Title: Coal Tip Safety in Wales **IA No:** LACOM0072 **RPC Reference No:** **Lead department or agency:** Law Commission **Other departments or agencies: Welsh Government**	**Impact Assessment (IA)** **Date:** **Stage:** Development/Options **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:** lisa.smith@lawcommission.gov.uk

Summary: Intervention and Options

RPC Opinion: RPC Opinion Status

Cost of Preferred (or more likely) Option (in 2019 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
£m	£m	£m	Qualifying provision

What is the problem under consideration? Why is government action or intervention necessary?

Current legislation relating to coal tips does not effectively address the management of disused coal tips. This is important as coal tip landslips can have devastating effects. In 1966 a coal tip slipped onto a primary school, killing 144 people. Existing legislation relates to a time when there was an active coal industry, and disused coal tips were not considered such a problem. Record-breaking rainfall accompanying Storms Ciara/Dennis in February 2020 led to coal tip landslips. This illustrates the potential risks that disused coal tips present to communities and to the environment. Government intervention is required to design and implement a new regulatory system.

What are the policy objectives of the action or intervention and the intended effects?

The policy objectives are to:

Identify gaps, inconsistencies and approaches in the current law which are unhelpful or have become outdated.

Identify options for alternative regulatory models appropriate for adoption in Wales

Ensure a robust, integrated and future-proofed regulatory system for coal tips which adopts a uniform approach to inspection, maintenance and record-keeping..

.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 0: Do nothing

Option 1: A single supervisory body with a duty to ensure the safety of disused coal tips with commensurate responsibilities including a tips register with up-to-date information including the tip management plan and records of inspections and publication of data; a general duty to inspect;
a system to designate tips requiring higher levels of intervention with work to be carried out by the supervisory body and maintenance agreements with tip owners for lower rated tips.
Option 1 promotes a consistent approach, delivers efficiencies of scale and provides a mechanism to prioritise the most pressing safety work.

Will the policy be reviewed? It will/will not be reviewed. **If applicable, set review date:** Month/Year

Does implementation go beyond minimum EU requirements?		Yes / No / N/A		
Is this measure likely to impact on international trade and investment?		Yes / No		
Are any of these organisations in scope?	**Micro** Yes/No	**Small** Yes/No	**Medium** Yes/No	**Large** Yes/No
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:**	**Non-traded:**	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

Summary: Analysis & Evidence

Policy Option 1

Description: Single Supervisory Unit with a duty to ensure the safety of disused coal tips

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: Optional	**High:** Optional	**Best Estimate:**

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	N/A		N/A	**N/A**
High	N/A		N/A	**N/A**
Best Estimate	N/A		N/A	**N/A**

Description and scale of key monetised costs by 'main affected groups'

Other key non-monetised costs by 'main affected groups'

Transitional costs: Training of staff in newly created supervisory body – induction estimated at 1-2 days; Guidance/Familiarisation: Primarily aimed at private landowners with lower risk profile coal tips who will require maintenance agreements. Around 70 percent of the 2,144 coal tips are in private hands. Legislative drafting; Creation of new database of all coal tips along with ownership profile.
On-going cost: Maintenance of database; Budget for newly created supervisory Unit.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	0		N/A	**N/A**
High	0		N/A	**N/A**
Best Estimate	0		N/A	**N/A**

Description and scale of key monetised benefits by 'main affected groups'

No transitional benefits identified.

Other key non-monetised benefits by 'main affected groups'

On-going benefits: Reduced risk of fatalities and injuries arising from coal tip disasters: Reduced cost of remediation as regular maintenance and inspection prevents the tip becoming unstable and reduces the need for more expensive works; Reduced environmental damage as disasters are prevented avoiding the adverse consequences of pollution to land and water; Reduced risk of damage including flooding of properties and transportation infrastructure. The average insurance claim for flooding of residential/commercial properties is £32,340/£57,500.

Key assumptions/sensitivities/risks	Discount rate	3.5

Assumptions: Database sufficiently captures high risk coal tips; Funds are made available to provide timely monitoring, inspection and maintenance.
Risks:
The database may be flawed as coal tips are unintentionally excluded. However, any missed coal tips are likely to be low risk ones; Unavailability of funds will lead to higher remediation costs.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs:	**Benefits:**	**Net:**	

Glossary

Coal waste: The unwanted material produced after saleable coal is separated out from the material extracted from a coal mine in a process of washing and preparation. The material is predominantly shale but also includes other discarded material. The waste is known as refuse in the wider mining industry, and more commonly 'spoil' in coal mining.

