

Shell U.K. Limited

## BRENT DECOMMISSIONING STAKEHOLDER ENGAGEMENT REPORT



A supporting document to the Brent Field Decommissioning Programmes

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Contents

<b>1</b>	<b>Executive Summary .....</b>	<b>3</b>
1.1	Regulatory Regime .....	5
1.2	Decommissioning Programme Submission and Public Consultation .....	5
<b>2</b>	<b>The Brent Decommissioning Project’s Approach to Stakeholder Engagement.....</b>	<b>6</b>
2.1	Background .....	6
2.2	Aims of the Brent Project Stakeholder Engagement.....	6
2.3	Commitment to the Brent Decommissioning Stakeholder Dialogue .....	6
2.4	Stakeholder Identification.....	7
2.4.1	Stakeholder Groups .....	8
2.5	Stakeholder Engagement Process .....	9
2.6	The Independent Review Group.....	10
2.7	The Cell Management Stakeholder Task Group .....	11
2.8	Environmental Impact Assessment (EIA) Scoping Report .....	13
2.9	One-to-one Meetings .....	13
2.10	Stakeholder Group Dialogue Events.....	15
2.11	Information Shared.....	15
2.12	Third-party Stakeholder Facilitation.....	16
2.13	Open Stakeholder Talks .....	17
2.14	Additional Stakeholder Engagement and Communication Platforms .....	17
2.14.1	Brent Decommissioning Website.....	17
2.14.2	Brent E-News.....	17
2.14.3	Emails .....	17
2.14.4	Conferences and Events.....	18
<b>3</b>	<b>Summary of Concerns, Interests and Views from One-to-one Briefings of Impacted and Engaged Stakeholders.....</b>	<b>20</b>
3.1	Scottish Fishermen’s Federation (SFF).....	20
3.2	Non-Governmental Organisations (NGO).....	20
3.3	Local Authorities, Development Agencies, Industry and Business Membership Organisations .....	21
<b>4</b>	<b>Key Issues Raised by Stakeholders – 2007 to 2016 .....</b>	<b>22</b>
<b>5</b>	<b>Summary of Key Issues and Concerns Raised by Stakeholders, and Shell Responses – 2007 to 2016 .....</b>	<b>23</b>
Appendix 1	List of Stakeholder Organisations .....	37
Appendix 2	Glossary of Terms and Abbreviations .....	41

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## 1 EXECUTIVE SUMMARY

Shell U.K. Limited, (Shell) is the Operator of the Brent Field, on behalf of itself and Esso Exploration and Production UK Limited (Esso) who are the owners in equal shares of the Brent Field.

This Stakeholder Engagement Report ('Report') sets out how the owners have engaged with stakeholders during the development of the draft Decommissioning Programme (DP) for the Brent Field. The personnel within Shell tasked with the preparation of the draft DP for the Brent Field are referred to as the 'Project'.

This Report details the approach to stakeholder engagement, and the programmes and processes that have supported this, since the Brent Decommissioning Project ('Project') started in 2006. It highlights the nature of the ongoing engagement with stakeholders, key concerns raised, and how the Project has responded and fed this into the decision-making process. It also explains how we have ensured that the technical and scientific studies, and related work that informed the Comparative Assessments (CAs) of the various decommissioning options, were verified by independent scientific and academic experts. Throughout the process it was important that Shell understood any stakeholder issues or concerns that would be raised by the recommendations, and to what extent any specific recommendation was acceptable to the range of stakeholders.

The Project wanted to ensure that a broad base of opinion was captured during a transparent engagement process, before reaching key decisions, and progressing to the implementation phase of the Project. The aim was to promote better mutual understanding, allow for all points of view to be considered, improve overall public trust, and make for better – informed decisions.

Stakeholder engagement has played a significant part in informing the DP. Since 2007 the Project has engaged with a wide range of organisations, including: academics, Non-Governmental Organisations (NGOs), fishermen, industry and business associations, members of parliament, regulatory bodies, regional economic development agencies, local authorities, community groups, professional engineering institutes, other oil and gas operators, research and innovation bodies, the media, and the general public.

The focus of this engagement has been to share information about the process, our initial thinking on a way forward, and the extent of the technical challenges and dilemmas associated with decommissioning. Stakeholders have been encouraged to share their views and perspectives, and directly influence the areas of study and activity that the Project Team has pursued. This inclusive and transparent engagement continues to provide a robust mechanism for frank and open discussion of stakeholders' views and concerns.

From the outset we have recognised the importance of this stakeholder engagement, and the need to understand how best to acknowledge and engage with stakeholder concerns. This dialogue and feedback has helped inform our proposals.

We have achieved this through:

- Open, transparent communication
- Building strong long-term relationships with stakeholders who have a high level of interest in decommissioning, and the Project
- Forming the Cell Management Stakeholder Task Group (CMSTG), to focus specifically on the Gravity Base Structures (GBSs) cell content management issue
- Establishing an Independent Review Group (IRG) of leading academics to review the studies undertaken in relation to decommissioning of the Brent Field

Information has been shared openly to ensure that there would be no surprises for stakeholders when the decommissioning recommendations were submitted, and to enable stakeholders to understand the challenges and dilemmas facing the Project. It was acknowledged that there would be a range of stakeholder views and interests on many of these issues, and it was unlikely that there would be one solution acceptable to everyone.

Since 2007 Shell has:

- Identified, engaged or reached out to over 180 organisations, involving more than 400 individuals, in the UK and mainland Europe
- Commissioned over 300 studies, which have been reviewed by independent engineers and scientists through the IRG (producing over 3,000 comments to which documented responses were provided)
- Delivered 14 stakeholder group dialogue events in London and Aberdeen
- Conducted over 300 one-to-one engagements/presentations
- Delivered two public talks in London and Aberdeen in July 2016 (in partnership with the Institution of Mechanical Engineers (IMechE))
- Issued 17 editions of the Brent E-News electronic newsletter (as of Q4 2016)
- Presented Project updates, and explained the challenges facing the Project, at over 50 conferences and industry events in the UK, Europe, and elsewhere in the globe
- Regularly shared lessons learned with a range of other operators, including members of the International Oil & Gas Producers (IOGP), and the Oil & Gas UK Decommissioning Forum

This has been a collaborative and sustained process, and the stakeholders' openness in their comments, observations and concerns, and long-term commitment to the process, has been welcomed and very much appreciated. Their questions and suggestions have helped to increase our understanding, encouraged us to seek additional information, and enhanced our engagement strategy.

Stakeholders have also informed the process of developing the DP, and encouraged us to think differently about how things could, or should be done.

Examples of specific Project responses to stakeholder key inputs include:

- Convening the CMSTG in 2011 – which subsequently contributed to the recommendations on cell content management
- For the cell contents Leave in Place option, we understood we would need to undertake long-term fate modelling to better understand the impacts if the cell contents released into the marine environment. The stakeholder community were also requesting modelling to be able to consider this option. When it was completed the IRG reviewed and commented on the modelling, and the outcome
- Due to the uncertainty surrounding the cell contents and its characteristics, we understood the requirement to collect samples of cell sediment, and the need to respond to the stakeholders' request, in order to validate the assumptions underlying the long-term fate the modelling. We were committed to obtaining these samples as it was an area of major interest to a number of stakeholders. The stakeholders involved in the CMSTG wanted to understand the analysis of the cell content, as they did not think they could consider the Leave in Place option without understanding what would happen to the material once the cells had degraded. We obtained samples of the cell contents, after overcoming considerable technical difficulties, and shared the results with the CMSTG
- Broadening the cell sediment analysis based on stakeholder feedback, to including specific compounds
- Asking stakeholders when and how they wanted to be engaged, and developed the engagement plan accordingly

- Extending the Public Consultation period from the statutory 30 days to 60 days, to allow stakeholders additional time to review and provide feedback on the complex suite of documents in the DP
- Ensuring that stakeholders understood clear examples of where their recorded concerns were in line with the actions being undertaken (e.g. the inclusion of the impacts of leaving historical drill cuttings piles in the Environmental Impact Assessment (EIA))

*(Refer to Section 5 for the full tables of key issues and questions raised by Stakeholders, and Shell response.)*

Where we faced dilemmas around more challenging decisions and issues, such as the management of the storage cell content, and the decommissioning of the GBSs we have openly addressed these with the stakeholders, engaging as widely and deeply as appropriate, in order to develop the best possible understanding of the issue. Our goal was to ensure a broad understanding of our recommendations, how we have arrived at them, and to explain why these may differ from options preferred by some stakeholders.

Our approach was not to submit our recommendations until we were confident that that they were safe, technically achievable, environmentally and socially sound, and financially responsible.

### 1.1 Regulatory Regime

The DP follows a rigorous regulatory process tightly defined by the then Department of Energy and Climate Change (DECC) now the Department for Business, Energy, and Industrial Strategy (BEIS), and the Oslo Paris Convention (OSPAR) framework<sup>1</sup>.

OSPAR recognises that there may be difficulties in removing certain structures, including concrete installations, and footings of large steel jackets. In these instances operators can apply for an exemption, or 'derogation', from the general rule of complete removal. These cases require Comparative Assessments (CAs) to be carried out<sup>2</sup>.

The CA process, as stipulated by BEIS (was DECC), has been pivotal in arriving at the final recommendations for the decommissioning of the Brent Field.

Derogations are dealt with on a case-by-case basis, and any exemption to full removal would be granted not only based on our analysis, but also the OSPAR review and BEIS consideration and agreement to our proposals in line with previous derogations under the OSPAR Decision 98/3. The Ekofisk, Frigg, Murchison, NW Hutton, and Miller fields have already received derogations for their decommissioning programmes.

### 1.2 Decommissioning Programme Submission and Public Consultation

The recommendations for decommissioning the Brent Field have been submitted in two separate DPs. The Project received permission from DECC to submit a DP for the Brent Delta topside ahead of the main DP. The rationale for submitting a separate programme for the Brent Delta topside focussed on the assessed protracted review period for the Brent Field DP. In July 2015 the plan was approved to remove the Delta topside using a new-design of heavy lift vessel, the Pioneering Spirit, developed as innovative technology by the Swiss-based company Allseas Group SA.

Following the UK domestic consultation process for the Brent Field DP, responses will be recorded and included in the DP. A separate derogation document will then be submitted to OSPAR for consultation on the derogation proposal. Following this BEIS will make its decision on approval. The approval process for the full Brent DP is expected to take more than a year.

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<sup>1</sup> Refer to Page 26 in the Brent Field Decommissioning Programme.

<sup>2</sup> Refer to Page 13 in the Brent Field Decommissioning Programme.

