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Carbon Pricing of Refrigerant Imports and Destruction

Submission to Joint Select Committee on Australia's Clean Energy Future Legislation

Executive Summary

This submission recommends that the introduction of carbon-equivalent pricing for refrigerants in July 2012 include complementary regulation and policy measures to:

1. Establish an incentive for the recovery and destruction of fluorocarbon gases at the same time as carbon pricing is applied to imports of these gases. The current government proposal is to delay the introduction of a cash incentive for fluorocarbon recoveries and destruction until July 2013; an unnecessary and counterproductive delay.

Legislative amendment of the Ozone Depletion and Synthetic Greenhouse Gas Management (OPSGGM) Act should be made to explicitly provide for concurrent introduction of a cash rebate to provide an incentive for refrigerant destruction, and for the rate of the cash rebate to be directly related to the rate of the import levy, with details to be established in the regulations.

2. Remove the existing regulatory exemption for recovery of scheduled substances from the destruction of foams. This would have the effect of making it a legal requirement to recover and destroy fluorocarbon-blowing agents used in foams under the Ozone Depletion and Synthetic Greenhouse Gas Management (OPSGGM) Act.
3. Establish a co-regulatory Product Stewardship structure to manage the environmental impacts of fluorocarbon refrigerants and blowing agents. This would have the effect of requiring the entire Refrigeration and Air Conditioning supply chain to be responsible for the environmental impact of equipment from production, through life and at end of life.
4. Significantly enhance enforcement and education of the OPSGGM Act by allocating funding to:
 - a) Afford greater direct enforcement of the Act
 - b) Afford extensive training to support the industry in its necessary transition from High GWP refrigerants to Low GWP refrigerants.

These recommendations will generate far greater emissions reduction from the Refrigeration and Air Conditioning industry at a cost well below the proposed carbon price to be imposed on refrigerants.

These complementary measures aim to address the full range of RAC industry GHG emissions and make the industry responsible for implementing the required program, whilst providing appropriate support to the industry to achieve this level of abatement.

Purpose

To establish the need for concurrent introduction of the cash incentive for fluorocarbon refrigerant recovery and destruction with the imposition of a carbon-equivalent price on importation of HFC fluorocarbon refrigerants.

We understand that the Federal authorities responsible for establishing the price on destruction of fluorocarbon refrigerants (F-gas) are considering differentiating the two prices; the importation levy vs the destruction reward. The purpose of this submission is to discuss the implications of the alternative prices and structures for continued destruction of Ozone Depleting Substances (ODS) and Synthetic Greenhouse Gases (SGG).

Situation Description

The primary purpose of carbon pricing is to reduce Australian GHG emissions across all industries. This principle is equally relevant to refrigerants and the refrigeration and air conditioning industry where the purpose of applying carbon pricing to refrigerants is to generate financial incentives to reduce their emissions, in addition to existing legislative and regulatory controls on emissions.

The Impact of Carbon Pricing on Refrigerants

The impact of the carbon-equivalent pricing on refrigerant imports will be to cause a major shift in the structure of the refrigeration and air conditioning (RAC) industry:

1. It will increase the cost of high GWP refrigerants by several times the current price whilst the cost of low GWP refrigerants will be largely unchanged; thus generating a price incentive in favour of low GWP refrigerants.
2. It will make refrigerant selection a significant factor in new RAC technology choice because refrigerants will become a more significant portion of RAC equipment cost at initial purchase, and through life due to recharge requirements.
3. It will cause a shift in refrigerant selection from high GWP refrigerants to low GWP refrigerants; including over the next decade reduced imports of F-gas and far greater use of domestically manufactured low GWP refrigerants, and probably domestically manufactured low RAC equipment designed to use low GWP refrigerants.
4. It will cause greater RAC industry attention to be paid to reducing refrigerant leakage and the cost of recharging with expensive refrigerants.
5. It will encourage the retrofit of suitable existing RAC systems with less expensive and high performance hydrocarbon refrigerants (e.g. vehicle and small split system AC).
6. It will reduce refrigerant emissions by millions of CO₂-e tonnes PA.

However, this is a long-term process of transition because there are 30,000,000 RAC units in use in Australia and roughly 2,000,000 new units purchased every year. The transition to new technology will progress slowly as old units reach end of life and are replaced with new low GWP technology, and the economy expands creating demand for more RAC equipment.

A further impact of carbon pricing will be to cause the RAC industry to contribute in the order of \$320 million per annum from the import levy to consolidated revenue. This amount will decline over time as the volume of F-gas used declines. However, the levy will certainly amount to more than \$2 billion over the decade and possibly as much as \$3 billion depending on the rate of transition to low GWP refrigerants. As the volume of F-gas use and imports declines the annual value of the levy will decline.

Ozone depleting refrigerants (CFC and HCFC) and Synthetic Greenhouse Gases (HFCs) will remain a major source of refrigerant emissions because these refrigerants will continue to be used and therefore emitted due to leakage, and improper end of life disposal.