Disused tip: A tip which is no longer being tipped upon which is not associated with an operational mine.

Maintenance: Routine tip maintenance includes the clearing out, re-cutting and improvement of drainage ditches and culverts, and checking and clearing screens designed to capture detritus after heavy rainfall.

Open cast mining: A mining technique that involves taking minerals, especially coal, from the surface of the ground rather than from passages dug under it.

Reclamation: The process by which derelict, despoiled or contaminated land is brought back into a specified beneficial use.

Remediation: The process by which health and safety and environmental risks are reduced to an acceptable level. The aim of coal tip remediation is to ensure the safety of coal tips.

Restoration bond: A bond provided by a mining company prior to beginning a mining operation for the purpose of remediation upon the cessation of the mining activity.

Evidence Base

Introduction

Background

1. Coal has been mined in Britain since Roman times. The industry grew rapidly during the nineteenth century, reaching a peak annual production of 293 megatonnes in 1913. It declined to 100 megatonnes in 1984 and current levels are 7 megatonnes from underground mines and 8 megatonnes from opencast pits.[1]

2. The coal waste problem was relatively small when all coal was mined by hand and small quantities of waste were deposited at the site of the mine. As the scale of mining increased in the nineteenth century, so did the volume of waste.

3. A coal tip is a pile of accumulated waste material from the coal mining process. Some coal tips are very large, and some are positioned on steep slopes. Poor management of coal tips can lead to slips, and may result in disasters. The worst example of this is the Aberfan disaster in 1966, when a coal tip slipped onto a primary school, resulting in the death of 116 children and 28 adults.

[1] B Palumbo-Roe and T Colman, "The nature of waste associated with closed mines in England and Wales", (2014) *British Geological Survey* OR/10/14, available at: http://nora.nerc.ac.uk/id/eprint/10083/1/OR10014.pdf (last visited 29 April 2021).

4. The current legislation was enacted following the Aberfan disaster, at a time when there was an active coal industry. However, it does not provide an effective management framework for disused coal tips – of which there are just under 2150 in Wales – in the twenty-first century.

5. With the prospect of increasing rainfall intensity as a result of climate change and coal tip landslips which occurred in February 2020 following Storms Ciara and Dennis, the Welsh Government has established a Coal Tip Safety Task Force to deliver a programme of work to address the safety of coal tips in Wales. The Task Force programme will respond to immediate safety concerns and develop a new long-term policy approach to the legacy of disused coal tips. As part of this, the Welsh Government asked the Law Commission to complete a project in this area.

6. The Law Commission's report will identify gaps, inconsistencies and unhelpful or outdated approaches within the legislation, and will make recommendations for a new robust, integrated and future-proofed regulatory framework.

7. It was recognised that the project was taking place against the background that addressing coal tip safety is a priority; the Welsh Government and the Coal Tip Safety Task Force are engaged in remediation and other urgent work to mitigate the immediate risk posed by coal tips in Wales. It was agreed that the project would supplement that response by proposing a coherent and principled legislative basis for dealing with that risk in the longer term.

8. The terms of reference agreed between the Welsh Government and the Law Commission stipulated that the project would consider the current ownership and management of coal tips in Wales, drawing on the work of the Coal Tip Safety Task Force as needed; evaluate current legislation relating to the safety of coal tips, from the perspective of human health and safety and of environmental impact; identify options for alternative regulatory models to be adopted in Wales; identify the features needed to ensure that any proposed system is able to provide effective enforcement, and in particular a rapid and coordinated response when emergency works become necessary.

Problem under consideration

Outdated law

9. The laws regulating coal tips are outdated and reform is vital for protecting the public in Wales and minimizing the risk of another disaster occurring.

10. The legislation relates to a time when there was an active coal industry and does not provide an effective management framework for disused coal tips in the twenty-first century

11. With climate change, the risks associated with disused coal tips are likely to become an increasing problem.

The main problems with the current legislation

12. The legislation which covers disused tips, Part 2 of the Mines and Quarries (Tips) Act 1969, does not confer a duty on local authorities to inspect and secure disused tips, but merely provides a permissive regime.

Inadequate safety provision

13. Powers may be used only where it appears to the local authority that there may be danger to the public due to instability. This gives authorities a wide margin of discretion. It also means that they cannot intervene at an earlier point on a proactive basis to prevent risk arising. There is no standardised system of risk assessment to provide consistency. No duties of inspection or management are conferred on private owners of the tips either.