## 2 THE BRENT DECOMMISSIONING PROJECT'S APPROACH TO STAKEHOLDER ENGAGEMENT

### 2.1 Background

The Project's long-term, comprehensive programme of stakeholder engagement reflects one of the major lessons learnt from the issues generated by the decommissioning of Brent Spar in 1995. These included the importance of early, and very broad stakeholder engagement, and the requirement for the technical and scientific work that underpins the decommissioning programme to be independently reviewed.

### 2.2 Aims of the Brent Project Stakeholder Engagement

At an early stage of the stakeholder engagement process, the Brent Field owners clearly set out their intentions for a broad-based stakeholder engagement for the Project.

This was expressed as an intent to 'work directly with stakeholders to inform the draft decommissioning programme submitted to BEIS' by:

- Communicating the various issues and concerns raised by the decommissioning studies so that they are understood and considered by the stakeholders
- Gaining stakeholders' feedback and views on decommissioning scenarios

Stakeholder engagement is an integral component of Shell's Project Development Process, embedded within corporate and project level governance mechanisms, such as **Shell's Business Principles and Control Framework**:

*'Shell companies recognise that regular dialogue and engagement with our stakeholders is essential. In our interactions with employees, business partners, and local communities we seek to listen and respond to them honestly and responsibly.'* – **Shell Business Principal 7: Communication & Engagement.**

The Project stakeholders are characterised as, 'any individual or group that has a specific or defined interest in, or is potentially impacted by, the decommissioning of the Brent Field'.

The owners have sought to develop relationships and dialogue to meet stakeholders' expectations, and have been committed to building close working relationships with stakeholders in order to create trust, and develop open and constructive dialogue. Throughout the development of the DP the owners have been committed to making information available in a timely and accessible manner.

### 2.3 Commitment to the Brent Decommissioning Stakeholder Dialogue

Shell's statement of commitment to the Brent Decommissioning Stakeholder Dialogue was published on the Brent [website](#) in 2008 to ensure it was visible and accessible to all interested parties.

The Commitment states:

- We will make every effort to engage with all relevant stakeholders
- We will work with stakeholders to understand their issues and concerns in order to provide input into technical assessments and studies
- Output from such engagements will be considered in our decision making process
- We will produce a publicly available record of facilitated dialogue events
- We will provide feedback to stakeholders' queries and issues
- We will seek feedback on the engagement process and share it with the stakeholders
- We will engage with stakeholders and provide information via:
  - Our [website](#)
  - Independently facilitated dialogue events

- Meetings on a one-to-one basis, as required and appropriate
- Other means as appropriate, constructive and practical (e.g. E-News, emails and letters)

Managing expectations is an important part of stakeholder engagement.

Our stakeholder engagement process is committed to:

- Providing important input for our decision making process
- Complementing, but not replacing, the statutory approvals process or the owners approvals process
- Making available to all stakeholders all information and data that can be reasonably provided
- Treating all stakeholders equally
- Being undertaken in accordance with Shell's Statement of General Business Principles

### 2.4 Stakeholder Identification

The stakeholder engagement process for the Brent Field led to the identification of more than 180 stakeholder organisations in the UK and Europe. These stakeholders have varied interests including:

- Statutory interest and obligation for the oil and gas industry/decommissioning/marine and onshore environment
- Interest in previous decommissioning projects
- Previous involvement working with Shell
- Specific interest in Brent decommissioning

We developed a comprehensive stakeholder database by identifying organisations interested in current operations in the North Sea, following DECC's (now BEIS) Decommissioning Guidelines, and the Oil & Gas UK Guidelines on Stakeholder Engagement for Decommissioning Activities, and by referring to previous decommissioning projects.

Shell has also worked hard to maintain the database, given the length of the engagement with stakeholders. Many contacts within organisations changed over the years (retirement, change of role etc.) so we have regularly updated the database, and re-engaged with new personnel where possible throughout the duration of the stakeholder engagement process.

We have added to the database throughout the many years of stakeholder engagement, as a result of gaps identified in the stakeholder mix, existing stakeholders suggesting others who should be involved, or through direct requests for involvement. The stakeholder database was fully updated in 2016 prior to engagements on the recommendations in the Brent DP, and we have endeavoured to make sure that the database was as comprehensive as possible, and encompassed all interested parties.

Early in 2016, we conducted a 'Stakeholder Sensing' to re-engage with the wider stakeholder group, understand current levels of interest, and how stakeholders would like to be engaged during the finalisation of the DP. Resources for Change, the Project's independent facilitators, contacted stakeholders to establish their continuing interest in the Project, issues they are interested in, and their preferred communication medium (e.g. face-to-face meetings, emails, E-News, webinars, or group dialogue events). Over 100 stakeholders were contacted, and 58 interviews conducted.

### 2.4.1 Stakeholder Groups

A broad range of stakeholders have been involved in the engagement and dialogue. These include, but are not limited to:

- NGOs – including Greenpeace, WWF Scotland, Royal Society for the Protection of Birds (RSPB) Scotland, KIMO UK Network, Historic Scotland and Natural England
- UK Government departments – including Her Majesty’s Treasury (HMT) and Her Majesty’s Revenue and Customs (HMRC)
- Members of the Westminster, Holyrood and European Parliaments
- Regulatory bodies – BEIS, Oil & Gas Authority, Health & Safety Executive and Maritime and Coastguard Agency
- The Centre for Environment, Fisheries and Aquaculture Science (CEFAS)
- Statutory consultees for the DP comprise:
  - National Federation of Fishermen’s Organisations
  - Scottish Fishermen’s Federation (SFF)
  - Northern Ireland Fish Producers’ Organisation
  - Global Marine Systems Limited
- Industry and Business Associations – including but not limited to: Oil & Gas UK, Decom North Sea, International Oil & Gas Producers, Offshore Contractors Association, Aberdeen and Grampian Chamber of Commerce and Scottish Council for the Development of Industry
- Trade unions including – Unite the Union and GMB
- Economic development agencies including – Scottish Enterprise, Highlands and Islands Enterprise and Tees Valley Combined Authority
- Media – international and national media and press agencies, regional and local media and oil and gas industry trade press
- Think tanks on key matters – such as SustainAbility
- Oil and gas industry supply chain companies
- Local authorities – including Aberdeen City Council, Aberdeenshire Council and Hartlepool Borough Council
- Community groups – such as the Aberdeen Community Council Forum
- Public sensing and survey groups in the UK, Netherlands and Germany
- Professional engineering institutes including – Institution of Mechanical Engineers (IMechE), Institution of Chemical Engineers (IChemE), Institution of Structural Engineers (IStructE), Mining Institute of Scotland and Society of Petroleum Engineers (SPE)
- Other oil and gas operators
- Academia – individual academics and academic institutions including, but not limited to: The Robert Gordon University, University of Aberdeen, St. Andrews University, Strathclyde University, Edinburgh University, Heriot-Watt University and Glasgow University
- Research and innovation bodies including – Natural Environment Research Council, Oil & Gas Innovation Centre and Aberdeen Institute of Energy

### 2.5 Stakeholder Engagement Process

From the outset, the stakeholder engagement process was based on the clear principle of 'Dialogue – Decide – Deliver' – that is engaging extensively with stakeholders on the emerging range of options and listening to their views and concerns, prior to arriving at the decommissioning recommendations, sharing those recommendations, and submitting the DP. The stakeholders were also asked how and when they would like to input their views into the Project. This led to tailoring our approach depending on stakeholders' needs and preferences. Relationships with many stakeholders have been built on an individual basis, through one-to-one meetings, whereas other stakeholders were happy to be kept informed of the Project's progress through more general stakeholder dialogue events, or by emails and E-News.

Throughout the development of the DP we carried out a programme of engagement and dialogue with both statutory consultees and stakeholders. Meetings and engagements were conducted across the UK. In mainland Europe, we held engagement sessions in Germany, and maintained a dialogue with stakeholders from The Netherlands and Norway.

By recording specific stakeholder requests and concerns from the outset, the Project was able to consider how to address these, where possible, early in the process.

The aims of the engagement programme were to:

- Provide all stakeholders with news and information about the DP, the issues that we were addressing, and the information that we were obtaining
- Enable stakeholders to gain an understanding of the DP as it developed, and have an opportunity to ask questions
- Create a means by which stakeholders could tell us of their concerns and views on any aspect of the DP
- Provide a mechanism for stakeholders to learn about, and discuss, the views and concerns of other stakeholders
- Allow us to appreciate and understand our stakeholders' concerns, and take these into account when developing our technical studies, assessing the advantages and disadvantages of different options, and identifying recommended options

We developed processes and tools for conducting a long-term engagement programme with these stakeholders. The main elements comprised:

- A public [website](#)
- Brent E-News which is available from the [website](#) (with a link circulated to all stakeholders on the database)
- Email updates from the Project, circulated to stakeholders
- Stakeholder dialogue events
- One-to-one meetings with individual stakeholders, or stakeholder organisations
- Presentations at conferences, seminars and industry meetings
- Regular engagement with the media, including a visit to the Delta platform prior to submission of the Brent Delta topside DP in February 2015, and a media briefing in July 2016 prior to the public talks held in partnership with IMechE

Other activities supporting this programme include:

- The work of the IRG in reviewing our technical studies
- The work of the CMSTG. The CMSTG consisted of 15 participating organisations (plus IRG representation) and was developed to allow a focussed group of interested, and engaged, stakeholders to review the cell sediment management issues

- UK and mainland Europe public sensing exercises in 2014 and 2016
- The publication *Brent Decommissioning Environmental Impact Assessment Scoping Report* by Det Norsk Veritas GL (DNV), which was available for public comment prior to the development of the EIA, and the DP

## 2.6 The Independent Review Group

Lessons were learned from the Brent Spar decommissioning in 1995, including the clear need for independently verifiable science, which would underpin the recommendations for decommissioning the complex Brent Field. In addition BEIS guidance on derogation cases requires that studies and assessment processes that support the chosen decommissioning options are subject to independent expert verification.

To inform decision-making, we completed a wide range of engineering and technical studies, using either our own expertise or independent companies and consultancies. All the important studies have been scrutinised by an Independent Review Group (IRG), established in 2006, when Professor John Shepherd of Southampton University was invited to appoint a group of leading academics from across Europe to form the Group. The Group comprises technical, engineering and environmental experts, and their remit was to review and report on the completeness, objectivity, and rigour of supporting studies, as well as the validity of the conclusions or findings. We did not have any editorial control over the IRG. A key objective was to provide stakeholders with a degree of assurance regarding the engineering and science.

The IRG started its work on 30th January 2007, and has met regularly throughout the planning process. The involvement of the IRG has been able to provide stakeholders with an additional layer of assurance regarding the technical work undertaken by Shell, and from its inception has provided robust challenges back to the Project.

