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: 24/03/2022** **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**
£N/A	£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 which can lead to coal tip landslips with 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. This is no longer the case as climate change is bringing record-breaking rainfall, as illustrated by the tip slides which resulted from Storms Ciara/Dennis in February 2020. This illustrates the potential for significant harm that disused coal tips present to communities, many of which are in the most economically deprived areas, 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Identify gaps, inconsistencies and approaches in the current law which are unhelpful or have become outdated.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 authority with a duty to ensure the safety of disused coal tips with commensurate responsibilities including a tip register with up-to-date information including an accessible summary of the most recent inspection report and the risk classification assigned; a general duty to inspect; a system to designate tips requiring higher levels of intervention with work to be carried out by the supervisory authority, and maintenance agreements with owners and occupiers 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'

N/A

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

Transitional costs: Training of staff in newly created supervisory authority – 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 65% of the 2,456 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 authority.

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.

Opencast 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, paritularly in South Wales, 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" (2010) *British Geological Survey* OR/10/14, http://nora.nerc.ac.uk/id/eprint/10083/1/OR10014.pdf (last visited 22 March 2022).

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 2500 in Wales – in the twenty-first century.

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

6. The Law Commission's report identifies gaps, inconsistencies and unhelpful or outdated approaches within the legislation, and makes 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. The objective was to lay the foundation for action to avoid or significantly reduce the risk of environmental damage, injury and loss of life.

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 ensure a rapid and coordinated response when emergency works become necessary.

9. Public consultation commenced on 10 June 2021 and ran for three months. We received 69 responses to the consultation. Our provisional proposals received strong support.

Problem under consideration

Outdated law

10. 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.

11. 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

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

The main problems with the current legislation

13. 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

14. 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

15. 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

16. 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

17. 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

18. 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 aware that there is a coal tip on the land. Local authorities may have difficulty in identifying who the owner is.

19. 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

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

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

22. 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

23. 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.

24. The failings in the current regulatory framework result in risks to public health and safety and to the environment. There is the heightened risk of harm from insufficient attention to the problem of disused coal tips. From an economics perspective, negative externalities and spillover effects[2] flow from the actions of owners of coal mines. The cost of coal mining failed to include the cost of waste disposal as evidenced through the hazard that coal tips now present.

25. Delay in carrying out remedial work and/or the failure to undertake requisite maintenance work of disused coal tips compounds the hazard. There is a significantly greater cost burden for the state when large scale and sometimes emergency remediation work is subsequently needed. This has the further knock-on effect of reducing the availability of state funds for other projects.

26. The regulatory burden is also spread disproportionately across different local authorities, depending on the number of tips in a given area. This is particularly problematic given the disproportionate location of many disused coal tips in the most socially deprived areas of Wales. Many households will be under-insured, if insurance is indeed a possibility. Moreover the communities will be that much more dependent on government funded initiatives that may be overtaken by regulatory priorities.

27. 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.

28. 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

[2] Negative externalities occur when production imposes external costs on third parties outside of the market for which no appropriate compensation is paid. A spillover effect is an unintended consequence of production that impacts on those with no involvement in the productive process at any stage.

of civil liability for harm caused by coal tips, and offers relief from unexpected and costly remediation work.

29. 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

30. There are just under 2,500 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 65% of tips are on private land or land with unknown ownership. On provisional figures, local authorities own 354 tips, and 183 are managed by Natural Resources Wales. The Coal Authority owns 33 tips. Each local authority has a list of coal tips within its boundaries.[3]

31. 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

[3] Provisional figures published by the Welsh Government on 26 October 2021 identify 2,456 tips: see https://gov.wales/coal-tip-safety#section-72291.

Procedure for managing disused tips

32. 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.

33. 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

34. The costs of a maintenance programme are dependent on the size of the tip and the current standard of its 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. This excludes costs of privately owned tips which account for the vast majority. An early estimate of the annual maintenance budget is £15m per year based on £37k per higher risk tip.[4]

35. 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.

36. The CA annual budget of £350,000 for the care of its 40 tips 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 often planned 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.[5]

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

38. 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 the 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).[6]

---

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

[5] Evidence provided by the Coal Authority.

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

39. 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.[7]

40. The CA has estimated, based on their experience of maintaining tips, that the annual budget for tip maintenance and works to keep tips safe in Wales will be around £5 million per year. This excludes any remediation and reprofiling work. In the short term, over the first few years of the new regulatory regime, there would be additional costs as work is done to catch up with essential maintenance work and to bring tips up to the required standard.[8]

41. 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.