Unnecessarily complex legislation

14. The powers granted to the local authorities in relation to tip owners are subject to a confusing system of notices and counter notices. In addition, the costs of remediation are vast, and local authorities do not have the appropriate resources. The process in the legislation by which they can attempt to recoup their costs is cumbersome, can be costly in terms of legal fees and could end up as a charge on a property that might not be realised for decades.

Inflexible legislative response

15. The legislation does not provide adequate mechanisms to remediate tip slides in an emergency situation, particularly where the necessary steps may clash with more recent environmental and waste disposal legislation.

Cost inefficiencies

16. There are 22 local authorities in Wales. Some of the authorities have no coal tips, and some have hundreds of tips. The burden of operating the Part 2 regime falls disproportionately on a small number of local authorities, and each local authority has a different mix of low and high-risk tips, and a different mix of types of ownership. Local authorities have lost specialist staff and have limited capacity to take on additional duties.

Incomplete information and risks of under-resourced tip management

17. Private owners, many of whom are small farmers, may not have resources or the necessary skills to inspect and maintain tips. Local authorities report that some are uncooperative or unaware of their duties. In some cases when people buy the land, they are not even aware that there is a coal tip on the land. Local authorities may have difficulty in identifying who the owner is.

18. Local authorities are frequently unable to recover the costs of undertaking remedial work on tips on private land. They may know that the owner will be unable to pay. There is reluctance also to incur legal costs as a result of enforcement action. Even if a charge is imposed on a property, it may take decades to recover the money.

Policy Objectives

19. Review existing legislation to identify gaps, inconsistencies and approaches in the current law which are unhelpful or have become outdated.

20. Through comprehensive consultation identify options for redressing the problems in the current legislation, including alternative regulatory models appropriate for adoption in Wales.

21. Ensure, by way of new primary legislation, a robust, integrated and future-proofed regulatory system which adopts a uniform approach to inspection, maintenance and record-keeping throughout the life cycle of all coal tips from creation to abandonment to remedial works.

Rationale for intervention

22. The conventional economic approach to Government intervention in order to resolve a problem is based on efficiency or equity arguments. The Government may consider intervening if there are strong enough failures in the way markets operate or in existing interventions. In both cases the proposed intervention should avoid creating a further set of disproportionate costs and distortions. The Government may also intervene for reasons of equity.

23. The failings in the current regulatory framework result in risks to public health and safety and to the environment, and significant economic costs for the state when large scale and sometimes emergency remediation work is required because maintenance work to prevent the harm has not been carried out. The regulatory burden is also spread disproportionately across different local authorities, depending on the number of tips in a given area.

24. A new regulatory framework provides scope for efficiency savings for local authorities and central government through economies of scale in the administration of the tips regime. It also offers potential to prioritise works needed to secure tips on the basis of a rational categorisation of risk across all regions.

25. It also offers benefits to private tip owners by providing a more coherent and efficient approach to inspection, maintenance and remediation of tips. This will reduce the likelihood of civil liability for harm caused by coal tips, and offers relief from unexpected and costly remediation work.

26. There is potential to enhance the value of the tips through a more coherent approach to maintenance and remediation, as there may be new land uses arising from the need to protect biodiversity, capture carbon and mitigate flood risk. There may also be a role for disused tips to play in mitigating habitat and other environmental losses elsewhere, for example through road building.

Scale and scope

27. There are just under 2,150 coal tips in Wales. But very few of these tips are active. As mines have closed over recent decades, more and more tips have become disused. The pattern of ownership of these tips reflects the history of the coal mining industry. Some 70% of tips are on private land or land with unknown ownership. On provisional figures local authorities own just over 350 tips, under 20% of all tips, and about 180 are managed by Natural Resources Wales, amounting to just under 10%. The Coal Authority owns 33 tips or just over 1%. Each local authority has a list of coal tips within its boundaries.

28. Key regulatory stakeholders are:

- Local authorities: There are 22 local authorities in Wales. Some local authorities own significant numbers of tips. Local authorities also have responsibilities to ensure that all tips in their area do not pose a danger to the public by reason of instability.
- Natural Resources Wales: Natural Resources Wales is a Welsh Government sponsored body, which became operational from 1 April 2013, when it took over the management of the natural resources of Wales. It manages a significant number of coal tips.
- The Coal Authority: The Coal Authority is an executive non-departmental public body, sponsored by the Department for Business, Energy & Industrial Strategy. It manages the effects of past coal mining, including subsidence damage claims which are not the responsibility of licensed coal mine operators. It deals with mine water pollution and other mining legacy issues. It owns a number of coal tips in Wales. The tips response team at the Coal Authority has been commissioned by the Welsh government to undertake an urgent review of all the coal tips in Wales as part of the work of the Coal Tip Safety Task Force.
- Coal Tip Safety Task Force: Formed by the Welsh Government immediately following the Tylorstown slide on 16 February 2020 to deliver an urgent programme of work ensure that coal tips across Wales were being managed safely and effectively. The Task Force is led by the Department for Environment and Rural Affairs, a department of the Welsh Government. Task Force partners working together with the Welsh Government are the Coal Authority, its sponsoring body the Department for Business, Energy and Industrial Strategy, and the Welsh Office. The technical group working with the Task Force includes Natural Resources Wales, local authorities and the Welsh Local Government Association.
- The Welsh Government
- The UK Government