Recycling / Reuse and Destruction

For as long as F-gas use and emissions remain high there remains a need and opportunity to recover F-gas.

The significantly increased cost of imported HFC (due to the carbon pricing levy), the decline of the HCFC import quota and increased cost of HCFC, and the ongoing ban on importation of CFC will create a major demand for recovery and reuse of refrigerants. This is a well-established practice in regards to CFCs and HCFCs, and will soon be adopted for HFCs.

The OPSGGM Act will remain in place prohibiting the intentional release of F-gas. Refrigerant Reclaim Australia (RRA) will continue to recover F-gas for destruction (at least through July 2012), and now has authorisation to recycle and resell refrigerant. Other organisations can be expected to arise to meet the demand for recycling depending on the matters described below. RRA has substantial funds available to fund F-gas recovery and destruction (about \$25 million).

It has been announced that a cash incentive for F-gas recovery and destruction will be provided, which is likely to expand the range of organisations providing recovery and destruction services. The level of this incentive has not been set and is apparently a matter for DCCEE and DSEWPaC to resolve.

The central principle is that recovery and destruction of F-gas has the effect of reducing emissions because gases that are destroyed are not available to be emitted. **The question becomes what price should the government be prepared to pay for reduced emissions from F-gas destruction.**

Options

The Government could:

1. Rely on RRA in the interim and fund RRA as required over the long run to continue to provide the service of recovery and destruction, including allowing RRA to set the price of rebates available to contractors and wholesalers with ACCC oversight.
2. Set the rate for recovery and destruction at the existing carbon price, which could translate to about \$46.00 per kg of refrigerant (assuming an average GWP of 2000). This rate could be left in place until emissions trading is established, at which time the rate would need to be adjusted to match the market rate for carbon trading.
3. Set any price it chooses, at least between these two extremes.
4. Call on the RAC industry to establish a comprehensive product stewardship organisation that would address the full range of RAC equipment and refrigerant management issues including but not restricted to through life and end of life emissions.

In setting the price for refrigerant recovery and destruction we recognise that the source of funds will be from consolidated revenue. It is most appropriate that any gas destroyed should qualify for a rebate at the same rate as the levy applied to imports. Since applying the tax on the import effectively assumes that the gas will be released to the environment, if it is recovered and destroyed instead, the levy should be refunded, exactly as it is if the gas is exported.

Option Discussion

Option 1

Our view is that continuing to fund RRA would be inappropriate and ineffective.

It is clear that RRA has not met a high standard of refrigerant recovery and destruction, and certainly has not met any reasonable level of performance for the purpose of reducing GHG emissions. Evidence of this includes the fact that RRA has never recognised a responsibility to

deal with end of life RAC equipment, takes weak stand on through life recoveries and obtains only a small proportion of gas available for recovery.

At the same time RRA has substantial accumulated funds and should be required to expend those funds for the purpose they were collected in the first place. If the reward for recovery and destruction is paid from consolidated revenues then it is possible that RRA would never have the requirement to expend its retained earnings.

Nonetheless RRA can be expected to continue by virtue of its 'first in' advantage in recycling F-gas. However in this role it will no longer be funded by an industry levy and will have to compete, effectively as a private enterprise.

Alternatively RRA could be required to pay out its retained earnings at a higher rate (say the carbon price) until they were fully expended at which time it would cease to exist.

Options 2 & 3

The Government could set the price for destruction at a similar value to the carbon equivalent price, in effect offering a rebate for destruction at the same average value of the levy imposed at import. This level of reward could increase recovery volumes because it would pay organisations that recover and submit gas for destruction a price that is roughly twice the current RRA cost of destruction (approximately \$25/kg).

This could provide a strong incentive for private organisations to meet the demand for refrigerant recovery, although there are considerable uncertainties about the cost involved in recovering gas from end-of-life equipment. Substantial investment in education and enforcement activities among those currently engaged in the disposal of end of life equipment are also likely to be required to change current practice in this industry, in addition to the higher incentives.

In spite of the uncertainties around the level of rebate, and other measures required to increase recovery volumes for destruction, at least in the interim period it is only fair and logical to provide a comparable rebate for destruction at the same time as imposing the import levy.

Option 4

The Government could call for the establishment of a comprehensive RAC industry product stewardship organisation, which would have responsibility for both through-life and end-of-life refrigerant management and emissions reduction.

This option is attractive because it recognises that refrigerant management and RAC equipment management are inextricable on a supply chain basis. All parties involved in the selection of RAC equipment and its management through-life and at end-of-life would be required to work together to achieve the objectives of the scheme.

In this context the responsibility for setting the price for refrigerant recovery and destruction and for refrigerant recycling becomes the responsibility of the entire RAC industry supply chain.

There are a number of important implications of this structure:

1. It would draw on the recently adopted legislation for product stewardship development and therefore cause the RAC industry to be brought into line with all other industries that have through-life and end-of-life environmental impacts.
2. It would be a co-regulatory product stewardship structure incorporating the OPSGGM Act. The Act and Regulations could be modified and updated to include the requirement to recover and destroy F-gas currently not addressed including end-of-life gases and foams, which are a significant source of emissions currently.
3. It would make possible the use of technology available for comprehensive RAC demanufacture because such equipment is able to address both the refrigerant and the insulation-blowing agent. The latter is a large proportion of the total (about 60%) in EOL equipment.

