



Grant Thornton

**Forensic accounting investigations of cost information
provided by National Grid Gas Transmission for the Milford
Haven pipeline project**

**Report of Grant Thornton UK LLP
dated 17 March 2015**

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1 EXECUTIVE SUMMARY

- 1.1 Grant Thornton UK LLP (Grant Thornton) has been instructed by The Office of Gas and Electricity Markets (Ofgem) to carry out a review (in accordance with our instructions set out in **Section 2**) of the cost information provided by National Grid Gas Transmission (NGGT) for the Milford Haven (MH) pipeline project as set out in further detail at paragraph 1.6.
- 1.2 The MH pipeline is the UK's largest high-pressure gas pipeline linking the two Liquefied Natural Gas (LNG) terminals (Dragon and South Hook) at Milford Haven, Pembrokeshire with the UK gas transmission network at Tirley.
- 1.3 The MH pipeline project includes:
- i 320km of new pipeline with associated Above Ground Installations (AGIs);
 - ii one new compressor station (Felindre) and new units plus modifications at two existing compressor stations (Churchover and Wormington); and
 - iii a major Pressure Reduction Installation at Tirley (Tirley PRI) and two smaller ones in the pipeline sections.
- 1.4 Ofgem are undertaking an ex-post efficiency review of the MH pipeline project in order to assess whether the expenditure for the project was incurred efficiently and subsequently assess the impact on consumers. In order to carry out their review Ofgem require Grant Thornton to carry out a review of the actual external and internal costs incurred, together with the annual expenditure profile for each main element of the project.
- 1.5 NGGT changed their accounting system in October 2007. The information prior to this date is only available as a 'data dump' with no breakdown of the individual transactions. As a result, it has been agreed that our detailed review will not cover expenditure initially recognised in the old accounting system, ie costs incurred prior to October 2007. The balances relating to this period prior to October 2007 have been recorded in the underlying SAP data¹ of the new accounting system as transactions that had been allocated a 'Document Type Reference' of UE or UH.

¹ SAP is the name of a standard accounting package used by many companies

- 1.6 Further detail of our work is set out in **Section 3**, supplemented in **Appendices 1 to 11**, and is summarised as follows:
- i ascertain the contracts that were placed for the execution of the project and the costs (internal and external) that are attributed to these contracts;
 - ii establish the processes and policies undertaken by NGGT in relation to shared costs and ascertain the metrics in respect of the allocation of costs;
 - iii reconcile the cost information incurred to those reported to Ofgem on an annual basis with the actual spend for delivering the project in its entirety;
 - iv for directly incurred costs (post October 2007), trace expenditure (over £250,000) through the purchasing and payments system and reconcile the costs included on the invoice schedule to the cost template; and
 - v for indirectly incurred costs (post October 2007), trace expenditure (over £250,000) through the accounting system, and confirm the amount allocated has been correctly applied in accordance with the stated allocation methodology.
- 1.7 This report reflects the costs provided by NGGT on 19 December 2014 together with information and explanations received by Grant Thornton up to and including 20 February 2015. Our report does not, therefore, reflect any information or the outcome of discussions held after that date².
- 1.8 NGGT have provided an excel spreadsheet setting out a summary of the actual costs incurred by project along with the underlying SAP data (for all transactions up to and including 31 March 2014 ie the 2014 accounting year end date) for each of the eight sub-projects that comprise the total project. It is this spreadsheet that has been used in our work and to produce a summary of costs on an annual basis. All of the costs reported by NGGT and set out throughout this report are outturn costs.

² As set out in Appendix 2 (paragraphs 2.23 and 2.35), as at the date of this report, supporting documentation in relation to compensation payments and enhancement costs (totalling £3,007,149) for the Felindre to Brecon pipeline project and in relation to legal costs of £376,868 for the Brecon to Tirley pipeline project is currently outstanding

- 1.9 A summary of total costs by sub-project is set out below (and in **Appendix 1** which sets out the annual costs by sub-project):

Summary of costs

	Cost information provided by NGGT £	Amended NGGT cost information ³ £
Milford Haven to Aberdulais Pipeline	315,048,473	315,048,473
Felindre to Brecon Pipeline	315,539,732	315,539,732
Brecon to Tirley Pipeline	220,045,465	220,045,465
Wormington Compressor Station	57,587,432	64,250,336
Churchover Compressor Station	41,096,318	41,096,318
Felindre Compressor Station	85,169,364	85,169,364
Tirley PRI	75,712,756	81,093,181
Environmental Monitoring and Aftercare	13,450,581	13,450,581
	1,123,650,122	1,135,693,451

- 1.10 A split of the cost information provided by NGGT in the table above between pre October 2007 and post October 2007 ie old and new system is at paragraph 3.6. As mentioned at paragraph 1.5 above, as a result of the difficulties with the accounting system data our detailed review work has focused on post October 2007 expenditure, as agreed with Ofgem.

SUMMARY OF FINDINGS

Contracts

- 1.11 We were instructed by Ofgem to consider whether contracts were placed for the execution of the MH pipeline project and whether the costs attributed to these contracts can be matched to costs provided to Ofgem by NGGT's costs templates.
- 1.12 Our review confirmed that seven contracts were awarded and in place in respect of the main works of the MH pipeline project as follows:

Summary of contracts awarded

	Date Contract Initially Awarded	Contractor
Milford Haven to Aberdulais Pipeline	27/05/2004	Contractor B
Felindre to Brecon Pipeline	17/02/2005	Contractor B
Brecon to Tirley Pipeline	08/09/2005	Contractor C
Wormington & Churchover Compressor Station	12/09/2005	Contractor A
Felindre Compressor Station	12/09/2005	Contractor A
Tirley PRI	05/11/2009	Contractor C
Environmental Monitoring and Aftercare	01/06/2010	Contractor H

³ As noted at paragraphs 1.14 and 1.16, costs in relation to the Wormington incident and REDACTED CNI (£5.4 million) have not been included in the MH pipeline project cost information provided by NGGT. These amended figures show the total of the project after these costs, of £6.7 million (£12.2 million less £5.5 million claimed on insurance) for the Wormington incident and £5.4 for million REDACTED CNI, have been included.

Reconciliation

- 1.13 We have been asked to reconcile the cost information incurred to those reported to Ofgem on an annual basis (Regulatory Reporting Pack data) in relation to these projects with the actual spend for delivering the MH pipeline project (recorded in the SAP data). The reconciliation is at **Appendix 1**.
- 1.14 We note that costs in relation to the Wormington incident and security for the REDACTED CNI project are not included within the MH SAP data and therefore have not been included in the cost information reported to Ofgem. We consider the Wormington incident and Critical National Infrastructure (CNI) costs further in **Section 3**.

NGGT's payment processes

- 1.15 During our review we established the processes for making payments to supplies for directly and indirectly incurred costs. Part of our review included consideration of the system for recording costs.
- 1.16 Based upon our review it appears that NGGT have suitable systems in place for the approval and payment of invoices to contractors, along with the allocation of costs to the eight MH pipeline project Work Breakdown System (WBS) codes. However, as noted in paragraph 1.14 above, NGGT have accounted for the costs in relation to the Wormington incident and CNI costs (including security at REDACTED) separately to the MH pipeline project costs. This is a matter for discussion between Ofgem and NGGT.

Directly incurred costs

- 1.17 We were instructed by Ofgem to carry out certain procedures relating to identifying expenditure and tracing through to payment (as detailed in paragraph 3.45) in relation to the post October 2007 direct costs incurred on the MH pipeline project.
- 1.18 These procedures have been carried out as required and a summary of our findings is set out at paragraph 1.20 below.

Indirectly incurred costs

- 1.19 We were instructed by Ofgem to carry out certain procedures relating to identifying expenditure and confirming any cost allocation (as detailed in paragraph 3.49) in relation to the post October 2007 indirect costs incurred on the MH pipeline project.

- 1.20 The findings of our work in relation to directly and indirectly incurred costs are summarised in the table below⁴:

SAP data	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs Post October 2007 tested	Total costs £	% of total costs tested
Milford Haven to Aberdulais Pipeline	36,129,158	31,872,799	(1,160,241)	30,712,558	85%	315,048,473	10%
Felindre to Brecon Pipeline	73,905,668	66,330,457	2,671,043	69,001,499	93%	315,539,732	22%
Brecon to Tirley Pipeline	55,143,345	46,168,974	1,972,353	48,141,327	87%	220,045,465	22%
Wormington Compressor Station	32,044,640	35,551,133	(6,134,647)	29,416,486	92%	57,587,432	51%
Churchover Compressor Station	17,194,575	14,550,402	1,241,687	15,792,089	92%	41,096,318	38%
Felindre Compressor Station	56,460,213	51,150,245	964,525	52,114,770	92%	85,169,364	61%
Tirley PRI	75,712,755	37,392,493	22,881,131	60,273,623	80%	75,712,756	80%
Environmental Monitoring and Aftercare	13,450,582	1,240,738	6,548,266	7,789,004	58%	13,450,581	58%
Total	360,040,936	284,257,240	28,984,117	313,241,357	87%	1,123,650,122	28%

Reallocated costs

- 1.21 As explained in more detail at paragraphs 3.38 to 3.42, during the MH pipeline project, costs recorded in relation to the pipelines, Compressor Stations, Tirley PRI and Environmental, Monitoring and Aftercare (EMA) have been reallocated between the sub-projects. NGGT have explained that this was to ensure that the appropriate expenditure reflected in each sub-project was correct. We have agreed that the reallocations were on an appropriate basis. In any event such reallocations between these codes do not affect the total amount attributed as cost of the overall project. This is separate to the reallocation of certain costs to the Wormington incident project code or from the REDACTED sub-project code to a code (CNI costs) outside the MH pipeline project, which is commented on elsewhere.

⁴ The amount tested in relation to the 'Value indirect costs tested' for the Milford Haven to Aberdulais pipeline is a negative value due to four transactions we have reviewed which relate to costs which are transferred out of the sub-project, as set out in Appendix 3 and explained at paragraph 3.57.

The amount tested in relation to the 'Value indirect costs tested' for the Wormington Compressor Station is a negative value as a result of costs transferred to the Wormington Incident project of £5.8 million and a transfer of costs of £2.6 million to the Churchover Compressor Station as a result of the reconciliation exercise carried out in January 2012 (see Appendix 6 and paragraph 3.38).

CONCLUSIONS

- 1.22 Our review of NGGT's processes and procedures has indicated that it has appropriate policies for the approval and payment of goods and services.
- 1.23 On the basis of our review of the information and explanations received to date in relation to the sample of directly and indirectly incurred costs that we have reviewed (being costs incurred post October 2007 over £250,000), we can confirm that costs are supported by invoices (or other supporting documentation), ledgers and payment information that indicate that they have been incurred and paid and correlate to the relevant cost included within the SAP system and hence the RRP information provided to Ofgem. In addition, we can confirm for the indirect costs that they appear to have been the subject of appropriate allocation methods.

Grant Thornton UK LLP

Grant Thornton UK LLP

London

17 March 2015

2 INTRODUCTION

INSTRUCTIONS

- 2.1 Grant Thornton has been instructed by Ofgem to prepare a report on our review of the cost information provided by NGGT for the MH pipeline project. This review is limited to the procedures set out in more detail in **Section 3**, and in particular, to expenditure items incurred post October 2007 over £250,000.
- 2.2 NGGT changed their accounting system in October 2007. The information prior to this date is only available as a 'data dump' with no breakdown of the individual transactions. As a result, Ofgem have advised that our review will not cover expenditure initially recognised in the old accounting system, ie costs incurred prior to October 2007. This is discussed in further detail, along with the impact on our review, in **Section 3**.
- 2.3 The main objective of our review is to substantiate the costs included within the cost information provided, and reconcile this cost information to the costs reported to Ofgem on an annual basis. In particular, we have been asked to:
 - i ascertain the contracts that were placed for the execution of the project and the costs (internal and external) that are attributed to these contracts;
 - ii establish the processes and policies undertaken by NGGT in relation to shared costs and ascertain the metrics in respect of the allocation of costs;
 - iii reconcile the cost information incurred to those reported to Ofgem on an annual basis with the actual spend for delivering the project in its entirety;
 - iv for directly incurred costs (post October 2007), trace expenditure (over £250,000) through the purchasing and payments system and reconcile the costs included on the invoice schedule to the cost template; and
 - v for indirectly incurred costs (post October 2007), trace expenditure (over £250,000) through the accounting system, and confirm the amount allocated has been correctly applied in accordance with the stated allocation methodology.

- 2.4 In carrying out our review of the SAP data for the eight sub-project codes relating to the MH pipeline project provided by NGGT, we have been able to identify and consider transactions (such as Tirley PRI) which have been recorded within one of the sub-project codes and then reallocated. However, it is outside the scope of our review to review the wider accounting systems of NGGT in order to identify any costs which may relate to the MH pipeline project but were not attributed to one of the eight sub-projects (as we know is the case with the Wormington incident costs (paragraph 3.105) classified as non-works capex). Whilst Ofgem have made us aware of items that are accounted for outside of the MH pipeline project (being the Wormington incident and CNI costs), we note the potential risk that further costs could be held outside of these codes which we would be unable to identify without a full analysis of NGGT's accounting systems.
- 2.5 This work does not constitute an audit performed in accordance with Auditing Standards.
- 2.6 If further information is produced and brought to our attention after service of this report, we reserve the right to revise our opinions as appropriate.
- 2.7 Except to the extent set out in this report, we have relied upon the documents and information provided to us as being accurate and genuine. To the extent that any statements we have relied upon are not established as accurate, it may be necessary to review our conclusions.
- 2.8 The report has been prepared using Microsoft Word and Microsoft Excel. The report may contain minor rounding adjustments due to the use of computers for preparing certain calculations.

RESTRICTION ON CIRCULATION

- 2.9 Grant Thornton does not accept or assume responsibility, duty of care, liability or other obligation to any third party other than Ofgem, who as a result, either directly or indirectly, of disclosure of the whole or any part of this report by Ofgem receives, reads or otherwise obtains access to this document. Any party relying on this report does so entirely at their own risk.

2.10 In the preparation of this report, Grant Thornton has been provided with material by Ofgem (and by third parties at Ofgem's request) relating to third parties. We have relied upon warranties and representations provided by Ofgem that:

2.10.1 Ofgem is fully entitled to disclose such information to us for inclusion within our report, free of any third party rights or obligations; and

2.10.2 Ofgem will only permit circulation of this report in accordance with any rights to confidentiality on the part of any third party.

2.11 Any objections to the inclusion of material should be addressed to Ofgem. Accordingly, Grant Thornton acknowledges no duty or obligation whatsoever to any party in connection to the inclusion in the report of any material referring to any third party material or the accuracy of such material.

DISCLOSURES OF INTEREST

2.12 To the best of our knowledge, we have no connection with any of the parties or advisors involved in the MH pipeline project that would in any way impact upon our independence in preparing this report.

FORMS OF REPORT

2.13 For your convenience, this report may have been made available to recipients in electronic as well as hard copy format. Multiple copies and versions of this report may therefore exist in different media and in the case of any discrepancy the final signed electronic copy should be regarded as definitive.

3 THE MILFORD HAVEN PIPELINE PROJECT REVIEW

INTRODUCTION

- 3.1 In 2004 National Grid (who at that time, until 2005, were named National Grid Transco) were required to provide the necessary infrastructure to connect two LNG facilities at Milford Haven to the UK gas transmission network. The MH pipeline project relates to the provision of this infrastructure and includes:
- i 320km of new pipeline with associated Above Ground Installations (AGIs);
 - ii one new compressor station (Felindre) and new units plus modifications at two existing compressor stations (Churchover and Wormington); and
 - iii a major Pressure Reduction Installation at Tirley (Tirley PRI) and two smaller ones in the pipeline sections.
- 3.2 Throughout the pipeline project, NGGT have provided Ofgem with various tables in relation to the project's annual expenditure through the annual regulatory reporting process. These are high level figures and Ofgem has no information on individual contracts or on the cost allocation to specific Work Breakdown Structure (WBS) codes/elements within each project.
- 3.3 At the current point of time, the programme is now substantially complete (with the exception of costs in relation to the Environmental, Monitoring and Aftercare (EMA) contract which involves ten year surveys and will therefore continue until 2017) and gas is flowing from the LNG terminals.

INFORMATION PROVIDED

- 3.4 Grant Thornton has relied upon the following information in reviewing the cost information for the MH pipeline project:
- i an Excel download of the underlying SAP data (for all transactions up to and including 31 March 2014 ie the 2014 accounting year end date with brought forward figures for costs incurred prior to October 2007) for each of the eight sub-projects;
 - ii a summary of costs by WBS element for each of the eight sub-projects;
 - iii a high level reconciliation of the SAP data to the Regulatory Reporting Pack (RRP) data previously provided on an annual basis;
 - iv copies of invoices over £250,000 (post October 2007) and payment ledger reports from the Accounts Payable (AP) system showing payment of the invoices recorded (the invoice payment schedule);

- v details of NGGT arrangements for competitive tendering of major projects and contract evaluation procedures;
- vi copies of the contracts with the Main Works Contractors; and
- vii information and explanations provided to us by NGGT. This included a visit to NGGT's offices on 27 November 2014 to discuss the project along with the General Ledger (GL) and AP systems, and subsequent telephone calls and email correspondence with NGGT staff.

REVIEW OF COST INFORMATION

3.5 The main objective of our review is to substantiate the costs included within the cost information provided, and reconcile this cost information to the costs reported to Ofgem on an annual basis. In particular, we have been asked to:

- i ascertain the contracts that were placed for the execution of the project and the costs (internal and external) that are attributed to these contracts;
- ii establish the processes and policies undertaken by NGGT in relation to shared costs and ascertain the metrics in respect of the allocation of costs;
- iii reconcile the cost information incurred to those reported to Ofgem on an annual basis with the actual spend for delivering the project in its entirety;
- iv for directly incurred costs (post October 2007), trace expenditure (over £250,000) through the purchasing and payments system and reconcile the costs included on the invoice schedule to the cost template; and
- v for indirectly incurred costs (post October 2007), trace expenditure (over £250,000) through the accounting system, and confirm the amount allocated has been correctly applied in accordance with the stated allocation methodology.

3.6 All of the costs reported by NGGT and set out throughout this report are outturn costs. The cost information for the MH pipeline project (as provided by NGGT) is summarised below:

Summary of costs

	Pre October 2007 £	Post October 2007 £	Total £
Milford Haven to Aberdulais Pipeline	278,919,317	36,129,156	315,048,473
Felindre to Brecon Pipeline	241,634,065	73,905,668	315,539,732
Brecon to Tirley Pipeline	164,902,121	55,143,344	220,045,465
Wormington Compressor Station	25,542,792	32,044,639	57,587,432
Churchover Compressor Station	23,901,744	17,194,574	41,096,318
Felindre Compressor Station	28,709,151	56,460,213	85,169,364
Tirley PRI	-	75,712,756	75,712,756
Environmental Monitoring and Aftercare	-	13,450,581	13,450,581
	763,609,190	360,040,932	1,123,650,122

NGGT'S FINANCIAL PROCESSES

Accounting systems

- 3.7 NGGT uses the SAP accounting system for the MH pipeline project. Within the system a WBS code has been set up for each of the eight sub-projects. Each WBS code is then broken down into WBS elements in order to separate out the various types of expenditure.
- 3.8 The costs provided to Ofgem on an annual basis have been taken directly from NGGT's SAP financial system which is used as the basis for cost reporting and preparation of financial and regulatory accounts.
- 3.9 NGGT changed their SAP accounting system in October 2007. The legacy SAP system has very limited functionality and is a read only system. The costs incurred prior to 2007 have been transferred to the new system as a 'data dump' and therefore the details of the individual transactions are not available. For costs incurred before December 2006, only a single figure of the spend is available whereas for costs incurred between January to October 2007, the new SAP system holds rolled up totals at the WBS code level by month.
- 3.10 All costs that have been transferred to the new SAP system have been allocated the 'Document Type Reference' of UE or UH. We have therefore been able to separate the costs incurred on each of the eight sub-projects between pre 2007 (for which no breakdown of information is available) and post 2007 (for which we have all individual line entries of the SAP system).

