



## AREMA Submission to the Senate Select Committee on Climate Policy

6 April 2009

The Airconditioning and Refrigeration Equipment Manufacturers Association (AREMA) represents the interests of Australian and international manufacturers of airconditioning and refrigeration equipment, active in the Australian market.

As such, the proposals in the Carbon Pollution Reduction Scheme (CPRS) White Paper have significant implications for the industry in Australia. Synthetic greenhouse gases (SGGs) are to be included in the CPRS, a subset of SGGs. HFCs are the most commonly used refrigerants. They were introduced to replace ozone-depleting refrigerants (which also have a higher global warming potential). They are non-flammable, non-toxic and extremely stable. They are already controlled in Australia, including a prohibition on preventable emissions by under the Ozone and Greenhouse Management Act 1989.

AREMA members are committed to playing a positive role in meeting the objectives of the CPRS, that is, 'to meet Australia's emission reduction targets in the most flexible and cost-effective way and to support an effective global response to climate change.'

However, it is our view that the approach set out for synthetic greenhouse gases (SGGs), specifically HFCs, in the Exposure Draft will not achieve the stated objective in the airconditioning and refrigeration sector.

The current CPRS proposals have a number of significant difficulties when applied to the airconditioning and refrigeration sector.

### **Issues with the current CPRS proposals as they impact on the Australian airconditioning and refrigeration industry**

#### HFCs and the CPRS- a Basic Disconnect

The CPRS is a cap-and-trade system, and has at its centre the assumption that once a cap has been set on emissions, those emissions will then be allocated across the economy using market mechanisms.

HFCs cannot fully play a role in this Scheme, as their preventable emission is, and will remain, an offence under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

The current CPRS proposals have the potential to undermine the environmental performance of the industry while imposing very significant costs.

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In more detail:

### **Unintended Effects on HCFC Use**

- Current proposals could encourage the substitution of HCFC equipment for HFC equipment, specifically HCFC-22, with commensurate detriment to both the ozone layer and climate protection, given that in addition to its ozone depleting potential HCFC-22 has a higher GWP than HFC 134a.
- It should be noted that the Chinese domestic and commercial airconditioning market is predominately HCFC, providing a ready source for increased importation of HCFC equipment into Australia.
- The Montreal Protocol does not control the import of used HCFC-22. Existing CPRS proposals would provide significant incentives to import this material with detrimental consequences for direct and indirect emissions and the ozone layer (HCFC-22 is a less efficient refrigerant than most HFCs).

The White Paper stated that the Government will address this distortion with the introduction of a ban on the import and manufacture of equipment using HCFCs. Presumably the White Paper's vague proposal to address the issues raised by the massive price differential between HFCs and HCFCs can only mean the imposition of a similarly massive tax, charge or fee on HCFCs, again with no meaningful prospect of introducing any significant behavioural change.

### **A Lack of Practicable, Commercially Available Alternatives in Many Applications**

- There is a lack of viable alternatives to HFCs for many applications.
- Australia is about 1% of world market for airconditioners. Major global manufacturers will not design and manufacture equipment specifically for Australia.
- Most equipment would have a life of at least 20 years, except for particularly long-lived equipment such as chillers, with approximately 5% of installed equipment replaced annually. This 5% is the only part of the market that can react to a high HFC price, but only in the small minority of cases where viable alternatives exist.
- The increase in the cost of equipment (due to the increased refrigerant price) gives an incentive to keep old equipment in service longer, with commensurate efficiency penalties leading to increased indirect emissions

- 90% of bulk refrigerant is used for servicing existing equipment. Significantly increased prices may lead to reduced servicing, compromising efficiency and again leading to increased indirect emissions

### **A Possible Disincentive for Australian Manufacturers**

- A significant increase in Australian refrigerant prices, compared to prices in other manufacturing centres such as China, Korea and Thailand, could act as a disincentive to Australian airconditioning and refrigeration equipment manufacturers. Australia has a number of local manufacturers, and a small but important export market. Large increases in costs compared to other manufacturing centres in the region could help shift manufacturing offshore.
- Australian manufacturers and importers will face huge cash flow problems to finance, in advance, projected HFC emissions over the next 20+ years.

### **Australia Alone in Including HFCs in an ETS**

- AREMA understands that there is no working national emissions trading program that includes HFCs. The EU ETS specifically considered this issue, and opted to control HFC emissions using a program of end use controls; similar to those that have existed in Australia since 2003.
- Experience in Scandinavia, cited in the White Paper, is of limited application to Australia. The Scandinavian (specifically Norwegian) program is a carbon tax, and the industry profile of Norway is unlikely to be similar to Australia, with our comparatively high reliance on airconditioning.