Procedure for managing disused tips

29. Part 2 of the 1969 Act confers powers on local authorities to ensure that disused tips do not, by reason of instability, pose a threat to the public. Under these powers, local authorities can gain access to information about tips and have a right of entry, with specified notice to the owner, to carry out exploratory tests.

30. Where there is reasonable ground to believe that the disused tip is unstable and immediate entry is required, the local authority can enter the land without giving notice or obtaining a warrant. Where it appears to the local authority that the disused tip is unstable, and for this reason constitutes a danger to the public, the authority can also serve a notice on the owner of the tip requiring them to carry out remedial works to ensure the stability of the tip, although the owner is able to serve a counter-notice requiring the local authority to use its own powers to carry out the work, and can appeal against the notice on several grounds. The local authority has the power to carry out these works itself and has a right of entry for this purpose. Contribution orders may be made and the local authority has powers to recover expenses from the tip owner.

Cost of maintaining or remediating tips

31. The costs of a maintenance programme are dependent on the size of the tip and the current standard of the drainage system. Obtaining actual spend from Local Authorities is a complex task as it has generally been captured in a more general budget e.g. for bridges and roads. Costs can vary from small budgets of £10k to £200k, which excludes costs of privately owned

tips accounting for the vast majority. An early estimate of the annual maintenance budget is £15m per year based on £37k per higher risk tip.[2]

32. The Coal Authority [CA] follows an inspection schedule (which is monthly, quarterly and yearly depending on the tip, as well as after rainfall of more than 40mm in 24 hours) for the 40 coal tips they own in the UK. There is also an ongoing maintenance programme.

33. The CA annual budget of £350,000 for the care of its 40 tips in the UK includes all major works alongside regular maintenance such as storm repairs, fencing, etc. By scheduling major works through horizon scanning and regular inspections the average cost of each tip is about £5,000- £10,000. Major infrastructure renewals are planned often years in advance. For example, in 2021 the CA will be replacing the access bridge to one of their tips based on its prioritisation some 2 years previously. Regular maintenance avoids the 'major hits' on spend.[3]

34. Time allocated for internal inspections is covered from manpower budget. Commercial inspections are charged out based on time or in packages based on scope etc.

35. In the absence of a maintenance programme, coal tips risk progressing to the stage of requiring remediation work once the unmaintained tip becomes a danger. In early 2000s the cost of the "Tips and Slips" budget for the Forestry Commission provided by the Welsh Government was £200K per year to manage the liabilities on former coal board sites. As well as an agreed programme of works the team also dealt with any extraordinary occurrences such as the Tintern remedial works of summer 2008 (which cost £38k).[4]

36. An estimate has been given that the cost of remediating the coal tips in Wales over the next 10 years will be £500-600 million.[5]

37. Our proposals for reform relate to disused tips only, as we have concluded that the regulatory framework for tips associated with operational mines works well. Where there have been recent concerns, for example as to the conditions governing the closure of mines and the remediation of the associated tips, these relate to the operation of the available controls in practice and not to the legal framework. It is useful however for the purposes of an economic impact assessment to look at the cost of restoring recently closed mines.

38. Modern tips are covered by Mining Waste Directive protection. The Environmental Permitting Regulations and planning conditions impose requirements to ensure restoration and after-care of mining sites after mines close.

39. There are some issues, illustrated by the cost of restoring open cast mines compared with the level of the restoration bonds required. At East Pit, where an application for new mining is now being considered, the bond stands at around £4m, while the restoration is likely to cost about £115m. At another vast pit, Margam, near Bridgend, there is £5.7m available – against an estimated restoration cost of £56m. At Ffos-y-fran, the bond laid down by the operators was £15m, well short of the restoration bill of 50m plus .[6]

Costs associated with tip slide disasters

[2] Information provided by Department for Environment and Rural Affairs , Welsh Government [Natural Resource Management Programme]

[3] Evidence provided by Coal Authority consultee.

