National Grid Gas Transmission

Quarry & Loss RIIO-T1 Reopener Submission

8th May 2018

National Grid Gas Transmission

Quarry and Loss Reopener 2018

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I. Executive Summary

1. This document is the formal submission by National Grid Gas Transmission (hereafter referred to as National Grid) to Ofgem to request £23.1m (09/10 price base) of funding for Quarry and Loss Development Claims incurred and forecast to be incurred during the RIIO-T1 period in relation to settling claims under the Deed of Easement or Deed of Servitude for:

   - loss of crop and drainage;
   - loss of land development;
   - sterilised minerals;
   - landfill and tipping; and
   - power generation.

2. This document is being submitted under the Uncertainty Mechanism – Licence Condition 5E.1 for Quarry and Loss Development Claims in the May 2018 reopener window.

Submission summary

3. As part of RIIO-T1, no baseline funding was provided for Quarry and Loss liabilities due to the high level of uncertainty around the volume and financial magnitude of claims.

4. Arrangements for the recovery of these costs are set out in the Special Condition 5E.1 of the licence. Quarry and Loss costs are difficult to predict and can be impacted significantly by individual claims, hence their inclusion as part of this uncertainty mechanism.

5. To date in RIIO-T1, National Grid has received Quarry and Loss claims which range from £100 to £1.3m. We challenge claims where we deem them to be unreasonable or unsubstantiated or our liability is unproven.

6. Quarry and loss claims must exceed the materiality threshold of £14.5m (2009/10 price base) by the end of the RIIO-T1 period to trigger the requirement for cost recovery as part of the May 2018 reopener. Claims received and forecast to be received by the end of RIIO-T1 will exceed this amount.

7. National Grid has not received and is not anticipating to receive any claims in relation to power generation during the RIIO-T1 period. Therefore this claim category is not included within this submission.

8. Landfill and tipping costs received to date have been associated with sterilised mineral claims so these have been dealt with as one category in this submission.

9. Actual costs incurred to date: **£14.2m** (09/10 price base), forecast costs 2018 - 2021: **£8.9m** (09/10 price base), the total cost of claims over RIIO-T1: **£23.1m** (09/10 price base). This amount is over the materiality threshold as specified in the licence.

	Actuals					Forecast			
£m (in 09/10 price base)	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**Total RIIO-T1**
Loss of Crop	2.5	0.9	0.8	0.9	0.6	1.1	0.7	0.5	**7.8**
Drainage	0.9	0.8	0.8	0.9	0.8	1.9	1.5	0.8	**8.3**
Loss of Development	0.0	0.1	0.3	0.6	1.4	0.4	0.0	0.0	**2.7**
Sterilised Minerals	0.1	0.3	0.3	0.5	1.0	0.1	0.3	0.0	**2.5**
Sterilised Minerals – Quarry C	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	**1.7**
Total Value	***3.5***	***2.0***	***2.1***	***2.9***	***3.7***	***3.5***	***4.1***	***1.3***	***23.1***

Table 1: RIIO-T1 Expenditure for Quarry and Loss

10. **RIIO-T1 output**: *In settling any Quarry and Loss claims, National Grid will demonstrably challenge as far as is reasonable regarding both the basis of the claim and the quantum of the compensation being sought.*

11. **RIIO-T1 sterilised minerals Quarry C output**: Due to the ongoing uncertainty in relation to this specific sterilised minerals claim this has been outlined as a separate RIIO-T1 output. *By the end of RIIO-T1, National Grid will have decommissioned the section of pipeline affected by the quarrying activity.*

II. Glossary of terms

Crop Yield – This is a measurement of the amount of harvestable crop grown over a specific area.

Deed of Grant of Easement – Legal agreement between the pipeline operator and Land Owner providing a 'right of way' for the pipeline over a given width.

Deed of Release – A legal agreement removing a liability from one party to a Deed of Grant of Easement

Deed of Servitude - The equivalent of a Deed of Grant of Easement under Scottish Law

Deed of Variation – A legal agreement outlining a change in the Deed of Grant of Easement, sitting alongside that document.

Full and Final Settlement – An agreed amount of compensation that removes any liability for the items listed with the relevant party.

Grantor – The party (usually the landowner / occupier) who is granting a right under the Deed of Grant of Easement

Heads of Claim – also known as a Heads of Loss. A Heads of Claim refers to a list of damages / losses / costs incurred by the Grantor arising from National Grid exercising its rights normally with a financial amount claimed and evidence attached.

In-Line Inspection – Pipeline condition assessment using an intelligent In-Line Inspection tool or 'PIG' to identify any damage.

Land Agent – Person employed by either the land owner / occupier, or by National Grid, to represent them; a land agent would normally be a chartered surveyor (RICS).

Lands Officer – National Grid staff who manage the companies access to land, legal agreements, Grantor relations and matters of compensation.

Land Remediation – Works carried out in order to return land to a state equivalent to pre-asset installation.

Sterilised Minerals – Is the volume of mineral deposits which cannot be extracted by quarrying activity due to the presence of a pipeline.

III. Background

12. Quarry and Loss liabilities result from the terms in the Deed of Grant of Easement or Deed of Servitude (hereafter referred to as the Deed), the legal documents which determine the rights and restrictions associated with pipeline assets. Within these legal documents the Grantee, National Grid, indemnifies the Grantor, the Landowner, against all substantiated losses arising from the exercise of the rights.

13. Landowners' claims for loss of revenue compensation can be categorised into three distinct areas:-

- "Loss of Crop and Drainage": These claims relate to a loss suffered or a cost incurred as a result of land damage and/or drainage defects due to the presence of the pipeline.

- "Loss of Development": The Deed restricts certain developments directly above the pipeline and within a defined easement area to protect the Grantee's underlying asset. There are also restrictions recommended by the Health & Safety Executive (hereafter referred to as HSE) which are applied by the local planning authority. These restrictions may result in the Grantor being unable to develop an area of land under the terms of the Deed. This means they can claim compensation for the area of loss of development.

- "Sterilised Minerals": National Grid pipelines can be and historically have been laid through mineral deposits, where there is no alternative economic route, which the Grantor is prevented from extracting under the terms of the Deed. A compensation claim can be made based on the value of the minerals that cannot be extracted. In some circumstances, following mineral extraction, the void left can be filled with inert landfill material. By preventing the mineral extraction, the opportunity to landfill is lost which is also liable for compensation under the terms of the Deed.

14. There are other clauses within the Deed which may result in Grantors' claims being submitted to National Grid for other land damage as a result of the presence of the pipeline. For example restrictions can be applied to the Grantor in relation to access and activity on their land where erosion or pipeline buoyancy has resulted in an area of shallow depth of ground cover over the pipeline. This submission does not include costs associated with claims of this type due to the ongoing level of uncertainty.

15. Regardless of the type or origins of the claim received, there are two fundamental principles that need to be satisfied for a claim to be taken forward:

- Liability: Is the loss suffered solely as a direct result of the rights/restrictions contained within the Deed and is the claimant party to that Deed?

- Evidence: If it is established that National Grid has a liability, can the claim be substantiated with appropriate evidence? It is the duty of the claimant to provide all evidence to substantiate any claim.

16. Clear processes are in place to validate and challenge the basis and amount of the compensation being sought for all claims. These processes are contained in Appendix 1 and are explained using case studies under the relevant section of this report.

17. The forecast costs included within this submission are based on a substantiated provision based on our experience of claims dealt with to date and known claims which are projected to be settled by the end of the RIIO-T1 period. As demonstrated in several of the following case studies, some claims can take a number of years to settle and this has been taken into account in the forecast.

18. Costs are managed internally in categories, the finance tables in this submission have been structured to reflect this internal categorisation of claims. Also, at the request of Ofgem, Quarry C costs are separated into their own category distinct from Sterilised Minerals. Thus, the cost categories used in this re-opener document are:

a. Loss of Crop

b. Drainage

c. Loss of Development

d. Sterilised Minerals (less Quarry C)

e. Quarry C

19. The submission document is structured into the following chapters:

- Loss of Crop & Drainage
- Loss of Development
- Sterilised Minerals
- Other Claims
- Submission Summary

IV. Loss of Crop and Drainage

20. This section explains the background to National Grid's liabilities under the heading of Loss of Crop and Drainage. By the end of RIIO-T1 we are forecasting to have incurred costs of £16.1m for claims made against this Quarry and Loss category. More detail about the actual costs incurred and the forecasts are provided in the following sections.

Loss of Crop and Drainage - Background

21. The presence of National Grid pipeline assets has caused, and in some cases continues to cause, land damage and associated drainage defects (outside of the five year defect period for a pipeline construction project) at a number of locations across the country. Liabilities have arisen which require National Grid to rectify the damage through land remediation, drainage repair works, or by way of compensation to the Grantor for loss of crop yield. Under the terms of the Deed there is a clause in regards to damage or injury caused by exercising our rights that states:

> *"(National Grid Gas)……. where it reasonably can, must make good any damage or injury so caused and where this does not happen must fully compensate the Grantor".*

22. These liabilities will continue in perpetuity until such time as the land damage and/or drainage defects have been rectified or the liability has been removed by way of a one-off 'full and final' settlement with the Grantor. The liabilities are not linked to the operational life of the pipeline. If a pipeline is decommissioned the liability will remain as long as there is an asset in the ground with the potential to cause land damage and associated drainage defects.

23. National Grid has three separate financial provisions for satisfying liabilities associated with land damage and/or drainage defects. These are as follows:

- Loss of Crop - Annual Payments: This provision is used for loss of crop payments on an annual basis where there is a proven loss due to the presence of the pipeline.
- Loss of Crop - Full and Final Settlements: This provision is used for one off 'full and final' settlement payments where it has been calculated to be economically efficient to pay a lump sum now rather than continue to pay annual compensation in perpetutity.
- Drainage - Investigation and Repair: This provision is used to fund investigation and repair works to address drainage defects caused by the presence of the pipeline.

24. In this submission, evidence is provided to demonstrate that the loss of crop and drainage costs incurred to date and forecast to be incurred are compliant with the requirements of the uncertainty mechanism in Licence Condition 5E.1. In particular it can be demonstrated that National Grid:

- has incurred loss of crop and drainage costs since April 2013 and forecasts to incur further costs to the end of RIIO-T1;
- has managed these costs efficiently by challenging the legitimacy of the claims and the amount of compensation being sought;
- has reduced the ongoing liability to consumers for compensation payments by agreeing 'full and final' settlements where it is financially efficient to do so.

Loss of Crop – Annual Payments

25. Table 2 outlines the cost and volumes of claims received to date and forecast to be settled within the RIIO-T1 period.