The IRG membership comprised the following notable academic experts:

- **Professor John G Shepherd (Chairman)** – Professor John Shepherd CBE FRS is Professorial Research Fellow in Earth System Science in the School of Ocean & Earth Science at the National Oceanography Centre, University of Southampton
- **Professor Torgeir Bakke** – Senior Research Scientist and Co-ordinator for Oil and Gas issues at the Norwegian Institute for Water Research, and a part-time Associate Professor in Marine Biology at the University of Oslo
- **Professor Günther F Clauss** – Chair of Ocean Engineering, Technical University, Berlin
- **Professor William D Dover** – Emeritus Shell Professor of Mechanical Engineering at University College London
- **Professor Jürgen Rullkötter** – Professor of Organic Geochemistry at the University of Oldenburg, Germany
- **Professor W Brian Wilkinson** – Visiting Professor at the Universities of Reading and Newcastle Upon Tyne
- **Mr Richard J Clements** – Secretary
- **Professor David Davies** – Professor in Production Technology Heriot-Watt University
- **Professor Quentin Fisher** – Professor of Petroleum Geoengineering at the University of Leeds
- **Professor Ian Main** – Professor of Seismology and Rock Physics at the University of Edinburgh

The specification of the work for the various studies and the selection of contractors to undertake the work lay with the owners, but the IRG suggested additional topics for investigation.

The IRG's role is to ensure that an appropriate range of options has been reviewed, so that the information available is adequate for a rational decision to be reached by us.

The independence and impartiality of the IRG is assured by the group, and its members, having the right to publish its/their findings, including any dissenting views on the findings submitted to the IRG for review. The credibility of academics is dependent on their independence.

The IRG has met on twenty seven occasions, commencing in January 2007.

The IRG reviewed over 300 major reports, raised over 3000 review comments requiring a response from the Project, and was important to our decision making process. IRG members have attended the group stakeholder dialogue events, and presented an update on their role and their work regarding the DP at the stakeholder dialogue events. IRG representatives attended all the CMSTG sessions as observers, most recently in November 2015.

### 2.7 The Cell Management Stakeholder Task Group

For the assessment of the options for handling the GBS cell contents we invited a subgroup of stakeholders to perform a more detailed examination of the options, and evaluate the relative performance of the options using criteria that were important to them. Cell sediment management options were originally discussed with stakeholders at engagement events in 2010, and subsequently in 2011, a group called the Cell Management Stakeholder Task Group (CMSTG) was created, comprising stakeholders who represented a cross section of diverse views and had expressed a willingness and desire to undertake an in-depth assessment of the shortlisted options for the management of the cell contents. Fifteen organisations and individuals representing a range of different stakeholder perspectives were invited to participate.

The purpose of the CMSTG work was to inform the CA. It was clearly understood by the CMSTG that they were not being asked to select a recommended option on our behalf.

The aim was to help inform the owners' decision-making on cell management, and to ensure wider stakeholder confidence in the choice of a cell management option, or options.

Over the years we met them both collectively and individually at regular intervals to share information, present the emerging proposals and obtain their views and opinions. The input from the group collectively and from the individuals was invaluable. They raised important questions and helped us to refine our approach at each stage of the CA process.

**Membership of the CMSTG included representatives from:**

- Aberdeen Community Council Forum
- Centre for Environment, Fisheries and Aquaculture Sciences
- Department of Energy and Climate Change
- Environment Agency
- Greenpeace International
- Health and Safety Executive (HSE)
- Joint Nature Conservation Committee
- KIMO UK Network
- Marine Scotland
- Maritime and Coastguard Agency
- Oil & Gas UK
- Royal Society for the Protection of Birds Scotland
- Scottish Environmental Protection Agency (SEPA)
- Scottish Fishermen's Federation
- University of St. Andrews

Members of the IRG attended the CMSTG meetings in the capacity of observers.

### Cell Content Management Options

In total, 42 of the 64 cells around the base of Brent Bravo, Brent Charlie and Brent Delta have been used for oil storage and separation, and they contain some legacy oil residue, water, ballast, and sediment.

Proposed cell sediment treatment options considered by the CMSTG included:

- Remove and re-inject into the reservoir via a new well
- Remove and take onshore for treatment
- Leave in Place and cap the sediment
- Leave in Place with Monitored Natural Attenuation (MNA)
- Leave in Place

### CMSTG Programme of Work

Over the period of 21 months from September 2011 to June 2013 we completed a total of five workshops in which the advantages and disadvantages of the options were examined and discussed. The work of the CMSTG was facilitated by the independent third party consultants Catalyze, with the Project Team providing data and information as requested, which was available before the completion of the Cell Survey Project. To manage the data and assessments, Catalyze used the proprietary software HiView3 to permit the CMSTG to build and interrogate a Multi Criteria Decision Analysis Model (MCDA). The CMSTG identified the criteria with which they wished to assess the performance of the options, scored the performance of the options in each criterion, and weighted the criteria relative to each other.

The CMSTG judged that the most important criteria in differentiating the options were:

- The medium and long-term effects on the marine environment
- The use of natural resources, including landfill
- The potential reaction of the public
- The acquisition of knowledge about the cell contents and about technologies for cell management which could be applied to future projects
- The current readiness of technologies for cell management

The model developed by the CMSTG examined the options for decommissioning the cells safely and effectively. This model has been helpful in allowing us to develop and refine our own recommendations. The Catalyze Report of the work stated that 'When the 'pros and cons' of each of the options are aggregated, there is little to choose between them. The resulting model is finely balanced and sensitive to changes in criteria weights; however, it also represents a wealth of information and judgement.'

Stakeholders not directly involved in the task group were kept informed about the progress of the CMSTG and the MCDA model with regular email updates from the Project Team, and at the November 2013 stakeholder event.

Stakeholder input from the dialogue events contributed to our decision to persist with efforts to retrieve samples of oil, water, and sediment from the cells, and aided in confirming options to deal with the residual contents. The Project Team exerted considerable effort and investment over several years to obtain the samples, which given its unique nature, and inherent challenges, both physical and environmental, was an extremely challenging operation.

CMSTG members were updated on the status of the post-sampling activities, prior to results being available, in order to ensure they were informed throughout the process.

Subsequently, in Q3 and Q4 2015, there were a series of one-to-one meetings with members of the CMSTG to discuss the results of the cell sediment sampling.

At the request of the individual members, the Project convened a CMSTG plenary session on 27 November 2015, where the task group had the opportunity to collectively discuss the cell sample results, and the output from the cells sediment CA work. The cell sampling and receipt of the samples into the independent laboratory was witnessed by Bureau Veritas (BV), and the modelling was verified by BMT Cordah, who presented at the CMSTG plenary session. The task group also heard from Det Norsk Veritas – GL (DNVGL) who verified the cell sample toxicology report. Members of the IRG spoke about their involvement in the planning and review of the cell sampling.

### **Incorporating the CMSTG Work into the Shell CA**

We took the work of the CMSTG into account in our CA in three ways. Through working with the CMSTG and supporting them in their deliberations and listening to their discussions, we:

1. Gained a deep appreciation of the criteria that they wished to take into account when comparing options
2. Obtained a clear view of the relative importance of each criterion, and a strong steer on the criteria that they thought were particularly important in identifying a recommended option
3. Gained a great insight into the 'trade-off' between options that were important for our stakeholders

A full description of the CMSTG's work is presented in the Analysis Report produced by Catalyze which is referenced in the Cell Contents Technical Document.

## **2.8 Environmental Impact Assessment (EIA) Scoping Report**

Decommissioning of offshore oil and gas facilities has the potential to impact both the environment and society, and an EIA is required to ensure issues are identified and then managed responsibly.

DNV GL was contracted to prepare an environmental scoping report for the decommissioning EIA of the Brent Field. The key objective of the scoping report was to identify any potentially significant environmental, social and health impacts in the DP that will require examination in detail in the EIA.

In May 2011 the draft EIA scoping report for the Project was published on the Brent decommissioning [website](#). We were keen to encourage comments and input from interested parties, so that stakeholder views could be taken on board from an early stage in defining the scope of the environmental studies. Ahead of publication, the draft scoping report was circulated to all stakeholders on the Brent database. These stakeholders were encouraged to contact the Project Team with any comments or suggestions on the proposed content. The impact of leaving historic drill cuttings piles was included in the EIA, which also reflected stakeholders' concerns. Subsequent stakeholder dialogue events in September 2011 offered a session in which attendees had the opportunity to ask questions about the scoping report on a one-to-one basis with a Project Team member.

A number of alternative decommissioning options were covered in the scoping report. As planning and preparation for the decommissioning of the field continued, it was recognised that some of the options examined in this scoping report may need to be modified. In addition, some options were not taken forward into the full EIA because they pose unacceptably high technical and/or safety risks. The report covered all stages of decommissioning: preparation, removal operations, transport, and onshore recovery/destruction/dismantling and final reuse/disposal.

The Scoping Report was the precursor of the Environmental Statement supporting the overall DP, which was subsequently developed by DNV GL.

## **2.9 One-to-one Meetings**

Since 2007 we have proactively engaged with our stakeholders, and have held over 300 one-to-one engagements. The purpose of the one-to-one meetings conducted between the Project and single stakeholder organisations was to enable a more in-depth conversation, and to allow the discussion to be focused on issues of key importance to that particular stakeholder.

We conducted around 80 one-to-one meetings in Q4, 2014 and early Q1, 2015, before the public consultation stage on the Brent Delta topside decommissioning commenced on 18 February 2015. These meetings were conducted across the UK to maximise the numbers of stakeholders engaged.

During Q4 2015, and throughout 2016, prior to submission of the main DP, we engaged with members of the CMSTG, through one-to-one meetings, and held a subsequent CMSTG plenary session at the request of the members. In addition, we held an extended round of meetings with over 30 engaged stakeholders, in Q2 and Q3 2016, where we shared the outputs of the CAs, and the proposed recommendations, to gauge reaction, and feedback into the DP.

Stakeholders helped to inform, clarify and refine the discussions and debate leading to the recommendations on all of the options. Throughout the process, they have challenged our thinking on a range of issues.

