (6.59, 6.65) but there are, at the very least, considerable uncertainties whether a Theddlethorpe GSF scheme would proceed. If it did not and there was no underground gas storage at Saltfleetby, the social and economic benefits to the nation would not be realised (11.104).

Delay

11.138 Whatever the reason for the past delays they are irretrievable, so I am only concerned with the delays that would occur in the future (6.86).

11.139 In the event that the Secretary of State were to refuse the application and WSUK decided to prepare a new scheme with the GSF at Theddlethorpe, there would be a delay while a new scheme was prepared, environmentally assessed and, if found acceptable, approved (5.173). There is no certainly that an acceptable scheme could be devised but, if it could, the application would in future go to the Infrastructure Planning Commission, which has been established to speed up the approval process. Even so, both the Applicants and the County Council envisaged a delay of two years or so (5.174, 6.85, 6.89).

11.140 Whilst acknowledging the IPC's new procedures, bearing in mind the unique nature of a 220 barg onshore pipeline and the delays encountered in developing the 144 barg Corrib pipeline in Ireland (Annex B para 5.9), I would envisage a minimum delay of two years.

11.141 With very much the same construction period, such a delay would clearly mean the scheme would not be operational until at least 2015/16 (5.174); some way beyond the 2013/14 date at which the need for storage is likely to become a particular issue for the security of the nation's gas supplies (6.78, 11.98).

11.142 Although WSUK would be able to construct the pipeline under permitted development rights, they would still need consent under the Gas Transporters (Environmental Impact Assessment)(England and Wales) Regulations (6.87). No application had been made at the time of the Inquiry, but WSUK declared an intention to do so, and there should be adequate time for an application to be made and determined alongside the other applications that were the subject of the Inquiry (6.87, 6.88).

Policy

11.143 Apart from the Coastal Conservation Area matter noted above (11.120), a GSF at Theddlethorpe would be subject to very similar Development Plan and national policies as one at Saltfleetby. I do not consider there would be much to choose between the two in this respect.

Other Considerations

11.144 I see no reason to consider a GSF at Theddlethorpe would have any materially different effects to one at Saltfleetby in terms of water resources, flora and fauna (6.75), atmospheric discharges or tourism. Similar considerations would also apply to flood risk.

11.145 Without even an outline proposal, there has of course been no proper public consultation on a Theddlethorpe option where the Parish Council, and others, might well oppose the scheme (9.2).

Summary of Alternatives

11.146 There is little prospect of additional linepack, and large scale gas storage in the North Sea would be possible, but much more expensive and therefore less likely to proceed than the proposed onshore option. Gasometers would not provide anywhere near the same scale of storage as the proposed scheme (11.112).

11.147 Access to the gas field needs to be from above, where Wellsites A and B already exist and could be suitably adapted (11.114), but there is more flexibility in the positioning of the GSF. There was no suggestion that any other site for the GSF on the gas field would be any better than the proposed one at Grayfleet East (11.116).

11.148 The possibility of a GSF at Theddlethorpe was considered only in the most sketchy outline form (11.117). There might be less harm to the landscape with a Theddlethorpe GSF (11.122) and there would be insignificant light pollution (11.123). As at Saltfleetby, there would be no major impact from noise (11.128), but a Theddlethorpe GSF would reduce still further the already acceptable traffic flows at Saltfleetby (11.129).

11.149 Adequate, though possibly different, safety measures could just as well be put in place at Theddlethorpe as at Saltfleetby, though the Theddlethorpe option would be likely to increase the technical and operational complexity of the scheme.

11.150 Significant additional costs would be involved with a Theddlethorpe option (11.133) and these would reduce the profitability of the scheme whoever developed it. Whether it would become financially unviable is not known (11.136). Refusal of the present applications would however result in a delay of at least two years in providing the new storage capacity which

would be beyond the time at which the need for additional storage could well become an issue for the security of national gas supplies (11.141).

11.151 The above conclusions are based on very limited evidence, and there is no real way of knowing whether an acceptable scheme could be produced at Theddlethorpe (6.13). Furthermore, if such a scheme was promoted, there is no evidence to show that it would be clearly better than the Applicant's proposals (5.154, 6.14). It is however clear that any such development would very likely be significantly more expensive, more technically and operationally complex and undoubtedly take at least two years longer to become operational; if indeed it proceeded at all.

Planning Obligation

11.152 In reaching my conclusions, I have taken the terms of the Applicants' unilateral obligation into account (10.1, 10.2). Without them, I consider the traffic conditions on Tinkle Street and the nearby minor roads would be unacceptable.

Conditions

SAO and Gas Act 1965 Section 16 Conditions

11.153 It would be necessary and appropriate to attach the conditions put forward by the parties. They fall into two categories, those necessary to properly discharge the Secretary of State's duties under Section 4 of the Gas Act 1965, and those safety conditions which may be imposed separately under Section 16. In Annex C, I give both sets of conditions (10.20).

Planning Conditions

11.154 There is no dispute that the Secretary of State has power to attach conditions to a deemed planning permission (6.7).

11.155 The planning conditions referred to below are numbered in accordance with those shown in Section 18 of the Statement of Common Ground (10.6) and Section 10 above.

Condition 3 – Duration

11.156 Despite the nominal 25 year life quoted in the ES, I see no particular reason why the development should be time limited (10.7, 10.8). This is not the usual extractive minerals process where the supply of mineral would become exhausted. Instead, this would be a cyclic process of repeated filling and withdrawing the gas which I consider should be allowed to continue as long as there is a national need for the development.

Condition 5 – Approved Plans

11.157 There was no traditional planning application in this case and therefore no definitive application plans, but those listed in Document WG20 would appropriately identify the development and should be referenced in an appropriate condition (10.9).

Condition 9b – Construction Hours

11.158 It would be more precise to define work in an 'emergency' as that being necessary in the interests of health and safety (10.10).

Condition 9c – Construction Noise

11.159 It may well be that short term construction projects can have noise limits set at 65-70dB(A), but this would be up to a three year construction programme. The proposed scheme has been assessed on the noise levels that were given in evidence; the highest at a noise sensitive property being 54dB(A) and, regardless of the District Council's suggestion, I consider the limit should be 55dB$L_{Aeq(1hr)}$ in order to safeguard the living conditions of the affected residents (10.11, 10.12)

Condition 10a – Drilling Noise

11.160 The exact position for noise measurements at each property should be a matter for subsequent determination in a noise monitoring programme (10.13).

Condition 11a – Operational Noise

11.161 As in Condition 10a, the detailed noise measurement location should be included in a noise monitoring programme, and the term emergency should be defined as in Condition 9b above.

Condition 12 – Emergency Noise Levels

11.162 Again the term emergency should be defined as in Condition 9b.

Condition 15 – Construction Traffic Hours

11.163 Clearly the intention is to restrict the times of HGV movements in and out of the site throughout the construction period and not just for the activities mentioned in the suggested condition (10.17).

Condition 24 – Construction Waste

11.164 A method statement for minimising waste should be aimed at just that. I therefore see no reason to add the County Council's proposed amendment (10.18).

Condition 28 – Restoration Plan and
Condition 29 – Removal of Plant and Machinery

11.165 Although I see no reason to time limit the development if it is still performing a beneficial function, the Applicants have indicated the prospect of ceasing to operate the site at some time and, at that point, envisaged restoring it, probably to agriculture (10.8). In these circumstances, I consider it necessary to attach conditions requiring an appropriate restoration scheme, which would no doubt include the removal of the plant and machinery. With that condition, it would not be normal practice to also require a bond, as suggested by one of the objectors (7.4).

Schedule of Planning Conditions

11.166 I have considered the necessary conditions that might be attached to the deemed planning permission, if it is granted, and I attach them as Annex C. In some cases, I have varied the wording and the reasons where I consider that appropriate and in accordance with the guidance in Circular 11/95.

Overall Conclusions on SAO and Deemed Planning Consent

11.167 As the SAO and the matter of a deemed planning consent are interdependent, I have considered them together against the Development Plan and the other material considerations (11.8).

11.168 The proposed scheme would conflict with the policies of the Development Plan and National Planning Policy primarily because of the effect on the landscape and, to a much lesser extent, from noise emissions (11.88, 11.92).

11.169 The scheme would comply with National Energy Policy in helping to meet an urgent national need for gas storage capacity by about 2013/14 (11.103, 11.109).

11.170 Alternative schemes for gas storage in the North Sea, or gasometers, are not realistic alternatives to the use of the Saltfleetby Gas Field (11.146) and the wellsites need to be more or less where the existing ones are situated (11.147).

11.171 There is more flexibility in the positioning of the GSF and the most realistic alternative would be to locate it at Theddlethorpe (11.148). However, there is no real way of knowing whether an acceptable scheme could be designed. Even if it were, there is no evidence to show that it would be clearly better than the proposed scheme. It would most likely be more expensive, and there would be delays of at least two years in meeting the urgent need for gas storage (11.151).

11.172 Whilst there would be some conflict with the Development Plan, I conclude that this is outweighed by the urgent need for the development and the lack of realistic alternatives. Accordingly, the SAO should be granted and a direction made that deemed planning permission should also be granted. In both cases, the suggested conditions in Annex C should be attached.

Deemed Hazardous Substances Consent

11.173 The application is for a direction that deemed Hazardous Substances Consent be given by Lincolnshire County Council as the Hazardous Substances Authority for the area. The Health and Safety Executive was consulted and concluded that there would be no significant reasons on safety grounds for refusing Hazardous Substances Consent and the County Council have raised no objections on this point (Annex B, para 5.17 & 5.18). The conditions recommended by the HSE were considered at the Inquiry and are included in Annex C to this report.

11.174 I conclude that a direction should be made that Hazardous Substances Consent be granted, subject to the suggested conditions in Annex C.

Compulsory Purchase Order

11.175 As a public gas transporter, WSUK made the CPO in accordance with the Gas Acts of 1965 and 1986, and the Acquisition of Land Act 1981 (2.28). If confirmed, the Order would authorise the acquisition of land for the Gas Storage Facility (GSF) and the expansion of Wellsites A & B, the rights to drill below 800m and to store gas in strata between 2,240 and 2,450m below ground as well as the right to access and plant areas of off-site

landscaping and the right to lay and maintain a pipeline to Theddlethorpe (2.29).

11.176 The Order Land covers an area of 2,097.6ha and includes 737 land ownership plots; many relating just to the storage of gas. There were 10 objections to the CPO, two of which were withdrawn before the Inquiry started (2.30).

11.177 The CPO Objectors raised issues relating to Human Rights (7.14), WSUK's right to compulsory purchase powers (7.14), the need for compulsory powers in this case (7.15), the legality of confirming the Order (7.14), whether confirmation of the CPO would pre-judge the SAO/Planning process (8.21), strong public opposition demonstrated by the limited voluntary take-up (7.15), depression of property values (7.15), no local mains gas supplies (7.15), no commercial compensation rate to landowners (7.16) and that the CPO should enable owners to sell up and leave the area (8.22). The issues of environmental harm and safety (8.23) that were raised by CPO objectors have been covered in the SAO/Planning considerations above.

Property Blight and Compensation

11.178 Several objectors argued that the development would blight their property values and affect business incomes (7.15, 7.16, 8.22), but that is a matter for determination through the compensation process, either by voluntary agreement or, if necessary, through the Lands Tribunal (5.201). Accordingly, the amount of compensation is not a matter for the Secretary of State to consider in deciding whether to confirm the CPO. The appropriate value of the underground storage rights of the property owners would no doubt be taken into account in the process (5.199, 7.15)

WSUK's authority to make a CPO

11.179 Whilst WSUK may not be a Local Authority or Government Department, they are a licensed Gas Transporter and are therefore statutorily entitled to compulsory purchase powers (2.28, 7.14). WSUK is not UK owned, but the ownership of the company is not material to that entitlement (5.6, 7.14).

Propriety of Confirming the CPO

11.180 The whole purpose of the Compulsory Purchase Order is to enable the scheme to proceed and, having taken into account all the material considerations, I have concluded above that this would be in the public interest (8.23, 11.172). This is a good example of the benefits of considering the SAO/Planning merits of a development at the same time as the CPO that would be needed for its implementation (8.21). Whilst every effort should be made to achieve voluntary agreements (5.199), the number outstanding may or may not reflect the degree of public opposition. Nevertheless, that in itself is not a major consideration in deciding whether the CPO should be confirmed in the public interest (7.15).

Need for the CPO

11.181 WSUK entered into negotiations with all the landowners of the 737 plots of land and, by the end of the Inquiry they had achieved voluntary agreements with 181 of the 644 landowners involved (5.199). Although some cases were in the hands of solicitors, that still left 463 to be completed; many relating to the underground strata (5.198, 7.15). There is no evidence to show an absence of need for any of the CPO land or rights. Accordingly, failure to complete every last agreement could well jeopardise the entire project and, without compulsory powers, there would be a very real possibility that the national benefits of the development would not materialise.

Impediments to the Scheme Proceeding

11.182 Even if the SAO, the CPO and the deemed planning and hazardous substances consents are approved, a considerable list of further approvals would be required to implement the scheme (2.31). The Applicants intend to submit the necessary application for Environmental Impact Assessment of the Theddlethorpe Pipeline (2.32) and the other applications which logically follow on from the SAO determination. They would almost all require authorisation from the HSE or the Environment Agency who have been consulted but there is no reason to suppose the necessary approvals would not be forthcoming (2.31).

11.183 WSUK has stated their intention to bring forward the scheme to contribute to the gas storage capacity in the UK by 2013/14. Furthermore, WSUK is ultimately owned by two very large companies with the expertise and funding to carry out the project which is estimated at about £200m (5.6, 5.202, 6.57).

11.184 I conclude that there should be no significant impediments to the scheme proceeding if the current Orders and authorisations are granted.

Human Rights and the Public Interest

11.185 Article 1 of the First Protocol of the European Convention on Human Rights has been transposed into UK law by the Human Rights Act 1998 (7.14). This Article entitles every person to the peaceful enjoyment of his possessions, but it is a qualified right because it also says that this does not impair the right of the State to control the use of property in accordance with the general interest. In this case, I consider it would be in the public interest to confirm the Order and therefore no human rights would be infringed.

11.186 It was pointed out that those local people who would be principally affected by this gas storage scheme did not benefit from a mains gas supply to their properties (7.15). Even so, along with the rest of the residents of the UK, they would benefit from the improved national economy and the security of their electricity supplies (5.5, 11.100).

Summary of Conclusions on Compulsory Purchase Order

11.187 Property blight is a matter for compensation, the amount of which is considered through a separate system and is not a matter for the Secretary of State in this determination.

11.188 WSUK has the statutory right to compulsory powers and it can be beneficial to consider the CPO at the same time as the other principal applications. There is a need for the CPO in order to ensure that failure to acquire the necessary land and rights would not prevent the scheme proceeding; and there are no other identified impediments to the development.

11.189 There is no human rights reason not to confirm the Order for which I consider there to be a compelling case in the public interest.

12 Recommendations

12.1 I recommend that:-

- The Storage Authorisation Order be made,
- A direction be given that deemed planning permission be granted,
- A direction be given that deemed Hazardous Substances Consent be granted, and
- The Wingas Storage UK Ltd (Saltfleetby Gas Storage Facility) Compulsory Purchase Order 2009 be confirmed.

J I McPherson
INSPECTOR

Annex A - Glossary of Abbreviations and Terms

3LPE Three Layer Polythene
AGI Above Ground Installation
ALARP As Low As Reasonably Practicable
ALC Agricultural Land Classification
AOD Above Ordnance Datum
AQIA Air Quality Impact Assessment
AQMA Air Quality Management Area
Barg Bar Gauge
BAP Biodiversity Action Plan
BAT Best Available Technique
BCM Billion Cubic Metres
BERR Business, Enterprise and Regulatory Reform
BGL Below Ground Level
BGS British Geological Survey
BPEO Best Practicable Environmental Option
BS British Standard
CATS Central Area Transmission System
CCA Coastal Conservation Area
CCGT Combined Cycle Gas Turbine Power Generation Plant
CCTV Closed Circuit Television
CHP Combined Heat and Power
CIPS Close Interval Potential Survey
COMAH Control of Major Accident Hazards
CP Cathodic Protection
CRA Corrosion Resistant Alloy
dB(A) Weighted decibel
DECC Department of Energy and Climate Change
DfT Department for Transport
DN Distribution Network
DTI Department of Trade and Industry
DUKES Digest of Energy Statistics
EA Environment Agency
EAL Environmental Assessment Levels
EIA Environmental Impact Assessment
ELLP East Lindsey Local Plan
EQS Environmental Quality Standard
ES Environmental Statement
ESD Emergency Shut Down
FRA Flood Risk Assessment
FRED Fire, Release, Explosion & Dispersion (Shell Global Solutions software)
GSF Gas Storage Facility
GPS Global Positioning System
GLVIA Guidelines for Landscape and Visual Impact Assessment
GW Giga Watts
HASWA Health and Safety at Work, etc Act 1974
HDD Horizontal Directional Drill
HER Historic Environment Record
HGV Heavy Goods Vehicle

HP High Pressure
HSE Health and Safety Executive
IPC Infrastructure Planning Commission
IPPC Integrated Pollution Prevention & Control
JESS Joint Energy's Security of Supply Working Group
LAQM Local Air Quality Management
LBAP Local Biodiversity Action Plan
LCC Lincolnshire County Council
LDD Local Development Documents
LDF Local Development Framework
LGCM Lincolnshire Coastal Grazing Marsh
LBAP Local Biodiversity Action Plan
LMP Lighting Management Plan
LMLP Lincolnshire Minerals Local Plan
LNG Liquefied Natural Gas
LNR Local Nature Reserve
LSP Lincolnshire Structure Plan
LVIA Landscape and Visual Impact Assessment
MCM Million Cubic Metres
MCMD Million Cubic Metres per day
MHSWR Management of Health and Safety at Work Regulations 1999
MPS Minerals Planning Statement
MSS Metres Substance
NG National Grid
NNR National Nature Reserve
NPS National Policy Statement
NTS National Transmission System
PC Process Contribution or Parish Council
PEC Predicted Environmental Concentration
PEDL Petroleum Exploration and Development Licence
PPG Planning Policy Guidance
PPS Planning Policy Statement
PSR Pipelines Safety Regulations 1996
QRA Quantitative Risk Assessment
R2P2 Reducing Risk, Protecting People
RAWP Risk Assessment Working Group
RPG Regional Planning Guidance
RSSEM Regional Spatial Strategy for the East Midlands
SAC Special Area of Conservation
SAO Storage Authorisation Order
SCC Stress Corrosion Cracking
Sm^3 Standard Cubic Metre
SMR Sites and Monuments Record
SNCI Site of Nature Conservation Importance
SOCG Statement of Common Ground
SoS Secretary of State
SSSI Site of Special Scientific Interest
SPA Special Protection Area
TBE Transporting Britain's Energy

TC Trenchless Crossing
TGT Theddlethorpe Gas Terminal
TDU Thermal Dose Unit
T/R Transformer/Rectifier
UGS Underground Gas Storage
UKBAP United Kingdom Biodiversity Action Plan
UKCS United Kingdom Continental Shelf
UKOPA United Kingdom Onshore Pipeline Operators' Association
WSUK WINGAS Storage UK Ltd

Adsorption Unit	Four towers with silica gel which adsorbs fluid from the gas, finally drying it. Two towers are in service at any one time, one on standby and one being regenerated using gas fired desorption heaters.
Agenda 21	A programme run by the United Nations (UN) related to sustainable development. It is a plan of action to be taken globally, nationally and locally by organizations including the UN, and national governments.
Agricultural Land Classification (ALC)	The process used to determine the quality of agricultural land. Grades 1, 2 and 3a are classed as being the "best and most versatile" land, and are deemed as being a nationally important resource.
Air Quality Objective	Policy target generally expressed as a maximum ambient concentration to be achieved, either without exception or with a permitted number of exceedences within a specific timescale (see also air quality standard).
Air Quality Standard	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups (see also air quality objective).
ALARP	The Health and Safety at Work etc. Act 1974 and subsequent legislation requires employers to reduce risks, to employees and members of the public, from their undertakings to as low as is reasonably practicable. The term 'reasonably practicable' is defined by case law and involves weighing a risk against the sacrifice in time, money and trouble needed to reduce that risk. If there is a gross disproportion between the reduction in risk and the sacrifice required, then no action is necessary and the risk level is ALARP.
Amenity	The preferable features of a location which contribute to its overall character and the enjoyment of residents or visitors.
Aquatic vegetation	Plants adapted to living in water
Aquifer	An aquifer is an underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt, or clay) from which groundwater can be usefully extracted.
Arable land	Land cultivated for plant crops.
Archaeological	Review and synthesis of available archaeological and historical data within

