

Regulatory Impact Statement: Carbon Price Methodology for the Synthetic Greenhouse Gas Levy

Regulatory Impact Statement

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Agency Disclosure Statement

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

It provides an analysis of options for the setting a permanent carbon price methodology for the Synthetic Greenhouse Gas (SGG) levy that result from the Climate Change (Synthetic Greenhouse Gas Levies) Regulations 2013 and the Climate Change Response (Emissions Trading and Other Matters) Amendment Act 2012.

Consultation has taken place as part of the regulation process. In relation to the proposed regulations and amendments a consultation document was released. The Ministry for the Environment received very few submissions on this issue. This may be reflective of the minor and technical nature of these regulations. Submitters were sought out to provide comments on the proposals and all of the information contained in the submissions were analysed.

The analysis and options proposed are constrained by the lack of information available to both the Ministry for the Environment and the public. The few submissions received by the Ministry outlined very little information on the impacts of these policy options. Analysis of submissions provided limited information on which to base impact assessments of these options.

It is also worth noting that the Government is currently reviewing the use of the secondary market Certified Emission Reduction unit to value the NZU, which is used to calculate ETS revenue in the Crown’s Annual Financial Statements. These ongoing discussions involve the Treasury, Audit New Zealand and Ministry for the Environment and are yet to be finalised. Although these discussions are external to this process, any changes made to the unit used to value the ETS revenue for the Crown will impact the SGG levy. These impacts are likely to positively impact the levy by aligning the methodology with the policy intent.

SUMMARY OF OPTIONS

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.

Malcolm McKee– Acting Director, Climate and Risk

Signature of person

Date

Glossary of terms

CCRA	Climate Change Response Act 2002
GWP	Global Warming Potential - GWP is a term used to measure the effect of a gas compared to an equivalent amount of carbon dioxide. The most common SGG mixture used in New Zealand is HFC134a, which has a GWP of 1,430. The highest GWP belongs to SF ₆ , at 22,800.
SF ₆	Sulphur hexafluoride
HFC	Hydrofluorocarbons
PFC	Perfluorocarbons
ETS	New Zealand Emissions Trading Scheme
NZU	New Zealand Unit
ETS participant	Emitters of greenhouse gases or people engaged in removal activities such as forestry that have obligations under the NZ ETS to report on their greenhouse gas emissions, and to surrender eligible emission units to cover these emissions or earn units under the CCRA.
NZTA	The New Zealand Transport Agency is responsible for collecting the levy for the SGGs contained in imported motor vehicles.
Customs	The New Zealand Customs Service is responsible for collecting the levy for SGGs contained in imported goods.
EPA	The Environmental Protection Authority is responsible for receiving, collating and publishing information related to the levy and monitoring compliance.
sCER	secondary market Certified Emission Reduction units, These units are traded Kyoto carbon credits issued for Clean Development Mechanism (CDM) projects by the United Nations Framework Convention on Climate Change
SGGs	Synthetic Greenhouse Gases – New Zealand only accounts for Sulphur hexafluoride, Hydrofluorocarbons and Perfluorocarbons.

Background

- 1 Synthetic greenhouse gases (SGGs) such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), also known collectively as refrigerants, are contained in air-conditioning units, refrigerators and motor vehicle air-conditioning units. These refrigerants are characterised by very high global warming potentials (GWPs) and are released into the atmosphere as the product is used.
- 2 The Climate Change (Emissions Trading and Other Matters) Amendment Act 2012 removed the ETS obligation for the importation of HFCs and PFCs in goods and motor vehicles, and replaced it with a SGG levy linked to the carbon price. Bulk importers of HFCs and PFCs face their carbon costs through participation in the NZ ETS.
- 3 Using a levy, rather than an ETS obligation, decreases administration and compliance costs and increases the certainty of the carbon cost placed on businesses. The trade-off is the loss in flexibility in the carbon price from not being able to purchase the cheapest units in the carbon market at the time of unit surrender.
- 4 The SGG levy commences on 1 July 2013. The Climate Change (Synthetic Greenhouse Gas Levies) Regulations 2013 sets out a temporary carbon price methodology and calculation of the carbon price for the SGG levy through regulations.