[4] John Browne and Robert Vaughan, Natural Resources Wales.

[5] Letter from Chris Bryant MP (MP for Rhondda) to the Chancellor of the Exchequer, cited in A James, "Coal tip securing could cost more than £500m' in Wales" (2020) *BBC News*, available at: https://www.bbc.co.uk/news/uk-wales-54829054 (last visited 29 April 2021).

[6] G Monbiot, "Big Coal's big scam; scar the land for profit and then let others pay to clean up" (2015) *The Guardian,* available at: https://www.theguardian.com/commentisfree/2015/apr/28/big-coal-keep-it-in-the-ground-energy-opencast-mines (last visited 29 April 2021).

40. The following instances set out the human, financial and environmental costs:

- In the case of the Aberfan disaster in 1966, there were 144 deaths, 116 of which were of children, mostly between the ages of 7 and 10. An additional 6 adults and 29 children were injured. The NCB paid out £500 for each bereaved family.

- The cost of clearing the 60,000 tonnes of waste that fell into the river below the Tylorstown tip in February 2020 was £2.5 million. The cost of the next stages of tip remediation to secure the tip is estimated as £12 to 14 million. This does not include the cost to the environment or any associated anxiety it may have caused in the local community. The remediation is also causing environmental harms (such as felling trees in order to place the material somewhere after it was removed).

- Hatfield Colliery's rotational coal tip slide in 2013 cost £64 million to remediate (the colliery only had insurance of £32 million) and closed a railway line for six months.

- The final cost of removing the remaining Aberfan tip in 1968 was £850,000. The Government contributed £500,000, the NCB £250,000 and the local community were expected to contribute £150,000 out of the Aberfan Disaster Memorial Fund raised for them by the international community (which totalled £1.75 million). In 1998 the Government returned the £150,000 to the fund, and in 2007 the Government contributed £1.5 million to the fund to make up for the lost interest, and £500,000 to the Aberfan Education Charity.[7]

- Medical issues caused to the survivors of Aberfan as the result of the disaster. A study published in the British Journal of Psychiatry in 2003 found that half of the survivors had experienced Post Traumatic Stress Disorder (PTSD). They also found that they were more than three times more likely to have developed lifetime PTSD than a comparison group from a nearby village, and 34 per cent of survivors who took part in the study still experienced bad dreams or difficulty sleeping because of thoughts about the disaster. Fifty-four percent of survivors also reported that any reminder brought back strong feelings about it.[8] In 2005 Imperial Tobacco settled out of court to end an unfair dismissal case brought against them by an Aberfan survivor, who had been employed by the company's Rizla cigarette paper factory near Pontypridd. She was sacked after she refused to continue working night shifts, explaining that it had brought on flashbacks from 1966, when she had been buried waist-deep in the landslide while walking to school and a friend who had been walking with her was killed.[9] Further, in the year following the tip slide, close relatives of the victims had a death rate seven times higher than the norm.[10]

- The immediate emergency service costs. The emergency service costs must have been extremely high with regard to Aberfan. It took a week to recover all the bodies. We have been unable to find a figure for either Tylorstown or Aberfan, but we have been informed that the valleys are so narrow that, in the event of casualties, emergency services would have to be provided by the army and casualties might require airlifting out. The narrow roads have also contributed towards the high cost of the Tylorstown remediation.

---

[7] M Shipton, "How the people of Aberfan were repeatedly betrayed after the disaster" (2016) *Wales Online*, available at: https://www.walesonline.co.uk/news/wales-news/how-people-aberfan-were-repeatedly-12025941 (last visited 29 April 2021).

[8] L Morgan and others, "The Aberfan Disaster: 33-year follow up of survivors" (2003) 182 *British Journal of Psychiatry* p 532, available at: https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry/article/aberfan-disaster-33year-followup-of-survivors/AC7358FC5D7F362BB8080FC1579C074A (last viewed 29 April 2021).

[9] BBC News, "Aberfan trauma case settled" (2005), available at: http://news.bbc.co.uk/1/hi/wales/south_east/4243923.stm (last visited 29 April 2021).

[10] R Wilkinson, *Unhealthy Societies: The afflictions of inequality* (2002) p 180.

- Pollution from abandoned coal mines and non-coal mines contribute to seven percent of failures of bodies of water in the UK to be awarded good status.[11]

41. Coal tip slides in the last 10 years, 2011-2021

    - 2011, in Tredegar, a remediated coal tip slide into the playground and classrooms of a school.