Desk Based Assessment	a search area (typically 1km radius) to establish a site's archaeological background.
Area of Great Landscape Value	Areas of Great Landscape Value (AGLV) are locally designated areas of countryside whose distinctive character and natural beauty is valued at the local (county, district or borough) level. AGLV are identified in local planning policy and are generally subject to greater levels of protection in respect of development than areas of undesignated open countryside.
Area of Outstanding Natural Beauty	Areas of Outstanding Natural Beauty (AONB) are nationally designated areas of precious landscape whose distinctive character and natural beauty are so outstanding that it is in the nation's interest to safeguard them. Their care has been entrusted to the local authorities, organisations, community groups and the individuals who live and work within them or who value them. The Countryside and Rights of Way Act, 2000 added further regulation and protection, ensuring the future of AONBs as important national resources.
AutoTRACK	Computer-aided design programme to show the swept path of a manoeuvring vehicle.
Baseline	Existing environmental conditions present on, or near a site, against which future changes may be measured or predicted.
Best Available Techniques	The most effective techniques for achieving a high level of protection of the environment as a whole, techniques that have been developed on a scale which allows them to be used in the relevant industrial sector, under economically and technically viable conditions, taking into account of the costs and advantages. Includes both the technology and the way the installation is designed, built, maintained, operated and decommissioned.
Biodiversity	Abbreviated form of 'biological diversity' referring to variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part.
Biodiversity Action Plan	Plans which set specific, measurable, achievable, realistic and time bounded conservation targets for species and habitats. The UK BAP is the UK Government's response to the Convention on Biological Diversity (CBD) signed in 1992. It describes the UK's biological resources and commits a detailed plan for the protection of these resources. It has 391 Species Action Plans, 45 Habitat Action Plans and 162 Local BAPs with targeted actions. www.ukbap.org.uk
British Standards	The display of a British Standard number shows that the manufacturer claims to have made the product in accordance with the British Standard. A standard is a published document that contains a technical specification or other precise criteria designed to be used consistently as a rule or definition. Standards are designed for voluntary use and do not impose any regulations. However, laws and regulations may refer to certain standards and make compliance with them compulsory. Sometimes BS will be accompanied by the letters EN and/or ISO. These mean that the standard was developed as a European (EN) or International (ISO) standard and then adopted by the UK as a British Standard.
Bronze Age	The period between about 2500BC and 700BC characterised by the use of bronze

Buffer zone	An area separating two or more types of land use, such as between a residential area and a commercial area, for the purposes of preserving amenity.
Cap Rock	The layer or layers or rock overlaying the reservoir rock which provides the seal or cap which contained the original gas. Without this the gas would have gently percolated to surface and dispersed, as the majority of natural gas (methane) does, to be oxidized in the atmosphere. At Saltfleetby the cap rock is a 600 metre thick layer of dense marine mudstone.
Catchment Area	A land area where precipitation runs off into streams, rivers, lakes, and reservoirs. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge.
Cold vent	A narrow tall pipe to vent gas safely if the plant, or part of it, must be depressurised for maintenance or in the event of emergency. N.B. this vent does not vent the reservoir contents.
Compression facility	The equipment needed to raise the pressure of the gas sufficiently high for the gas to dissipate into the pores of the rock (see Reservoir). This will consist of gas turbine driven compressors and coolers.
Condensate	A hydrocarbon liquid which condenses from the gas when it cools in the same way water condenses from steam on a cold window.
Condition	An obligation attached to a planning permission which circumscribes the manner in which a development may be carried out.
Consultation	Procedures for assessing public opinion about a plan or major development proposal, or in the case of a planning application, the means of obtaining the views of affected neighbours or others with an interest in the proposal.
Consultation bodies	Any body specified in the relevant EIA Regulations which the Competent Authority must consult in respect of an Environmental Statement, and which also has a duty to provide information or advice during the EIA process.
Conservation Status	For habitats, conservation status is determined by the sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area; for species, conservation status is determined by the sum of influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area.
Critical Load	The highest load that will not cause chemical changes leading to long-term harmful effects in the most sensitive ecological systems.
Curtilage	The land, often enclosed, around a building.
Cushion Gas	The gas reinserted into the reservoir in order to raise the pressure to a level where the storage facility can work efficiently.

dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2x10^{-5}$Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Department of Energy and Climate Change (DECC)	The Government department, created in October 2008, which is responsible for energy policy, including gas storage, and climate change mitigation policy. www.decc.gov.uk
Department for Communities and Local Government (DCLG)	This UK Government Department took over responsibility for planning issues from the Office of the Deputy Prime Minister in May 2006. www.communities.gov.uk
Department for Environment, Food and Rural Affairs (DEFRA)	This is a government department responsible for the regulation of the food industry in the UK, animal welfare and environmental issues as well as flood defence whose aim is sustainable development. www.defra.gov.uk
Department for Transport (DfT)	The government department responsible for transport matters. www.dft.gov.uk.
Development Control	The term commonly employed to describe that part of the Town & Country Planning Act (as amended) which relates to the submission and determination of planning applications.
Development Plan	A set of documents (text and maps) which contain the regional planning body and local planning authority policies and proposals for development, including minerals (Regional Spatial Strategies and Development Plan Documents). Unitary development plans, structure plans and local plans are now superseded.
Development Plan Documents (DPD)	Development plan documents, together with the Regional Spatial Strategy, form the development plan. The DPD include the core strategy, allocations, proposals map and action area plans.
Ecological Integrity	An ecological term used to describe a site. The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.
Environmental Impact Assessment	The process by which information about the environmental effects of a proposed activity is collected, analysed and presented to decision makers.
Environmental Statement	A document which presents the findings of an Environmental Impact Assessment together with details of appropriate mitigation.
Effect	A physical or measurable change to the environment attributable to the Proposed Development.

Exceedence	A period of time where the concentrations of a pollutant is greater than, or equal to, the appropriate air quality standard.
Fauna	Animal life.
Feature (Landscape feature)	(or element) a component part of the landscape (eg hedge, wood, stream)
Floodplain	A strip of relatively flat and normally dry land alongside a stream, river, or lake that is inundated by water during a flood.
Flood risk	The probability of flooding occurring in a particular area.
Flora	Plant life.
Flue	It is instance it is a chimney for conveying exhaust gases from the boiler to the outdoors.
Foul water	Water which is contaminated by human or industrial waste.
Free-field Level	A sound field determined at a point away from reflective surfaces other than the ground with no significant contributions due to sound from other reflective surfaces. Generally as measured outside and away from buildings.
Frequency (Sound)	The rate of repetition of a sound wave. The subjective equivalent in music is pitch. The unit of frequency is the Hertz (Hz), which is identical to cycles per second.
Geomorphology	The study of landforms and processes that shape them, including buried land surfaces and deposits.
Geophysical survey	Recording of potential subsurface archaeological features by mapping variations in magnetic fields or electrical resistance.
Glare	The uncomfortable brightness of a light source when viewed against a dark background.
Groundwater	Water located beneath the ground surface in soil pore spaces and in the fractures of geologic formations
Ground flare	An enclosed (boxed but open at the top) low level flare to burn off gas liberated from the condensate stabilisation system which has then been used to blanket the condensate storage tanks (the gas excludes oxygen and prevents formation of an explosive atmosphere in the tank).
Habitat	The environment in which populations or individual species live or grow.
Heavy Goods Vehicle (HGV)	Vehicles over 7.5 tonnes gross weight or where noise calculations are concerned, vehicles of unladen weight exceeding 1,525 kg (Calculation of Road Traffic Noise document (issued by the Department of Transport in 1988)
Herbaceous	Relating to plants that are fleshy as opposed to woody.
Historic	The repository for all archaeological and historical information relating to

Environment Record (HER)	a county or district.
Holt	A place of shelter used by otter. May be above ground or an underground feature.
Hydrology	The movement, distribution and quality of water throughout the earth.
Illuminance	Illuminance expresses the quantity of light that arrives on a surface. It is measured in lux (lx) and indicated with the letter E. Illumination is a relative quantity which expresses the ratio between the flux and a surface: an illuminance of 1 lux corresponds with a flux of 1 lumen distributed over a surface of 1 metre squared. Illuminance can be measured on a horizontal or a vertical surface. Usually, if not otherwise specified, it refers to illuminance on the "working plane", that is on the hypothetical horizontal surface, at a height corresponding to that of a normal desk or work bench (about 85cm). Illuminance is very important for describing the lighting conditions of an environment.
Impact	A physical or measurable change to the environment attributable to the Proposed Development
Improved grassland	Grassland that has been agriculturally improved, usually through application of fertiliser, and typically characterised by few dominant grass species.
Indicator species	Species (usually but not always flora) that are especially characteristic of semi-natural habitats. Individually they are often slow to colonise new ground and the presence of a collection of such species occurring together suggests that the habitat is semi-natural and of long continuity. Indicators relevant to the ES are those of ancient woodlands and grasslands on neutral soils (“mesotrophic” grasslands).
Indirect impacts	Impacts on the environment, which are not a direct result of the development but are often produced away from it or as a result of a complex pathway. Sometimes referred to as secondary impacts
Inlet facility	The first part of any gas processing plant. It is where the majority of fluids are removed.
Interconnecting pipelines	Short lengths of pipeline connecting the GSF compressors to the wells.
Internationally protected biological sites	Sites that, in addition to being designated SSSI are designated under European or other international law or treaties. On land these include Special Protection Areas (SPA) for birds and Special Areas of Conservation (SAC) for other fauna, flora and habitats (Sites of [European] Community Importance) and Ramsar wetland sites.
Invertebrate	Any organism that does not have an internal bony or cartilaginous skeleton, such as insects, spiders, snails and related fauna.
Iron Age	The period between about 700BC and AD43 characterised by the use of iron.

L_{90}	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence, L_{90} is the level exceeded for 90% of the time and is often used to describe the background noise.
$L_{Aeq, T}$	L_{Aeq} is defined as the notional steady sound level which, over a stated period of time (T), would contain the same amount of acoustical energy as the A - weighted fluctuating sound measured over that period.
L_{Amax}	L_{Amax} is the maximum A - weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
Land use	The primary use of the land, including both rural and urban activities.
Landform	Combinations of slope and elevation that produce the shape and form of the land.
Landscape analysis	The process of breaking the landscape down into its component parts to understand how it is made up
Landscape assessment	An umbrella term for description, classification and analysis of the landscape.
Landscape character area	Tract of landscape which may include several landscape types but which retains a recognisable local identity. They are related to a specific locality, and are therefore unique.
Landscape character type	Distinct unit of landscape where particular landform and land cover elements combine to produce relatively homogenous landscape character. Landscape types are generic in that they may occur in different parts of the country, eg river floodplain, open, rolling downs.
Landscape effects	Change in the elements, characteristics, character and qualities of the landscape as a result of development. These effects can be positive or negative.
Landscape quality	The physical state of the landscape, based upon its intactness, from visual, functional and ecological perspectives. It reflects the state of repair of individual features and elements which make up the character of any one place.
Landscape value	The relative importance attached to a landscape because of its quality/condition and special qualities such as scenic beauty, tranquillity or wildness, rarity, known cultural associations and/or conservation interest. Expresses national or local consensus of opinion and is often used as a basis for designation of areas of landscape within a hierarchy of relative value in which National Parks and AONBs represent the landscapes of highest value which are nationally designated.
Landscape sensitivity	The extent to which a landscape can accept change of a particular type

	and scale without unacceptable adverse effects on its character
LMP	Light Management Plan
Local Biodiversity Action Plan (LBAP)	The Local Biodiversity Action Plan is the agreed strategy for conservation and enhancement in a particular area which will help meet the UK BAP.
Local Nature Reserve	A statutory designation of a site of local nature conservation significance, declared by local planning authorities under the National Parks and Access to the Countryside Act, 1949. Other non-statutory local nature reserves are established and managed by a variety of public or private bodies (e.g. county wildlife trusts, Royal Society for the Protection of Birds).
Local Plan	A detailed district or borough-wide land-use plan, prepared and adopted by a district planning authority, which is part of the statutory development plan. Consists of a written statement which sets out the district planning authority's development control policies and proposals for land use and transport over a period of about 10 years and an Ordnance Survey-based proposals map. The East Lindsey Local Plan and the Lincolnshire Minerals Local Plan will be replaced in due course by Core Strategies. In the interim period, the Secretary of State issued Directions in September 2007, identifying those policies in each plan which continue to remain in force, known as 'saved' policies.
Local Planning Authority	The local planning authority is the district, borough, unitary, city or county council which is the body responsible for the preparation of development plans, processing planning applications and guiding development within the administrative area.
Local Development Documents (LDD)	Local development document is the collective name given to all documents within the local development framework.
Local Development Framework (LDF)	The local development framework is the portfolio of local development documents which provide the basis for delivering spatial planning strategy.
Local Transport Plan (LTP)	Local transport plans are developed by partnerships of local authorities, businesses, transport operators and service users as part of the New Deal for Transport initiative and aim to promote integrated local transport systems and to tackle problems of congestion and pollution (Department of Transport Local Government and the Regions, 2002).
Luminance (cd/m^2)	Luminance expresses the ratio between the intensity emitted in a certain direction and the expanse of the emitting surface. It is indicated with the letter L and is measured in candela per square metre (cd/m^2). A luminance of 1 cd/m^2 is that produced in a certain direction by a surface which has, in that direction, an intensity of 1 candela and that appears to the observer with an expanse of 1 metre squared Luminance is the quantity more directly correlated with vision: it takes into account not only the quantity of energy which reaches the eye, but also the sensation of glare or discomfort that it can produce
Luminous flux (Lumen)	Luminous flux expresses the total quantity of luminous energy emitted from a source over a time interval. The flux does not give any information on the quality of the light, or on its distribution in space. If we imagine a

	comparison between light and water, a luminous source can be compared to an open tap, and the luminous flux expressed as the litre quantity of water that flows from the tap per second. The flux is indicated with the Greek letter Φ (Phi) and is measured in lumen (lm).
Luminous intensity (Candela)	Luminous intensity expresses the quantity of light which leaves a source in a certain direction. It is indicated by the letter I and is measured in candela (cd). More specifically, intensity expresses the ratio between the exit flux of a source within a certain solid angle and the size of the solid angle itself. An intensity of 1 candela corresponds with a flux of 1 lumen exiting from a solid angle of 1 steradian. Luminous intensity is a vector quantity therefore it is not sufficient to indicate the quantity alone but the associated direction must also be indicated in order to express it. To evaluate a lighting fixture, it is very useful to analyse the relative intensities in all directions on a plane.
Magnitude	A combination of the scale, extent and duration of an effect.
Medieval	The period of the Middle Ages between the early 5th century and mid 16th century AD.
Mesolithic	The period of the Middle Stone Age between about 9000BC and 4000BC characterised by hunter-gatherer communities.
Metering facility	Provision of fiscal quality metering (usually ultrasonic meters clamped to the outside of a section of pipework).
Mitigation Measures	Actions proposed to moderate adverse impacts and to enhance beneficial impacts arising from the whole or specific elements of the Proposed Development.
Minerals Planning Statements (MPS)	Documents issued by CLG setting out government policy and advice on minerals planning issues.
National Nature Reserve	An area designated by Natural England under 16 to 29 of the National Parks and Access to the Countryside Act 1949. Typically, NNRs are among the best examples of a particular habitat. NNRs are of national importance.
Natural Gas	Naturally occurring methane from decomposition of organic matter where no oxygen is present.
Neolithic	The period of the New Stone Age between about 4000BC and 2500BC characterised by the first settled farming communities.
Non Technical Summary (NTS)	A report which briefly describes the main points discussed in the Environmental Statement in a clear manner, without the use of technical jargon and phraseology.
Notable species	Notable species are those that are recognised (e.g. as rare, scarce, flagship species etc), as warranting particular attention in a legal or local policy context.

Off-site planting works	Planting proposed on land outside of the Application Site, to be implemented by legal agreement.
Permeability	The property or capacity of a rock, sediment or soil to transmit a fluid; it is a measure of the ease of fluid flow under unequal pressure.
Phase 1 Habitat survey	A qualitative survey, based on mapping (onto standard templates – OS maps and/or map record sheets) the distribution of habitat types across a site.
Photomontage	A type of visualisation or illustration that is based on photographs and that simulates the likely appearance of a proposed development in the photographic view.
Pigging	Sending a tool inside the pipeline propelled by pressure. The tool (named after Pipeline Internal Gauging tool) may range from a simple sphere, used to sweep fluids from the pipeline, up to an 'intelligent pig' with instruments to measure the wall thickness and other parameters of the pipeline during maintenance checks. The pig is launched from a pig launcher (a section of pipe with a loading door and valves able to divert flow behind the pig).
Planning Policy Guidance (PPG)	Planning Policy Guidance notes set out the UK Government's national policies on different aspects of planning. They are being replaced by Planning Policy Statements.
Planning Policy Statements (PPS)	Planning Policy Statements set out the UK Government's national policies on different aspects of planning. They are gradually replacing the Planning Policy Guidance notes.
$PM_{2.5}$	Particulate matter with a mean aerodynamic diameter of less than 2.5 micrometres (μm).
PM_{10}	Particulate matter with a mean aerodynamic diameter of less than 10μm.
Post-medieval	The period from the mid 16th century to the end of the 19th century, including the Industrial Revolution in the mid 18th century.
Prehistoric	Referring to anything belonging to or existing in times before recorded history (the Roman period) and including the Mesolithic, Neolithic, Bronze Age and Iron Age.
Primary Route Network	A nationally designated network of roads suitable for long-distance traffic between major centres.
Process Contribution	The ambient pollutant concentration arising from the operation of the proposed facility (i.e. the impact on air quality of the facility in isolation).
Predicted Environmental Concentration	Process Contribution plus the background ambient pollutant concentration.
Proposed Development	The proposals described in the "SAO Gas Act Application", and shown in the drawings accompanying the SAO Stage 2 Gas Act application
Quantitative	This refers to something that can be measured in a precise way to give a definite result. This contrasts with qualitative, which is usually a more

	subjective assessment of the amount of something.
Ramsar Sites	See ‘internationally protected biological sites’
Rarity (Ecology)	A measure of relative abundance.
Receptor	A component of the natural, created or built environment such as human being, water, air, a building, or a plant that is affected by an impact. Landscape receptors include physical landscape resources such as woods, hedgerows etc, special interests such as areas of landscape designation and visual receptors include viewer groups such as residents, users of public rights of way and roads.
Regional Spatial Strategy (RSS)	A strategy for how a region should look in 15 to 20 years time and possibly longer. It identifies the scale and distribution of new housing in the region, indicates areas for regeneration, expansion or sub-regional planning and specifies priorities for the environment, transport, infrastructure, economic development, agriculture, minerals and waste treatment and disposal.
Remediation	The treatment of soil / ground water to reduce the level / risk from contamination. There are many forms of remediation that can take place both on and offsite.
Reservoir	The geological structure in which gas is stored, in this case a 20 metre thick layer of sandstone around one and a half miles vertically below ground. The gas is held in pores between the sand grains, rather like a sponge.
Residual Effects	Those effects of the Proposed Development that cannot be mitigated following implementation of mitigation proposals.
Risk assessment	An assessment of the likelihood and severity of an occurrence.
Romano-British	The period characterised by the Romanised culture within that part of Britain that became part of the Roman Empire from AD43 until AD410.
Ruderal	Plant species typical of the early stages of colonisation of disturbed ground, often short-lived species, OR the community formed by a collection of such species in recently disturbed habitat.
Run-off	Precipitation (rain, snow, hail, etc.), snow melt, or irrigation water that appears in uncontrolled surface streams, rivers, drains or sewers.
Scheduled Monuments	Nationally important monuments that are legally protected under the terms of the Ancient Monuments and Archaeological Areas Act 1979.
Scoping Opinion	The formal view of the determining authority on the range of issues and topics to be covered by the Environmental Impact Assessment.
Scoping Study	An exercise undertaken to determine which elements will be covered in an Environmental Statement.
Scrub	Vegetation consisting of stunted trees, bushes, and other plants.
Significance of	The significance of effect is assessed by taking into consideration the

Effect	environmental sensitivity and importance of a receptor and the nature, magnitude (scale) and duration of the change or effect being assessed.
Site Context	The surrounding area to the Application Site.
Semi-natural habitats	Areas where plant and animal species are predominantly native to the locality and are determined primarily by physical characteristics (such as soil type and drainage) and by the interaction between species including flora and fauna. Such habitats are generally recognized as being of high nature conservation value.
Semi-natural woodland	Woodland which does not originate obviously from planting. Includes sites which are considered 'ancient', secondary woods on ancient sites and woods which may have developed on former settlements or quarries.
Sett	A place of shelter used by badger, typically an underground feature.
Shut In	A well is said to be shut in if the valve at the wellhead is closed, isolating the well bore from the surface facilities. If all the wellhead valves are closed, the reservoir is said to be shut in.
Shut In Pressure	During the withdrawal phase, the reservoir pressure will fall to 40 barg at the wellhead. This is the flowing pressure at the compressor junction. When the wellhead valves are closed at the end of withdrawal, the reservoir pressure will begin to rise due to the migration of gas from the reservoir at large towards the well bores. This is the 'shut in pressure' and is expected to be 100 barg. It should be noted that this is a characteristic of depleted reservoir fields.
Site of Nature Conservation Importance	Non-statutory designation selected at Local Authority level for a site of nature conservation interest.
Site of Special Scientific Interest	A site statutorily notified under the Wildlife and Countryside Act 1981 (as amended) as being of special nature conservation or geological interest. SSSIs include wildlife habitats, geological features and landforms.
Sky Glow	The brightening of the night sky above towns, cities and countryside.
Slug catcher	A vessel with a sump (or a system of pipes) to collect 'slugs' of fluid picked up by the gas flow in a pipeline.
Species	A group of interbreeding organisms that seldom or never interbreed with individuals in other such groups, under natural conditions; most species are made up of subspecies or populations.
Sound Pressure Level	The effective sound pressure or root-mean-square values of the pressure fluctuations above and below atmospheric pressure caused by the passage of a sound wave, expressed in decibels.
Source Intensity	This applies to each source in the potentially obtrusive direction, outside of the area being lit.
Special Protection Area	See 'internationally protected sites'

Special Area of Conservation	See 'internationally protected sites'
Spill point	The sub-surface contour around the reservoir structure, beyond which gas would no longer be contained. This is analogous to overturning a bowl in a tray of water. If more air (gas) is pumped into the bowl it will push the water down until it eventually bubbles out under the overturned rim of bowl. In this example the rim is the spill point.
Spraint	Otter faeces. Often used to demarcate territorial areas.
Statutory body	Government-appointed organisation that advises on particular issues such as health and safety.
Surface water	Water collecting on the ground or in streams, rivers or lakes.
Sustainable Drainage System (SuDS)	Sustainable drainage systems use techniques to control surface water run-off as close to its origin as possible, before it enters a watercourse. This involves moving away from traditional piped drainage systems to engineering solutions that mimic natural drainage processes such as porous pavements.
Ten Year Statement	Document produced annually by National Grid that sets out future supply-demand and investment.
Topography	The natural or artificial features, level and surface form of the ground surface.
Transport Assessment	A quantitative assessment of transport impacts of construction and operational phases of the Proposed Development.
Transport Audit	An audit of all transport work associated with the proposal.
Typicalness (Ecology)	Exhibiting the qualities, traits, or characteristics that identify a kind, class, group, or category.
UK Biodiversity Action Plan	See 'Biodiversity Action Plan'.
Visual amenity	The value of a particular area or view in terms of what is seen
Visual effect	Change in the appearance of the landscape as a result of development. This can be positive (ie beneficial or an improvement) or negative (ie adverse or a detraction)
Visual envelope	Extent of visibility to or from a specific location or site.
Visualisation	A computer simulation, photomontage or other technique to illustrate the appearance of a proposed development.
Void	The hollow created by the excavation of material in a quarry or open pit.
Watercourse	A flowing body of water such as river, stream or brook.
Well, Wellhead	A well is the hole originally drilled by a drilling rig which is lined with steel casing (i.e. pipe) with cement injected around it at high pressure. The

	casing is sealed at its bottom end with a casing shoe before drilling out of the bottom with a smaller bit a repeating the casing process. Thus the well consists of a series of ever smaller concentric casings, with the shoes (casing points) selected for operational reasons and to protect aquifers or to isolate other pressurised formations. The inner pipe is the production tubing which conveys the gas to surface where a casting with valves for isolation and maintenance is mounted. This valve arrangement is the wellhead (the casting on which everything is mounted is often called the 'Christmas Tree'.
Well-site	The area required for drilling the wells and for installation of the production equipment. The area is defined by the possible need to site a drilling rig on the site in order to carry out work-over, rather than the area needed for the production equipment.
Work-over	Maintenance of a well. May be a minor operation such as running gauges in to monitor pressure and temperature or may involve pulling production tubing to make repairs or to perforate the tubing to bring other geological strata into production. The final work-over is called abandonment. This is plugging the well and injecting cement into it such that it is completely sealed before cutting off the casings below plough depth.
Working Gas	The volume of gas injected and then withdrawn through the year. This is over and above the cushion gas (see above).
World Health Organization (WHO)	The World Health Organisation is the United Nations specialised agency for health. www.who.int/en/.
Zone of Theoretical Visibility (ZTV)	Areas from which a specified element of a development may be visible.

