Regulatory Impact Statement

ETS Review 2011: Proposed amendments to the Climate Change Response Act 2002 – Part 2 – Synthetic Greenhouse Gases

Agency Disclosure Statement

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

It provides an analysis of problems identified with the ETS as currently legislated and a range of policy options that could address these problems. Where possible a preferred option has been identified. These preferred options require legislative amendments to implement.

The analysis conducted is underpinned by a range of assumptions, not least the assumed carbon price to 2020. In addition, some of the ETS cost estimates presented depend on emission projections produced by various models which in turn depend on a range of assumptions.

Substantial consultation has taken place as part of the ETS Review 2011, and the recommendations of the paper largely align with the recommendation of the Review Panel. Therefore further consultation on the recommendations in the paper is not recommended. Consultation will be required later in the year as part of creating new regulations are reasonable implementable.

Many of the preferred options would benefit business by reducing their costs (e.g. the introduction of levies for synthetic greenhouse gases). Some preferred options would increase business costs (e.g. removing the exemption for importing certain synthetic greenhouse gases) or reduce flexibility (such as removing options to calculate emissions).

None of the preferred options would impair private property rights and market competition or the incentives on businesses to innovate and invest. Nor would they override fundamental common law principles.

Stuart Calman – Director, Climate and Risk

Signature of person Date: 27/04/2012

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Executive summary

1. This Regulatory Impact Statement (RIS) summarises the regulatory impact analysis of a range of problems identified with the Emissions Trading Scheme (ETS) as currently legislated. These problems have been identified from a number of sources, such as:

    - the 2011 ETS Review Panel's (the Panel) recommendations for specific changes to the ETS and for the Government to consider certain issues further
    - stakeholders' submissions during the Panel's consultation
    - Government agencies' experiences from implementing the ETS to date.

2. For each problem a number of alternative policy options have been considered against an assessment criteria. This assessment criteria is based on three high level objectives agreed by Cabinet for the Panel's review, namely:

    - helps New Zealand to deliver its 'fair share' of international action to reduce emissions, including meeting any international obligations
    - delivers emission reductions in the most cost effective manner
    - supports efforts to maximise the long term economic resilience of the New Zealand economy at least cost.

3. Based on this assessment, official's recommend a number of changes to the ETS. These changes require legislative amendments to the Climate Change Response Act 2002 (the Act). Under current legislation, a number of changes to the ETS will come into force on 1 January 2013, such as the synthetic greenhouse gases (SGG) sector facing surrender obligations under the ETS. If the Government wants to make changes to these ETS settings then legislative amendments need to be made before the end of 2012.

Synthetic greenhouse gases

4. SGG are imported in bulk and in finished goods like fridges, cars, heat pumps and aerosols. There is a manufacturing sector in New Zealand that purchases bulk SGG and re-exports it in goods to China, Australia and other markets. Another exporter, currently funded by a voluntary levy on bulk SGG imports, collects used gas and exports it to Australia for destruction. There are three families of SGG; hydro fluorocarbons (HFC), per fluorocarbons (PFC), and sulphur hexafluoride (SF_6).

5. Although SGG only make up 1.3% of New Zealand's emissions profile, the emissions from SGG have high global warming potentials and have been increasing relatively quickly since 1990. In 1990, there were no HFCs in New Zealand, in 2009 the New Zealand Greenhouse Gas Inventory reported 879,200 tCO_2-e of HFCs. This is simply because more and more of the gases are being imported and used to replace ozone□depleting gases (CFCs).

6. From 1 January 2013, importers and manufacturers[1] of SGG will face surrender obligations under the ETS. Those obligations will relatively substantially increase the cost of gas leaking equipment, as well as encourage the recovery of gas from end of

[1] There are no SGG manufacturers in New Zealand. All SGG is imported. The rest of this RIS uses "importers" as shorthand for "importers and manufacturers". The ETS applies to SGG manufacturers as well as importers to avoid perverse economic outcomes where manufacturing the gas in NZ becomes cheaper than importing it and being subject to the ETS. There would be no environmental impact, but importers would be disadvantaged.

life equipment. However, this may not provide a sufficient incentive to mitigate all unnecessary leakage of SGG. Accordingly, officials recommend that wilful leakage of SGG be banned. The sources of leakage targeted by the ban would be the same as those already required to avoid leakage of ozone depleting substance (for which SGGs are substitutes). Leakage emissions can be avoided through already widely used monitoring and handling practises and gas recovery technology. The preferred policy option is better than the status quo in two of the three assessment criteria.

7. There is an inequitable cost imposition through current ETS settings on importers of SF_6. The surrender obligation for importers of SF_6 is based on the amount of gas imported. The actual emissions, which the Government's international obligations are based on, occur over a much longer timeframe (up to 100 years) than just the year of import. Officials recommend that users of SF_6 in electrical switchgear face the surrender obligation, rather than the importer. This would align ETS participant obligations to those of the Government. However, there are many small users of SF_6 who would incur disproportionate compliance costs compared to their actual emissions. It is expected that limiting ETS obligations to large SF_6 users would minimise compliance costs but achieve near full coverage of emissions. This policy change will necessitate the removal of the ability of those who export or destroy SF_6 to earn emission units. The preferred policy option is better than the status quo in all three assessment criteria.

8. Importers of motor vehicles containing SGG will face ETS compliance costs. The exemption threshold balances compliance costs with the costs of emissions. However, exemptions create fiscal costs, and in addition there are on-going concerns about the level of compliance likely from the sector. Emissions pricing through a SGG levy implemented at the point of vehicle registration is considered a better policy than the status quo in one assessment criteria and worse in another. No exemptions would be required and existing fee collection systems would be used. Further work and consultation is required on the necessary changes to the Land Transport Act regulations.

9. Similarly, importers of other goods containing SGG face ETS compliance costs from 1 January 2013. However, unlike motor vehicle importers, there is no exemption threshold. The same problems apply to this sector, and, officials recommend the introduction of a SGG levy, linked to the prevailing carbon price, on imports of other goods containing SGG. The preferred policy is better than the status quo in one of the three assessment criteria and worse in another. Further work and consultation is required on creating new regulations.

10. Exporters of SGG will be eligible for New Zealand units (NZUs) from 1 January 2013. This is to incentivise the collection of end of life SGG as otherwise these gases may have been released as well as recognise that large proportion of SGG that enters New Zealand is re-exported reasonably quickly in manufactured goods. However, this creates a risk that people might import SGG in 2012 solely for the purpose of obtaining NZUs by re-exporting from 2013. Further restricting the eligibility for NZUs from exporting SGGs would avoid this risk. This preferred policy is better than the status quo in one of the assessment criteria, and no different in the other two.

11. Importers of two types of SGGs (HFC-245fa and HFC-365mfc) are exempt from ETS surrender obligations. This is because these gases are not part of New Zealand's Kyoto Protocol obligations from 2008 to 2012. However, from 1 January 2013 New Zealand will be required under its international obligations to report on these gases.

Accordingly, officials recommend the removal of this exemption. This preferred policy is better than the status quo in all three of the assessment criteria.

Consultation

12. There was consultation on many of these issues through the 2011 ETS Review Panel's consultation. Expert industry and other submitters on SGG issues preferred a levy system and a range of other policies, some of which are analysed in this RIS (the ban on leakage and the change of ETS participant for sulphur hexafluoride emissions). However those submitters who supported a levy preferred that it be applied more broadly than is recommended in this paper (i.e. across all importers, not just those importing SGG in goods) and that it be only at a low rate (whereas the proposal in this paper is for the levy to equal to the ETS value of the SGG imported). Because there is a large differences in detail between the submissions and the proposals, further consultation is recommended

13. However, further consultation is required for some issues where more details are needed to ensure quality implementation (e.g. for the two SGG levies) or where the issue has not previous been consulted on (e.g. the restriction of eligibility for units from exporting SGG).

Implementation, monitoring and evaluation

14. These proposals will be implemented through amendments to the Act and through changes to its supporting regulations.

15. The amendments made will be monitored and evaluated to ensure they effectively address the problems identified. Monitoring and evaluation plans will be developed once these proposals have been approved by Cabinet. The Act requires five-yearly reviews of the ETS (the first occurred in 2011). The review in 2016 will provide an opportunity to reassess the effectiveness of the proposed amendments and the ETS more broadly. The monitoring and evaluation plans will ensure that the review has the information available to it to make this assessment.

Glossary of terms

AAU	Assigned Amount Unit. An AAU is an internationally tradable emission unit or carbon credit issued as part of the Kyoto Protocol to allow countries to meet their emission obligations and is equal to one metric tonne of carbon dioxide equivalent emissions.
the Act	Climate Change Response Act 2002.
Afforestation	The direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.
CER	Certified Emission Reduction. A CER is a tradable emission unit or carbon credit issued by the Clean Development Mechanism (CDM) Registry for emission reductions achieved by CDM projects and verified by the rules of the Kyoto Protocol. CERs can be used by countries that have ratified the Kyoto Protocol to meet their emissions limitation or reduction commitments.
CO_2-e	Carbon dioxide equivalent. The quantity of a given greenhouse gas multiplied by its global warming potential, which equates its global warming impact relative to carbon dioxide (CO_2).
Cost of emissions	This is also referred to as the price of carbon. A cost faced by emitters for the release of greenhouse gas emissions into the atmosphere.
Deforestation	The conversion of indigenous and exotic forest land to another use, such as grazing. Deforestation involves clearing forest and not replanting within four years after clearing. It does not include harvesting where a forest is replanted as this is part of normal plantation forestry activities.
Eligible emission units	Certain types of emission units that can be surrendered by ETS participants to meet their obligations. These include NZUs and certain types of emission units created under the Kyoto Protocol.
Emissions	The release of greenhouse gases into the atmosphere from human activity.
the ETS	the New Zealand Emissions Trading Scheme. Under the ETS certain emitters of greenhouse gases have an obligation to report their emission and surrender eligible emission units to cover their emissions.
ETS participants	Emitters of greenhouse gases or people engaged in removal activities such as forestry that have obligations under the ETS to report on their greenhouse gas emissions, and to surrender eligible emission units to cover these emissions or earn units under the Act.
First commitment period	The period from 2008 to 2012 under which the countries ratifying the Kyoto Protocol have to meet their emission limitation or reduction commitments.
Fixed price option	During the transition phase to 31 December 2012, certain ETS participants have the option to buy New Zealand emission units (NZUs) from the Government for a fixed price of $25.
Forests	Forest land is an area of land of at least one hectare with forest species that has, or is likely to have, tree cover of more than 30 per cent in each hectare. Forest land does not include land that has, or is

	likely to have, tree crown cover with an average width of less than 30 metres. Forest species are trees capable of reaching five metres in height at maturity in the place they are growing, excluding tree species grown for the production of fruit and nut crops.
Greenhouse gases	Greenhouse gases are constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation. The gases covered under the first commitment period of the Kyoto Protocol are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perflurocarbons (PFCs) and sulphur hexafluoride (SF_6).
GWP	Global warming potential. See CO_2-e above.
Kyoto Protocol	A protocol to the UNFCCC that includes emissions limitation or reduction commitments for ratifying developed countries.
the Minister	Minister for Climate Change Issues.
MAF	Ministry of Agriculture and Forestry
NZUs	New Zealand emission units created by the Government. These are either allocated or sold to certain ETS participants. They are the main unit of trade in the ETS and can be surrendered by ETS participants to meet their ETS obligations. In certain circumstances, NZUs can be converted to AAUs and sold overseas.
One-for-two obligation	During the transition phase to 31 December 2012, certain ETS participants have to surrender one eligible emissions unit for every two tonnes of emissions. This is also referred to as the 50 per cent progressive obligation.
Pre-1990 forests	Forest established before 1 January 1990 on land that remained in forest and was predominantly exotic species on 31 December 2007. See section 4 of the Act.
Price of carbon	See cost of emissions.
Post-1989 forests	New forest established after 31 December 1989 on land that was not forest at that date. These forests are eligible to earn carbon units (or carbon credits) from 1 January 2008. See section 4 of the Act.
Transition phase	Under the Act, the period up to the end of 2012 during which there is an option to buy New Zealand emission units (NZUs) from the Government for a fixed price of $25, a one-for-two surrender obligation and there are restrictions on the export of NZUs.