One-to-one engagements in 2016 to share the CA outputs and potential recommendations included:

- Aberdeen & Grampian Chamber of Commerce
- Aberdeen City Council
- Aberdeen Community Council Forum
- Aberdeen Institute of Energy
- Aberdeen University
- Aberdeenshire Council
- Centre for Environment, Fisheries and Aquaculture Science
- Decom North Sea
- Fishermen's Legacy Trust
- Greenpeace International
- Hartlepool Borough Council
- Health and Safety Executive
- Joint Nature Conservation Committee
- KIMO UK
- Marine Scotland
- Natural England
- Northern Lighthouse Board
- Offshore Contractors Association
- Robert Gordon University
- Royal Yachting Association
- Royal Society for the Protection of Birds
- Scottish Council for the Development of Industry
- Scottish Enterprise
- Scottish Government Oil & Gas Team
- Scottish Environmental Protection Agency
- Scottish Fishermen's Federation
- Tees Valley Combined Authority

- Unite the Union
- WWF Scotland

### 2.10 Stakeholder Group Dialogue Events

The Project began its engagement process by sharing the outputs of its emerging decommissioning studies with stakeholders in 2007. These studies were the starting point for the Project and were undertaken to inform the development of the DP.

The stakeholder engagements were helpful in supporting the development of proposals, which on balance provide the best solutions that take into account:

- Safety
- Technical feasibility
- Environmental impact
- Societal impact
- Cost

The purpose of these events was to:

- Update stakeholders on the Project's progress
- Share any issues arising
- Provide stakeholders with an opportunity to meet the Project Team and ask them questions directly
- To invite stakeholders' views and reactions initially about the Project's decommissioning studies, and subsequently about the emerging recommendations for the draft DP

Since 2007 there have been a total of 14 group dialogue sessions (seven in London and seven in Aberdeen). These have provided opportunities for stakeholders to raise any issues, concerns and ideas they wished us to consider as we proceed through the decommissioning planning process. Invitations for each of these events were sent to all stakeholders on the Brent Decommissioning Project database.

### 2.11 Information Shared

From an early stage the Project shared the various options for decommissioning openly with stakeholders at the group events, and ensured members of the Project Team were available to answer questions and provide information.

Information discussed during these events included, but was not limited to:

- Options and issues around the GBS (legs and cells)
- Feasibility of cutting the GBS legs
- Possibility of full or partial removal of the GBS
- Leave in Place options (legs and cells)
- Potential effects of the legs toppling
- Long-term degradation of the structures
- Navigation aids and exclusion zones
- Cell content treatment options
- Pipelines
- Drill cuttings

- Removal of attic oil trapped at the top some of the cells
- Removal of the topsides

## 2.12 Third-party Stakeholder Facilitation

We decided from the outset to use the services of an independent, third party stakeholder facilitator. The first event in 2007 was facilitated by Facilitators UK, and for subsequent events we engaged The Environment Council (TEC) a UK-registered charity specialising in multi-stakeholder engagement processes. When TEC ceased to operate in 2013, Resources for Change, a specialist organisation of similar ethos and skills was brought in to continue this support.

Resources for Change engaged the key staff members from TEC who had previously worked on the Brent project to maintain transparency, impartiality and continuity throughout the dialogue process.

The events were designed and managed by the independent facilitators, and post event reports compiled by TEC/R4C were circulated to all stakeholders and shared on the Brent [website](#).

Dialogue events comprised:

- January 2007 – Aberdeen and London (Facilitators UK)
- November 2007 – Aberdeen and London (TEC)
- September 2008 – Aberdeen and London (TEC)
- April 2009 – Aberdeen and London (TEC)
- June/July 2010 – Aberdeen and London (TEC)
- Sept 2011 – Aberdeen and London (TEC)
- November 2013 – Aberdeen and London (R4C)

Reading materials were distributed ahead of the events to ensure the attendees understood the content and nature of the information they were being asked to discuss. These materials and slides used during the event were also shared on the Brent [website](#). Any stakeholders attending the events that were new to the Project were offered an introductory briefing in advance, so that they had a good level of background knowledge to support their participation in the discussions.

The objective was to ensure there would be 'no surprises' for the participants regarding the options, processes, and potential recommendations, for the Project Team to be as transparent as possible, and to encourage a full and frank discussion of the key issues. It was important for stakeholders to be able to trust the process; to see that their comments were recorded and responded to; and be confident that the issues they raised were considered in the decision-making process.

The benefit of these group events was that stakeholders were able to have a collective discussion on the various topics and issues, and to gain an understanding of these from a range of different stakeholders' perspectives, alongside the opportunity to express their own views.

The Project Team provided responses to stakeholders which were prepared after the stakeholder events (2007 to 2011). These were documents in which Shell responded to the key issues and questions raised by stakeholders in more detail, and circulated these by email back to all stakeholders after the events.

Evaluations were carried out for each of the engagement events. Evaluation data was gathered in the form of feedback from stakeholders via written questionnaires. The output of these was shared with stakeholders and used to monitor the effectiveness of the process and to enhance it as necessary.

### 2.13 Open Stakeholder Talks

In July 2016 the Project held wider stakeholder events in partnership with the IMechE in London (4 July 2016) with 120 attendees, and in Aberdeen (7 July 2016) with 220 attendees. These events were marketed and promoted widely to ensure that all interested parties had the opportunity to attend, consider the recommendations presented, ask questions in an open forum, talk to Project Team members and provide further comments.

#### Information Shared

At both events we presented an overview of the proposed decommissioning recommendations that included, but was not limited to plans to:

- Plug and make safe the wells
- Remove and recycle the four topsides
- Remove the debris from the seabed
- Remove the attic oil from the GBS cells
- Remove the Brent Alpha upper jacket and leave the Alpha jacket footings in place (Alpha jacket is an OSPAR derogation candidate)
- Leave undisturbed drill cuttings in place (drill cuttings are an OSPAR derogation candidate)
- Leave the three concrete GBSs in place, add to the FishSAFE database, fit navigation aids to the legs, and ensure that a safety zone remains in place (the GBSs are an OSPAR derogation candidate)
- Leave the GBS cell content in place
- Put forward a range of recommendations for the 28 pipelines, depending on their size, location and configuration. Options range from full removal to leaving in place with remedial work

### 2.14 Additional Stakeholder Engagement and Communication Platforms

#### 2.14.1 Brent Decommissioning Website

A dedicated [website](#) was set up early in the Project's inception to act as a 'one-stop-shop' for stakeholders to have easy and quick access to information and material.

The website includes information about the background to the Project and its current status, stakeholder dialogue information, and detailed information on the IRG, and the CMSTG, Factual videos, a brochure and narratives are also available to help explain details of the Project.

There is a 'contact us' feature to enable any stakeholder to send communications to the Project Team, and to access Brent E-News, the Brent brochure and other downloads. The downloads include the materials used for stakeholder dialogue meetings and related outputs, such as briefing notes, presentation slides, stakeholder meeting reports, and feedback from the Project Team on issues and questions raised by stakeholders.

#### 2.14.2 Brent E-News

Brent E-News, our online magazine, was created in 2009 as an easily accessible and current information stream to keep stakeholders updated with the progress of the Project. On average three editions are produced each year and sent to the contacts on the Brent Decommissioning Project stakeholder database. Overall positive feedback has been received on E-News, with stakeholders finding it a useful tool to read about news and developments in the Decommissioning Project.

#### 2.14.3 Emails

The Project Team has also kept stakeholders informed with other project developments through timely email updates, for example on the early progress of the CMSTG, and the public consultation of the draft DP for the Delta topside.

#### 2.14.4 Conferences and Events

The Project has been active in both sharing information and lessons learned with the wider oil and gas industry, and the decommissioning sector, while learning from industry partners, key contractors and the stakeholder community, during both the planning and execution phases. The Project is committed to knowledge sharing and exchange as part of the wider stakeholder engagement, and supporting the future development of the decommissioning sector's skills, capabilities, and capacity building.

Over the duration of the Project, presentations have been given by members of the Project Team at over 50 conferences and industry events.

For several years regular attendance at Decom North Sea, Oil & Gas UK, and Norske Petroleumsforening (NPF) (Norway) events provided additional opportunities for engagement with other operators, supply chain companies, academics, the media, and other interested parties on both a formal and informal basis.

Since 2006, events the Project has presented at include, but are not limited to:

- Decom North Sea Annual Conferences, St. Andrews, Scotland
- Decom North Sea 1 Day Offshore Conferences, Aberdeen, Scotland
- Norske Petroleumsforening (NPF) North Sea Decom Conferences, Norway
- NOF events in the North East of England and Scotland
- Oil & Gas UK Decom Forums, Aberdeen, Scotland
- DecomWorld Annual Conference, Houston, USA
- Total Decom Conference, Glasgow, Scotland
- Offshore Technology Conference Asia, Kuala Lumpur, Malaysia
- Offshore Conference, Rotterdam, the Netherlands

Additional presentations and dialogue sessions have included:

- Scottish Enterprise/Decom North Sea/Highlands and Islands Enterprise
  - Shared information for research study into Scottish ports capabilities
- Scottish Enterprise/Energy Jobs Taskforce/Oil & Gas Authority
  - Studies into greater collaboration for improved efficiency and capacity building
- Institution of Structural and Civil Engineers
- Energy Institute
- Engineering Construction Industry Training Board
- Decom North Sea/Zero Waste Scotland
- Institution of Mechanical Engineers
- Institution of Chemical Engineers
- International Oil and Gas Producers
- Society of Petroleum Engineers
- Mining Institute of Scotland

### Additional Stakeholder Consultation on Brent Delta Topside Decommissioning Programme

The Brent Delta Topside DP was submitted separately to DECC (now BEIS), ahead of the Brent Field DP, and the public consultation for this was completed in February to March 2015. In February 2015 copies of the Draft Brent Delta topside DP were published on the DECC website and the Brent decommissioning [website](#), hard copies were made available in Aberdeen City Main Public Library, and at Shell's offices in Tullos, Aberdeen, and were issued to the statutory consultees on this date in accordance with Regulatory requirement. Public notices announcing the start of the consultation were printed in six publications, including details of how to obtain a copy of the programme, and how to send in responses and queries.

In addition to the formal requirements there was a significant programme of stakeholder engagement beyond the statutory consultation. We sent copies of the Brent Delta Topside DP to the statutory consultees, and the stakeholders on our database were informed by email that public consultation had commenced. In addition, a week before the closing date, an email was sent to alert them to the deadline for responses.

Members of Parliament with a known interest in the Energy Sector and with regional interests in decommissioning, and Members of the Scottish Parliament were invited to face-to-face meetings prior to the submission of the draft Brent Delta topside DP for public consultation.

Journalists from national and regional media (print and broadcast) were invited to visit the Brent Delta platform offshore prior to the submission of the, Brent Delta Topside DP, and a telephone briefing was held for those not available for the visit. The purpose of the visit and briefing was to inform the media of the upcoming consultation, provide a detailed briefing on the background to Brent Delta and the challenges of decommissioning, and the proposed single lift operation for Brent Delta topside. The subsequent media coverage helped inform the wider public about the challenges of decommissioning the Brent Field, and alerted the public to the imminent publication of the Brent Delta Topside DP.

