

Regulatory Impact Statement

Climate Change Response (Disposal Facilities) Regulations 2010

Agency Disclosure Statement

This Regulatory Impact Statement has been prepared by the Ministry for the Environment.

It provides an analysis of options to particular policy problems that have come from consultation on exposure draft regulations. The objective of the regulations is to guide operators of solid waste disposal facilities in estimating greenhouse gas emissions and thereby fulfilling part of their obligations under section 62 of the Climate Change Response Act 2002 (the Act). The analysis assesses three policy problems and methods of resolving them. The work has benefited from advice provided from an independent expert and the public consultation on exposure draft regulations.

There are no gaps, assumptions, dependencies, or any significant constraints, caveats or uncertainties concerning the analysis, except for an assumption regarding future emissions unit prices used in the fiscal impact analysis.

The policy proposals will not impair private property rights, market competition, or override fundamental common law principles. The policy proposals will provide positive incentives for businesses to innovate and invest, in line with the objectives of the Act.

All of the policy proposals impose compliance costs on solid waste disposal facility operators by virtue of those operators already having obligations under the Act. The preferred policy proposals will reduce potential compliance costs to the minimum while retaining flexibility for operators to voluntarily incur extra compliance costs in order to reduce New Zealand Emissions Trading Scheme emissions costs.

There is one implementation risk from the policy proposals. A small number of participants will be affected by a risk of underestimating the efficiency of their landfill gas system. This will result in an overestimation of emissions and therefore impose costs on those persons that are not justified. There are technical methodological reasons for this risk, and those matters will be resolved by the end of 2011 and amendments made to the regulations as part of the annual update of prescribed emissions factors. That amendment will take effect well before the sector faces NZ ETS costs from 2013.

Halting the promulgation of the policy proposals in regulations in order to resolve the implementation risk is not justified. Significant regulatory and methodological uncertainty would be experienced by the sector, and the benefits of voluntary reporting would be lost. Officials are very confident of resolving the risk before the end of 2011.

Kevin Currie, Director

25/8/10

Status quo and problem definition

Status Quo

1. The Crown is required to manage national greenhouse gas emissions under the United Nations Framework Convention on Climate Change (UNFCCC). The Kyoto Protocol requires the Crown to control emissions over 2008 to 2012 to be at five times 1990 emissions, or purchase emission units to make up for any excess emissions.
2. The Climate Change Response Act 2002 (the Act) imposes requirements on persons operating waste disposal facilities (disposal facility (DF) participants) from 1 January 2012. Section 62 of the Act states that a participant must calculate the emissions and the removals from the activity in accordance with the methodologies prescribed in regulations made under the Act.
3. Persons with obligations are required to report on their 2012 calendar year disposal facility operating activities by 31 March 2013. Persons with obligations are required to report on their 2013 calendar year disposal facility operating activities by 31 March 2014, and surrender the necessary number of emission units by 31 May 2014.
4. In addition, the Act provides for voluntary reporting of disposal facility operating activities from 1 January 2011. Promulgation of regulations in 2010 will enable voluntary reporting to be undertaken with an understanding of the requirements that will apply when reporting becomes mandatory.
5. While the solid waste disposal sector does not have unit surrender obligations under the New Zealand Emissions Trading Scheme (NZ ETS) until after the Kyoto period, for the assessment of fiscal costs this analysis assumes a continuation of the Kyoto commitment after 2012. So, if national emissions from landfills as reported in the New Zealand's Greenhouse Gas Inventory (Inventory) are more the total emissions as reported from disposal facilities under the NZ ETS, then this is a fiscal cost to the Crown.
6. Regulations as allowed under section 163 of the Act could prescribe the data or other information that must be collected, as well as prescribing methodologies that must be followed to calculate greenhouse gas emissions.
7. Only solid waste disposal facilities that operate as a business, at least in part, and accept some waste from households are defined as disposal facilities in the Act and are required to participate in the NZ ETS. This is the same group of disposal facilities that are currently required to pay a levy to the Crown for each tonne of waste disposed under the Waste Minimisation Act 2008.
8. There are currently 54 disposal facilities accepting solid municipal waste in New Zealand at present and who will be required to participate in the NZ ETS. In addition, there are an unknown number of other types of waste disposal facilities such as private landfills and 'cleanfills' that are not captured by the NZ ETS activity descriptions.
9. Greenhouse gas emissions from some disposal facilities are currently controlled by the National Environmental Standard on Air Quality (NES). Only disposal facilities above a threshold¹ are required to meet the NES obligations, which cap maximum concentrations of methane at the landfill surface. The NES requires New Zealand's disposal facilities to install and operate landfill gas collection systems. There are no inconsistencies or conflicts between the NES objectives and the NZ ETS.