Status quo

16. The Emissions Trading Scheme (ETS) is currently New Zealand's primary tool to achieve its international climate change commitments and to transition to a low carbon economy. The ETS was designed in the context of the international framework established under the Kyoto Protocol. For example, the ETS allows participants to sell New Zealand Units (NZUs) overseas[2] and to buy and surrender eligible overseas units to meet their ETS obligations. For the purposes of this regulatory impact analysis (RIA), in the status quo it is assumed that the ETS will be implemented as currently legislated. In addition, a carbon price of $10.41 has been used to estimate the value of emission units.[3]

17. The agreement reached in December 2011 at the United Nations Conference of the Parties in Durban provides more certainty about the potential international framework after 2012, when the first commitment period (CP1) under the Kyoto Protocol ends. The key features of the Durban agreement are:

    - a new agreement with 'legal force' covering developed and developing countries will be agreed by 2015 and will come into force by 2020
    - a second commitment period (CP2) under the Kyoto Protocol from 2013 to 2017 (or 2020) covering the European Union, other European countries and any other country who decides to join in 2012[4]
    - confirmation of the continuation of the Clean Development Mechanism (CDM) after 2012 and the development of new market mechanisms.

18. The Government has indicated that it will sign up to the new agreement from 2020, although it has not yet decided whether to join CP2. Even if New Zealand does not join CP2 it is likely that the Government will want to set a level of ambition for the ETS in the period to 2020 in order to ensure New Zealand is well placed to meet its future obligations.

19. The Climate Change Response Act 2002 (the Act) required a review of the ETS to be completed before the end of 2011. The Act required the Minister for Climate Change Issues (the Minister) to appoint a panel (the Panel) to conduct the review and specify its terms of reference. The Minister appointed a Panel in December 2010 and its final report was provided to the Minister on 30 June 2011.[5] The report contained 61 recommendations, a number of which, if accepted, would require amendments to the Act and/or regulations.

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2 Under current legislation there is a restriction on the non-forestry sectors from exporting NZUs overseas during the transition phase (until the end of 2012). NZUs are first converted to AAUs before export.

3 This is the prevailing carbon price for January 2012 based on the average premium CER price as calculated by Point Carbon.

4 The USA, Canada, Japan and Russia have already decided not to join. Australia and New Zealand have not yet indicated whether they will join.

5 *Doing New Zealand's fair Share, ETS Review 2011: Final report*, ETS Review Panel, 30 June 2011. Further details of the Panel's review and its final report is available at: http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/index.html

Objectives

20. The Panel's terms of reference were agreed by Cabinet in 2010.[6] These stated that the objective of the review is to ensure that the ETS beyond 2012:

    - helps New Zealand to deliver its 'fair share' of international action to reduce emissions, including meeting any international obligations (referred to subsequently as 'delivering fair share')
    - delivers emission reductions in the most cost effective manner (referred to subsequently as 'delivering cost-effective emission reductions'), and
    - supports efforts to maximise the long term economic resilience of the New Zealand economy at least cost (referred to subsequently as 'long-term economic resilience').

21. For the purposes of carrying out this RIA, these three high level objectives have been used to develop a number of sub-objectives and assessment criteria. These sub-objectives and criteria are set out in full in Annex 1. Table 1 below provides a summary.

Table 1: Assessment criteria under each of the high level objectives

High level objective	Delivering fair share	Delivering cost-effective emission reductions	Long-term economic resilience
Criteria	Facilitate international efforts	Minimise short-term negative economic impacts	Minimise long-term negative economic impacts
	Contribute to NZ international obligations	Minimise costs to businesses	Maintain long-term international competitiveness
	Enhance NZ's international credibility	Minimise market distortions	Provide incentives for the long-term development of low cost emission abatement technologies
	Contribute to achieving NZ's fair share	Minimise risks of trade sanctions	Maximise equity between sectors and socio-economic groups
	Provide incentives to abate	Minimise Government's administrative and implementation costs	Promote intertemporal equity
	Contribute to meeting NZ's 2050 target	Minimise ETS participants' compliance and transaction costs	Ensure appropriate risk-sharing between emitters and Government
		Promote understanding of ETS	Appropriately reflect the Crown's responsibilities as a Treaty partner
		Minimise fiscal costs/maximise fiscal savings	Support the development of the Māori economy consistent with their environmental values
		Maximise market liquidity and transparency	Minimise negative/maximise positive wider environmental impacts
		Facilitate links with other schemes	Ensure the environmental integrity of overseas emission units surrendered in the ETS

6 See CAB Min (10) 44/11.

Approach to options analysis

22. For consistency, the criteria have been used for the analysis of all the policy problems identified. A scoring approach was used, whereby each policy option was scored against each criterion compared to the status quo. A positive score meant the policy option was better at achieving a particular criterion than the status quo; a negative value meant it was worse. Where possible, quantitative analysis was used to determine the order of magnitude of the score. Where this was not possible then judgement was used instead.

23. This approach identified the criteria which were most relevant for assessing the policy options, i.e. where there were material differences in the scores between the policy options and the status quo. Policy conclusions were based upon this analysis, without the need to apply weights to the criterion.

24. In the interests of brevity, this RIS presents the assessment against the high level objectives rather than the full criteria. This assessment is also presented in a summary table in the sections below. A tick shows that the policy option is better at achieving a high level objective than the status quo; a cross shows it is worse. A dash shows it is no different to the status quo. The number of ticks or crosses indicates the scale of how much better or worse it is. This reflects the scoring approach explained above.

Problem definition and regulatory impact analysis

25. The scope of this RIS is those policy problems where the preferred policy option arising from the RIA would require an amendment to the Act and/or regulations to implement. All other policy problems are out of scope of this RIS.

26. The policy problems identified are based on:

    - the Panel's recommendations for specific changes to the ETS and for the Government to consider certain issues further
    - stakeholders' submissions during the Panel's consultation
    - Government agencies' experiences from implementing the ETS to date.

27. In this context, the RIS considers the policy problems with the ETS after 2012 set out below and each is considered in more detail in the following section.

    A. Synthetic greenhouse gases (SGG)

        i. banning wilful leakage of SGG
        ii. point of obligation for sulphur hexafluoride activities
        iii. SGG levy on motor vehicle imports
        iv. SGG in goods other than motor vehicles
        v. eligibility as a removal activity when exporting SGGs
        vi. removing exemptions for importing particular SGGs

A. *Synthetic greenhouse gases*

28. Synthetic greenhouse gases (SGGs) are used in many domestic and commercial air-conditioning and refrigeration goods. Examples are supermarket chillers, domestic fridges and heat pumps, motor vehicles, asthma inhalers and air-conditioning used in offices. The gases are characterised by very high global warming potentials (GWPs). They are often referred to as F-gases and include:

    - sulphur hexafluoride (SF_6), which is used primarily as an insulator for high voltage electrical equipment
    - perfluorocarbons (PFCs), which are mainly found in emissions from aluminium smelters and in some refrigerant gas mixtures
    - hydrofluorocarbons (HFCs), which are used to replace ozone-depleting substances in many applications in the refrigeration and air-conditioning sector and other related industrial processes such as the manufacture of plastic foams and as aerosols.

29. Although SGG only make up 1.3% of New Zealand's emissions profile, the emissions from SGG have high global warming potentials and have been increasing relatively quickly since 1990. The Panel found that on balance the high transaction and compliance costs for importers of SGG outweighed the benefit of having SGG in the ETS. Therefore, the Panel recommended that SGG be removed from the ETS and replaced with two levy schemes for importing SGG.

30. From 1 January 2013, people who import or manufacture SGGs, including those contained in goods, will have to collect data on that activity, report on the amount of gas imported, and surrender the required number of emission units. In contrast, people who export or destroy SGGs, including those contained in goods, will be eligible for NZUs.

31. The ETS will reduce emissions by introducing costs to SGG leakage, and rewards for SGG collection and destruction. However, it is difficult to estimate the scale of emission reductions because the behavioural and technological responses are unknown.

32. ETS coverage of SGG activities is consistent with the ETS treatment of other sources of greenhouse gas emissions, and will lead to improvements in our knowledge of SGG activities, which will increase the accuracy of the national greenhouse gas inventory. More background information on SGGs can be found in the Panel's *Issues Statement*[7] and final report.[8]

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7 http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/issues-statement.pdf

8 http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/review-report.pdf

i. Banning wilful leakage of SGG

Status Quo

33. Unavoidable leakage of SGG will occur whenever particular specialist aerosols and fire equipment are used. Other uses of refrigerants result in leakage over time from equipment. Leakage also occurs through equipment manufacture, refilling and servicing, equipment failure and the disposal of end of life equipment.

34. Leakage of SGG is not banned, but from 2013 it will carry a significant cost to the emitter. Under the ETS, avoidance of leakage is incentivised. The cost of replacement refrigerants will increase when a carbon cost is applied.[9] Also, there will high interest in collecting end of life refrigerant in order to export it for destruction or recycling and thereby gain removal units.

Problem definition

35. The SGG sector make up 1.3% of New Zealand's emission profile, therefore the risk that wilful leakage poses on New Zealand's emissions position is low.

36. It is theoretically possible for users to continue to have wilful leakage despite increased costs:

- for some many large users, the servicing of refrigeration equipment is outsourced to contractors. Users might not draw the connections between increased servicing costs and equipment leakage
- activities relating to disposal of end of life goods where the operator has no intention of recovering the gas despite its market value.