This additional stakeholder engagement process was important because the Brent Delta topside DP also provided an overview of the materials on the GBS, and provided an early opportunity for stakeholders to raise concerns over these issues, as well as the topside itself.

### 3 SUMMARY OF CONCERNS, INTERESTS AND VIEWS FROM ONE-TO-ONE BRIEFINGS OF IMPACTED AND ENGAGED STAKEHOLDERS

Over time we held a series of meetings and dialogues with engaged stakeholder groups, and with groups who are likely to be impacted by our decommissioning activities, to ensure we have recorded their feedback and understood their concerns. A summary of these issues includes, but is not limited to, the following:

#### 3.1 Scottish Fishermen's Federation (SFF)

The SFF is the representative body of Scottish fishermen's organisations, and a statutory consultee to the DP, and also a member of the CMSTG. As commercial users of the sea, the Project recognises the importance and value of ongoing, open dialogue with the fishing industry, which is clearly impacted by the activities and recommendations contained in the DP.

A series of constructive meetings were held with the SFF, as the representative body of wider fishermen's interests, during the period 2007 to 2016.

During this time the SFF has consistently expressed a preference to see as much of the seabed as possible returned to its former state. Given the options proposed for the GBS, they would prefer the legs to be left intact, uncut and above sea level ('legs up'), but have concerns about the implications of the legs failing in the long-term. If left as legs up, the preference would be for the legs to be above the sea level, and fitted with navigation aids. There was perceived risk of snagging if the legs were cut to the IMO-defined -55m for mid water fishing. The use of the 'fishSAFE' aid for navigation was acknowledged. The SFF deemed legs down or placed on the sea bed was not a preferred outcome.

In discussions about the pipeline options, the SFF has been interested in the proposals to use rock placement, as these could be trawled over, but there were potential issues relating to snagging if the rock placement profiles changed. Discussions were held on the other options under consideration for the pipelines, and there was dialogue on safety and exclusion zones. The input and concerns from the SFF have been taken into consideration during the development of the recommendations in the DP.

#### 3.2 Non-Governmental Organisations (NGO)

Throughout the engagement process there was a regular and transparent dialogue with interested NGOs, whose views, suggestions and comments were recorded and used to inform the final recommendations. Sharing information, and understanding their concerns was central to the overarching principle of a 'no surprises' approach to the final recommendations.

Greenpeace International and the RSPB, are members of the CMSTG, and specifically involved in the detailed dialogue around the options for the cells sediment. We were also in dialogue with WWF Scotland, and Scottish Wildlife Trust, amongst others, during the course of the Project.

Information on outputs from the CAs, and potential recommendations on the other aspects of decommissioning the Brent Field was shared openly with NGO's through face-to-face meetings, telephone conference calls, emails, and plenary sessions.

In summary, NGOs concerns focused on, but was not limited to

- Principle of clean seas
- Long term positive/negative effects on the marine environment and habitat
- Drill cuttings, and OSPAR thresholds
- Cell content, and sediment composition, and treatment options
- Leave in place option for GBS – degradation, legacy issues, monitoring
- Interest in longer term technological developments that might provide solutions in the future

### 3.3 Local Authorities, Development Agencies, Industry and Business Membership Organisations

Positive and constructive meetings were held with Aberdeen City Council, Aberdeenshire Council and Hartlepool Borough Council, including both officials and elected representatives. In addition the Project has engaged in dialogue with Aberdeen & Grampian Chamber of Commerce, Scottish Enterprise, Tees Valley Combined Authority and the Scottish Council for Development of Industry.

The key issues that were common to all the engagements focussed on:

- How to support the developing Decommissioning industry sector
- Maximising opportunities for the local economies
- The impact on local jobs and skills
- How the Brent project was supporting local content in both Scotland and the North East of England

Discussions also covered how the Project was taking the fishing industry concerns into account, and the potential for increasing supply chain yard capacity, and quay and port facilities.

## 4 KEY ISSUES RAISED BY STAKEHOLDERS – 2007 TO 2016

Due to the complexity and structure of the Brent Field, stakeholders have taken a keen interest from the outset in the challenges facing the Project and in the final decommissioning recommendations. As Shell openly shared the nature of the engineering, technical and environmental dilemmas, stakeholders actively provided feedback on their key concerns. These issues are listed below, and are summarised in Section 5, laying out the themes, concerns, and project responses, captured during the period 2007 to 2016.

- Why decommission?
- Presumption of clean seas
- GBS cell contents management
  - Existing data and modelling
  - Sampling programme
  - Actual sampling data
  - Analysis of sampling
  - Range of options
  - Options selection/decision strategy
- GBS – legs
  - Legs up
  - Legs down
  - Toppling
  - Degradation
- Pipelines
  - Options for treatment/removal
  - Rock dumping
  - Views of the fishing industry
- Drill cuttings
  - Removal
  - OSPAR thresholds
  - Long-term monitoring of impacts
- Debris
- Options for re-use of the assets, recycling
- Topside single lift issues
- Alpha jacket options
- Monitoring and long-term liability and legacy, benthic environment survey, impacts/cumulative impacts
- Impacts on sea traffic, navigation markers, safety zones
- Opportunities for technology and innovation
- Decision-making transparency, public perception, stakeholder engagement process
- Costs
- Opportunities/impacts on employment and skills

5 SUMMARY OF KEY ISSUES AND CONCERNS RAISED BY STAKEHOLDERS, AND SHELL RESPONSES – 2007 TO 2016

Theme	Stakeholder Issue	Response
Decommissioning and alternative options	<p>Why are you decommissioning the Brent Field?</p> <p><b>Re-use of facilities</b> Stakeholders wanted to know what alternatives had been considered for the reuse of the facilities</p> <p>Is there a market for the Brent four topsides?</p> <p>How many recycling options are there for the topsides?</p>	<p>Decommissioning is the next phase in the life cycle of the Brent Field. Since the start of production in 1976 the field life was extended for as long as possible. Continuous investment, and redevelopment in the 1990s, by the field owners (Shell and Esso) extended the field well beyond the original expectations of 25 years. Shell has extracted 99.5% of the economically recoverable reserves. DECC approved the Cessation of Production (CoP) for Brent Delta in 2011, and for Brent Alpha and Brent Bravo in 2014. Production from Brent Charlie is expected to come to an end within the next few years. The next step was to consider potential ways to re-use the platforms.</p> <p>Options considered ranged from windfarms to carbon capture and storage (CCS). Eventually Shell concluded, and DECC agreed, that the age of the infrastructure, its distance from shore, and lack of demand for re-use, as well as the cost of modernising the facilities, made its re-use unfeasible, both technically and economically. We have not identified any commercially viable alternatives uses.</p> <p>The topsides are more than 35 years old and we have not received any expressions of interest from third parties wanting to use them in their entirety. Some sub-components or items of equipment could be re-used, but there are likely to be few such opportunities because of the age of much of the equipment.</p> <p>Under the DECC Guidance Notes if there are no alternative uses for the topsides <i>in situ</i>, they must be fully removed and returned to land. They could be re-used somewhere else, or dismantled and the different types of material recycled.</p>

Theme	Stakeholder Issue	Response
<p><b>GBS overall structure</b> From 2008 onwards the stakeholders were raising issues around the options to be considered for the GBS structures</p>	<p><b>Leaving the legs in place – legs up</b> Stakeholder concerns with regard to leaving the legs fully in place included: the risk to human safety; vessel safety; navigation; degradation; and the long-term fate of the structures through collapse</p> <p><b>Cutting the legs – legs down – possible removal to -55 m</b> Stakeholders wanted full consideration to be given to the refloat options, the waste management, disposal and recycling, location of onshore disposal and potential impacts to environment, transfer risks, cost to the taxpayer, opportunities for the supply chain</p>	<p>Shell commissioned studies on the long-term fate of structures. Anatec were commissioned to carry out studies into collision and snagging, and risk assessments were undertaken and incorporated into CAs.</p> <p>Aid to Navigation (AtoN) will be fitted on the remaining GBS, as may be approved by BEIS, and to ensure that the structure is subject to marking and lighting in accordance with applicable regulations. We will also inform the UK Hydrographic Office (UKHO) at least six weeks in advance of the change in status of the Brent platforms so that the appropriate notification is made for the awareness of mariners and for the requisite amendment to charts.</p> <p>In addition, the existing safety zone of 500 m radius will remain in place around the GBSs whilst the remaining parts of the installation remain above sea level after removal of the topside. This will supplement the awareness of the structure to mariners via the charts, the AtoN and FishSAFE of the hazards within such a safety zone.</p> <p>Feasibility studies on refloat options were reviewed by the IRG. Studies showed that refloat was very high risk, with a high degree of uncertainty on a predictable outcome. (The decommissioning programmes for the Frigg and Ekofisk fields have previously concluded refloat was not a viable option, and they received derogations from OSPAR to Leave in Place.) The CAs for the GBS included technical feasibility, impacts and energy use assessed in the Environmental Statement.</p>

Theme	Stakeholder Issue	Response
<p>GBS overall structure (continued)</p>	<p><b>Monitoring</b> A key concern was clarity and information on what future programmes of management, monitoring and liability would involve, and the monitoring the facilities after topside removal, and Leave in Place options</p>	<p>Post decommissioning surveys, followed by monitoring and survey programmes, are to be agreed with BEIS, to assess any immediate impacts from decommissioning programme, conditions and effects of derogated structures and drill cuttings.</p> <p>After topside removal, the GBS will be left with all legs protruding above the sea (to about 19 m above LAT).</p> <p>After the topside lift, the Single Lift Vessel (SVL) will fit an AtoN on one of the legs before it departs the Field. If the AtoN cannot be fitted at this time we will discuss appropriate action with BEIS. In such circumstances a likely temporary solution would be to station a guard vessel close to the GBS to alert shipping until the AtoN can be fitted.</p> <p>For the Brent Field the changed status of the GBS will be notified to the Marine and Coastguard Agency, the UK Hydrographic Office and in notices to Mariners. It will also be entered into the FishSAFE database.</p> <p>The current proposal, yet to be agreed with BEIS, is that on completion of the whole Brent decommissioning programme all the GBS will be subjected to an 'as left' structural survey' and then post-decommissioning environmental survey.</p> <p>The type and frequency of further surveys will be discussed and agreed with BEIS as described in the DP for the rest of the Brent Field.</p>