¹ The threshold is 'one million tonnes in capacity'.

10. In Cab Min (10) 19/7 it was agreed that regulations would be developed for consultation that prescribed methodologies and a default emissions factor and provided flexibility for landfill operators to incur additional costs in order to more accurately estimate potential emissions from their facility.
11. Submissions on the exposure draft regulations and subsequent analysis identified the need for additional policies to be reflected in the regulations. This RIS analyses those problems against the original set of objectives.

Problems to be solved

12. The first problem is that the exposure draft regulations offered opportunities for landfill operators to underestimate emissions through selective development of unique emissions factors. Similarly, the classes² of waste for which UEFs could be applied did not necessarily match the information generally gathered by landfill operators on waste sources, resulting in additional compliance and administrative costs.
13. The second problem is that there is potential for landfill operators who run landfill gas collection systems to attain a system efficiency estimate greater than 100%, implying the gas system is collecting more gas than the landfill is actually generating. Such results are nonsensical and would undermine the reliability of the complete set of waste regulations if allowed. Conversely, it is possible that the methodology will result in the underestimation of the system efficiency estimate, resulting in a landfill operator reporting more emissions than are actually expected to occur.

Objectives

14. The objectives of any intervention are to:
 - a) Align, as closely as practicable, to the principles and methodologies used to calculate the Inventory with the methodologies that participants will use to calculate their emissions or removals under the NZ ETS thus avoiding fiscal risk to the Crown;
 - b) Minimise transaction and compliance costs to participants in terms of the information that must be collected and reported;
 - c) Minimise administrative costs, including compliance costs, for the NZ ETS administrator
 - d) Provide the best price signal including if possible, incentives for improved emissions efficiency;
 - e) Avoid creating perverse incentives;
 - f) Provide participants with certainty so that the methodologies are known ahead of time.
15. The regulatory impact analysis is grouped into the two policy problems for discussion

Regulatory impact analysis

Problem 1 – Classes of waste for UEF applications

16. As agreed in Cab Min (10) 19/7, landfill operators can use either a prescribed default emissions factor or approved UEFs. Consultation on exposure draft regulations has revealed weaknesses in the original methodology for determining UEFs based on waste composition. As the exposure draft regulations provided, a landfill operator could choose

² These were municipal solid waste, commercial and industrial solid waste, building and demolition solid waste, and other waste

to apply for a UEF for a low organic waste class, such as building and demolition materials, and use the DEF for residential waste. This would result in underreporting of emissions from that facility, as the setting of the DEF includes the national average proportion of building and demolition waste in the total waste stream.

17. Submitters also noted concerns with the predefined classes of waste. In many modern landfills, it is very difficult to separate and identify waste from the particular classes. Such steps would require the landfill operator to incur compliance costs above the costs associated with the actual compositional analysis and UEF application, as well as create additional uncertainty as to the validity of a UEF application.
18. Analysis of this problem has identified a single viable solution. The regulations could allow participants to apply for a single facility-wide UEF or multiple UEFs based on self-defined waste classes, such as 'waste from transfer stations'. There would be no requirement to separate waste into the previously prescribed classes, instead a landfill operator would be able to utilise their own analysis on waste sources and describe them as 'classes'.
19. Another solution might be not allowing UEF's based on waste composition, The This achieves objectives (b) and (c) in reducing compliance costs, but fails (a), (d) and (e). The failure of objective (d) is due to the weakening of the emissions price, and inability of a participant to have emissions reduction activities recognised through the regulations and thereby their NZ ETS costs.
20. A final solution might be to allow a UEF based on waste composition only to apply for all waste received. This would reduce compliance costs for the participant and the administrator compared to obtaining multiple UEFs (objectives (b) and (c)) but, similar to the prior solution, fail objectives (a), (d) and (e). A landfill operator would not be able to have significant waste composition changes from particular waste sources recognised by their NZ ETS costs unless they reapplied for a UEF.
21. Under the preferred solution, a landfill operator is allowed to use a UEF would not be able to use the DEF for any class of waste. That is, the landfill operator would need to have UEFs covering all the classes of waste that the facility receives. By preventing the use of the DEF, the risk of underestimating emissions as identified in paragraph 16 above will be avoided.
22. The use of multiple UEFs and user-defined waste classes provides greater opportunities for participants to reduce NZ ETS costs by more accurately estimating emissions in current and future years.
23. Such policy solutions will reduce administrative and compliance costs for landfill operators compared to the methods set out in the exposure draft regulations in so far as they would be able to self-select waste classes (objective (b)). The number of classes is up to the landfill operator, but each class must have its own compositional analysis performed. As noted in the RIS attached to Cab Min (10) 19/7, the costs of sampling and weighing are estimated at \$50,000 per test, and at least two tests will be required for a UEF application. As UEFs are voluntary, landfill operators will only face these costs if they assess the benefit of using a UEF is greater than the costs of the application process.
24. Consequently, this policy solution meets all of the objectives.
25. There will be no perverse incentives from the policy solution (objective (e)), and because it will reduce the risk of underestimating emissions, it will enhance the NZ ETS price incentive.