Process for making payments

- 3.11 The main process used by NGGT for making payments for both directly and indirectly incurred costs is set out below:
- a invoices are raised by the main works contractor;
 - b invoices are passed to the external Project Services company for review;
 - c invoices are passed to National Grid Project Manager for approval or further challenge;
and
 - d once approval is granted, the Project Services company provide the approved invoice information to NGGT's finance department for entry into the SAP system.

3.12 As part of our review we ensured that the following authorisation levels were adhered to:

Authorisation level	Payment to be authorised by
i up to £500,000	Senior Project Manager (SPM) only
ii £500,000 up to £2 million	SPM and Head of Gas Construction (later Capital Delivery)
iii £2 million up to £5million	As above and Head of Construction for NGGT
iv £5million and over	As above and a NGGT Director

BACKGROUND WORK

3.13 The cost incurred under the eight WBS project codes for the main works of the MH pipeline project fall under seven contracts as follows:

Summary of contracts awarded

Project	Date Contract Initially Awarded	Contractor
Milford Haven to Aberdulais Pipeline	27/05/2004	Contractor B
Felindre to Brecon Pipeline	17/02/2005	Contractor B
Brecon to Tirley Pipeline	08/09/2005	Contractor C
Wormington & Churchover Compressor Station	12/09/2005	Contractor A
Felindre Compressor Station	12/09/2005	Contractor A
Tirley PRI	05/11/2009	Contractor C
Environmental Monitoring and Aftercare	01/06/2010	Contractor H

3.14 The background to these contracts and reasons for variations are discussed in paragraphs 3.15 to 3.35 below.

Milford Haven to Aberdulais

3.15 Prior to the Long Term System Entry Capacity (LTSEC) Auctions in December 2004, NGGT ran a competitive tender event on 2 February 2004 for the Milford Haven to Aberdulais pipeline. To ensure they did not compromise the three year delivery timescale for the Milford Haven to Aberdulais pipeline, NGGT ran the tender event in advance of the September and December 2004 LTSEC Auctions, on the basis of available information from the terminal owners.

3.16 The work tendered comprised the design, construction and commissioning of approximately 120km of 1220mm diameter high pressure steel pipeline. Two suppliers passed the vendor evaluation and the contract was awarded to Contractor B on 27 May 2004 (Stage I) and 2 March 2005 (Stage II) for £91.5 million and £93.5 million respectively. Based upon the tender evaluation, awarding the contract to Contractor B represented the most financially advantageous solution for the project.

Felindre to Brecon

- 3.17 Following the December 2004 LTSEC auctions NGGT realised that increased capacity in the gas pipeline network was required. As a result, the scope of the MH pipeline project was changed with the overall required pipeline length being increased from 120km to approximately 320km. The delivery timescale of three years remained unchanged.
- 3.18 As a result, following the award of the Milford Haven to Aberdulaish project, Contractor B were instructed under a Project Managers Instruction (PMI) on 17 February 2005 to commence Stage I preliminary routing, design works and environmental statement preparation for a second pipeline (which at the time was between Aberdulaish to Llanvetherine) for the MH pipeline project. This instruction was issued to take advantage of the option to vary the works in the first pipeline contract from Milford Haven to Aberdulaish, and also to take advantage of the rates which had previously been competitively tendered.
- 3.19 After a routing and consultation exercise the route was ultimately revised to run from Felindre, near Swansea, to Tirley in Gloucestershire. The revised route managed environmental concerns and had the potential to be constructed in one construction season.
- 3.20 NGGT have advised that this revised route was split into two parts Felindre to Brecon (89km) and Brecon to Tirley (107km) to enable two contractors to be deployed and that this approach was employed with the aim of maximising resource levels available in order to achieve project completion before the required deadline of quarter four in 2007.
- 3.21 Contractor B were awarded Stage II detailed design and construction on 28 September 2006 for the Felindre to Tirley route incorporating the Stage I works already instructed under the previous Milford Haven to Aberdulaish contract. Contractor B were awarded the works as they had the capacity to carry them out in the required timescales whilst the only other supplier to have passed the vendor evaluation (Contractor C) had no availability due to being awarded the Brecon to Tirley section of pipeline.

Brecon to Tirley

- 3.22 The works comprising the design, construction and commissioning of the 107km (referred to above) of 1220mm diameter high pressure steel pipeline, including a New Pressure Reduction Installation (PRI) at Tirley. A competitive tender was carried out and two suppliers passed the vendor evaluation, the contract was awarded to Contractor C on 8 September 2005 for £77.9 million plus possible uplifts for certain risks. This option represented the most advantageous financial solution for the project.

Wormington and Churchover Compressor Stations

- 3.23 NGGT have explained that the MH pipeline project required major modifications and additional power at the existing NGGT compressor stations located at Wormington and Churchover, as well as a new compressor station (see paragraph 3.27).
- 3.24 In order to meet capacity requirements of the project, the Churchover Compressor Station was required to operate bi-directionally, whilst the Wormington Compressor Station would need to operate in a number of different configurations over a wide range of head and flow conditions. The pre-existing units would not have been capable of meeting these different configuration requirements.
- 3.25 The full scope of works included within this competitive tender and contract included preliminary design, detail design, procurement, construction and commissioning.
- 3.26 NGGT gave the five contractors who passed the vendor evaluation checks an opportunity to tender for this contract, Felindre Compressor Station or both, if it was economically advantageous to do so. The Wormington & Churchover Compressor Station contract was awarded as a dual award with the Felindre New Build Compressor to Contractor A on 12 September 2005 and based upon the tender evaluation was the most financially advantageous solution for both projects.

Felindre Compressor Station

- 3.27 As noted above, the Felindre New Build Compressor contract was awarded as a dual award with the Wormington and Churchover Compressor Station to Contractor A on 12 September 2005.
- 3.28 The full scope of works included within the tender and contract included preliminary design, detail design, procurement, construction and commissioning.

Tirley PRI

- 3.29 The Tirley PRI contract is a modification to the Brecon to Tirley contract, discussed in paragraph 3.22 above, that was agreed with Contractor C on 5 November 2009. NGGT have advised that the increase in contract amount was approved through Form D procedures along with a resanction paper dated 5 October 2010⁵ to reflect the increased contract cost for the expanded works at Tirley. This was signed off by Stuart Humphrey (UK Transmission FD) whose authority was delegated from Nick Winsor (Executive Director Transmission). The revision to the contract is outlined in paragraphs 3.30 to 3.34 below.
- 3.30 The full scope of works included within the contract included preliminary design, detail design, procurement, construction and commissioning of the Tirley PRI.
- 3.31 NGGT have explained that the Tirley Pressure Reduction Installation (Tirley PRI) was required as the Felindre compressor and pipelines constructed between Milford Haven and Tirley were designed to operate at pressures up to 94barg. This pressure level was necessary to ensure NGGT could provide the obligated entry capacity at the Milford Haven entry point. The Tirley PRI protects the existing infrastructure which can only operate at pressures up to 75barg. Without the PRI, Felindre compressor and the Milford Haven to Tirley pipeline would only be able to operate at a restricted pressure which would not have optimised the full capability of the design.
- 3.32 Planning permission was rejected at the intended site of the PRI at Corse. Therefore, a new site (Tirley) had to be found causing significant delays to the project. As a result, the Tirley PRI works increased in scope and cost from the original planned works at Corse.
- 3.33 The revised location, Tirley, is a larger site to accommodate additional landscaping with revised pipework connection arrangements. It also incorporated the function of the pre-existing Tirley AGI allowing its removal and return of the land to agricultural use.
- 3.34 The commissioning and performance testing of Felindre Compressor Station was delayed as a consequence of not having the PRI in place. This also added to the increase in costs.

⁵ This capital investment paper sought to resanction the Tirley PRI on scope, time and cost (with an increase to costs of £60 million). The paper also sought to disaggregate the scheme from the Main South Wales Reinforcement Scheme (ie the three pipelines and compressors).

Environmental Monitoring and Aftercare

- 3.35 The Environmental Monitoring and Aftercare work has been managed by a Project Services Company and includes ten year surveys continuing until 2017. A framework agreement between National Grid Gas Plc and Contractor H was entered into on 1 June 2010 for the provision of project related project services support (Gas above £100k)⁶.

Cost allocation

- 3.36 Due to the high expenditure on procurement and construction activities, the majority of the costs in relation to this project are, by nature, direct costs with invoiced costs being allocated directly to the sub-project they relate to. However, as instructed by Ofgem, as part of our review we have also considered the methodology applied by NGGT in allocating indirect costs to the MH pipeline project.
- 3.37 Staff at NGGT are required to complete timesheets with time being charged to the projects they have worked on at their appropriate hourly rate. NGGT have advised that on occasion a charge may be allocated for the time of members of senior management for their involvement in supervision of the project. This allocation is only made in a few instances where individuals were unable to submit a timesheet and is calculated in line with the project load of the people they manage. Staff costs are recorded on an individual basis within the SAP system and as a result we have not identified staff costs in excess of £250,000 during our review. In addition, the total cost of staff is a small percentage of the post 2007 cost⁷ and therefore we have not carried out any detailed testing on this allocation.

Cost reallocations

- 3.38 During our review we identified a reallocation of costs to/from the Wormington and Churchover Compressor Station and Tirley PRI sub-projects. NGGT have advised that although they accounted for all costs in relation to the Wormington/Churchover Compressor Station works and the Wormington incident (relating to a fracture in the compressor station pipework as explained at paragraphs 3.105 to 3.108 below) separately, there were some transactions misclassified in each. As such, a reconciliation exercise was undertaken in January 2012 to ensure the total expenditure reflected in each project was correct. Our detailed testing in relation to these reallocations (and the amounts transferred) are set out in **Appendices 6 and 7**.

⁶ NGGT provided an unsigned copy of the EMA contract however, they also provided a signed copy of the framework agreement along with a copy of the Form D (Application for award of contract resubmission).

⁷ The total 'NG Staff costs' incurred post October 2007 is £6.4 million (ie 2% of the total post October 2007 costs). However, this total is made up of over 5,000 transactions (all under £250,000).

- 3.39 A further cost reallocation of £20.6 million was made between the Brecon to Tirley pipeline sub-project and the Tirley PRI scheme. All costs prior to 2010/2011 were contained within the Brecon to Tirley pipeline sub-project. However, following the relocation of the PRI from Corse to Tirley and the increased scale of the works (and costs) a new sub-project code (Tirley PRI) was set up. £20.6 million (as set out in the Tirley sanction paper 2010) was reallocated from the Brecon to Tirley pipeline sub-project to the new Tirley PRI code to enable closure of all three main pipeline sub-projects which were largely complete. Our detailed testing in relation to these reallocations (and the amounts transferred) are set out in **Appendices 5 and 9**.
- 3.40 Further costs were reallocated to the Tirley PRI scheme in line with the Tirley sanction paper 2010 from the Felindre Compressor Station sub-project. Various work and hence costs could only be incurred at the compressor stations once Tirley PRI was completed and therefore these costs have been reallocated to the Tirley PRI scheme. The tables in Appendix 2 (paragraphs 2.82 to 2.83) separate out the 'other costs' which have been reallocated to the Tirley PRI scheme. Our detailed testing in relation to the reallocations from the Felindre Compressor Station sub-project (and the amounts transferred) is set out in **Appendices 8 and 9**.
- 3.41 During our review we also identified £700,000 of costs relating to works carried out by Contractor C post commissioning (see **Appendix 5**) which were reallocated from the Brecon to Tirley pipeline sub-project to the Felindre to Brecon pipeline sub-project (£500,000) and to the Milford Haven to Aberdulais pipeline sub-project (£200,000).
- 3.42 We agree that the above allocations appear to be mathematically accurate and the methodology employed is appropriate. No further cost allocations have been brought to our attention during our review.

RECONCILIATION

- 3.43 The actual costs incurred in delivering the project (recorded in the SAP data) have been reconciled to those reported to Ofgem on an annual basis (RRP data) as per **Appendix 1**. With the exception of a difference of £0.5 million in 2011/2012, which relates to costs which were capitalised and not included in the RRP data, there are no variances between the SAP and RRP data.

- 3.44 We note that costs in relation to the Wormington incident and CNI costs, including security for the REDACTED CNI project (see paragraphs 3.105 to 3.112 below), are not included in the cost information reported to Ofgem for the MH pipeline project. However, the second table in **Appendix 1** sets out a reconciliation of the costs recorded in the SAP data amended to include the Wormington incident and REDACTED CNI costs to the RRP data in order to demonstrate the differences. This reconciliation shows an overall variance of £12.5 million, £6.7 million⁸ (paragraph 3.108 below) of which relates to the Wormington incident whilst £5.4 million (paragraph 3.111 below) relates to REDACTED CNI costs.

REVIEW OF DIRECTLY INCURRED COSTS

- 3.45 Ofgem has instructed that our work in relation to directly incurred costs covers the following:
- i identify the total expenditure for each contract
 - ii trace expenditure from the contract to an invoice(s) or journal;
 - iii trace the invoice through the purchasing systems; and
 - iv trace the invoice through to the payment system.
- 3.46 We have reviewed amounts and obtained the invoice for all costs incurred post October 2007 in relation to the MH pipeline project in excess of £250,000.
- 3.47 In addition, we were advised by NGGT that when they implemented the new SAP system in October 2007, they experienced issues where purchase orders (POs) were incorrectly aligned to a cost centre as opposed to a WBS element. In the following six months NGGT performed an exercise of raising journals to transfer costs from the cost centre to the relevant project WBS element. This activity was performed until all POs were realigned to the correct WBS element.
- 3.48 All items of this nature were identified through our testing of indirect costs. However, for the purpose of our review we have included the invoices, that during this time were accounted for within the SAP system as journal entries (and therefore on initial inspection of the SAP data do not appear to relate to an invoice), within direct costs and confirmed the validity of spend as part of direct costs invoice testing.

⁸ Being £12.2 million of costs incurred less the £5.5 million insurance claim proceeds

REVIEW OF INDIRECTLY INCURRED COSTS

- 3.49 Ofgem has instructed that our work in relation to indirectly incurred costs covers the following:
- i identify the total indirectly incurred expenditure for each contract;
 - ii trace expenditure to supporting information an invoice(s) or journal;
 - iii confirm apportioned costs have been allocated as prescribed in the cost allocation methodology used by NGGT; and
 - iv confirm any calculations are arithmetically correct and free from error.
- 3.50 We have reviewed amounts incurred post October 2007 in relation to the MH pipeline project in excess of £250,000 (and obtained explanations in relation to credit balances below £(250,000)).

THE SUB-PROJECTS

- 3.51 As noted at paragraph 3.13 above, the MH pipeline project was undertaken (and accounted for) in eight sub-projects with seven contracts being awarded for the main works. The main work costs of each the sub-projects (as provided by NGGT) can be attributed to a specific contract as follows:

Projects to contract

Sub-project	WBS code	Contract	Main works costs £	Total costs £
Milford Haven to Aberdulais Pipeline	TCC/00717	Contractor B	225,213,073	315,048,473
Felindre to Brecon Pipeline	TCC/03114	Contractor B	240,310,322	315,539,732
Brecon to Tirley Pipeline	TCC/03113	Contractor C	147,645,063	220,045,465
Wormington Compressor Station	TCC/03130	} Contractor A	47,888,625	57,587,432
Churchover Compressor Station	TCC/03131		33,916,271	41,096,318
Felindre Compressor Station	TCC/03129	Contractor A	75,544,459	85,169,364
Tirley PRI	TCC/20502	Contractor C	54,944,646	75,712,756
Environmental Monitoring and Aftercare	TCC/20503	Contractor H	13,049,965	13,450,581
			838,512,423	1,123,650,122

- 3.52 The costs in relation to each of these sub-projects, along with details of our testing, are discussed in turn below.

Milford Haven to Aberdulais pipeline

3.53 A summary of the costs incurred in relation to this sub-project is set out below⁹:

Milford Haven to Aberdulais Pipeline

WBS Element	WBS Description	Ref ¹⁰	Pre October 2007 £	Post October 2007 £	Total £
TCC/00717-1-03	MILFORD HAVEN-ABERDULAI-MAIN WORKS	1	201,651,222	23,561,852	225,213,073
TCC/00717-1-10	MILFORD HAVEN-ABERDULAI - MATERIALS	2	43,371,103	(4,121,154)	39,249,949
TCC/00717-1-09	M. HAVEN-ABERDULAI-COMPENSATION	3	6,422,633	7,132,668	13,555,301
TCC/00717-1-05	M.HAVEN-ABERDULAI-PROJECT SERVICES	5	6,797,358	1,667,128	8,464,486
TCC/00717-1-15	M.HAVEN-ABERDULAI - INSPECTION SERVICES	6	7,759,125	(179,146)	7,579,979
TCC/00717-1-04	M.HAVEN-ABERDULAI-NGT STAFF COSTS	4	2,379,177	2,692,598	5,071,775
TCC/00717-1-16	MILFORD HAVEN-ABERDULAI - EASEMENTS	3	3,351,027	866,692	4,217,719
TCC/00717-1-08	MILFORD HAVEN-ABERDULAI - MISC	11	2,599,839	558,830	3,158,669
TCC/00717-1-23	M. HAVEN-ABERDULAI - PUBLIC RELATIONS	7	1,076,442	589,433	1,665,876
TCC/00717-1-07	M. HAVEN-ABERDULAI-LAND AGENTS	3	531,903	998,943	1,530,846
TCC/00717-1-12	MILFORD HAVEN-ABERDULAI – OLI	11	262,473	970,140	1,232,613
TCC/00717-1-25	M.HAVEN-ABERDULAI-OFFSHORE STUDY	8	1,211,679	7,164	1,218,843
TCC/00717-1-24	M. HAVEN-ABERDULAI - LEGAL (SOLICITOR)	3	268,920	731,463	1,000,383
TCC/00717-1-35	ENHANCEMENT COSTS	3	-	515,000	515,000
TCC/00717-1-34	CPO ENQUIRIES	11	443,046	1,044	444,090
TCC/00717-1-18	MILFORD HAVEN-ABERDULAI-LAND PURCHASE	3	310,000	-	310,000
TCC/00717-1-36	COMMUNITY GAIN	3	155,629	74,031	229,661
TCC/00717-1-02	MILFORD HAVEN-ABERDULAI - FEASIBILITY	8	210,925	-	210,925
TCC/00717-1-13	MILFORD HAVEN-ABERDULAI - NETWORK COSTS	11	79,408	49,583	128,991
TCC/00717-1-22	M. HAVEN-ABERDULAI-AGI WORKS-BLOCK VALV	11	25,281	-	25,281
TCC/00717-1-21	M. HAVEN-ABERDULAI-AGI WORKS-ABERDULAI	11	1,075	12,889	13,964
TCC/00717-1-06	MILFORD HAVEN-ABERDULAI - QRA	11	7,551	-	7,551
TCC/00717-1-28	OFFSHORE FEAS. TO AVONMOUTH	11	3,500	-	3,500
Total			278,919,317	36,129,156	315,048,473

3.54 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 3**. £30,712,558 (85%) of the total post October 2007 costs of £36,129,156 have been agreed to invoice or other supporting documentation.

Contract arrangements

3.55 Our review of contract documentation in relation to the Milford Haven to Aberdulais main works raised no areas of concern.