	Actuals					Forecast			
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total RIIO-T1
Annual payments £m (in 09/10 price base)	0.9	0.6	0.6	0.7	0.5	0.4	0.4	0.3	**4.3**
No. claims	215	105	103	88	90	96	81	76	**854**

Table 2: RIIO-T1 expenditure crop annual

26. Under the terms of the Deed, National Grid is required to pay compensation to a Grantor for the loss of crop yield where liability has been proven.

27. National Grid will assess if it is possible, and economically efficient, to remediate the land however where this is not possible (e.g. the works will not guarantee avoidance of loss) or it is prohibitively expensive to do so National Grid will compensate the Grantor for any loss in crop yield. This continues in perpetuity until such time as the land damage and/or drainage defects have been rectified or the liability has been removed by way of a one-off 'full and final' settlement to the Grantor.

Loss of Crop – Annual payment claim review process

28. All claims are managed by regionally based Land Officers in the specialist Land and Acquisitions team or by external, qualified land agents who work on National Grid's behalf. The high level process for this is shown in a flow chart in Appendix 1.

29. The process for the Land Officer to review the claim is detailed in a Standard Operating Procedure (SOP) included in Appendix 2. Each claim must be substantiated with the appropriate evidence including:

- a land plan showing the pipeline;
- photographs;
- crop inspection report;
- measurements of the land affected; and
- evidence of current market prices.

30. Annual crop loss compensation claims are settled on the basis of crop inspections which are carried out by the relevant National Grid Land Officer or appointed land agent representing National Grid. Crop inspections involving site visits usually take place between July-September when crops are still in the ground but mature enough to assess if there are losses/reduced yields in the pipeline easement areas. National Grid refuses to settle any claims where a crop inspection has not taken place.

31. In the interests of efficiency crop inspections are normally carried out with the Grantor's appointed land agent present so that any losses can be agreed between parties at the time of the inspection. This means that many of the claims received by National Grid are already aligned to the losses agreed during the crop inspection. Accordingly there is often no difference in the value of the submitted claim to that agreed, reducing time and cost associated with the process. However these claims are still subject to the provision of appropriate evidence as outlined in paragraph 29 above.

32. One of the key elements considered in settling an annual crop loss claim is the crop yield which can vary due to a wide range of factors, including weather, ground conditions, topography and the presence of pests. In arable land, National Grid sometimes request yield returns which can be calculated using technology built into the combine harvester. With crops like potatoes, part of the crop inspection may involve digging and weighing a small area of the crop (for example $1m^2$) and then calculating the yield per acre on that basis. Notwithstanding these methods, the typical range of yields for the various common crops is well known and readily available in industry publications such as the John Nix pocketbook[1] and National Grid's own generic crop guide.

33. All of the claim evidence is compiled and detailed in the claim form with an overall description of the claim breakdown and a recommendation for approval by an individual with the correct delegation of authority in line with Table 3. The Land Officers who scrutinise the claims are chartered surveyors or working towards

[1] https://www.thepocketbook.co.uk/

achieving chartered status and have significant industry experience. This provides assurance that they have the required valuation experience, professional integrity and knowledge to ensure the claims are fair and reasonable.

34. There are different levels of authority for approving payments demonstrating appropriate internal governance over the authorisation and payment process. The authority levels differ depending on the different payment methods. The authority levels for payment by cheque (up to a maximum £50k, anything above this has to paid by BACS), which apply to the majority of annual crop compensation payments, are outlined in Table 3 below:

Role	Delegation of authority levels (£)
Land Officer	£1 - £2,000
Senior Land Officer	£2,000 - £4,000
Regional Land Manager	£4,000 - £5,000
Land & Acquisitions Manager	£5,000 - £20,000
Head of Network Engineering	£20,000 - £25,000
Director (Gas Transmission Owner)	£25,000 - £50,000

Table 3: Payment Authority Levels for cheque payments

35. In some cases National Grid may pay compensation to a Grantor or their representative by way of a BACS electronic transfer. For this payment method, known as a C-Series payment, the authority levels are outlined in Table 4 below:

Role	Delegation of authority levels (£)
Land Officer	£0.00
Senior Land Officer	£0.00
Regional Land Manager	£0,00 - £20,000
Land & Acquisitions Manager	£20,000 - £150,000
Head of Network Engineering	£150,000 - 500,000
Director (Gas Transmission Owner)	£500,000 - £3,000,000

Table 4: Payment Authority Levels for BACS (C-Series) payments

36. With reference to Table 3 and 4 above, claims may only be approved by individuals with an appropriate or greater level of authority for the value of the

claim.National Grid publish a fee scale document[2] which provides the basis for assessing the appropriate cost for land agents' (Surveyors') fees reasonably incurred in respect of a claim for compensation. In addition, in certain cases a land agent may seek to charge fees on a time-charge basis but this must be agreed with National Grid prior to commencement of any work. In assessing a fee on a time-charge basis, it must be demonstrated that the fees proposed are reasonable and proportionate to the complexity of the claim and are commensurate with the time, effort and expertise required for the claim.

Loss of Crop – Annual payment case study

37. The case study below demonstrate the process followed for loss of crop annual payment claims. This case study is typical examples of the types of annual crop loss claims received.

Case study 1 – Scotland

Original Annual Claim - £6,500 (including agents fees)
Agreed Annual Claim - £3,800 (reduction of £2,700 including agents fees)
This case study demonstrates the process for an annual crop loss claim and how it is calculated with reference to crop prices, volume per acre and National Grid's fee scale for payment of land agent's fees.

In settling this particular claim National Grid's appointed land agent assessed significantly lower losses in two of the affected fields which meant the claim was negotiated down successfully.

In April 2017, National Grid settled an annual crop loss compensation claim with this Grantor for the sum of £3,800. This related to a loss of crop yield incurred in 2016 due to the presence of pipeline. The area affected by the pipeline was 14.6 acres across six different fields sown with a variety of crops. The claim was calculated as follows:

Claim item	Cost (£)
Crop loss – various including winter wheat, wheat, daffodils and oilseed rape	3,100
Agents Fee	600
Expenses	100
Total	**3,800**

[2] https://www.nationalgrid.com/sites/default/files/documents/8589940368-Payment%20of%20Surveyors%20Fees%202017.pdf

In this case National Grid's appointed land agent assessed much lower losses in two fields. The original value of the claim including the agent's fee was £6,500. Further to negotiations on the actual losses incurred, this was reduced to £3,800 which represents a reduction of 41% from the original claim value.

The amended claim was agreed with the Grantor and the claim form was signed and counter signed by the land agent acting on behalf of National Grid. The claim was checked and recommended for approval by the instructing Senior Land Officer on 28th April 2017 and then authorised for payment by the Land Manager on 4th May 2017.

Loss of Crop – Annual payment costs to date

38. With reference to Table 2, it can be seen that in RIIO-T1 (April 2013 until March 2018) National Grid have incurred circa £3.2m in actual costs associated with 601 annual compensation claims. The total value of the annual claims submitted to National Grid during this period was greater than this. By taking a robust approach to challenging the value and legitimacy of all claims submitted, National Grid has regularly settled claims at a lower value than originally submitted, as demonstrated in Case Study 1.

£m (in 09/10 price base)	Actual					Total RIIO-T1
	13/14	14/15	15/16	16/17	17/18	
Scotland	0.20	0.14	0.23	0.29	0.17	1.03
North West	0.31	0.03	0.01	0.06	0.04	0.45
East	0.30	0.33	0.29	0.29	0.24	1.45
South West	0.01	0.01	0.01	0.00	0.01	0.04
South East	0.07	0.04	0.03	0.03	0.05	0.22
Total	0.89	0.55	0.57	0.67	0.51	**3.19**

Table 5: Loss of crop annual costs incurred to date by region

39. At the start of RIIO-T1 (April 2013) National Grid had a loss of crop annual claims liability of £1.6m. During the RIIO-T1 period National Grid has successfully reduced this annual liability down to approximately £0.6m with approximately 125 Grantors still making regular claims (this figure may increase as new Grantors may come forward with a valid claim). This notable decrease in annual liabilities is a result of National Grid actively seeking to, where economically efficient, remove these long term liabilities by agreeing to a 'full and final' settlement with the Grantor (more detail on this is provided in paragraph 41).

40. The number of annual claims settled each year by National Grid does not correlate to the number of Grantors with the potential to submit a claim. As explained below (in paragraph 39), the number of claims received by National Grid in any given year is dependant on a number of local factors.

Loss of Crop – Annual payment forecast methodology

41. In order to forecast the volume and cost of anticipated loss of crop annual payments in the remaining three years of RIIO-T1, National Grid has reviewed which Grantors are likely to submit a legitimate compensation claim based on historic submissions and the local knowledge of the Lands Officers. A number of factors were considered when developing the forecast volume of loss of crop annual claims including:

a. Not every known Grantor with a valid claim will necessarily submit their claim every year; in some cases they may submit a claim covering multiple years.

b. A small proportion of Grantors have been known to stop claiming despite having submitted claims in previous years. National Grid does not proactively chase Grantors to submit claims as it would be uneconomic to do so.

c. Annual claims from Grantors who have agreed to a 'full and final' settlement will stop. Where National Grid is expecting to complete a 'full and final' settlement then no further annual claim is included in the forecast from this point onwards.

d. Each year, National Grid receives a number of ad-hoc loss of crop compensation claims that need to be settled. Typically these arise from a drainage problem reported by a Grantor which National Grid, if liable, will seek to rectify by way of drainage investigations and repair works. However as a result of these works and the plant access route, the Grantor may also suffer loss of crop or land damage for which they may seek compensation. As these types of compensation claims are ad-hoc in nature and typically of relatively low value no provision has been included in the forecast for these claims.

e. New annual claims arise when a Grantor contacts National Grid and is able to substantiate an annual claim for loss of crop that National Grid was not previously aware of. For example, this may happen if there is a change in land ownership, or the Grantor becomes aware they have a claim after getting advice from a new land agent. We have not included an assumption in our forecast for new claimants materialising; volumes included in the forecast are known claimants only.

f. The forecast also takes into account the fees payable by National Grid to the Grantor's appointed land agent. In the majority of cases the Grantors appoint a professional land agent to represent them in negotiations with

National Grid and it is National Grid's policy to pay their reasonable fees in this regard. For forecasting purposes reference has been made to National Grid's fee scale document. This fee scale ensures that the agent's fee is proportionate to the value of the compensation claim settlement value. The fee scale is subject to periodic review to ensure accuracy.

g. The forecast is based on an annualised claim per Grantor assuming that this liability will be incurred annually for the duration of RIIO-T1.