4. The volume of emissions recovered would be significantly increased in the short term because blowing agent uses of F-gas and RAC equipment end-of-life emissions are a significant portion of the total. This would assist in making a larger contribution to Australia's emissions reduction target.
5. The operations of the organisation would be more transparent and measurable so that all parties concerned would be able to know and see the performance of the program.
6. It would call on the product stewardship organisation to set the price for refrigerant recovery and destruction in consultation with Government and the entire RAC supply chain.
7. It would open the market for refrigerant recovery and destruction to competitive forces under the direction of the product stewardship organisation.
8. It would enable far greater integration of other programs required to address the introduction of carbon pricing for refrigerants. Particularly the need for broad based education and training in favor of low GWP refrigerants.
9. It would, however, require Government funding to establish the product stewardship organisation. Based upon previous investigations carried out looking at this option, it is expected that approximately \$1 million would be required to establish such an organization. This amount may be able to be reduced if the existing RRA organization could be leveraged for this purpose.

We strongly recommend option 4 for the reasons listed above. Option 4 will generate far greater GHG emissions reduction and the associated increase in national emissions. It will cause the entire RAC industry to work together to reduce emissions and manage the transition to low GWP refrigerant technology. These are non-trivial opportunities that warrant the consideration of Government and the use of Clean Energy Future funds.

Timing

Concurrent introduction of the carbon-equivalent price and the cash incentive for recovery is important for the following reasons:

- Further delay is unwarranted. Recovery of refrigerant gas from end-of-life equipment in particular has been far below international best practice, and delaying introduction of greater incentives of recovery and destruction serves no purpose;
- Companies currently involved in refrigerant recovery are being held back by the lack of sufficient financial incentives to justify ambitions for significant expansion of capacity;
- Placing a value on the bank of existing refrigerant will provide equipment owners with a valuable asset that can be used to offset the expense of upgrading to climate friendly RAC systems;
- Introducing the recovery incentive 'carrot' at the same time as the HFC levy 'stick' will provide a good news story with which to ease the introduction of the reform.

Environmental Benefits

Any of the options above would provide a financial driver for the increased recovery and destruction of greenhouse gases and ozone depleting gases through comprehensive de-manufacture of refrigeration and air conditioning equipment. Typically, there is more F-gas in the insulating foam of an old refrigerator than in the refrigerant loop itself. Currently this

insulating foam is landfilled, and the gas escapes to the environment over time as the foam deteriorates. It has been estimated that the amount of F-gas emissions that could be avoided in Australia through a comprehensive de-manufacturing scheme for refrigerators and air conditioning equipment would exceed 500,000 tons CO₂ equivalent per annum, even if such a scheme were only effective on the Eastern seaboard of Australia.

Comprehensive de-manufacturing of older refrigerators would also prevent the landfilling of mercury and poly-chlorinated biphenyls from the electrical equipment contained within the refrigerator.

Related Recommendations

Enforcement

We further recommend that funding from the carbon pricing legislation be allocated to enforcement and education.

The OPSGGM Act makes it illegal to emit refrigerants. To date the relevant provisions of the Act have never been enforced. Whilst there has been significant education to make the RAC industry aware of the prohibition of emissions by the Act, these have not been effective.

Perhaps the clearest evidence of this observation is the fact that the vast majority of end of life RAC equipment is not degassed prior to being shredded. The result of shredding by the scrap metal industry is currently to release both refrigerants and blowing agents.

There is clearly a need for high profile enforcement of the Act to cause the 400 scrap metal dealers, the 700 municipal councils and the scrap metal shredding companies aware of and compliant with the Act.

End-user Awareness Program and Industry Education

We recommend that a program of awareness, training and advice on alternatives be undertaken. This should include options to reduce reliance on costly high GWP refrigerant, and to reduce commercial risk due to leakage of such refrigerants, and should be aimed at end users across all sectors of the market, from domestic through all commercial to industrial.

The level of knowledge of such matters amongst most end-users is limited and reliance on servicing and installing contractors is high. It is critical that end-users of high GWP refrigerant gases are made aware not only of the risks to which they are exposed, but also the practical and cost effective climate friendly solutions to which they may transfer to reduce their risk.

We therefore also recommend that the government allocate funding for a range of programs across the various industry sectors to address this information deficit.

We also see a need for targeted funding under the Clean Energy Skills program to expand the availability of existing NSW TAFE courses on the use of carbon dioxide and hydrocarbons to the other States and Territories.

The impact of carbon pricing as described above will cause a high degree of change in the industry. It is fundamental that this change, and particularly the technical parameters involved in the transition from synthetic to natural refrigerants requires education and training that is not currently widely available.

We therefore recommend that the Government allocate specific funding for this purpose.

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