



APPENDIX 2:
ENERGY CATEGORISATION OF DECOMMISSIONING OPTIONS

Introduction

The quantification of energy and emissions was an integral part of DNV GL’s EIA for the Brent Field Decommissioning and is required under the Department of Energy and Climate Change (DECC) Guidance Notes on Decommissioning [1]. In support of the EIA, DNV GL prepared an *Energy Use and Gaseous Emissions Report* [2] which quantifies the energy use and gaseous emissions likely to arise from the decommissioning options for the Brent Field facilities. **Error! Reference source not found.**

This Appendix categorises the energy consumption calculated in DNV GL’s *Energy Use and Gaseous Emissions Report* for each of the Brent Field decommissioning options using an ‘energy impact key’ (Table 1). The key is based on a methodology taken from the 2002 OLF *Handbook for Environmental Impact Assessment for Offshore Decommissioning* [3], and has been applied in various offshore decommissioning projects.

The key was developed to highlight significant differences between alternatives and to rank the alternatives in relative terms. The categorisation is not definitive and could be different if set in a different context. For example, an energy impact defined as ‘large negative’ using this key might be ‘insignificant’ when compared against national energy consumption.

The categorisation for each Brent Field facility and decommissioning option is outlined in Table 2.

Table 1: Energy Impact Key

Reference Unit	Energy Category				
	None/ Insignificant	Small Negative*	Small- moderate Negative*	Moderate Negative	Large Negative
Energy (Million GJ)	<0.1	0.1-0.8	0.8-1	1-3	3-6

*energy categories have been modified slightly because original key did not have a ‘small-moderate negative’ category, as per DNV GL EIA methodology.

Table 2: Energy Categorisation for Decommissioning Options

Facility	Option Number	Energy (million GJ)	Energy Category
Topsides	Option 1	1.2	Moderate negative
Brent A Upper Jacket	Option 1	0.2	Small negative
Brent A Jacket Footings	Option 1	0.4	Small negative
	Option 2	0.4	Small negative
	Option 3	0.4	Small negative
GBS	Option 1	4.9	Large negative
	Option 2	3.8	Large negative
GBS Attic Oil	Option 1	0.4	Small negative
GBS Cell Contents	Option 1	4.2	Large negative
	Option 2	1.0	Moderate negative
	Option 3	1.2	Moderate negative
	Option 4	1.4	Moderate negative
	Option 5	0.07	None/Insignificant
GBS Drilling Legs	Option 1a	0.3	Small negative
	Option 2a	0.1	Small negative
	Option 3a	0	None/Insignificant

Facility	Option Number	Energy (million GJ)	Energy Category
	Option 4a	0	None/Insignificant
	Option 1b	1.4	Moderate negative
	Option 2b	0.7	Small negative
	Option 3b	0.3	Small negative
	Option 4b	0.3	Small negative
	Option 5	0	None/Insignificant
GBS Minicell Annulus	Option 1	0.3	Small negative
	Option 2	0.1	Small negative
	Option 3	0.1	Small negative
	Option 4	0.1	Small negative
	Option 5	0	None/Insignificant
Seabed Drill Cuttings	Option 1	0.07	None/Insignificant
Brent A Seabed Drill Cuttings	Option 1	0.2	Small negative
	Option 2	0.09	None/Insignificant
	Option 3	0.1	Small negative
	Option 4	0.2	Small negative
	Option 5	0.03	None/Insignificant
Cell Top Drill Cuttings	Option 1	0.005	None/Insignificant
	Option 2	0.3	Small negative
	Option 3	0.3	Small negative
	Option 4	0.3	Small negative
	Option 5	0.5	Small negative
	Option 6	0.03	None/Insignificant
GBS Tri-cell Drill Cuttings	Option 1	0.0	None/Insignificant
Seabed Structures and Debris	Option 1	0.2	Small negative
Wells	Option 1	3.3	Large negative
Pipelines Group 1	Option 1, 2, 3	0.1	Small negative
Pipelines Group 2	2A: Option 2	0.05	None/Insignificant
	2A: Option 3	0.05	None/Insignificant
	2A: Option 4	0.06	None/Insignificant
	2A: Option 5	0.07	None/Insignificant
	2A: Option 6	0.06	None/Insignificant
	2A: Option 7	0.07	None/Insignificant
	2B: Option 1	0.3	Small negative
	2B: Option 4	0.3	Small negative
	2B: Option 5	0.3	Small negative
	2B: Option 6	0.3	Small negative
	2B: Option 7	0.3	Small negative
	2C: Option 1	0.4	Small negative
	2C: Option 6	0.5	Small negative
	2C: Option 7	0.4	Small negative
	2C: Option 8	0.5	Small negative
2C: Option 9	0.5	Small negative	

Facility	Option Number	Energy (million GJ)	Energy Category
	2D: Option 2	0.005	None/Insignificant
	2D: Option 3	0.006	None/Insignificant
	2D: Option 5	0.005	None/Insignificant
	2D: Option 6	0.005	None/Insignificant
	2E: Option 1	0.04	None/Insignificant
	2E: Option 4	0.05	None/Insignificant
	2E: Option 5	0.05	None/Insignificant
	2E: Option 6	0.05	None/Insignificant
	2E: Option 7	0.06	None/Insignificant

¹ DECC, Guidance Notes, *Decommissioning of Offshore Oil and Gas Installations and Pipelines under the Petroleum Act 1998*, Version 6, March 2011.

² DNV GL, *Energy Use and Gaseous Emissions Report for the Brent Field Decommissioning EIA*, DNV GL Report No.: 187KVXJ-3, Rev 5, 2016.

³ Norwegian Oil Industry Association, OLF, *Handbook for Environmental Impact Assessment for Offshore Decommissioning*, 2002.