Annex B

Application by

Wingas Storage UK Limited

for

Storage Authorisation Order (Gas Act 1965, Section 4)
Deemed **Planning Permission** (Town and Country Planning Act 1990, Section 90)
Deemed **Hazardous Substances Consent** (Planning (Hazardous Substances) Act 1990)
The Wingas Storage UK Limited (Saltfleetby Gas Storage Facility) Compulsory Purchase Order 2009

Assistant Inspectors Report of the Public Inquiry

Assistant Inspector:	**Mark Kilcullen, BEng (Hons), C.Eng. M.I.E.T.**
Date of Report:	**23 February 2010**
Opening of Public Inquiry:	**1 December 2009**
Held at:	**Kenwick Park Hotel, Louth, Lincolnshire, LN11 8NR**
File Reference	**91-08-04-05/5C**

Contents of the Report

Introduction

1.1 In accordance with my Minute of Appointment dated 6 July 2009, I assisted during the Public Inquiry at the Kenwick Park Hotel, Louth, Lincolnshire which opened on 1 December 2009 into applications made by Wingas Storage UK Limited for a Storage Authorisation Order, deemed Planning Permission, deemed Hazardous Substances Consent and the Wingas Storage UK Limited (Saltfleetby Gas Storage Facility) Compulsory Purchase Order 2009.

1.2 I was asked to report on Plant, Safety and Operational aspects of the proposal and attended sittings on 1, 2, 3, 15, 16 December 2009 and 5, 7 January 2010. I also attended Site Visits on 7 December 2009 and 6 January 2010.

1.3 This report will be an Annex to the main report where details of representation, attendees and documents are given. This report includes the substance of the representations made at the Public Inquiry on plant safety and operational aspects, together with my comments and conclusions.

Description of the Proposal

2.1. A fuller description of the proposal is contained in the main report. As a summary, the proposal is to store natural gas in a depleted underground gas reservoir. Gas would be stored when the demand is low, generally when the price is low, and exported when the demand is high, generally when the price is higher.

2.2. In storage mode the gas would be imported via a 70 barg pipeline from the National Transmission System (NTS) at Theddlethorpe to a Gas Storage Facility (GSF) at Grayfleet East where it would be compressed to a pressure of up to 220 barg and piped to new storage wells on the extended A and B wellsites. A minimum quantity of gas would be retained in the reservoir, known as cushion gas. Gas which is cycled between storage and export is known as working gas.

2.3. In export mode the gas would flow from the wellsites to the GSF for processing to NTS specification before being returned to the NTS via a 70 barg pipeline to Theddlethorpe. The gas would need processing as water and condensate are also present in the reservoir and would be extracted with the gas. Gas extracted from the reservoir is referred to as wet gas, after processing it is referred to as dry gas.

2.4. Lincolnshire County Council object to the application on the basis that the GSF would be more appropriately sited at Theddlethorpe. Some local residents have cited safety concerns as part of their objections to the development.

The Case for Wingas Storage UK Limited

Matter 4 – whether concerns over the safety of the public can be satisfactorily addressed

3.1. Safety of the surface and sub-surface infrastructure is covered in the evidence of Mark Tissington (WG/MT/P). Mr Tissington sets out in detail the regulatory regime applying to the proposed facility, identifies the work done to date in considering safety and outlines the framework within which future work will be conducted in order to satisfy the HSE. Graham Goodfellow produces, as an Appendix to his evidence (WG/GDG/P), a Quantified Risk Assessment (QRA) of the proposed 70 barg pipeline to Theddlethorpe, as well as a QRA of an alternative 220 barg pipeline.

3.2. It is important to note that there is no safety objection from the HSE, Lincolnshire County Council or East Lindsey District Council.

3.3. Mr Tissington's evidence considers the geology of the Saltfleetby gas field, subsurface safety, and surface safety. Dr Tauchnitz's evidence details the experience WSUK's parent company has in operating gas storage facilities and pipelines in Europe and Russia (WG/FT/P App A).

The geology of the Saltfleetby gas field

3.4. Both the British Geological Survey report on the geology of the Saltfleetby gas field (CDA5 App 2) and Professor Haszeldine's evaluation of that report (CDA13) are in accord with WSUK's own assessment of the geological aspects of the gas storage proposal and conclude that the geology is suitable for gas storage.

3.5. Professor Main's report (CDA14) examined the implications of local seismic activity for the integrity of the reservoir and concluded that the geological integrity of the reservoir and cap rock has withstood far greater loads from events over geological time, such as ice melt, than are likely to occur in seismic activity over the lifetime of the gas storage facility. The report also concluded that the "risk of an 'underground explosion' is extremely unlikely at these depths due to the highly anoxic conditions of the reservoir." In other words the gas pressure excludes oxygen to prevent an explosive mixture.

3.6. As highlighted by Professor Main, the shorter term effect of producing the gas has had an exponentially greater effect in terms of loading than has recent seismic events and no adverse effects have been seen. This demonstrates that the reservoir and cap rock will be able to withstand the lower loads experienced as a result of the working gas volume cycling.

3.7. Both the BGS report and Professor Haszeldine's report recommend that a survey be carried out to establish existing soil gas levels before storage operations commence. WSUK agree with this approach and will be carrying

out a survey at selected points over the reservoir to establish the baseline. This is reflected in agreed Condition 16 (CDB11 p47).

3.8. The reports referred to above also conclude that the most likely source of gas leakage would be through the well casing or mechanical failure and this is considered in relation to surface and subsurface safety below.

Subsurface safety

3.9. Mr Tissington's evidence (WG/MT/P paras 161-178) explains the regulatory controls and British Standard guidance applicable to wells and well casing. These include the Borehole Sites and Operations Regulations 1995, The Offshore Installations and Wells (Design and Construction, etc.) Regulations and BS EN 1918-2: 1998 "Gas supply systems. Underground Gas Storage. Functional Recommendations for storage in oil and gas fields." Mr Tissington concludes (para 164), "the well must be designed and made of such materials that it retains its integrity under all reasonably foreseeable conditions. This would include seismic activity and the cyclic nature of gas storage operations."

3.10. WSUK has also considered 'spill point' protection. It needs to be noted that the reservoir is large and the storage operation does not in fact utilise the whole reservoir area. Mr Tissington explains (para 179) that "The design is intrinsically safe in that the compressors are not physically capable of pressurising the reservoir to a point where a spill point incident or rock fracture could occur." Nevertheless, WSUK will monitor the southern part of the reservoir and comparison with the reservoir model will allow the operator to "predict spill point potential within the reservoir before it actually occurs." (para 180).

3.11. Mr Tissington also explained that the cap rock has been inspected and cored during previous drilling operations and has been found to be an excellent seal for the reservoir both in structure and thickness (WG/MT/P para 183).

3.12. Mr Tissington concludes (para 193) that "the issues surrounding sub-surface safety are adequately addressed and will be developed further during detailed design."

Surface safety

3.13. This issue is covered in paragraphs 194-289 of Mr Tissington's evidence. As of 26 February 2009, the proposed facility will be classified as a COMAH site (WG/MT/P para 224), but will also be subject to a raft of other safety regulation and guidance as set out in Mr Tissington's evidence. Including the Pipelines Safety Regulations 1996 which classifies the pipelines as 'major accident hazard pipelines' and requires the HSE to inspect the design, construction and operation of the pipelines(WG/MT/P para 91). This will involve a process of 'risk assessment' in order to develop a 'safe system of work' (WG/MT/P para 208).

3.14. This regulatory regime will apply to all aspects of the surface installation including the wellsites, the 220 barg flow lines, the GSF and the 70 barg import/export pipeline to Theddlethorpe. Mr Tissington concludes (para 287) that "Risks relating to the surface facilities are manageable by compliance with legislation, guidance and appropriate standards. It is possible to design, construct and operate the proposal effectively and safely. More detailed risk assessment will be undertaken during the detailed design process and in order to comply with COMAH."

3.15. The HSE categorise the tolerability of risk into three regions: Intolerable, Tolerable and Broadly Acceptable (WG/GDG/P Para.29). Risks greater than $1x10^{-4}$ per year are intolerable, risks less than $1x10^{-6}$ per year are Broadly Acceptable. Risks falling in the region between $1x10^{-6}$ per year and $1x10^{-4}$ per year are Tolerable if as low as reasonably practicable (ALARP).

3.16. The pipeline risk assessment considers individual risk and societal risk. Individual risk is a measure of the frequency at which an individual at a specified distance from a pipeline is expected to sustain a specified level of harm from the realisation of a specific hazard. Individual risk is typically calculated for a theoretical permanent resident along a transect perpendicular to the pipeline. Societal risk is a measure of the relationship between the frequency of an incident and the number of casualties that will result. Societal risk assessments typically take into account the details of particular developments, building layout, population distribution and population movement throughout the day (WG/GDG/P Para.39-41).

3.17. In relation to the 220 barg flow lines between the wellsites and the GSF, WSUK has produced a quantitative risk assessment (QRA) undertaken by Mr Goodfellow (WG/GDG/P App A) which demonstrates that the individual risks from those pipelines are just above $1x10^{-6}$ per year and are 'as low as reasonably practicable' (ALARP) and societal risk is zero as there are no occupied buildings within the hazard distance. For the 70 barg import/export pipeline to Theddlethorpe the QRA demonstrates the individual risk is $3.32x10^{-7}$ per year and broadly acceptable. The societal risk FN curve is well within the broadly acceptable region. That conclusion is not challenged by the County Council; indeed, the County Council does not challenge any aspect of the safety of the proposed facility. The safety and other characteristics of the County Council's alternative pipeline solutions will be considered in relation to 'matter 5' below.

Conclusions on safety

3.18. It is WSUK's case that concerns over the safety of the public can be and, indeed, have been properly addressed. It is submitted that there is no safety reason for refusing this application.

Matter 5 – the main alternatives considered and reasons for the choice of location for the gas storage facility

3.19. WSUK's Environmental Statement (CDA1 section 5) carries out an assessment of the alternatives to the proposed GSF site at Grayfleet East (Option 4) that were considered by WSUK. These alternatives included three other sites in the general vicinity of the existing wellsites (Options 1-3) and a site in the vicinity of the Theddlethorpe Gas Terminal (Option 5). Some of the operational and safety implications of siting the GSF at Theddlethorpe were also considered in a separate document entitled the Theddlethorpe Development Option (CDA6). Overall, WSUK came to the conclusion that its proposed site for the GSF at Grayfleet East was the most appropriate option.

3.20. WSUK's evidence supporting that conclusion is dealt with in the evidence of Dr Tauchnitz (WG/FT/P esp. paras 144-186), Mark Tissington (WG/MT/P esp. paras 290-356) and Graham Goodfellow (WG/GDG/P). In short, it is WSUK's case that there are a number of technical, operational, safety, financial, timing and, indeed, environmental reasons why Grayfleet East is an appropriate site for the proposed GSF and that a site at Theddlethorpe is not to be preferred.

3.21. In this case the 'applicant' has gone to great lengths to consider alternative locations and has explained in detail why none of them, including any site at Theddlethorpe, is to be preferred to the proposed site at Grayfleet East. Furthermore, it is abundantly clear from the written evidence that 'objectors', and in particular the County Council, have not demonstrated, having regard to all material considerations and not just impact on the countryside, that a site at Theddlethorpe has a clear advantage over the proposed site at Grayfleet East; a site where WSUK has managed to negotiate an option to acquire the necessary land for the GSF by agreement.

3.22. Before reviewing the arguments put forward by the County Council it is worth recalling the advice in the 'fuller note' attached to the Minster's 16 May 2006 Statement (CDC10) which makes it clear that "Developers will be best placed to make a judgement about the technical feasibility and financial viability of individual projects."

The County Council's position

3.23. The County Council's case, in a nutshell, is that the proposed GSF should be located on a site at Theddlethorpe, rather than at Grayfleet East. The County Council recognises correctly, that if the GSF were to be located at Theddlethorpe, then it would be necessary for any pipeline between Theddlethorpe and the wellsites to be able to operate at 220 barg, which is the maximum pressure required for gas injection into the underground reservoir. It was in relation to this issue, amongst others, that the Theddlethorpe Development Option document dismissed a Theddlethorpe GSF.

3.24. The County Council's letter of objection states (CDE15) that "if on balance the Secretary of State is satisfied that due to safety concerns the Theddlethorpe option is not feasible then consent should be granted [at Grayfleet East] subject to conditions". The officer's report (CDC7), written by Mr McBride, recognised (para 10.4) that "In determining the site location the applicant notes that technical, operational and safety reasons have outweighed environmental considerations in arriving at the proposed site being the preferred option to locate the main gas handling and treatment installation." Later in the report, however, that balance has been reduced to "safety issues" against "environmental issues" (para 10.5). It is implicit in this balancing exercise by Mr McBride that he has discounted WSUK's 'safety' reasons for rejecting the Theddlethorpe option, albeit that this was done at a time when the County Council had no 'safety' advice of its own.

3.25. At the time of the pre-inquiry meeting, 29 July 2009, the Inspector was told that the County Council had still not instructed an expert witness on technical pipeline issues. Mr Guite, the County Council's technical pipelines witness, accepted in cross examination that he was not an expert on 'safety matters'; but was, in fact, an expert on 'design' and 'hydraulics'.

3.26. Mr Guite, quite properly, did not seek to challenge any of WSUK's safety evidence. His principal contribution to the inquiry was to suggest that it would be 'feasible' to replace the proposed 8.1km 70 barg import/export pipeline between Grayfleet East and Theddlethorpe with a two (or three) pipeline solution comprising a 220 barg import pipeline and a 70 barg export pipeline (and, possibly, a methanol pipeline).

3.27. By confining its case to the technical feasibility of a 220 barg pipeline, however, the County Council appears to have largely, if not completely, ignored the wider safety, technical, operational, cost and commercial reasons for rejecting a Theddlethorpe option.

The Theddlethorpe Development Option

3.28. The Theddlethorpe Development Option document (TDO) (CDA6) was one of the suite of documents which accompanied WSUK's application for an SAO. It made clear that the ES accompanying the application "describes the assessment of environmental effects associated with alternative locations" (para 1.2) and that the TDO itself specifically describes "the main reasons associated with the integrity and safety of transporting gas at high pressures for discounting the option of locating the gas storage facility at Theddlethorpe" (para 1.3).

3.29. The TDO examines two possible sites at Theddlethorpe being (1) a site adjacent and to the west of the TGT, and (2) a site within the perimeter of the Theddlethorpe Gas Terminal (TGT). The County Council places far too much emphasis on the statement in the TDO (para 3.1) that "An initial assessment undertaken by WSUK has indicated that both these approaches are feasible from an operational and management viewpoint, and would not have significant impact on the environment.". It needs to be recognised

that this was only an “initial assessment”, that the assessment was undertaken in the context that the GSF was not at that time subject to the COMAH Regs and that, in any event, WSUK was rejecting the Theddlethorpe option on other grounds and so did not need to go beyond an ‘initial assessment’ on operational and other issues. Importantly, ConocoPhillips does not agree with much of the TDO and, in particular, does not accept that there are benefits (see correspondence at Mr Guite’s Rebuttal proof Appendices).

3.30. It should also be noted that the TDO itself expressed considerable reservations and caution about technical and operational issues at Theddlethorpe. For example:

a) “There are, however, difficult issues to be resolved, not least of which is that gas storage has different technical and economic requirements to the ConocoPhillips normal operations. Theddlethorpe gas terminal is subject to Control of Major Accident Hazards (COMAH) regulations. Consequently installing a 220 barg pipeline within it would significantly affect the risk profile so it would need careful consideration.” (para 4.3);

b) “From the operational, pipeline maintenance and safety aspects, siting the plant at Theddlethorpe has significant disadvantages not least operating a wet gas line with the attendant difficulties described above. There are also communications and logistic problems associated with permanently manning the Wellsites which are no longer in line of sight of the GSF.” (para 6.6);

c) Any potential benefits “are outweighed by operational problems and safety issues.” (para 8.1);

d) “A GSF located at Theddlethorpe would be significantly more difficult to operate and maintain compared to Grayfleet. It would be less flexible to match the market requirements of potential customers.” (para 8.2);

e) In relation to siting the plant next to the TGT it was stated that “Detailed operational analysis will be required to see if it is possible to operate two rather different plants on this site.” (para 8.2); and

f) “As the system operator and distributor WSUK is obliged to select the solution which has the lowest possible risk. It has therefore decided that the option to site the compression facilities at Theddlethorpe is not feasible at the present stage of technical and operational development.” (para 8.7)

3.31. What is clear from the above it that, whilst ‘initial assessment’ saw some potential benefits, the overwhelming balance was against locating the GSF at Theddlethorpe and that was not just based on pipeline safety concerns but also reflected other technical and operational disadvantages.

Safety legislation and guidance

3.32. The evidence of Mark Tissington (WG/MT/P paras 60-103) and Graham Goodfellow (WG/GDG/P paras 21-38) sets out in detail the safety legislation and guidance relevant to the construction and operation of the project, including that relevant to pipeline safety. Mr Guite did not take issue with any of WSUK's evidence on that issue.

3.33. In short, it is submitted that WSUK, as the proposed operator, is under a duty to:

a) reduce risk "so far as is reasonably practicable" (Health and Safety at Work Act 1974); and

b) "take all measures necessary to prevent major accidents" (COMAH Regs).

3.34. The HSE sets out detailed guidance on complying with such legal duties by reference to the concepts of 'as low as reasonably practicable' (ALARP) and the 'risk control hierarchy.

3.35. In 'Reducing Risks, Protecting People' (R2P2) (CDC66) the HSE sets out detailed guidance on its decision-making process in relation to its regulation of the health and safety of employees and the public. The HSE has developed a criteria-based framework, known as the 'tolerability of risk' (TOR). This approach is represented visually in the inverted triangle shown at Mr Tissington's Figure 1 (WG/MT/P page 27) and again at Mr Goodfellow's Figure 1 (WG/GDG/P page 8). This shows the three regions of risk as being 'intolerable', tolerable if ALARP' and 'broadly acceptable'. It is important to understand, however, that the duty to reduce risk ALARP does not stop at the 'broadly acceptable' region. This is made clear in the guidance at paragraph 123 of R2P2, which comments on the ALARP triangle as follows:

3.36. "The light zone at the bottom, on the other hand, represents a broadly acceptable region. Risks falling into this region are generally regarded as insignificant and adequately controlled. We, as regulators, would not usually require further action to reduce risks unless reasonably practical measures are available. The levels of risk characterising this region are comparable to those that people regard as insignificant or trivial in their daily lives. They are typical of the risk from activities that are inherently not very hazardous or from hazardous activities that can be, and are, readily controlled to produce very low risks. Nonetheless, we would take into account that duty holders must reduce risks whenever reasonably practicable to do so or where the law so requires it."