37. These failures indicate that leakage could be further discouraged above that incentivised by the ETS. However, there is no quantifiable data available to pinpoint the amount of leakage that currently occurs or is likely to occur once emitters have to pay for leakage. The scale of the problem is therefore unknown.

Options analysis

38. Two options have been identified that seek to further discourage leakage. An outline of these options is set out in the table below.

Option	**Status quo**	**1: Ban wilful leakage from particular uses of SGG**	**2: Use voluntary guidelines and communications materials to address the market failures.**
Key features	Leakage is disincentivised through increased cost of replacement SGG and increased value of SGG recovered from end of life goods, however leakage is not banned.	A ban would prohibit people knowingly releasing, without lawful justification, SGGs. The ban would need to be targeted at particular uses and activities involving these gases, such as refrigeration, air conditioning, and	Communications materials would educate SGG users about the relationship between leakage and increased gas costs. Voluntary guidelines already exist as the Australia and New Zealand Refrigerant Handling Code of Practice 2007, and these are already

9 The price of the most common refrigerant, HFC134a, will increase from $12/kg to around $45/kg at $25/tCO$_2$e

		electrical switchgear.	part of engineer training.

39. Fiscal impacts cannot be pinpointed as there is no data on the likely emissions mitigations from either option. It is assumed that regulations are more effective than education alone, as regulations will naturally require the same communications and information, if not more. Leakage minimisation will reduce emissions obligations, and thereby reduce the number of emission units surrendered compared to the status quo. However, reported national emissions will reduce by the same amount, therefore the overall fiscal impacts are nil, before implementation and administration costs are considered.

40. The relevant sectors are already familiar with a ban on releasing ozone depleting substances (ODS) under the Ozone Layer Protection Act 1996.[10] In addition, the meaning of wilful leakage is established in case law. Therefore, the meaning of the wilful and the banned practices are already well established within the sector. This also increases the certainty of the effectiveness of the ban, as this type of legislation is already in place and working successfully.

41. Economic impacts are likely to be positive for both options compared to the status quo, given the financial rewards of emissions mitigations. Regulations will have the greatest economic benefits simply because it will result in more costs avoided and gas collected for reuse or destruction.

42. Regulations will have greater compliance costs than a voluntary approach, because people are required to manage SGG appropriately rather than simply discharging it. The voluntary approach is already, to some extent, being performed through engineer training.

43. Environmental impacts will be positive for both options over the status quo, but higher for the regulatory approach given it will lead to more leakage minimisation.

44. A summary of the impacts under the status quo and the policy options is presented in the table below.

OPTION	IMPACT	NET IMPACT
Status quo	ECONOMIC: Avoidable costs incurred on businesses and consumers, and economic opportunities presented by increased value of SGG are not realised ENVIRONMENTAL: Emissions occur that could be avoided	n/a as it is the status quo
Option 1 (ban)	FISCAL: No change as reduced emissions will result in less emission units surrendered, but also less emissions reported by the Government ECONOMIC: Higher economic welfare. Avoided costs of emissions and economic returns for those who collect the	Improves on status quo

[10] Section 13(f) of the Ozone Layer Protection Act 1996 bans the knowing release of certain ozone-layer damaging substances (ODS): '*…every person commits an offense against this Act who … knowingly or without lawful justification or excuse releases a controlled substance into the atmosphere while:*

(i) installing, operating, servicing, modifying, or dismantling any refrigeration or air-conditioning equipment or other heat-transfer medium; or

(ii) installing, servicing, modifying, or dismantling any fire extinguisher

	SGG. ENVIRONMENTAL: Reduced emissions COMPLIANCE: Additional implementation and administrative costs compared to status quo and option 2	
Option 2 (education)	FISCAL: Same as option 1. ECONOMIC: Higher economic welfare but less than option 1 ENVIRONMENTAL: Reduced emissions but less than option 1 COMPLIANCE: Additional implementation and administrative costs compared to status quo (but less than option 1)	Improves on status quo

Incidence of impacts

45. Economic impacts will be to the benefit of refrigerant and switchgear engineers and users, as leakage minimisation will reduce costs. Both options have minimal compliance and administrative costs.

Assessment against objectives

46. In terms of delivering fair share, there is no difference between the options and the status quo.

47. In terms of delivering cost-effective emission reductions, option 1 (ban) is preferred. Fiscal impacts will be zero. It is assumed that regulations under option 1 are more effective than the education initiative alone under option 2 (education), as regulations will naturally require the same communications and information, if not more. Leakage minimisation will reduce emissions obligations, and thereby reduce the number of emission units surrendered compared to the status quo. However, reported national emissions will reduce by the same amount, therefore the overall fiscal impacts are nil, before implementation and administration costs are considered.

48. There will be economic benefits from both options compared to the status quo, given very low compliance and administrative costs and the financial rewards of emissions mitigations. Option 1 (ban) will have greater economic benefits from higher emissions mitigation activities. Option 2 (education) is already, to some extent, being performed through engineer training.

49. Implementation of option 1 (ban) has minimal risk as the relevant sectors are already familiar with a ban on releasing ozone depleting substances (ODS) under the Ozone Layer Protection Act 1996. However, it will be difficult for the government to ensure full compliance with a prohibition under option 1 because such activities are almost always preformed without formal observation. Compliance with the ban will be assisted by existing training programmes, the continued use of the Australia and New Zealand Refrigerant Handling Code of Practice 2007, and communications efforts between industry and the government.

50. The voluntary approach does not have the same compliance risk, but it will not result in the same economic and environmental benefits as the other option. Additionally, given current education and training content for refrigeration and switchgear engineers, it is likely that a voluntary approach would have very little, if any, benefits above the status quo.

51. In terms of long-term economic resilience, option 1 (ban) is preferred as it will achieve greater emission reductions than the status quo or option 2 (education). Excessive

release from poor gas handling and monitoring practices is an economic cost to SGG users and consumers.

Recommendation

52. On balance, option 1 (ban) is preferred. While there is no concrete evidence of a significant problem, a policy that bans wilful release has economic and environmental benefits. This assessment is summarised in the table below. There were no submitters to the ETS Review who opposed such a policy. It was directly supported by major refrigerant users and by refrigerant engineer representative associations. The views of switchgear users and engineers are not known.

Summary assessment of the policy options against the high level objectives relative to the status quo			
	Status quo	**Option 1 (ban)**	**Option 2 (education)**
Delivering fair share	-	-	-
Delivering cost-effective emission reductions	-	✓	-
Long-term economic resilience	-	✓✓	✓

Implementation

53. A ban will be implemented through an amendment to the Act. A ban would be easily implemented because the sector is already familiar with an identical regulation on ODS release. Breaches of compliance will come to light through industry and the public notifying the relevant authorities. It will therefore be important to communicate the ban and consequences of breaches to industry and provide easy access to an enforcement service.

ii. Point of obligation for sulphur hexafluoride activities

Status quo

54. An importer or manufacturer of sulphur hexafluoride (SF_6) is a mandatory participant in the ETS. Estimations of emissions are based on the quantity of gas imported (there are no manufacturers of SGGs in New Zealand). Although exact numbers are unknown, there are likely to be less than five importers of SF_6 in any year. This includes the importation of SF_6 in bulk as well as pre-installed in goods.

55. The ETS generally applies to a number of people that are distant from the actual emitter. Examples include coal and gas mining, importing synthetic fertiliser, slaughtering ruminant animals, and dairy processing of milk or colostrums. In all of those cases, the decision to oblige a person other than the emitter was justified on the ground that it reduced administrative costs by reducing the number of people who would have obligations, while maximising the amount of emissions covered by the ETS. This is true also for SF_6, where there are at least 35 users of SF_6 in electrical switchgear and an unknown number of people who use it in other applications such as eye surgery, but there are less than 5 importers.

56. The price of SF_6 is expected to increase significantly (from about $30/kg to approximately $279/kg).[11] This price increase will motivate behaviour changes from all downstream users, including the monitoring and prevention of leakage and handling practice improvements. It is possible that in some cases where SF_6 costs are immaterial to product costing or through price insensitivity of customers, the cost increase will simply be recovered from customers and the initial motivating effect will weaken. However it is clear that such a large increase in cost will incentivise emission reduction activities as well as provide motivation for using alternatives to SF_6.

Problem definition

57. The difference between other ETS sectors and SF_6 is that SF_6 is emitted over many years after importation. Mined coal and gas mined can be expected to be consumed within a short period of time. Synthetic fertiliser can be expected to be applied and degrade reasonable quickly after importation. The point is that the government's liability is occurred at roughly the same time as the ETS participant. This is not the case for SF_6. It is arguably unfair for the government to require emission units to be surrendered by importers when its own liability is incurred only when emissions are reported (which could be over 50 years after the SF_6 was imported).

58. The size of the difference is illustrated in the table below:[12]

	2013	2014	2015
Projected national SF_6 emissions (national inventory, tCO_2-e)	20,815	20,851	20,880
Net imported SF_6 (ETS obligations, tCO_2-e)	137,968	138,203	138,401

59. The burden of this difference falls entirely on SF_6 importers and users. Under current ETS settings, the government receives units from participants that it will have no need to surrender for actual emissions for many years ahead.

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11 Carbon price assumed to be $10.41 per unit. GWP is 22,800. One kg of SF_6 is equal to 22.8 kg of CO_2, so $30 + (22.8 x $10.41) = $279

12 Source: Ministry for the Environment national inventory and net position modelling, and converted using global warming potentials from the IPCC Fourth Assessment Report.

60. The ETS pricing of SF_6 as it enters New Zealand will reduce emissions downstream. However, there may be more transparent and direct incentives on users than simple pass through of increased costs from importers that could be encouraged when policy options are assessed to deal with the difference between SF_6 importer ETS obligations and the obligations of the government.

Options analysis

61. Four options have been identified that reduce or remove the equity problem so that the emissions reported by participants are closer to those reported in the inventory:

Option	**Status quo**	**1: Users of SF_6 are points of obligation**	**2: Users of SF_6 in electrical switchgear are points of obligation**	**3: Importers apply leakage rate method**	**4: Limit coverage to bulk importers of SF_6 only**
Key features	• ETS obligation rests with all SF_6 importers	• SF_6 users to report actual emissions under the ETS • Full coverage of emissions • ETS obligations will equal national emissions.	• Some users to report actual emissions under the ETS • Majority (over 85 per cent) of national SF_6 emissions would be priced by the ETS.	• Importers only need report the leakage from the SF_6 imported in that year, and the leakage from SF_6 they imported in previous years. • ETS costs for importers from leakage of previous imports will be difficult to pass onto current customers • No direct connection between actual emissions from users and the ETS obligations of importers.	• Only bulk imports of SF_6 priced by the ETS. • Bulk imports of SF_6 considered a proxy for actual emissions, as often used in replacing leaked gas (although is generally used in manufacturing and first fills also). • No direct connection between actual emissions from users and the ETS obligations of importers.