⁹ The post October 2007 costs for materials (WBS element TCC/00717-1-10) are negative as a result of the majority of expenditure for materials being incurred pre October 2007 (when NGGT bought the materials to build the pipeline) and then post October 2007 there was a transfer of nearly £6 million of surplus stock out of the sub-project.

¹⁰ See Appendix 11 for a description of the type of costs included within each WBS element.

Directly incurred costs

- 3.56 Our review of the post October 2007 direct costs that relate to the Milford Haven to Aberdulais sub-project over £250,000 raised no areas of concern.

Indirectly incurred costs

- 3.57 As set out in **Appendix 3**, during our review, we identified four transactions totalling £(1,715,388) which related to the transfer of connection costs to separate projects outside of the MH pipeline project. NGGT explained that these connection costs are for separately sanctioned projects to deliver four separate connections (two entry connections being Dragon and South Hook and two exit connections being Murco and Pembroke). These costs are recharged directly to the client as per the relevant agreement. NGGT confirmed that all works on these connection projects are complete and the relevant costs have been recovered from the associated customer.
- 3.58 Our review of the post October 2007 indirect costs that relate to the Milford Haven to Aberdulais sub-project over £250,000 raised no areas of concern.

Pre 2007 Expenditure

- 3.59 As noted at paragraph 3.9 above, expenditure incurred prior to October 2007 was recorded in the old accounting system and therefore details are not available at a transactional level. As a result, we asked NGGT to provide an explanation of the pre October 2007 costs included within each WBS element. Descriptions of the WBS Elements are at **Appendix 11**.

Felindre to Brecon pipeline

3.60 A summary of the costs incurred in relation to this sub-project is set out below¹¹:

Felindre to Brecon Pipeline

WBS Element	WBS Description	Ref ¹²	Pre October 2007 £	Post October 2007 £	Total £
TCC/03114-1-01	MAIN WORKS PIPELINE-MWC1	1	177,121,119	63,189,203	240,310,322
TCC/03114-1-06	MATERIALS	2	39,831,530	(5,236,817)	34,594,713
TCC/03114-1-11	COMPENSATION	3	3,040,250	6,572,805	9,613,055
TCC/03114-1-09	INSPECTION SERVICES	6	7,115,151	2,219,201	9,334,352
TCC/03114-1-02	PROJECT SERVICES-PSC1	5	4,200,958	2,257,302	6,458,260
TCC/03114-1-10	EASEMENTS	3	4,372,749	389,739	4,762,488
TCC/03114-1-16	MISCELLANEOUS	11	2,227,479	1,285,953	3,513,432
TCC/03114-1-14	NG STAFF COSTS	4	993,252	783,383	1,776,635
TCC/03114-1-13	LEGAL SERVICES	3	810,757	415,319	1,226,077
TCC/03114-1-03	LAND AGENTS-LAC1	3	375,973	776,948	1,152,922
TCC/03114-1-12	COMMUNITY RELATIONS	3	644,836	358,431	1,003,267
TCC/03114-1-18	ENHANCEMENT COSTS	3	-	769,770	769,770
TCC/03114-1-15	FEASIBILITY COSTS	8	678,197	-	678,197
TCC/03114-1-17	CPO ENQUIRIES	3	200,112	58,401	258,514
TCC/03114-1-19	COMMUNITY GAIN	3	5,500	111,818	117,318
TCC/03114-1-08	NETWORK COSTS	11	16,200	-	16,200
TCC/03114-1-07	OLI	11	-	(45,789)	(45,789)
Total			241,634,065	73,905,668	315,539,732

3.61 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 4**. £69,001,499 (93%) of the total post October 2007 costs of £73,905,668 have been agreed to invoice or other supporting documentation.

Contract arrangements

3.62 Our review of contract documentation in relation to the Felindre to Brecon main works raised no areas of concern.

Directly incurred costs

3.63 Our review of the post October 2007 direct costs that relate to the Felindre to Brecon sub-project over £250,000 raised no areas of concern.

¹¹ The post October 2007 costs for materials (WBS element TCC/03114-1-06) are negative as a result of the majority of expenditure for materials being incurred pre October 2007 (when NGGT bought the materials to build the pipeline) and then post October 2007 there was a transfer of over £4 million of surplus stock out of the sub-project plus accounting adjustments of a further £0.5 million.

¹² See Appendix 11 for a description of the type of costs included within each WBS element.

Indirectly incurred costs

- 3.64 Our review of the post October 2007 indirect costs that relate to the Felindre to Brecon sub-project over £250,000 raised no areas of concern.

Pre 2007 Expenditure

- 3.65 As noted at paragraph 3.9 above, expenditure incurred prior to October 2007 was recorded in the old accounting system and therefore details are not available at a transactional level. As a result, we asked NGGT to provide an explanation of the pre October 2007 costs included within each WBS element. Descriptions of the WBS elements are at **Appendix 11**.

Brecon to Tirley Pipeline

- 3.66 A summary of the costs incurred in relation to this sub-project is set out below:

Brecon to Tirley Pipeline

WBS Element	WBS Description	Ref ¹³	Pre October 2007 £	Post October 2007 £	Total £
TCC/03113-1-09	MAIN WORKS PIPELINE-MWC2	1	103,706,392	43,938,671	147,645,063
TCC/03113-1-01	MATERIALS	2	44,476,099	(85,941)	44,390,158
TCC/03113-1-05	EASEMENTS	3	6,381,766	2,758,801	9,140,567
TCC/03113-1-04	INSPECTION SERVICES	6	2,883,961	1,584,204	4,468,165
TCC/03113-1-10	PROJECT SERVICE-PSC2	5	2,210,265	1,941,009	4,151,274
TCC/03113-1-16	MISCELLANEOUS	11	1,545,003	566,261	2,111,264
TCC/03113-1-14	STAFF COSTS	4	1,048,624	929,677	1,978,301
TCC/03113-1-08	LEGAL SERVICES	3	318,695	956,881	1,275,576
TCC/03113-1-18	ENHANCEMENT COSTS	3	-	1,231,552	1,231,552
TCC/03113-1-03	NETWORK COSTS	11	518,864	249,071	767,935
TCC/03113-1-07	COMMUNITY RELATIONS	3	335,662	318,465	654,127
TCC/03113-1-15	FEASIBILITY COSTS	8	569,650	-	569,650
TCC/03113-1-11	LAND AGENTS-LAC2	3	284,057	237,804	521,861
TCC/03113-1-17	CPO ENQUIRIES	3	416,760	100,440	517,200
TCC/03113-1-12	LAND PURCHASE-LP2	3	-	347,152	347,152
TCC/03113-1-19	COMMUNITY GAIN	3	21,513	61,541	83,054
TCC/03113-1-13	AGI WORKS-AGI2	11	74,378	3,419	77,797
TCC/03113-1-06	COMPENSATION	3	63,700	-	63,700
TCC/03113-1-02	OLI	11	46,732	4,338	51,070
Total			164,902,121	55,143,344	220,045,465

- 3.67 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 5**. £48,141,327 (87%) of the total post October 2007 costs of £55,143,344 have been agreed to invoice or other supporting documentation.

¹³ See Appendix 11 for a description of the type of costs included within each WBS element.

Contract arrangements

- 3.68 Our review of contract documentation in relation to the Brecon to Tirley main works raised no areas of concern.

Directly incurred costs

- 3.69 As set out in **Appendix 5**, during our review, we identified a transaction for £(310,437) which related to the transfer of costs to a separate project outside of the MH pipeline project. NGGT explained that the costs are separate to the MH pipeline project as they are for the materials, procured through Contractor C, for a separately sanctioned scheme associated with a minimum connection built for RWE (Pembroke Power Station). The RWE scheme was managed by the same team as the MH pipeline project.

- 3.70 Our review of the post October 2007 direct costs that relate to the Brecon to Tirley sub-project over £250,000 raised no areas of concern.

Indirectly incurred costs

- 3.71 Our review of the post October 2007 indirect costs that relate to the Brecon to Tirley sub-project over £250,000 raised no areas of concern.

Pre 2007 Expenditure

- 3.72 As noted at paragraph 3.9 above, expenditure incurred prior to October 2007 was recorded in the old accounting system and therefore details are not available at a transactional level. As a result, we asked NGGT to provide an explanation of the pre October 2007 costs included within each WBS element. Descriptions of the WBS elements are at **Appendix 11**.

Wormington Compressor Station

- 3.73 The Compressors at Wormington and Churchover were tendered & awarded as one contract to Contractor A.
- 3.74 A summary of the costs incurred for the Wormington Compressor Station is set out below:

Wormington Compressor Station

WBS Element	WBS Description	Ref ¹⁴	Pre October 2007 £	Post October 2007 £	Total £
TCC/03130-1-02	MAIN WORKS CONTRACT	1	19,058,321	28,830,304	47,888,625
TCC/03130-1-09	ELECTRICITY CONNECTIONS	9	4,463,079	2,257,414	6,720,493
TCC/03130-1-03	PROJECT SERVICES	5	998,426	687,722	1,686,148
TCC/03130-1-10	NG COSTS	4	568,355	275,659	844,014
TCC/03130-1-26	MINOR ORDERS	11	-	269,433	269,433
TCC/03130-1-06	COMMUNICATIONS	7	47,117	35,905	83,022
TCC/03130-1-01	FEASIBILITY STUDIES	8	76,521	-	76,521
TCC/03130-1-07	PROJECT MANAGER LIAISON	11	5,425	7,364	12,789
TCC/03130-1-22	INCIDENT INVESTIGATION COSTS	11	-	6,387	6,387
TCC/03130-1-15	UPS & ELECTRICAL	11	325,548	(325,548)	-
	Total costs as provided by NGGT		25,542,792	32,044,639	57,587,432
TCC/20045	Wormington incident costs ¹⁵		-	6,662,904	6,662,904
	Total costs amended for Wormington incident		25,542,792	38,707,543	64,250,336

- 3.75 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 6**. £29,416,486 (92%) of the total post October 2007 costs provided by NGGT of £32,044,639 have been agreed to invoice or other supporting documentation.

Contract arrangements

- 3.76 Our review of contract documentation in relation to the Wormington Compressor Station main works raised no areas of concern.

Directly incurred costs

- 3.77 Our review of the post October 2007 direct costs that relate to the Wormington Compressor Station sub-project over £250,000 raised no areas of concern.

Indirectly incurred costs

- 3.78 Our review of the post October 2007 indirect costs that relate to the Wormington Compressor Station sub-project over £250,000 raised no areas of concern.

¹⁴ See Appendix 11 for a description of the type of costs included within each WBS element.

¹⁵ See paragraph 3.108

Pre 2007 Expenditure

- 3.79 As noted at paragraph 3.9 above, expenditure incurred prior to October 2007 was recorded in the old accounting system and therefore details are not available at a transactional level. As a result, we asked NGGT to provide an explanation of the pre October 2007 costs included within each WBS element. Descriptions of the WBS elements are at **Appendix 11**.

Churchover Compressor Station

- 3.80 A summary of the costs incurred for the Churchover Compressor Station is set out below:

Churchover Compressor Station

WBS Element	WBS Description	Ref ¹⁶	Pre October 2007 £	Post October 2007 £	Total £
TCC/03131-1-02	MAIN WORKS CONTRACT	1	18,851,193	15,065,078	33,916,271
TCC/03131-1-09	ELECTRICITY CONNECTIONS	9	3,697,660	404,281	4,101,941
TCC/03131-1-03	PROJECT SERVICES	5	906,324	543,055	1,449,379
TCC/03131-1-10	NG COSTS	4	282,044	890,725	1,172,769
TCC/03131-1-22	MINOR ORDERS	11	-	219,638	219,638
TCC/03131-1-01	FEASIBILITY STUDIES	8	133,627	-	133,627
TCC/03131-1-06	COMMUNICATIONS	7	25,107	70,677	95,784
TCC/03131-1-07	PROJECT MANAGER LIAISON	11	5,148	1,763	6,911
TCC/03131-1-05	LAND AQUISITION	3	380	(380)	-
TCC/03131-1-08	CONTAMINATED LAND	11	8	(8)	-
TCC/03131-1-11	COMPRESSOR	11	254	(254)	-
Total			23,901,744	17,194,574	41,096,318

- 3.81 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 7**. £15,792,089 (92%) of the total post October 2007 costs of £17,194,575 have been agreed to invoice or other supporting documentation.

Contract arrangements

- 3.82 Our review of contract documentation in relation to the Churchover Compressor Station main works raised no areas of concern.

Directly incurred costs

- 3.83 Our review of the post October 2007 direct costs that relate to the Churchover Compressor Station sub-project over £250,000 raised no areas of concern.

Indirectly incurred costs

- 3.84 Our review of post October 2007 indirect costs that relate to the Churchover Compressor Station sub-project over £250,000 raised no areas of concern.

¹⁶ See Appendix 11 for a description of the type of costs included within each WBS element.

Pre 2007 Expenditure

- 3.85 As noted at paragraph 3.9 above, expenditure incurred prior to October 2007 was recorded in the old accounting system and therefore details are not available at a transactional level. As a result, we asked NGGT to provide an explanation of the pre October 2007 costs included within each WBS element. Descriptions of the WBS elements are at **Appendix 11**.

Felindre Compressor Station

- 3.86 A summary of the costs incurred in relation to this sub-project is set out below:

Felindre Compressor Station

WBS Element	WBS Description	Ref ¹⁷	Pre October 2007 £	Post October 2007 £	Total £
TCC/03129-1-02	MAIN WORKS CONTRACT	1	25,244,296	50,300,163	75,544,459
TCC/03129-1-03	PROJECT SERVICES	5	1,602,788	1,758,333	3,361,121
TCC/03129-1-09	ELECTRICITY CONNECTIONS	9	365,825	2,774,138	3,139,963
TCC/03129-1-10	NG COSTS	4	579,708	957,524	1,537,232
TCC/03129-1-01	FEASIBILITY STUDIES	8	648,019	446,719	1,094,738
TCC/03129-1-07	PROJECT MANAGER LIAISON	11	139,065	97,202	236,267
TCC/03129-1-04	PLANNING CONSENTS	3	102,323	-	102,323
TCC/03129-1-16	CONTROL SYSTEM	11	-	88,604	88,604
TCC/03129-1-06	COMMUNICATIONS	7	15,992	21,020	37,013
TCC/03129-1-15	CABS & BUILDINGS	11	-	14,500	14,500
TCC/03129-1-17	COMMUNITY GAINS	3	10,000	1,072	11,072
TCC/03129-1-05	LAND ACQUISITION	3	1,135	938	2,072
Total			28,709,151	56,460,213	85,169,364

- 3.87 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 8**. £52,114,770 (92%) of the total post October 2007 costs of £56,460,213 have been agreed to invoice or other supporting documentation.

Contract arrangements

- 3.88 Our review of contract documentation in relation to the Felindre Compressor Station main works raised no areas of concern.

Directly incurred costs

- 3.89 Our review of the post October 2007 direct costs that relate to the Felindre Compressor Station sub-project over £250,000 raised no areas of concern.

¹⁷ See Appendix 11 for a description of the type of costs included within each WBS element.

Indirectly incurred costs

- 3.90 Our review of the post October 2007 indirect costs that relate to the Felindre Compressor Station sub-project over £250,000 raised no areas of concern.

Pre 2007 Expenditure

- 3.91 As noted at paragraph 3.9 above, expenditure incurred prior to October 2007 was recorded in the old accounting system and therefore details are not available at a transactional level. As a result, we have asked NGGT to provide an explanation of the pre October 2007 costs included within each WBS element. Descriptions of the WBS elements are at **Appendix 11**.

Tirley PRI

- 3.92 A summary of the costs incurred (all of which were incurred post October 2007) in relation to this sub-project is set out below:

Tirley PRI

WBS Element	WBS Description	Ref ¹⁸	Pre October 2007 £	Post October 2007 £	Total £
TCC/20502-1-10	PAC2030 Main Works PRI	1	-	51,820,671	51,820,671
TCC/20502-1-27	Commissioning Gas Flow	10	-	5,065,670	5,065,670
TCC/20502-1-11	PAC2030 Project Services	5	-	3,589,091	3,589,091
TCC/20502-1-16	Main Works Felindre	1	-	2,005,819	2,005,819
TCC/20502-1-18	NG Costs Felindre	4	-	1,982,550	1,982,550
TCC/20502-1-14	PAC2030 NG Staff costs	4	-	1,750,071	1,750,071
TCC/20502-1-21	Project Services Worm/Church	5	-	1,452,898	1,452,898
TCC/20502-1-02	PAC2030 Materials	2	-	1,393,833	1,393,833
TCC/20502-1-20	Main Works Worm/Church	1	-	1,118,155	1,118,155
TCC/20502-1-17	Project Services Felindre	5	-	1,069,624	1,069,624
TCC/20502-1-13	PAC2030 Land Purchase	3	-	984,844	984,844
TCC/20502-1-05	PAC2030 Inspection Services	6	-	787,999	787,999
TCC/20502-1-22	NG Costs Worm/Church	4	-	753,231	753,231
TCC/20502-1-19	Minor Orders Felindre	11	-	452,835	452,835
TCC/20502-1-09	PAC2030 Legal Services	3	-	346,097	346,097
TCC/20502-1-04	PAC2030 Network Costs (MGD)	11	-	343,193	343,193
TCC/20502-1-08	PAC2030 Community Relations	7	-	308,616	308,616
TCC/20502-1-23	Minor Orders Worm/Church	11	-	218,945	218,945
TCC/20502-1-15	PAC2030 Miscellaneous	11	-	111,603	111,603
TCC/20502-1-24	COMMUNITY GAIN	3	-	77,618	77,618
TCC/20502-1-06	PAC2030 Easements	3	-	36,906	36,906
TCC/20502-1-12	PAC2030 Land Agents	3	-	22,249	22,249
TCC/20502-1-07	PAC2030 Compensation	3	-	17,283	17,283
TCC/20502-1-03	PAC2030 ILI	11	-	2,954	2,954
Total costs as provided by NGGT			-	75,712,756	75,712,756
REDACTED CNI costs ¹⁹			-	5,380,425	5,380,425
Total costs amended for REDACTED CNI			-	81,093,181	81,093,181

¹⁸ See Appendix 11 for a description of the type of costs included within each WBS element.

¹⁹ See paragraph 3.111 below

- 3.93 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 9**. £60,273,623 (80%) of the total costs provided by NGGT of £75,712,756 have been agreed to invoice or other supporting documentation.

Contract arrangements

- 3.94 Our review of contract documentation in relation to the Tirley PRI main works raised no areas of concern.

Directly incurred costs

- 3.95 Our review of direct costs that relate to the Tirley PRI sub-project over £250,000 raised no areas of concern.

Indirectly incurred costs

- 3.96 Our review of indirect costs that relate to the Tirley PRI sub-project over £250,000 raised no areas of concern.

WBS Elements

- 3.97 Descriptions of the WBS elements in relation to the Tirley PRI scheme are at **Appendix 11**.

Environmental, Monitoring and Aftercare

- 3.98 A summary of the costs incurred (all of which were incurred post October 2007) in relation to this sub-project is set out below:

Environmental Monitoring and Aftercare

WBS Element	WBS Description	Ref ²⁰	Pre October 2007 £	Post October 2007 £	Total £
TCC/20503-1-02	PAC2149 Main Works Environmental	1	-	13,049,965	13,049,965
TCC/20503-1-07	PAC2149 NG Staff Costs	4	-	258,495	258,495
TCC/20503-1-06	PAC2149 Inspection Services	6	-	105,228	105,228
TCC/20503-1-09	PAC2149 Community Relations	7	-	36,894	36,894
Total			-	13,450,581	13,450,581

- 3.99 Our detailed testing to this sub-project (including details of the suppliers) is set out in **Appendix 10**. £7,789,004 (58%) of the total costs of £13,450,581 have been agreed to invoice or other supporting documentation.