3.37. It is clear that, even within the 'broadly acceptable' region, duty holders "must" reduce risk where it is "reasonably practicable to do so". This is important, as the QRA for the various pipeline alternatives put forward by the County Council have significantly higher risk profiles than that proposed by WSUK.

3.38. The HSE guidance in R2P2 also explains the concept of the 'risk control hierarchy'. Paragraphs 84-85 explain as follows:

3.39. "the proper characterisation of the risk is important to the effective application of the preferred risk control hierarchy promoted by HSC/E and the EU. The hierarchy actually covers controls on hazards as well as the resulting risks. At the top of the hierarchy and consistent with the general duty to secure health and safety, is the consideration of measures or alternatives that will avoid the hazard in the first place. This might involve substitution or the adoption of processes that conform with principles aimed at ensuring that a design is inherently safer. Lower down the hierarchy is the consideration of measures that will reduce risks, given that there are no viable alternatives to accepting the hazard.

3.40. *An implicit presumption underlying the hierarchy is that it is not the case that any activity can be pursued simply because measures are available to control the risks it entails. ..."* (emphasis added)

3.41. Again, this is important as it is central to the 'risk control hierarchy' that risk should be avoided before consideration is given to measures to reducing it.

3.42. The HSE website sets out an 'ALARP Suite of Guidance' (CDC67) which explains the concept 'reasonably practicable' and provides guidance on what HSE staff should expect to see in duty-holder's demonstrations that risk has been reduced to ALARP. Within CDC67, the guidance entitled "Principles and guidelines to assist HSE in its judgements that duty-holders have reduced risk as low as reasonably practicable" is particularly relevant.

3.43. Paragraph 8 of that guidance states that "*Thus, determining that risks have been reduced ALARP involved an assessment of the **risk** to be avoided, of the **sacrifice** (in money, time and trouble) involved in taking measures to avoid that risk, and a **comparison** of the two."* (original emphasis). The following paragraphs (paras 10-30) explain these concepts in further detail.

3.44. Paragraphs 46-50 of the guidance provide detailed guidance on 'Choosing between options'. The guidance gives the following advice:

a) "At the design stage, where safety cases or plans are required to be submitted to HSE, HSE will assess the option duty-holders put before it, but where that option does not reduce risks ALARP, HSE may reject a safety case, ask duty holders to consider a different option, or use its enforcement powers to prevent further work (depending on the situation in question)." (para 47);

b) "At a more detailed level, HSE would consider judgements as to whether risks are or will be controlled ALARP as central to deciding between options, though again the reason for the option chosen may still be a relevant factor." (para 49); and

c) "In practice duty-holders may have a number of options where an assessment would show that costs are not grossly disproportionate. The option, or combination of options which achieves the lowest level of residual risk should be implemented, provided grossly disproportionate costs are not incurred. The legal requirement to reduce risk as low as is reasonably practicable rules out HSE accepting a less protected but significantly cheaper option." (para 50) (emphasis added)

3.45. It is a particular feature of the present case that not only does the WSUK proposed pipeline have the lowest quantified risk, it also involves less sacrifice in terms of 'money, time and trouble' - in other words it costs less, would be quicker to build and is technically and operationally preferable. The substance of this will be discussed later, but the high-level point is that the WSUK proposed pipeline is clearly the ALARP option and the County Council's proposed alternatives would clearly not be, there being a safer, cheaper, quicker and less troublesome alternative available.

3.46. On the nature of the ALARP duty the County Council's evidence is completely inadequate and potentially misleading. Mr Guite's proof (para 2.2 and see also para 3.1) simply states that the HSE "would generally prefer any option which presents lower risk" but that it will "examine each case on its merits". This reduction of the very clear guidance of the HSE to a 'general preference' seriously distorts the very clear requirement for duty-holders to reduce risk ALARP. This distortion is even more surprising given that Mr Guite sought specific advice from the HSE on this issue and was expressly directed in an email from Giles Hyder (a Principal Inspector in the Gas and Pipelines Unit) to R2P2 paragraph 123 on ALARP and paragraph 85 on the 'inherent safety' (WG4). Mr Guite offered no satisfactory answer for failing to draw that advice to the Inspector's attention.

3.47. That failure to understand properly the ALARP duty has led to a primary flaw in the County Council's approach to the consideration of pipeline alternatives and caused it to regard the choice of a lower risk option as a 'general preference' rather than a more fundamental duty. The County Council seeks to make up for this error by postulating a scenario in which the WSUK project had been refused an SAO, on the basis of there being a feasible Theddlethorpe option involving a 220 barg pipeline, and then asking the question whether that 220 barg pipeline would be ALARP. That argument, however, is a classic example of pulling oneself up by one's own bootstraps. It presupposes the rejection of the proposed 70 barg pipeline in order to justify the County Council's 220 barg pipeline on the basis that no lower risk 70 barg pipeline exists. The plain fact is, however, that the 70 barg pipeline has not been rejected and remains the ALARP choice for an import/export pipeline between a GSF at Grayfleet East and the national transmission system at Theddlethorpe.

3.48. It is worth emphasising, however, that WSUK does not suggest that simply because there is a duty on WSUK to design, construct and operate a project (including an import/export pipeline) that has risks that are ALARP itself means that an SAO must be granted despite any environmental objection.

It does submit, however, that compliance with the ALARP duty is a highly material consideration in the determination of this application for an SAO, and particularly so in the context of section 4(3) of the Gas Act 1965 which requires the Minister to have regard to "the safety of the public".

The relevance of safety, technical, and operational issues

3.49. As stated above, section 4(3) of the Gas Act 1965 requires the Minister to have regard to "the safety of the public" and, furthermore, the application of the ALARP principle requires a decision-maker to carry out "an assessment of the risk to be avoided, of the sacrifice (in money, time and trouble) involved in taking measures to avoid that risk, and a comparison of the two." In that context it is clearly material for the Inspector and the Secretary of State to take into account not only safety issues, but also issues relating to the technical, operational, timing and cost implications of the County Council's alternative pipeline options (i.e. 'money', 'time' and 'trouble').

3.50. Such issues are also relevant to any consideration of whether there is in fact a realistic alternative project capable of meeting the acknowledged 'need' for additional gas storage capacity in a 'timely' (i.e. urgent) fashion. As will be discussed shortly, the County Council's proposed alternative to the WSUK development is itself a very different project indeed. It would be more expensive, take longer to deliver and be technically and operationally less attractive than that proposed. Commercially it would also be a very different project and, as Dr Tauchnitz made clear, WSUK has taken no decision to promote such a project in the event that the proposed scheme was refused.

3.51. It is clear, therefore, that safety, technical, operational, timing, cost and commercial issues are relevant to the determination of the Secretary of State in the particular circumstances of this application.

The LCC alternative GSF at Theddlethorpe

3.52. In the development before the Inspector and the Secretary of State, WSUK proposes a 20" 8.1km import/export pipeline between the NTS at Theddlethorpe and the Grayfleet East GSF. This would be a 'dry' pipeline and would operate at a maximum pressure of 70 barg. On import to the reservoir, the import/export pipeline would deliver 'dry' gas from the NTS to the GSF at 70 barg where compressors would have the capacity to increase the pressure to 220 barg for injection into the reservoir. The two short 'wet' flow lines (or interconnectors) between the GSF and wellsites A and B would, therefore, have a maximum design pressure of 220 barg. On export, the 'wet' gas from the reservoir would be delivered via the flow lines to the GSF, where it would be dried to NTS standards and then sent back to the NTS via the 'dry' import/export pipeline at 70 barg.

3.53. The County Council's proposal to put the GSF at Theddlethorpe would require the entire length of pipeline between Theddlethorpe and the

wellsites to be capable of operating at 220 barg so that the required maximum pressure could be achieved at the wellheads for injection into the reservoir. The County Council appears to propose two alternative pipeline options to achieve this objective, which will be referred to as the single and twin pipeline solutions.

3.54. In the County Council's single pipeline solution, there would be a single 'wet' pipeline between the Theddlethorpe GSF and the wellsites which would operate at a maximum pressure of 220 barg. The pipeline would have to be 'wet' because it would handle both 'wet' gas from the reservoir for export to the NTS, as well as 'dry' gas from the NTS for injection to the reservoir. This has important operational implications in terms of the need to 'pig' the wet pipeline and add methanol to prevent hydrate formation and, in addition, technical and cost implications in terms of the additional equipment needed at a Theddlethorpe GSF.

3.55. In the quantitative risk assessment attached to his proof (WG/GDG/P App A), Mr Goodfellow carried out a comparative individual and societal risk assessment of the proposed 20" 70 barg pipeline between Grayfleet East and the NTS at Theddlethorpe (Option A) and an equivalent 20" 220 barg pipeline (Option B).

3.56. In his evidence in chief Mr Guite stated that his single pipeline solution proposed a 14-16" 220 barg 'wet' pipeline. At paragraph 2.3 of his evidence, Mr Guite also proposed a twin pipeline solution. At paragraph 1.2 and 1.3 of his Rebuttal evidence Mr Guite clarified that his twin pipeline solution comprised a 20" wet pipeline with a design pressure of 75 barg and a 12" dry pipeline with a design pressure of 220 barg. In his rebuttal paragraph 2.1 he also identified the need for an additional 2" to 4" methanol pipeline to be laid alongside the other two pipelines. In his evidence in chief Mr Guite changed the diameters of the two gas pipelines to 12-16" and 18-20" respectively and in cross examination he changed them again to 14-16" and 14" respectively.

3.57. It is these latter figures, given in cross examination, that have been taken to represent the County Council's final case on the single and twin pipeline solution proposed for a GSF at Theddlethorpe. This was later confirmed when the County Council produced its 'schematic' for its pipeline alternative options at LCC7. It is important to note, however, that the County Council presented no evidence on the feasibility of locating the GSF at Theddlethorpe; just on the feasibility of the pipelines between a Theddlethorpe GSF and the wellsites.

Pipeline safety

3.58. Mr Goodfellow gave evidence on pipeline safety in his proof of evidence (WG/GDG/P) and, in particular, set out a comparative QRA at his Appendix A. As stated earlier, the County Council called no expert evidence on pipeline safety and did not seek to challenge Mr Goodfellow's QRA figures.

3.59. Before considering Mr Goodfellow's QRA, a few preliminary points need to be made about the County Council's proposed 220 barg pipeline:

a) The UK high pressure gas transmission system typically operates at 70 barg, with some sections operating at the higher pressure of 85 barg, and so a pipeline operating at 220 barg needs to be understood as an extremely high pressure pipeline;

b) WSUK and its parent companies have no experience of operating a 220 barg pipeline across 8.1km of open countryside and have absolutely no desire to operate such a pipeline;

c) The highest pressure pipeline elsewhere in the UK is the onshore section of the CATS terminal pipeline in Teesside which is limited to a pressure of 125 barg and runs through a heavily industrialised area under close surveillance (WG/GDG/P para 74);

d) So far as WSUK is aware, no 220 barg cross-country pipeline operates anywhere in Europe;

e) The Corrib pipeline in the Republic of Ireland is only proposed to operate at 144 barg onshore, but has been delayed for years and still not given approval; and

f) The short 220 barg flow lines proposed between the GSF at Grayfleet East and the wellsites have been sited well away from dwellings (such that they have a societal risk of zero) and would be monitored from the 24-hour manned GSF control room by infra-red CCTV allowing a quick response in the event of potential pipeline damage (WG/GDG/P paras 75-77).

3.60. Mr Goodfellow's comparative QRA of Option A (a 20" 70 barg pipeline as proposed) and Option B (a 20" 220 barg pipeline alternative) showed Option A to have an individual risk of 3.23×10^{-7} and Option B to have an individual risk of 1.82×10^{-6}. Option A is, therefore, within the 'broadly acceptable' region on the ALARP triangle, whilst Option B, with a risk 5 times higher than option A, is in the 'tolerable if ALARP' region (WG/GDG/P App A para 5.3). In terms of societal risk, Option A (3.36×10^{-6}) and Option B (3.03×10^{-5}) are both within the 'broadly acceptable' region, although the risk from Option B is approximately 10 times higher.

3.61. Mr Guite's single 'wet' pipeline solution assumes a 220 barg pipe diameter of 14-16" (see above). The individual risk QRAs for 12" and 16" 220 barg pipelines was given in Figure D-1 of Appendix D to Mr Goodfellow's QRA report (WG/GDG/P App A). These figures were produced for the proposed 12" and 16" 220 barg flow lines between the wellsites and the GSF, but the 'individual risk' assessment would be the same for the 8.1 km import/export pipeline. The risk levels are just above the 1×10^{-6} 'broadly acceptable' threshold and, therefore, only tolerable if ALARP. These figures are also

several times higher than the individual risk figures for the proposed 70 barg pipeline to Theddlethorpe (WG/GDG/P App A Figure 11 – option A).

3.62. The societal risk QRA is based on the actual distribution of dwellings around the proposed pipeline route, on the basis of an assumed average number of residents per dwelling. The societal risk figures for Mr Guite's 14"-16" single 220 barg pipeline solution are shown in WG38 (second sheet on cross examination figures) with yellow and green lines. These show that the societal risk is at least 3.9 times (i.e. 390%) and up to above 5 times (500%) higher than the societal risk from the proposed 70 barg pipeline. It is clear, therefore, that the County Council's alternative single 'wet' pipeline solution has a materially higher risk profile and is certainly not the ALARP solution. By way of context, the societal risk figures for the 12" and 16" flow lines are zero, as they have been sited such that there are no dwellings within the hazard distances.

3.63. Although Mr Guite suggested that 'measures' could be taken to reduce the risk of his single 220 barg pipeline, such measures would offend against the R2P2 'risk control hierarchy' which states that risk should be avoided before taking measures to reduce risk that cannot be avoided. In any event, measures such as burying the pipeline deeper or placing it in concrete would apply equally to the proposed 70 barg pipeline and so do not affect the fundamental risk relationship between the two options.

3.64. For Mr Guite's twin pipeline solution the individual risk of each of the pipelines would be additive. Thus if the individual risk of a single 14" 220 barg pipeline was itself several times higher than that for the proposed 70 barg pipeline (see above), then the relative risk from a 14" 220 barg pipeline and a 14"-16" 70 barg pipeline would be higher still. Again, the individual risk of the two pipeline solution is several times higher than that for the proposed 70 barg pipeline and the alternative is clearly not ALARP.

3.65. The equivalent figures for societal risk are again set out in Mr Goodfellow's WG38. Mr Guite's 14"-16" 70 barg pipeline and 14" 220 barg pipeline are shown on WG38 (second sheet) with blue and pink lines. These show that the societal risks are about 5 times (500%) to 6.4 times (640%) greater than for the proposed 70 barg pipeline. Again what is clear is that the proposed 70 barg pipeline is the ALARP solution, even though all of the societal risks shown are very low.

Operations

Single Pipeline

3.66. As stated above, with the GSF at Theddlethorpe, the County Council's 220 barg single pipeline would have to operate as a 'wet' pipeline. This has important consequences for the operation of the pipeline in that:

a) the liquids from the production gas would collect in the pipeline, particularly in 'dips' where the pipeline is thrust bored under roads, causing problems of corrosion and 'slugging' (i.e. 'slugs' of liquid being picked up and propelled along the pipeline by the gas flow, causing potential damage) (see Mr Tissington's evidence paras 332-339);

b) the pipeline would require methanol injection to prevent 'hydrate' formation (see Mr Tissington's evidence paras. 340-347); and

c) the pipeline would require regular 'pigging' to remove liquids (corrosion inhibitor, production fluids and methanol) on any change between export and import modes (see Mr Tissington's evidence paras. 349-353). The reservoir would be damaged if the volume of liquid contained in an 8.1 km wet pipeline were injected into it.

3.67. These issues would not exist, or not exist to the same degree, for the two short 'wet' 220 barg flow lines between the proposed GSF and the wellsites. The flow lines would entail far less swept volume than an 8.1km pipeline (WG/MT/P para 350); could primarily rely on heaters to prevent 'hydrate' formation (WG/MT/P para 59); and, as Dr Tauchnitz explained, the flow lines would not need to be regularly 'pigged' between export and import modes as the volumes of liquid could be accepted by the reservoir. [NB this is a correction to Mr Tissington's para 349.]

3.68. These operational characteristics of a wet pipeline have very real commercial consequences for the project, not only in terms of 'money' and 'trouble', but also in terms of the speed with which the reservoir could switch from export to import mode and, therefore, WSUK's ability to accept short notice contracts in the gas spot market (WG/FT/P para 155 and Dr Tauchnitz evidence in cross examination).

3.69. Mr Guite accepted in cross examination that these presented very real operational disadvantages of a single wet pipeline. It was because of such disadvantages, that he proposed his twin pipeline solution.

Twin Pipeline

3.70. Mr Guite's twin pipeline solution involved a 220 barg 'dry' import pipeline and a second 70 barg 'wet' export pipeline. This solution would still require the regular pigging of the wet pipeline, together with the addition of methanol to prevent 'hydrate' formation, but it would remove the issue of 'turnaround time'. The twin pipeline solution brings its own problems, however, in terms of the additional cost and 'health and safety' risk of a second pipeline. These problems do not exist for the 8.1km 'dry' pipeline proposed by WSUK.

3.71. It is clear, and indeed accepted by the County Council, that locating the GSF at Theddlethorpe would cause operational problems for the project that do not exist, or do not exist to the same degree, for the development as

proposed. Mr Guite freely accepted in cross examination that no operator would want to operate an 8.1km 'wet' pipeline if a 'dry' pipeline solution were available; his position was simply that if the GSF had to go to Theddlethorpe, then a 'feasible' single or twin pipeline solution was available. That, once again, wrongly pre-supposes that the GSF has to go to Theddlethorpe.

3.72. The simple point is that the County Council's Theddlethorpe option has important operational disadvantages compared with the development as proposed. Those are clearly material to any decision as to whether the proposed development should be refused an SAO on the basis that an acceptable alternative exists with a GSF located at Theddlethorpe.

Technical

3.73. Two short points can be made:

a) A twin (or triple) pipeline solution would require a much wider pipeline corridor than is proposed for the single 70 barg pipeline; and

b) A 'wet' pipeline solution would require additional equipment (slug catcher[1] and methanol still[2]) at any Theddlethorpe GSF.

3.74. It was Mr Goodfellow's evidence that a twin 220/70 barg pipeline solution would require a 25m safety separation distance between pipelines. Any methanol pipeline would require a further undefined separation distance. The pipelines would also require working areas some 15m either side of the pipelines for construction and maintenance. A twin or triple pipeline corridor would, therefore, be very much wider than that necessary for the proposed single 70 barg pipeline. It is not known whether the existing proposed pipeline corridor, where WSUK has managed to negotiate a number of easements by agreement, would be sufficiently wide to accommodate a twin (or triple) pipeline solution and the County Council gave no evidence to suggest that the existing proposed corridor was feasible.

3.75. In addition, locating the GSF at Theddlethorpe would require additional equipment at the GSF because of the different operating characteristics of the development. Principal amongst these would be a large slug catcher to extract liquids lifted from the wet pipeline, and a methanol still to remove the methanol needed to prevent hydrate formation. The site of a Theddlethorpe GSF would also have to be larger to accommodate this extra equipment.

[1] A slug catcher is designed to safely catch any slugs of liquid which can be lifted by the gas flow from pools which can form at low points along the pipeline.

[2] A methanol still is needed to recover methanol injected at the wellhead to prevent hydrate formation. Hydrates are ice containing hydrocarbons which can form in the gas below certain temperatures. Hydrates within the pipeline could present a safety hazard and ultimately cause a blockage. Hydrates can also be prevented by heating the pipeline. WSUK do not consider it is likely to be practical to heat an 8.1km pipeline.

The application of the ALARP principle

3.76. It is clear from the above review of the County Council's pipeline alternatives that the proposed development remains the ALARP option. The proposed 70 barg pipeline has the lowest individual and societal risk, and actually involves less sacrifice in terms of 'money', 'time' and 'trouble'.

3.77. It is not good enough for the County Council to argue that, in absolute terms, the levels of risk of its pipeline alternatives are low. UK health and safety legislation is 'objective' driven and it is appropriate that risk to the public should be driven down 'as low as is reasonably practicable'.

3.78. The County Council will not be the operator of this pipeline and will not have the legal and moral obligation to ensure safety – WSUK will. WSUK takes the safety of the public, its staff and the environment very seriously. WSUK submits that it is both reasonable and, indeed, responsible that it should want to pursue an ALARP pipeline solution and that the Inspector and the Secretary of State should be very slow to force an operator to do otherwise.

Theddlethorpe GSF feasibility

3.79. The County Council appears to have assumed that the feasibility of locating the GSF at Theddlethorpe turns on nothing more than the feasibility of constructing a 220 barg pipeline between Saltfleetby and Theddlethorpe; that is a long way from the truth.

3.80. The existing ConocoPhillips gas terminal is a 'top tier' COMAH site with its own safety case agreed with the HSE. In February 2009 the HSE announced that the COMAH Regulations would also apply to the underground storage of gas in natural strata (WG/MT/P para 65 and 79) thereby making the GSF a COMAH site. As Dr Tauchnitz pointed out, "To construct the GSF within, or adjacent to, the ConocoPhillips facility would have important safety implications not just for the GSF facility, but also for the existing ConocoPhillips facility. The HSE would be particularly concerned to ensure that the location of the new COMAH facility next to an existing operational COMAH facility did not give rise to any 'domino effect'." (WG/FT/P para 167).