62. All of the options have negative fiscal impacts compared to the status quo because projections and evidence from the largest user of SF_6 indicate that imports will continue to be greater than emissions. The influences on SF_6 importing include economic growth and electricity network infrastructure. Naturally, option 2 has greater fiscal impacts

than option 1 because there would not be complete coverage of emissions sources. Several small users of SF_6 in electrical switchgear will consider their administration costs to outweigh environmental benefit. Electrical switchgear use of SF_6 accounts for over 85 per cent of SF_6 emissions in New Zealand.

63. Compliance impacts vary between the options. The options that require monitoring of leakage at the user level will necessitate one-off investment in measurement and monitoring equipment. For electrical switchgear users (option 2) that equipment is probably already purchased because they already carry out such monitoring as signatories in the government's memorandum of understanding with large SF_6 users. Information from one user suggests equipment costing over $3000 would be needed, and up to a week's time each year in weighing SF_6 cylinders and reporting. There will also be greater numbers of ETS participants than if the obligation was at the importer level, and this is a significant compliance cost if all users such as small medical and electrical sources were included.

64. Applying a leakage factor to imports would have one additional administrative cost above the status quo, being the necessity for importers to ensure records were kept of imports in previous years so that the leakage factor could be applied and emissions calculated. This would not be difficult for importers.

65. Narrowing ETS obligations to just bulk imports of SF_6 (option 4) would reduce compliance costs from the status quo, as no importers of SF_6 in equipment would be required to register, maintain records and perform the other ETS requirements. There are very few such importers and very accurate knowledge of quantity imported. The price of bulk SF_6 would increase for the New Zealand manufacturer and exporter of switchgear (who is also a bulk importer), and some netting out arrangement would be required to reduce the transaction costs from ETS surrendering obligations and eligibility for removals on export of SF_6.

66. A significant economic impact to importers would result from the inability of importers to pass actual ETS costs onto customers in any single supply of SF_6. The importers will incur ETS costs every year until the SF_6 imported is assumed emitted in full. However, the customer has already paid for the SF_6 in a single transaction. Incurring ETS obligations so far into the future poses several economic risks for the importer, including the risk that emission units prices increase over time and the importer had not factored that increase into the price charged to the customer.

67. Options 1 and 2 have the greatest environmental impact, with the option with the greatest coverage scoring the highest. Submitters to the ETS review, and the panel itself, considered that placing the point of obligation at the user level would have environmental benefits compared to the status quo. The opinions were generally that users would connect SF_6 management with ETS obligations more transparently than if ETS costs were simply passed through by importers.

68. Basing ETS obligations on a leakage factor would have negative environmental impacts, compared to the status quo. There would be a lack of connection between actual emissions and ETS obligations, unless the leakage factor could be revised periodically to match calculations in the inventory. Also, there would be only a very slight price increase in SF_6 supplied to users; much less than in the status quo policy.

69. Similarly, limiting ETS obligations to bulk SF_6 imported will reduce the ETS impact on SF_6 being used in New Zealand, compared to the status quo. This reduced impact

diminishes interest in emissions mitigation at the user level. However, the impact would be greater than the leakage approach option because a high amount of SF_6 imported would be priced by the ETS.

70. A summary of the impacts under the status quo and the policy options is presented in the table below.

OPTION	IMPACT	NET IMPACT
Status quo	ECONOMIC: Negative impact as upfront payment for future emissions is not equal to actual annual emissions costs faced by the government. For example, the net difference between SF_6 emissions and amount imported is $1.2 million. FISCAL: Variable as depends on level of importing and exporting activity compared to actual emissions. Expected to be more emissions units surrendered than needed by the Government in the first five years (i.e. positive fiscal impact) COMPLIANCE: Low costs as very few importers	n/a as it is status quo
Option 1 (all users)	ENVIRONMENTAL: Good impacts through increased awareness (though less than status quo) FISCAL: Compared to status quo, fiscal impacts are expected to be negative in first few years COMPLIANCE: High costs if all users participate because of need to record stocks of SF_6	Worse than status quo.
Option 2 (some users)	ENVIRONMENTAL: Good impacts through increased awareness (though less than option 1) FISCAL: Expected to be negative in first few years (very marginally greater than option 1). COMPLIANCE: Minimal costs and records already maintained	Improves on status quo
Option 3 (leakage rate)	ECONOMIC: Inability for importers to pass on full ETS costs in a single supply of SF_6 makes this worse than the status quo ENVIRONMENTAL: Worse than status quo as very few emissions are priced transparently FISCAL: Expected to be negative in first few years (even more so than option 2)	Worse than status quo
Option 4 (bulk importers)	ENVIRONMENTAL: Worse than status quo as less SF_6 is priced FISCAL: Expected to be negative in first few years (but not as much as in option 1)	Worse than status quo

Incidence of impacts

71. None of the options differ from the status quo in terms of the incidence of impacts. If the mandatory participant was the SF_6 importer, the ETS costs would be expected to be passed through to SF_6 users and then to electricity consumers and through the pricing of other uses of SF_6. If the mandatory participant was the SF_6 user, then the passed through costs would simply be more direct.

72. Information was obtained from the largest user of SF_6 in electrical switchgear on the impact on consumer electricity bills from the status quo policy. The policy was expected

to lead to a very small increase of less than 0.016 per cent on consumer electricity costs.

73. The policy options will reduce this impact on consumers, because less ETS costs will be experienced by the importers and users of SF_6 as detailed in the fiscal analysis section above.

Assessment against objectives

74. In terms of delivering fair share, options 1 (all users) and 2 (some users) are preferred over the status quo because there is a direct link between actual emissions and the pricing of SF_6. The status quo over prices SF_6 emissions by assuming all SF_6 is emitted when it is imported. Options 3 and 4 will shrink the ETS coverage of SF_6 emissions and are therefore considered weaker than the status quo.

75. In terms of delivering cost-effective emission reductions, option 2 (some users) is preferred. The narrowing of obligations to particular users, especially if combined with an easily understood participation threshold, would lower administrative and compliance costs but retain near full coverage of emissions. Option 1 obliges all users to determine their obligations or eligibility for exemption under a threshold (if one was promulgated), when it is known that only a few users of SF_6 in electrical switchgear are responsible for a very large proportion of emissions. Option 3 will not result in meaningful emission reductions as very little SF_6 supplied into New Zealand would incur full emissions pricing. It is also impractical, as given the low rates of leakage this option would require an importer to be reporting emissions for up to 50 years after import. Option 4 insufficiently deals with the problem as much of bulk SF_6 is used to fill imported or manufactured equipment for the first time.

76. All of the options will result in fiscal costs to the government, because they avoid the over-surrender of emission units under the current ETS settings. The fiscal cost of option1, compared to the status quo, is a loss of $1.2 million per year. Option 2 (some users), because it reduces the number of emissions included in the ETS, will have fiscal costs of $1.3m. It should be noted that under option 2, only approximately 12,000 units, valued in total at $134,000, will be surrendered each year.

77. In terms of long-term economic resilience, options 1 (all users) and 2 (some users) are preferred as they ensure appropriate and equivalent risk sharing on emissions between the participants and the government.

Recommendation

78. On balance, option 2 (some users) is preferred, as it resolves the problems, minimises compliance costs, and retains nearly full coverage of emissions. A summary of the assessment against the objectives is set out in the table below.

Summary assessment of the policy options against the high level objectives relative to the status quo					
	Status quo	**Option 1 (all users)**	**Option 2 (some users)**	**Option 3 (leakage rate)**	**Option 4 (bulk importers)**
Delivering fair share	-	✓	✓	xx	x
Delivering cost-effective emission reductions	-	✓	✓✓	xx	x
Long-term economic resilience	-	✓	✓	x	x

Implementation

79. Although the Panel did consult SF_6 participants, the details behind option 2 (some users) was not consulted on. Therefore, further consultation will be required on the specific criteria for exemption for users of SF_6 in electrical switchgear.

80. A threshold would be needed to ensure those administrative and compliance costs do not outweigh the environmental benefit from ETS coverage. Electrical switchgear use of SF_6 accounts for over 85 per cent of SF_6 emissions in New Zealand. Of those emissions, one user accounts for 60 per cent of total emissions, and three users account for over 75 per cent of emissions.

81. An appropriate threshold must be easily understood and not require investment in emissions monitoring equipment to determine eligibility. A suitable threshold is 1 tonne of SF_6 installed in electrical switchgear. This would result in 77 per cent of emissions from the sector being priced by the ETS, while exempting all but five potential participants. The fiscal cost would be $40,000 per year compare to full coverage of emissions from electrical switchgear users.

82. Under the preferred policy, there will be no need to continue to provide emission units to those who export or destroy SF_6. This is because only actual emissions will be subject to the ETS. The previous policy recompensed exporters of SF_6 as they would have incurred an increased cost for SF_6 when they imported it or purchased it from a New Zealand seller. As this upfront cost increase will no longer occur under the preferred policy, there is no need to compensate exporters and destroyers of SF_6.

iii. SGG levy on motor vehicles

Status quo

83. All SGG importers, including those who import SGG in the air conditioning systems of motor vehicles, have ETS obligations. Motor vehicle importers are required to determine the SGG mix in the vehicle and its quantity, calculate potential emissions, and report and surrender units from 2013. Alternatively, importers can use a default method which simplifies the calculations at the risk of overestimating the amount of SGG being imported.

84. Exemption threshold have been prescribed for some sectors to balance the estimated administrative and compliance costs with environmental benefits. A threshold of 100tCO_2-e[13] was prescribed for motor vehicles importers, along with an optional default emissions factor approach to simplify the calculations and reduce administrative requirements.

85. Numbers of motor vehicle importers in 2009 were as follows:[14]

No of vehicles imported	**No of importers (round to next 10 or 5)**
1	2800
2 to 4	620
5 to 10	200
11 to 20	130
21 to 50	135
51 to 100	110
101 to 500	120
501 to 1000	20
1000 +	24

Problem definition

86. The compliance costs from participating in the ETS are burdensome for many SGG importers, particularly those who import only a small amount of SGG. Participants also need to seek emission units from the market and surrender them, which has its own transaction costs.

87. The status quo has the following problems.

(a) Fiscal cost from threshold and 100tCO_2-e allowance

88. The fiscal costs of the threshold and 100tCO_2-e allowance combined are estimated at around $600,000 per year from 2013.

(b) There will be a number of mandatory participants incurring administrative and compliance costs but reporting no emissions for the year, due to the 100tCO_2-e allowance and the related parties test –

89. It is unknown exactly how many people will incur the compliance costs only to report zero emissions because of the way the related parties test compels certain people to determine eligibility for exemptions by combining the emissions from their activities.

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13 This equates to around 110 cars using the default emissions factor approach.

14 Source: Ministry of Transport

(c) Lack of clarity on who is the 'importer' is leading to ETS implementation uncertainty

90. There is uncertainty regarding who is the importer of motor vehicles and therefore who is required to participate in the ETS. This uncertainty adds administrative costs to the government.