Status quo and problem definition

- 5 The current methodology works by averaging the value of the unit used in the Crown's Annual Financial Statements to value the NZU over the period starting 1 November 2011 and ending 31 October 2012. This methodology and the principles it is based on, have been agreed between officials from the Ministry for the Environment, Treasury and Audit New Zealand.
- 6 A transitional methodology was set due to timing constraints which meant that there was insufficient time to consult on a permanent methodology when the regulations were passed. This process ensures that the permanent methodology reflects the outcomes of public consultation.
- 7 The current carbon pricing methodology is transitional and applies only to the period from 1 July 2013 to 31 December 2013. Therefore, a permanent methodology for setting the carbon price for future levy years, starting with the 2014 levy year, needs to be set in regulations. The Climate Change (Synthetic Greenhouse Gas Levies) Regulations 2013 will need to be amended to set a permanent carbon price methodology.
- 8 There are two elements that need to be assessed when considering the carbon price methodology:
 1. The type of emission unit to use to value the carbon price, and
 2. The period in time over which to take the carbon price from the chosen emission unit.

Objectives

- 9 In addressing the problem definition it is important to ensure the proposed regulations adhere to the same policy objectives as the SGG levy. These objectives are to:
 - a. ensure goods and motor vehicles containing SGG face a carbon price that is equivalent, over the long term, to those importing SGG in the ETS
 - b. minimise administration and compliance costs for importers of goods and people registering motor vehicles for on-road use.

Assessment criteria

- 10 For the purposes of carrying out this RIS, these two high level objectives have been used to develop a number of criteria which have been used to assess options of the carbon pricing methodology for the SGG levy.
- 11 In order to meet the objectives, the following criteria must be met:
 - **Efficiency** – adopt and maintain only regulations for which the costs on society are justified by the benefits to society

- **Effectiveness** – regulation should be designed to achieve the desired policy objectives
- **Transparency and clarity** – the regulation-making process should be clear, and regulatory processes and requirements should be as understandable and accessible as practicable
- **Equity** – regulation should be fair and treat those affected equally
- **Environmental integrity** – the environmental integrity of the ETS should be maintained.

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

High level objective	Ensure goods and motor vehicles containing SGG face a carbon price that is equivalent, over the long term to those importing SGG in the ETS	Minimise administration and compliance costs for importers of goods and people registering motor vehicles for on-road use
Criteria	<p>Effectiveness - Regulation should be designed to achieve the desired policy objectives</p> <p>Equity - Regulation should be fair and treat those affected equally</p> <p>Environmental integrity -The environmental integrity of the ETS should be maintained</p>	<p>Efficiency - Adopt and maintain only regulations for which the costs on society are justified by the benefits to society</p> <p>Transparency and clarity - The regulation-making process should be clear, and regulatory processes and requirements should be as understandable and accessible as practicable</p>

Options

Part one: The type of emission unit to use to value the carbon price

- 12 In order to achieve the policy objectives of the levy (ETS alignment and low administrative and compliance costs), the type of emission unit used should be well-traded and have an observable market price. That is, information on the unit is easily available and unit prices are determined by the market.
- 13 The current emission unit used to value the carbon price in the transitional SGG levy is the same unit used by the Crown to value ETS revenue. Presently this is a secondary Certified Emission Reduction unit (sCER), which is well-traded and has an observable market price.
- 14 Officials consider that there is only one viable option to value the carbon price, which is to continue the current transitional methodology used by the Crown. This methodology most accurately reflects the objectives of the SGG levy by ensuring that there is strong link between the ETS and the SGG levy. Over the long run, bulk importers of SGG through the ETS will face a carbon price equivalent to importers of goods and motor vehicles paying the SGG levy.
- 15 The Crown uses the sCER to value the NZU, which is used to calculate ETS revenue in the Crown's Annual Financial Statements. The sCER was chosen as it was previously demonstrated that there was a strong correlation between sCER prices and the NZU prices. However, the Government can choose to change the use of the sCER to value ETS revenue in the Annual Financial Statements, if there is evidence that another unit is a better reflection of the NZU price. The sCER may no longer be an appropriate unit due to the divergence in prices quoted for sCERs (\$0.40¹) and NZUs (\$1.87²). Any changes made to the unit used to value the ETS revenue for the Crown are likely to positively impact the levy by aligning the methodology to the objectives of the SGG levy.
- 16 The regulations will not specify the unit used to value the carbon price as the unit will be subject to annual review by the Treasury, Audit New Zealand and the Ministry for the Environment to ensure that it reflects, as accurately as possible the market price of NZUs.