Loss of Crop – Annual payment forecast costs to the end of RIIO-T1

42. In the remaining three years of RIIO-T1 National Grid expects to incur a further £1.1m in costs for loss of crop annual claims. The forecast is comprised of a number of anticipated annual claims based on known claimants that have claimed historically.

£m (in 09/10 price base)	Forecast			Total RIIO-T1
	18/19	19/20	20/21	
Scotland	0.08	0.07	0.07	**0.21**
North West	0.02	0.02	0.01	**0.05**
East	0.31	0.27	0.20	**0.78**
South West	0.00	0.00	0.00	**0.00**
South East	0.03	0.03	0.03	**0.09**
Total	**0.4**	**0.4**	**0.3**	**1.13**

Table 6: Loss of crop annual forecast costs by region

Loss of Crop - Full and final settlement

43. A 'full and final' settlement is a means of removing the ongoing annual loss of crop payment liability with a Grantor where it is deemed economic to do so.

44. Table 7 outlines the cost and volume of 'full and final' settlements agreed to date and those forecast to be agreed by the end of the RIIO-T1 period.

	Actuals					Forecast			
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total RIIO-T1
Full and final settlements £m (in 09/10 price base)	1.6	0.3	0.2	0.3	0.04	0.6	0.3	0.2	**3.54**
No. claims	66	15	7	9	9	15	5	6	**132**

Table 7: RIIO-T1 Expenditure full and finals

45. In 2008, National Grid initiated the 'Historic Crop Loss Project' (HCLP). This sought to proactively approach all Grantors where there was a known annual loss of crop liability and offer:

- a one-off 'full and final' settlement to remove the ongoing crop loss liability; or
- where possible a Deed of Variation, which removes National Grid from all future liabilities including crop loss, subsidence and drainage by varying the terms of the original Deed of Grant of Easement.

46. It should be recognised that a 'full and final' settlement is an agreement between National Grid and the current Grantor. If the land is sold, a new Land Owner could have a claim against National Grid for crop losses they experience on the same piece of land. The ownership of agricultural land affected by National Grid's pipelines rarely changes hands, so this risk is relatively low.

47. However, it is preferable for National Grid to secure a Deed of Variation removing National Grid from all liabilities including crop loss, subsidence and drainage in perpetuity by varying the terms of the original Deed. The Deed is attached to the land and its terms are binding to all future Land Owners.

48. At the start of the project in 2008, there were 602 known annual claimants nationally and our annual liability for loss of crop compensation was approximately £1.85m. Since 2008, the number of annual claimants has reduced to 125 and an annual liability for loss of crop of approximately £0.6m.

49. The table below shows the number of 'full and final' settlements that have been agreed since the start of the HCLP:

	Financial year	Region					
		Scotland	North West	East	South West	South East	Total
TPCR-4	09/10	39	24	1	0	9	**73**
	10/11	62	11	18	0	23	**114**
	11/12	29	74	39	0	8	**150**
	12/13	11	31	41	0	0	**83**
RIIO-T1	13/14	5	14	47	0	0	**66**
	14/15	3	4	8	0	0	**15**
	15/16	3	2	2	0	0	**7**
	16/17	2	0	7	0	0	**9**
	17/18	4	0	4	0	1	**9**

Table 8: Full and final settlements to date

Loss of Crop - Full and final settlement process

50. National Grid always seeks to negotiate the lowest settlement value whilst maintaining good relationships with the Grantors. Each negotiation is managed separately with the Land Officer using their professional judgement and the following relevant factors:

- annual crop loss liability;
- asset life remaining;
- potential cost to reinstate the land to original state and the likelihood of success;
- potential cost to deal with any drainage problems on the land and the likelihood of success;
- time and effort spent dealing with the above on an enduring basis; and
- the need to maintain positive Grantor relationships in perpetuity.

51. Throughout the process, National Grid has acted in the commercial best interests of the consumer by having a clear method of calculating the maximum economic threshold for settling with any given Grantor. This is based on the size of their current annual loss of crop compensation payments.

52. Where offers have been made over and above the maximum economic threshold, this has only been where it could be demonstrated to be financially beneficial long term, for example where a Deed of Variation can be negotiated or where the potential cost of reinstating the land following a drainage defect claim would be significantly greater than the current annual loss of crop payment. Generally, National Grid has agreed a Deed of Variation where it can be demonstrated to be an economically efficient settlement. A Deed of Variation absolves National Grid of all future potential liabilities associated with the land including drainage and subsidence.

Loss of Crop – Full and final settlement case study

53. The case study below demonstrates the process followed to agree 'full and final' settlements with Grantors.

Case Study 2 – Scotland

Average annual loss of crop cost – £3,000
Drainage costs – n/a
Full & final settlement & Deed of Release cost - £15,000

This case study relates to land at a farm in Scotland. Recognising ongoing liabilities for future loss of crop annual compensation an economic settlement with the Grantor was agreed for a Deed of Release (another legal term for a Deed of Variation).

Following the pipeline construction in 2008, drainage restoration works were completed to the satisfaction of the Grantor but a liability still existed for annual crop loss compensation. The Grantor accepted an offer based on the 2013 annual settlement (£1,300) rather than a five year average of the annual claim history which would normally be used. It was successfully argued by the National Grid's Land Officer that using a full average would not be representative as claims prior to 2013 included significant elements of Grantor's time, changes to the farming regime, disturbance etc. which specifically arose from the initial restoration difficulties and would be unlikely to recur in the future. The average annual compensation claim over the previous four years had been £3,000 so had this been used as the basis for the settlement calculation a much higher Deed of Release settlement could have been justified.

In February 2015, National Grid instructed solicitors to complete a full and final settlement and a Deed of Release with the Grantor. This absolved National Grid of all future crop loss, drainage and subsidence liabilities as set out in the Deed.

The instruction to solicitors to complete the Deed of Release was recommended for approval by the Land Officer and approved by the Regional Land Manager on 9th February 2015.

As can be seen from the above explanation, National Grid successfully absolved itself of all future liabilities in relation to crop loss, drainage and subsidence at this site. The method of calculation used to negotiate the settlement represented the

most economic approach for National Grid as it was based on just the crop loss element of the 2013 claim rather than the higher average annual figure. In overall terms this represents a financial benefit to National Grid and consumers by reducing long term costs.

Loss of Crop – Full and final settlement costs to date

54. With reference to Table 7 it can be seen that so far in RIIO-T1 National Grid has incurred circa £2.4m in 'full and final' settlements and/or Deeds of Variation.

Loss of Crop – Full and final settlement forecast methodology

55. In order to forecast anticipated expenditure over the remaining RIIO-T1 period, National Grid has reviewed known annual claimants that are likely to agree to a 'full and final' settlement or a Deed of Variation, the likely settlement values and the financial year those settlements are likely to be completed. It has been assumed that only the 26 'full and final' settlements, currently in negotiation will complete in this period. The list of known annual claimants and which ones are likely to complete in the remaining RIIO-T1 period.

56. Where National Grid is expecting to complete a 'full and final' settlement then no further annual claim is included relating to this Grantor in the forecast from this point onwards.

Loss of Crop – Full and final settlement forecast costs to the end of RIIO-T1

57. Over the remainder of RIIO-T1 National Grid expects to incur a further £1.1m in costs for full and final settlements.

	Forecast			Total RIIO-T1
	18/19	19/20	20/21	
Full and final settlements £m (in 09/10 price base)	0.6	0.3	0.2	**3.54**
No. claims	15	5	6	**132**

Table 9: Full and final settlements forecast to the end of RIIO-T1

58. Through the HCLP all known annual claimants were offered a 'full and final' settlement. As a result 526 Grantors settled with National Grid removing the ongoing liability. There are a further 26 Grantors that are expected to agree terms to 'full and final' settlements before the end of RIIO-T1.

59. As explained above, National Grid has significantly reduced its annual crop loss compensation liability by taking this approach. Any cost associated with 'full and final' or Deeds of Variation must be compared against the associated reduction in the annual claims liability over the long term.

Drainage – Investigation and repair

60. Table 10 outlines the cost and volume of drainage investigation and repair works completed to date and those forecast to be completed within the RIIO-T1 period.

	Actuals					Forecast			
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total RIIO-T1
Investigation & repair £m (in 09/10 price base)	0.9	0.8	0.8	0.9	0.8	1.9	1.5	0.8	**8.3**
Completed jobs	128	123	117	126	129	170	167	144	**1,103**

Table 10: RIIO-T1 Expenditure drainage

61. The drainage provision is used to fund investigation works (non-intrusive and intrusive) on sites where defects have been reported in order to establish if National Grid has a liability. If it is shown to be our liability, then a remedial drainage system may be installed or the Grantor will be compensated for losses.

62. National Grid could have a liability for a number of reasons including the reinstatement of the land or settlement issues caused by the presence of the pipeline. Drainage issues may also arise due to Land Owner / occupier activities where National Grid would not be liable such as:

- damage to drainage pipes during agricultural activities;
- routine maintenance of ditches and outfalls not being carried out; or
- changes to water table in adjacent fields.

Drainage – Investigation and repair claim review process

63. Drainage issues are reported to National Grid by Land Owners/occupiers and these are then assigned to a Land Officer. The Agricultural Land Drainage Framework is then used to instruct a specialist drainage contractor to carry out investigation works as per the three phases outlined below. National Grid seeks to effectively manage these phases of work via the appointed contractors, reviewing recommendations and challenging where appropriate. It should be recognised that this is a highly specialist area and National Grid have appointed these contractors to provide expert advice on these matters. The Agricultural land

Drainage Framework provides National Grid with a range of contractors that can be employed to undertake drainage works using pre-agreed framework rates for labour and machinery ensuring National Grid receves value for money.

64. The drainage mitigation strategy is split into three phases; non-intrusive investigation, intrusive investigation and remedial works. Each of these phases are described below and outlined in the process flow chart in Appendix 1.

Phase 1 – Non-intrusive investigation

65. This includes desk-based research, site walk over and liaison with the Land Owner/agent to establish any liability and/or recommend intrusive investigation (Phase 2). The specialist drainage contractor produces a Phase 1 Report for National Grid explaining the outcome of these investigations.

66. The Phase 1 Report may or may not conclude that National Grid is liable for rectifying the reported drainage issues. If the conclusion is that National Grid is not liable then this will be reported back to the Land Owner and no further investigation works will be carried out.

67. If the conclusion of the Phase 1 Report is that National Grid may be liable or that further investigations are required to establish liability, National Grid will then challenge and review the recommendations of its appointed drainage contractors. If National Grid agree that further works are required, the Land Officer will instruct the drainage contractor to undertake a Phase 2 intrusive investigation.