²⁰ See Appendix 11 for a description of the type of costs included within each WBS element.

Contract arrangements

- 3.100 The EMA work differs to the other sub-projects where physical assets are being built by a main works contractor and has been managed by a Project Services company. Our review of contract documentation in relation to the EMA work raised no areas of concern.

Directly incurred costs

- 3.101 Our review of direct costs that relate to the Environmental, Monitoring and Aftercare sub-project over £250,000 raised no areas of concern.

Indirectly incurred costs

- 3.102 Our review of indirect costs that relate to the Environmental, Monitoring and Aftercare sub-project over £250,000 raised no areas of concern.

WBS Elements

- 3.103 Descriptions of the WBS elements in relation to the Environmental, Monitoring and Aftercare project are at **Appendix 11**.

COSTS NOT INCLUDED IN THE MH PIPELINE

- 3.104 As noted above in paragraph 3.44 costs in relation to the Wormington Incident and CNI costs are not included in the cost information reported to Ofgem for the MH pipeline project. Detailed testing of this expenditure is outside the scope of this review. However, the background to these costs is outlined below in paragraphs 3.105 to 3.112.

Wormington Incident

- 3.105 During the 'gassing up' of the Wormington Compressor Station (see paragraphs 3.73 to 3.79), following significant pipework modifications to the compressor station pipework, a brittle fracture in the pipework was experienced. The incident was reported to the HSE and an Incident Investigation team established to determine the root cause of the fracture.
- 3.106 As the Wormington Incident was not expected and the costs associated with the investigation, rebuild and programme extensions for Wormington and Churchover were not part of the approved capital plan for the MH project, NGGT have accounted for these costs outside of the MH project. A separate project code was set up by NGGT to enable the costs of the Wormington incident to be recorded separately and recovered from insurers. This is a matter for discussion between Ofgem and NGGT.

- 3.107 NGGT have provided us with the SAP data for the Wormington Incident, although no detailed review has been undertaken in relation to these costs. A summary of the total costs incurred of £12.2 million is set out below:

Wormington Incident

WBS Element	WBS Description	Total £
TCC/20045-1-01	INCIDENT CONTRACTOR A COSTS-WORMINGTON REBUILD	5,158,911
TCC/20044-1-01	INCIDENT CONTRACTOR A COSTS-C/OVER PROG DEFERRMT	3,676,632
TCC/20044-1-04	INCIDENT - PROJECT SERVICES COSTS	1,483,512
TCC/20045-1-03	INCIDENT - PROJECT SERVICES COSTS	725,719
TCO/20049-1-01	INCIDENT INVESTIGATION COSTS	433,448
TCC/20045-1-04	INCIDENT - NG PROJECT TEAM COSTS	370,929
TCC/20044-1-03	INCIDENT NG SITE STAFF COSTS - C/OVER	154,255
TCC/20045-1-06	INCIDENT WORMINGTON CSR DELAYS	120,000
TCC/20045-1-05	INCIDENT NG SITE STAFF COSTS - WORMGTN	39,498
Total		12,162,904

- 3.108 On closure of the Wormington incident project NGGT have received £5.5 million from insurers against the total costs of £12.2 million. NGGT were pursuing a legal claim in relation to the remainder of the costs. However, following legal advice a decision was taken by NGGT and the insurers not to pursue any further recovery of costs.

CNI costs

- 3.109 Five sites²¹ included in the MH pipeline project have been designated as CNI and have incurred expenditure which has been allocated to CNI cost codes. For all but REDACTED, the CNI work was carried out after the originally planned main works on the MH pipeline project was completed. For REDACTED, the CNI works were undertaken at the same time as the main works and therefore there are costs (such as security costs) which have been transferred from the REDACTED sub-project code to the CNI code. This is discussed in further detail below.

²¹ REDACTED.

REDACTED

- 3.110 The REDACTED was initially due to be constructed at REDACTED and included an estimate of £ REDACTED for security costs which entailed a basic metal fence around the site. During the building of the pipeline the decision was made to build REDACTED (as a result of planning permission being rejected at the original REDACTED site). The REDACTED is approximately five times larger than the planned REDACTED development at REDACTED. Furthermore the REDACTED was classified as an area of CNI. As a designated CNI site the REDACTED was required to have a number of additional security measures built into the development. This included REDACTED. A contract to carry out works in respect of the REDACTED CNI was awarded to Contractor C on 17 June 2011.
- 3.111 Due to the time pressures of the project the CNI works at REDACTED were undertaken at the same time as the main works, with the overall costs of the REDACTED CNI project being £5.38 million. A summary of the costs incurred in relation to the REDACTED CNI is set out below:

CNI REDACTED

WBS Element	WBS Description	Total £
TCC/20257-1-01	MAIN WORKS CONTRACT - CIVILS	2,771,918
TCC/20257-1-02	MAIN WORKS CONTRACT - TECHNICAL	1,202,061
TCC/20257-1-03	NG STAFF COSTS	1,115,465
TCC/20257-1-04	PROJECT SERVICES	217,455
TCC/20257-1-05	MINOR ORDERS	67,768
TCC/20257-1-09	OPERATIONAL DRAWINGS	5,758
Total		5,380,425

- 3.112 Owing to the change in scope between the initial REDACTED and the eventual development at REDACTED, NGGT did not incur any of the originally estimated security costs of £152,228 for the REDACTED PRI project and therefore no related costs have been included in the MH pipeline project. The much larger costs of the REDACTED CNI project of £5.38 million (including security) have not been included in the SAP data, or the cost information reported to Ofgem, for the MH pipeline project.

OTHER ITEMS

Settlement agreements

- 3.113 Ofgem advised us that 'settlement agreements' may have been signed in relation to the contracts. On review of the SAP data for the Wormington and Churchover Compressor projects we identified a number of entries with the narrative 'CONTRACTOR A settle'. We have discussed these with NGGT staff who advised these were in relation to month end accruals and have corresponding equal reversing entries subsequently reversed. This is consistent with our review of the SAP data.
- 3.114 No costs have been identified through our review of transactions over £250,000 and analysis of SAP data that relate to settlement agreements and NGGT have confirmed that none have been negotiated for any part of the MH pipeline project.

Prepayments and accruals

- 3.115 During our detailed testing (see **Appendix 2**) we identified a number of prepayments and accruals in existence at 31 March 2014 (ie the 2014 financial year end). Included within the March 2014 transactions for the eight sub-projects, are prepayments (ie a reduction to costs) totalling £1,360,342 and accruals (ie an increase to costs) totalling £2,504,260. As a result, there are net costs of £1,143,918 (0.3% of the total post October 2007 costs) included within the MH pipeline project costs reported by NGGT.
- 3.116 We have not performed any further testing to identify whether these amounts have been released in the 2015 financial year (other than set out in the appendices). However, we asked NGGT to provide the total costs incurred to date for FY2014/2015 (P1 to P10), a summary of which is set out below:

FY 2014/2015 - P1 - P10 costs

Sub-project	WBS code	Total costs £
Milford Haven to Aberdulais Pipeline	TCC/00717	(25,303)
Felindre to Brecon Pipeline	TCC/03114	(83)
Brecon to Tirley Pipeline	TCC/03113	1,336
Wormington Compressor Station	TCC/03130	(100,000)
Churchover Compressor Station	TCC/03131	100,000
Felindre Compressor Station	TCC/03129	525
Tirley PRI	TCC/20502	168,149
Environmental Monitoring and Aftercare	TCC/20503	539,392
		684,017

SUMMARY OF FINDINGS

3.117 The findings of our detailed testing are summarised by project below:

SAP data	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs Post October 2007 tested	Total costs £	% of total costs tested
Milford Haven to Aberdulais Pipeline	36,129,158	31,872,799	(1,160,241)	30,712,558	85%	315,048,473	10%
Felindre to Brecon Pipeline	73,905,668	66,330,457	2,671,043	69,001,499	93%	315,539,732	22%
Brecon to Tirley Pipeline	55,143,345	46,168,974	1,972,353	48,141,327	87%	220,045,465	22%
Wormington Compressor Station	32,044,640	35,551,133	(6,134,647)	29,416,486	92%	57,587,432	51%
Churchover Compressor Station	17,194,575	14,550,402	1,241,687	15,792,089	92%	41,096,318	38%
Felindre Compressor Station	56,460,213	51,150,245	964,525	52,114,770	92%	85,169,364	61%
Tirley PRI	75,712,755	37,392,493	22,881,131	60,273,623	80%	75,712,756	80%
Environmental Monitoring and Aftercare	13,450,582	1,240,738	6,548,266	7,789,004	58%	13,450,581	58%
Total	360,040,936	284,257,240	28,984,117	313,241,357	87%	1,123,650,122	28%

IMPACT OF COST ASSESSMENT REVIEW

3.118 Following our review of the cost information, as detailed above, we consider that there are no amendments required to the RRP figures provided to Ofgem with regard to the information reviewed with the one possible exception below.

3.119 NGGT clarified that expenditure in relation to the Wormington incident and CNI costs are not included in the MH pipeline project SAP data and hence the cost information reported to Ofgem as these are considered separate projects to the MH pipeline. This is a matter for discussion between Ofgem and NGGT.

1 RECONCILIATION BETWEEN COSTS REPORTED TO OFGEM AND THE ACTUAL SPEND

Reconciliation - SAP Data relating to the MH pipeline project as provided by NGGT (ie excluding Wormington incident and REDACTED CNI costs) to RRP Data

SAP data- Year ended 31 March	2005 to 2007			2008	2009	2010	2011	2012	2013	2014	Total
	£m			£m	£m	£m	£m	£m	£m	£m	£m
Milford Haven to Aberdulais Pipeline	230.15			71.13	4.42	6.63	3.02	(0.11)	(0.21)	0.02	315.05
Felindre to Brecon Pipeline	92.85			201.00	12.26	6.60	1.88	0.29	0.62	0.05	315.54
Brecon to Tirley Pipeline	91.45			115.99	21.13	9.52	(17.71)	(0.49)	0.12	0.05	220.05
Wormington Compressor Station	20.21			24.57	13.41	(0.16)	1.25	0.44	0.52	(2.65)	57.59
Churchover Compressor Station	18.41			15.64	0.69	3.57	1.13	(0.97)	0.01	2.62	41.10
Felindre Compressor Station	26.20			43.27	14.07	2.06	(0.50)	0.06	0.00	(0.00)	85.17
Tirley PRI				-	-	-	30.06	23.27	20.44	1.95	75.71
Environmental Monitoring and Aftercare				-	-	-	10.12	1.10	1.39	0.85	13.45
Total	479.26			471.60	65.98	28.22	29.25	23.57	22.88	2.88	1,123.65
RRP	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
RRP (pipeline , compressors and EMA)	5.65	123.17	350.44	471.60	65.98	28.22	29.25	23.09	22.88	2.88	1,123.16
Total RRP 2005 to 2007	479.26										
Variance between SAP and RRP data	0.00			0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.49

Reconciliation - SAP Data (including Wormington incident and REDACTED CNI costs) to RRP Data

SAP data	2005 to 2007			2008	2009	2010	2011	2012	2013	2014	Total
	£m			£m	£m	£m	£m	£m	£m	£m	£m
Milford Haven to Aberdulais Pipeline	230.15			71.13	4.42	6.63	3.02	(0.11)	(0.21)	0.02	315.05
Felindre to Brecon Pipeline	92.85			201.00	12.26	6.60	1.88	0.29	0.62	0.05	315.54
Brecon to Tirley Pipeline	91.45			115.99	21.13	9.52	(17.71)	(0.49)	0.12	0.05	220.05
Wormington Compressor Station (including Wormington incident costs ²²)	20.21			24.57	21.43	3.64	1.40	0.64	0.52	(8.15)	64.25
Churchover Compressor Station	18.41			15.64	0.69	3.57	1.13	(0.97)	0.01	2.62	41.10
Felindre Compressor Station	26.20			43.27	14.07	2.06	(0.50)	0.06	0.00	(0.00)	85.17
Tirley PRI (REDACTED)				-	-	0.06	30.06	23.49	25.27	2.21	81.09
Environmental Monitoring and Aftercare				-	-	-	10.12	1.10	1.39	0.85	13.45
Total	479.26			471.60	74.00	32.07	29.40	24.00	27.72	(2.36)	1,135.69
RRP	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
RRP (pipeline, compressors and EMA)	5.65	123.17	350.44	471.60	65.98	28.22	29.25	23.09	22.88	2.88	1,123.16
Total RRP 2005 to 2007	479.26										
Variance between SAP and RRP data	0.00			0.00	8.02	3.85	0.15	0.91	4.84	(5.24)	12.53

²² The insurance claim proceeds of £5.5 million have been included as a negative balance in the 2014 costs.

2 COSTS REVIEW

MILFORD HAVEN TO ABERDULAIS

- 2.1 The cost template includes an amount of £36,129,156 (paragraph 3.53) in relation to expenditure incurred post October 2007 for the Milford Haven to Aberdulaish section of pipeline. A breakdown by WBS element is set out below, along with the amounts tested²³ during our review²⁴:

Milford Haven to Aberdulaish Pipeline

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/00717-1-03	MILFORD HAVEN-ABERDULAIH-MAIN WORKS	23,561,852	24,052,555	(1,160,241)	22,892,314	97%
TCC/00717-1-09	M. HAVEN-ABERDULAIH-COMPENSATION	7,132,668	6,180,846	-	6,180,846	87%
TCC/00717-1-04	M.HAVEN-ABERDULAIH-NGT STAFF COSTS	2,692,598	-	-	-	-
TCC/00717-1-05	M.HAVEN-ABERDULAIH-PROJECT SERVICES	1,667,128	-	-	-	-
TCC/00717-1-07	M. HAVEN-ABERDULAIH-LAND AGENTS	998,943	-	-	-	-
TCC/00717-1-12	MILFORD HAVEN-ABERDULAIH - OLI	970,140	-	-	-	-
TCC/00717-1-16	MILFORD HAVEN-ABERDULAIH - EASEMENTS	866,692	739,398	-	739,398	85%
TCC/00717-1-24	M. HAVEN-ABERDULAIH - LEGAL (SOLICITOR)	731,463	400,000	-	400,000	55%
TCC/00717-1-23	M. HAVEN-ABERDULAIH - PUBLIC RELATIONS	589,433	-	-	-	-
TCC/00717-1-08	MILFORD HAVEN-ABERDULAIH - MISC	558,830	-	-	-	-
TCC/00717-1-35	ENHANCEMENT COSTS	515,000	500,000	-	500,000	97%
TCC/00717-1-36	COMMUNITY GAIN	74,031	-	-	-	-
TCC/00717-1-13	MILFORD HAVEN-ABERDULAIH - NETWORK COSTS	49,583	-	-	-	-
TCC/00717-1-21	M. HAVEN-ABERDULAIH-AGI WORKS-ABERDULAIH	12,889	-	-	-	-
TCC/00717-1-25	M.HAVEN-ABERDULAIH-OFFSHORE STUDY	7,164	-	-	-	-
TCC/00717-1-34	CPO ENQUIRIES	1,044	-	-	-	-
TCC/00717-1-15	M.HAVEN-ABERDULAIH - INSPECTION SERVICES	(179,146)	-	-	-	-
TCC/00717-1-10	MILFORD HAVEN-ABERDULAIH - MATERIALS	(4,121,154)	-	-	-	-
Total		36,129,158	31,872,799	(1,160,241)	30,712,558	85%

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.2 We obtained a schedule of invoices paid during the period 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.

²³ The amount tested in relation to indirect costs for main works is a negative value due to four transactions we have reviewed which relate to costs which are transferred out of the sub-project, as set out in Appendix 3 and explained at paragraph 3.57.

²⁴ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

- 2.3 In total, we reviewed 18 invoices over £250,000 (totalling £24,052,555²⁵) relating to the Milford Haven to Aberdulais pipeline main works contract with Contractor B and a further 18 invoices over £250,000 (totalling £8,080,846²⁶) in relation to compensation payments, easements, solicitors' fees and enhancement costs. These are included at **Appendix 3**.

Date of signed contract

- 2.4 The original contract is dated 27 May 2004, and is between NGGT and Contractor B.

Vouching to contract

- 2.5 We agreed all 36 invoices as being appropriately classified as expenditure under the Milford Haven to Aberdulais sub-project within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.6 We agreed all 36 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.7 We agreed all 36 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying SAP data.

Vouching to payment system

- 2.8 We agreed with Ofgem at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.9 We agreed all 36 invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all 36 invoices as being paid.

INDIRECT COSTS TESTING

- 2.10 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 (or below £(250,000) for credit balances) were selected for review.

²⁵As shown in Appendix 3, the SAP data for TCC/00717-1-03 (main works) includes credit balances which have been tested as part of testing of indirect costs and therefore the total amount of the invoices reviewed is greater than the total for the WBS element as per SAP.

²⁶As shown in Appendix 3, at 31 March 2014 a prepayment of £260,602 in relation to easements was made against this balance, reducing the balance included in SAP by this amount.

- 2.11 We have sought an explanation as to the nature of the transaction and confirmed the cost or credit to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

FELINDRE TO BRECON

- 2.12 The cost template includes an amount of £73,905,668 (paragraph 3.60) in relation to expenditure incurred post October 2007 for the Felindre to Brecon section of pipeline. A breakdown by WBS element is set out below, along with the amounts tested during our review²⁷:

Felindre to Brecon Pipeline

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/03114-1-01	MAIN WORKS PIPELINE-MWC1	63,189,203	62,280,252	500,000	62,780,252	99%
TCC/03114-1-11	COMPENSATION	6,572,805	2,589,149	545,000	3,134,149	48%
TCC/03114-1-02	PROJECT SERVICES-PSC1	2,257,302	872,180	-	872,180	39%
TCC/03114-1-09	INSPECTION SERVICES	2,219,201	-	1,244,863	1,244,863	56%
TCC/03114-1-16	MISCELLANEOUS	1,285,953	-	381,180	381,180	30%
TCC/03114-1-14	NG STAFF COSTS	783,383	-	-	-	-
TCC/03114-1-03	LAND AGENTS-LAC1	776,948	-	-	-	-
TCC/03114-1-18	ENHANCEMENT COSTS	769,770	-	-	-	-
TCC/03114-1-13	LEGAL SERVICES	415,319	284,330	-	284,330	68%
TCC/03114-1-10	EASEMENTS	389,739	304,545	-	304,545	78%
TCC/03114-1-12	COMMUNITY RELATIONS	358,431	-	-	-	-
TCC/03114-1-19	COMMUNITY GAIN	111,818	-	-	-	-
TCC/03114-1-17	CPO ENQUIRIES	58,401	-	-	-	-
TCC/03114-1-07	OLI	(45,789)	-	-	-	-
TCC/03114-1-06	MATERIALS	(5,236,817)	-	-	-	-
Total		73,905,668	66,330,457	2,671,042.66	69,001,499	93%

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.13 We obtained a schedule of invoices paid during the period 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.

²⁷ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

- 2.14 In total, we reviewed 20 purchase invoices over £250,000 (totalling £62,280,252) relating to the Felindre to Brecon pipeline main works contract with Contractor B and a further 12 invoices over £250,000 (totalling £4,672,007²⁸) in relation to project services, easements and legal fees . These are included at **Appendix 4**.

Date of signed contract

- 2.15 The original contract is dated 17 February 2005, and is between NGGT and Contractor B.

Vouching to contract

- 2.16 We agreed all 32 invoices as being appropriately classified as expenditure under the Felindre to Brecon sub-project within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.17 We agreed all 32 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.18 We agreed all 32 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying SAP data.