¹ Close price at 5 June 2013, Point Carbon

² Spot price at as 6 June 2013, Point Carbon

- 17 Therefore, we are proposing to maintain the current status quo: the type of emission unit used to value the carbon price for the SGG Levy should be consistent with the unit used by the Crown for valuing an NZU through its Annual Financial Statements. As there are no other viable options, this issue will not be assessed further in this Regulatory Impact Statement.

Part two: The period in time over which to take the carbon price from

- 18 It is important to note that for all options there is a six-month gap required between when the price is calculated and the start of the levy year. This will allow for the regulations to be updated with new levy rates, allow Customs and NZTA to update their systems, and provide businesses with sufficient lead time to prepare for the new rates. Therefore, the period over which the carbon price can be taken can be no later than 30 June on any particular year. This decision was previously agreed to in Cabinet [CAB Min (12) 23/10 refers].
- 19 There were three proposed options that can be used to take the carbon price from:
- 20 **Option One:** Take an average of the daily spot price of the chosen emission unit (or units) from the previous financial year. This would mean the carbon price for the 2014 levy year would be an average of the carbon price over the period 1 July 2012 to 30 June 2013.
- 21 **Option Two:** Take a shorter average of the chosen emission unit, such as an average over the previous six-months. This would mean the carbon price for the 2014 levy year would be an average of the carbon price from 1 January to 30 June 2013.
- 22 **Option Three:** Take the spot price of the chosen emission unit on 30 June 2013.

Regulatory Impact Analysis

23 As the current carbon price methodology is transitional and will not be applicable for future levy years, the option will not be assessed against this status quo. Instead, the option will be assessed by whether or not it will impact positively (Ü or ÜÜ) or negatively (X) on the assessment criteria.

Summary of Options Analysis

The following table sets out a summary of the options analysis. The preferred option is Option One.

Options	Assessment against Criteria					Impacts			
	Efficiency	Effectiveness	Transparency and clarity	Equity	Environmental integrity	Economic	Environmental	Fiscal	Net impact
Option One (average over one year)	Ü	ÜÜ	Ü	ÜÜ	Ü	Low Will capture a larger set of carbon prices and more fully reflect market prices. However, it may create a greater average time lag (lower correlation) between the period the levy is taken from and the date of levy implementation	Low The period of time used to take the carbon price will not make a material environmental impact	n/a The period of time used to take the carbon price does not have any fiscal impacts on the Government	Low The price of carbon in the SGG levy will most accurately reflect the carbon prices across a greater period of time.
Option Two (average over six months)	Ü	Ü	Ü	Ü	Ü	Low Will capture a smaller set of carbon prices and broadly reflect market prices, but with a potential bias as the sample covers part of a year. However there will be a lower average time lag between the date the levy is taken and the date of levy implementation so be more correlated than option one.	Low The period of time used to take the carbon price will not make a material environmental impact.	n/a The period of time used to take the carbon price does not have any fiscal impacts on the Government	Low The price of carbon in the SGG levy will reflect a more recent average of the carbon prices with a risk of some bias.
Option Three (spot price at 30 June 2013)	Ü	X	Ü	X	Ü	Low Will only reflect one price and will inaccurately represent the carbon prices in the market.	Low The period of time used to take the carbon price will not make a material environmental impact.	n/a The period of time used to take the carbon price does not have any fiscal impacts on the Government	Low The price of carbon in the SGG levy will not reflect market prices

24 Overall the net impact of the period of time used to average the carbon price will be low.

Assessment against evaluation criteria

Efficiency

- 25 The period in time over which the carbon price is taken will not make a significant difference to the costs and benefits on society. In the long term, the costs faced by SGG levy payers and the costs faced by other emitters will even out.