Phase 2 – Intrusive investigation

68. If liability cannot be established definitively as part of the Phase 1 works it may be necessary to undertake Phase 2 intrusive investigations. This usually involves an excavator to unearth the drainage and junctions to establish the cause of the problem. At this stage, if the liability is confirmed to be National Grid's then two options are possible:

- If the issue can be fixed easily, remedial works are completed (e.g. failed junction of drainage pipes). This is referred to as a 'find and fix' solution.

- If it cannot be fixed easily the specialist drainage contractor will recommend a drainage scheme to rectify the problem, which may be implemented at a later date (within Phase 3). The contractor will also provide indicative costs for the scheme. The National Grid Land Officer will receive a Phase 2 Report which they will challenge and review, both the recommendations and indicative Phase 3 cost forecast, before deciding whether to proceed to Phase 3.

Phase 3 – Drainage repair works

69. If it is decided that a Phase 3 remedial drainage scheme needs to be implemented, the instructing Land Officer will seek a detailed quotation from the specialist drainage contractor from Phase 1 and 2 for the work. The contractor

may be instructed directly, through the framework contract, if this is deemed economic and efficient. If the scheme is expected to cost over £20k or if an alternative supplier is required then multiple quotations will be sought.

70. Once appointed, the drainage contractor implements the recommended drainage scheme from Phase 2 following agreement with the Land Owner.

71. National Grid always seeks to be as efficient as possible when undertaking drainage investigation and repair works, seeking to reduce overall costs. One of the main ways this can be achieved is to complete a Phase 2 'find and fix'. This approach can normally be taken on the more straightforward drainage repairs, for example where there are poor or missing connections between severed drains or silt build up within header drains. Once the problem has been identified the repairs can normally be completed within one day.

72. The advantages of this approach are:

- it avoids the cost of the contractor remobilisation;
- the repair can be undertaken without having to backfill the investigations and re-excavate at a later date;
- the gas pipeline easement area does not need to be re-marked;
- it avoids service searches having to be undertaken again;
- it avoids the additional cost of the drainage consultant having to liaise further with the Grantor, National Grid and the other contractors to arrange the Phase 3 works;
- it avoids the potential for further unnecessary crop loss compensation claims if there is significant delay in undertaking the Phase 3 works;
- it ensures that the drainage problem is investigated and repaired quickly and efficiently, delivering good customer service for National Grid's Grantors; and
- it ensures that available contractors are used efficiently and can move on to carry out works at other National Grid sites more promptly.

Drainage – Investigation and repair case studies

73. The case studies below demonstrate the process followed for drainage investigation and repair works.

Case Study 3 – Lancashire
Loss of crop compensation - £3,800 **Drainage investigation and repair costs - £14,300** This case study demonstrates where National Grid has had a drainage problem reported and has sought to establish liability through appropriate technical

investigations. National Grid has then acted diligently to resolve the drainage issue through appropriate remediation works using specialist drainage contractors.

The Grantor notified National Grid about a drainage issue on his land via his appointed land agent in September 2016. National Grid's responsible Land Officer then instructed a specialist drainage contractor to investigate this drainage issue and report back on National Grid's liability. An initial site visit and Phase 1 non-intrusive investigation, was carried out in October 2016.

The Phase 1 report concluded that previous drainage remedial works carried out in 2015 only had a limited effect on improving the drainage and that the gas pipeline installation works had adversely affected the drainage in and around the pipeline easement area. It concluded that National Grid was liable for rectifying these drainage issues and recommended further investigations were required in order to check the status and condition of the existing drains and the subsoil profile.

The drainage specialist contractor was subsequently instructed by National Grid to carry out a Phase 2 intrusive investigation in April 2017. This recommended a remedial drainage scheme involving the installation of six new 100 mm drains with gravel fill parallel to the existing tile drains connected to a 160 mm carrier to the ditch.

In June 2017 a compensation claim totalling £3,800 was settled with the Grantor covering crop loss, reinstatement and Grantor's time and inconvenience with respect to the drainage issue.

The total costs of these drainage investigations were as follows:

Item	Cost (£)
Phase 1 non-intrusive investigation	1,500
Phase 2 intrusive investigation	2,400
Phase 3 remedial drainage works	10,400

Case Study 4 – Herefordshire

Annual loss of crop – n/a
Drainage investigation and repair costs - £300

This case study demonstrates where National Grid has received a report of a drainage issue from a Grantor and has established that the pipeline is not the cause and so National Grid is not liable for the issue and no further action is taken.

The Grantor contacted National Grid in late 2016 complaining that there was an

erosion issue in his field close to the pipeline easement which he believed was caused by the presence of the pipeline.

National Grid instructed a specialist drainage contractor in December 2016 to undertake a Phase 1 site visit and report to establish if the problem was caused by the presence of the pipeline. The specialist drainage contractor completed the site visit in January 2017 and reported to National Grid that there was an erosion problem in the ditch through the Grantor's field close to the pipeline: The erosion in the ditch started at a point where a drain, installed by National Grid when the pipeline was constructed, outfalls into the ditch. However the specialist drainage contractor concluded that the erosion was caused naturally, and was being exacerbated by the Grantor's own cattle and additional water flow down the ditch as a result of the neighbouring farmer changing his cropping rotation.

It was agreed that the Grantor could fill in and stabilise the area himself and National Grid was not liable for undertaking any further investigations or remedial works.

The total cost of these drainage investigations are as follows:

Item	Cost (£)
Phase 1 non-intrusive investigation	300
Phase 2 intrusive investigation	0 (not required)
Phase 3 remedial drainage works	0 (not required)

Drainage – Investigation and repair volumes and costs to date

74. The volume of drainage works that have been completed each year since the start of RIIO-T1, along with total cost incurred, is shown in Table 11.

	Actuals					Total RIIO-T1
	13/14	14/15	15/16	16/17	17/18	
Drainage investigation and repair £m (in 09/10 price base)	0.9	0.8	0.8	0.9	0.8	**4.1**
No. completed works	128	123	117	126	129	**623**

Table 11: Drainage works completed to date

75. To date the majority of the drainage investigation and repair work has been completed in Scotland, the North West and the East of the country. Historically there have been very few reports of drainage issues in the South East.

76. In the South West a significant number of drainage issues have been reported, approximately 140, but the contractors available on the Minor Civil Engineering Framework did not have sufficient resource in this region to address the volume of complex drainage issues in this region. As a result, there is a known backlog of drainage issues to investigate and potentially repair in this region.

77. A new Agricultural Land Drainage Framework was established in July 2017 which provides the following benefits:

- New specialist agricultural contractors with the required expertise to address complex drainage issues.
- Full geographical coverage including South West region.
- Larger number of contractors which provides greater choice and allows for competitive tendering where necessary. This also encourages technical innovation, diversity and cost effectiveness of design solutions, and value for money in surveying services.
- Improved service levels and time taken to respond to drainage issues reported by Grantors.

78. In financial year 2017/18, following the establishment of the new framework, a number of jobs were initiated to start addressing the back-log in the South West. Some of these jobs have been finalised and closed out, some have progressed onto Phase 2 or Phase 3 works. The intention is to work through the back-log of legacy sites in this region over the next three years.

Drainage – Investigation and repair forecast methodology

79. The forecast for the remainder of the RIIO-T1 period is based on a series of calculations using the average cost of each phase of drainage work. Actual costs over the period July 2017 to January 2018 for all jobs (which have been instructed under the new Framework) were collected to calculate an average cost per phase in all regions within the UK. These costs are indicative of future costs likely to be incurred to remediate future drainage jobs.

80. Volumes of jobs were collected over the RIIO T-1 period , which gives a view on the average number of jobs in each region in a given year. A separate exercise was also conducted to analyse the proportion of jobs that move from Phase 1 to Phase 2 to Phase 3 across a 12 month time horizon. These proportions were also used to inform the forecast.

81. For forecasting purposes, the South West was split out from the rest of the UK. Because of the back-log, the South West will be the main driver of cost in drainage between now and the end of the RIIO-T1 period. In order to clear the

back-log in the RIIO-T1 period, the volume of jobs required in the South West are noticeably higher. The unit cost of drainage remedial works in the South West is significantly higher than in the other regions as the mitigation has been delayed by a number years due to the contractor resource constraints, as mentioned above. Drainage issues deteriorate over time resulting in an increase in size, scale and complexity of remedial works. Any jobs where work has been fully completed, or where we have agreed a scope of works with contractors and have cost certainty, we have included as part of our regional average costs for the South West. Beyond the backlog, we have forecasted new claims that are unknown to us at the current time based on historical trends. Any new claims materialising in the South West have been deemed to be at UK average costs.

82. The cost of jobs can vary significantly across regions and between different drainage contractors. In addition when new jobs come into National Grid it may take several months or even years to complete those works whilst different phases of the work are carried out. Associated costs can be incurred across multiple financial years. The forecast to the end of RIIO-T1 is our best view of the drainage works that are to be completed. This includes clearing the back-log that has developed in the South West, in addition to the remediation of other drainage issues which materialise across the rest of the UK.

Drainage – Investigation and repair forecast volumes and costs to the end of RIIO-T1

83. The forecast volume of drainage works that are expected to be completed each year in each region by the end of RIIO-T1, along with total forecast cost to be incurred (£4.2m), is shown in Table 12.

	Forecast			Total RIIO-T1 volume	Total RIIO-T1 cost (£m) 09/10 price base
	18/19	19/20	20/21		
UK	125	125	125	375	1.6
South West (backlog)	45	42	19	106	2.6
Total	170	167	144	**481**	**4.2**

Table 12: Drainage works forecast to be completed by March 2021

Loss of Crop and Drainage Submission Cost Summary

84. Table 13 below outlines the actual and forecast costs associated with crop loss and drainage for the RIIO-T1 period. All figures are shown in 2009/10 price base.

	Actuals (RRP)					Forecast			
£m (in 09/10 price base)	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total RIIO-T1
Loss of crop annual	0.9	0.6	0.6	0.7	0.5	0.4	0.4	0.3	**4.4**
Loss of crop full & final settlements	1.6	0.3	0.2	0.3	0.04	0.6	0.3	0.2	**3.5**
Drainage investigation and repair	0.9	0.8	0.8	0.9	0.8	1.9	1.5	0.8	**8.3**
Total value	**3.4**	**1.7**	**1.6**	**1.9**	**1.3**	**2.9**	**2.2**	**1.3**	**16.1**

Table 13: RIIO-T1 Expenditure loss of crop and drainage

V. Loss of Development

85. This section details the business and governance processes for settling loss of development compensation claims. Table 14 outlines the number of actual and forecast claims to be settled within the RIIO-T1 period.