Vouching to payment system

- 2.19 We agreed with Ofgem at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.20 We agreed all 32 invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all 32 invoices as being paid.

INDIRECT COSTS TESTING

- 2.21 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 were selected for review.

²⁸As shown in Appendix 4, at 31 March 2014 prepayments of £195,455 in relation to easements and £426,347 in relation to compensation were made against this balance, reducing the balance included in SAP by these amounts.

- 2.22 We have sought an explanation as to the nature of the expenditure and confirmed the cost to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

OUTSTANDING ITEMS

- 2.23 As shown in **Appendix 4**, a further £3,007,149 (4% of the total post October 2007 costs) of expenditure has been verified as being paid and agreed to SAP. However, as at the date of this report, NGGT have not provided the invoice or any other supporting documentation for the four transactions (totalling £2,479,961) in relation to compensation payments and the one transaction (for £527,188) in relation to enhancement costs.

BRECON TO TIRLEY

- 2.24 The cost template includes an amount of £55,143,344 (paragraph 3.66) in relation to expenditure incurred post October 2007 for the Brecon to Tirley section of pipeline. A breakdown by WBS element is set out below, along with the amounts tested during our review²⁹:

Brecon to Tirley Pipeline

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/03113-1-09	MAIN WORKS PIPELINE-MWC2	43,938,671	42,500,289	679,301	43,179,590	98%
TCC/03113-1-05	EASEMENTS	2,758,801	2,668,685		2,668,685	97%
TCC/03113-1-10	PROJECT SERVICE-PSC2	1,941,009	-	695,066	695,066	36%
TCC/03113-1-04	INSPECTION SERVICES	1,584,204	-		-	-
TCC/03113-1-18	ENHANCEMENT COSTS	1,231,552	1,000,000	-	1,000,000	81%
TCC/03113-1-08	LEGAL SERVICES	956,881	-	330,743	330,743	35%
TCC/03113-1-14	STAFF COSTS	929,677	-	-	-	-
TCC/03113-1-16	MISCELLANEOUS	566,261	-	-	-	-
TCC/03113-1-12	LAND PURCHASE-LP2	347,152	-	267,243	267,243	77%
TCC/03113-1-07	COMMUNITY RELATIONS	318,465	-	-	-	-
TCC/03113-1-03	NETWORK COSTS	249,071	-	-	-	-
TCC/03113-1-11	LAND AGENTS-LAC2	237,804	-	-	-	-
TCC/03113-1-17	CPO ENQUIRIES	100,440	-	-	-	-
TCC/03113-1-19	COMMUNITY GAIN	61,541	-	-	-	-
TCC/03113-1-02	OLI	4,338	-	-	-	-
TCC/03113-1-13	AGI WORKS-AGI2	3,419	-	-	-	-
TCC/03113-1-01	MATERIALS	(85,941)	-	-	-	-
Total		55,143,345	46,168,974	1,972,353	48,141,327	87%

²⁹ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.25 We obtained a schedule of invoices paid during the period from 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.
- 2.26 In total, we reviewed 38 purchase invoices over £250,000 (totalling £63,010,725³⁰) relating to the Brecon to Tirley pipeline main works contract with Contractor C and a further eight invoices over £250,000 (totalling £4,225,816³¹) in relation to easements and enhancement costs. These are included at **Appendix 5**.

Date of signed contract

- 2.27 The original contract is dated 8 September 2005. As discussed in paragraph 3.29, this was later amended to include the revised requirements of the Tirley PRI and a supplementary contract was agreed on 5 January 2009. Both contracts are between NGGT and Contractor C.

Vouching to contract

- 2.28 We agreed all 46 invoices as being appropriately classified as expenditure under the Brecon to Tirley sub-project (or transferred to the Tirley PRI scheme as discussed in paragraph 3.39) within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.29 We agreed all 46 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.30 We agreed all 46 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying SAP data.

³⁰ As shown in Appendix 5, £19.5 million of these costs were transferred to the Tirley PRI scheme (as part of the £20.6 million reallocation discussed in paragraph 3.39) and a further £1,010,437 was transferred to other projects. Therefore only £42.5 million (as per the table above) of the total amount agreed of £63.0 million relates to the Brecon to Tirley pipeline.

³¹ As shown in Appendix 5, the SAP data for easements (TCC/03113-1-05) contained various credit balances in relation to transfers out of the WBS Element, along with a prepayment and an accrual as at 31 March 2014. As a result the amount included in SAP is less than the amount agreed to invoices.

Vouching to payment system

- 2.31 We agreed with Ofgem at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.32 We agreed all 46 invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all 46 invoices as being paid.

INDIRECT COSTS TESTING

- 2.33 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 (or below £(250,000) for credit balances) were selected for review.
- 2.34 We have sought an explanation as to the nature of the expenditure and confirmed the cost or credit to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

OUTSTANDING ITEMS

- 2.35 As shown in **Appendix 5**, as at the date of this report, supporting documentation in relation to legal costs of £376,868 (1% of the total post October 2007 costs) is currently outstanding.

WORMINGTON COMPRESSOR STATION

- 2.36 The cost template includes an amount of £32,044,639 (paragraph 3.74) in relation to expenditure incurred post October 2007 for the Wormington Compressor Station. A breakdown by WBS element is set out below, along with the amounts tested³² during our review³³:

Wormington Compressor Station

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/03130-1-02	MAIN WORKS CONTRACT	28,830,304	33,931,998	(6,134,647)	27,797,351	96%
TCC/03130-1-09	ELECTRICITY CONNECTIONS	2,257,414	1,619,135	-	1,619,135	72%
TCC/03130-1-03	PROJECT SERVICES	687,722	-	-	-	-
TCC/03130-1-10	NG COSTS	275,659	-	-	-	-
TCC/03130-1-26	MINOR ORDERS	269,433	-	-	-	-
TCC/03130-1-06	COMMUNICATIONS	35,905	-	-	-	-
TCC/03130-1-07	PROJECT MANAGER LIAISON	7,364	-	-	-	-
TCC/03130-1-22	INCIDENT INVESTIGATION COSTS	6,387	-	-	-	-
TCC/03130-1-15	UPS & ELECTRICAL	(325,548)	-	-	-	-
Total		32,044,640	35,551,133	(6,134,647)	29,416,486	92%

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.37 We obtained a schedule of invoices paid during the period from 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.
- 2.38 In total, we reviewed 31 purchase invoices over £250,000 (totalling £48,141,507³⁴) relating to the main works contract with Contractor A and a further two invoices over £250,000 (totalling £1,619,135) in relation to electricity connections. These are included at **Appendix 6**.

³² The amount tested in relation to indirect costs for the Wormington Compressor Station is a negative value as a result of costs transferred to the Wormington Incident project of £5.8 million and a transfer of costs of £2.6 million to the Churchover Compressor Station as a result of the reconciliation exercise carried out in January 2012 (see Appendix 6 and paragraph 3.38).

³³ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

³⁴ As shown in Appendix 6, all invoices in relation to the Contractor A contract for both the Wormington and Churchover Compressors have originally been posted to TCC/03130-1-02. Therefore the total of the invoices we have reviewed is for both the Wormington and Churchover projects. The SAP data therefore also includes credit balances for the transfer of costs (often being for 50% of the invoice cost) to the Churchover Compressor Station the total of which is set out in Appendices 6 and 7.

Date of signed contract

- 2.39 The Compressors at Wormington and Churchover were tendered & awarded as one contract to Contractor A on 12 September 2005.
- 2.40 The project as tendered was reported to Ofgem as a single project. NGGT have accounted for the two compressors under two different WBS codes (TCC/03130 for Wormington and TCC/03131 for Churchover). There are a number of transfers between these two codes. However, as these costs fall under the same contract we have not reviewed these transactions in detail other than to confirm the amount transferred between the two WBS codes.

Vouching to contract

- 2.41 We agreed all 33 invoices as being appropriately classified as expenditure under the Wormington Compressor Station sub-project (or transferred to the Churchover Compressor Station project) within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.42 We agreed all 33 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.43 We agreed all 33 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying SAP data.

Vouching to payment system

- 2.44 We agreed at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.45 We agreed all 33 invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all 33 invoices as being paid.

INDIRECT COSTS TESTING

- 2.46 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 (or below £(250,000) for credit balances) were selected for review.

- 2.47 We have sought an explanation as to the nature of the expenditure and confirmed the cost or credit to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

CHURCHOVER COMPRESSOR STATION

- 2.48 The cost template includes an amount of £17,194,575 (paragraph 3.80) in relation to expenditure incurred post October 2007 for the Churchover Compressor Station. A breakdown by WBS element is set out below, along with the amounts tested during our review³⁵:

Churchover Compressor Station

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/03131-1-02	MAIN WORKS CONTRACT	15,065,078	14,209,509	855,569	15,065,078	100%
TCC/03131-1-10	NG COSTS	890,725	-	-	-	-
TCC/03131-1-03	PROJECT SERVICES	543,055	-	386,118	386,118	71%
TCC/03131-1-09	ELECTRICITY CONNECTIONS	404,281	340,893	-	340,893	84%
TCC/03131-1-22	MINOR ORDERS	219,638	-	-	-	-
TCC/03131-1-06	COMMUNICATIONS	70,677	-	-	-	-
TCC/03131-1-07	PROJECT MANAGER LIAISON	1,763	-	-	-	-
TCC/03131-1-08	CONTAMINATED LAND	(8)	-	-	-	-
TCC/03131-1-11	COMPRESSOR	(254)	-	-	-	-
TCC/03131-1-05	LAND AQUISITION	(380)	-	-	-	-
Total		17,194,575	14,550,402	1,241,687	15,792,089	92%

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.49 We obtained a schedule of invoices paid during the period from 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. As noted at paragraph 2.38 above, the 31 invoices relating to the main works contract with Contractor A were originally posted to the main works WBS element for the Wormington Compressor Station and then a reallocation was made to transfer £14,209,509 (net) into the main works WBS element for the Churchover Compressor Station (TCC/03131-1-02). The invoice schedule included one invoice over £250,000 (£340,893) in relation to electricity connections. This is included at **Appendix 7**.

Date of signed contract

- 2.50 The Compressors at Wormington and Churchover were tendered and awarded as one contract to Contractor A on 12 September 2005.

³⁵ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

- 2.51 The project as tendered was reported to Ofgem as a single project. NGGT have accounted for the two compressors under two different WBS codes (TCC/03130 for Wormington and TCC/03131 for Churchover). There are a number of transfers between these two codes. However, as these costs fall under the same contract we have not reviewed these transactions in detail other than to confirm the amount transferred between the two WBS codes.

Vouching to contract

- 2.52 We agreed the invoice (and the amounts transferred from Wormington - TCC/03130) as being appropriately classified as expenditure under the Churchover Compressor Station sub-project within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.53 We agreed the invoice recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.54 We agreed the invoice recorded on the schedule or identified from our testing of indirect costs to the underlying SAP data.

Vouching to payment system

- 2.55 We agreed with Ofgem at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.56 We agreed the invoice recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows the invoice as being paid.

INDIRECT COSTS TESTING

- 2.57 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 (or below £(250,000) for credit balances) were selected for review.
- 2.58 We have sought an explanation as to the nature of the expenditure and confirmed the cost or credit to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

FELINDRE COMPRESSOR STATION

- 2.59 The cost template includes an amount of £56,460,213 (paragraph 3.86) in relation to expenditure incurred post October 2007 for the Felindre Compressor Station. A breakdown by WBS element is set out below, along with the amounts tested during our review³⁶:

Felindre Compressor Station

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/03129-1-02	MAIN WORKS CONTRACT	50,300,163	48,650,245	322,247	48,972,491	97%
TCC/03129-1-09	ELECTRICITY CONNECTIONS	2,774,138	2,500,000	-	2,500,000	90%
TCC/03129-1-03	PROJECT SERVICES	1,758,333	-	642,279	642,279	37%
TCC/03129-1-10	NG COSTS	957,524	-	-	-	-
TCC/03129-1-01	FEASIBILITY STUDIES	446,719	-	-	-	-
TCC/03129-1-07	PROJECT MANAGER LIAISON	97,202	-	-	-	-
TCC/03129-1-16	CONTROL SYSTEM	88,604	-	-	-	-
TCC/03129-1-06	COMMUNICATIONS	21,020	-	-	-	-
TCC/03129-1-15	CABS & BUILDINGS	14,500	-	-	-	-
TCC/03129-1-17	COMMUNITY GAINS	1,072	-	-	-	-
TCC/03129-1-05	LAND ACQUISITION	938	-	-	-	-
Total		56,460,213	51,150,245	964,525	52,114,770	92%

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.60 We obtained a schedule of invoices paid during the period from 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.
- 2.61 In total, we reviewed 23 purchase invoices (totalling £48,650,245) over £250,000 relating to the Felinder Compressor Station main works contract with Contractor A and a further three invoices over £250,000 (totalling £2,500,000) in relation to electricity connections. These are included at **Appendix 8**.

Date of signed contract

- 2.62 The original contract is dated 12 September 2005 and is between NGGT and Contractor A.

³⁶ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

Vouching to contract

- 2.63 We agreed all 26 invoices as being appropriately classified as expenditure under the Felindre Compressor Station sub-project within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.64 We agreed all 26 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.65 We agreed all 26 invoices on the schedule or identified from our testing of indirect costs to the underlying SAP data.

Vouching to payment system

- 2.66 We agreed at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.67 We agreed all 26 invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all 26 invoices as being paid.

INDIRECT COSTS TESTING

- 2.68 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 (or below £(250,000) for credit balances) were selected for review.
- 2.69 We have sought an explanation as to the nature of the expenditure and confirmed the cost or credit to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

TIRLEY PRI

- 2.70 The cost template includes an amount of £75,712,756 (paragraph 3.92) in relation to expenditure incurred post October 2007 for the Tirley PRI. A breakdown by WBS element is set out below, along with the amounts tested during our review³⁷:

Tirley PRI

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/20502-1-10	PAC2030 Main Works PRI	51,820,671	31,841,951	19,500,000	51,341,951	99%
TCC/20502-1-27	Commissioning Gas Flow	5,065,670	4,889,000	-	4,889,000	97%
TCC/20502-1-11	PAC2030 Project Services	3,589,091	-	-	-	-
TCC/20502-1-16	Main Works Felindre	2,005,819	301,704	297,678	599,382	30%
TCC/20502-1-18	NG Costs Felindre	1,982,550	-	533,002	533,002	27%
TCC/20502-1-14	PAC2030 NG Staff costs	1,750,071	-	-	-	-
TCC/20502-1-21	Project Services Worm/Church	1,452,898	-	-	-	-
TCC/20502-1-02	PAC2030 Materials	1,393,833	-	555,000	555,000	40%
TCC/20502-1-20	Main Works Worm/Church	1,118,155	359,838	596,642	956,480	86%
TCC/20502-1-17	Project Services Felindre	1,069,624	-	362,225	362,225	34%
TCC/20502-1-13	PAC2030 Land Purchase	984,844	-	691,583	691,583	70%
TCC/20502-1-05	PAC2030 Inspection Services	787,999	-	-	-	-
TCC/20502-1-22	NG Costs Worm/Church	753,231	-	-	-	-
TCC/20502-1-19	Minor Orders Felindre	452,835	-	-	-	-
TCC/20502-1-09	PAC2030 Legal Services	346,097	-	345,000	345,000	100%
TCC/20502-1-04	PAC2030 Network Costs (MGD)	343,193	-	-	-	-
TCC/20502-1-08	PAC2030 Community Relations	308,616	-	-	-	-
TCC/20502-1-23	Minor Orders Worm/Church	218,945	-	-	-	-
TCC/20502-1-15	PAC2030 Miscellaneous	111,603	-	-	-	-
TCC/20502-1-24	COMMUNITY GAIN	77,618	-	-	-	-
TCC/20502-1-06	PAC2030 Easements	36,906	-	-	-	-
TCC/20502-1-12	PAC2030 Land Agents	22,249	-	-	-	-
TCC/20502-1-07	PAC2030 Compensation	17,283	-	-	-	-
TCC/20502-1-03	PAC2030 ILI	2,954	-	-	-	-
Total		75,712,755	37,392,493	22,881,131	60,273,623	80%

- 2.71 Further tables breaking down the expenditure into amounts that relate to Tirley PRI only and amounts that relate to other costs such as 'Commissioning Gas Flow' and works at Felindre or Wormington/Churchover which could only be carried out once Tirley PRI was completed are at paragraph 2.82 below.

³⁷ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.72 We obtained a schedule of invoices paid during the period from 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.
- 2.73 In total, we reviewed 23 purchase invoices over £250,000 (totalling £31,841,951) relating to the main works contract with Contractor C and a further four invoices over £250,000 (totalling £5,550,542) in relation to commissioning gas flow and main works at the Felindre and Wormington Compressor Stations which could only be carried out once the Tirley PRI was completed. These are included at **Appendix 9**.

Date of signed contract

- 2.74 The construction of the Tirley PRI is included in the revised Brecon to Tirley contract dated 5 November 2009 between NGGT and Contractor C.

Vouching to contract

- 2.75 We agreed all 27 invoices as being appropriately classified as expenditure under the Tirley PRI scheme within the SAP system and hence the RRP returns provided to Ofgem.

Vouching to invoice

- 2.76 We agreed all 27 invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.77 We agreed all 27 invoices on the schedule or identified from our testing of indirect costs to the underlying SAP data.

Vouching to payment system

- 2.78 We agreed at the outset of our review that we would not undertake a substantive exercise to agree payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.79 We agreed all 27 invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all 27 invoices as being paid.

INDIRECT COSTS TESTING

- 2.80 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 (or below £(250,000) for credit balances) were selected for review.
- 2.81 We have sought an explanation as to the nature of the expenditure and confirmed the cost or credit to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

FURTHER BREAKDOWN OF TIRLEY PRI EXPENDITURE

- 2.82 As requested by Ofgem, the expenditure as set out in the table at paragraph 2.70, is broken down into (a) amounts that relate to Tirley PRI only and (b) amounts that relate to other costs such as 'Commissioning Gas Flow' and works at Felindre or Wormington/Churchover which could only be carried out once Tirley PRI was completed in the below two tables.