(d) Compliance costs are significant for many importers

91. In general, costs associated with calculating emissions are minimised through the option of using default emission factors (i.e. assumed amounts of emissions per car, truck, and bus). Participants can easily calculate likely ETS obligations from each shipment of vehicles and recover that cost from customers throughout the year.

92. However the expected compliance costs from reporting emissions and purchasing and surrendering emission units have alarmed some importers. In a submission on draft methodological regulations, the Motor Industry Association indicated that the administrative and compliance costs amount to $4.20 per vehicle. In contrast, a single vehicle contains around $11 in SGG under the ETS.[15]

Options analysis

93. One possible option is to increase the existing exemption threshold. This would reduce the relative size of compliance costs to ETS obligations. Less people would be required to participate and those that do would be able to enjoy administrative efficiencies that smaller importers might not. However by reducing the number of participants and emissions included in the ETS, it would come at a fiscal cost. Such a solution also fails to deal with the problems of defining the 'importer' and the potential for nil returns. Because it fails to solve three of the four problems above, it is not a valid policy option.

94. There is only one viable alternative policy option, aside from full exclusion of the sector from the ETS. The policy option involves the introduction and implementation of a mandatory levy on motor vehicles that are registered for on-road use that is linked to an emission unit price. This policy option was recommended by the Panel. This levy would be empowered by amendment of the Act and applied through amendment of the Land Transport (Motor Vehicle and Registration) Regulations. It would not include vehicles that are not registered for road use, such as aircraft and ships, and vehicles used off road such as on construction sites, mines and most agricultural equipment. It would also not include vehicle parts, such as refrigerated trucks, that may still contain SGGs.

95. A number of different fees must be paid before a vehicle is registered for road use. These fees are set out in the Land Transport Regulations. These regulations are implemented by the NZ Transport Agency, while the regulations are administered by the Ministry of Transport. Wharf landing inspections record a number of different attributes about a vehicle when it is imported. Registration fees are based on those recorded attributes.

96. The removal of the threshold and 100tCO_2e allowance would have a fiscal benefit of $600,000 per year. However, the overall fiscal impacts are indeterminate because

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15 Per participant, one day work per week in compliance, at a rate of $30/hr, equates to $10,900 over the year. With 70,000 vehicles imported by 27 members of the MIA, the compliance costs amount to $4.20 per vehicle. In contrast, a single vehicle contains around $11 worth of SGG after the ETS has increased its value.

there will be a difference between the levy revenue and the ETS revenue. The levy imposed on any single vehicle will not equal the value of the refrigerant in it. The ETS allows highly accurate estimate of refrigerant content. The levy could assume higher or lower content than is actually the case. The accuracy of the levy is dependent on the attributes recorded at inspection.

97. Compliance and administrative costs would be reduced from the status quo. The levy would utilise the existing fees collection system. The status quo, in contrast, requires knowledge and activities that are alien to most, if not all, vehicle importers. It also necessitates the normal ETS management activities from the government, including auditing and ensuring compliance.

98. There are several elements to determining the environmental impacts from a change of policy. In one respect, they depend on the level of accuracy that can be obtained in matching the levy amounts to the actual refrigerant content of the vehicle. These impacts are 'at the margin'; that is, they are likely to be insignificant given the levy will attempt to match SGG content as much as possible.

99. A levy whose revenue is absorbed in the government revenue books will not incentivise emissions reductions elsewhere in the economy. The status quo, through participants purchasing emission units from foresters and other sources, will result in emissions reductions.

100. Neither the levy nor the ETS would have such a cost increase impact that vehicle import decisions would change. In both policies, costs would be immediately passed onto vehicle purchasers who also will not amend their purchasing decisions irrespective of the policy being either an ETS or a levy.

101. However to ensure the minimisation of administrative and implementation costs, the SGG vehicle levy will apply to specified SGGs intending that at the start it will only apply to HFC134a. This is because, of the SGGs listed by the Second Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), HFC134a is by far the most common and have the highest global warming potentials of any refrigerant used in the air conditioning systems of motor vehicles. By referring to it explicitly, the levy will reward imports of alternative, low/nil global warming potential refrigerants.

102. On balance, the levy is environmentally worse than the status quo, unless the levy revenue is recycled into rewarding emissions reductions activities.

103. A summary of the impacts under the status quo and the policy options is presented in the table below.

OPTIONS	IMPACT	NET IMPACT
Status quo	ENVIRONMENTAL: Participants indirectly fund emissions reductions through purchasing emission units COMPLIANCE: Typical ETS costs incurred by government and participants, although the threshold exempts people who import a small amount of SGG in total in vehicles	n/a as status quo
Option 1 (levy)	ENVIRONMENTAL: Worse than status quo as emission reductions are not 'purchased' without revenue recycling FISCAL: Better than status quo as no threshold is required COMPLIANCE: Better than status quo as costs reduced to almost zero, except for initial set up cost for NZTA	improves on status quo

Incidence of impacts

104. The levy differs from the status quo in terms of the incidence of impacts. Vehicle inspectors will be involved in determining the existence of SGG in imported motor vehicles. A levy system would mean no sellers of emissions units are involved.

105. However, there are similarities in the cost impacts, in that importers of vehicles would pass the ETS costs or levy costs onto vehicle buyers. Using mid-point assumptions about the amount of gas in a single car, both the levy and the ETS would increase its cost by $10.

Assessment against objectives

106. In terms of delivering fair share, the environmental impact of option 1 is worse than the status quo. The levy option will impart a price signal to users of SGG similar to the ETS. However importers will not purchase emission units from the market to meet their obligations, instead they will pay a levy to the government. This means a source of demand for emission units, estimated as 150,000 units, is removed from the market, which in turn affects the incentives faced by other ETS sectors. Consequently, the policy option will have negative environmental impacts compared to the status quo if revenue is not used to incentivise emissions reductions elsewhere in the economy.

107. In terms of delivering cost-effective emission reductions, the policy option is preferred over the status quo. The removal of the threshold and 100tCO_2-e allowance will result in $600,000 per annum fiscal benefit. There will be some fiscal cost from being unable to levy the SGG content of vehicles that do not get registered for road use, such as vehicles used solely on farms, or in activities such as mining as well as parts of vehicles imported for use in vehicle repairs, and boats and aircraft, but as no information is known about these vehicles then the cost cannot be estimated.

108. The policy option will avoid approximately $500,000 per year in economic losses associated with businesses' ETS compliance costs.[16] The proposed levy system will utilise a well established registration and fees system with minimal changes, meaning lower compliance costs for government.

109. There will be some administrative costs to the administering agency from implementing any new inspection requirements and designing and applying new levy information systems. If the SGG levy used inspection information already generated, then new administrative costs will be minimal, although there will be set up costs. It is likely that information will be required from inspectors on the attribute '*has/has not an air conditioning unit'* and then *'contains/does not contain* HFC143a'. The levy will impose differential fees accordingly based on the existing categorisation of light and heavy vehicles, including buses and trucks.

110. Information from the NZ Transport Agency states this will cost less than $500,000 to set up with minimal on-going costs. There will also be training and implementation costs for inspectors, customs brokers and vehicle importers. The NZ Transport Agency has also expressed its concern at the short time allowed to set up and implement such a system. However, delays will incur fiscal costs if SGG is imported without any emissions pricing.

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16 Using the MIA information of $4.20 costs per vehicle and 130,000 vehicles imported per year.

111. In terms of long-term economic resilience, by avoiding the compliance and administrative costs associated with the ETS, the policy option is preferred over the status quo.

112. The levy option proposes removing ETS obligations for some participants, which may set a precedent for other ETS participants wanting to be taxed for emissions instead of having ETS obligations. However, using a levy to manage compliance costs for this sector is not setting a precedent for the treatment of other ETS sectors. Addressing the costs of compliance for other ETS sectors is done through providing exemptions and thresholds. Such a threshold is in place for motor vehicle importers, but it is considerably less than other sector thresholds (generally around 5000tCO_2e per annum). An equivalently sized threshold for SGG ETS obligations would almost totally exempt all importers of goods and motor vehicles. It would also introduce inequity between the few remaining importers that were above or below it.

113. The policy change will not introduce inequity within the SGG sector. All SGG imported into New Zealand will continue to have an emissions cost. Those who import SGG in bulk will still face ETS obligations because the chemical nature of the gas and the amounts of gas being imported in any particular shipment mean their compliance costs are considered minimal. Furthermore, exportation of goods containing SGG (including motor vehicles) will continue to receive emission units as a removal activity.

114. Motor vehicle importers will continue to incur a cost for importing SGGs. There is a risk that the cost they incur, per tonne of CO2e, could be different than the costs faced by ETS participants. This difference could be due to the time lag between updating the rate of the SGG levy and changes in the market price of emissions units. Ways to address this problem include updating the rate of the SGG levy:

    - each month, however because the levy has the properties of a tax, changes must be supported by legislation, and overly-frequent legislation has administration costs to the government.
    - when emissions unit prices shift significantly and in a sustained manner. This option would provide a set of criteria that, if met, would require change to the rate of the SGG levy. However, if the requirement was for the market price to have sustained a significant difference for at least several months, and noting that regulatory development itself is time consuming and requires time before the changes are implemented, then it is possible changes might be at best annual.
    - on an annual basis with the average emissions unit price over the previous 12 months. This would enable the rate of the SGG levy to be reasonably close to the market price for emissions units (although there is a risk that it could be completely different towards the time to update it). This is the preferred option.

Recommendation

115. On balance, the policy option (levy) is preferred, because of the fiscal benefit and the significant reduction in administrative costs for the government and compliance costs for participants. The updating of the rate of the SGG levy should be performed annually. A summary of the assessment against the objectives is set out in the table below.

Summary assessment of the policy options against the high level objectives relative to the status quo		
	Status quo	**Option 1 (levy)**

Delivering fair share	-	X
Delivering cost-effective emission reductions	-	✓✓
Long-term economic resilience	-	-

Implementation

116. To implement the policy option (levy) the Act will need to be amended as follows:

- remove the activity of importing SGG in goods, including motor vehicles, from the ETS
- add empowering provisions to allow the NZTA and the Customs Service to collect SGG levy revenue

117. To implement the policy option (levy) further work and consultation is required on the regulatory changes. Specifically this will include the following changes to the Land Transport Act regulations:

- the classifications of vehicles
- the initial rates of the SGG levy

iv. SGG in goods

Status quo

118. The ETS requires all SGG importers to calculate potential emissions, and report and surrender units from 2013. There are no default emission factors, nor is there a threshold.

119. Goods that are imported into New Zealand that contain SGG include household fridges, freezers and dehumidifiers, domestic air conditioning units, remote cabinet or central rack systems as used in supermarkets and some other food retailers, refrigeration units for truck trailers, metered dose inhalers (i.e. asthma), and fire extinguishers.