3.81. Neither ConocoPhillips nor the HSE would be able to offer any definitive advice on the acceptability of a GSF at Theddlethorpe without a scheme being worked up and a safety case developed. The County Council offered no evidence on this aspect of the feasibility of locating the GSF at Theddlethorpe and certainly was not able to say that such a development was feasible.

3.82. Mr Tissington makes clear (WG/MT/P para 322), the potential need for some separation between the COMAH plants could mean that any GSF would have to be moved further west, such that it breached the adjacent tree screen.

In those circumstances, it is suggested that the alleged benefit of moving the GSF to Theddlethorpe would be lost.

3.83. The safety interaction between the two plants is a source of potential hazard that can simply be avoided by siting the GSF at Grayfleet East as proposed. On this central plank of its own argument the County Council's case is silent.

3.84. As stated earlier, the consideration of alternatives should be 'proportionate' and WSUK should not be sent off on an expensive, time consuming and uncertain 'wild goose chase' unless the objections at Grayfleet East really are overwhelming; they are not.

Conclusions on alternatives

3.85. It is WSUK's submission that there are overwhelming reasons for rejecting the County Council's Theddlethorpe GSF alternative, including:

a) It is clear that the proposed import/export pipeline has a significantly lower risk profile than the various alternatives put forward by the County Council and is the ALARP option;

b) The County Council's alternatives impose additional operational burdens on the operator, including the need for additional pigging and the increased use of methanol to prevent hydrate formation;

c) Extra equipment would be required including, depending upon which option is considered, additional pipelines, a methanol still and large slug catchers;

d) It is not known whether a new COMAH facility could actually be located on or immediately adjacent to the existing TGT, which is itself a 'top tier' COMAH facility;

Hazardous Substances Consent

3.86. Hazardous substances consent is required where it is proposed to store more than a specific quantity of specified substances. Natural gas is one of the specified substances and WSUK propose storing more than the specific quantity. Issues relating to the grant of Hazardous Substances Consent are dealt with in the evidence of Mark Tissington (WG/MT/P) and, in particular, his paragraphs 358-366. HSE's response statement (CDC69) concluded that "… the risks to the surrounding population arising from the proposed operation(s) are so low that there are no significant reasons, on safety grounds, for refusing Hazardous Substances consent". The HSE response details a number of conditions (WG43) which are to be included in the suggested conditions section of the main report.

The Case for Lincolnshire County Council and Other Objectors

4.1. Lincolnshire County Council simply objected to the proposed scheme on the grounds of substantial harm to the character of the countryside from the GSF at Grayfleet. They considered that a GSF at Theddlethorpe would cause significantly less harm and should therefore be preferred.

Wingas's site selection exercise

4.2. Wingas's site selection exercise was fatally flawed. They began work on the project in late 2004. Wingas's site options were identified in the June 2005 Scoping Report.[3] That considered that it was 'commercially and technically preferable' for the GSF to be as close as possible to the reservoir and well site. Whilst it was feasible to have the surface installations off-reservoir there were more safety implications. Consequently off-reservoir options were not examined further. [4]

4.3. In 2005 Wingas therefore failed:

a) to assess the commercial, technical and safety issues of on and off site facilities in the context of the Saltfleetby reservoir – their assessment was general and in principle;

b) to consider the environmental effects of on and off reservoir facilities or to come to a balanced, overall conclusion on the preferable location for the Gas Storage Facility.

4.4. As Mr Guite pointed out, if the judgment is solely confined to operational matters it is easier to have the GSF at Grayfleet rather than Theddlethorpe. However the judgment which the Secretary of State has to make, and which Wingas should have made in 2005, is which is the best site overall having considered all the aspects of the scheme and having undertaken a more rigorous technical, commercial and safety assessment of the alternatives.

4.5. Wingas then submitted a request for a scoping opinion to the Secretary of State in 2007.[5] This referred to nine options, all of which were 'on reservoir' and consequently did not include an option at Theddlethorpe (para 3.4.3.2 and drawing C7308/7B at Appendix 3 of the request). Five of those options were rejected because of the need for a high-pressure pipeline, without any consideration of the pipeline issues that actually arose or environmental considerations.

4.6. Wingas then carried out pre-application consultation under the Gas Act. It was only when the Gas Act application was submitted in the autumn of

[3] Dr Tauchnitz proof para 41.
[4] CDG2, Scoping Report para 3.4.2.1 and see 3.8.1, 3.8.2.
[5] Environmental Statement, App 1.4.

2008 that Wingas examined off-site options.[6] Long before that time Wingas had been committed to the Grayfleet East option. All of the subsequent work undertaken by Wingas has therefore had to attempt to show that alternatives were not feasible. Wingas should have, much earlier, properly considered how alternatives could work and the overall benefits and impacts of such alternatives.

Uncertainty over the operational requirements of the scheme

4.7. Wingas's witnesses did not know how the scheme, which they invite the Secretary of State to approve, will operate or what it is designed to achieve:

(I) Mr Tissington gave a considerable amount of written and oral evidence about the operation of the Wingas proposal and what he claimed were operational disadvantages of the Theddlethorpe options. In cross-examination he agreed that he did not have expertise in operational matters. When cross-examined about the implications of his statement (proof para 56) that the pipelines between the GSF and the wellsites would need to be cleared by pigging every time there was a change between injection and extraction modes, Wingas's QC interrupted to say he was now told by Dr Tauchnitz that Mr Tissington's evidence was wrong. Dr Tauchnitz was then recalled to say that pigging was not needed at every change over but under further cross-examination he did not have a document which said this. No assessment had been carried out of how often pigging would be required and he based his comments on what he had been told by other people within Wingas;

(II) The Environmental Statement and Mr Tissington's proof said that injection would be at a rate of 4.2 million standard m^3/day 'progressively' falling to 1.5 million standard m^3/day.[7] Dr Tauchnitz's proof said the injection rate would fall from 4.2 to about 2.36 million standard m^3/day.[8] In cross-examination Dr Tauchnitz said that the system should be able to inject 9-10 million standard m^3/day when attempting to dismiss a Theddlethorpe two pipeline option. He said 'This is not included in our Environmental Statement because we tried to make it easier to understand'. Dr Tauchnitz completely changed the operating requirements in cross-examination and without any documentary support. That is not a satisfactory approach or one which can give the Secretary of State confidence;

(III) The application was predicated on the basis that there would be lengthy periods of injection and extraction. For example the Planning Supporting Statement says 'As a seasonal storage reservoir, compression of gas will take place for some 6 months in the spring/summer with production of the stored reserves over the winter period (3 months) depending on the gas price spreads and fluctuations'.[9] However in evidence Dr Tauchnitz and Mr

[6] In the Theddlethorpe Development Options report, the ES chapter 5 and appendix 5.1.
[7] ES Vol. 1 para 4.89 and proof para 36 respectively.
[8] Para 93.
[9] Para 1.4.

Baldwin talked of a potential need to change between extraction and injection with great speed and inject at high volumes to take advantage of market price movements and respond to demand but failed to demonstrate that this was how the facility was intended to operate particularly given the documented emphasis on lengthy injection and extraction periods. Mr Baldwin gave purely theoretical evidence about how Saltfleetby might operate as he had not seen Wingas's business plans;

(IV) the Environmental Statement said that the pipelines between the GSF and the wellsites would be 300 barg (Vol. 1, para 4.50) but in the application 220 barg pressure is referred to (Formal Submission, para 3(e)). Dr Tauchnitz claimed that these pipelines were still designed for 300 bar.[10] Penspen only assessed 220 barg pipelines.

4.8. There are a number of implications of this evidence:

(I) the Secretary of State is being asked by Wingas to rely on operational factors in making a decision when Wingas themselves are orally rewriting their own proposal;

(II) No reliance should be placed on Mr Tissington's evidence on operational matters, whether on the Wingas scheme or on the Theddlethorpe options. These are outside his expertise and it is apparent – since his own QC interrupted cross-examination to contradict him – that Wingas do not accept the accuracy of his evidence about their operations;

(III) Wingas have failed to produce evidence from someone able to talk with authority about operational matters or the design of the scheme. The Secretary of State will have to do the best he can, relying on Mr Guite's evidence;

(IV) The County Council and Mr Guite have had to consider the Theddlethorpe options against rapidly changing requirements for the scheme. That has led to the evolution of those proposals.

The Theddlethorpe options

Sites

4.9. The Theddlethorpe Development Option report considered, in general terms, sites located on and off the Theddlethorpe Gas Terminal. The Environmental Statement referred at times to three sites outside the terminal, on the west and south west side, but its noise assessment dealt with the field to the west of the terminal.

4.10. The County Council has assessed the field to the west of the terminal and the northern part of the terminal complex. There is the potential for siting

[10] In XX.

the GSF in either location. The Theddlethorpe Development Option report considered that an in-terminal location could be feasible, subject to further investigation, and identified potential operational benefits in doing so.[11] It is apparent that there was some very limited discussion by Wingas with Conocco Phillips in 2005/6 and discussions only restarted in mid-2009 for the purpose of preparing evidence to the inquiry. As Mr Kent of Wingas put it on 25th September 2009 'it is important for us to say we have given some thought to the LCC preferred option'.[12] Conocco Phillips have reserved their position, in the absence of Wingas paying for detailed studies.

4.11. The synergies are apparent. The terminal already removes water, condensate and methanol from the gas extracted from the Saltfleetby gas field and a number of other offshore fields currently in declining production. Theddlethorpe is operating at about 1/3rd capacity with the expectation that this will fall to 1/6th over the next few years.[13]

4.12. The most obvious off-terminal site is the field adjacent to the western boundary of the terminal. This is within the tree belt around the terminal. The terminal and the field are in the freehold ownership of National Grid, a fact which astonishingly Dr Tauchnitz was unaware of.

Pipelines

4.13. The Wingas proposals are to have 220 barg pipelines between the GSF and the wellsites (12" to Wellsite A and 16" to Wellsite B) and a 70 barg 20" pipeline to Theddlethorpe. The 220 barg pipelines would operate both wet[14] and dry. The 70 barg pipeline would be dry. The existing 10" pipeline would be used for water and condensate to travel to Theddlethorpe for further treatment, disposal or onward transmission.

4.14. Penspen assessed a Theddlethorpe option as a 220 barg 20" pipeline (wet and dry). It is now apparent that such a pipeline is of too large a diameter.

4.15. In the light of Wingas' latest explanations of their proposals, Mr Guite puts forward two options based on the revised flow rates and pressures as emerged during the inquiry i.e. 9 million S m3/day injection and extraction rate at a pressure varying between 100 to 220 barg at the wellhead:[15]

(i) a single 220 barg pipeline of 14 to 16 inches in diameter, operating wet and dry from Theddlethorpe to Wellsite B. The existing 10" pipeline could be used to transport dry gas to 'pig' the pipeline back to the Gas

[11] See particularly para 3.1, 4.1.
[12] Letter to Conoco Phillips, appended to Mr Guite's rebuttal.
[13] Mr Guite in Chief. See National Grid's *Transporting Britain's Energy 2009*.
[14] 'Wet' means that the pipeline carries extracted gas which has not had liquids (water and condensate) removed from it. At present this is gas taken from the gas field and in future would be extracted stored gas prior to treatment at the gas storage facility. 'Dry' gas is gas with the liquid removed and a dew point less than -10 ºC, in the proposals this would be gas taken from the National Transmission System for storage or extracted gas after it has passed through the GSF.
[15] See schematic drawing LCC7.

Storage Facility. There would be a 12" 220 barg wet and dry pipeline from Wellsite B to Wellsite A;

(ii) a two pipeline system with a 14" to 16" 80 barg wet pipeline from Wellsite B to Theddlethorpe and a 14" 220 barg dry pipeline carrying gas from Theddlethorpe to Wellsite B. The wellsites would be connected by 10" 220 barg dry and 10" 80 barg wet pipelines. This would significantly reduce the time taken to switch modes and reduce or eliminate many of the operational concerns raised by Wingas.

4.16. If significant quantities of methanol are required (and Dr Tauchnitz dropped his claim that methanol would be required), then it may be sensible to transport it to the wellsites by pipeline rather than tanker.

4.17. The evidence is that Theddlethorpe options are feasible. Indeed that was common ground at least until the exchange of proofs and even afterwards there was no serious attempt by Wingas to suggest that a Gas Storage Facility could not be sited at Theddlethorpe.

Safety

Approach to safety in Gas Act decisions

4.18. Safety is a material consideration by reason of section 4(3) of the Gas Act 1965, Article 5 and Annex IV of the EIA Directive and as a matter relevant to planning. None of these matters specify a standard to be applied or set any test. Safety is simply one of many material considerations to which the decision maker should attach appropriate weight.

4.19. It is common ground that if the risks are very low then very little weight is to be given to those actual or perceived risks.[16]

4.20. Professor Haszeldine in his report for the County Council said that underground storage was not a serious risk. He calculated the risk as 1 in 675,000 of the affected population or 6.8 x 10-5.[17] This was the risk which Mr Foster identified in his evidence as 'very low' and to which very little weight should be attached. That risk is greater than that arising from any of the pipeline options.

4.21. It follows that very little weight should be attached to the relative risk levels of the various pipeline options. Pipeline safety is neither a matter which prevents consideration of the Theddlethorpe options nor is it a matter which carries material weight in favour of Grayfleet East.

4.22. Health and Safety legislation does not alter the Secretary of State's consideration of the application. The Health and Safety at Work Act 1974 does not impose any obligation on the Secretary of State in making

[16] Foster XX.
[17] County Council January 2009 committee report, para 9.62, 9.64; Professor Haszeldine's report, page 2.

planning decisions. As the draft National Policy Statement EN-1 correctly observes, the Act should not affect decision-making.[18] When making decisions under the Gas Act or planning decisions, the Secretary of State is not obliged to chose the safest scheme and it would be an error of law to take that approach. He should, as Mr Goodfellow and Mr Foster accepted weigh safety with all other considerations.

4.23. That Act imposes duties on those carrying out business and the enforcing authorities (in the present case the Health and Safety Executive). That requires the reduction of risks where reasonably practicable. Whether something is reasonably practicable depends on whether it will receive all necessary consents. An option which would not get planning permission is not reasonably practicable. The Health and Safety Executive's website recognises the existence of such constraints on design options 'Depending on the particular legal context and the circumstances in question, where the very essence or ethos of the business could not be achieved without following the design suggested, then HSE could not reject the option so as to prevent the undertaking proceeding'.[19] Whether it will get planning permission involves consideration of all relevant matters, including safety. If the safety risks of alternatives are too great, then safety may be a decisive factor in the planning decision. If the risks are very low, then the Secretary of State is not forced to choose the lowest risk option if that would otherwise be undesirable in planning terms.

4.24. The legal regimes all work together. Location and general design decisions are taken by the Gas Act and planning processes which will consider safety alongside all other considerations. If a proposal is approved, it will then be subject to detailed design and operated in accordance with Health and Safety legislation and the approach of reducing risks where reasonably practicable.

4.25. Safety concerns the risk of something going wrong and the consequences if it does. The consequences are affected by the number of people who are sufficiently close to be in danger. Where an installation may pose dangers off-site, the extent of the population in the vicinity will affect the risks. Consequently for such installations the safest location would be in a sparse populated area in the countryside. However the Secretary of State is not obliged to place installations in the middle of the countryside because very low risks will be even lower in that location.

Pipelines

4.26. The risks involved in any of the pipeline options are very low – or put another way the pipelines are very safe. The evidence is that pipelines are a safe method of transporting gas. Mr Goodfellow said for the Saltfleetby pipelines that there were essentially two principal risks which formed the figure for probability: damage by third party intervention (someone digging

[18] Para 4.11.1
[19] Principles and guidelines to assist HSE, para 48 (CDC67).

a hole) or seismic activity / land slip. Issues of corrosion could be dealt with by regular inspection and construction and material defects by Quality Assurance and testing. Damage to gas pipes has tended to occur mainly to the distribution network, running local gas mains down roads. In the present case the pipelines will mainly be in agricultural land, on routes marked and known to the farmers, and will cross main roads at considerable depth (9 to 15m).

4.27. In the Health and Safety Executive approach, risk acceptability criteria come in two forms:

(i) individual risk, which is the risk to a notional individual positioned on or at certain distances from the facility being assessed;

(ii) societal risk, which is the risk of actual casualties and is a factor of the risk of particular numbers of casualties based on the highest density of population along the route of the particular pipeline.

4.28. For individual risk, risks to the public greater than 1×10^{-4} per annum (1:10,000) are not acceptable. Risks between that level and 1×10^{-6} (1:1,000,000) are tolerable if As Low As Reasonably Practicable. Risks less than 1 in a million are Broadly Acceptable or as Mr Goodfellow put it for Wingas, 'there is typically no concern'.[20]

4.29. Societal risk for pipelines is set out in the IGE/TD/1 Societal Risk FN Criteria21 which shows areas which are Broadly Acceptable and those which are tolerable if ALARP. Mr Goodfellow points out:[22]

> "For linear hazards such as pipelines, where significant numbers of people may be at risk in a single event, societal risk is a better measure with which to judge the acceptability of risk levels."

4.30. The Health and Safety Executive document Reducing Risks, Protecting People (known as 'R2P2') considers the tolerability of individual risk and societal concerns,[23] saying of the Broadly Acceptable region:[24]

> "Risks falling into this region are generally regarded as insignificant and adequately controlled. We, as regulators, would not usually require further action to reduce risks unless reasonably practicable measures are available. The levels of risk characterising this region are comparable to those that people regard as insignificant or trivial in their daily lives. They are typical of the risk from activities that are inherently not very hazardous or from hazardous activities that can be, and are, readily controlled to produce very low risks. Nonetheless, we would take into account that duty holders must reduce risks wherever it is reasonably practicable to do so or where the law so requires it."

[20] Quantitative Risk Assessment appended to proof, page 13, para 3.8.
[21] Quantitative Risk Assessment appended to proof, page 14, figure 5.
[22] Quantitative Risk Assessment appended to proof, page 13, para 3.8.
[23] See page 42, Figure 1.
[24] *Reducing Risks, Protecting People* Para 123.

4.31. Reducing Risks, Protecting People says of ALARP:

> "**124** The zone between the unacceptable and broadly acceptable regions is the tolerable region. Risks in that region are typical of the risks from activities that people are prepared to tolerate in order to secure benefits, in the expectation that:
>
> - the nature and level of the risks are properly assessed and the results used properly to determine control measures. The assessment of the risks needs to be based on the best available scientific evidence and, where evidence is lacking, on the best available scientific advice;
>
> - the residual risks are not unduly high and kept as low as reasonably practicable (the ALARP principle – see Appendix 3); and
>
> - the risks are periodically reviewed to ensure that they still meet the ALARP criteria, for example, by ascertaining whether further or new control measures need to be introduced to take into account changes over time, such as new knowledge about the risk or the availability of new techniques for reducing or eliminating risks.
>
> **125** Benefits for which people generally tolerate risks typically include employment, lower cost of production, personal convenience or the maintenance of general social infrastructure such as the production of electricity or the maintenance of food or water supplies."

4.32. Penspen have carried out two Quantitative Risk Assessments. The model used has changed between the 2008 QRA (in the Theddlethorpe Development Option report) and the 2009 QRA in Mr Goodfellow's proof. Particular assumptions are made about depth and wall thickness.

4.33. The headline conclusions are:

a) for the Wingas proposal, the 70 barg pipeline between the GSF and the National Transmission System is within Broadly Acceptable categories for individual and societal risk, the 220 barg pipelines between the GSF and the wellsites are in the tolerable if ALARP category for individual risk and there is no societal risk because of their distance from residential populations;

b) for all the Theddlethorpe options which have been discussed, the individual risk is in the tolerable if ALARP category and the societal risk is Broadly Acceptable.

4.34. Mr Guite has demonstrated that a 14 or 16 inch 220 barg pipeline would be adequate, and in two pipeline options 14 to 16 inch 70 or 80 barg pipelines. The individual risk profiles for the 220 barg pipelines to Theddlethorpe will be similar to the 220 barg pipelines between the wellsites and the GSF in

the 2009 QRA Annex D.[25] They are just above the Broadly Acceptable category. So the maximum individual risks of the Wingas proposal and the Theddlethorpe options will be essentially the same (because Wingas uses 220 barg pipelines) and the societal risk will be greater in the Theddlethorpe options but in all cases will be Broadly Acceptable. The hazard distances from a 20 inch 70 barg pipeline and a 14 inch 220 barg pipeline are very similar.

4.35. The modelling does not take account of the greater depth of the pipelines where they cross roads and watercourses where drilling will put them at least 9 metres below the road or water course.[26] Nor does it encompass increased protection at key locations[27] or 24 hour monitoring by fibre optic cables. Such measures would reduce the individual risk profiles for the 220 barg pipelines, potentially to the Broadly Acceptable level.

4.36. On the issue of pipeline safety, the HSE have confirmed that there are no legislative or de-facto limits to pipeline pressure and that they would expect that if the pipeline is designed correctly they do not believe there is any reason why the duties under the relevant legislation (the Pipeline Safety Regulations 1996) could not be met. The context therefore is that all the potential pipelines are very safe and the key factor – the societal risk – is Broadly Acceptable, that is they are risks which are trivial in daily life. There is therefore no safety objection to either the Wingas proposal or the Theddlethorpe options in pipeline terms. The Secretary of State should take the safety issues into account but attach very little weight to them in the present circumstances. The risks are lowest in the Wingas proposal but since all options are very safe, no material weight should be attached to this further risk reduction. It is not a factor which counts against other considerations to any material degree.