(a) Tirley PRI - Tirley only expenditure

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/20502-1-10	PAC2030 Main Works PRI	51,820,671	31,841,951	19,500,000	51,341,951	99%
TCC/20502-1-11	PAC2030 Project Services	3,589,091	-	-	-	-
TCC/20502-1-14	PAC2030 NG Staff costs	1,750,071	-	-	-	-
TCC/20502-1-02	PAC2030 Materials	1,393,833	-	555,000	555,000	40%
TCC/20502-1-13	PAC2030 Land Purchase	984,844	-	691,583	691,583	70%
TCC/20502-1-05	PAC2030 Inspection Services	787,999	-	-	-	-
TCC/20502-1-09	PAC2030 Legal Services	346,097	-	345,000	345,000	100%
TCC/20502-1-04	PAC2030 Network Costs (MGD)	343,193	-	-	-	-
TCC/20502-1-08	PAC2030 Community Relations	308,616	-	-	-	-
TCC/20502-1-15	PAC2030 Miscellaneous	111,603	-	-	-	-
TCC/20502-1-24	COMMUNITY GAIN	77,618	-	-	-	-
TCC/20502-1-06	PAC2030 Easements	36,906	-	-	-	-
TCC/20502-1-12	PAC2030 Land Agents	22,249	-	-	-	-
TCC/20502-1-07	PAC2030 Compensation	17,283	-	-	-	-
TCC/20502-1-03	PAC2030 ILI	2,954	-	-	-	-
Total		61,593,028	31,841,951	21,091,583	52,933,534	86%

(b) Tirley PRI - other costs

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/20502-1-27	Commissioning Gas Flow	5,065,670	4,889,000	-	4,889,000	97%
TCC/20502-1-16	Main Works Felindre	2,005,819	301,704	297,678	599,382	30%
TCC/20502-1-18	NG Costs Felindre	1,982,550	-	533,002	533,002	27%
TCC/20502-1-21	Project Services Worm/Church	1,452,898	-	-	-	-
TCC/20502-1-20	Main Works Worm/Church	1,118,155	359,838	596,642	956,480	86%
TCC/20502-1-17	Project Services Felindre	1,069,624	-	362,225	362,225	34%
TCC/20502-1-22	NG Costs Worm/Church	753,231	-	-	-	-
TCC/20502-1-19	Minor Orders Felindre	452,835	-	-	-	-
TCC/20502-1-23	Minor Orders Worm/Church	218,945	-	-	-	-
Total		14,119,727	5,550,542	1,789,547	7,340,089	52%

2.83 The expenditure in the above two tables are further broken down by the financial year in which the costs were incurred/posted to the SAP system:

(a) Tirley PRI - Tirley only expenditure by financial year

WBS Element	WBS Description	2011 £	2012 £	2013 £	2014 £	Total costs £
TCC/20502-1-10	PAC2030 Main Works PRI	24,943,410	16,905,470	9,626,033	345,759	51,820,671
TCC/20502-1-11	PAC2030 Project Services	382,203	1,385,258	1,386,074	435,557	3,589,091
TCC/20502-1-14	PAC2030 NG Staff costs	164,578	626,465	767,573	191,456	1,750,071
TCC/20502-1-02	PAC2030 Materials	1,208,923	(59,310)	244,221	-	1,393,833
TCC/20502-1-13	PAC2030 Land Purchase	881,623	103,220	-	-	984,844
TCC/20502-1-05	PAC2030 Inspection Services	57,072	504,633	216,232	10,062	787,999
TCC/20502-1-09	PAC2030 Legal Services	345,000	1,097	-	-	346,097
TCC/20502-1-04	PAC2030 Network Costs (MGD)	-	-	298,943	44,250	343,193
TCC/20502-1-08	PAC2030 Community Relations	54,267	174,231	71,481	8,638	308,616
TCC/20502-1-15	PAC2030 Miscellaneous	55,000	21,215	28,934	6,454	111,603
TCC/20502-1-24	COMMUNITY GAIN	-	30,560	47,058	-	77,618
TCC/20502-1-06	PAC2030 Easements	-	17,687	19,219	-	36,906
TCC/20502-1-12	PAC2030 Land Agents	-	10,000	2,997	9,252	22,249
TCC/20502-1-07	PAC2030 Compensation	-	-	17,283	-	17,283
TCC/20502-1-03	PAC2030 ILI	-	-	2,451	503	2,954
TCC/20502-1-25	CNI Design	-	15,431	(15,431)	-	-
Total		28,092,076	19,735,956	12,713,067	1,051,929	61,593,028

(b) Tirley PRI - other costs by financial year

WBS Element	WBS Description	2011 £	2012 £	2013 £	2014 £	Total costs £
TCC/20502-1-27	Commissioning Gas Flow	-	-	5,065,670	-	5,065,670
TCC/20502-1-16	Main Works Felindre	197,796	1,601,125	407,494	(200,596)	2,005,819
TCC/20502-1-18	NG Costs Felindre	533,002	418,749	408,350	622,450	1,982,550
TCC/20502-1-21	Project Services Worm/Church	516,723	455,068	327,943	153,164	1,452,898
TCC/20502-1-20	Main Works Worm/Church	67,500	150,654	930,001	(30,000)	1,118,155
TCC/20502-1-17	Project Services Felindre	399,403	337,492	214,253	118,477	1,069,624
TCC/20502-1-22	NG Costs Worm/Church	241,385	306,277	174,115	31,453	753,231
TCC/20502-1-19	Minor Orders Felindre	-	140,337	136,687	175,811	452,835
TCC/20502-1-23	Minor Orders Worm/Church	15,640	119,369	57,929	26,007	218,945
Total		1,971,449	3,529,071	7,722,442	896,766	14,119,727

ENVIRONMENTAL MONITORING AND AFTERCARE

- 2.84 The cost template includes an amount of £13,450,582 (paragraph 3.98) in relation to expenditure incurred post October 2007 for Environmental Monitoring and Aftercare (EMA) sub-project. A breakdown by WBS element is set out below, along with the amounts tested during our review³⁸:

EMA

WBS Element	WBS Description	Post October 2007 £	Value direct costs tested £	Value indirect costs tested £	Total costs tested £	% of costs tested
TCC/20503-1-02	PAC2149 Main Works Environmental	13,049,965	1,240,738	6,548,266	7,789,004	60%
TCC/20503-1-07	PAC2149 NG Staff Costs	258,495	-	-	-	-
TCC/20503-1-06	PAC2149 Inspection Services	105,228	-	-	-	-
TCC/20503-1-09	PAC2149 Community Relations	36,894	-	-	-	-
Total		13,450,582	1,240,738	6,548,266	7,789,004	58%

DIRECT COSTS INVOICE TESTING

Review of amounts paid

- 2.85 We obtained a schedule of invoices paid during the period from 1 October 2007 to 25 November 2014 and reviewed all amounts over £250,000. In addition, as noted at paragraph 3.48, as part of our testing of indirect costs we identified further invoices which were not included on the invoice schedule as they had been posted to the SAP system as journals.
- 2.86 In total, we reviewed four invoices (totalling £1,240,738) over £250,000 which related to the EMA sub-project. This is included at **Appendix 10**.

Date of signed contract

- 2.87 A framework agreement between National Grid Gas Plc and Contractor H was entered into on 1 June 2010 for the provision of project related project services support (Gas above £100k)³⁹.

Vouching to contract

- 2.88 We agreed the four invoices as being appropriately classified as expenditure under the EMA project within the SAP system and hence the RRP returns provided to Ofgem.

³⁸ The SAP data for WBS elements in blue has been reviewed however there are no transactions over £250,000 and therefore no detailed testing has been carried out.

³⁹ NGGT provided an unsigned copy of the EMA contract however, they also provided a signed copy of the framework agreement along with a copy of the Form D (Application for award of contract resubmission).

Vouching to invoice

- 2.89 We agreed the four invoices recorded on the schedule or identified from our testing of indirect costs to the underlying invoice.

Vouching to purchase ledger

- 2.90 We agreed the four invoices on the schedule to the underlying SAP data.

Vouching to payment system

- 2.91 We agreed with Ofgem at the outset of our review that we would not undertake a substantive exercise to agreement payments to bank statements. We have reviewed AP payment data provided by NGGT in order to record the date invoices were paid in relation to the MH pipeline project.
- 2.92 We agreed the four invoices recorded on the schedule or identified from our testing of indirect costs to AP payment information provided by NGGT. This shows all four invoice as being paid.

INDIRECT COSTS TESTING

- 2.93 In order to review non-invoiced costs we obtained and reviewed the SAP data for the project. All items which were not contras (ie eliminated by a corresponding credit balance) over £250,000 were selected for review. This included four journals (totalling £7,500,000⁴⁰) which related to costs transferred from other WBS codes within the MH pipeline project, as pre 2011 'environmental enhancement' costs were accounted for under the relevant pipeline WBS codes rather than under their own WBS code (TCC/20503).
- 2.94 We have sought an explanation as to the nature of the expenditure and confirmed the cost to supporting documentation in order to confirm the expenditure is valid, correctly stated and correctly classified.

⁴⁰ £951,734 of which was tested as part of the direct cost testing as per Appendix 11

3 MILFORD HAVEN TO ABERDULAIS TESTING

TCC/00717 Milford Haven - Aberdulais Pipeline

DIRECT COSTS																
WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/00717-1-03	Milford Haven - Aberdulais - Main Works															
	1550	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 41	02-Nov-07	29-Nov-07	6,331,453	6,331,453	6,331,453	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	1550	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 40	28-Sep-07	25-Oct-07	3,820,038	3,820,038	3,820,038	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5238	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 54	28-Nov-08	24-Dec-08	2,986,933	3,336,933	3,336,933	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5215	REDACTED	Milford Haven to Aberdulais 1220mm Pipeline	Assessment No 46	21-Apr-08	24-Apr-08	1,350,148	1,350,148	1,350,148	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5236	REDACTED	Milford Haven to Aberdulais 1220mm Pipeline	Assessment no. 53.	06-Nov-08	04-Dec-08	1,229,542	1,229,542	1,229,542	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5256	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 60	02-Jul-09	02-Jul-09	1,153,186	1,153,186	1,153,186	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5254	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 52	02-Jul-09	02-Jul-09	1,153,186	1,153,186	1,153,186	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5208	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 44	04-Feb-08	17-Mar-08	1,138,760	1,138,760	1,138,760	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5234	REDACTED	Milford Haven to Aberdulais Stage II Works	Assessment no. 52	08-Oct-08	05-Nov-08	729,815	729,815	729,815	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5203	REDACTED	Milford Haven to Aberdulais Stage II Works	Assessment no. 43	16-Jan-08	16-Jan-08	715,265	715,265	715,265	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	7367	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 62	29-Jan-10	19-Feb-10	600,550	600,550	600,550	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5226	REDACTED	Milford Haven to Aberdulais Stage II Works	Assessment no. 50	01-Aug-08	27-Aug-08	599,661	599,661	599,661	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5221	REDACTED	Milford Haven to Aberdulais Stage II Works	Assessment no. 48	06-Jun-08	04-Jul-08	598,993	598,993	598,993	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5244	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 55	08-Jan-09	18-Feb-09	449,907	449,907	449,907	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	7369	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 63	22-Jul-10	18-Aug-10	332,636	332,636	332,636	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5212	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment No 45	26-Mar-08	02-Apr-08	329,014	332,636	332,636	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	5230	REDACTED	Milford Haven to Aberdulais Stage II Works	Assessment no. 51	03-Sep-08	13-Oct-08	278,615	278,615	278,615	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
	73612	REDACTED	Milford Haven to Aberdulais 1220mm pipeline	Assessment no. 61	28-Oct-09	25-Nov-09	254,853	254,853	254,853	✓	✓	NO	YES	YES	TCC/00717-1-03	✓
								24,052,555								

TCC/00717 Milford Haven - Aberdulais Pipeline

DIRECT COSTS																	
WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?	
TCC/00717-1-09	Milford Haven - Aberdulais - Compensation																
	5500002649	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 17/03/2008 (Log 514 Milford Haven to Aberdulais)	17-Mar-08	21-Jul-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	5500004240	REDACTED	Milford Haven - Aberdulais Pipeline	Milford Haven to Aberdulais client account funds	30-Sep-08	01-Oct-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900011500	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 01/12/2009 (Log 569 Milford Haven to Aberdulais)	01-Dec-09	28-Jan-10	499,306	499,306	499,306	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	5500002334	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 07/06/2011 (Log 615 Milford Haven to Aberdulais)	07-Jun-11	10-Jun-11	498,441	498,441	498,441	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900006473	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 07/04/2008 (Log 551 Milford Haven to Aberdulais)	17-Jun-09	08-Sep-09	495,693	495,693	495,693	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	5500000311	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 07/04/2008 (Log 505 Milford Haven to Aberdulais)	07-Apr-08	08-Apr-08	491,907	491,907	491,907	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	5500008835	REDACTED	Milford Haven - Aberdulais Pipeline	Landowner compensation payments	16-Oct-12	29-Oct-12	478,620	478,620	478,620	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	5500011276	REDACTED	Milford Haven - Aberdulais Pipeline	Landowner compensation payments	13-Dec-11	14-Dec-11	451,036	451,036	451,036	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900000223	REDACTED	Milford Haven - Aberdulais Pipeline	Landowner compensation payments	05-Oct-07	11-Oct-07	449,218	449,218	449,218	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900000325	REDACTED	Milford Haven - Aberdulais Pipeline	Landowner compensation payments	05-Oct-07	12-Oct-07	449,218	449,218	449,218	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900006366	REDACTED	Milford Haven - Aberdulais Pipeline	Landowner compensation payments	09-Sep-10	10-Sep-10	386,475	386,475	386,475	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900009562	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 01/10/2009 (Log 562 Milford Haven to Aberdulais)	01-Oct-09	17-Nov-09	317,121	317,121	317,121	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900006474	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 20/07/2009 (Log 552 Milford Haven to Aberdulais)	20-Jul-09	08-Sep-09	306,552	306,552	306,552	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
	1900001202	REDACTED	Milford Haven - Aberdulais Pipeline	Land agent fees to 01/04/2009 (Log 579 Milford Haven to Aberdulais)	01-Apr-09	04-May-10	357,259	357,259	357,259	✓	✓	NO	YES	YES	TCC/00717-1-09	✓	
								6,180,846									
	TCC/00717-1-16	Milford Haven - Aberdulais - Easements															
5500004070		REDACTED	Milford Haven - Aberdulais Pipeline	Milford Haven to Aberdulais client account funds	16-Sep-08	16-Sep-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/00717-1-16	✓	
5500005114		REDACTED	Milford Haven - Aberdulais Pipeline	Milford Haven to Aberdulais client account funds	30-Oct-08	04-Nov-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/00717-1-16	✓	
Prepayment as at 31/03/2014.						(260,602)	739,398										
TCC/00717-1-24	Milford Haven - Aberdulais - Legal (solicitor)																
	5500011979	REDACTED	Milford Haven - Aberdulais Pipeline	Mediation Settlement (REDACTED)	23-Jan-14	07-Feb-14	400,000	400,000	400,000	✓	✓	NO	YES	YES	TCC/00717-1-24	✓	
TCC/00717-1-35	Enhancement Costs																
	5500011979	REDACTED	Milford Haven - Aberdulais Pipeline	To provide a contribution to WWCG regional activities.	28-Mar-08	16-Sep-08	500,000	650,000	650,000	✓	✓	YES	YES	YES	TCC/00717-1-35	✓	
							500,000										
	Total direct costs reviewed						31,872,799										

TCC/00717 Milford Haven - Aberdulais Pipeline

INDIRECT COSTS												
WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule £	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
TCC/00717-1-03	Milford Haven - Aberdulais - Main Works											
	100703341	12-Dec-07	12-Dec-07	Terminal connection for Dragon - Third party connection costs (customer funded) transferred outside of the MH pipeline project to separately sanctioned project.	(550,779)	✓	✓	YES	YES	YES	TCC/00717-1-03	✓
	103232751	31-Mar-10	31-Mar-10	Terminal connection for South Hook -Third party connection costs (customer funded) transferred outside of the MH pipeline project to separately sanctioned project.	(212,342)	✓	✓	YES	YES	YES	TCC/00717-1-03	✓
	103232753	31-Mar-10	31-Mar-10	Minimum Connection for Murco - Third party connection costs (customer funded) transferred outside of the MH pipeline project to separately sanctioned project.	(741,882)	✓	✓	YES	YES	YES	TCC/00717-1-03	✓
	103232754	31-Mar-10	31-Mar-10	Minimum Connection for Pembroke Power Station - Third party connection costs (customer funded) transferred outside of the MH pipeline project to separately sanctioned project.	(210,385)	✓	✓	YES	YES	YES	TCC/00717-1-03	✓
					(1,715,388)							
	103232752	31-Mar-10	31-Mar-10	Transfer of costs back to Milford Haven sub-project - adjustment required when closing out the terminal works	555,146	✓	✓	YES	YES	YES	TCC/00717-1-03	✓
					(1,160,241)							
				Total indirect costs reviewed	(1,160,241)							
				TOTAL DIRECT AND INDIRECT COSTS REVIEWED	30,712,558							

4 FELINDRE TO BRECON TESTING

TCC/03114 Felindre - Brecon Pipeline

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03114-1-01	Main Works Pipeline - MWC1															
	5198	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 31.	28-Sep-07	25-Oct-07	21,136,317	21,136,317	21,136,317	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5201	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 32.	02-Nov-07	13-Dec-07	11,146,731	11,146,731	11,146,731	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5209	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 35.	22-Feb-08	03-Mar-08	3,804,314	3,804,314	3,804,314	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5216	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 36	08-Apr-08	09-May-08	2,785,726	2,785,726	2,785,726	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5204	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 33	05-Dec-07	31-Dec-07	2,601,572	2,601,572	2,601,572	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5239	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 45	28-Dec-08	24-Dec-08	2,016,011	2,366,011	2,016,011	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5233	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 43.	08-Oct-08	04-Nov-08	2,131,912	2,131,912	2,131,912	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5223	REDACTED	Milford Haven to Aberdulais Stage I Works	Assessment no. 40	02-Jul-08	04-Aug-08	1,962,611	1,962,611	1,962,611	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5219	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 38	07-May-08	18-Jun-08	1,880,226	1,880,226	1,880,226	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5227	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 41.	01-Aug-08	27-Aug-08	1,859,640	1,859,640	1,859,640	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5207	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 34	16-Jan-08	19-Feb-08	1,843,814	1,843,814	1,843,814	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5229	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 42.	03-Sep-08	13-Oct-08	1,487,011	1,487,011	1,487,011	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5255	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 59	15-Jun-10	02-Jul-09	1,153,186	1,153,186	1,153,186	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5253	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 51	15-Jun-09	02-Jul-09	1,153,186	1,153,186	1,153,186	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5237	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 44.	06-Nov-08	04-Dec-08	1,131,336	1,131,336	1,131,336	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5222	REDACTED	Aberdulais to Llanvetherine Stage I Works	Assessment no. 39	06-Jun-08	04-Jul-08	1,083,935	1,083,935	1,083,935	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5245	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 46.	08-Jan-09	06-Mar-09	898,950	898,950	898,950	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5211	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 36.	03-Mar-08	31-Mar-08	858,894	858,894	858,894	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
	5249	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 48.	08-Apr-09	12-May-09	814,626	814,626	814,626	✓	✓	NO	YES	YES	TCC/03114-1-01	✓