Effectiveness

- 26 An effective carbon price methodology would use an emission price point that produced a fair representation of market price. This methodology would produce a price close to the price of the emission units used by the SGG sector participants who remain in the ETS. This would minimise the potential for competitive distortion between those facing the levy (importers of goods and motor vehicles) and those remaining in the ETS (importers of bulk SGG).
- 27 **Option one** would be the most effective as it takes an average over a longer period of time, a full year. By taking an average over a full year and capturing a full set of carbon prices, this option would even out the peaks and troughs of the price of any particular emission unit. This would mean it is very likely to produce an accurate and fair representation of the market price that is close to the emission unit price faced by those in the ETS. However, the accuracy of this option is traded-off with a greater average time-lag³ between the data collection and the period it is applied. This results in a lower correlation between current ETS price and the levy price.
- 28 **Option two** would be less effective than option one, but more effective than option three. This is because the time period the average is taken over is shorter and covers the same half a year. This means the peaks and troughs of the price would be more prominent and potentially introduces a potential bias if seasonal effects exist. It is likely to still produce an approximation to a market price. This option creates a smaller average time-lag bias between the current ETS price and the levy price than option one. This would represent a more recent carbon price, which would more closely align the period the carbon price is taken from and the period it applies to.
- 29 **Option three** would be the least effective of the three options. This is because taking a spot price on any particular day risks using a price that is not representative of the average current market price. The price on any particular day can drop well below or above the average market price. This option has the shortest lag time and will reflect the most recent value of the carbon price. However, using a single day spot price would significantly increase the risk of a divergence in price used by the levy from the price faced by those under the ETS.

Transparency and clarity

- 30 This methodology is being set out in regulations; and therefore provides transparency and clarity to those affected by the levy. All three options provide equal transparency and clarity.

Equity

- 31 **Option one** is fairest for those facing the levy as it is likely to produce the most reliable and representative market price. Taking an average over a full year is most likely to result in a carbon price for levy payers that is close to the market prices faced by those in the ETS. This option would, on average, provide a more level playing field for those SGG levy payers who compete with or are also ETS participants as the prices are more closely aligned. However, this option also creates a greater average time-lag which risks becoming unfair to levy payers if the price diverges substantially from prices faced by ETS participants. In the long run this effect will average out as it is the most accurate (unbiased) estimate.
- 32 **Option two** is less fair as it may produce a price that is less representative of the market price. This is balanced with the smaller time-lag between this option and option one, which represents a more current market price.
- 33 **Option three** is the least fair as it is likely to produce a price that is not reliable or representative of the market price. Although this option represents the most recent carbon price, it risks

³ This is the average period of time between the first date the carbon price is taken from and the date in which the levy applies to, i.e. the average time lag for option one (12-monthly average) will be 12 months, the average time lag for option two (six-monthly average) will be 9 months, and the average time lag for option three (spot price) will be six months.

becoming unfair to those facing a price under the SGG levy that is not aligned to the costs faced from those ETS participants.

Environmental integrity

- 34 The levy has environmental integrity by placing an added cost on SGG. The period of time the carbon price is taken from will not significantly affect the levy's environmental integrity as it will not significantly affect the cost faced by levy payers.

Impact assessment

- 35 The levy will impact importers of goods containing HFC or PFC; this includes air-conditioning units and refrigerators. The levy will also impact people who register a motor vehicle for on-road use. This is because the air-conditioning units of motor vehicles contain HFCs.
- 36 The following table shows a total 189,551, new and used, vehicles were registered in 2012. This table acts as a proxy for the number of vehicles that will face the levy.

Total number of vehicles registered during 2012 ⁴

Vehicle	Number registered
Cars	161,407
Trucks	27,201
Buses and Coaches	943
TOTAL	189,551

- 37 The impact of the carbon price methodology on the cost to the importer or person registering a motor vehicle is negligible. This assessment is valid whether considering the emission unit used or the timing of the price point. The carbon price under the ETS or the levy will not materially impact the decisions taken by vehicle importers.
- 38 The following analysis shows the cost impact on goods containing SGG under the ETS compared with the costs under the levy. Supporting the objectives of the levy, over the long term, those bulk importers of SGG in the ETS will face a carbon price that is equivalent to those levy payers.
- 39 The following table shows a worst-case scenario where bulk importers of SGG, under the ETS, are passing on a carbon price of \$0.05 and goods importers, under the levy, are passing on a carbon price of \$12.50 (the highest the carbon price could be under the transitional phase).