120. Within such goods, there are large ranges in

- the amount of SGG in the good (for example, compare metered dose inhalers to supermarket chillers), and
- the chemical mixtures in the SGG, which make it complex to determine global warming potentials and therefore ETS obligations.

Problem definition

121. The problems with the status quo are:

(a) compliance costs will outweigh environmental benefits for many mandatory participants. It is uncertain how many importers there are across the range of goods with different SGG content because no information is currently captured about them. It is entirely possible that that there are several hundred small to large importers of goods that contain SGG. Many of those importers may be unaware of ETS obligations.

(b) because there are large numbers of mandatory participants, there will be costs and risks on the administration of the ETS, even though most participants will have only small amounts of liabilities.

(c) there will possibly be widespread non-compliance, as there is no ability to monitor who should have registered with the ETS. The Act does not allow information sharing with the Customs Service, and there is no requirement for persons who import SGG to be registered in any other way than under the ETS.

(d) calculating emissions is complex and will further encourage non-compliance

122. Some importers will not be troubled by ETS compliance issues if they also export SGG to Australia. Currently, importers of SGG into Australia are required to report SGG quantities and GWPs and hold a SGG import licence. It is expected that those people will be in the minority however, as very few New Zealand persons will be both importers into New Zealand and exporters to Australia. It does however suggest that information on the quantity and type of SGG in imported goods will be reasonably available from manufacturers if they supply both the New Zealand and Australian markets.

Options analysis

123. Aside from the status quo, there are three options that address the problems to varying degrees of success.

124. Option 1 is a SGG levy on imported goods that contain SGG, based on broad categorization and SGG charges and types, and implemented by the NZ Customs Service.

125. This is similar to other levy systems in New Zealand.[17] An importer of SGG in goods other than motor vehicles completes import documentation that identifies the goods' Tariff codes. If the value of the goods is over $400, then Customs will seek GST and other fees from the importer, irrespective of whether the goods are for personal or business use. Often the importer is a broker who will pass those costs down to their client.

126. Option 2 is a licensing and levy system, similar to that in Australia, which is administered by a third agency in conjunction with Customs, where the levy is based on the SGG content and not the good.

127. This will require any importer to record a license number on the customs documentation. Licenses would either be pre-defined through application, or developed ad hoc on import. The license provides the levy administrator the ability to charge the importer the levy at a later date. Importers would not be able to obtain their goods from Customs without providing a license number.

128. Option 3 is apply a threshold to the status quo, and allow information sharing between Customs and the ETS administrator. This retains the status quo, and will require some importers to make certain calculations throughout the year to determine where their obligations are in relation to the threshold.

129. Thresholds will lead to market distortions, where some imported goods will not have an ETS cost but competing products do. The impact of these distortions depends on the threshold - a low threshold might leave the market situation unchanged for competitors, as only very small annual shipments would be exempt. A larger threshold would start to damage competitiveness especially within niche markets and where domestic manufacturers compete against importers.

130. An outline of these options is set out in the table below.

Option	**Status quo**	**1: A SGG levy on imported goods that contain SGG**	**2: A licensing and levy system could be created, similar to that in Australia**	**3: Apply a threshold to the status quo**
Key features	ETS obligation rests with importers of SGG in goods, with few exceptions, such as medical uses and personal goods that are not for business use.	Levy would be based on broad categorization and SGG charges and types, and implemented by the NZ Customs Service. This is similar to other levy systems in New Zealand. An importer of SGG in goods other than motor vehicles completes import documentation that identifies the goods' Tariff codes. If the value of the goods is over $400, then Customs will seek GST and other fees from the importer, irrespective other whether the goods are for personal or business use. Often	The system would be administered by a third agency in conjunction with Customs, and the levy would be based on the SGG content and not the good. Any importer would be required to record a license number on the customs documentation. Licenses would either be pre-defined through application, or developed ad hoc on import. The license provides the levy administrator the ability to charge the importer the	This will require some importers to make certain calculations throughout the year to determine where their obligations are in relation to the threshold. In order to ensure compliance, information would need to be shared between Customs and the ETS

[17] The Alcohol Advisory Council Levy, the ACC Levy, the Heavy Engineering Research Levy, and the Petroleum or Engine Fuel Monitoring Levy

		the importer is a broker who will pass those costs down to their client. This option requires creating new regulations along with enabling provisions in the Act. The levy rate and Tariff classifications will be set by regulations.	levy at a later date. Importers would not be able to obtain their goods from Customs without providing a license number. Also, there is currently no levy system administered outside Customs in New Zealand, although there are several license schemes (such as controls on ODS imports and for other restricted trade regimes).	administrator

131. The fiscal impacts of a levy under option 1 and 2 will be determined by how closely the levy can match the SGG content of the imported goods. Any underestimation of SGG content will lead to fiscal costs. This could be balanced by some overestimation, so that the levy represents an average of the SGG content of certain goods. For example, a similar approach is used for the ETS coverage of SGG in imported motor vehicles, where the "default charge method" assumes an average amount of SGG for each car. Option 2 would provide more accurate reporting of emissions, as one-off/small-time importers would not be able to import SGG without the knowledge of the government. For this reason, option 1 may possess a fiscal risk to the government as these importers may be missed. However, on balance the set-up and implementation costs of the licensing system far outweigh the potential fiscal risk to the government.

132. There will also be fiscal costs from the administration of the system, including invoicing importers and managing compliance, which are offset to a degree by the savings made from not monitoring and enforcing ETS obligations. The NZ Customs Service has estimated the implementation costs of option 1 as being approximately $203,000, primarily from computer systems set up and educational initiatives. The operational costs would be approximately $50,000 per annum.

133. Implementation and operation costs of option 2 are difficult to estimate. No import levy system currently exists in New Zealand that is not managed by the NZ Customs Service. A reporting and billing system would need to be designed, implemented and run by an agency from afresh. No information is obtainable on the likely cost of this system, but it would likely be substantial. Licenses are used to control the import of ozone depleting substances, trade with Iran, amongst other trade restriction policies. A licensing system for SGG would be an order of magnitude greater in scope and participation than the existing systems. Therefore running costs cannot realistically be extrapolated. There would be additional storage and administrative costs for NZ Customs Service in ensuring importers can only receive their goods once a licence number is provided.

134. There would naturally be fiscal impacts from a threshold under option 3. Because, as noted above, very little information is known about the number of importers and their individual SGG importing activities, it is impossible at this stage to consider a likely threshold. However, if the threshold resulted in 20 per cent of imported SGG being exempt from the ETS, then this would be at a fiscal cost of $4.8m per year.[18]

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18 There was 1,219,680 tonnes of synthetic greenhouse gases imported into New Zealand in 2009 (in carbon dioxide equivalent terms). A threshold is already in place for motor vehicle importers which is estimated to have a fiscal cost of $600,000 per year. Hence the fiscal cost of expanded exemptions is the difference between the cost of the status quo exemptions and the cost of the 20 per cent coverage.

135. Under option 1 compliance costs for participants are significantly reduced, compared to the status quo.

136. The licensing system under option 2 would introduce administrative and compliance costs above those associated with option 1, as importers will need to apply for and manage compliance with each license. These costs could be reduced if the license regime were flexible, such as the term of the license. There will be additional costs for NZ Customs Service in ensuring all importers can only receive the goods once a licence number is provided.

137. Environmental impacts also vary between the options. Both levy options will impart a price signal to users of SGG, similar to the ETS. However importers will not purchase emission units from the market to meet their obligations, instead they will pay a levy to the government. This means a source of demand for emission units is removed from the market, which in turn affects the incentives faced by other ETS sectors. Based on anecdotal information, there is not expected to be a large amount of emissions mitigation from the SGG sector even with ETS costs. Therefore there is an important negative environmental consequence from using a levy system instead of the status quo.

138. Option 3 has negative environmental impacts through it not pricing of SGG imported by small importers.

139. A summary of the impacts under the status quo and the policy options is presented in the table below.

OPTION	IMPACT	NET IMPACT
Status quo	ENVIRONMENTAL: Participants indirectly fund emissions reductions through purchasing emission units COMPLIANCE: Typical ETS costs incurred by government and participants. The absence of a threshold means compliance costs for small importers will outweigh environmental benefits.	n/a as is status quo
Option 1 (levy)	ENVIRONMENTAL: Poorest of the options as a generally applied levy with broad categorisation will not incentivise lower GWP gases to be imported (if there is no consequent reduction in the payable levy). Also zero offsetting of emissions will occur as no emission units will need to be purchased. FISCAL: Best option, but marginally worse than status quo. COMPLIANCE: Best - The reduction in administrative costs associated with emissions estimation, reporting and sourcing emission units could be significant. Although there will be new operational costs	Improves on status quo
Option 2 (licensing)	ENVIRONMENTAL: Poor as no offsetting. However, with licensing the levy could be more accurately applied than under option 1. FISCAL: Worse than option 1 as a result of potentially significant license system design, implementation and operational costs. COMPLIANCE: Same costs are reduced as in option 1, but	Worse than status quo

	new costs are experienced from complying with a license system including potential issues with obtaining goods from Customs, applying for licenses, and reporting on SGG imported.	
Option 3 (threshold)	ENVIRONMENTAL: Poor as exemptions undermine the environmental integrity of the ETS and affect the demand for emission units to offset obligations. FISCAL: Worse than option 1 as exemptions create fiscal costs of about $5m per year if 20 per cent of imported SGG becomes exempt. COMPLIANCE: Costs are reduced from status quo as there would be fewer participants.	Worse than status quo

Incidence of impacts

140. All options are the same, although option 3 (exemptions) would mean less importers are required to participate in the ETS. Officials from the Customs Service would be involved in options 2 and 3. In all cases, pricing of SGG will increase the costs of imported equipment to buyers, who include households and businesses. For example, a small office fridge containing 130 grams of HFC134a would increase in cost by $2.

Assessment against objectives

141. In terms of delivering fair share, the environmental impact of options 1 and 2 are worse than the status quo and option 3. Both levy options will impart a price signal to users of SGG similar to the ETS. However importers will not purchase emission units from the market to meet their obligations, instead they will pay a levy to the government. This means a source of demand for emission units is removed from the market, which in turn affects the incentives faced by other ETS sectors.

142. In terms of delivering cost-effective emission reductions, option 1 is preferred over the other options and the status quo. It is the only option that reduces administrative and compliance costs significantly while having minimal fiscal costs.

143. There is no difference between the options and the status quo in terms of long-term economic resilience. There may be equity concerns regarding the use of an SGG levy on importing goods containing, similar to those discussed under the motor vehicles analysis above. The same conclusions are valid here regarding the relative significance of compliance costs compared to other ETS sectors, the effects of a comparable threshold to manage those compliance costs, and the methodology for determining when the rate of the SGG levy should be changed to take into account changes in the market price for emission units.