	Actuals					Forecast			
	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total RIIO-T1
Loss of development £m (in 09/10 price base)	0.0	0.1	0.3	0.6	1.4	0.4	0.0	0.0	**2.7**
No. claims	**0**	**0**	**0**	**2**	**5**	**1**	**0**	**0**	**8**

Table 14: RIIO-T1 Expenditure loss of development

86. Deeds of Grant provide protection for the pipeline through Grantor covenants restricting activities and land use in proximity to the pipeline. To ensure these restrictions do not cause the Grantor to suffer a loss, the deed incorporates a development clause which enables the Grantor, to claim for compensation, subject to satisfying key triggers.

Loss of Development – Claim review process

87. To make a successful claim, a Grantor must either be granted planning consent which they cannot implement due to covenants, or planning consent which was refused solely as a result of the pipeline. The process flow in Appendix 1 provides the steps that must be satisfied in order to establish liability.

88. When a claim is received and a liability is expected, a small provision (£25,000) is created so that experts can be instructed to investigate the level of liability. When there is confidence and evidence to support a liability, the provision is amended accordingly.

89. A key criteria for establishing liability is planning permission which is granted by the local planning authority. The Health & Safety Executive (HSE), is a statutory consultee to the planning process advising on land use in proximity to hazardous installations which includes National Grid's pipelines and above ground installations.

90. Major accidents involving hazardous installations are rare, but when they do happen the effects on people living nearby can be devastating. This became apparent following the Flixborough incident in 1974, more recently at Buncefield in 2005, and across Europe for example at Enschede in the Netherlands in 2000. HSE first offered advice to planning authorities in 1972 and this was introduced

across the European Union in 1996. The simple aim is to manage population growth close to hazardous installations to mitigate the consequences of a major accident. HSE has developed guidelines to advise on development which are known as “Planning Advice for Developments near Hazardous Installations” (PADHI) and have been in place in their current form since 2007.

91. PADHI provides guidelines on the type and scale of development within proximity to hazardous pipelines, and will advise against planning consent to those applications which do not accord with the guidelines. The guidelines take into account the operating pressure and wall thickness of the pipeline. Historically liability for loss of development only related to the pipeline easement area, however the liability for loss of development can extend hundreds of metres from the pipeline if planning permission is denied solely due to the presence of the pipeline (in line with PADHI).

92. The potential loss of development liability has increased significantly as local planning authorities are applying the HSE PADHI guidelines.

Loss of Development - Case studies

Case Study 5 – Holiday Chalets

Initial Claim: £432,000 plus compound interest from 1975

Final Settlement Figure: £295,000 plus National Grid costs of £85,000

This case study demonstrates how National Grid challenge a claim, obtain the information through legal and professional experts to defend our position, and offer a commercially acceptable solution.

National Grid received a claim for £432,000 (historical valuation date) plus compound interest from 1975 for loss of development of holiday chalets due to the presence of our high pressure gas pipeline.

In 2013 a Grantor submitted planning permission for 74 holiday chalets. The permission was refused by the local planning authority due to the scale of development in close proximity to the gas pipeline (interpreting the PADHI guidelines issued by the HSE). The claimant contacted National Grid requesting compensation, at which point our process for assessing liability and proof of claim was explained. The claimant needed to prove that the planning was only refused due to the pipeline.

The claimant duly submitted an amended planning application for 32 lodges to adhere to PADHI thresholds and the permission was granted in August 2014, demonstrating that if the pipeline had not been there they would have been granted permission for the 74 lodges.

A frequent exchange of correspondence over a three year period followed. The claimant accepted the valuation date principle, but continued to pursue compound interest from the date the pipeline was constructed in 1975. National Grid did not agree with the historic valuation figure presented by the claimant.

Our robust challenge involved engaging with a Valuer with specialist historical knowledge and experience of the leisure accommodation sector, external litigation lawyer support, and Counsel opinion and as highlighted above, numerous meetings and extensive correspondence, but despite all reasonable efforts a settlement could not be reached. In an attempt to settle the case we offered independent mediation.

A strong case was put forward by the National Grid team during mediation and a final resolution was reached at £250,000 plus professional costs of £45,000. A settlement agreement and a Deed of Variation ensuring no further claims for Loss of Development for the affected pipeline can be made was entered into and registered against the Land Registry title. The total costs incurred by National Grid were £85,000 including the mediation costs, Counsel opinion, Valuer's costs and external Litigators. This was the first loss of development claim where we defended our position on valuation date and interest. Subsequent cases where

we have relied upon opinions sought in this case have been much quicker and cheaper to defend.

Case Study 6 – Wind Farm

Initial Claim: £11.8m

Estimated Settlement Figure: less than £1m

This case study exhibits that dispute resolution is the only option to resolve some claims, the time that can take and the cost associated with such action. Note due to the volume of paperwork collated for this claim it is not possible to include in the appendices of this submission.

A new pipeline was required to reinforce the transmission network in Scotland. Rights were acquired voluntarily from all landowners except one, who rejected the scheme. In 2003, to ensure delivery of the strategically important pipeline a Compulsory Purchase Order was sought and we were successful in acquiring the necessary rights in June 2004 to meet our licence obligations from the objector.

The pipeline was duly constructed, but the Grantor had the right to be compensated for losses suffered as a result of the rights granted. Any claim must be received within six years from the grant of the rights.

In August 2009 we received a claim to the sum of £11.8m for loss of development of a wind farm that could not be constructed due to proximity to the high pressure gas pipeline. The original claim could not be substantiated and was challenged by National Grid.

The communication received from the Grantor following the claim in 2009 was intermittent with limited evidence provided to substantiate their claim. Our challenge to the quantum of the claim resulted in a revised claim being received in December 2013 for £3.1m. The Grantor claimed it was prevented from constructing two wind turbines due to the presence of the gas pipeline. An extensive investigation involving a number of specialists including, environmental consultants, radar specialists, turbine manufacturers, planning consultants, valuers, and lawyers all supported the internal legal and surveying team in discrediting the claim. In addition due to the contentious nature of the claim, legal Counsel was instructed to provide advice.

Following this robust review and challenge of the claim National Grid offered a settlement of £230,000. This offer was rejected and the landowner requested the matter be settled at a Lands Tribunal Hearing.

Following the presentation and cross examination of evidence involving all our specialists over a seven day hearing, the Inspectors report was published on 3rd

June 2016. The tribunal made an award of £280,000.

Whilst the tribunal award was greater than the £230,000 offered by National Grid the value of £280,000 was significantly less than the value of the original claim. National Grid incurred £375,000 on professional fees to date challenging the claim. A final settlement is still to be reached, although it is envisaged the total liability for the claim will be less than £1m.

Loss of Development - Summary of claims

93. At the start RIIO-T1 there was one existing loss of development claim. To date a further eleven claims have been received.

94. Of the twelve loss of development claims, two have been agreed in 2016/17, five have been agreed in 2017/18 incurring costs of £1.4m. One of the twelve claims has been withdrawn.

95. Of the remaining five ongoing claims, based on the stage of negotiations and experience to date, one of these claims is forecast to be settled by the end of RIIO-T1. The forecast settlement value is based on National Grid's assessment of liability through use of external experts and internal knowledge and experience. The other three claims are at early stages of assessment and challenge and are not envisaged that these will be settled within RIIO-T1.

VI. Sterilised Minerals

96. This section details the business and governance processes for settling sterilised minerals compensation claims. Table 15 outlines the number of actual and forecast claims to be settled within the RIIO-T1 period.

	Actuals (RRP)					Forecast			
£m (in 09/10 price base)	**13/14**	**14/15**	**15/16**	**16/17**	**17/18**	**18/19**	**19/20**	**20/21**	**Total RIIO-T1**
Sterilised Minerals	0.1*	0.3	0.3	0.5	1.0	0.1	0.3	0.0	**2.5**
No. Claims	**0**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**6**

Table 15: RIIO-T1 Expenditure sterilised minerals [3]

97. Whilst pipelines are routed to avoid mineral reserves there are situations where this is unavoidable. Such situations are envisaged and appropriate protection for both National Grid and the Grantor is incorporated within the Deeds. A compensation claim can be made based on the value of the minerals that cannot be extracted. In some circumstances, following mineral extraction, the void left can be filled with inert landfill material. By preventing the mineral extraction, the opportunity to landfill is lost which is also liable for compensation under the terms of the Deed.

Sterilised Minerals – Claim review process

98. When claims are submitted by Grantors for sterilised minerals National Grid follows the process as outlined in Appendix 1.

99. The terms of the Deed incorporates the Mines (Working Facilities and Support) Act 1923. This Act makes provisions for facilitating the working of minerals and for imposing restrictions on the working of minerals through land required for the support /protection of gas pipelines.

100. Under the Deed, the Grantor needs to submit a Notice of Approach informing us of their intention to mine the minerals beneath the pipeline.

101. Following this, National Grid provide a counter notice protecting the pipeline, confirming the protection zone or standoff from the pipeline which clarifies the volume of sterilised mineral and potential loss of inert landfill subject to planning consent.

[3] *Costs in 13/14 relate to legal fees incurred

102. If a claim by the Grantor is then issued to National Grid, we assess the claim to evaluate:

- the loss of profit of the sterilised mineral and/or potential loss of landfill; and
- options other than compensation (for example diversion or decommissioning of the pipeline).

103. Settlements of this type of claim are full and final settlements that are documented within a settlement Deed between the Grantor and National Grid for the section of pipeline. They tend to be less controversial than Loss of Development claims, but can take considerable time for all the required evidence to substantiate a settlement to be gathered.

104. National Grid carry out quarry surveys every five years (2016 latest survey) to evaluate standoff zones from all pipelines and highlight any potential future risks.

Sterilised Minerals – Case studies

Case Study 7 –Quarry A

Initial Cost: £585,000

Final Cost: £530,000 inclusive of fees plus National Grid costs of £7,200

This case study has been chosen as the minerals surveyor that submitted the claim on behalf of the claimant is highly regarded in the industry for presenting clear and well evidenced claims. Despite this and the claim not being litigious, it took about 30 months to settle due to the robustness of the evidence National Grid seek in order to reach a settlement.

Quarry A is a sand and gravel quarry. The quarry is operational having obtained the necessary planning permission and permits to operate.

National Grid received a Notice of Approach in May 2014 informing us of the intention to mine the minerals beneath the pipeline. National Grid provided a counter notice protecting the pipeline, confirming the protection zone or standoff from the pipeline and therefore confirming the volume of sterilised mineral.

In February 2015, a claim was received for £585,000 plus professional costs, for loss of mineral and inert landfill for which they also had planning consent. National Grid instructed a specialist minerals valuer to advise on the quantum of our liability requesting evidence from the Claimant including an audit of the claimants financial accounts.