    - 2013, Hatfield colliery rotational slide, which destroyed a section of railway that had to be closed for six months and remediated at a cost of £64 million.

    - 2018, at Tower Colliery the centre of coal tip collapsed (described as a scour) due to the intense rainfall exceeding the capacity of the surface water controls. This contributed to flooding of a major road.

    - 2020 (February), Tylorstown coal tip slide which blocked a river, buried a strategic water main, broke a foul sewer and covered a footpath and cycle path. Other less significant slides occurred at the same time in Clydach Vale, on the railway line to Aberdare, Wattstown and Pontygwaith.

    - 2020 (December), Wattstown coal tip slide, 2000 tonnes of material slipped.

Option description

42. This impact assessment compares Option 1 against the do nothing [option 0]:

- Option 0 – Do nothing. Under this option the problems outlined above would persist;

- Option 1 – (preferred): A single supervisory body with a duty to ensure the safety of disused coal tips; a tips register on an interactive database with up-to-date information including the tip management plan and records of inspections; a general duty to inspect; a system to designate tips requiring higher levels of intervention with work to be carried out by the supervisory body; maintenance agreements with tip owners for lower rated tips, to be administered either by local authorities or the supervisory body; an approved panel of engineers; publication of tip data.

Option 1: A single supervisory body with a duty to ensure the safety of disused coal tips

43. Many stakeholders think that it would be better to have one body with expertise managing the tips, or possibly only the higher risk tips. One common fund could be used to undertake work based on prioritisation of the highest risk tips. Some also think that it would be less expensive in the long term for the specialist body to carry out all the inspections, maintenance and remediation of at least the higher risk tips than to have powers which allow intervention only when the tip has become a danger. The cost of inspections to ensure

[11] Environment Agency, *Inventory of closed mining waste facilities* (2014) p 2, available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/288582/LIT_6797_7d390c.pdf (last visited 3 March 2021).

that private owners have carried out the necessary maintenance work could be as high as carrying out the work itself.

44. This option would place a duty on the oversight body to compile and maintain a tips register. This would include up-to-date information including the tip management plan and records of inspections. We think that an interactive database would ensure consistency and increase efficiency by generating reminders of deadlines for requirements such as inspections.

45. We also provisionally propose a system to designate those tips requiring higher levels of intervention. This would impose a more rigorous safety regime. We think it would be more efficient for the work to be carried out by the supervisory body itself.

46. For lower-rated tips, we provisionally propose a system of maintenance agreements with tip owners, to be administered either by local authorities or the supervisory body.

47. We also suggest an approved panel of engineers to conduct more skilled remediation work, once again to ensure safety and consistency of approach.

48. We suggest publication of tip data to ensure that the public are provided with the information they need in order to feel reassured.

Options considered but not taken forward

49. An overarching Centre of Excellence to monitor tip maintenance and remediation work conducted, as now, by local authorities, with a duty to compile and maintain a tips register on an interactive database with up-to-date information including the tip management plan and records of inspections, publication of data.

50. We think this option will not produce economies of scale and would not enable the prioritisation of work across all tips based on a uniform approach to risk assessment. It would preserve the disproportionate cost impact of tip maintenance and remediation work on a handful of local authorities. It would not solve the problem of loss of specialism across local teams, although the Centre of Excellence could help with training and promotion of a standardised approach.

Elements of the regulatory framework which remain undecided

51. Our consultation paper asks a number of questions about the proposed regulatory framework: will a brand new supervisory authority be needed, or should it form part of an existing body; will responsibility for drawing up maintenance agreements with lower risk tip owners fall to the new supervisory authority, or should this stay with local authorities? Until we know the views of stakeholders on these questions, we cannot be sure of the form that the new regulatory framework will take. For this reason, we are not able to give figures for the overall cost of the proposed scheme.

52. The policy choice as to how to fund the work is outside of our terms of reference. There are charging models from the Reservoirs Act 1975 which could be applied to the new framework: a fee could be charged at the time of entry of a tip on the register; where a tip is designated as high risk, an annual fee could be charged to tip owners, or a fee charged which reflects the cost of the work carried out more accurately. We propose that maintenance on lower risk tips is done by the tip owners themselves under maintenance agreements. But where work is done on a lower risk tip by the authority because the tip owner has failed to reach a maintenance agreement or has not complied with its terms, the cost of the work could be charged to the owner. As these policy choices have not yet been

made, we are not able to calculate the extent to which the cost of the scheme would be covered by tip owners.