TCC/03114 Felindre - Brecon Pipeline

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
	5251	REDACTED	Felindre to Brecon 1220mm pipeline	Assessment no. 49.	14-May-09	04-Jun-09	530,255	530,255	530,255	✓	✓	NO	YES	YES	TCC/03114-1-01	✓
							<u>62,280,252</u>									
TCC/03114-1-02	Project Services - PSC1															
	90995022	REDACTED	Felindre to Brecon pipeline	Felindre to Brecon pipeline project interim account - Charges in respect of professional services in accordance with order nr: NGT 8264 (Period 01/08/07-31/08/07)	24-Sep-07	14-Dec-07	311,307	311,307	311,307	✓	✓	NO	YES	YES	TCC/03114-1-02	✓
	91042688	REDACTED	Felindre to Brecon pipeline	Felindre to Brecon pipeline project interim account - Charges in respect of professional services in accordance with order nr: NGT 8264 (Period 01/10/07-31/10/07)	15-Nov-07	14-Jan-08	295,309	295,309	295,309	✓	✓	NO	YES	YES	TCC/03114-1-02	✓
	91023579	REDACTED	Felindre to Brecon pipeline	Felindre to Brecon pipeline project interim account - Charges in respect of professional services in accordance with order nr: NGT 8264 (Period 01/09/07-30/09/07)	25-Oct-07	21-Dec-07	265,564	265,564	265,564	✓	✓	NO	YES	YES	TCC/03114-1-02	✓
							<u>872,180</u>									
TCC/03114-1-10	Easements															
	5500004633	REDACTED	Felindre to Brecon pipeline	Felindre to Brecon client account funds	18-Sep-08	14-Oct-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/03114-1-10	✓
				Prepayment as at 31/03/2014.			<u>(195,455)</u>									
							<u>304,545</u>									
TCC/03114-1-11	Compensation															
	100686741	REDACTED	Felindre to Brecon pipeline	Felindre to Brecon client account funds	12-Dec-07	13-Dec-07	362,500	362,500	362,500	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
	103402459	REDACTED	Felindre to Brecon pipeline	Log 581 Felindre to Brecon	06-May-10	07-May-10	488,684	488,684	488,684	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
	103642626	REDACTED	Felindre to Brecon pipeline	Log 584 Felindre to Brecon	30-Jun-10	30-Jun-10	498,190	498,190	498,190	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
	104109735	REDACTED	Felindre to Brecon pipeline	Log 592 Felindre to Brecon	13-Oct-10	13-Oct-10	478,339	478,339	478,339	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
	105261610	REDACTED	Felindre to Brecon pipeline	Log 619 Felindre to Brecon	27-Jun-11	27-Jun-11	331,071	331,071	331,071	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
	106913765	REDACTED	Felindre to Brecon pipeline	Log 650 Felindre to Brecon	21-Jun-12	21-Jun-12	452,211	452,211	452,211	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
	107710673	REDACTED	Felindre to Brecon pipeline	Log 662 Felindre to Brecon	07-Dec-12	07-Dec-12	404,501	404,501	404,501	✓	✓	NO	YES	YES	TCC/03114-1-11	✓
				Prepayment as at 31/03/2014.			<u>(426,347)</u>									
							<u>2,589,149</u>									
TCC/03114-1-13	Legal Services															
	496098	REDACTED	New Build - Felindre	Protestors - Penpont Estate, disbursements not liable to VAT.	19-Dec-07	07-Mar-08	284,330	284,330	284,330	✓	✓	NO	YES	YES	TCC/03114-1-13	✓
							<u>284,330</u>									
							<u>66,330,457</u>									
				Total direct costs reviewed												

TCC/03114 Felindre - Brecon Pipeline

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule £	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03114-1-01	Main Works Pipeline - MWC1											
	100138187	11-Aug-10	11-Aug-10	Transfer of costs from Brecon to Tirley project - TCC/03113-1-09 (see Appendix 5) to other pieplines. Costs relate to works carried out by Murphy on the JV section post commissioning. As the JV contract did not have a defects liability period, Murphy were contracted to support with any defect correction	500,000	✓	✓	YES	YES	YES	TCC/03114-1-01	✓
					500,000							
TCC/03114-1-09	Inspection Services											
	100658866	05-Dec-07	05-Dec-07	Expenditure line made up of a single entry for payments against invoices 5105611153 213395, 5105611175 212107, 5105611178 213643, 5105611201 214038, 5105611223 214740, 5105611303 212648, 5105611311 214369, 5105612389 212107, 5105613286 214982, 5105615517 212107, 5105615803 212541, 5105619813 2115697, 5105621239 214982, 5105623595 216481, 5105623596 215906, 5105623760 214982, 5105623961 216642, 5105627036 217021, 5105642707 219543. Agreed to breakdown of expenditure provided by NGGT - all below £250K.	1,244,863	✓	✓	YES	YES	YES	TCC/03114-1-09	✓
					1,244,863							
TCC/03114-1-10	Compensation											
	109987009	25-Mar-14	25-Mar-14	Accrual as at 31 March 2014. Review of P1-10 for FY 2014/15 confirms the accrual is still being maintained with current carrying cost of £480,990.	545,000	✓	✓	YES	YES	YES	TCC/03114-1-10	✓
					545,000							
TCC/03114-1-16	Miscellaneous											
	100686256	18-Dec-07	18-Dec-07	Expenditure line made up of a single entry for payments against invoices 5105620231 120889, 5105623010 121211, 5105623159 118654, 5105623918 K119132, 5105623924 120360, 5105623960 122187, 5105623971 121495, 5105623981 121963, 5105624074 120100, 5105624077 122188, 5105624079 K121734. Agreed to breakdown of expenditure provided by NGGT - all below £250K.	381,180	✓	✓	YES	YES	YES	TCC/03114-1-16	✓
					381,180							
				Total indirect costs reviewed	2,671,043							
				TOTAL DIRECT AND INDIRECT COSTS REVIEWED	69,001,499							

TCC/03114 Felindre - Brecon Pipeline

OUTSTANDING ITEMS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
							£							
TCC/03113-1-11	Compensation													
	100703870		Felindre to Brecon pipeline				500,000	X	✓	NO	YES	YES	TCC/03114-1-11	✓
	101166426		Felindre to Brecon pipeline				500,000	X	✓	NO	YES	YES	TCC/03114-1-11	✓
	103063538		Felindre to Brecon pipeline				495,614	X	✓	NO	YES	YES	TCC/03114-1-11	✓
	103311708		Felindre to Brecon pipeline				492,657	X	✓	NO	YES	YES	TCC/03114-1-11	✓
	102085999		Felindre to Brecon pipeline				491,689	X	✓	NO	YES	YES	TCC/03114-1-11	✓
							2,479,961							
TCC/03113-18	Enhancement Costs													
	100192611		Felindre to Brecon pipeline				527,188	X	✓	NO	YES	YES	TCC/03114-1-18	✓
							527,188							
Total items with information outstanding							3,007,149							

5 BRECON TO TIRLEY TESTING

TCC/03113 Brecon - Tirley Pipeline

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03113-1-09	Main Works Pipeline - MWC2															
	310021/025	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 27/09/07	12-Oct-07	22-Nov-07	9,328,061	9,616,558	9,328,061	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/049	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 24/09/09.	06-Oct-09	17-Feb-10	6,551,965	6,551,965	6,551,965	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/026	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/10/07	01-Nov-07	10-Dec-07	6,009,927	6,195,801	6,009,927	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/027	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 29/11/07	12-Dec-07	24-Jan-08	5,096,280	5,096,280	5,096,280	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/001C	REDACTED	Brecon to Tirley 1200mm pipeline	Bonus for contract completion in accordance with NEC option Q	14-Jan-08	07-Mar-08	4,000,000	4,000,000	4,000,000	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/029	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 31/01/08	14-Feb-08	22-Feb-08	3,462,931	3,540,954	3,462,931	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/030	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 28/02/08	28-Feb-08	31-Mar-08	2,542,380	2,616,635	2,542,380	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/028	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 27/12/07	27-Dec-07	25-Jan-08	2,514,854	2,567,507	2,514,854	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/032	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 24/04/08	24-Apr-08	20-May-08	1,958,235	1,958,235	1,913,573	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/036	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 28/08/08	04-Sep-08	18-Sep-08	1,743,300	1,743,300	1,700,220	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/034	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 31/07/08	04-Jul-08	23-Jul-08	1,581,427	1,581,427	1,581,427	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/033	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 29/05/08	26-Aug-08	02-Jul-08	1,416,797	1,416,797	1,416,797	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/035	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 31/07/08	11-Aug-08	21-Aug-08	1,309,362	1,309,362	1,272,136	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/055	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/03/10	30-Mar-10	15-Jun-10	1,264,126	1,264,126	1,264,126	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/031	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 27/03/08	07-Apr-08	16-Apr-08	1,227,549	1,227,549	1,198,699	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/039	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 30/11/08	08-Dec-08	23-Dec-08	936,624	936,624	936,624	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/037	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/09/08	07-Oct-08	07-Nov-08	932,288	932,288	906,639	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/053	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 28/01/09.	05-Feb-10	04-Mar-10	873,204	873,204	873,204	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/059	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 29/07/10.	03-Aug-10	13-Sep-10	781,430	791,436	781,430	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/038	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 30/10/08	07-Nov-08	17-Nov-08	717,457	717,457	717,457	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/061	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 30/09/10	07-Oct-10	03-Nov-10	679,320	679,320	679,320	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/060	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 26/08/10	01-Sep-10	13-Sep-10	670,041	670,041	670,041	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/058	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 24/06/10	30-Jun-10	13-Jul-10	667,092	657,086	657,086	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/063	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/11/10.	02-Dec-10	01-Feb-11	634,806	634,806	634,806	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/057	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 27/05/10	01-Jun-10	18-Jun-10	609,361	609,361	609,361	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/054	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/02/10	03-Mar-10	16-Mar-10	585,822	585,822	585,822	✓	✓	NO	YES	YES	TCC/03113-1-09	✓

TCC/03113 Brecon - Tirley Pipeline

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
	310021/062	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 28/10/10	04-Nov-10	29-Nov-10	572,780	572,780	572,780	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/056	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 29/04/10	07-May-10	15-Jun-10	557,304	557,304	557,304	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/041	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 29/01/09.	06-Feb-09	06-Mar-09	536,111	536,111	536,111	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/040	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/12/08	07-Jan-09	07-Jan-09	435,983	435,983	424,204	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/042	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 26/02/09	05-Mar-09	19-Mar-09	424,062	424,062	424,062	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/052	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 31/12/09	04-Jan-10	20-Jan-10	413,463	413,463	413,463	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/047	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 30/07/09	07-Aug-09	20-Aug-09	413,448	413,448	413,448	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/051	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 26/11/09	02-Dec-09	08-Jan-10	342,486	342,486	342,486	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/044	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 30/04/09	08-May-09	20-May-09	340,321	340,321	340,321	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/050	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 29/10/09	06-Nov-09	08-Dec-09	339,511	339,511	339,511	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/046	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 25/06/09.	02-Jul-09	22-Jul-09	287,355	287,355	287,355	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
	310021/043	REDACTED	Brecon to Tirley 1200mm pipeline	Value of works to 26/03/09.	06-Apr-09	15-Apr-09	253,262	253,262	253,262	✓	✓	NO	YES	YES	TCC/03113-1-09	✓
				Transfer to Tirley PRI on establishment of separate contract (see Appendix 9)			(19,500,000)									
				Transferred to Felindre to Brecon (see Appendix 4) - Costs relate to works carried out by REDACTED on the JV section post commissioning. As the JV contract did not have a defects liability period, REDACTED were contracted to support with any defect correction	11-Aug-10	11-Aug-10	(500,000)									
				Transfer of costs outside of the MH pipeline project to a Customer Connection scheme associated with RWE (Pembroke Power Station)	16-Apr-10	16-Apr-10	(310,437)									
				Transferred to Milford Haven to Aberdulais - Costs relate to works carried out by REDACTED on the JV section post commissioning. As the JV contract did not have a defects liability period, REDACTED were contracted to support with any defect correction	11-Aug-10	11-Aug-10	(200,000)									
							<u>42,500,289</u>									
TCC/03113-1-05	Easements															
	1900000381	REDACTED	Brecon to Tirley 1200mm pipeline	Land agent fees to 31/08/2007 (Log 474 Brecon to Tirley)	09-Oct-07	16-Oct-07	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
	1900004830	REDACTED	Brecon to Tirley 1200mm pipeline	Land agent fees to 30/11/2007 (Log 492 Brecon to Tirley)	30-Nov-07	11-Feb-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
	5500003686	REDACTED	Brecon to Tirley 1200mm pipeline	Land agent fees to 07/08/2008 (Log 516 Brecon to Tirley)	07-Aug-08	03-Sep-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
	5500005113	REDACTED	Brecon to Tirley 1200mm pipeline	Brecon to Tirley client account funds	30-Oct-08	04-Nov-08	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
	1900006456	REDACTED	Brecon to Tirley 1200mm pipeline	Land agent fees to 01/07/2009 (Log 550 Brecon to Tirley)	01-Jul-09	03-Sep-09	500,000	500,000	500,000	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
	1900000165	REDACTED	Brecon to Tirley 1200mm pipeline	Corse PRI land purchase	03-Oct-07	10-Oct-07	431,500	431,500	431,500	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
	1900009560	REDACTED	Brecon to Tirley 1200mm pipeline	Land agent fees to 15/10/2009 (Log 563 Brecon to Tirley)	15-Oct-09	17-Nov-09	294,316	294,316	294,316	✓	✓	NO	YES	YES	TCC/03113-1-05	✓
				Treadrow PRI - costs transferred to Land Purchase (TCC/03113-1-12)	17-Oct-11	17-Oct-11	(267,243)									
				Two transfers in relation to Land Option payments - both below £250k			(261,313)									
				Prepayment as at 31/03/2014.			(144,274)									
				Accrual as at 31/03/2014			115,700									
							<u>2,668,685</u>									

TCC/03113 Brecon - Tirley Pipeline

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03113-1-18	Enhancement Costs 1900014446	REDACTED	Brecon to Tirley 1200mm pipeline	BBNPA/National Grid supplementary agreement 2008	25-Mar-09	26-Mar-09	1,000,000	1,000,000	1,000,000	✓	✓	NO	YES	YES	TCC/03113-1-18	✓
							1,000,000									
							46,168,974									
Total direct costs reviewed																

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule £	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03113-1-09	Main Works Pipeline - MWC2 101062102	16-Jul-08	16-Jul-08	Expenditure line made up of a single entry for retention payments against invoices 07100622, 07100623, 07100497, 07110291, 07110292, 07120361, 08010580, 08020638. Agreed to breakdown of expenditure provided by NGGT - all below £250K.	679,301	✓	✓	YES	YES	YES	TCC/03113-1-09	✓
					679,301							
TCC/03113-1-10	Project Service - PSC2 100711646	07-Jan-08	07-Jan-08	Expenditure line made up of a single entry for payments against invoices 5105625206 3708, 5105627526 3844, 5105627581 3848, 5105634256 3860, 5105635516 3900, 5105671707 3708CR, 5105671728 3933, 5105671729 3933, 5105671742 3934, 5105671753 4033, 5105672432 3990. Agreed to breakdown of expenditure provided by NGGT - all below £250K.	695,066	✓	✓	YES	YES	YES	TCC/03113-1-10	✓
					695,066							
TCC/03113-1-08	Legal Services 100051895	30-Jan-08	29-Jan-08	Expenditure line made up of a single entry for payments against invoices 497481, 495899. Agreed to breakdown of expenditure provided by NGGT - both below £250K.	330,743	✓	✓	YES	YES	YES	TCC/03113-1-08	✓
					330,743							
TCC/03113-1-12	Land Purchase - LP2 100686256	17-Oct-11	17-Oct-11	Treaddown PRI - costs transferred from Easements (TCC/03113-1-05)	267,243	✓	✓	YES	YES	YES	TCC/00717-1-05	✓
					267,243							
Total indirect costs reviewed					1,972,353							
TOTAL DIRECT AND INDIRECT COSTS REVIEWED					48,141,327							

OUTSTANDING ITEMS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03113-1-08	Legal Services 100052706	31-Jan-08	31-Jan-08				376,868							
							376,868							

6 WORMINGTON COMPRESSOR STATION TESTING

TCC/03130 Wormington Compressor Station

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data	Net invoice value	Net invoice value less retention	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
							£	£	£							
TCC/03130-1-02	Main Works Contract															
	08020638	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 25. Value of works up to 03/02/08.	26-Feb-08	25-Mar-08	4,933,735	4,933,735	4,933,735	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	08050561	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 28. Value of works up to 27/04/08.	21-May-08	19-Jun-08	4,285,782	4,285,782	4,071,493	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	07100497	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 21. Value of works up to 30/09/07.	23-Oct-07	22-Nov-07	3,383,044	3,383,044	3,383,044	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	08060578	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 29. Value of works up to 26/06/08.	26-Jun-08	31-Mar-08	3,166,120	3,166,120	3,166,120	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	07100622	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 20a. Value of works up to 02/09/07.	28-Sep-07	12-Nov-07	3,079,090	3,079,090	3,079,090	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	07110291	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 22a. Value of works up to 28/10/07.	29-Oct-07	12-Nov-07	3,054,432	3,054,432	3,054,432	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	07100292	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 22b. Value of works up to 28/10/07.	15-Nov-07	24-Dec-07	3,002,611	3,002,611	3,002,611	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	08060356	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 29. Value of works up to 01/06/08.	26-Jun-08	21-Aug-08	2,501,622	2,501,622	2,376,541	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	08010580	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 24. Value of works up to 31/12/07.	23-Jan-08	15-Feb-08	2,309,583	2,309,583	2,309,583	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	08090837	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 32. Value of works up to 31/08/08.	26-Sep-08	31-Oct-08	2,279,779	2,279,779	2,165,790	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	07100623	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 20b. Value of works up to 29/10/07.	29-Oct-07	12-Nov-07	2,243,795	2,243,795	2,243,795	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	08040452	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 27. Value of works up to 16/04/08.	16-Apr-08	16-May-08	1,846,782	1,846,782	1,846,782	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	08090001	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 31. Value of works up to 03/08/08.	27-Aug-08	17-Sep-08	1,786,969	1,786,969	1,697,621	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	08030528	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 26. Value of works up to 02/03/08.	25-Mar-08	09-Apr-08	1,657,390	1,657,390	1,574,521	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	08100516	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 33. Value of works up to 28/09/08.	18-Nov-08	19-Nov-08	995,698	995,698	945,913	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	08070633	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 30. Value of works up to 29/06/08.	22-Jul-08	02-Sep-08	920,811	920,811	874,771	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	09060385	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 41. Value of works up to 31/05/08.	30-Jun-09	13-Jul-09	909,788	909,788	864,298	✓	✓	NO	YES	YES	TCC/03130-1-02	✓
	10020367	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 49. Value of works up to 31/01/10.	15-Feb-10	16-Mar-10	649,320	649,320	616,854	✓	✓	NO	YES	YES	TCC/03130-1-02	✓

DIRECT COSTS

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TCC/03130 Wormington Compressor Station**DIRECT COSTS**

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data	Net invoice value	Net invoice value less retention	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?	
							£	£	£								
TCC/03130-1-09	Electricity Connections																
	380199878	REDACTED	Mds to Wormington & Churchover	Commercial utility connection: Scope changes for Wormington NGT 18.5 MvA.	08-Dec-08	02-Feb-09	990,645	990,645	990,645	✓	✓	NO	YES	YES	TCC/03130-1-09	✓	
	380127537	REDACTED	Mds to Wormington & Churchover	Stage 2 payment for utility connection at Wormington Gas Compressor site.	20-Nov-07	11-Jan-08	628,490	628,490	628,490	✓	✓	NO	YES	YES	TCC/03130-1-09	✓	
							1,619,135										
	Total direct costs reviewed						35,551,133										

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule £	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03130-1-02	Main Works Contract											
	101062102	16-Jul-08	16-Jul-08	Expenditure line made up of a single entry for retention payments against invoices 07100622, 07100623, 07100497, 07110291, 07110292, 07120361, 08010580, 08020638 (all below £250K). Agreed to breakdown provided by NGGT.	1,324,863	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	101714184	26-Mar-09	26-Mar-09	Transfer to Wormington Incident WBS project code (TCC/20045)	(4,800,878)	✓	✓			See Note 1		
	101788144	30-Apr-09	30-Apr-09	Transfer to Wormington Incident WBS project code (TCC/20045)	(1,001,849)	✓	✓			See Note 1		
	110018893	31-Mar-14	31-Mar-14	Balance of a reconciliation exercise undertaken in March 2014 to ensure the total expenditure reflected in the Wormington Compressor Station code (TCC/03130) and the Churchover code (TCC/03131) was correct. We have reviewed the calculation which is mathematically accurate and appears reasonable (See Appendix 7)	(2,621,129)	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	106186503	18-Jan-12	18-Jan-12	Balance of a reconciliation exercise undertaken in January 2012 to ensure the total expenditure reflected in the Wormington Compressor Station code (TCC/03130) and the Tirley PRI code (TCC/20502) was correct. We have reviewed the calculation which is mathematically accurate and appears reasonable. (See Appendix 9)	303,358	✓	✓	YES	YES	YES	TCC/03130-1-02	✓
	100357594	17-Jan-12	17-Jan-12	Balance of a reconciliation exercise undertaken in January 2012 to ensure the total expenditure reflected in the Wormington Compressor Station code (TCC/03130) and the Wormington Incident code (outside the scope of this review) was correct. We have reviewed the calculation which is mathematically accurate and appears reasonable.	660,988	✓	✓			See Note 1		
						(6,134,647)						
	Total indirect costs reviewed					(6,134,647)						
	TOTAL DIRECT AND INDIRECT COSTS REVIEWED					29,416,486						