The Gas Storage Facility

4.37. There is no safety objection to the Gas Storage Facility proposed by Wingas. Whilst accidents are always possible, there is no reason to think that the GSF cannot be operated safely.

4.38. The Theddlethorpe Development Option report noted that the Theddlethorpe Gas Terminal is subject to the Control of Major Accident Hazards (COMAH) Regulations. It said that installing a 220 barg pipeline within the terminal would significantly affect the risk profile so it would need careful consideration.[28] The report did not suggest that the gas storage facility could not be constructed inside the terminal for safety reasons. Nor did it raise any safety issues about the siting of the GSF outside but adjacent to the gas terminal.

[25] Confirmed by Wingas on day 11.
[26] Mr Tissington, oral evidence.
[27] Although the 70 barg modelling was based on an enhanced wall thickness of 10.3 mm (2009 QRA page 15, para 4.1, footnote 4).
[28] Para 4.3.

4.39. Mr Tissington's proof of evidence suggested for the first time that the COMAH regime would prevent the siting of a GSF immediately adjacent to the gas terminal. He speculated that sensitive equipment was in the western part of the gas terminal and 'Inevitably, this would mean that the GSF would have to be moved further west which would either mean breaking through the shelter belt or constructing the GSF next to the A1031 coast road'.[29] When cross-examined he backed off, simply saying that there are impacts which need to be looked at.

4.40. Whilst the COMAH regulations have in practice only been applied to underground gas storage in depleted gas fields since 2009, the regulations were applicable to the effect of a Theddlethorpe GSF on the COMAH regulated gas terminal when all the site selection was being carried out and the option report and Environmental Statement was being carried out. Had COMAH been an objection to the Theddlethorpe options it would have been raised earlier, not least as one of the 'main reasons' required in the Environmental Statement for not pursuing the Theddlethorpe options.

4.41. The issue was raised, very late, without any technical appraisal and was not sustained in the inquiry. The Secretary of State should conclude that the COMAH regime does not prevent or weigh against Theddlethorpe options.

Safety conclusion

4.42. All the proposals and options are extremely safe. Therefore very little weight should be attached to safety issues in the decisions to be taken by the Secretary of State. The Secretary of State is not obliged to choose the lowest risk of various acceptable options.

Operational issues

4.43. Making a proposal acceptable in planning terms may require different operational practices. Provided they do not render the scheme impractical it is not a reason for carrying out an unacceptable development that it is less convenient to operate an acceptable scheme. To take a common place example, restrictions on the hours of HGV movements to and from a development may make operation less convenient but can be insisted upon unless the proposal is for a distribution warehouse which requires 24 hour operation. In that latter case the planning authority will have to decide whether to allow the scheme with 24 hour working or refuse.

4.44. So that there may be different operational issues with a Theddlethorpe GSF is not a reason for rejecting either the feasibility or desirability of the alternatives.

4.45. In any event, the scheme can be operated with a Theddlethorpe GSF. That appears to be common ground. Mr Guite's evidence was careful and

[29] Proof, para 322.

measured, drawing on his considerable experience of pipelines and facilities design and operations. He demonstrated the imagination in dealing with technical issues which engineers, and the oil and gas industry which has operated in the most inhospitable places on the planet, have been expected to show.

4.46. In contrast, the Wingas evidence on the operation of their scheme and Theddlethorpe options was shambolic. Mr Tissington was put forward to present a lengthy critique of operational issues from the Theddlethorpe option in his written evidence and even more prominently in his oral evidence in chief. He was outside his professional expertise and his evidence was then sunk by his QC's intervention during cross-examination that Mr Tissington's written and oral evidence was wrong about pigging in the Wingas scheme. His critique of the Theddlethorpe options should be put aside.

4.47. Dr Tauchnitz did not fare much better. He started with an assertion that methanol would need to be added to the wet gas in such quantities that a methanol still costing up to £24 million would be required.[30] When recalled he said that if the gas was heated and the pipes insulated (and heaters are proposed at the wellsites in the Wingas scheme) then a methanol still would not be required.

4.48. Since Wingas have based much of their case on alleged operational problems with a Theddlethorpe option it was not open for Dr Tauchnitz to say when recalled 'As Mr Humphries has mentioned, the inquiry was not about operational issues, or we would have got somebody.' The nature of the Wingas evidence on the Theddlethorpe option has been to raise a series of ill-thought out problems, overstate their impacts and then collapse when pressed.

4.49. Whilst Mr Guite has always made clear that there are different operational issues with a relocated GSF, these can be dealt with. For example, in the single pipeline option, dry gas can be sent up the existing 10" pipeline to pig the wet/dry pipeline in the direction of Theddlethorpe so liquids would not be sent to the wellsites.

4.50. The two pipeline option has significant operational advantages over the Wingas proposal. If there is now a need to change between extraction and injection as soon as possible, then this can be done in a matter of minutes with two pipelines. Whereas if pigging of the two pipelines between the Grayfleet GSF and the wellsites is required then 2-3 hours will be spent on each pigging operation.

4.51. In conclusion, each different option will raise different operational issues. However there are no disadvantages to the Theddlethorpe options which weigh materially against them being preferred as alternatives to the Wingas proposals.

[30] Proof, para 159, 177.

Other Objections

4.52. Mr Stapleton on behalf of the local residents association raised concerns about the consequences of a major accident caused by human error. Mr Webster on behalf of Oakwell International raised concerns about the effect of an underground gas explosion or seismic activity damaging the integrity of the reservoir.

Comments and Conclusions

NB. The figures in brackets […] indicate the paragraphs from which the evidence is taken.

Geology and Sub-surface Safety

5.1. There is a comprehensive regime of regulations and standards in place to ensure the safe construction, operation and decommissioning of the underground storage reservoir [3.1]. Underground gas storage in depleted gas fields is well understood and WSUK's parent company has experience operating similar storage facilities within Europe and Russia [3.3]. The County Council are not objecting to the application on safety grounds and there is no objection from the HSE or East Lindsey District Council [3.2,4.37]. The geological reports provide assurance about the integrity of the reservoir and a condition is proposed to require ongoing gas level monitoring to provide continued assurance [3.7]. The compressors proposed for the gas injection cycle would not be capable of over pressuring the reservoir [3.10].

5.2. For this application the HSE has been consulted on the hazardous substances consent [3.86] and will enforce COMAH and other safety regulations. The risk of an underground explosion is extremely unlikely due to lack of oxygen within the reservoir preventing an explosive mixture from forming [3.5]. Based on the evidence I am satisfied that no issues relating to geology or subsurface safety weigh against this application.

Plant and Pipeline Safety

5.3. As with sub-surface safety, there is a comprehensive regime of regulations and standards in place to ensure the safe construction, operation and decommissioning of the proposed surface compression and processing facility (GSF) at Grayfleet East [3.13]. WSUK's parent company has experience operating similar storage facilities within Europe and Russia [3.3]. The County Council are not objecting to the application on safety grounds and there is no objection from the HSE or East Lindsey District Council [3.2,4.37]. Some concerns were raised about human error leading to a major accident [4.52]. Whilst human error can never be completely ruled out the regulations and standards in place should ensure safe operation [3.9].

5.4. Considering pipeline safety, the 70 barg 8.1 km dry gas pipeline between the GSF and the national transmission system (NTS) at Theddlethorpe would be used to import and export NTS grade gas [3.17]. This pipeline would be broadly the same as the pipelines of the NTS which run throughout the country [3.59 a)]. The individual risk is 3.32×10^{-7} per year and is within the broadly acceptable region of the HSE tolerability of risk

framework. The societal risk FN curve is well within the broadly acceptable region [3.17]. No safety concerns [4.36] have been raised about this pipeline for which the design, construction and operation would be inspected by the HSE as it would be classified as a 'major accident hazard pipeline' under the Pipelines Safety Regulations 1996 [3.13].

5.5. The 220 barg flow lines would run between the GSF and wellsites A and B [3.17]. These pipelines would operate dry when gas is being injected into the reservoir and wet when carrying gas and condensate extracted from the reservoir via the wellsites to the GSF. The pipelines would have to operate at up to 220 barg in order to get the gas to flow into the reservoir. Whilst the individual risks for these pipelines fall above $1x10^{-6}$ per year, the broadly acceptable region, and within the tolerable if ALARP region of the HSE tolerability of risk framework they have been routed away from properties such that the societal risk is zero [3.17]. No safety concerns [4.36] have been raised about these pipelines for which the design, construction and operation would be inspected by the HSE as they would be classified as 'major accident hazard pipelines' under the Pipelines Safety Regulations 1996 [3.13].

5.6. Plant and pipeline safety is not raised as a concern by any statutory bodies. Whilst safety concerns from third parties are understandable it is clear from the evidence that regulations are in place to ensure the plant and pipelines should operate safely. Based on the evidence I am satisfied that no issues relating to plant or pipeline safety weigh against this application.

Theddlethorpe Option

5.7. For a GSF to be located at Theddlethorpe gas has to be transported at pressures of up to 220 barg between the GSF and the wellsites. This pressure is needed to get the gas to flow into the reservoir as the wellhead pressure increases [3.53]. To achieve this the County Council proposed two options. The first option, a new single 220 barg pipeline from the GSF to the well sites, operating dry when gas is being stored in the reservoirs and wet during extraction. The second option, two new pipelines from the GSF to the wellsites, a dry 220 barg pipeline used to store gas in the reservoir and a wet 80 barg pipeline used during extraction [4.15].

Pipeline Safety

5.8. Pipelines are a very safe method of transporting gas [3.65, 4.26]. The proposed import/export 70 barg pipeline has an individual risk of $3.32x10^{-7}$ per year and would be broadly acceptable [3.17], the 220 barg alternatives would have an individual risk just above $1x10^{-6}$ per year and would be tolerable if ALARP [3.61, 3.64 ,4.34]. It may be possible to further reduce the risk with increased protection [4.35] this would affect the cost of the alternatives and would have to be factored into the risk assessment process. It is clear the proposed 70 barg pipeline has a much lower individual risk profile than either of the one or two pipeline alternatives put

forward by the County Council. The societal risk is low and broadly acceptable for all the pipelines [4.34] but for the 70 barg pipeline the societal risk is between 3.9 to 6.4 times lower than either of the alternatives [3.62, 3.65]. Risks categorised as broadly acceptable are comparable to those that people regard as insignificant or trivial in their daily lives [3.36].

5.9. Very little weight can be given to risk if the risk is very low [4.19]. WSUK have a duty to reduce risks as low as reasonably practicable (ALARP) [3.33, 3.36]. This duty requires a comparison of the risk to be avoided with the sacrifice (in money, time and trouble) involved in avoiding the risk [3.49]. I consider that an option cannot be deemed 'reasonably practicable' if it would not be granted planning consent [4.23] and in determining whether to grant consent, safety is only one of many factors to be considered. Conversely if a Grayfleet East GSF could get consent it is clearly a lower risk option and given WSUK's duty to reduce risks a Theddlethorpe GSF would not be the ALARP option. I note the unique nature of an 8.1 km 220 barg pipeline with 125 barg being the highest pressure onshore pipeline at present in the UK [3.59c)] and the NTS operating at up to 85 barg [3.59a)]. The proposed 144 barg Corrib pipeline in the Republic of Ireland has been delayed for many years [3.59e)]. However these issues are more relevant to potential delays and there was no evidence to suggest that an 8.1 km 220 barg pipeline was so dangerous that it would not be a viable option in safety terms. Considering the low level of risk from any of the pipeline options I consider that pipeline safety only carries limited weight against a Theddlethorpe Option but if a Grayfleet East GSF could get consent Theddlethorpe would not be the ALARP option.

Technical and Operation

5.10. When changing from export to storage mode the single 220 barg pipeline option, as proposed by the County Council, presents an operational issue with the need to remove fluids from the pipeline before using it to inject dry gas into the reservoir [3.66]. The removal of fluids is achieved by pigging. WSUK's position is that the reservoir would be damaged if the volume of fluids in the 8.1 km pipeline were injected into it but not by the smaller volume of fluids from the shorter 220 barg pipelines in the proposal applied for. The need to pig between a change from export to import increases the time needed to change between modes. The County Council exposed inconsistencies in WSUK's evidence on pigging [4.46] but I consider this issue presents a clear operational disadvantage which weighs against the single 220 barg pipeline.

5.11. By having a separate dry pipeline the two pipeline option, suggested by the County Council, overcomes the issue of having to pig fluids from the single pipeline before switching to storage mode [4.50]. For this option the pipeline corridor would need to be much wider than the proposal applied for as there would need to be a 25 metre separation between the two pipelines [3.74]. The need for a wider pipeline corridor clearly weighs against the twin pipeline option.

5.12. For both of the Theddlethorpe GSF pipeline options there are two common issues. The first is the need for a slug catcher at Theddlethorpe to safely catch slugs of liquid carried by the flow of gas [3.73]. The need for this slug catcher is not disputed and carries some weight against a Theddlethorpe GSF.

5.13. The second common issue is hydrate formation, where solids can form in the pipeline if the temperature falls too low [3.66, 3.73]. Hydrates can be prevented by heating the pipeline or injecting methanol. WSUK's position is that it would not be practical to heat a pipeline this long and so a methanol still would be needed at Theddlethorpe to recover the injected methanol. A further pipeline to return the methanol to the wellsites for reuse may also be needed. The County Council challenged this assertion [4.47]. Whilst no detail design work has been completed on this I am persuaded that WSUK's position is credible based on the operational experience of their parent company. The need for a methanol still and the possibility of a methanol pipeline weigh against a Theddlethorpe GSF.

5.14. COMAH regulations apply to the existing gas terminal at Theddlethorpe and would apply to a GSF at Grayfleet East. COMAH regulations would also apply to a GSF at Theddlethorpe [3.80]. No detailed design work has been undertaken to establish the feasibility of co-locating two COMAH sites. There are valid concerns about avoiding a possible 'domino effect' but no firm evidence to demonstrate that COMAH regulations would require a separation distance so large that the existing tree screen would have to be breached [3.82] or rule out a Theddlethorpe GSF altogether [4.40]. The uncertainty this causes about the feasibility of a Theddlethorpe GSF must carry some weight against such a scheme.

5.15. The County Council highlighted the synergies of using existing facilities at Theddlethorpe to process the extracted gas and pointed out that there is spare capacity at the terminal [4.11]. This carries some weight in favour of a Theddlethorpe GSF but this is very limited as there is no capacity to compress the gas to the pressure needed for storage which is a significant part of a GSF.

5.16. The technical and operational issues together carry significant weight against a Theddlethorpe GSF alternative.

Hazardous Substances Consent

5.17. The application is for a direction that deemed Hazardous Substances Consent be given by Lincolnshire County Council as the Hazardous Substances Authority for the area. The Health and Safety Executive has been consulted and concluded that there are no significant reasons on safety grounds for refusing Hazardous Substances Consent and the County Council have raised no objection to this application. The conditions recommended by the HSE are included with other conditions agreed at the inquiry [3.86].

5.18. Taking note of the HSE response to the application for Hazardous Substances Consent and on the basis that the recommended conditions are included, there are no issues to weigh against granting the application for Hazardous Substances Consent.

Mark Kilcullen
Inspector
Department of Energy and Climate Change
3 Whitehall Place
London SW1A 2HD

Annex C – Suggested Conditions

Suggested SAO and Gas Act Section 16 Conditions

Storage Authorisation Order Conditions

1. The storage of gas and the project must be carried out strictly in accordance with the details contained in the application documents, except to the extent that any variation of those details is required in order to comply with any of the following:

   a. Conditions which are imposed on the Applicant under section 16 of the Gas Act

   b. Conditions of the deemed planning permission; and

   c. This Order.

Definition of 'application documents':

The 'application documents' means all of the following documents:-

a. The Applicants' Formal Submission of Proposals for a Gas Storage Authorisation Order for the Saltfleetby Gas Field under Section 4 of the Gas Act 1965; and

b. The Applicants' Environmental Statement dated October 2008 including the plans therein but only in so far as the plans are identified in any conditions attached to a planning permission for the project deemed to have been granted under section 90 of the Town and Country Planning Act 1990.

Conditions under Section 16 of the Gas Act

1. During the first cycle cushion gas and working gas will be injected into the reservoir, the cushion gas is required to bring the initial reservoir pressure up to the minimum operating pressure of 100bar (shut in pressure). The working gas which is constantly recycled during successive injection and withdrawal cycles shall not exceed a volume of 0.715 bcm.

2. During any cycle of the injection of gas into the field reservoir, the reservoir pressure of the Saltfleetby reservoir shall not be permitted to exceed 221 bar at the surface.

3. The number of wellheads shall not exceed 11 in total.

4. At each wellhead the riser internal diameter shall not exceed 4.5".

5. The internal diameter of the pipeline between the GSF and the Theddlethorpe Gas Terminal shall not exceed 20".

6. The chalk aquifer shall be sealed by means of a grouted steel liner during construction of each well to prevent contamination of the aquifer by reservoir fluids or non-water based drilling fields.

7. The installation of the boreholes shall be in accordance with the requirements of British Standard 1918 Part 2 and the Offshore Installations and Wells (Design and Construction etc) Regulations 1996 and the Borehole Sites and Operations Regulations 1995.

8. At all times, the operator shall prevent pollution or silting up of any adjoining watercourses, or the pollution of the underlying strata, arising from operations on site.

9. Any above ground oil or liquid chemical storage tanks shall be located at least 10 metres from any watercourse and within a bund having a capacity of not less than 110% of the largest tank, or if the tanks are connected by pipework to allow equalisation of the level of the contents, 110% of the largest combined volume. Inlet/outlet vent pipes and gauges must be located within the bunded area, and any tap or valve shall be so arranged as to discharge vertically downwards and shall be kept locked shut when not in use. The floor and walls of the bund shall be impervious to oil/water and resistant to any stored chemicals.

Suggested Deemed Planning Permission Conditions

1. **Commencement**
The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

Reason: To comply with Section 91 of the Town and Country Planning Act 1990

2. **Notification of Commencement**
Not less than seven working days notice in writing shall be given to the Mineral Planning Authority prior to the commencement of construction works.

Reason: To enable the Mineral Planning Authority to monitor the development.

3. **Duration**

(Omitted)

4. **Notification of Commissioning**
Not less than seven working days notice in writing shall be given to the Mineral Planning Authority prior to the commissioning of the pipeline.

Reason: To enable the Mineral Planning Authority to monitor the development.

5. **Approved Details**
Except as may be modified on application to the Mineral Planning Authority and/or as may be modified or required by the operation of other conditions to this permission, the development shall be carried out strictly in accordance with the approved Application Plans as listed in Document WG20 appended.

Reason: To enable the Mineral Planning Authority to monitor the development.

6. **Landscaping**

6a. The screening and landscaping of the development shall be undertaken in accordance with the scheme detailed in Appendix 8.2 (Volume 2) and indicated by figures 8.8 – 8.13 (Volume 3) of the Environmental Statement.

Reason: In the interests of the visual amenity of the area.

6b. The development shall not be brought into use until a Landscape Management Plan has been submitted to and approved in writing by the Mineral Planning Authority. The Plan shall include details of the implementation and specification for the maintenance tasks and a clear indication of maintenance visits and task frequency.

Reason: In the interests of the visual amenity of the area.

7. **Archaeology**

No development or groundworks shall take place within the application site until the applicant has prepared a programme of archaeological work in accordance with a written scheme of investigation which has been submitted to and approved in writing by the Mineral Planning Authority. Such scheme as approved shall be implemented in full.

Reason: In order to ensure satisfactory arrangements for the investigation, retrieval and recording of any possible archaeological remains on site.

8. **Drilling Scheme**

Before development commences all development and drilling equipment shall be installed and operated in accordance with a scheme that has previously been submitted to and approved in writing by the Mineral Planning Authority. For the avoidance of doubt such a scheme should include details of the drilling rig(s) and associated structures, tanks, cabins and associated infrastructure. Such schemes as approved shall be implemented in full.

Reason: In the interests of the residential amenity of the area.

9. **Construction and Construction Noise and Vibration**

9a. All activities associated with the construction of the Development excluding drilling activity shall be carried out in accordance with British Standard 5228, Parts 1 and 2: 1997 and Part 4: 1992; Noise and Vibration Control on Construction and Open Sites.

Reason: In the interests of the residential amenity of the area.

9b No construction work associated with the Development except drilling activity shall take place on the Site at any time on any Sunday or Bank Holiday nor on any other day except between the following times:

Monday to Friday	07:00-18:00 hrs
Saturday	07:00-13:00 hrs

unless such work -

a. is associated with an emergency (defined as work that is necessary in the interests of health and safety); or

b. is carried out with the prior written approval of the Mineral Planning Authority; or

c. relates to testing, reliability runs, trials or other preparations for the commissioning of the Development whilst in compliance with the limits in Condition 10a.

Reason: In the interests of the residential amenity of the area.

9c At no time during the construction of the Development should the noise level, when measured 1.2 metres above ground and not less than 4 metres from the façade of any residence, exceed a value of 55 $dBL_{Aeq\ (1\ hour)}$.

Reason: In the interests of the residential amenity of the area.

9d. No Development shall take place until there has been submitted to and approved in writing by the Mineral Planning Authority, a programme for the monitoring of noise generated during the construction of the Development. The programme shall specify the measurement locations for which noise will be monitored and the maximum permissible levels at each such monitoring position in order to ensure compliance with the noise levels in Condition 9c. The programme shall make provision for such noise measurements to be taken as soon as possible following receipt by the Company of a written request from the Mineral Planning Authority and such measurements shall be given to the Mineral Planning Authority as soon as reasonably practicable. At such monitoring locations, noise levels during construction operations shall not exceed the levels specified in the approved programme, unless in an emergency.