Awaiting all the requested evidence including financial accounts from the Claimant led to a slight delay, although the claim was eventually agreed in June 2016 in the sum of £530,000 inclusive of fees. National Grid incurred £7,200 of professional costs which included the specialist valuer's fees in substantiating the

settlement and the legal fees related to documenting the settlement. The legal documentation was completed in August 2016.

Case Study 8 –Quarry B

Initial Cost: £1,600,000 plus professional costs

Final Cost: £1,275,000 plus legal fees plus National Grid costs of £7,500

This case study demonstrates that whilst we have a liability, it may not be realised for a number of years, in this case 10 years.

Quarry B is a sand and gravel quarry. It has been owned and operated, under a planning permission for mineral extraction dated June 1995, varied by consent in 2010.

National Grid received a Notice of Approach in May 2006 informing us of their intention to mine the minerals beneath the pipeline. We provided a counter notice protecting the pipeline, confirming the protection zone or standoff from the pipeline. We clarified the volume of sterilised mineral and confirmed the liability.

The pipeline affected a number of extraction phases over a number of years. Quarry B decided not to submit claims piecemeal, but rather present a claim when the mineral operations affected by the pipeline had been completed. In March 2016, a claim was received in the sum of £1,600,000 plus professional costs, for loss of mineral. We instructed a specialist minerals valuer to advise on the quantum of our liability requesting evidence from the claimant including an audit of the claimants financial accounts.

Due to the complexity of providing specific evidence for the loss in each accounting year, the settlement was finally agreed in November 2017 in the sum of £1,275,000 plus legal fees. Our fees for defending the case and for documenting the settlement are expected to be £7,500.

Sterilised Minerals - Summary of claims

105. There were twelve known claims at the start of the RIIO-T1 period and a further six have been received to date. Four claims have been settled and nine have been withdrawn. These withdrawals are as a result of either challenge from National Grid, economic viability (i.e. decline of the Coal Industry) or reassessed liability.

Financial Year	No. of Sterilised Minerals claims settled
2013/14	0
2014/15	1
2015/16	1
2016/17	1
2017/18	1

Table 16: Number of claims settled to date

106. There are currently five ongoing claims which are at varying stages of negotiation. As has been demonstrated with the case studies, these claims can take a number of years for the evidence to be available to substantiate claims or support a settlement. Given the stage of negotiation two of the five ongoing claims are expected to be settled within the RIIO-T1 period.

Financial Year	No. of Sterilised Minerals claims forecast to be settled
2018/19	1
2019/20	1
2020/21	0

Table 17: Number of claims to be settled by end of RIIO-T1

Sterilised Minerals – Quarry C

107. There is one additional sterilised mineral claim which is subject to uncertainty and so has been separated out from the other sterilised mineral claims included within this reopener. The planning permission granted to this quarry is currently being contested. Further detail on this particular claim is provided in the following case study.

Case Study 12 –Quarry C

Initial Cost: £5-10m compensation claim

Estimated Cost: £1.7m for pipeline decommisioning

Quarry C, is a magnesium limestone quarry, which has been operational since 1948. The pipeline was constructed in 1973 through land beneath which a large reserve of magnesium limestone resides. Due to the depth of mineral reserve, the pipeline is sterilising a significant amount of minerals (circa 2,000,000 tonnes).

The quarry operators were granted permission to extend the quarry south into a

field with approximately 1km of pipeline running through it. A Notice of Approach was received from the quarry operators and we responded with a counter notice outlining all of the restrictions required for the pipeline. The pipeline Deed of Grant of Easement provides a provision for the land/mineral owner to be compensated for their proven loss, or National Grid is obliged to divert the affected section of pipeline at its own cost.

The current estimated mining loss is between £5-10m if the pipeline remains in situ. This is based on a geotechnical report including detailed ground investigation instructed by National Grid and a market assessment completed by experienced consultants in this area.

National Grid assessed all credible options for mitigating the liability to the quarry operator including negotiated compensation, a number of potential pipeline diversions and the opportunity to decommission the pipeline. Following a detailed needs case review it was concluded that decommissioning was a viable option.

The cost of decommissioning this section of pipeline is forecast to be approximately £1.7m which is significantly lower than the cost of compensation.

In December 2017 the planning permission for this quarry expansion was challenged by a local land owner via a judicial review. In March 2018 the judicial review supported the challenge and the planning permission for the quarry was revoked. However since March the quarry and the local council are in the process of approaching the supreme court to overturn the judicial review decision.

This leads to a significant amount of uncertainty around this claim as without the planning permission we no longer have a liability, however both the quarry and the local council are continuing to contest the decision and so there is a risk that this liability will come back within the next 12 months. Therefore we have included the forecast cost of decommissioning the pipeline in 2019/20 and have specified an output in relation to this claim as part of this reopener submission.

VII. Other Claims

108. Within the terms of the Deed of Easement there are a number of other clauses which may also lead to a Grantor approaching National Grid to submit a claim in relation to land damage as a result of the presence of the pipeline. To date only shallow depth of cover claims have been received, more detail is provided below.

Shallow depth of cover

109. Under the terms of the Deed of Easement there is a clause relating to depth of cover which obligates the Grantee (National Grid) to ensure that the depth of pipe is maintained so as to not interfere with the Grantor's use of the land. Where restrictions have to be placed on the Grantor's use of the land, the Grantee must fully compensate the Grantor for any loss which arises as an implication of the shallow pipeline.

110. As operators of the NTS, National Grid also has a statutory duty of care and a statutory requirement to ensure the NTS is maintained in accordance with the industry standard, '*TD/1 – Edition 5:Steel pipelines and associated installations for high pressure gas transmission'*. This document at Clause 7.16 states that '*The minimum depth of cover over a pipeline shall be in accordance with Table 9 requirements*' – Table 9 requires 1.1m for rural areas. Pipes laid to Edition 1 of TD/1 had a requirement set at a minimum depth of 0.9m, all subsequent editions have been 1.1m, but no retrospective works are required to bring Edition 1 pipelines up to the current standard.

111. Typical causes of shallow depth of cover of pipelines are soil erosion or buoyancy of the pipeline. A recent study by MACAW (now ROSEN) consultants reviewed a range of reported shallow pipe reports, and summarised their findings as '*65% of the locations of known Shallow Depth of Cover were in arable areas, with an average depth of cover of approximately 700 mm, therefore confirming these areas to be of high-risk*'.

112. Some areas are therefore known to be at higher risk of reduced depth of cover due to land-usage and soil type. However, most reports of shallow pipeline sections arise from National Grid's own pipeline staff, either as a result of line-walking programme (which covers the entire NTS over a four year period), or from responding to third party events and requests to mark out the pipeline route and confirm its approximate depth.

113. A recent review of a sample of 27 'line-walking' reports revealed 22 issues of reduced or low cover over a length of 1030km, giving rise to an average frequency of one issue every 46.8km. Based on a total NTS length of approx. 7600km, this equates to a potential of 163 issues identified in line-walking surveys or 41 each year of the four yearly line walking programme.

114. An innovation project is currently underway which is looking at using the X,Y,Z geographic data from In-Line Inspection (ILI) operations and analysing the results

against ground level data from Light Detection and Radar (LIDAR) surveys to calculate depth of cover. It is anticipated that this will become part of standard operating procedures resulting in a more accurate reporting mechanism for shallow pipelines.

115. The outcomes of this project will help to inform the development our long term strategy for Shallow Depth of Cover. This will ensure we have an effective way of identifying areas of shallow pipeline more quickly.

116. National Grid expects to incur some costs relating to reduced depth of cover in the next three years and will be engaging our stakeholders' to produce plans for a detailed strategy for reduced depth of cover in RIIO-T2. Due to the current level of uncertainty, no costs have been included in this reopener submission.

VIII. Submission Summary

117. Under licence condition 5E.1 National Grid is requesting £23.1m of funding for Quarry and Loss of Development Claims incurred and forecast to be incurred during the RIIO-T1 period. This submission has evidenced the process that National Grid follows to robustly challenge all claims and protect the interest of consumers.

118. Within this submission the actual and forecast costs have been provided for settling claims associated with the following categories:

- Loss of crop and drainage;
- Loss of land development;
- Sterilised minerals (including landfill and tipping).

119. The following table provides a summary of the reopener financial request.

Reopener financial request breakdown

120. Actual costs incurred to date: **£14.2m** (09/10 price base), forecast costs 2018 - 2021: **£8.9m** (09/10 price base), the total cost of claims over RIIO-T1: **£23.1m** (09/10 price base). This amount is over the materiality threshold as specified in the licence.

	Actuals					Forecast			
£m (in 09/10 price base)	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	Total RIIO-T1
Loss of Crop	2.5	0.9	0.8	0.9	0.6	1.1	0.7	0.5	**7.8**
Drainage	0.9	0.8	0.8	0.9	0.8	1.9	1.5	0.8	**8.3**
Loss of Development	0.0	0.1	0.3	0.6	1.4	0.4	0.0	0.0	**2.7**
Sterilised Minerals	0.1	0.3	0.3	0.5	1.0	0.1	0.3	0.0	**2.5**
Jackdaw Crag	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	**1.7**
Total Value	***3.5***	***2.0***	***2.1***	***2.9***	***3.7***	***3.5***	***4.1***	***1.3***	***23.1***