Problem 2: landfill gas (LFG) collection overestimation

26. LFG capture and destruction is the second important way to mitigate emissions. About 12 open disposal facilities (out of 54) currently collect LFG. The regulations will allow for an estimate of LFG collection efficiency if there is a system in operation. A modern LFG system, if properly installed and maintained, can reduce emissions by up to 90%. This means a disposal facility that previously had emissions of 10,000 tonnes of carbon dioxide equivalent in a year would report 1,000 tonnes, a reduction of 9,000 tonnes and an annual reduction in NZ ETS costs of \$450,000 (assuming \$50 per unit).
27. The exposure draft regulations prescribed the use of the metered information on gas passing through a LFG system. Data collected by meters relates to actual emissions from the waste deposited to date. That data would be converted to an efficiency factor through comparing metered data with modelled emissions from the disposal facility.
28. The use of a LFG efficiency estimate is a matter of application to the NZ ETS administrator as part of a UEF application.
29. The cause of the policy problem is technical. It is due to the differences between actual gas flows (as measured by the system meters) and modelled gas emissions. Modelling the generation of methane from landfills is an inexact science. Each landfill has its own real-life characteristics that make assumptions used in modelling inaccurate. For example, the assumptions used in modelling that wood is composed of an exact proportion of degradable organic carbon, and that this carbon biodegrades in a precise amount of time. These are assumptions used in the Inventory, and their source is international scientific literature as reported by Inventory Guidelines from the Intergovernmental Panel on Climate Change (IPCC). However, for some landfills that are 'cold' and/or wet, that biodegradation and production of methane will be slower than modelled.
30. Facilities that encourage methane generation by certain practices may be able to develop gas collection efficiency estimates that are above 100%. Conversely, facilities that have slow biodegradation or other similar factors may underestimate their actual system efficiency.
31. To avoid over estimating efficiency, the preferred policy solution is to cap the maximum estimate at 90%. As noted above, this is the technical maximum that an operational landfill can achieve. Evidence from consultation with landfill operators in New Zealand that are known to have high efficiency systems supports this figure. International literature, including from the IPCC, provides additional support on the theoretical maximum efficiency of a landfill gas system in an active landfill.
32. An alternative policy solution would be to not allow recognition of landfill gas destroyed by such systems in a participant's estimate of emissions. This solution would resolve the problem and reduce compliance costs for participants and the administrator (objectives (b) and (c), but fail all the other objectives. Importantly, it would not provide incentives to install and operate such systems efficiently (objective (d)), which would face significant opposition from landfill operators and be inconsistent with the objectives of the Act.
33. Another alternative policy solution would be to set a base efficiency value for any landfill that has a gas system operational. This base value could then be varied according to particular criteria, including landfill management practices, age and maintenance of the landfill gas system and other factors. This solution would fail objective (a), as the resulting efficiency value would not correlate with the actual gas quantities destroyed. It is probable that a landfill operator could be destroying less or more gas than the efficiency

value would ascribe. It is difficult to determine if it would increase or decrease administrative costs for participants or the administrator (objectives (b) and (c)). Because of its inherent inaccuracy, the solution would fail objective (d) as it would not provide the best price signal to incentivise emissions efficiency. It is also difficult to assess the solution against objective (e) as the results would be dependent on the level of detail of the adjustment criteria.