42. Modern tips are covered by Mining Waste Directive protection. The Environmental Permitting (Engalnd and Wales) Regulations 2016 and planning conditions impose requirements to ensure restoration and after-care of mining sites after mines close.

43. There are some issues, illustrated by the cost of restoring opencast mines compared with the level of the restoration bonds required. At East Pit, where an application for new mining is 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 .[9]

Costs associated with tip slides

44. The following instances set out the human, financial and environmental costs of tip slides:

- 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 the immediate work to remove 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 dealing permanently with the material left by the slide is estimated as £13.5 million. This does not include the cost to the environment or any associated anxiety it may have caused in the local community. The clear up is also causing environmental harms (such as felling trees in order to place the material somewhere after it is 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.

[7] 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*, https://www.bbc.co.uk/news/uk-wales-54829054 (last visited 22 March 2022).

[8] Figure provided by the Coal Authority to the Welsh Government.

[9] G Monbiot, "Big Coal's big scam; scar the land for profit and then let others pay to clean up" (2015) *The Guardian,* https://www.theguardian.com/commentisfree/2015/apr/28/big-coal-keep-it-in-the-ground-energy-opencast-mines (last visited 22 March 2022).

- 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.[10]

- 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.[11] 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.[12] Further, in the year following the tip slide, close relatives of the victims had a death rate seven times higher than the norm.[13]

- 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.

45. Coal tip slides in the last 10 years - 2011-2021:

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

    - 2013: the Hatfield Colliery rotational slide 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.

---

[10] 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 22 March 2022).

[11] L Morgan and others, "The Aberfan Disaster: 33-year follow up of survivors" (2003) 182 *British Journal of Psychiatry* 532, https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry/article/aberfan-disaster-33year-followup-of-survivors/AC7358FC5D7F362BB8080FC1579C074A (last visited 22 March 2022).

[12] BBC News, "Aberfan trauma case settled" (2005) http://news.bbc.co.uk/1/hi/wales/south_east/4243923.stm (last visited 22 March 2022).

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

- 2020 (February): the Tylorstown coal tip slide 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

46. 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 authority with a duty to ensure the safety of disused coal tips; a tip register containing up-to-date information including an accessible summary of the most recent tip inspection and the risk classification assigned; a general duty to inspect; a system to designate tips requiring higher levels of intervention with work to be carried out by the supervisory authority; maintenance agreements with tip owners for lower rated tips, to be administered by the supervisory authority and local authorities; a register of tip safety specialists.

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

47. We recommend a new supervisory authority with a duty to ensure tip safety. Many stakeholders thought 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 thought that it would be less expensive in the long term for the specialist authority 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 that private owners have carried out the necessary maintenance work could be as high as carrying out the work itself.
48. We recommend placing a duty on the supervisory authority to compile and maintain a tip register. This would include up-to-date information on tips including a summary of the most recent inspection report and the risk classification assigned. The register would help to ensure consistency. Depending on the technology used, it could increase efficiency by, for example, generating reminders of deadlines for requirements such as inspections. The register will also enable more informed decision-making, for example in planning decisions, by ensuring that relevant authorities have the information they need. We recommend that the register should be publicly accessible to provide reassurance that action is being taken to ensure that tips are safe.

49. We recommend that, on entry of a tip onto the tip register, the supervisory authority should be under a duty to arrange for the inspection of the tip. The purpose of the tip inspection would be to compile a risk assessment and design a tip management plan, after which the

supervisory authority would be in a position to assign a risk classification . The classification allows decisions to be taken as to priorities and where responsibility for the work indicated by the plan will fall.

50. We recommend 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 in most cases for the work to be carried out by the supervisory authority itself.

51. For lower-rated tips, we recommend a system of maintenance agreements with tip owners, backed up by tip orders, to be made by the supervisory authority and supervised by local authorities.

52. We also recommend a register of tip safety specialists to conduct more skilled remediation work, once again to ensure safety and consistency of approach.

Options considered but not taken forward

53. 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 tip register on an interactive database with up-to-date information including the tip management plan and records of inspections.