53. For this reason, the costs considered below relate to the extent to which the new scheme allows costs to be avoided rather than the total cost of the scheme. It also looks at synergies where funding already allocated to local authorities could be reallocated and economies of scale created. Further work will be undertaken following this consultation and before any legislation is introduced in Senedd Cymru to assess the likely financial implications of the proposed scheme and any alternative options which are identified'

Non-monetised costs and benefits of each option

54. This Impact Assessment identifies non-monetised impacts on individuals, groups and businesses in Wales, with the aim of understanding what the overall impact to society might be from implementing these options. The costs and benefits of the proposed scheme are compared to the "do nothing" option. Impact Assessments place a strong emphasis on valuing the costs and benefits in monetary terms (including estimating the value of goods and services that are not traded). However, there are important aspects that cannot sensibly be monetised. These might include how the provisional proposal impacts differently on particular groups of society or produces changes in equity and fairness, either positive or negative.

55. Whilst non-monetised impacts are identified in this impact assessment we may receive sufficient information to calculate the monetised impacts in future impact assessments. When calculating the net present social value[12] ("NPSV") we use a time frame of ten years, with the present being year 0. We assume the transitional costs and benefits occur in year 0, the current year, unless otherwise indicated. Ongoing costs and benefits accrue in years 1 to 10. We would normally apply a discount rate of 3.5%, in accordance with HM Treasury guidance.

56. At this consultation stage it would be helpful to have more insightful information that would assist in providing a more informed estimate of likely impact.

Option 0: Do nothing [base case]

57. Because the "do nothing" option is compared against itself its costs and benefits are necessarily zero, as is its NPSV.

Option 1: A single supervisory body with a duty to ensure the safety of disused coal tips

Costs

Transitional costs

[12] Costs to society are given a negative value and benefits a positive value. After adjusting for inflation and discounting, costs and benefits can be added together to calculate the Net Present Social Value (NPSV) for each option. See HMT Green Book at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf#page=1&zoom=auto,-47,842 page 21.

1. Training costs

Creating a new supervisory body will require staffing of specialists such as engineers in addition to administrative support. At a minimum there will be the need for an induction programme for all staff followed by discipline specific training. On average induction programmes last 1-2 days with a further half day for specialist events. Specialists will have mandated training requirements in keeping with their professional status. The introduction of an approved panel of engineers could increase these costs as the engineers would need to apply for approval.

2. Guidance material

There are an estimated 2,144 coal tips and just under 300 have a provisionally allocated higher risk profile. About 70% of the coal tips will be on private properties. Seven Local Authorities have responsibility for just under 80 percent of the higher risk coal tips. Provisional proposals would require that maintenance agreements are offered to all landowners who have lower risk coal tips and this will require some familiarisation on their part where they are not already experienced in tip management. For Local Authorities and those with specialism in this area guidance will not have changed significantly. Overall given the low numbers impacted we anticipate a negligible impact on familiarisation costs.

3. Legislative drafting

Legislative drafting is required to enact a Coal Tip Safety Bill for Wales to establish the single supervisory system. There is an opportunity cost through the unavailability to carry out other legislative tasks. However, the Bill has already been given first priority for 2023.

4. Establishment of new supervisory body

The cost associated with establishing a new supervisory body depends on what is envisaged. The new Unit may not be a wholly new entity and may be an amalgamation of existing departments. It will be able to draw on local authority expertise and work commissioned by the Welsh Government since the creation of the Coal Tip Safety Task Force in February. 2020 Staffing needs will be dependent on multiple decisions including the frequency of inspections, appropriate charging mechanisms and the enforcement protocol. It may be the case that additional costs of the new arrangements are negligible when compared to the existing cost structure as synergies are created from a more efficient centralised operation in place.

5.Set-up new tip register

The Coal Authority work commissioned by the Welsh Government has started to collect information which will contribute to the coal tip register. The objective is to build the register using DataMapWales. More work is needed to complete the register in order for it to inform regulatory operations.

On-going costs

6. Maintenance of tip register

The newly established supervisory Unit will need to maintain the tip register. The risk profile of coal tips is likely to change over time. Decisions regarding staffing will depend on the model adopted.

8. Maintenance of new supervisory Unit

The budgetary spend of the new supervisory Unit depends on decisions regarding the model to be adopted. If a merger with an existing department occurs costs may be less than creating a new Unit.

9. Increased cost of a general duty to inspect

The coal tip register will identify all coal tips. In the first few years there may be increased cost as the inspection of newly registered coal tips exceeds current inspection levels based on local authority perception of instability risk under the current regulatory regime.