34. In contrast, the preferred solution does not run against any of the objectives. It will not create perverse incentives or result in any additional administrative or compliance costs. It more accurately aligns the methodologies to those used in the Inventory, although as noted in the RIS to Cab Min (10) 19/7, there are more important fundamental differences between the methodology prescribed in the regulations and that which is used in the Inventory. These fundamental differences arise through the Inventory reporting actual emissions from waste disposal. In contrast, the NZ ETS methodology prescribed in the exposure draft regulations will result in landfill operators reporting potential, not actual, emissions. An estimate of potential emissions will include all the emissions that will result of the biodegradation of the waste over time, not just in the year it was disposed.
35. As noted in paragraph 29, there is a risk of the methodologies resulting in an underestimation of system efficiency. For example, one submission noted that this underestimation might cost it \$1m per year from 2013 which it may, or may not be able to pass onto users of the landfill. It is not clear whether this is a common situation amongst those landfills that have gas systems.
36. This risk cannot be managed at this stage, given the time pressures to promulgate regulations for use in voluntary reporting. It is a matter for further policy development and research. There is an annual NZ ETS regulations amendment programme to update emissions factors that resolution of this problem will be part of. This means that, contingent on the outcomes of the 2011 Review of the NZ ETS, a solution to this problem and risk will be in place by the end of 2011. More information on this risk and its resolution is found below in paragraphs 42 to 44.

Consultation

37. Officials have publicly consulted on exposure draft regulations over five weeks from mid June 2010. Six regional meetings were held with landfill operators and local authorities at least three weeks ahead of the closure of the consultation period and almost one hundred people attended the meetings in total. Twenty five submissions were received, including from public and private landfill operators. That consultation has given rise to the additional policy problems that are discussed by this paper.
38. A draft of this RIS was circulated to the following departments for comment: the Treasury, the Ministry for Agriculture and Forestry, the Ministry of Economic Development, the Ministry of Foreign Affairs and Trade, the Ministry of Transport and Te Puni Kokiri. The Department of Prime Minister and Cabinet was informed. Departments agree with the preferred policy options.

Conclusions and recommendations

39. This RIS considers two problems that have arisen from consultation on exposure draft regulations. It weighs possible policy solutions to those problems using the same objective criteria that were used in the development of the methodologies and policies for the exposure draft regulations.

40. The conclusions of the analysis are that:
 - a. Landfill operators who apply for UEFs based on waste composition should be required to use UEFs for all waste received. Additionally, the landfill operator should be able to define the waste class, including all waste, for which UEF apply.
 - b. The maximum value of the landfill gas system efficiency estimate should be capped at 90% in order to avoid a risk of overestimation of this value.

Implementation and Risks

Perverse outcomes

41. The policy recommendations above will have no perverse outcomes.

Implementation risks

42. The policy recommendations above have one implementation risk. It is known that the methodology for estimating landfill gas system efficiency will underestimate efficiency for some facilities, resulting in the overestimation of emissions. Landfill operators affected by this issue will be aggrieved at the 'fixing' of the potential overestimation issue to resolve a fiscal risk to the government, but no solution offered in the final regulations that resolves that fiscal risks to themselves . Managing this risk will require a work programme on methodologies that has a high degree of collaboration with the sector.
43. Pausing in the development of these regulations in order to resolve the implementation risk is not justified. The risk will not impose costs immediately. However, without methodologies prescribed in regulations, the benefits of voluntary reporting will be lost. This loss could impose costs on participants through being unable to test and resolve data collection systems, and increasing the chance of non-compliance when reporting becomes mandatory.
44. As noted in paragraph 26 above, the annual update to emissions factors in NZ ETS regulations offers an amendment vehicle to make necessary changes to regulations to avoid overestimation. Additionally, implementation activities planned for October 2010 will ensure that landfill operators are aware that there are no NZ ETS cost implications until 2013 and that there is therefore sufficient time to fix the issues.
45. Pending Cabinet approval, the NZ ETS Disposal Facility Regulations and amendments to the Unique Emissions Factors Regulations will be promulgated by 1 October 2010. Following this, there will be a period of targeted stakeholder engagement with the sector to inform them of the final design of the regulations. This will include the development and dissemination of guidance materials, regional workshops for all participants and individual case management for certain participants. The NZ ETS Disposal Facility Regulations and amendments to the Unique Emissions Factors Regulations will come into effect on 1 January 2011.

Monitoring, evaluation and review

46. Compliance and enforcement of the regulations will be in accordance with the Subpart 4 of Part 4 of the Act that sets out the provisions relating to offences and penalties. The proposed regulations are to be administered by the chief executive of the Ministry of Economic Development as part of his role in administering the Act.

47. The implementation risk noted above on the overestimation of emissions from the few landfills that have gas systems but slower waste degradation than assumed by models is important. As noted, officials intend resolving this problem with operators by the end of 2011, subject to the 2011 Review of the NZ ETS, which is at least a year before NZ ETS costs affect landfill operators.
48. The government can review regulations at any time. Furthermore, the regulations may be reviewed in the context of the scheduled reviews of the operation and effectiveness of the NZ ETS, as required by section 160 of the Act. The first review is to be completed by the end of 2011.