Reason: In the interests of the residential amenity of the area.

9e. In any instance where a time limitation referred to in Condition 9b or a noise level referred to in Condition 9c is not complied with because of an emergency the Company shall as soon as possible notify the Mineral Planning Authority and follow up the notification with a written statement detailing the nature of the emergency and the reason why the limitation could not be observed.

Reason: In the interests of the residential amenity of the area.

9f. No development shall take place until there has been submitted to and approved in writing by the Mineral Planning Authority, a programme for monitoring of vibration generated by heavy goods vehicle movements associated with the construction of the development. The programme shall make provision for such vibration measurements to be taken as soon as possible following receipt by the Company of a written request from the Mineral Planning Authority and such measurements shall be given to the Mineral Planning Authority as soon as reasonably practicable. At such monitoring locations, vibration levels during construction operations shall not exceed the levels advised in the approved programme, unless in an emergency (that is necessary in the interests of health and safety) or otherwise approved in writing by the Mineral Planning Authority.

Reason: In the interests of the residential amenity of the area.

10. **Drilling Noise**

10a The specific noise generated by drilling operations on the development site shall not exceed the following levels when measured and assessed in accordance with BS 4142:1997 *Method for rating industrial noise affecting mixed residential and industrial areas,* at the nearest residential properties at the following positions, indicated in **Table 10.1** annexed hereto:

Measurement position	Daytime – LAeq (1 hour)	Night-time LAeq (5 mins)
Pos 1 – Willey's Farm	42	37
Pos 2 – Howdales Farm	42	37
Pos 3 – South Cockerington Grange	42	37
Pos 4 – Beulah Farm	42	37
Pos 5 – Stump Cottage	42	37

Table 10.1

Reason: In the interests of the residential amenity of the area.

10b. No drilling shall take place until there has been submitted to and approved in writing by the Mineral Planning Authority, a programme for the monitoring of noise generated by drilling activity. The programme shall specify the locations from which noise will be monitored, the method of noise measurement (which shall be in accordance with BS 4142 1997) and the maximum permissible levels of noise at each such monitoring location in order to ensure compliance with the noise levels in Condition 10a. The programme shall make provision for such noise measurements to be taken by the Company following receipt by the Company of a written request from the Mineral Planning Authority and such measurements shall be given to the Mineral Planning Authority as soon as they are available. At such measurement locations noise levels during drilling operations shall not exceed the levels specified in the approved programme, except in an emergency (that is necessary in the interests of health and safety) or with prior written approval of the Mineral Planning Authority.

Reason: In the interests of the residential amenity of the area.

11. **Operational Noise**

11a The specific noise generated by the commercial operation of the Development shall not exceed the following levels at the nearest residential properties when measured generally in accordance with BS 4142 1997 at the positions indicated on the following **Table 11.1**:

Measurement position	Daytime – LAeq (1 hour)	Night-time LAeq (5 mins)	Night-time Leq at 31Hz (octave), (5 mins)
Pos.1 Willey's Farm	43	38	62
Howdales Farm	43	38	62
South Cockerington Grange	43	38	62
Beulah Farm	43	38	62
Stump Cottage	43	38	62

Table 11.1

Such noise shall exhibit no clearly tonal or impulse content at these properties. The limitations as to noise levels in this Condition shall be adhered to at all times except in an emergency (that is necessary in the interests of health and safety).

Reason: In the interests of the residential amenity of the area.

11b. The operation of the Development shall not take place until there has been submitted to and approved in writing by the Mineral Planning Authority, a programme for the monitoring of noise generated by the normal commercial operation of the Development. The programme shall specify the locations from which noise will be monitored, the method of noise measurement (which shall be in accordance with BS 4142 1997) and the maximum permissible levels of noise at each such monitoring location in order to ensure compliance with the noise levels in Condition 11a. The programme shall make provision for such noise measurements to be taken by the Company as soon as possible following receipt by the Company of a written request from the Mineral Planning Authority and such measurements shall be given to the Mineral Planning Authority as soon as they are available.

Reason: In the interests of the residential amenity of the area.

12. **High Noise Level Events during an Emergency**

In any instance where a noise level approved pursuant to Condition 9c or a noise limitation referred to in Conditions 10a and 11a is exceeded because of an emergency (that is necessary in the interests of health and safety), the Company shall as soon as reasonably practicable, and in any event within two working days, provide the Mineral Planning Authority with a written statement detailing the nature of the emergency and the reason why the noise level and/or limitation could not be observed. If the emergency period is expected to be for more than twenty-four hours then the Company shall inform those residents affected by the emergency of the reasons for the emergency and the expected duration.

Reason: In the interests of the residential amenity of the area.

13. **Noise Complaints Procedure**

In any instance where a local resident makes a complaint about noise or vibration generated by the construction and/or operation of the Development the Company shall carry out an investigation to establish the justification, or otherwise, of the complaint, the likely cause and possible remedial measures. A written report to the complainant shall be made as soon as reasonably practicable following the investigation and/or remedial work. The Company shall keep all such reports in an appropriate file and such file shall be made available to the Mineral Planning Authority on written request.

Reason: To ensure that any complaints on the grounds of noise or vibration are properly dealt with so as to reduce the impact of the Development on the amenities of the local residents.

14. **Dust**

No development shall take place until a scheme for dust monitoring and mitigation has been submitted to and approved in writing by the Mineral Planning Authority. The submitted scheme shall make provision for:

a. A dust control plan;

b. The locations of the dust monitoring points;

c. Details of the Monitoring Programme;

d. The type of monitoring equipment to be used;

e. The keeping of records of records for furnishing on request to the Mineral Planning Authority; and

f. A programme of implementation.

Reason: In the interests of human health and residential amenity.

15. **Hours of Operation**

During construction operations and the carrying out of site preparation or restoration and the delivery of equipment, HGVs shall not enter and depart the site outside the following hours without the prior written consent of the Minerals Planning Authority:

Monday to Friday 07.00 to 18.00 hrs;

Saturday 0700 to 1300 hrs; and

There shall be no deliveries to the site on Sundays or Public/Bank Holidays.

Reason: In the interests of the residential amenity of the area.

16. **Gas Monitoring**

Throughout the duration of the development the applicant shall carry out monitoring of gas levels within surrounding soils and groundwater, at agreed locations, in accordance with a scheme of monitoring that shall be approved in writing with the Mineral Planning Authority prior to the commencement of the development. For the avoidance of doubt, such a scheme shall include details of recording and the provision of results to the Minerals Planning Authority and other appropriate Regulatory Bodies (including the Health and Safety Executive and the Environment Agency) as necessary. Such schemes as approved shall be implemented for the duration of the development.

Reason: To ensure the protection of the environment and to monitor for any potential gas leakage or migration.

Soil Movement

17a Restoration shall be carried out such that after replacement of topsoil and subsoil, and after settlement, the contours will tie in with those of the surrounding land so that the restored area is free from ponding and capable of receiving an effective artificial under-drainage system.

Reason: To ensure that the site is reclaimed in a condition capable of beneficial after-use and in the interests of amenity.

17b Prior to re-spreading of subsoil or topsoil the upper 500mm of the surface shall be ripped at a spacing of 500mm or closer to remove rock, stone, boulder, wire rope, cable or other foreign objects or compacted layers capable of impending normal drainage operations including mole ploughing or sub-soiling.

Reason: To ensure that the site is reclaimed in a condition capable of beneficial after-use and in the interests of amenity.

17c Stones, materials and objects which exceed 200mm in any dimension and occur on the surface of the ripped and loosened ground shall be removed from the site or buried at a depth of not less than 2 metres below the final pre-settlement contours.

Reason: To ensure that the site is reclaimed in a condition capable of beneficial after-use and in the interests of amenity

17d The replacement of topsoil shall not commence until the Minerals Planning Authority has been notified that Condition 17c above has been fulfilled and has been given an opportunity of at least two working days to inspect the completed sub-soiling works.

Reason: To ensure that the site is reclaimed in a condition capable of beneficial after-use and in the interests of amenity.

17e The re-spread topsoil shall be ripped or loosened to provide loosening equivalent to a single tine pass at a spacing of 500mm or closer to full depth of the topsoil plus 100mm, and any loosened non-soil making material, rock, boulder or larger stone lying on the loosened topsoil surface and greater that 100mm in any dimension shall be removed from the site or buried at a depth not less than 2m below the final settled contours.

Reason: To ensure that the site is reclaimed in a condition capable of beneficial after-use and in the interests of amenity.

18. **Aftercare Management**

All areas restored pursuant to Conditions 17a to 17e above shall be subject to aftercare management for a five year period. This period shall commence on the date that topsoil replacement has been completed.

Reason: To ensure a productive after-use of the land.

19. **Aftercare Scheme**

An aftercare scheme shall be submitted to the Minerals Planning Authority, and approval obtained in writing, at least 3 months before the spreading of subsoil commences. The scheme shall outline the land management steps to be taken to establish and maintain a beneficial agricultural after-use and shall be implemented as approved.

Reason: To ensure a productive after-use of the land.

20. **Highway Works**

No development shall commence until the details of works to improve the public highway by widening the County road C652 between South Cockerington Village and Eleven Greens Fork (approximately 2.3km) and

strengthening the carriageway by providing an overlay have been submitted to and approved in writing by the Minerals Planning Authority and carried out in full.

Reason: In the interests of highway safety.

21. **Flood Risk Assessment**

The development permitted by this planning permission shall only be carried out in accordance with the approved Flood Risk Assessment (FRA) and the following mitigation measures detailed within the FRA:

a. Mitigation measures to be provided as per Drawing Ref: AJW/SQ/MCH (job No: 49308010 Figure 5). Specifically the platform shall be constructed to a level of 2.10mAOD. The top of the bund shall be set at 3.60mAOD with temporary barriers to 3.08mAOD at 2 no. entrances; and

b. Compensatory storage shall be provided as per paragraph 3.3.2 of the FRA with the spillway constructed at 2.85mAOD.

Reason: To reduce the risk of flooding to the proposed development and its future occupants and to ensure no increase in flood risk to neighbouring land.

22. **Flood Storage Areas**

A scheme for the detailed design and management of the flood storage areas at the Grayfleet Storage Facility shall have been submitted to and approved in writing by the Minerals Planning Authority prior to commencement of the construction of the GSF. The scheme shall include details of landscaping and the management programme to promote biodiversity, within the parameters required to deliver the Flood Risk Management Measures identified in the Environmental Statement. The scheme shall be implemented as approved.

Reason: To reduce the risk of flooding to the proposed development and its future occupants and to ensure no increase in flood risk to neighbouring land.

23. **Surface Water Drainage**

No development approved by this permission shall be commenced until a scheme for the provision of surface water drainage works has been approved by the Minerals Planning Authority. Such scheme shall be implemented before the construction of impermeable surfaces draining to the system.

Reason: To ensure a satisfactory means of disposal of surface water from the site.

24. **Construction Waste**

Prior to the commencement of Development, a detailed strategy and method statement for minimising the amount of construction waste resulting from the construction of the Development shall have been submitted to and approved in writing by the Minerals Planning Authority. The statement shall include details of the extent to which waste materials arising from construction activities will be reused on site. If such reuse on site is not practicable, then details shall be given of the extent to which the waste materials will be removed from the site for reuse, recycling composting or disposal. All waste materials shall thereafter be reused,

recycled or dealt with in strict accordance with the approved strategy and method statement.

Reason: To minimise the amount of construction waste to be removed from the site for final disposal.

25. **Local Liaison**

Before development commences, a local liaison forum shall be established in accordance with a scheme to be submitted to and approved in writing by the Minerals Planning Authority. The scheme shall include terms of reference and frequency of meetings of the forum. The forum shall meet in accordance with the approved details unless minor variations are agreed in writing with the Minerals Planning Authority.

Reason: To ensure a forum exists for interested parties to consider matters of mutual concern.

26. **Building Materials**

Notwithstanding the details shown on the approved plans, development shall not commence until details and samples of the materials to be used in the construction of the external surfaces of the buildings hereby permitted shall have been submitted to and approved in writing by the Minerals Planning Authority. The development shall be undertaken in accordance with the approved details.

Reason: In the interests of visual amenity.

27. **Lighting Plan**

No development shall commence until full details of all external lighting, generally in accordance with the exterior lighting report dated 25 October 2009 by Allan Howard, have been submitted to and approved in writing by the Minerals Planning Authority. Thereafter all lighting shall be installed and maintained in accordance with the approved details.

Reason: In the interests of the amenity of the local area and local residents.

28. **Restoration Plan**

12 months prior to the cessation of operations on the site, a comprehensive restoration plan shall be submitted in writing to the Mineral Planning Authority for approval. That plan shall set out details of the proposed afteruse of the land and the methods by which that would be achieved, including making safe the boreholes and pipelines and the removal of all plant, equipment roads and hardstandings. Thereafter the approved scheme shall be implemented in full.

Reason: To ensure appropriate restoration of the site at the time

29. **Removal of Plant and Machinery**

Incorporated in Condition 28

Suggested Deemed Hazardous Substances Consent Conditions

1 The Hazardous substances shall not be kept or used other than in accordance with the application particulars provided in the application to the HSE nor outside the areas marked for storage of the substances on the plan which formed part of the application.

2 The maximum pressure in any storage reservoir shall not exceed 221 bar at the surface.

3 The number of wellheads connected to the manifold pipework shall not exceed 4 at Wellsite ‘A’ and 7 at Wellsite ‘B’.

4 The internal riser of any wellhead shall not exceed an internal diameter of 4.5”.

5 The pipeline diameter between Wellsite ‘A’ and the GSF shall not exceed 12” nominal bore.

6 The pipeline diameter between Wellsite ‘B’ and the GSF shall not exceed 16” nominal bore.

7 The pipelines between Wellsite ‘A’ and the GSF and between Wellsite ‘B’ and the GSF shall be located underground with a nominal depth of cover of not less than 1.1 m.

Reason: in the interests of human health and safety and to protect the environment

APPEARANCES

FOR WINGAS STORAGE UK LIMITED

Mr Michael Humphries QC	Instructed by Hammonds LLP of 2 Park Lane, Leeds LS3 1ES

He called:

Dr Frank Tauchnitz PhD	Managing Director, Wingas Storage UK Limited
Mr John Baldwin MA CEng MIME MIGE MEI	Managing Director, CNG Services Limited
Mr Mark Tissington DipNEBOSH EnvDipNEBOSH MIIRSM GradIOSH	Health, Safety and Environment Manager, Wingas Storage UK Limited
Mr Graham Goodfellow MEng AIMechG	Consultant, Penspen Ltd.
Mrs Susan Dodwell MA BSc (Hons) CMLI	Director, Woolerton Dodwell Associates Limited
Mr Patrick Gurner BSc (Hons) CEng MICE	Director, Canon Consulting Engineers
Mr Ryan Mellor BA(Hons) MSc CEnv MIEEM	Associate Director, URS Corporation Limited
Mr Andrew Corkill BSc (Hons) MSc MIOA	Managing Director, Spectrum Acoustic Consultants
Mrs Katherine Hauser BEng MSc AIEMA	Senior Environmental Scientist, Golder Associates (UK) Limited
Mr Colin Smith FRICS	Senior Director and Head of Compulsory Purchase and Compensation, CB Richard Ellis
Mr Paul Foster BSc (Hons) DipTP MRTPI MRICS	Planning Associate, Barton Willmore LLP

FOR LINCOLNSHIRE COUNTY COUNCIL

Mr Richard Harwood assisted by Ms Ellen Wiles	Instructed by Legal Services, Lincolnshire County Council
He called: Mr David Barker MA BA(Hons) DipLA CMLI	Technical Director, Jacobs UK Ltd.
Mr Matthew Guite BEng (Hons)	Project Manager, J P Kenny Ltd.
Mr Richard Watson BEng(Hons) CEng MIA MAES MIEEE	Partner, Blue Tree Accoustics
Mr Neil McBride BA (Hons) DipU&RP MRTPI DMS	Development Manager, Lincolnshire County Council

FOR GRIMOLDBY & MANBY PARISH COUNCIL

Mr Tony Knowles	Chairman of the Parish Council

FOR SKIDBROOKE CUM SALTFLEET HAVEN PARISH COUNCIL

Mr Guy Williams	Parish Councillor

FOR SALTFLEETBY PARISH COUNCIL

Mr David Cooper	Clerk to the Parish Council

FOR THEDDLETHORPE PARISH COUNCIL

Mr David Cooper	Clerk to the Parish Council

FOR SALTFLEETBY RESIDENTS' ASSOCIATION

Mr Bruce Stapleton	Chairman of the Residents' Association

FOR OAKWELL INTERNATIONAL LIMITED

Mr Frank Webster	Consultant

FOR CONOCOPHILLIPS (UK) LTD

Mr John Marlow

DOCUMENTS

GENERAL DOCUMENTS

REFERENCE	DESCRIPTION
G1	Letters of Inquiry Notification to the SAO and CPO Objectors
G2	Attendance Lists for the Inquiry

CORE DOCUMENTS

Section A – Application Documents

REFERENCE	DESCRIPTION	DATE
CDA1	Environmental Impact Assessment Volumes 1-3	October 2008
CDA2	Non-Technical Summary	October 2008
CDA3	Notice of Application for a Storage Authorisation Order	October 2008
CDA4	Formal Submission for the Storage Authorisation Order	October 2008
CDA5	Outline Safety document	October 2008
CDA6	Theddlethorpe Option report	October 2008
CDA7	Planning Statement	October 2008
CDA8	Statement of Community Involvement	October 2008
CDA9	Hazardous Substances Consent Form	October 2008
CDA10	The Wingas Storage UK Limited (Saltfleetby Gas Storage Facility) Compulsory Purchase Order	2009
CDA11	The Wingas Storage UK Limited (Saltfleetby Gas Storage Facility) Compulsory Purchase Order – Order Maps	2009
CDA12	The Wingas Storage UK Limited (Saltfleetby Gas Storage Facility) Compulsory Purchase Order – Statement of Reasons	2009
CDA13	Saltfleetby Gas storage proposal (Wingas Storage UK) Evaluation of, and comments on, BGS Report CR/06/098C Haszeldine	2006
CDA14	An assessment of the possible effect of an earthquake similar to the ML 5.2 Market Rasen, 2008, earthquake on the Saltfleetby gas reservoir main	2008

Section B - Notification of Application and Post Submission Documents

REFERENCE	DESCRIPTION	DATE
CDB1	Correspondence from Barton Willmore to 23 formal consultees advising of the submission of the SAO application	24 October 2008
CDB2	Correspondence from Barton Willmore to an additional 7 formal consultees advising of the submission of the SAO application	4 November 2008
CDB3	Correspondence from Barton Willmore to 13 formal consultees advising of the submission of a Hazardous Substances Consent application	4 November 2008
CDB4	Correspondence from Barton Willmore to 1 additional formal consultee advising of the submission of the SAO application	24 November 2008
CDB5	Report to Planning Committee of East Lindsey DC, 15 January 2009	15 January 2009
CDB6	Minutes of the meeting of the Planning Committee of East Lindsey DC, 15 January 2009	15 January 2009
CDB7	Report to Planning and Regulation Committee of Lincolnshire County Council, 19 January 2009	19 January 2009 [copy to be provided by LCC]
CDB8	Minutes of the meeting of the Planning and Regulation Committee of Lincolnshire County Council, 19 January 2009	19 February 2009 [copy to be provided by LCC]
CDB9	WSUK's Statement of Case	14 September 2009
CDB10	LCC's Statement of Case	11 September 2009 [copy to be provided by LCC]
CDB11	**Statement of Common Ground**	November 2009
CDB12	Statement of Matters issued by the Secretary of State	24 June 2009
CDB13	BGS Report CR/06/098C	2006
CDB14	Correspondence from Alistair Wyness of URS Corporation to Vic Kirton of Lindsey Marsh Drainage Board and response from Martin Mitchell of the Lindsey Marsh Drainage Board	31 July 2009 and 5 August 2009

Section C - Government and other National Organisations' Documents

REFERENCE	DESCRIPTION	DATE
CDC1	Town and Country Planning Act 1990 (extracts)	1990
CDC2	Highways Act 1980 (extracts)	2004
CDC3	Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999	1999
CDC4	The Pipeline Works (Environmental Impact Assessment) Regulations 2000	2000
CDC5	The Public Gas Transporter Pipe-line Works (Environmental Impact Assessment Regulations 1999	1999
CDC6	Circular 02/99 - Environmental Impact Assessment	1999
CDC7	Environmental Impact Assessment – A Guide to Procedures	
CDC8	The Gas Act 1965 (extracts)	1965
CDC9	Guidance on the Gas Act – A Consultation	May 2007
CDC10	Energy Statement of Need for Additional Gas Supply Infrastructure by the Secretary of State for Trade and Industry	16 May 2006
CDC11	White Paper *Our Energy Future: Creating a Low Carbon Economy*	February 2003
CDC12	Command Paper *The Energy Challenge* (2006)	2006
CDC13	Energy Security: A national challenge in a changing world (2009)	2009
CDC14	PPS1: Delivering Sustainable Development	January 2005
CDC15	PPS1 Supplement: Planning and Climate Change	December 2007
CDC16	PPG4: Industrial and Commercial Development and Small Firms	November 1992
CDC17	Consultation Draft PPS4: Planning for Prosperous Economies	May 2009
CDC17.1	PPS4: Planning for Sustainable Economic Growth	December 2009
CDC18	PPS7: Sustainable Development in Rural Areas	August 2004
CDC19	PPS9: Biodiversity and Geological Conservation	August 2005
CDC20	Government Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact Within the Planning System	2005
CDC21	PPG13: Transport	April 2001
CDC22	PPG16: Planning and Archaeology	November 1990
CDC23	PPG20: Coastal Planning	October 1992