Theme	Stakeholder Issue	Response
<p><b>GBS cell content management</b></p> <p>There are 64 storage cells at the base of Brent Bravo, Charlie and Delta, 42 of which were used for oil storage. Cell content includes: sediment, water and attic oil, plus ballast. Throughout the stakeholder engagement process that started in 2007, issues around the content of the cells, and how Shell would manage this, were of key concern to stakeholders</p>	<p><b>Cell sampling programme</b></p> <p>From the 2007 stakeholder dialogue event onwards Stakeholders wanted to know how Shell was addressing the challenge of obtaining samples from inside the storage cells. They wanted Shell to share information on the sampling programme – sample size and range, timings, representative samples, commitment to best endeavours – to generate stakeholder confidence. Stakeholders suggested that a way to address this was for Shell to use knowledge from other industries and look for technological innovation</p> <p><b>Proposal to set up a small, dedicated group to look at the cell sediment management issues in more detail</b></p>	<p>Work started on the sediment sampling project in 2008, but it was only in 2014, after three unsuccessful attempts to access the cells, that the fourth attempt successfully obtained samples from three cells on Delta. It was a long, costly set of operations, but sediment samples were extracted from the cells, plus water samples, and sent for analysis. It took years of work, many millions of pounds of investment, and a variety of specially adapted innovative technologies before a suitable and successful method was developed.</p> <p>After several attempts to develop technology to access the cells, Shell’s Game Changer network enabled a dialogue to take place with NASA to develop and implement an innovative solution to access the cells through existing pipework. NASA expertise in navigation systems and miniaturization helped develop the concept which involved launching a tethered Sonar Sphere into a storage cell, using existing pipework, to produce a 3-D image and enable an estimate of sediment volume to be made.</p> <p>Progress and updates were shared at Stakeholder events, and a smaller group of interested stakeholders was set up, at stakeholder request, to focus on this issue (refer to CA CMSTG note below). The outputs from the Cell Sediment CA were used to arrive at the final recommendations in the DP.</p> <p>In 2011, following recognition by Shell that this was a key area of interest and a significant aspect of the scope of decommissioning for stakeholders, fifteen organisations and individuals representing a range of different stakeholder perspectives were invited to participate in a Cell Management Stakeholder Task Group (CMSTG). The CMSTG met as group four times in 2012, once in 2013, and once in 2015. Throughout they were also engaged on a one-to-one basis, and through email and by teleconferencing. The final plenary session was held in November 2015, and a report issued to the group in March 2016.</p>

Theme	Stakeholder Issue	Response
<p>GBS cell content management (continued)</p>	<p>Stakeholders commented that the decommissioning of the Delta topside should not have any adverse or negative implications or impacts on the management of material in the oil storage cells of the GBS</p> <p><b>Existing data and modelling</b> When the Leave in Place option was first tabled, and in view of the original challenges in obtaining cell samples, stakeholders wanted to know how Shell was making use of existing data on contents, and the use of statistical modelling to develop assumptions. Stakeholders did not think they could consider the option without understanding what would happen to the material left in place</p> <p><b>Sampling data and analysis</b> Due to the uncertainty surrounding the cell contents and characteristics stakeholders wanted to know the actual analysis of the contents. Stakeholders particularly requested the analysis look for specific phenol compounds, and heavy metals. They wanted to understand: proportions, volume, composition, consistency, toxicity, environmental impact</p>	<p>The Brent Delta Topside DP describes the work performed to examine if the topside could be used for managing the contents in the oil storage cells, the minicell annulus, or the drilling legs. (Refer to DP for full details).</p> <p>We have concluded that the topside could not be used for the management of the GBS cell sediment. The removal of the topside will therefore not foreclose any other technically feasible option for the management of material in the GBS cells.</p> <p>For the Leave in Place option Shell understood it would need to undertake fate modelling, the IRG reviewed and commented on Shell's proposals for modelling work, and the outcome, and the wider stakeholder community were requesting modelling.</p> <p>Originally Shell gathered a wide range of data sources, including: suggestions from stakeholders; previous data from Brent Spar storage tanks; Sullom Voe', GBS drilling legs; historical production records; sampling of water and interphase material in the cells' minicell and minicell annulus; pigging wax from cleaning pipelines. Information was shared at a stakeholder event in 2011, and in briefing materials circulated to all stakeholders. Modelling was commissioned in 2011 using existing data to develop assumptions on cell content. Fate modelling was shared with the CMSTG in 2012, and at the 2013 stakeholder event and through one-to-one meetings.</p> <p>Once the samples had been obtained (and the sampling process independently witnessed by Bureau Veritas), an independent laboratory SGS carried out the analysis of the cell sediment content. The phenol compounds were added to the list of content to be analysed, with heavy metals already included.</p> <p>The results, comparison with the original fate modelling, and outputs from the CAs, were subsequently shared with the CMSTG. The fate modelling was updated for the few compounds where the sampling showed significant differences from the initial assumptions about cell composition. Emerging recommendations were shared with stakeholders to understand any concerns, and final recommendations were shared with wider stakeholder groups prior to submission of the DP.</p>

Theme	Stakeholder Issue	Response
<p><b>GBS cell content management (continued)</b></p>	<p><b>Range of options</b>                      From 2011 onwards the stakeholders requested clarity on the range of possible options for managing the cell content. Issues raised by the CMSTG included Naturally Occurring Radioactive Material (NORM), landfill capacity, marine environmental impacts, Presumption to Remove and the Precautionary Principle                      The CMSTG also judged the most important criteria to differentiate between options are: The medium to long-term effects on the marine environment, the use of natural resources, including landfill, the potential public reaction, the current readiness of technologies for cell management                      Some stakeholders have expressed the view that removing the content is the right thing to do as matter of principle</p>	<p>The CMSTG were assisted by Catalyze to develop a Multi Criteria Decision Analysis (MDCA) tool. This initially assessed seven possible options proposed by Shell, later reduced to five. Option descriptions and assumptions were developed by Shell and presented to the CMSTG, and shared with stakeholders. The Cell Sediment options considered and shared at the earlier stakeholder events were:</p> <ul style="list-style-type: none"> <li>• Remove and re-inject in a new remote well</li> <li>• Remove to shore using a vessel, and treat and dispose of the material</li> <li>• Leave in Place and cap</li> <li>• Leave in Place with Monitored Natural Attenuation (MNA)</li> <li>• Leave in Place</li> </ul> <p>The CMSTG work influenced our CA of options for the management of the cell content.</p>
<p><b>Topsides – cutting, and lifting by Single Lift Vessel (SLV) (including specific Brent Delta Topside DP issues raised)</b></p>	<p><b>Stakeholders were concerned about the structural integrity of aged deteriorating topside</b></p>	<p>We carefully surveyed and assessed the condition of the Brent Delta topside. Our surveys confirm that some strengthening was required to allow the single lift to be undertaken, and this work has been completed.                      We surveyed the drilling derrick and the flare tower and confirmed that they were strong enough to be retained on the topside and be removed as part of the single lift. We have modelled the forces that would be exerted on the topside during transfer and as a result of the motion of the SLV in rough seas. We have defined the speeds that a SLV loaded with a topside should not exceed in various sea states.</p>

Theme	Stakeholder Issue	Response
<p>Topsides – cutting, and lifting by SLV (including specific Brent Delta DP issues raised) (continued)</p>	<p>How safe is it to take the topsides off?                      Risks and hazards, and cost benefit to justify removing topsides with hazardous material in place, including the possibility of topside toppling during the lift and transport to shore for recycling</p> <p>Concerns were raised that because of the chosen route, toppling may occur in or close to a Marine Conservation Zone, or Site of Special Scientific Interest, resulting in environmental impact of the 24,200 tonnes topside containing hazardous materials entering the marine environment. Concerns were also raised around risks, and remediation, and if Shell could confirm that sufficient cost/benefit analysis had taken place</p>	<p>All operations offshore and onshore carry some risk. We have selected single lift removal for the topsides because it was considered to require less work offshore than traditional ‘modular dismantling’ where the large amount of offshore cutting and lifting, and the prolonged nature of such an operations leads to greater exposure of personnel. Taking the topside onshore as a single item means that dismantling can be carried out in a controlled and safe manner.</p> <p>Before the Brent Delta topside is lifted, the SLV will have been thoroughly tested and approved by all the necessary surveyors and warranty authorities. Test lifts will have been performed. In conjunction with our lifting contractor Allseas, and our disposal contractor Able, we will have completed a very thorough series of risk assessments, Hazard Identifications (HAZIDS) and Hazard and Operability (HAZOP) assessments, and assessments of Major Accident Hazards (MAH) to satisfy all parties that the lift will be safe, and that lifting, transportation and loading onto the Able quay can all be carried out safely. All these assessments have informed and supported the formal Dismantlement Safety Case that has been approved by the HSE before the topside lift can proceed. We believe that all the necessary plans will be in place to ensure safe execution of the Project, and that the risk of toppling is negligible. However, contingency and emergency response plans will be in place in the extremely unlikely event of an incident. The lift of the Brent Delta topside is not time bound, and will not take place until the topside, lifting vessel, and yard are ready, there is a suitable weather window, and all the necessary permits have been obtained.</p> <p>Detailed assessments, studies and HAZIDs have been, and will be performed before the topside is transported to shore, back loaded and skidded on to the Able UK Seaton Port facility. This includes the work of independent surveyors.</p>

Theme	Stakeholder Issue	Response
<p>Topsides – cutting, and lifting by SLV (including specific Brent Delta DP issues raised) (continued)</p>		<p>The DP reflects 10 years of scientific assessment, collaboration and input from experts, NGOs and academia in properly assessing a number of concepts, to arrive at decommissioning solutions that are safe, responsible, and have minimal impact on the environment. In particular, the lifting, transportation, transfer to barge, tow in and subsequent load in of the Brent Delta topside has been subject to a comprehensive evaluation, including the comparison of several decommissioning options, and a number of different disposal facilities, both in UK and Norway. When taking into account the technical, safety and environmental and financial risks associated with these different option, and disposal facilities (e.g. personnel helicopter movements, control of modular break up offshore, marine operations, inventory of materials) the single lift methodology has been selected, using the new Allseas SA SLV Pioneering Spirit, with disposal at Able UK Seaton Port on Teesside. Both the selected contractors have a strong track record.</p> <p>Whilst the Intellectual Property rights associated with the design, construction and operation of the vessel belong to Allseas, and they are responsible for the commissioning of the vessel, Shell has carried out extensive technical reviews of the SLV methodology during specific phases of the Project. Throughout the process the Project has been fully engaged with Shell Trading and Shipping Company (STASCO), the appointed Marine Warranty Surveyor (DNV GL), an Independent Verification Body (Bureau Veritas), and Shell’s own Technical Experts.</p>