10. Increased cost of remedial and maintenance work on designated higher risk tips.

There may be proactive work which would not have been done by local authorities under the current regulatory regime. However, consultee feedback suggests the average cost of remedial and maintenance work should reduce over time. Horizon scanning prioritises remedial work on an on-going basis before the tip falls into such a state of disrepair the one-off costly exceeds the aggregate value of regular repair.

Benefits

Transitional benefits

None identified

Ongoing benefits

1. Avoided cost of remediation

In the absence of a maintenance programme, coal tips risk progressing to the stage of requiring remediation work once the unmaintained tip becomes a danger. The annual cost of regular coal tip inspections and maintenance of drainage systems etc is estimated at £5k-£10k. By contrast the cost of remediation following a coal tip disaster is significantly greater. The Hatfield Colliery's rotational coal tip slide cost £64 million to remediate and the Tylorstown tip slide is costing £12-14million for the initial phases of remediation. The Tylorstown tip was scheduled for remediation by the Welsh Government in 2012 in a programme of works which had to be cancelled. The cost of remediation at that time was estimated as £1.8 million.

2. Reduced risk of loss of life and injury

Regular inspections and maintenance of coal tips reduce the risk of fatalities and injuries. It is well-documented that coal tip disasters can lead to fatalities. In the case of Aberfan this was 144 deaths and 35 injuries. These are the direct effects along with costs to emergency services in recovery of bodies and also the treatment of the injured. There are also the ripple effects throughout the community through the long-term emotional distress and on-going cost to health resources.

3. Improved cost efficiencies: savings made by removing work from individual local authorities.

Coal tips are unevenly distributed which means that whilst some Local Authorities are burdened by having several tips under their jurisdiction, other local authorities have very few or none. This places a limit on the ability of some LAs to offer other services such as

health and education. A central supervisory body removes this burden and frees up resources. Moreover, a central body allows for the establishment of a centre of knowledge as against a fragmented approach that might not sufficiently capture changing patterns/trends.

4. Prevention of environmental damage

The fall-out from coal tip disasters can be long-term environmental damage. Studies highlight the positive correlation between pollution from abandoned mines and the poor quality of UK water. The cost of remedying environmental damage is illustrated through the Tylorstown tip slide in 2020. Immediate work to clear the 60,000 tonnes of waste that fell in the river below the tip cost £2.5 million. If waste requires relocation to prevent further environmental damage the costs will escalate.

A common problem associated with coal tips is that of spontaneous ignition to form burnt or partially burnt spoil. As recently as 2000 a coal tip fire in Swansea cost the LA about £1million to extinguish.

5. Avoided cost of clear up

Coal tip disasters impact directly on property, transportation and communication infrastructure. Studies of previous coal tip disasters reveal the high cost to infrastructure following a disaster. The Hatfield disaster disrupted railway operations for six months.

Global weather patterns all suggest the increased frequency of extreme rainfall events. These are likely to trigger coal slips and result in flooding of properties and major roads. Within the most recent 10 year time period there were no fewer than 5 events, two occurring in 2020 alone.

The Association of British Insurers [ABI] estimated the average cost of residential insurance claims from flooding at just over £32,300 and for commercial properties the average claim was just under £57,300[13]. Similarly the cost of flooding of a major road has been estimated in the region of £100,000[14] per hour the road is out of use. Considerable variability on the requisite remedial time to ensure its safe passage means a road may be out of use for periods lasting from a day to weeks.

6. Environmental gain

The potential exists to reverse the damage caused by coal tip slides through new land uses arising from the need to protect biodiversity, capture carbon and mitigate flood risk. Disused tips could contribute in mitigating habitat and other environmental losses elsewhere, for example through road building.

Specific impact assessments

Equality Assessment

[13] See https://www.abi.org.uk/news/news-articles/2020/03/insurance-pay-outs-to-help-customers-recover-from-storms-ciara-and-dennis-set-to-top-360-million/ last visited 15th April 2021.

[14] See https://rainbow-int-franchise.co.uk/flooding-statistics-uk/ last visited 15th April 2021

An initial screening revealed no adverse implications associated with proposed intervention. The assessment identified the positive impact on the Welsh population through the reduced risk of coal tip disasters. This provides enhanced physical and psychological security. Those who will benefit most are those living in close proximity to the former South Wales coalfields where large numbers of higher risk tips are situated. These communities suffer high levels of socio-economic deprivation due to the decline in the coal mining industry and the numbers of mine closures. The post-industrial legacy of coal mining affects this community disproportionately.

Welsh language impact assessment – provided separately.

Environmental

An assessment of the environmental impact is discussed throughout the impact assessment.