Table 18: RIIO-T1 Expenditure for Quarry and Loss

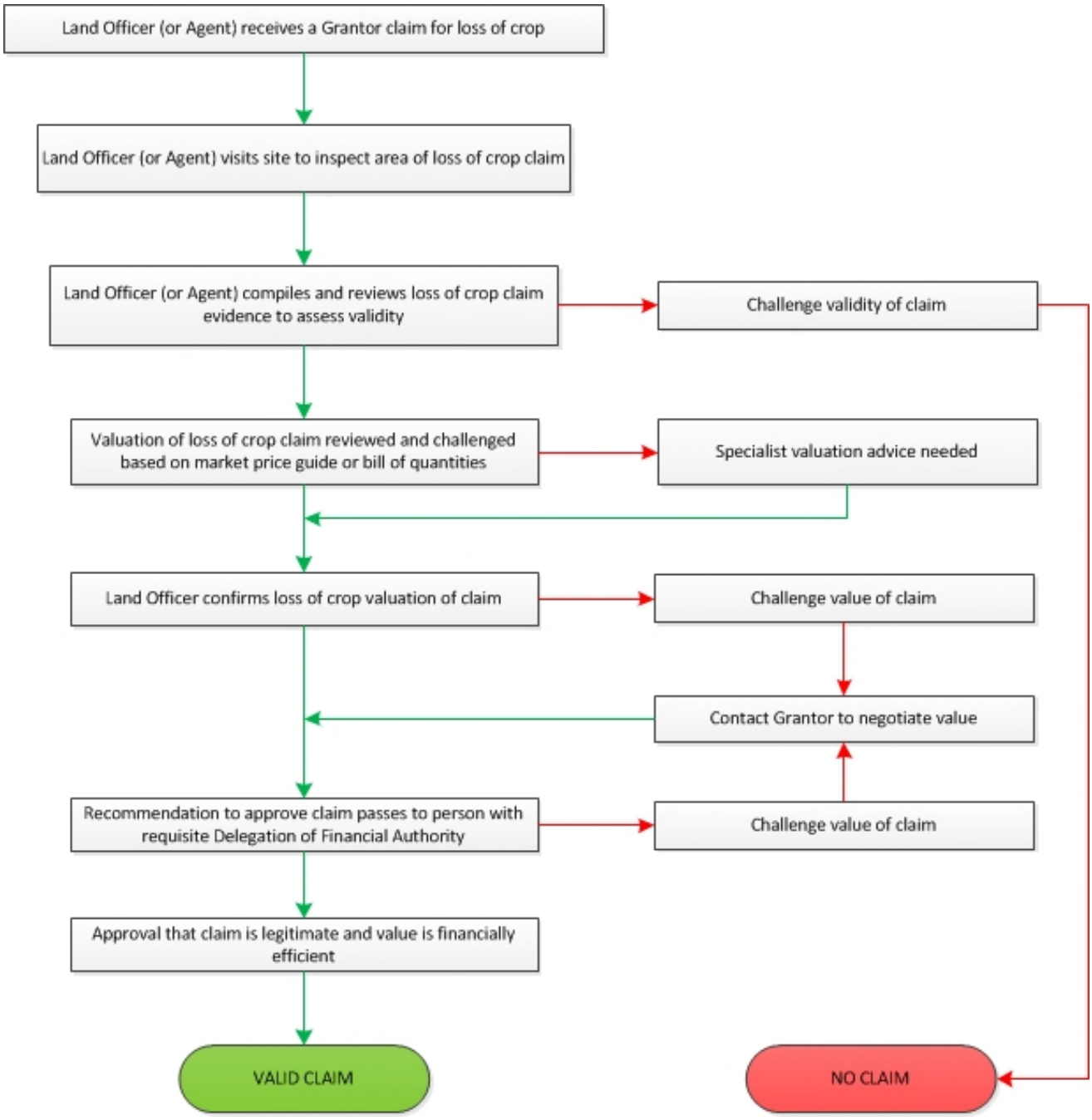
121. **RIIO-T1 output**: *In settling any Quarry and Loss claims, National Grid will demonstrably challenge as far as is reasonable regarding both the basis of the claim and the quantum of the compensation being sought.*

122. **RIIO-T1 Quarry C output**: Due to the ongoing uncertainty in relation to this specific sterilised minerals claim this has been outlined as a separate RIIO-T1 output. *By the end of RIIO-T1, National Grid will have decommissioned the section of pipeline affected by the quarrying activity.*