Theme	Stakeholder Issue	Response
<p>Topsides – cutting, and lifting by SLV (including specific Brent Delta DP issues raised) (continued)</p>		<p>Every effort has been made to mitigate against the likelihood of the Brent Delta Topside toppling. Allseas are finalising the installation and commissioning of the lifting arms on the SLV, which underwent trial lifts, and a successful lift of the Yme platform topside in Norway in August 2016. This provides further assurance that any unforeseen design, system or operating procedure issues have been identified and resolved before the Brent Delta topside is lifted. The whole Brent Delta lift and transfer operation is expected to take less than one week. In the extremely unlikely event of the vessel sinking or the topside toppling it would be considered a marine accident. Depending on the location and water depth, regulatory requirements, insurance etc. it would be either a wreck or a salvage, and no different to any other projects which include transport and heavy lift activities. We are working closely with the appropriate Regulators and local Marine/Harbour authorities to ensure all contingency plans will be in place for the removal of the topside. Refer to Brent Delta DP for full details.</p>
<p>Dismantling of the Brent Delta topsides at an onshore site</p>	<p>Is the environmental sensitivity of the onshore recycling site taken into account for each facility and each treatment method?</p>	<p>The procedure used to identify and select suitable sites for onshore dismantling and disposal fully considered the ‘environmental setting’ of each site, including environmental sensitivities in and around the area.</p> <p>The Able UK site will have all the necessary permits and licences to perform the dismantling operations, and manage, handle, store and transport the different waste streams that will arise from the dismantling of the topsides. The work on the site and the impacts of all its operations are regularly assessed and reviewed by Natural England.</p> <p>The potential impacts on near shore and onshore environments are discussed in the impact assessment. The results of the impact assessments will inform our detailed plans for the management and control of near shore and onshore operations, to mitigate potential environmental impacts.</p> <p>Prior to finalising our detailed plans for the reception of the Brent Delta topsides we performed an independent Environmental, Social and Health Impact Assessment (ESHIA) of the proposed operations, from the barge transfer site to final recycling or disposal.</p>

Theme	Stakeholder Issue	Response
<p>Dismantling of the Brent Delta Topsides at an onshore site (continued)</p>	<p>Selection of appropriate onshore dismantling site</p> <p>Did the search for, and contract award, of recycling sites for onshore disposal rely on one or several sites?</p> <p>Will Shell consider investing in some of the yards?</p>	<p>We conducted an extensive review of potential dismantling sites in the UK and Europe capable of receiving the Brent topsides in a single piece. Our assessment of sites took into consideration many factors such as water depth, availability of space for the dismantling process and the laying down and temporary storage of components and materials, facilities for handling and storing a wide range of potential waste streams, access to transport for moving materials on to recycling or disposal sites, track record in dealing with large structures containing a range of hazardous and non-hazardous materials, proximity to settlements, and availability of necessary personnel.</p> <p>We performed a detailed and thorough tendering exercise, having reviewed information and knowledge on a wide range of potential sites in UK and mainland Europe. Having selected single lift as the removal method, we decided that it would be most efficient and safer (for all the personnel involved) to place a contract with one site which had all the resources and capabilities to handle all our topsides, if required.</p> <p>This will allow us to develop a long-term working relationship with the dismantling contractor and for them to benefit from the training they will give their personnel, the experience they will gain as they dismantle our topsides in turn, and any improvement in facilities, equipment or infrastructure that may be made.</p> <p>Yes, having selected Able UK to dismantle the topside, we are working with them to upgrade parts of the site and this includes a significant programme of investment to strengthen the quay to take the weight of our topsides. This work has resulted in the creation of approximately 100 new jobs.</p>

Theme	Stakeholder Issue	Response
<p>Dismantling of the Brent Delta topsides at an onshore site (continued)</p>	<p>Have you considered the socio-economic impacts of dismantling and waste handling on communities and need for engagement</p> <p><b>Recycling of materials and disposal of waste</b> Stakeholders noted that in the waste hierarchy re-use was preferable to recycling; they asked how much we would be recycling and also how we were going to ensure that waste was dealt with appropriately onshore</p> <p>Stakeholders expressed the wish that we would do some 'joined up thinking' between our offshore and onshore operations</p>	<p>The Able UK site is a large existing development with a track record of dismantling large structures. Able has an active programme of communication and interaction with the local community.</p> <p>The effects of onshore dismantling and disposal are assessed as part of the EIA of the DP. As part of our preparations for receiving the Delta topside at the site, however, we performed a more detailed ESHIA. This assessed the environmental, socio-economic and health effects of the whole work programme, from the near shore transfer site to final recycling or disposal of all material returned in the topside. As part of that work, the appointed independent consultants sought the views of stakeholders and interested parties.</p> <p>The ESHIA is not required for regulatory purposes but it is a requirement under the Shell HSSE Control Framework; it will be used to inform the detailed plans being developed by our contractor Able for the management of the whole dismantling and disposal process.</p> <p>We plan to recycle at least 97% by weight of the material returned to shore in the Brent topsides; some individual items and components may be re-used. The Able UK Seaton Port site has a wide range of facilities for handling and storing segregated waste streams (that is before they are sent for recycling). It also has facilities, equipment, procedures and personnel for identifying, removing, handling, storing and disposing of a range of hazardous wastes.</p> <p>Offshore personnel with the knowledge of the facilities are involved with Able in planning the dismantling operation. Offshore staff have cleaned and vented the topside process system to minimise hazards to the onshore personnel who will dismantle the topside.</p>

Theme	Stakeholder Issue	Response
<p>Dismantling of the Brent Delta topsides at an onshore site (continued)</p>	<p>Is there going to be competition with offshore windfarm installations?</p> <p>Are there any skills or capabilities that are not yet present in the market place to execute the Project? What are the workforce needs/skills/timeframes needed for decommissioning? Might the skills challenge be in terms of volume rather than types of skills?</p>	<p>With respect to the use of the SLV, we do not think there will be any competition with the installation of wind-farms; this is not the core business of Allseas, and we have to book schedules of activity with them well in advance.</p> <p>With respect to onshore dismantling and disposal, the Able site has been used as a storage site for wind-farm components before they go offshore. The Able site is very large, however, and our programme of work for the topside is being planned well in advance so there will be no competition with, or implications from, any other activities that may take place on this site from time to time.</p> <p>By removing the Brent Delta topside in single lift, and performing the vast majority of dismantling work onshore, we potentially gain access to a larger workforce of appropriately skilled personnel than would be available if the work had to be performed by personnel with the training and experience required to perform similar activities offshore.</p> <p>As a result of our reviews and tendering process we are confident that Able has the capabilities, skills and resources to dismantle the Brent Delta topsides and manage the handling, transportation and disposal of all the different waste streams in a safe and environmentally responsible way. We are working closely with Able to ensure that everything is completely ready to receive the Brent Delta topside.</p>
<p>Actions determined by regulation and CA</p>	<p><b>Recommendations for pipelines</b> Stakeholders were concerned about potential for snagging, removal of subsea pipelines if not buried, the unacceptability of rock dumping, and cleaning of pipelines</p> <p><b>Drill cutting options</b> Stakeholders wanted assurance that drill cuttings are well understood (i.e. modelled, analysed, and monitored)</p>	<p>Shell commissioned a detailed study by Anatec (refer to Pipeline Technical Document); impacts of rock placement were assessed in the Environmental Statement, and a cleaning study/strategy devised.</p> <p>Detailed baseline surveys and analysis of the drill cuttings were conducted by Gardline.</p> <p>There were detailed modelling studies by BMT Cordah, and all cuttings, except for the Brent Charlie cell-top drill cuttings, are below the OSPAR thresholds. Drill cuttings have been assessed in the Environmental Statement and summarised in the DP. Shell carried out CA of options for the management of drill cuttings on cell tops if they have to be removed/moved.</p>

Theme	Stakeholder Issue	Response
<p>Actions determined by regulation and CA (continued)</p>	<p><b>Brent Alpha jacket</b> A concern was raised around residual snagging hazard for fishermen if footings cut to -85 m below lowest astronomical tide</p>	<p>Anatec snagging study is part of the suite of studies, and covered in the Brent Alpha jacket TD, the ES and the DP.</p>
<p>Other issues</p>	<p><b>Environmental impact and cumulative impacts</b> Stakeholders wanted to know more about these issue to inform their understanding of Shell’s proposals</p> <p><b>Technology and innovation</b> Stakeholders wanted to know if decisions could be revisited, if waiting for technological advances could widen available options, with reference to the cell management process, or the removal of the GBS, seeking assurance that all avenues have been explored</p> <p><b>Long-term liability and legacy</b> Stakeholders concerned about the nature of long-term liability and what happens after the company ceases to exist. This is a factor for stakeholders making an assessment of the options. How will liability be funded, and assurance against setting a precedent</p>	<p>Impacts and cumulative impacts have been assessed within the EIA. The scope of the EIA was shared with stakeholders for comment. The impact of leaving historical drill cuttings piles was included in the EIA, and has been an issue raised by stakeholder.</p> <p>Technical feasibility is assessed on the basis of present technology or new technology that is foreseeably likely to be available in the timescales of the Brent DP.</p> <p>Under the DECC Guidelines (Decommissioning of Offshore Oil and Gas installations and Pipelines under the Petroleum Act 1998) ‘Any remains of installations or pipelines will be subject to monitoring at suitable intervals as specified in each decommissioning programme, and may require maintenance or remedial action in the longer term. Such action may be the subject of a revision to the programme.</p> <p>The Brent owners will remain liable for any remaining facilities after decommissioning in accordance with current legislation.</p>

Theme	Stakeholder Issue	Response
<p>Other issues (continued)</p>	<p><b>Clean seas approach</b> Stakeholders wanted to know why 'clean seas' is not achievable</p> <p><b>Evidence base</b> Stakeholders wanted to know if the learnings from Delta is applicable to other Brent platforms</p> <p><b>Decision making transparency</b> Stakeholders wanted to know the rationales for the options selections, and how the decision making process works</p> <p><b>Costs/opportunities for the UK</b> Stakeholders concerned with the cost/benefit of the options. Costs should be transparent, including costs to the taxpayer</p>	<p>Independent studies were undertaken for removal of each of the three Brent GBS (Bravo, Charlie, Delta) and for the findings of the Brent Alpha jacket CAs on the removal of footings. Information on all these was provided to stakeholders at events and in briefing materials. Cost and operational risk were high in relation to environmental benefit and long-term obstruction risk. The studies on GBS and Brent Alpha jacket were also reviewed by the IRG.</p> <p>Each platform is looked at in its own right. There will be learning opportunities on the Brent Delta topside SLV removal and onshore disposal operations and management. Engineering lessons learned, and wells plug and make safe learnings are already being shared.</p> <p>Detailed CAs are described in each TD, and summarised in the DP. The outputs from the CAs were shared with stakeholders, including the CMSTG, and the emerging recommendations were also shared with stakeholders prior to public consultation when the Draft DP was submitted to BEIS. The IRG reviewed and commented on the CAs outputs.</p> <p>Cost is one of the five criteria in the CA process as laid down by BEIS. In 2015/2016 the OGA made it clear that they are looking to reduce costs of decommissioning. Regarding opportunities for UK PLC Shell has strict company and industry contracting and procurement processes and must comply with the law to ensure fair, transparent and non-discriminatory selection processes, however, estimates at time of writing indicate about 90% of UK local content in the Brent Project.</p>