Recommendation

144. On balance, option 1 (levy) is preferred, because of the significant reduction in administrative costs for the government and compliance costs for participants. Updating of the rate of the SGG levy should be performed annually if it materially differs from the average price of emission units over the previous six months. A summary of the assessment against the objectives is set out in the table below.

Summary assessment of the policy options against the high level objectives relative to the status quo				
	Status quo	**Option 1 (levy)**	**Option 2 (licensing)**	**Option 3 (threshold)**

Delivering fair share	-	X	X	-
Delivering cost-effective emission reductions	-	✓✓	X	-
Long-term economic resilience	-	-	-	-

Implementation

145. Further work and consultation is required on the ideal categorisation of SGG in goods as well as the levy rates. A SGG levy requires new regulations along with enabling provisions in the CCRA. The levy rate and good classifications will be set by regulations. All the changes will need to be worked through between MfE, Ministry of Economic Development, NZ Customs Service and industry.

146. There are a range of ETS exemptions in place for importing SGG in goods. Because those exemptions apply only to ETS obligations, they are not valid under a levy system. Exemptions will instead work in this way:

- if a person brings in a good containing SGG and is categorized by regulations in a way that means a levy payment is required, then the person is charged
- if the good is not included in the regulations categories that SGG levies apply to, then no charge is due.

147. Consequently, exemptions can be enabled through the careful categorization of goods in regulations and this regulations update process will occur annually.

v. *Eligibility of exporting SGG as a removal activity*

Status quo

148. The ETS allows people to apply for and receive emission units for any SGG exported or destroyed from 1 January 2013. This policy applies to exporters of SGG in bulk and in goods (including motor vehicles). Exporters of SF_6 must show that the SF_6 exported had incurred a carbon price, by virtue of it being imported after 1 January 2013. No other SGG has this requirement.

149. There are two reasons why exporters of SGG are eligible for emission units. Firstly, New Zealand has a large and competitive SGG exporting sector, including manufacturers of refrigeration, air conditioning, and aerosol equipment. There is no economic or environmental interest in harming the sector by imposing carbon costs when the gases are exported and emissions are not reported in the national inventory. Because those businesses will face an increased cost for the SGG they purchase from local importers, it is important they are able to recover that cost.

150. Secondly, the government wishes to incentivise the collection of end of life SGG that is exported for destruction, and awarding emission units are one way of doing this. Without that incentive, those gases may have been released in New Zealand.

Problem definition

151. The following problems arise from those policy settings

(a) Importing before 2013 to gain emissions units by re-exporting

152. Prior to 2013, people can import SGG (in bulk or in goods) other than SF_6 without incurring a carbon price (be it ETS obligations or a levy), then export the same SGG after 2012 to earn emission units. This is a short term fiscal risk to the government.

153. SGG (in bulk and in goods) is readily available for purchase and import. There are no New Zealand controls on the import or export of the gases. For a business already trading in industrial gases, additional imports would be inexpensive to store and easily re-exported. Many SGG have very high global warming potentials, so that just small amounts of the gas have large ETS value.

154. For example, an import of 800 jugs of HFC134a, with each jug containing 13.6kg of gas, costs $87,000 for the gas alone. Shipping and storage costs would be additional. The ETS value of that shipment if re-exported is $1.4m (140,000 emission units).

(b) Importing after 2013 under a levy system to re-export for emission units

155. If the ETS is amended to impose a levy on importers of goods containing SGG, then there is a fiscal risk that the levy revenue received from an importer might be less than the value of emission units if the same gas is re-exported. That is, the levy system may reward people who import then immediately re-export SGG. This is a fiscal risk to the government.

156. The potential for mismatch between the levy costs for an importer of SGG in goods and the value of emission units claimed from re-exporting the same goods depends entirely on the detail of the levy. An importer could be assumed under the levy system for importing a low GWP SGG in average quantities, but actually be importing high amounts of high GWP gas for extraction and re-exporting in bulk to claim removal units. This would be a design failure of the levy system.

Options analysis

157. One option has been identified that addresses the problem. This is to further restricting eligibility for emission units from exporting SGGs to:

    Exporting SGGs, including SGGs contained in goods, where any prescribed threshold is met, as long as;

    - *the person exporting bulk SGG is a manager of a product stewardship scheme accredited under the Waste Minimisation Act 2008, or*
    - *all the components of the SGG exported were imported after 31 December 2012.*

158. Restricting eligibility to just SGG exported to be destroyed will not address the problems, because it costs little to export gas for destruction, compared to the quantity and value of emission units potentially earned. That is, the purchase cost of the gas (in 2012), plus storage costs until 2013, would be considerably less than the value of the emission units earned in 2013 once the gas has been exported and destroyed.

159. It is necessary for the first criteria to be limited to scheme managers (not not say, participants in a scheme) because there can be many members of a particular scheme including bulk synthetic greenhouse gas importers for whom these controls need to apply.

160. The fiscal impacts of the restrictions will be positive, although as this work is simply closing a potential loophole, the benefits cannot be estimated.

161. Economic impacts are minimal beyond additional compliance costs for exporters. The policy option may slightly increase compliance costs for those exporting SGG, as they will need to show that the gas had been subject to the ETS or levy, or that they manage a product stewardship scheme. However, as part of earning emission units, a business needs to submit a return to the EPA, therefore adding evidence of import would only be an additional part of the entire process.

162. It is possible that people may be anticipating eligibility for removal units from exporting end of life gases who don't manage a product stewardship scheme. However, eligibility for product stewardship scheme accreditation generously relies only on waste avoidance and minimisation. It would be not difficult for a new exporter to gain accreditation and therefore eligibility for removal emission units. Therefore the incentives for alternative collectors and exporters of end of life gases will only very marginally affected by this additional regulatory burden.

163. Additionally, the economic interest in maximising the amount of SGG being collected will remain. It is possible for collectors to sell their collected gas to the manager of the accredited scheme, and those collectors would not need to be concerned with accessing sufficient end of life gases to make exporting for destruction viable given storage and export costs.

164. There may be some negative environmental impacts if the incentive to collect end of life gases is reduced from the status quo.

165. A summary of the impacts under the status quo and the policy option is presented in the table below.

OPTIONS	IMPACT	NET IMPACT
Status quo	FISCAL: Risks from persons undertaking business transactions solely to obtain emissions units	n/a as is status quo

Option 1 (restrictions)	FISCAL: Reduced fiscal risk ENVIRONMENTAL: Potentially less gas collection undertaken as incentives reduced, although would be very marginal. COMPLIANCE: Additional compliance costs for exporters of SGG.	Improves on status quo

Incidence of impacts

166. This policy change will affect exporters of SGG (in goods and in bulk). There are no indirect impacts.

Assessment against objectives

167. The policy option does not have any significant impact in terms of delivering fair share.

168. In terms of delivering cost-effective emission reductions, there are some minimal compliance and environmental impacts from the policy option as described above. The fiscal impacts of the restrictions proposed by the option will be positive, although as this work is simply closing a potential loophole, estimating the benefit is impossible. The benefits from avoiding the fiscal risk, although not estimated, are assumed to outweigh those environmental and compliance costs.

169. In terms of long-term economic resilience, there is no difference between the status quo and the policy option.

Recommendation

170. On balance, the policy option is preferred over the status quo because it removes the fiscal risk problem with only minor new compliance costs for participants. A summary of the assessment against the objectives is set out in the table below.

Summary assessment of the policy options against the high level objectives relative to the status quo		
	Status quo	**Option 1 (restrictions)**
Delivering fair share	-	-
Delivering cost-effective emission reductions	-	✓
Long-term economic resilience	-	-

Implementation

171. No consultation has been performed on this policy change, therefore consultation will occur as part of the process to amend the Climate Change (Other Removal Activities) Regulations 2009.

vi. *Removing exemptions for importing particular SGG*

Status quo

172. Under the Climate Change (General Exemptions) Order 2009, clause 15(2)(a) exempts persons from ETS obligations in respect of their imports of the gas HFC-245fa and HFC-365mfc (including the gases contained in goods). This exemption was put in place because even though those gases were not included in New Zealand's Kyoto Protocol obligations, persons importing them would have had ETS costs.

Problem definition

173. New Zealand will report emissions of the greenhouse gases listed by the IPCC Fourth Assessment Report from 1 January 2013. This list of gases includes HFC-245fa and HFC-365mfc and therefore the justification for the exemption will no longer be valid.

174. Retaining the exemption would create a fiscal cost to the government of approximately $85,000 per annum.

Options analysis

175. The only relevant option is to remove the exemption (see table below).

Option	**Status quo**	**1: Impose ETS obligations on importers of HFC-245fa and HFC-365mfc**
Key features	• Importers of HFC-245fa and HFC-365mfc are exempted from ETS obligations.	• The current exemptions could be removed by amending the General Exemptions Order.

176. The fiscal impact of the policy option is a benefit (increase in emission units surrendered) of about $85,000 per year.

177. The policy option will introduce compliance costs to importers of the gases. However these are not expected to be onerous, as there are typically two or less importers in a year, and calculating emissions obligations are simple due to the pure chemical nature of the gas.

178. There are environmental benefits from the policy option, as lower global warming alternatives to the gases exist and these could become more competitively priced once the ETS is applied.

179. A summary of the impacts under the status quo and the policy options is presented in the table below.

OPTIONS	**IMPACT**	**NET IMPACTS**
Status quo	FISCAL: Cost of $85,000 per year	n/a as is status quo
Option 1 (remove exemption)	COMPLIANCE: Cost to importers of the gases ENVIRONMENT: Lower climate change effects alternatives to the gases increasingly sought by users	improves on status quo

Incidence of impacts

180. The policy change would affect importers and users of these gases. There were two known importers in 2010 that used these gases in foam blowing.

Assessment against objectives

181. In terms of delivering fair share, the policy option is preferred as it will contribute, marginally, to the efforts of New Zealand in meeting international obligations and targets.

182. In terms of delivering cost-effective emission reductions, the policy option is preferred because it would create ETS incentives to reduce emissions of HFC-245fa and HFC-365mfc when it is used by pricing those emissions. Compared to the status quo, the policy option will provide fiscal savings of approximately $85,000 per year from 1 January 2013. There will be new compliance costs for importers.

183. In terms of long-term economic resilience, the policy option is preferred as it aligns the government's international obligations with those faced by importers of HFC-245fa and HFC-365mfc.

Recommendation

184. On balance, the policy option is preferred because of the fiscal and environmental benefits, introduction of equitable incentives to reduce emissions, and the alignment of the ETS with international obligations.

185. A summary of the assessment against the objectives is set out in the table below.

Summary assessment of the policy options against the high level objectives relative to the status quo		
	Status quo	**Option 1 (remove exemption)**
Delivering fair share	-	✓
Delivering cost-effective emission reductions	-	✓
Long-term economic resilience	-	✓

Implementation

186. This policy change can be implemented through a simple amendment to the relevant part of the Climate Change (General Exemptions) Order 2009. This will require consultation before an amendment to the Order can be made.