CDC24	PPS23: Planning and Pollution Control	November 2004
CDC25	PPG24: Noise	October 1994
CDC26	PPS25: Development and Flood Risk	December 2006
CDC27	Consultation on Proposed Amendments to PPS25: Development and Flood Risk	August 2009
CDC28	MPS1: Planning and Minerals	November 2006
CDC29	Planning and Minerals Good Practice Guide	November 2006
CDC30	MPS2: Controlling and Mitigating the Environmental Effects of Mineral Extraction in England	March 2005
CDC31	MPS2: Controlling and Mitigating the Environmental Effects of Mineral Extraction in England: Annex 1 Dust	March 2005
CDC32	MPS2: Controlling and Mitigating the Environmental Effects of Mineral Extraction in England: Annex 2 Noise	March 2005
CDC33	Guidelines for Landscape and Visual Impact Assessment, The Landscape Institute of Environmental Management & Assessment (Second Edition)	2002
CDC34	Landscape Character Assessment, Guidance for England and Scotland, The Countryside Agency and Scottish National Heritage	April 2002
CDC35	Countryside and Rights of Way Act 2000 (extracts)	2000
CDC36	Wildlife and Countryside Act 1981 (as amended) (extracts)	1981
CDC37	The Conservation (Natural Habitats & c.) Regulations 1994	1994
CDC38	The Conservation (Natural Habitats &c.) (Amendment) Regulations 2007	2007
CDC39	Natural Environment and Rural Communities Act 2006 (extracts)	2006
CDC40	British Standard 5228-1:2009 Noise and Vibration Control on Construction and Open Sites	2009
CDC41	British Standard 4142: 1997 Method for Rating Industrial Noise Affecting Mixed Industrial and Residential Areas	1997
CDC42	British Standard 8233: 1999 Sound Insulation and Noise Reduction for Buildings – Code of Practice	1999
CDC43	Guidelines for Community Noise, WHO, 2000	2000

CDC44	Guidance Notes No.1: Guidelines for the Environmental Assessment of Road Traffic, The Institute of Environmental Assessment	March 1993
CDC45	Design Manual for Roads and Bridges (DMRB) Volume 11 – Environmental Assessment, Dept of Transport	June 1993
CDC46	The Groundwater Regulations 1998 Statutory Instrument 2746	1998
CDC47	Environment Agency - Groundwater Protection Policy and Practice	May 2009
CDC48	Assessment of Community Response to Odourous Emissions, R&D technical report, P4-095/TR, Environment Agency	2002
CDC49	CIE 150: 2003 Guide on the limitation of the effects of obtrusive light from outdoor lighting installations	2003
CDC50	CIE 126: Guidelines for minimising sky glow	
CDC51	ILE Guidance notes for the reduction of obtrusive light	
CDC52	DoT: Guidance on Transport Assessment	March 2007
CDC53	DoT: Manual for Streets	March 2007
CDC54	Design Manual for Roads and Bridges (DMRB) Volume 6 Section 2 Part 6 – Geometric Design of Major/Minor Priority Junctions	January 1995
CDC55	CLG Lighting in the Countryside: Towards Good Practice	July 1997
CDC56	Environment Agency: Horizontal Guidance Note for Noise IPPC - Part 1: Regulation and Planning and Part 2: Noise Assessment and Control	September 2002
CDC57	Guidelines for Ecological Impact Assessment in the United Kingdom	June 2006
CDC58	CIBSE LG1 Lighting guide, The industrial environment	
CDC59	CIBSE LG6 Lighting guide, The outdoor environment	
CDC60	Planning and Compulsory Purchase Act 2004 (extracts)	1980
CDC61	Energy White Paper “Meeting the Energy Challenge”	May 2007
CDC62	CRTN Calculation of Road Traffic Noise	1988
CDC63	DMRB Design Manual for Roads and Bridges	1994
CDC64	HSE Report to Energy Review “The Health and Safety Risks and Regulatory Strategy Related to Energy Developments”	2006
CDC65	HSE notice applying COMAH to depleted reservoirs	2009
CDC66	HSE publication “Reducing Risks Protecting People” (R2P2)	2001
CDC67	HSE ALARP Guidance	2009

CDC68	RR605 "An appraisal of underground gas storage technologies and incidents, for the development of risk assessment methodology"	2008
CDC69	HSE response letter to HSC application	2008
CDC70	Health and Safety at Work etc. Act 1974	1974
CDC71	Management of Health and Safety at Work Regulations 1999	1999
CDC72	The Control of Major Accident Hazards Regulations 1999 (as amended)	1999
CDC73	Pipeline Safety Regulations 1996	1996
CDC74	Borehole Sites and Operations Regulations 1995	1995
CDC75	Gas Safety Management Regulations 1996	1996
CDC76	Planning (Hazardous Substances) Regulations 1992	1992
CDC77	Environmental Protection Act 1990 – s.79	1990
CDC78	The Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996	1996
CDC79	BS EN 1918-2:1998 Gas supply systems – Underground gas storage – Pt2 Functional recommendations for storage in oil and gas fields	1998
CDC80	BS EN 1918-5:1998 Gas supply systems – Underground gas storage – Pt5 Functional recommendations for surface facilities	1998
CDC81	Draft Overarching National Policy Statement for Energy (EN-1) - DECC	November 2009
CDC82	Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) - DECC	November 2009
CDC83	Correspondence from The Chief Planner to all Chief Planning Officers, entitled 'National Policy Statements'	9 November 2009
CDC84	Britain's Untapped Energy On-Shore Oil and Gas – Department of the Environment and the Department of Energy	
CDC85	Gas Storage in Your Area – Your Questions Answered – BERR	2007

Section D - Strategic and Local Planning Documents

REFERENCE	DESCRIPTION	DATE
CDD1	East Midlands Regional Plan	March 2009
CDD2	East Lindsey Local Plan Alteration Saved Policies September 2007	September 2007
CDD3	East Lindsey Local Plan Part 2: Settlement Map	August 1995
CDD4	Lincolnshire Minerals Local Plan	February 1991
CDD5	Lincolnshire Minerals and Waste Core Strategy Issues and Options	October 2008
CDD6	*A Flourishing Region:* Regional Economic Strategy for the East Midlands (2006-20)	
CDD7	The Regional Energy Policy Part 1: East Midlands Energy Challenge (East Midlands Regional Assembly)	March 2004
CDD8	The Regional Energy Policy Part 2: A Framework for Change	May 2007
CDD9	East Lindsey Core Strategy Issues and Options	November 2007
CDD10	East Lindsey Strategic Flood Risk Assessment	
CDD11	East Lindsey Landscape Character Assessment Final Report	July 2009
CDD12	Lincolnshire County Council: Development Guide on Transport and New Development Issues in Lincolnshire	January 2005
CDD13	Lincolnshire County Council: Network Management Plan	March 2009
CDD14	Lincolnshire County Council: Lincolnshire Local Transport Plan 2	March 2006
CDD15	East Midlands Regional Assembly: Putting Wildlife Back on the Map. A Biodiversity Strategy for the East Midlands. (Extracts)	May 2006
CDD16	Lincolnshire Biodiversity Action Plan. Action for Wildlife in Lincolnshire. 2nd Edition (Extracts) • Farmland and Grassland Action Plan • Rivers and Wetlands Action Plan • Trees & Woodland Action Plan	November 2006
CDD17	Lincolnshire's Coastal Grazing Marsh. A Vision for the Future	February 2008
CDD18	The Lincolnshire Coastal Grazing Marshes Project. Water Level Management Study	June 2008

CDD19	Lincolnshire Minerals and Waste Core Strategy Revised Issues and Options	October 2009

Section E - Miscellaneous Documents
Letters of Representation and Objection to SAO Application

REFERENCE	DESCRIPTION	DATE
CDE1	Correspondence from FC Webster, Oakwell International, Limited to Wingas	28 August 2008
CDE2	Correspondence from FC Webster, Oakwell International, Limited to SoS	28 October 2008
CDE3	Correspondence from Saltfleetby and District Residents' Association to SoS	14 December 2008
CDE4	Correspondence from Saltfleetby and District Residents' Association to ELDC	21 January 2009
CDE5	Correspondence from Saltfleetby and District Residents' Association to SoS	22 January 2009
CDE6	Correspondence from GJ and JC Williamson to SoS	5 January 2009
CDE7	Correspondence from D Morris to SoS	21 December 2008
CDE8	Correspondence from GJ and MJ Wain to SoS	27 December 2008
CDE9	Correspondence from B Holbrook to SoS	7 January 2009
CDE10	Correspondence from B Holbrook to SoS and response from R Pridham of DECC	16 July 2009 and 23 July 2009
CDE11	Correspondence from Mr and Mrs A R Ayres	14 January 2009
CDE12	Correspondence from G Marsh	19 February 2009
CDE13	Correspondence from Skidbrooke cum Saltfleet Haven Parish Council to SoS	15 January 2009
CDE14	Correspondence from Saltfleetby Parish Council to SoS	16 January 2009
CDE15	Correspondence from Lincolnshire County Council to SoS	20 January 2009
CDE16	Correspondence from East Lindsey District Council to SoS	27 January 2009
CDE17	Correspondence from Lincolnshire Wildlife Trust to SoS	8 January 2009
CDE18	Correspondence from Environment Agency to SoS	5 January 2009
CDE19	Correspondence from Environment Agency to SoS	19 March 2009

CDE20	Correspondence from Environment Agency to Programme Officer	9 September 2009
CDE21	Correspondence from Mr P Scarborough to SOS	
CDE22	Correspondence from Mr W Hill to SoS	26 February 2007
CDE23	Left blank	
CDE24	Letter from DECC giving coordinates of oilfield 250	17 May 2007

Letters of Objection to CPO Application

REFERENCE	DESCRIPTION	DATE
CDE25	Correspondence from Mr R Midwood to SoS	29 March 2009
CDE26	Correspondence from Chris Beal to SoS	1 April 2009
CDE27	Correspondence from Mrs J Delaney to SoS	undated
CDE28	Correspondence from Mr A Beaven to SoS	4 April 2009
CDE29	Correspondence from Mr and Mrs Cook to SoS	5 April 2009
CDE30	Correspondence from Mr and Mrs Marshall to SoS	6 April 2009
CDE31	Correspondence from Mrs J Foster to SoS	11 April 2009
CDE32	Correspondence from Mr P Day on behalf of Mr F W Howell and correspondence from Mr Howell to DECC	8 April 2009 and undated
CDE33	Correspondence from Mr J Beckett to SOS, correspondence from Mr T Kent of Wingas to Mr Beckett and response from Mr Beckett	9 July 2009 and 27 August 2009

Section F - Other Planning Application Documents

REFERENCE	DESCRIPTION	DATE
CDF1	Decision Notice issued by East Lindsey District Council, granting temporary planning permission for use as a lorry park of Manby Airfield, ref N/113/02430/06	6 May 2009
CDF2	Correspondence from ELDC to Barton Willmore, agreeing a period of three years for the temporary use as a lorry park of Manby Airfield	4 September 2009

Section G - Other Documents

REFERENCE	DESCRIPTION	DATE
CDG1	Corrib Onshore Pipeline: Pipeline Integrity and Design by John Purvis	

CDG2	Oilfield No.250, Wingas Storage UK Limited, Saltfleetby Gas Storage Project, Lincolnshire. Environmental Impact Assessment Scoping Report prepared by David Langham.	June 2005
CDG3	Letter from the Director of Highways and Planning at Lincolnshire County Council to David Langham enclosing a Scoping Opinion in respect of the Wingas Storage UK Limited project at Saltfleetby Gas Field.	5 September 2005

STATEMENT OF COMMON GROUND
(See Document CDB11)

INQUIRY DOCUMENTS

[Italics denote documents submitted during the Inquiry]

ID/1	*Note by the Inspector on Environmental Impact Assessment*
ID/2	*List of Objectors to the Storage Authorisation Order*
ID/3	*List of Objectors to the Compulsory Purchase Order*
ID/4	*List of Interested Parties*
ID/5	*Letters of Withdrawal*
ID/6	*Consultation Responses*
ID/7	*Notes of Pre-Inquiry Meeting*

DOCUMENTS SUBMITTED BY THE PARTIES

WINGAS STORAGE UK LTD.

WG/FT/P	Proof of evidence and appendices by Frank Tauchnitz - Company Background and Project Description
WG/FT/PS	Summary proof of evidence by Frank Tauchnitz
WG/FT/PE	*Erratum sheet in respect of evidence by Dr Frank Tauchnitz*
WG/MT/P	Proof of evidence by Mark Tissington - Plant Safety
WG/MT/PS	Summary proof of evidence by Mark Tissington
WG/GDG/P	Proof of evidence and appendices by Graham Goodfellow - Pipeline Safety
WG/GDG/PS	Summary proof of evidence by Graham Goodfellow
WG/JB/P	Proof of evidence by John Baldwin - Need
WG/JB/PS	Summary proof of evidence by John Baldwin
WG/PG/P	Proof of evidence by Patrick Gurner - Highways
WG/PG/PS	Summary proof of evidence by Patrick Gurner
WG/PG/AP	Appendices to proof of evidence by Patrick Gurner
WG/RM/P	Proof of evidence by Ryan Mellor - Ecology
WG/RM/PS	Summary proof of evidence by Ryan Mellor
WG/RM/AP	Appendices to proof of evidence by Ryan Mellor
WG/ARC/P	Proof of evidence by Andrew Corkill - Noise
WG/ARC/PS	Summary proof of evidence by Andrew Corkill

WG/CDS/P	Proof of evidence by Colin Smith **-** Compulsory Purchase
WG/CDS/PS	Summary proof of evidence by Colin Smith
WG/CDS/AP	Appendices to proof of evidence by Colin Smith
WG/PRF/P	Proof of evidence by Paul Foster - Planning
WG/PRF/PS	Summary proof of evidence by Paul Foster
WG/PRF/AP	Appendices to proof of evidence by Paul Foster
WG/KH-SA/P	Proof of evidence by Katherine Hauser - Air Quality
WG/ KH-SA/PS	Summary proof of evidence by Katherine Hauser
WG/ KH-SA/AP	Appendices to proof of evidence by Katherine Hauser
WG/SD/P	Proof of evidence by Sue Dodwell - Landscape (Including lighting)
WG/SD/PS	Summary proof of evidence by Sue Dodwell
WG/SD/AP	Appendices to proof of evidence by Sue Dodwell (2 volumes)
WG1	*Opening Submissions on behalf of the Applicant*
WG2	*Draft Unilateral Undertaking*
WG/2a	*Signed and dated S106*
WG3	*Energy Wind Generation- Question asked by Lord Stoddart of Swindon*
WG4	*Email correspondence between HSE and Matthew Guite regarding pipeline safety*
WG5	*Additional summary lighting calculation*
WG6	*Saltfleetby – Luminance value comparisons*
WG7	*Letter and enclosures dated 10 November 2009 from Patrick Gurner to Lincolnshire County Council regarding a suggested temporary construction road*
WG8	*Email dated 30 November from Cliff Vivian, Lincolnshire County Council to Patrick Gurner in response to WG7*
WG9	*Letter dated 19 November 2009 from Hammonds to Grimoldby and Manby Parish Council regarding their evidence*
WG10	*Letter dated 27 November from Grimoldby and Manby Parish Council in response to WG9*
WG11	*Letter dated 7 December 2009 from Hammonds to Grimoldby and Manby Parish Council regarding the feasibility study into the temporary route off the B1200*
WG12	*Notes from meeting held on 3 December 2009 between Andrew Corkill and Richard Watson*
WG13	*Revised Table 4 of Appendix A of Andrew Corkill's evidence*
WG14	*Discussion with Stakeholders, Schedule of Progress*
WG/14a	*Updated schedule of responses*
WG15	*Flood Risk Addendum, Report submitted to the Environment Agency*
WG16	*East Lindsay District Council online proposals map showing coastline conservation area*
WG17	*Clarification of issues arising in respect of Sue Dodwell's Landscape Proof of Evidence*
WG18	*Extracts from Lorenz von Ehren*

WG19	*Technical Note TN593, Maintenance of Young Farm Woodlands*
WG20	*List of application drawings which Wingas would be prepared to be bound to, by way of a condition on any deemed planning permission issued by the Secretary of State*
WG21	*Letter dated 19 November from Hammonds to the Programme Officer regarding an error in the Environmental Statement*
WG22	*Consultation undertaken by Wingas in relation to the Environmental Statement*
WG23	*Paragraph 9.38 of Paul Foster's Proof of Evidence – clarification regarding the legality of imposing a condition on the deemed planning permission requiring the maintenance of a landscaping scheme for 10 years*
WG24	*Copy of full planning permission and approved plans for erection of a general purpose agricultural storage building at Grange Farm, South Cockerington*
WG25	*Extracts from NPS's regarding a restatement of existing Government Policy*
WG26	*Secretary of State's decision letter – Land at King Street*
WG27	*Plans showing Wingas's three alternative Theddlethorpe Option sites as referred to in the Environmental Statement, volume 2, Appendix 5.1: Theddlethorpe A1, A2 and B*
WG/28	*Letter dated 14 December from Patrick Gurner to Julia Dixon, Hammonds, regarding the suggested quadrupling of traffic levels during the summer on the B1200, by Saltfleetby Parish Council*
WG/29	*Equipment used in depleted reservoir (Pore Storage) gas storage operations*
WG/30	*Proposed pipeline and equipment location schematic diagram*
WG/31	*Clarification of issues arising in respect of Sue Dodwell's Landscape proof of evidence (See WG/17)*
WG/32	*Table 8.5 – Temporary visual effects, highlighting substantial and substantial/moderate*
WG/33	*Briefing note on orchid transportation*
WG/34	*Emails and enclosures regarding the need to make an application pursuant to Regulation 3(5) of The Public Gas Transport Pipe-Line Works (Environmental Impact Assessment) Regulations 1999 ("the Regulations")*
WG/35	*Post Richard Watson xx tables agreed between Andrew Corkill and Richard Watson, witness on noise for Wingas UK Limited and Lincolnshire County Council (Rev. 1)*
WG/36	*Glossary of Terms*
WG/37	*Glossary of Abbreviations*
WG/38	*Societal Risk FN Curve*
WG/39	*The Caythorpe Gas Fields Storage Authorisation Order 2008*
WG/40	*Decision letter for the Caythorpe Gas Field*
WG/41	*Extracts from the Inspector's Report on Caythorpe Gas Field*
WG/42	*Schedule of approvals*
WG/43	*Revised SAO, Section 16 Gas Act conditions and Hazardous Substances Consent Conditions (to replace those conditions set out on pages 51 and 51 of the Statement of Common Ground)*
WG/44	*Closing submissions*

OBJECTOR DOCUMENTS

LINCOLNSHIRE COUNTY COUNCIL

LCC/NM/P	Proof of evidence and appendices by Neil McBride – Planning
LCC/NM/PR	Rebuttal proof of evidence by Neil McBride
LCC/MG/P	Proof of evidence and appendices by Matthew Guite - Pipeline Safety
LCC/MG/PR	Rebuttal proof of evidence by Matthew Guite
LCC/DJB/P	Proof of evidence and summary by David Barker - Landscape
LCC/DJB/AP	Appendices to proof of evidence by David Barker
LCC/DJB/PR	Rebuttal proof of evidence by David Barker
LCC/RW/P	Proof of evidence and appendices by Richard Watson - Noise
LCC/1	*Opening Submissions on behalf of Lincolnshire County Council*
LCC/2	*Letters dated 13 October and 2 November 2009 from ConocoPhillips to Wingas Storage Limited*
LCC/3	*Predicted Plant Growth*
LCC/4	*Outline pipelines sizing calculations*
LCC/5	*Email between Lincolnshire County Council and East Lindsey District Council regarding the receipt of any noise complaints at Theddlethorpe*
LCC6	*Email from Lincolnshire County Council to Hammonds regarding consultation with the emergency services*
LCC/7	*Schematic for pipeline alternative options*
LCC/8	*Inspector's Report on King Street*
LCC/9	*Closing submissions*
LCC/10	*Meaning of emergency in conditions*

OAKWELL INTERNATIONAL LIMITED

O/S1/P	Proof of evidence by Frank Webster

SALTFLEETBY & DISTRICT RESIDENTS' ASSOCIATION

O/S2/P	Proof of evidence by Bruce Stapleton

SKIDBROOKE WITH SALFFLEET HAVEN PARISH COUNCIL

O/S8/P	Proof of evidence by David Cooper

SALTFLEETBY PARISH COUNCIL

O/S9/P	Proof of evidence by David Cooper

LINCOLNSHIRE WILDLIFE TRUST

O/S12/P	Proof of evidence by Caroline Steel
O/S12/W1	*Letter dated 18 December from Caroline Steel to the Programme Officer*

THEDDLETHORPE PARISH COUNCIL

O/S14/P	Proof of evidence by David Cooper

GRIMOLDBY & MANBY PARISH COUNCIL

O/S15/P	Proof of evidence signed by Mrs Pugh, Clerk to the Council and prepared by Terry Knowles

INTERESTED PARTIES

IP/1	*Statement by ConocoPhillips regarding Theddlethorpe Gas Terminal*
IP/1a	*Letter dated 2 December 2009 from Manda Goodwin, ConocoPhillips to the Programme Officer, regarding the proposed site visit to Theddlethorpe Gas Terminal*

WRITTEN REPRESENTATIONS

O/S16/W	Written representation by Philip Scarborough