Worst-case carbon price scenario faced by bulk importers (ETS participants) versus levy payers:

Product	Average charge (kg)	Specified SGG	GWP (IPCC 2007)	Approximate retail price	\$0.05/tCO ₂ e (Bulk importers)	\$12.50/tCO ₂ e (Levy)	Price Increase (Bulk importers)	Price Increase (Levy)	Difference in price increase
Household or small commercial fridge	0.13	HFC134a	1430	\$1,000	\$0.01	\$2.32	0.00%	0.23%	0.23%
Household or small commercial air conditioning unit	1.5	R410A	2088	\$2,000	\$0.16	\$39.15	0.01%	1.96%	1.95%
Heat pumps	2.12	R410A	2090	\$4,000	\$0.22	\$55.39	0.01%	1.38%	1.38%
Dehumidifiers containing HFC-134a	0.15	HFC134a	1430	\$400	\$0.01	\$2.68	0.00%	0.67%	0.67%

⁴ NZTA, 2012

- 40 The following table shows the current scenario where bulk importers under the ETS are passing on a carbon price of \$1.87 (the current carbon price⁵) and goods importers are passing on a carbon price of \$8.22 (the current carbon price for the 2013 levy period).

Current carbon price scenario faced by bulk importers (ETS participants) versus levy payers:

Product	Average charge (kg)	Specified SGG	GWP (IPCC 2007)	Approximate retail price	\$1.87/tCO ₂ e (Bulk importers)	\$8.22/tCO ₂ e (Levy)	Price Increase (Bulk importers)	Price Increase (Levy)	Difference in price increase
Household or small commercial fridge	0.13	HFC134a	1430	\$1,000	\$0.35	\$1.53	0.03%	0.15%	0.12%
Household or small commercial air conditioning unit	1.5	R410A	2088	\$2,000	\$5.86	\$25.75	0.29%	1.29%	0.99%
Heatpumps	2.12	R410A	2090	\$4,000	\$8.29	\$36.42	0.21%	0.91%	0.70%
Dehumidifiers containing HFC-134a	0.15	HFC134a	1430	\$400	\$0.40	\$1.76	0.02%	0.44%	0.34%

- 41 When taking into consideration the commercial price of goods containing SGG, the price difference between the results of each of the two situations above is estimated to be below 2 per cent of the value of the good. This is because under the transitional phase measures the highest the price could be is \$12.50 for an emission unit. Under the current situation, the price increase difference will be less than 1 percent of the value of the good. Therefore, the carbon price methodology chosen will not materially distort competition between levy payers and ETS participants.

⁵ Point Carbon, 06.06.13

Conclusions and recommendations

- 42 The methodology chosen to value the carbon price should align with primary objectives of the SGG levy (ETS alignment and low administrative and compliance costs). This should ensure the carbon price faced by those importing SGG in goods and motor vehicles are aligned with the long term costs faced by those bulk importers of SGG through the ETS.
- 43 The approach used by the Crown to value ETS revenue should reflect the objectives of the SGG levy. Therefore, we are proposing to maintain the current status quo where type of emission unit used to value the carbon price for the SGG levy is the same unit used by the Crown for valuing an NZU through its Annual Financial Statements. This ensures a link between the carbon prices faced by levy payers with the costs faced by in the ETS. This is the only viable option available.
- 44 The regulations will not state the specific unit used to value the carbon price, only to use the unit used by the Crown. The unit will be subject to annual review by the Treasury, Audit New Zealand and the Ministry for the Environment to ensure that it reflects, as accurately as possible, the market price of NZUs. The Crown currently values the NZU using the sCER price. However, in the future this unit can change if the Government believes the sCER is not an appropriate measure of NZU prices.
- 45 There is not a substantial difference in options for choosing the point in time to take the carbon price from. All three options provide environmental integrity, transparency and clarity, however, differ in their effectiveness and equity provided for SGG levy payers.
- 46 The option of taking a yearly average (option one) aligns the most with the policy objectives of the levy. This option is the most accurate, effective and equitable as it would capture the anomalies of the carbon price and best represents, over the long term, the average carbon price. By providing a more complete average, this option provides more certainty and less variability with the carbon prices faced by SGG levy payers.
- 47 This option eliminates the risk of bias, but at the potential cost of a lower correlation between the most recent ETS price and the levy price. However, the effect of a longer time lag between the period the carbon price is taken and the period in which the carbon price applies to is considered minor in achieving the objectives of the levy. In the long term the costs faced by SGG levy payers and the costs faced by other emitters will even out. Therefore, the preferred policy option for the period of time over which to take the carbon price is to take a yearly average, i.e. option one.