Note 1

Three transfers (totalling £(5,141,739) were made out of the Wormington Compressor Station sub-project to the Wormington Incident WBS project code (TCC/20045). As noted at paragraph 3.106 NGGT set up a separate project code for the incident costs so the costs could be recorded separately and recovered from the insurers. This a matter for discussion between Ofgem and NGGT

7 CHURCHOVER COMPRESSOR STATION TESTING

TCC/03131 Churchover Compressor**DIRECT COSTS**

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03131-1-02 Main Works Contract							14,209,509									
Transfer to Churchover Compressor split of MWC AMEC invoices between Wormington and Churchover project (invoices tested in Appendix 6)							<u>14,209,509</u>									
TCC/03131-1-09 Electricity Connections																
380266983	REDACTED	Mods to Wormington & Churchover		Final payment for Wormington project as per agreement with David Hall. Central Networks commissioning has been completed and any remaining issues such as the network monitoring and production of reports are over and above this value and shall be invoiced separately.	26-May-10	19-Jun-10	340,893	340,893	340,893	✓	✓	NO	YES	YES	TCC/03131-1-09	✓
							<u>340,893</u>									
Total direct costs reviewed							<u>14,550,402</u>									

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule £	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03131-1-02 Main Works Contract				Transfer to Wormington Incident WBS project code (TCC/20045)	(1,765,560)	✓	✓		Note 1			
	101714184	26-Mar-09	26-Mar-09	Balance of a reconciliation exercise undertaken in March 2014 to ensure the total expenditure reflected in the Wormington Compressor Station code (TCC/03130) and the Churchover code (TCC/03131) was correct. We have reviewed the calculation which is mathematically accurate and appears reasonable. (See Appendix 6)	2,621,129	✓	✓	YES	YES	YES	TCC/03131-1-02	✓
					<u>855,569</u>							
TCC/03131-1-03 Project Services				Expenditure line made up of a single entry for payments against invoices 5105625169 3763, 5105625314 3779, 5105627496 3832, 5105627601 3855, 5105634152 3872, 5105634210 3876, 5105641156 3922, 5105654864 3985, 5105671705 3662, 5105671708 3708, 5105671721 3750, 5105671768 4038, 5105671772 4037 (all below £250K). Agreed to breakdown provided by NGGT.	386,118	✓	✓	YES	YES	YES	TCC/03131-1-03	✓
					<u>386,118</u>							
Total indirect costs reviewed					<u>1,241,687</u>							
TOTAL DIRECT AND INDIRECT COSTS REVIEWED					<u>15,792,089</u>							

Note 1

A transfer of £(1,765,560) made out of the Churchover Compressor Station sub-project to the Wormington Incident WBS project code (TCC/20045). As noted at paragraph 3.106 NGGT set up a separate project code for the incident costs so the costs could be recorded separately and recovered from the insurers. This a matter for discussion between Ofgem and NGGT

8 FELINDRE COMPRESSOR STATION TESTING

TCC/03129 Felindre Compressor Station

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data £	Net invoice value £	Net invoice value less retention £	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
TCC/03129-1-02	Main Works Contract															
	08020446	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 25. Value of works up to 03/02/08.	28-Feb-08	25-Mar-08	4,773,276	4,773,276	4,773,276	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08030457	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 26. Value of works up to 02/03/08.	20-Mar-08	17-Apr-08	4,690,242	4,690,242	4,478,114	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	07110169	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 20a. Value of works up to 02/09/07.	25-Sep-07	12-Nov-07	3,496,810	3,496,810	3,496,810	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	07110375	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 22. Value of works up to 28/10/07.	22-Nov-07	21-Dec-07	3,366,597	3,802,618	3,366,597	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	07110170	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 20b. Value of works up to 02/09/07.	25-Sep-07	12-Nov-07	3,338,213	3,338,213	3,338,213	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08080631	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 31. Value of works up to 03/08/08.	28-Aug-08	08-Oct-08	3,242,858	3,242,858	3,080,658	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	07100443	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 21. Value of works up to 30/09/07.	23-Oct-07	22-Nov-07	3,011,123	3,011,123	3,011,123	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08060578	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 29. Value of works up to 01/06/08.	26-Jun-08	07-Jul-08	2,938,380	2,938,380	2,791,461	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08050559	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 28. Value of works up to 27/04/08.	19-May-08	20-Jun-08	2,719,471	3,035,617	2,719,471	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08010374	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 24. Value of works up to 30/12/07.	21-Jan-08	19-Jun-08	2,584,630	2,584,630	2,584,630	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08040577	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 27. Value of works up to 30/03/08.	22-Apr-08	30-May-08	2,024,369	2,234,354	2,024,369	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08070570	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 30. Value of works up to 01/02/09.	23-Jul-08	12-Aug-08	1,988,298	1,988,298	1,888,883	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	07110404	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 23. Value of works up to 11/11/07.	26-Nov-07	09-Jan-08	1,892,585	2,134,610	1,892,585	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	07120326	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 23b. Value of works up to 02/12/07.	26-Nov-07	09-Jan-08	1,694,686	1,694,686	1,694,686	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	09040238	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 33. Value of works up to 11/11/07.	20-Apr-09	22-Apr-09	1,630,864	1,630,864	1,513,272	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08090851	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 32. Value of works up to 31/08/08.	25-Sep-08	08-Oct-08	1,202,511	1,202,511	1,142,385	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	09020670	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 37. Value of works up to 01/02/09.	18-Feb-09	10-Mar-09	897,668	897,668	853,734	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08100600	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 33. Value of works up to 28/09/08.	22-Oct-08	17-Nov-08	697,498	697,498	662,623	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	09040238	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 38. Value of works up to 01/02/09.	27-Mar-09	22-Apr-09	645,003	645,003	645,003	✓	✓	NO	YES	YES	TCC/03129-1-02	✓
	08120739	REDACTED	New Build - Felindre	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Interim assessment no. 35. Value of works up to 18/12/08.	23-Dec-08	20-Jan-09	521,448	521,448	510,855	✓	✓	NO	YES	YES	TCC/03129-1-02	✓

DIRECT COSTS

INDIRECT COSTS

9 TIRLEY PRI TESTING

TCC/20502 Tirley PRI

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data	Net invoice value	Net invoice value less retention	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
							£	£	£							
TCC/20502-1-10	PAC2030 Main Works PRI															
	310021/073 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 29/09/11	06-Oct-11	25-Oct-11	2,143,247	2,143,247	2,143,247	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/084 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 30/08/12.	06-Sep-12	13-Sep-12	1,866,663	1,866,663	1,810,663	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/071 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 28/07/11	04-Aug-11	11-Aug-11	1,817,132	1,817,132	1,762,618	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/069 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 26/05/11	15-Jun-11	17-Sep-09	1,786,423	1,786,423	1,786,423	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/083 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 26/07/12.	31-Jul-12	07-Aug-12	1,774,930	1,774,930	1,721,682	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/072 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 25/08/11	01-Sep-11	06-Sep-11	1,698,908	1,698,908	1,647,941	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/068 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 28/04/11.	13-Jun-11	24-Jun-11	1,666,036	1,666,036	1,666,036	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/070 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 30/06/11	12-Jul-11	28-Jul-11	1,611,543	1,611,543	1,611,543	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/075 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 24/11/11	01-Dec-11	22-Dec-11	1,558,229	1,558,229	1,558,229	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/074 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 27/10/11	02-Nov-11	12-Nov-11	1,528,877	1,528,877	1,483,011	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/081 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 31/05/12.	07-Jun-12	26-Jun-12	1,468,872	1,468,872	1,468,872	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/078 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 23/02/12	01-Mar-12	20-Mar-12	1,446,012	1,446,012	1,446,012	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/079 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 23/02/12	04-Apr-12	24-Apr-12	1,443,698	1,443,698	1,443,698	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/082 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 28/06/12.	06-Jul-12	13-Jul-12	1,435,103	1,435,103	1,392,050	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/080 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 26/04/12	03-May-12	22-May-12	1,367,692	1,367,692	1,367,692	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/085 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 27/09/12	04-Oct-12	16-Oct-12	1,363,224	1,363,224	1,322,328	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/076 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 29/12/11.	05-Jan-12	24-Jan-12	1,246,890	1,246,890	1,246,890	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/077 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 26/01/12.	02-Feb-12	21-Feb-12	1,218,545	1,218,545	1,218,545	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/065 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 27/01/11	31-Jan-11	22-Mar-11	1,044,890	1,044,890	1,044,890	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/066 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 24/03/11.	03-Mar-11	07-Apr-11	818,545	818,545	818,545	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/067 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 31/03/11.	07-Apr-11	26-Apr-11	765,848	765,848	765,848	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/064 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 30/12/10	06-Jan-11	01-Feb-11	514,975	514,975	514,975	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
	310021/094 REDACTED	Brecon to Tirley 1200mm pipeline		Value of works to 27/06/13.	04-Jul-13	06-Aug-13	255,670	255,670	255,670	✓	✓	NO	YES	YES	TCC/20502-1-10	✓
							31,841,951									
TCC/20502-1-16	Main Works Felindre															
	13020292 REDACTED	New Build - Felindre		Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the new build compressor station, South Wales. Value of works up to 31/01/13.	07-Feb-13	20-Feb-13	301,704	301,704	286,619	✓	✓	NO	YES	YES	TCC/20502-1-16	✓
							301,704									

TCC/20502 Tirley PRI

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data	Net invoice value	Net invoice value less retention	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
							£	£	£							
TCC/20502-1-20	Main Works Worm/Church															
	11120577	REDACTED	Mods to Wormington & Churchover	Preliminary design, detailed design, procurement, construction, installation and commissioning associated with the modifications to Wormington and Churchover Compressor Stations. Interim assessment no. 59. Value of works up to 2012/11.	21-Dec-11	30-Jan-12	359,838	359,838	341,846	✓	✓	NO	YES	YES	TCC/20502-1-20	✓
							<u>359,838</u>									
TCC/20502-1-27	Commissioning Gas Flow															
	40614935	REDACTED	Tirley PRI	Agreement to limit flows from South Hook Terminal to REDACTED during the period of the Tirley tie-ins.	09-Dec-08	20-Aug-12	REDACTED	REDACTED	REDACTED	✓	✓	NO	YES	YES	TCC/20502-1-27	✓
	40614887	REDACTED	Tirley PRI	Agreement to limit flows from BG to REDACTED during the period of the Tirley tie-ins.	09-Dec-08	20-Aug-12	REDACTED	REDACTED	REDACTED	✓	✓	NO	YES	YES	TCC/20502-1-27	✓
							REDACTED									
Total direct costs reviewed							<u>37,392,493</u>									

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
					£							
TCC/20502-1-10	PAC2030 Main Works PRI											
	100310876	14-Jan-11	14-Jan-11	Transfer to Tirley PRI sub-project on establishment of separate contract from the initial Brecon to Tirley contract in line with Tirley Sanction paper 2010. (see Appendix 5)	19,500,000	✓	✓	YES	YES	YES	TCC/20502-1-10	✓
					<u>19,500,000</u>							
TCC/20502-1-20	Main Works Worm/Church											
	108638955	25-Jun-13	25-Jun-13	Accrual maintained for the 2013/14 financial year. Review of P1-10 for FY 2014/15 confirms the accrual has been reversed with no subsequent costs being incurred.	900,000	✓	✓	YES	YES	YES	TCC/20502-1-20	✓
	106186503	18-Jan-12	18-Jan-12	Balance of a reconciliation exercise undertaken in January 2012 to ensure the total expenditure reflected in the Wormington Compressor Station code (TCC/03130) and the Tirley PRI code (TCC/20502) was correct. We have reviewed the calculation which is mathematically accurate and appears reasonable. (See Appendix 6)	(303,358)	✓	✓	YES	YES	YES	TCC/20502-1-20	✓
					<u>596,642</u>							
TCC/20502-1-13	PAC2030 Land Purchase											
	104575200	27-Jan-11	27-Jan-11	Transfer from Brecon to Tirley pipeline sub- project - LAND PURCHASE-LP2 (TCC/03113-1-12) for associated land purchase at Tirley in line with the Tirley Sanction paper 2010.	691,583	✓	✓	YES	YES	YES	TCC/20502-1-13	✓
					<u>691,583</u>							
TCC/20502-1-02	PAC2030 Materials											
	104526079	14-Jan-11	14-Jan-11	Transfer from Brecon to Tirley pipeline sub- project - Materials (TCC/03113-1-01) for materials in line with 2010 Tirley Sanction paper.	555,000	✓	✓	YES	YES	YES	TCC/20502-1-02	✓
					<u>555,000</u>							
TCC/20502-1-18	NG Costs Felindre											
	104526079	14-Jan-11	14-Jan-11	Transfer from Felindre Compressor Station sub-project - NG costs (TCC/03129-1-10) for NG Staff costs incurred due to late gas in line with 2010 Tirley Sanction paper.	533,002	✓	✓	YES	YES	YES	TCC/20502-1-02	✓
					<u>533,002</u>							

TCC/20502 Tirley PRI

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule £	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
TCC/20502-1-17	Project Services Felindre											
	104570795	26-Jan-11	26-Jan-11	Transfer from Felindre Compressor station sub-project - Project Services (TCC/03129-1-03) for associated commissioning delays of Tirley in line with Tirley Sanction paper 2010) (See Appendix 8)	362,225	✓	✓	YES	YES	YES	TCC/20502-1-17	✓
					<u>362,225</u>							
TCC/20502-1-09	PAC2149 Legal Services											
	100310876	14-Jan-11	14-Jan-11	Transfer from Brecon to Tirley pipeline sub-project - CPO ENQUIRIES (TCC/03113-1-17) for legal services in line with 2010 Tirley Sanction paper.	345,000	✓	✓	YES	YES	YES	TCC/20502-1-09	✓
					<u>345,000</u>							
TCC/20502-1-16	Main Works Felindre											
	100213525	26-Sep-11	26-Sep-11	Transfer from Felindre Compressor Station sub-project - main works (TCC/03129-1-02) for associated commissioning delays of Tirley in line with Tirley Sanction paper 2010 (See Appendix 8)	297,678	✓	✓	YES	YES	YES	TCC/20502-1-20	✓
					<u>297,678</u>							
				Total indirect costs reviewed	<u>22,881,131</u>							
				TOTAL DIRECT AND INDIRECT COSTS REVIEWED	<u>60,273,623</u>							

10 ENVIRONMENTAL MONITORING AND AFTERCARE TESTING

TCC/20503 Environmental Monitoring and Aftercare

DIRECT COSTS

WBS Element	Invoice ref	Supplier	Contract per invoice	Description	Invoice date	Date paid	Value per SAP data	Net invoice value	Net invoice value less retention	Amount agreed to invoice	Agreed to SAP	Invoice Apportioned	Project classification correct	Expenditure classification correct	Code	OK?
							£	£	£							
TCC/20503-1-02	PAC2149 Main Works Environmental															
	6031	REDACTED	EMA	Project Environ. Services - South Wales, ABR Commission No: 2484, Ancillary Item,	01-Oct-10	24-Nov-10	252,056	252,056	252,056	✓	✓	NO	YES	YES	TCC/20503-1-02	✓
	5853	REDACTED	EMA	Project Environmental Services - South Wales, ABR Commission No: 2484, Ancillary Item.	01-Aug-10	15-Sep-10	260,009	260,009	260,009	✓	✓	NO	YES	YES	TCC/20503-1-02	✓
	5989	REDACTED	EMA	Project Environmental Services - South Wales, ABR Commission No: 2484, Ancillary Items - at cost plus 10%.	01-Sep-10	01-Nov-10	439,669	439,669	439,669	✓	✓	NO	YES	YES	TCC/20503-1-02	✓
							951,734									
	6686	REDACTED	EMA	Project Environmental Services - South Wales, ABR Commission No: 2620, Ancillary Items - at cost plus 10%.	01-Sep-11	21-Oct-11	289,004	289,004	289,004	✓	✓	NO	YES	YES	TCC/20503-1-02	✓
							1,240,738									
Total direct costs reviewed							1,240,738									

INDIRECT COSTS

WBS Element	Document no	Document date	Posting date	Description	Value per cost journal schedule	Amount agreed to support data	Agreed to SAP	Journal Appropriate	Project classification correct	Expenditure classification correct	Code	OK?
					£							
TCC/20503-1-02	PAC2149 Main Works Environmental											
	100310876	14-Jan-11	14-Jan-11	Transfers of cost including Rhead invoices from Brecon to Tirley scheme for Aftercare works in line with 2010 Tirley Sanction paper.	2,480,000	✓	✓	YES	YES	YES	TCC/20503-1-02	✓
	100310877	14-Jan-11	14-Jan-11	Transfer of cost including Rhead invoices from Felindre to Brecon scheme for Aftercare works in line with 2010 Tirley Sanction paper.	2,670,000	✓	✓	YES	YES	YES	TCC/20503-1-02	✓
	100310878	14-Jan-11	14-Jan-11	Transfers from Milford Haven to Aberdulais for Aftercare works in line with 2010 Tirley Sanction paper.	1,350,000	✓	✓	YES	YES	YES	TCC/20503-1-02	✓
	100345099	14-Feb-11	14-Feb-11	Transfers of cost including Rhead invoices from Brecon to Tirley scheme for Aftercare works in line with 2010 Tirley Sanction paper.	1,000,000	✓	✓	YES	YES	YES	TCC/20503-1-02	✓
				Invoices over £250k included within transfers tested as part of direct costs (see above)	(951,734)							
					6,548,266							
Total indirect costs reviewed					6,548,266							
TOTAL DIRECT AND INDIRECT COSTS REVIEWED					7,789,004							

11 DESCRIPTION OF WBS ELEMENTS USED IN THE MH PIPELINE PROJECT

- 11.1 As noted throughout the report, due to the change in accounting system, details of expenditure incurred prior to October 2007 is not available at a transactional level. To understand the type of the costs incurred throughout the life of the project, we have asked NGGT to provide an explanation of the costs included within each WBS element.
- 11.2 Included within the cost summary tables for each of the eight projects are references for each of the WBS elements. The description provided by NGGT in relation to each reference is set out in the table below:

WBS element descriptions

Ref	Type	Description of costs provided by NGGT
1	Main works contractor	External contractor appointed through a competitive tender to manage and deliver the detailed design and construction of the either the pipelines or compression works.
2	Materials	Purchase of materials direct from the manufacturer. Typically this would be either steel linepipe or bends.
3	Land and Compensation	Costs for access, ongoing use and compensation for land associated with the project. This will also include land agent fees and legal fees.
4	Staff costs	Internal National Grid costs directly associated with the project (ie Construction, Asset Management and Operations).
5	Project Services	External service provider of project staff for engineering and commercial roles within the project team.
6	Inspection Services	External service provider of specialist inspection services i.e. welding inspection on the pipeline construction.
7	Communications	External service provider for all external project communications and information.
8	Feasibility	Feasibility works associated with development of the Milford Haven project ie optioneering works.
9	Electricity connections	Electrical connections associated with installation of an electric driven compressor.
10	Commissioning Gas	Constraint payments at Milford Haven associated with commissioning of Tirley.
11	Miscellaneous	Various costs in association with the Milford Haven project. All transactions below £250k.



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