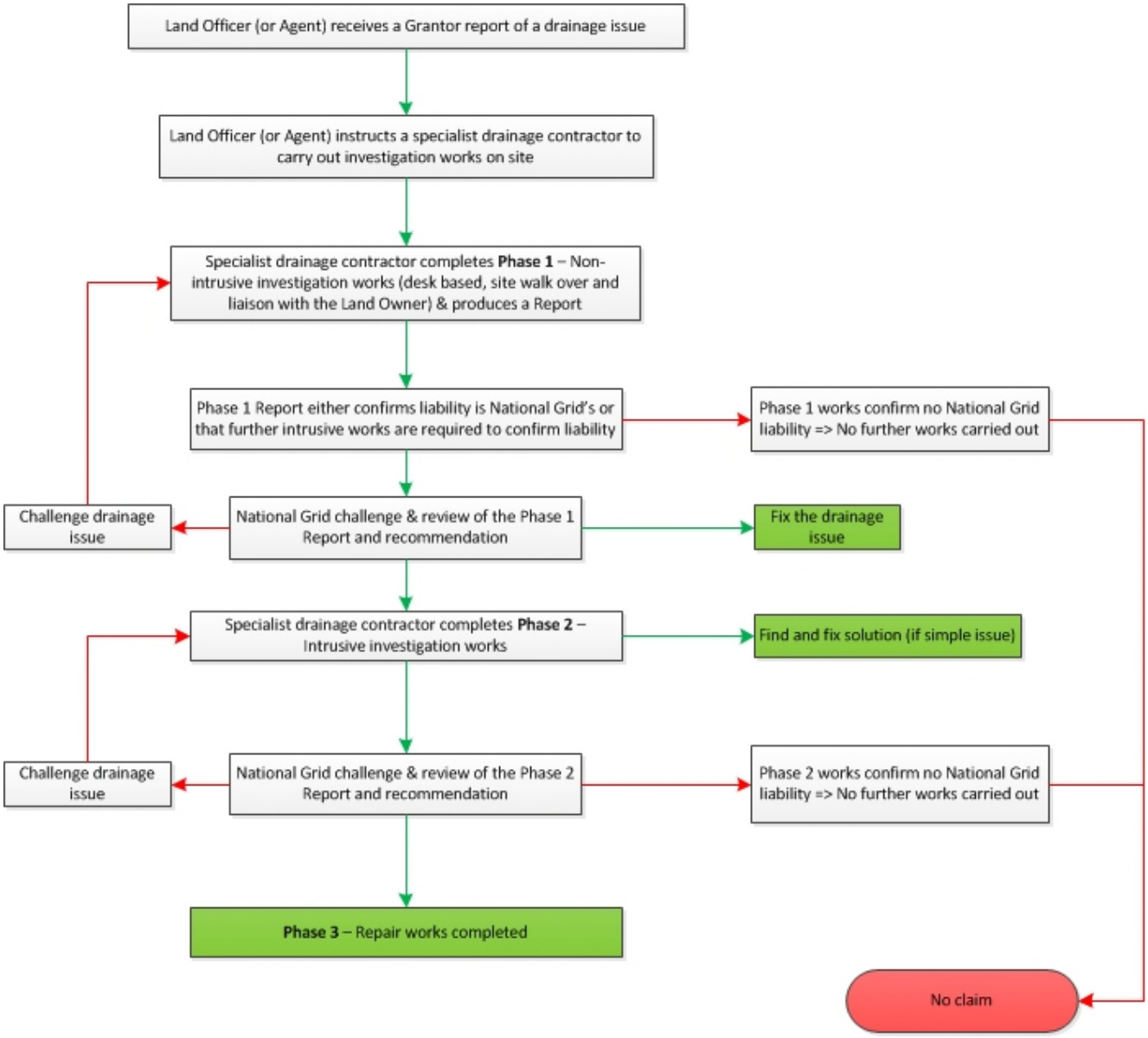
Appendix 1 – Process Flow Charts

Appendix 1 – Process Flow Charts

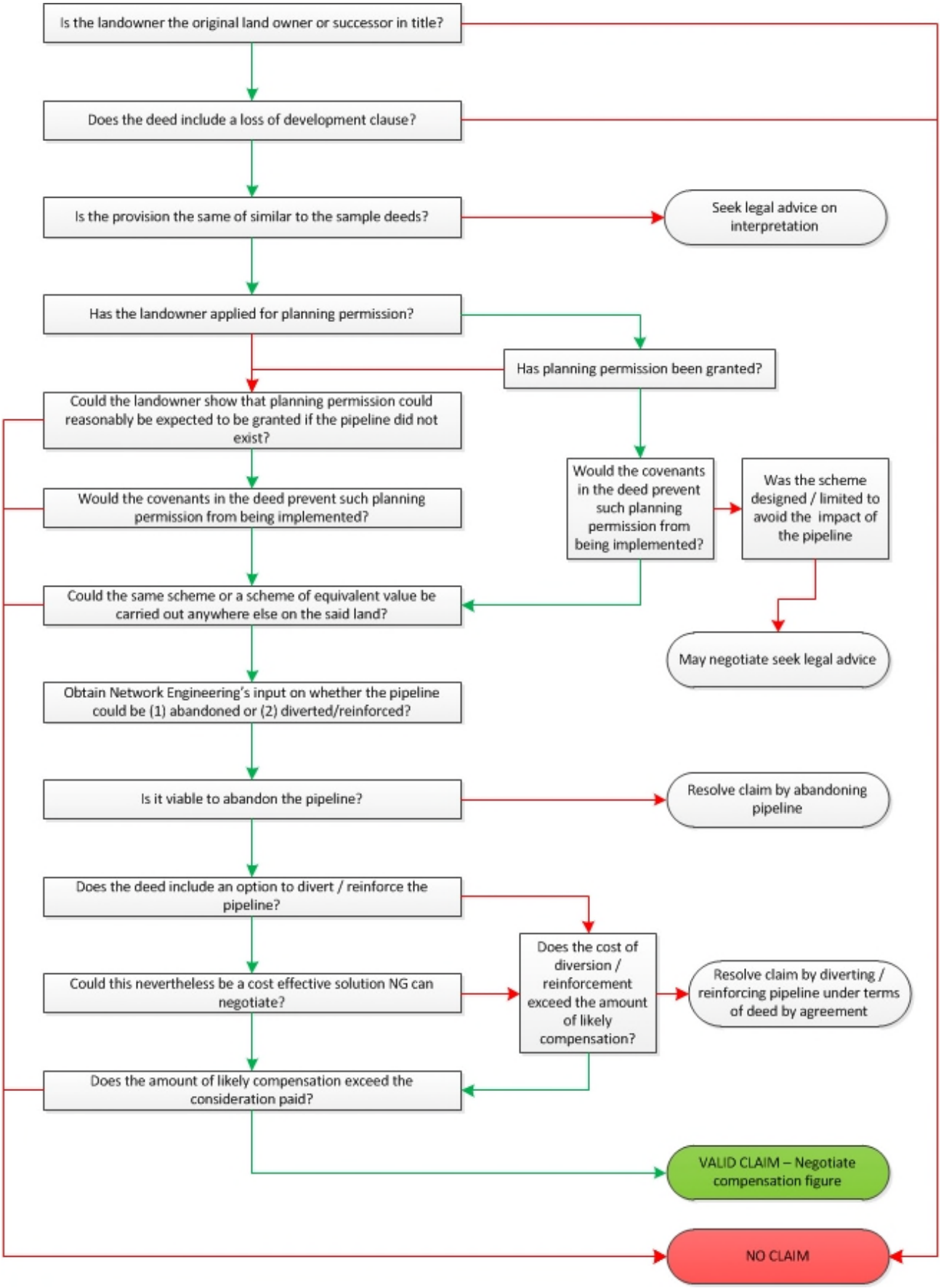
Crop Annual Process Flow Chart



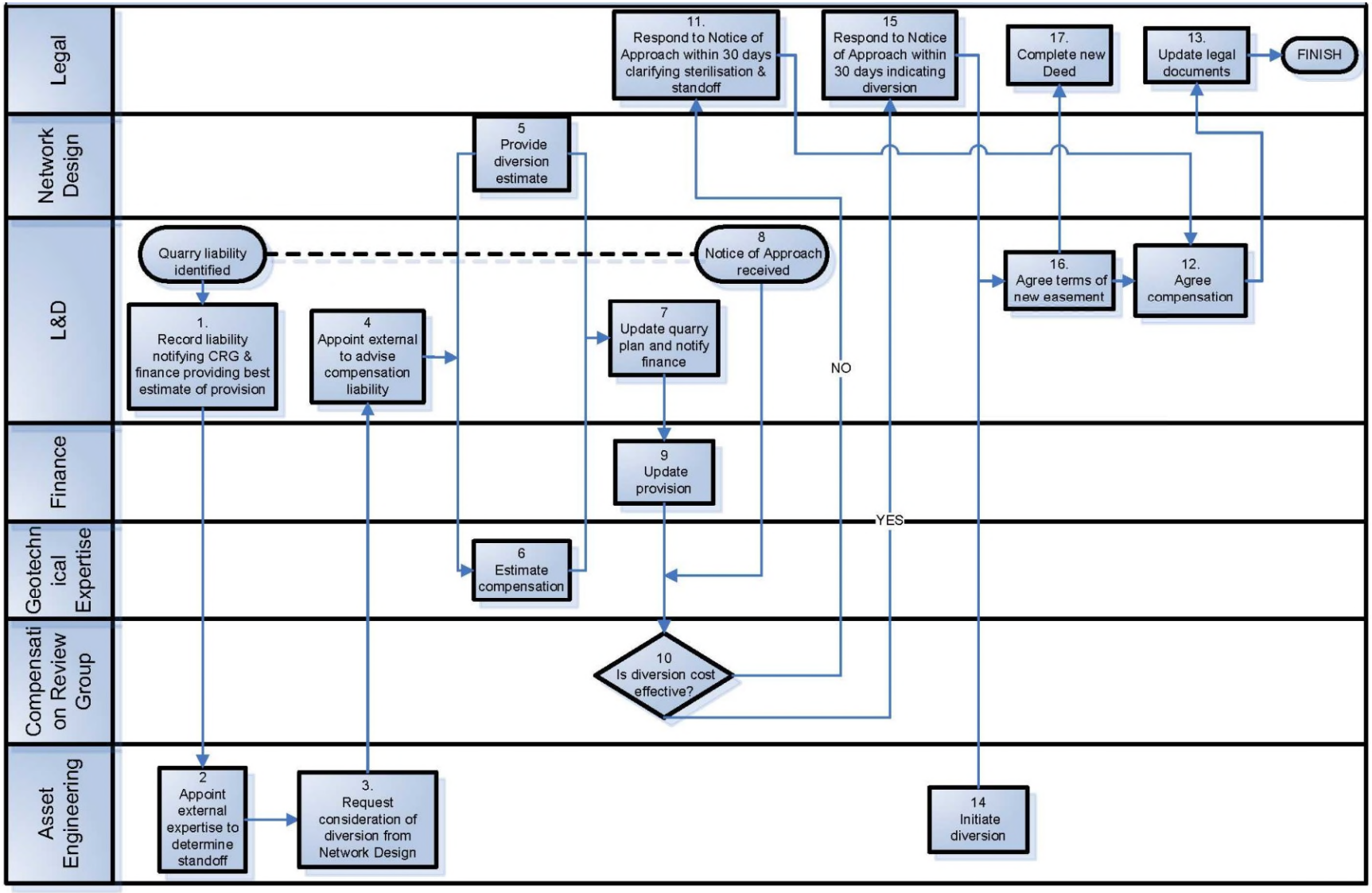
Drainage Process Flow Chart



Loss of Development Process Flow Chart



Sterilised Minerals Process Flow Chart



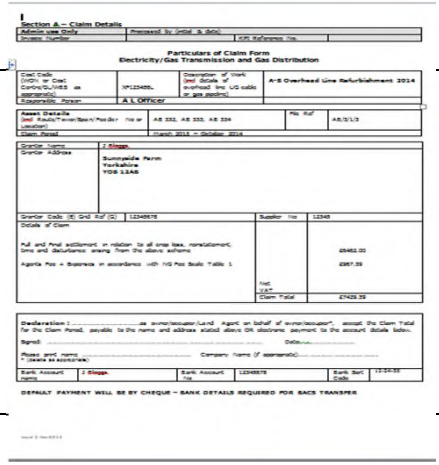
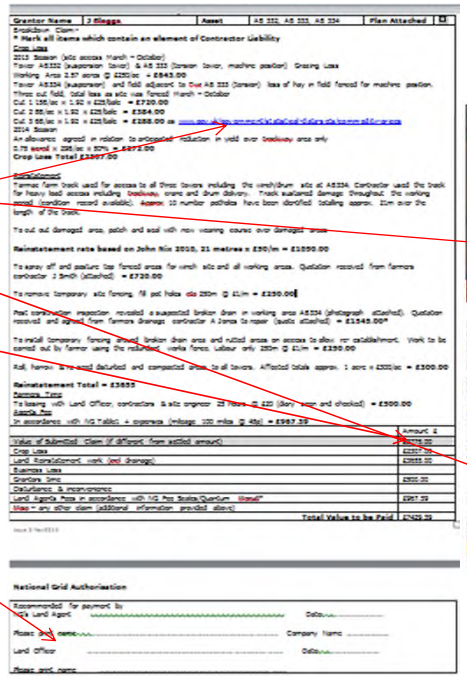
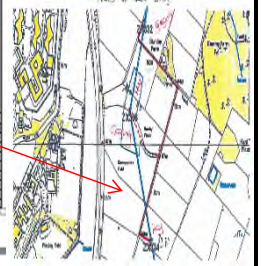
Appendix 2 – Claim Review SOP

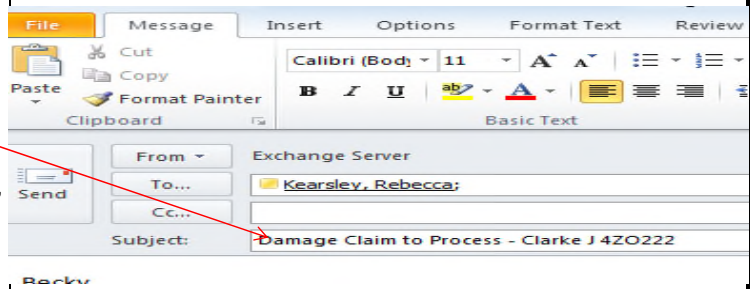
Date	24/06/15
Originator	J Clarke/M Thomas
Team	NW&S
Project Ref	

Standard Operating Procedure

nationalgrid

Operation - Name & No	Collate/Complete Particulars of Claim Form SOP001	**Page**	1 of 2
Tools / Equipment	POC Form/Pen/laptop. Access to the internet	**Issue**	4

No.	Main Operating Steps	Key Points	
1	Agree compensation amount	Can be agreed with Grantor or appointed Land Agent	
2	Complete Particulars of Claim Form (POC) and send for signature to Grantor or appointed Land Agent	**Minimum Information Required:** a) Payee name and address b) Grantor code or specify non grantor c) Supplier No. d) Work Order Number e) Description of Works including overhead line nomenclature and route name f) Asset details g) Claim Period h) Compensation amount i) Brief details of Claim j) Name of Responsible Person	
3	Receive signed POC from Grantor or appointed Land Agent	Either electronic or paper NOTE: if sending electronically, document must be in pdf format.	
4	Complete Part B - Claim Assessment and compile evidence file	**Minimum Information Required** a) Description of works at site, (Tower Type - machine position/pull through etc.) b) Crop/Livestock c) Specific period(s) of site work d) Working Area Plans detailing access routes and land take areas **must be attached to claim** e) Crop yields and rates - details of reference material required. Email link or publication. f) Copy of Agents Invoice if claim includes Agents Fees - which should be signed off by LO as correct g) Under breakdown of claim, include value of submitted claim h) Signature of Recommending Land Officer - who should be the same as the Responsible Person in Part A NB - every claim should have a minimum of one signature, either NG Land Officer or External Land Agent (acting for NG) if claim is received electronically from External Agent with all supporting evidence this can be forwarded to Regional Administrator (email trail will form authorising signature trail) **Unnecessary Evidence SHOULD NOT be included** eg - MER page, NG Surveyors Fee Scale, Agents letter of Authority, Payment Schedule, NG Generic Guides, unnecessary Photos, BACS letter head	  

5	Complete Part C - When Contractors Liability applies (or delete section if not)	a) Name of Contractor b) Address of Contractor c) Name and date passed to Engineer **NB - Contractor sign off will not delay payment of claim**	**Section C – Contractors Liability** Delete section if not **CONTRACTORS LIABILITY ELEMENT OF CLAIM** Contractor/Company Name: John Wayne & Sons Address: 25 Anystreet, Anywhere, In the World **Passed to responsible Engineer (name)**: J Wayne — **Date**: 01 April 2014 I confirm acceptance of the Contractors Liability details above and agree to reimburse the sum of **£1545.00** Signed---------- Date ---------- Print name and position ----------
6	Email the RA with the claim to process	Email Regional Administrator with scanned Particulars on Claim form **Only one single claim in PDF format should be attached to each email.** Email Subject Heading should include:- **'Damage Claim to Process - grantor name - asset number"** Body of email should include claim amount Standard authorisation process is to send the claim to the next level of authorisation, unless agreed up front with SLO/RLM as appropriate, if this is agreed then advise Regional Administrator in email as to who is the authoriser. Refer to SOP002 for Process Damage Claim.	 Please find attached Damage Claim to process in the value of £15,000.00 Scenario 1 - Not required to follow the 'food chain' through authorisers: Suggested example email text: "Please find attached claim for processing in the amount of £11,050, please process and forward direct to Land Manager for approval." Scenario 2 - Required to follow food chain Suggested example email text: " Please find attached claim form for processing in the amount of £6,050, please process and forward to next authoriser in the DOA chain."
7	Arrange for Contractors Liability to be signed off as agreed	Send to Contractor for signature Pass signed form to Project Financial Control	
	J Clarke/ M Thomas 24/06/15	C. Webber 24/06/15	J Clarke 05/12/2015
	Written by: Name / Position / Date	Approved by: Name / Position / Date	Review: Date / Responsibility for Review