Consultation

- 48 A consultation document was released on 24 April 2013 outlining the proposed SGG levy regulations. Consultation for this issue ran for four weeks and closed on the 17 May 2013.
- 49 This issue was grouped with a proposed SGG levy exemption for motor vehicles that are entry certified and inspected prior to 1 July 2013, but not registered until on or after that date. Due to tighter deadlines, the motor vehicle exemption was fast-forwarded to ensure that regulations came into effect before the levy commencement date.
- 50 MfE received three submissions for the carbon price methodology. There was broad support for the Government's preferred approach, with all submitters supporting the use of the sCER. There was also support for the Government opting to use another unit, if there is clear evidence that the alternative unit is a better reflection of the NZU price.
- 51 Two submitters from the Heating, Ventilation, Air-conditioning and Refrigeration industry supported taking a yearly average of the carbon price. Over the long term, the timing difference in the SGG levy pricing will average out. Options two and three were not considered to achieve the objectives of the levy as they would not represent long term average carbon prices.
- 52 One submitter, from the automobile industry, while noting they did not have strong views on this issue, suggested a fairer methodology would be option two. They suggested taking a 6-month average of carbon prices (based on the most recent applicable 6-month period) would most likely represent current market prices. However, while this would minimise the average lag, it is considered that this option would not provide the most accurate estimate and includes a potential for bias.
- 53 One submitter also claimed that an issue of the competitive impact of imported goods containing SGG on NZ manufacturers who encapsulate bulk SGG into their product has not been addressed. Due to this imported competition the closer correlation of ETS pricing with the SGG

levy afforded by option one is crucial to those parties who are both ETS participants and face the SGG levy. These parties require as much consistency as practicable.

- 54 Customs, NZTA and the EPA were consulted with during the development of the Government's proposed regulations. The Ministry will continue to work with all implementation agencies to ensure administrative simplicity and effective implementation.

Implementation

- 55 The SGG levy will come into effect on 1 July 2013. The levy for goods is administered by Customs and the levy for motor vehicles is administered by the NZTA. The functions of the EPA are to receive, collate and publish information related to the levy.
- 56 As this methodology is for the period from 2014 onwards, its implementation will follow existing regulation processes. The administrative and operational processes are outlined in a Memorandum of Understanding between MfE, the EPA, NZTA and Customs.

Monitoring, evaluation and review

- 57 MfE will work closely with industry, the EPA, Customs and the NZTA to effectively monitor and review the SGG levy. The EPA is the main agency responsible for monitoring compliance with the levy.
- 58 The rate and details of the levy are set by regulation and are updated annually to reflect the new carbon price and associated levy rates. Regulations can be made under the CCRA to specify new gases, motor vehicles or goods added to the schedule, if needed. The Memorandum of Understanding between MfE, the EPA, NZTA and Customs outlines these processes:
- a. June: MfE will consult with EPA, Customs, NZTA and industry to determine whether new assumed gas amounts need to be added or changed and goods need to be removed from the schedule to the regulations.
 - b. July: MfE will obtain the average carbon price, using the updated carbon price methodology, and calculate the new prices for the levy.
 - c. July: if any new gas amounts or goods need to be changed, MfE will consult with Customs and NZTA to start updating systems and documents.
 - d. September: MfE will present Cabinet papers for the new levy rates in order for regulations to be drafted, signed and Gazetted before the end of the levy year.
- 59 If no levy rate is set before the beginning of the year, the levy rate for that year is to remain the same as it was for the preceding levy year.
- 60 MfE, Audit New Zealand and Treasury will continue to monitor the Crown's method to value ETS revenue in the Crown's Annual Financial Statement. This methodology is currently being reviewed given the divergence in price between the sCER and NZU.