### **Thresholds for Inclusion in the CPRS- Charged Equipment Importers**

- The Government has proposed applying a threshold of 25,000mt CO<sub>2</sub>e for the inclusion of charged equipment importers in the CPRS. This figure is equivalent to slightly less than 20 metric tonnes of the most common HFC refrigerant, HFC-134a.
- AREMA agrees that, should the CPRS go ahead in its current form, it is essential for both the integrity of the program and for equity reasons, that charged equipment importers be included. However, the introduction of a threshold is fraught with danger, given the market distortion this entails. The introduction of a threshold can also lead to the development of artificial business restructurings and other artificial strategies to allow firms to come in under the threshold.
- The Ozone Protection and Synthetic Greenhouse Gas Reporting Act requires all importers to report on imports- the purchase of appropriate permits can be managed using that data.

- AREMA believes that if the CPRS goes ahead it should include HFC importers of both all bulk and all charged equipment.

### **Significant Decreases in Emissions Unlikely**

- In theory, increasing the price of gas should lead to improved refrigerant handling and a reduction in leaks – but the cost of gas is currently high enough to make mechanics careful. In addition, there is already a blanket prohibition on preventable leaks in the Ozone Protection and Synthetic Greenhouse Gas Management Act. There are no additional practicable behavioural changes regarding emission reductions that technicians could adopt, in addition to those already required of them by law.

### **Unintended Consequences of Very Significant Refrigerant Price Increases**

- Massively increasing the price of refrigerant may tempt service personnel to undercharge units reducing efficiency and increasing indirect emissions.
- Similarly, such increases could lead to more field charging of equipment. Comprehensive data shows that field charging leads to increased leaks and reduced operating efficiency
- Importers may be tempted to import uncharged equipment and transfer the cost of the permit to the installer, with similar results.
- Heat pumps for hot water and industrial heat recently praised by Minister Garrett will be disadvantaged by a higher refrigerant price.
- Similar arguments apply for airconditioners used for heating (the majority use being in southern Australia).

### **Occupational Health and Safety Implications**

- There may be serious OH&S consequences of increasing the price of refrigerant, which would provide a significant monetary incentive to use hydrocarbon refrigerants in unsafe applications. While hydrocarbons function well as a refrigerant, and uniquely will operate in equipment designed for fluorocarbons, they are highly flammable and explosive. A recent tragic example of the consequences of using hydrocarbon refrigerants in equipment designed (as most equipment is) for fluorocarbon refrigerants was seen at the fatal coolstore explosion in New Zealand in April this year.

### **Massive Increases in Refrigerant Prices Could Encourage Poor and Illegal Practices**

- Apart from increased risk of theft encouraged by a disproportionate increase in refrigerant prices, there could be increased risk of smuggling and illegal importation.

This was certainly the experience in the US in the early 1990s when a very significant tax was placed on CFCs, based on the same philosophy underpinning the CPRS. In that instance the tax, and the ability to avoid it, fuelled a very large and lucrative trade in smuggled refrigerant. It is noteworthy that, when the USEPA moved to control HCFCs, the tax was not included in the policy package for those refrigerants, due to its unintended consequences.

- Deliberate undercharging would also be more lucrative. For example, an unscrupulous installer could undercharge a supermarket system by 50kgs – the system will operate less efficiently but the undercharge will not be apparent until the system is put under load on a hot day when it will not perform as specified.
- Other distortions would include the incentive stockpile before the start of the scheme. In some cases it may be feasible to stockpile a number of years of consumption.

### **Negative Effects on Small and Medium Enterprises**

The structure of the airconditioning and refrigeration service industry is characterised by the inclusion of a large number of small and medium enterprises. The current CPRS proposal could have a number of negative effects in this area:

- refrigeration tradesmen will need more capital to finance stock of gases;
- any increase in undercharging will lead to a loss of efficiency ;
- increasing reuse of refrigerants, which could be contaminated by oil, water or air, leading to reduced efficiency and increased indirect emissions;
- a large increase in the number of recovery bottles may have logistical consequences for recovery and destruction.

### **Recovery and Destruction Issues**

The current CPRS proposal has the potential to undermine Australia's internationally recognised product stewardship program for fluorocarbon refrigerants, Refrigerant Reclaim Australia (RRA).

These issues were addressed in detail in a comprehensive submission to both the Green and White Papers by that organisation following the release of the Green Paper, but unfortunately the issues raised have not been addressed in any subsequent documents or the White Paper.