## APPENDIX 1 LIST OF STAKEHOLDER ORGANISATIONS

### Stakeholders on the Brent Decommissioning Project Database

- Aberdeen and Grampian Chamber of Commerce
- Aberdeen City and Shire Economic Forum (ACSEF)
- Aberdeen City Council
- Aberdeen Community Council Forum
- Aberdeen Fish Producer's Organisation
- Aberdeen Harbour Board
- Aberdeen Renewable Energy Group (AREG)
- Aberdeenshire Council
- Advisory Committee on Protection of the Sea, Europe (ACOPS)
- Association of British Offshore Industries
- Bellona
- British Geological Survey
- Business in the Community Scotland
- Capturing the Energy
- Cardiff University
- Centre for Environment, Fisheries and Aquaculture Science (CEFAS)
- Chartered Institute of Waste Management
- Cromarty Firth Port Authority
- Danish Fishermen's Producer Association (Danmarks Fiskeriforening Producent Organisations)
- Danish Ornithological Society (Dansk Ornitologisk Forening)
- Danish Society for Nature Conservation (Danmarks Naturfredningsforening)
- Decom North Sea
- Department Communications, Energy and Natural Resources, Ireland
- Department for Business, Energy & Industrial Strategy
- Department for Environment, Food and Rural Affairs (Defra)
- East of England Energy Group (EEEGR)
- EBN Energy Management Netherlands (Energiebeheer Nederland)
- ECN Energy Research Centre of the Netherlands
- Energy Industries Council (EIC)
- Energy Institute
- Engineering UK
- Environment Agency
- Environment Agency Northern Ireland
- Environment Agency Norway (Miljødirektoratet)
- Environmental Protection Agency Denmark (Miljøstyrelsen)
- European Commission (DG Energy, DG Environment, DG MARE)
- European Commission Office in Scotland
- Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany (BMUB)
- Forum for the Future
- Fraserburgh Harbour
- Friends of the Earth
- Friends of the Earth Germany (BUND)
- Friends of the Earth Norway (Norges Naturvernforbundet)
- Friends of the Earth Scotland
- German Marine Research Consortium (KDM)
- Global Marine Systems
- GMB Scotland
- Green Warriors of Norway (Norges Miljøvernforbund)
- Greenpeace Germany
- Greenpeace International
- Greenpeace UK
- Hartlepool Borough Council
- Health and Safety Executive (HSE)

- Heriot-Watt University
- Highland Council
- Highlands and Island Enterprise
- Historic Environment Scotland
- HM Revenue & Customs
- HM Treasury
- Industry Nature Conservation Association (INCA)
- Industry Technology Facilitator (ITF)
- Institute of Civil Engineers (ICE)
- Institute of Marine Engineering Science and Technology (IMAREST)
- Institute of Marine Research, Norway (Havforskningsinstituttet)
- Institute of Materials, Minerals and Mining (IOM3)
- Institution of Chemical Engineers (IChemE)
- Institution of Mechanical Engineers (IMechE)
- Institution of Structural Engineers
- International Association of Oil and Gas Producers (OGP)
- International Marine Contractors' Association (IMCA)
- International Maritime Organization (IMO)
- International Navigation Association (PIANC UK Section)
- International Research Institute of Stavanger (IRIS)
- Joint Nature Conservation Committee (JNCC)
- Kommunenes Internasjonale Miljøorganisasjon (KIMO) UK Network
- Lerwick Port Authority
- Marine Alliance for Science & Technology Scotland (MASTS)
- Marine Biological Association of the UK
- Marine Connection
- Marine Conservation Society
- Marine Institute
- Marine Management Organisation (MMO)
- Marine Scotland
- Maritime and Coastguard Agency (MCA)
- Ministry of Climate and Environment Norway (Klima- og miljødepartementet)
- Ministry of Economic Affairs, Netherlands (Ministerie van Economische Zaken)
- Ministry of Infrastructure and the Environment, Netherlands (Ministerie van Infrastructuur en Milieu)
- Ministry of Petroleum & Energy Norway (Olje- og energidepartementet)
- Ministry of Trade, Industry and Fisheries Norway (Nærings- og fiskeridepartementet)
- National Federation of Fishermen's Organisations (NFFO)
- National Oceanography Centre
- National Trust Scotland
- Natural England
- Natural Environment Research Council (NERC)
- Natural Resources Wales
- Netherlands Organisation for Applied Scientific Research (TNO)
- NOF Energy
- North Sea Advisory Council (NSAC)
- North Sea Commission
- North Sea Directorate Netherlands (RWS Noordzee)
- North Sea Foundation (Stichting De Noordzee)
- Northern Ireland Fishermen's Federation
- Northern Lighthouse Board
- Norwegian Fishermen's Federation (Norges Fiskarlag)
- Norwegian Fishing Vessel Owners Union (Fiskebåt)
- Norwegian Institute for Water Research (NIVA)

- Norwegian Oil and Gas Association (Norsk Olje og Gass)
- Norwegian Petroleum Directorate (Oljedirektoratet)
- Ocean Alliance
- Offshore Contractors Association (OCA)
- Oil & Gas Authority (OGA)
- Oil and Gas UK (OGUK)
- OPITO
- Orkney Islands Council
- OSPAR Commission
- Peterhead Port Authority
- Plymouth Marine Laboratory
- Police Scotland
- Port of Rotterdam
- Rail Maritime and Transport Union (RMT)
- Renewable Energy Association
- Renewable UK
- Robert Gordon University
- Royal Academy of Engineering
- Royal Geographic Society
- Royal Institute of Navigation
- Royal Society of Chemistry (RSC)
- Royal Yachting Association Scotland
- RSPB Scotland
- Scallop Association
- Scotland Office
- Scottish Association for Marine Science (SAMS)
- Scottish Council Development & Industry (SCDI)
- Scottish Enterprise
- Scottish Environment LINK
- Scottish Environment Protection Agency (SEPA)
- Scottish Fishermen's Federation
- Scottish Fishermen's Organisation
- Scottish Government (Business, Enterprise and Energy Directorate)
- Scottish Natural Heritage
- Scottish Oceans Institute
- Scottish Pelagic Fishermen's Association
- Scottish White Fish Producers Association
- Scottish Wildlife Trust
- Sea Watch Foundation
- Seafish
- Seas at Risk
- Shark Trust
- Shetland Fisherman's Association
- Shetland Islands Council
- Shetland Oil Terminal Environmental Advisory Group (SOTEAG)
- Shipbuilders and Shiprepairers Association (SSA)
- Society of Maritime Industries
- South Devon and Channel Shell fishermen
- Southern Norway Trawlers Association (Sør-Norges Trålerlag)
- Subsea Cables UK
- Sullom Voe Association (SVA) Ltd
- Sullom Voe Harbour Authority
- SustainAbility
- Teesside Valley Unlimited
- The Crown Estate
- The Environment Centre (tEC)
- The Wildlife Trusts
- Transport Scotland
- UCL Energy Institute
- UK Chamber of Shipping
- UK Fisheries Oil and Gas Legacy Trust Fund
- UK Oil & Gas Chaplaincy
- Unite the Union
- United Kingdom Hydrographic Office

- University of Aberdeen
- University of Abertay
- University of Edinburgh
- University of Glasgow
- University of Hull
- University of Reading
- University of Southampton
- University of St Andrews
- University of Strathclyde
- University of the Highlands and Islands
- University of York
- Whale & Dolphin Conservation (WDC)
- World Conservation Union (IUCN)
- WWF Cymru
- WWF Germany
- WWF International
- WWF Netherlands
- WWF Norway
- WWF Scotland
- WWF UK
- ZERO Waste Scotland

APPENDIX 2 GLOSSARY OF TERMS AND ABBREVIATIONS

AtoN	Aid to Navigation	MAH	Major Accident Hazards
AUV	Autonomous Underwater Vehicles	MCDA	Multi-Criteria Decision Analysis Model
CA	Comparative Assessment	MEP	Member of the European Parliament
CCS	Carbon Capture and Storage	Mini-cell	A cylindrical compartment inside the utility legs on Brent Bravo and Brent Delta that can be dewatered to give access to inspect and maintain the ballast (seawater) system manifolds
CEFAS	Centre for Environment, Fisheries and Aquaculture Science	MNA	Managed Natural Attenuation
CMSTG	Cell Management Stakeholder Task Group	MP	Member of Parliament
CoP	Cessation of Production	MSP	Member of the Scottish Parliament
DBEIS	Department for Business, Energy and Industrial Strategy (was DECC)	NERC	Natural Environment Research Council
DECC	Department of Energy and Climate Change (now DBEIS)	NGOs	Non-Government Organisations
DNV	Det Norske Veritas	NORM	Naturally Occurring Radioactive Material
DP	Decommissioning Programme	OGA	Oil & Gas Authority
EIA	Environmental Impact Assessment	OGUK	Oil & Gas UK
ENGOS	Environmental Non-Government Organisations	OSPAR	Oslo Paris Convention
ESHIA	Environmental, Social and Health Impact Assessment	R&D	Research and Development
FishSAFE	An electronic means of alerting vessels to the proximity of a structure in the sea. FishSAFE is a commercial fishing industry driven safety program.	RSPB	Royal Society for Protection of Birds
GBS	Gravity Base Structures	SCDI	Scottish Council for the Development of Industry
HAZID	Hazard Identifications	SEPA	Scottish Environmental Protection Agency
HAZOP	Hazard and Operability	SFF	Scottish Fishermen's Federation
HMRC	Her Majesty's Revenue and Customs	SLV	Single Lift Vessel
HMT	Her Majesty's Treasury	SPE	Society of Petroleum Engineers
HSE	Health and Safety Executive	STASCO	Shell Trading and Shipping Company
HSSE	Health, Safety, Security, Environment	TD	Technical Documents
IChemE	Institution of Chemical Engineers	TEC	The Environment Council
IMechE	Institution of Mechanical Engineers	UKHO	UK Hydrographic Office
IOGP	International Oil & Gas Producers	WWF	Worldwide Fund for Nature
IRG	Independent Review Group		
JNCC	Joint Nature Conservation Committee		
LAT	Lowest Astronomical Tide		

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