Summary of recommendations

OPTIONS	IMPACTS	NET IMPACTS	Net financial impacts over forecast period (2012-16)
Banning wilful leakage of SGG	Despite there being some additional implementation and administrative costs, this policy will have a positive environmental impact as it will lead to leakage minimisation.	Improves on status quo	$1.280 million in additional compliance and monitoring costs. Data is not available on the environmental benefit.
Users of SF_6 in electrical switchgear are points of obligation	Electrical switchgear use of SF_6 accounts for over 85 per cent of SF_6 emissions in New Zealand. By moving the ETS obligation to large users and creating a threshold of one tonne, 77 per cent of emissions from the sector would be covered, and there would be only three potential participants. The fact that 15% of the emissions will not be covered by this option, is outweighed by the reduction in compliance and administration cost to business and government by there only being three potential participants, and also the benefit that the inequitable liability on businesses will be moved back onto the Crown.	Improves on status quo	$4.877 million in lost revenue from narrowing of emissions coverage. This outweighed by reductions in compliance/ administration costs and improving equity for the SF_6 sector.
SGG levy on motor vehicle at first point of registration	This option is environmentally worse than the status quo unless the revenue is recycled into rewarding emissions reductions activities, as the emissions are not being offset by the purchasing of units. However, in terms of cost, both to business and government, this option is an improvement on the status quo. The removal of the threshold and 100tCO_2e allowance would have a fiscal benefit of $600,000 per year. The levy is administratively simpler, and despite the initial set-up costs, the operating costs would be reduced to almost zero.	Improves on status quo	$0.514 million in additional revenue.
SGG levy on goods imported	As with the SGG levy on motor vehicles, this levy is environmentally worse than the status quo unless the revenue is recycled into rewarding emissions reductions activities, as	Improves on status quo	$0.250 million in set-up and ongoing costs to the government. This is outweighed by the reduction in

	the emissions are not being offset by the purchasing of units. However, the reduction in administrative costs associated with emissions estimation, reporting and sourcing emission units could be significant for businesses. New Zealand could adopt a licensing system similar to Australia. However, the magnitude and cost of set-up and operation cannot be justified as the SGG sector only make up 1% of New Zealand's emission profile.		administrative costs on businesses.
Eligibility of exporting SGG as a removal activity	This option reduces the fiscal risk to the government. Although, there may be some additional compliance costs for exporters of SGG, these are not expected to be any other than the directly permitted scheme manager.	Improves on status quo	The fiscal impacts of the restrictions will be positive, although as this work is simply closing a potential loophole, the benefits cannot be estimated.
Removing exemptions for importing particular SGG	This option will increase compliance costs to the importers of these gases (insulation foam importers). However, not including them would create unjustifiable inequities across the SGG sector.	Improves on status quo	$0.243 in additional revenue from extended emissions cover. Additional administrative costs to insulation foam importers are not known.

Consultation

187. In March 2011, the Panel published its *Issues statement and call for written submissions*[19]*.* The Panel received 162 written submissions. In addition, the Panel met with a number of stakeholders. Annex 2 of the Panel's final report provides further details.[20] In addition the Panel published a comprehensive summary of submissions.[21] The consultation covered specific issues and on possible policy options. The concerns raised by submitters have been reflected in the analysis set out above.

188. In terms of importing SGGs, submissions from industry representatives argued that the ETS as it is designed was not the appropriate legislative tool for reducing emissions. They preferred a package of alternative policies, including import levies. Some of those recommendations are included in this RIS, e.g. the banning of wilful leakage and import levies. Other suggestions need further analysis to determine their value in addition to a carbon price measure imposed on importers. This is summarised in section A.

189. However, not all of the policy problems and/or specific policy options covered in this RIS were considered by the Panel because they were not specified in the terms of reference and/or submitters did not raise them during consultation. These are:

- criteria for exemption for users of SF_6 in electrical switchgear
- the changes to the Land Transport Act regulations in relation to the mandatory SGG levy on motor vehicles
- the ideal categorisation of SGG in goods and levy rates.

190. Accordingly officials recommend further consultation on these issues. A lack of consultation could result in policy and implementation risks, such as a misspecification of the policy problem and more effective policy design options being overlooked.

191. There has also been substantial departmental consultation during the course of this RIA.

Conclusions and recommendations

192. In summary the following conclusions and recommendations are reached:

- a ban on the wilful leakage of SGG
- users of SF_6 in electrical switchgear should be point of obligation subject to consultation on the criteria for exemption
- a SGG levy on motor vehicles when they are registered for on-road use should be introduced subject to consultation on the changes to the Land Transport Act regulations
- a SGG levy on imported goods that contain SGG should be introduced subject to consultation on the ideal categorisation of SGG in goods and levy rates
- further restricting the eligibility for emission units from exporting SGGs.

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19 See: http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/consultation/

20 See: http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/index.html

21 See: http://www.climatechange.govt.nz/emissions-trading-scheme/ets-review-2011/consultation/

Implementation

193. All of the proposals will be implemented through amendments to the Act and/or through regulations.

194. In terms of the recommended changes for SGG, some of the changes will be implemented through changes to existing administrative systems and process operated by other agencies, i.e. the NZ Transport Agency and NZ Customs Service. Discussions are continuing with these agencies to facilitate the implementation of these changes. Changing the point of obligation for SF_6 will impose ETS obligations on potentially just three people (one of whom is already a mandatory participant in respect of importing SF_6) and they are well known to officials. Accordingly, this is not expected result in any implementation problems.

195. There is a need to change the methodologies in the climate change regulations as to prescribe robust and clear emissions estimation calculations to participants. Again, because those likely to be affected by the new regulations are already undertaking comparable reporting, these methodological changes are expected to be easy to implement.

Monitoring, evaluation and review

196. The Act requires the Minister to conduct regular reviews of the operation and effectiveness of the ETS (s160). The first review occurred in 2011 and will occur every five years thereafter. The Act (s160(5)) also specifies what the review must cover, although the review is not limited to these matters. Under the Act, the Minister sets the terms of reference and appoints a panel to conduct any review (s160(6)). The Minister is required to publish the panel's report on the review.

197. The Act also requires the Minister to publish an annual report on the ETS. This contains details of the number of ETS participants, the number and types of emission units surrendered and the amount of NZUs allocated each year[22].

198. A substantial amount of information and data on the ETS is already collected. For example, ETS participants are required to report on their emissions annually. In addition, data are collected each year to assist New Zealand to complete its national inventory. Survey data are collected periodically from the industry[23] and forestry sectors[24]. Data are also collected for use in a number of sector models to produce emission projections, such as the energy sector[25].

199. There is close liaison between policy and implementation officials that ensures early identification of any problems arising. Officials also meet regularly with businesses and groups, including Māori, most affected by the ETS.

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22 See: http://www.climatechange.govt.nz/emissions-trading-scheme/building/reports/ets-report/

23 See for example: Ministry of Economic Development Occasion Paper 11/04, *Business responses to the introduction of the New Zealand emissions trading scheme. Part I: Baseline*. Available at: http://www.med.govt.nz/about-us/publications/publications-by-topic/occasional-papers

24 See, for example: http://www.maf.govt.nz/news-resources/publications?title=Deforestation%20Survey

25 See, for example, Ministry of Economic Development, *Energy Outlook*. Available at: http://www.med.govt.nz/sectors-industries/energy/energy-modelling/modelling/new-zealands-energy-outlook

200. There may however be a need to collect data that is not currently collected for monitoring and evaluation purposes. A Ministry for the Environment monitoring and evaluation plan will be completed for each policy proposal once approved by Cabinet.

Annex 1: Objectives, sub-objectives and criteria used in the regulatory impact analysis

201. The table below shows the top level objectives, sub-objectives and assessment criteria used in the analysis.

Top level objectives	**1. Help New Zealand to deliver its 'fair share' of international action to reduce emissions, including meeting any international obligations**		**2. Deliver emission reductions in the most cost-effective manner**					**3. Support efforts to maximise the long-term resilience of the New Zealand economy at least cost**			
Sub-objectives	**1A. Meet international obligations**	**1B. Achieve a level of emissions consistent with New Zealand's 'fair share'**	**2A. Minimise negative economic impacts in the short term**	**2B. Maintain international competitiveness of New Zealand businesses in the short term**	**2C. Ensure administrative efficiency and effectiveness**	**2D. Minimise fiscal costs**	**2E. Ensure efficiency of carbon market**	**3A. Maximise long term economic resilience**	**3B. Maximise equity between sectors and groups**	**3C. Ensure the Crown-iwi relationship under the Treaty of Waitangi is appropriately reflected in ETS legislation, regulation, policy and implementation**	**3D. Minimise negative environmental impacts and promote positive environmental impacts**
Assessment criteria	a) Facilitate progress of international efforts to address climate change	a) Contribute to meeting New Zealand's 'fair share' by 2020	a) Minimise short term negative impacts on economic welfare (e.g. GDP, National Disposable Income, etc)	a) Minimise carbon cost differentials between New Zealand's trade exposed businesses and its trading competitors and partners	a) Minimise administrative and implementation costs to Government	a) Minimise fiscal costs	a) Maximise market liquidity	a) Minimise negative economic impacts in the long term	a) Maximise equity between sectors of the economy	a) Appropriately reflect the Crown's responsibilities as a Treaty partner and deliver on any relevant Treaty settlement obligations	a) Minimise negative (wider) environmental impacts
	b) Contribute to meeting New Zealand's existing international obligations	b) Provide incentives for businesses to adopt existing emission abatement opportunities	b) Minimise costs to non-trade exposed businesses	b) Minimise risks of trade sanctions or harm to New Zealand's clean and green reputation for New Zealand's exporters	b) Minimise compliance costs to ETS participants	b) Maximise fiscal savings	b) Maximise market transparency	b) Maintain international competitiveness of New Zealand's businesses in the long term	b) Maximise socio-economic equity, e.g. between high- and low-income households	b) Support the development by Māori of their natural resources in ways that contribute to the development of the Māori economy, and which are consistent with their environmental values	b) Maximise positive (wider) environmental impacts
	c) Enhance	c) Provide	c) Minimise		c) Minimise		c) Facilitate	c)Provide	c) Promote		c) Ensure

	New Zealand's international credibility to influence the outcome of international climate change negotiations.	incentives for consumers to buy low-emission products	competition distortions within and between sectors of the New Zealand economy		transaction costs to ETS participants buying or selling emission units		future links with overseas emissions trading schemes	incentives for the development of new emission abatement opportunities at least cost and businesses' ability to meet future demand for low-carbon products	inter-temporal equity, namely equity between present generation and future generations		environmental integrity of international emission units surrendered in the ETS
		d) Contribute to meeting New Zealand's 2050 domestic emission reduction target			d) Promote understanding of the ETS				d) Ensure appropriate risk-sharing between emitters and Government/ taxpayers		