54. 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

55. 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. Our recommended regime envisages that agreements and orders for the carrying out of tip safety work will include provision for payment either by or to the owner or occupier of land containing a tip. We recommend that maintenance on lower risk tips is done by the tip owners or occupiers, and that work on designated tips will normally be carried out by the supervisory authority itself, but policy choices have not yet been made to determine who will pay the cost of the work. For this reason, we are not able to calculate the extent to which the cost of the scheme would be covered by tip owners.

56. 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 the Senedd to assess the likely financial implications of the proposed scheme and any alternative options which are identified.

57. There is a possibility that the new regulatory framework could be extended to non-coal tips. There are estimated to be in excess of 20,000 such tips. It was not within our terms of reference to consider such tips, but we invited stakeholder views on the issue in our consultation paper as the Welsh Government had indicated to us that they would welcome these. Those respondents who offered a view were unanimous in favouring an expansion of the regime to cover all tips. We are not able to provide an assessment of the impact of such an extension.

Public Consultation Exercise

58. We held a series of consultation events over the three month consultation period involving stakeholders from a wide range of sectors. We received 69 written responses. A quarter were from the engineering, geoscience and mining sectors; almost 10% were from legal stakeholders; we also received very useful responses from the heritage/history sector, local government, those representing the interests of landowners, environmental organisations, and bodies responsible for infrastructure that could be affected by coal tip slides, such as the rail and water industries. Nearly 15% came from elected representatives such as Members of the Senedd, Members of Parliament and local Councillors.

59. Overall, these responses were very supportive of our provisional proposals. A number of proposals were supported by over 90% of the respondents to the consultation, such as the proposal for a supervisory authority, a central tip register and a duty to arrange for the inspection of tips. There was also strong majority support (80-89%) for almost all of the other provisional proposals, and support for all provisional proposals was above 68%.

Non-monetised costs and benefits of each option

60. 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.

61. 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). When calculating the net present social value[14] ("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.

62. On this occasion we are unable to derive an NPSV because there are important aspects that cannot sensibly be monetised due to evidence gaps. For example, whilst we make recommendations for a new supervisory authority, our recommendations incorporate a degree of flexibility as to how responsibilities will be allocated, particularly for lower risk tips. For this reason, we are not able to estimate the size of the new supervisory authority. We

[14] 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 p 21 (last visited 22 March 2022).

are also unable to provide the cost [savings] from the new body investing in appropriate technology.

63. However, what can be done is to identify cost / benefit areas and to provide as full an explanation as is possible.

Option 0: Do nothing [base case]

64. 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

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 2,456 coal tips and just over 300 have a provisionally allocated higher risk profile. About 65% of the coal tips will be on private properties. Seven local authorities currently have responsibility for just over 80 % of the higher risk coal tips. Our recommendations would require maintenance agreements to be 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 authority

The cost associated with establishing a new supervisory body depends on what is envisaged. We have recommended that it should be a new, central, public body. The new authority 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, numbers of designated tips, and the enforcement protocol. Tasks may be

delegated to other authorities or to tip owners or contracted out to third parties. 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. Creation of a tip register

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

1. Maintenance of tip register

The newly established supervisory authority will need to maintain the tip register. Information such as in relation to inspections will need to be updated. The risk profile of coal tips is likely to change over time. Decisions regarding staffing will depend on the model adopted.

2. Maintenance of new supervisory authority

The budgetary spend of the new supervisory authority depends on decisions regarding the model to be adopted.

3. Increased cost of a general duty to inspect

The coal tip register will identify all coal tips. In the first few years there will 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.

4. 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 that the one-off cost 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 features such as drainage

systems is estimated at £5k-£10k. By contrast the cost of remediation following a coal tip slide is significantly greater. The Hatfield Colliery's rotational coal tip slide cost £64 million to remediate and the Tylorstown tip slide is costing £13.5 million 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 treatment of the injured. There are also the ripple effects throughout the community through 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 local authorities to offer other services such as health and education. A central supervisory authority 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 slides 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. As recently as 2000, a coal tip fire in Swansea cost the local authority about £1 million to extinguish.

5. Avoided cost of clear up

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

Global weather patterns 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. For commercial properties, the

average claim was just under £57,300[15]. Similarly, the cost of flooding of a major road has been estimated in the region of £100,000[16] per hour the road is out of use. Considerable variability on the requisite remedial time 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

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 assessment

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

[15] 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 22 March 2022).

[16] See https://rainbow-int-franchise.co.uk/flooding-statistics-uk/(last visited 22 March 2022).