



Australian Government

**Department of the Environment
and Water Resources**

**Ensuring the licensed installation of
split system air conditioners in Australia**

**Discussion paper
February 2007**

This publication is available online at:

<http://www.environment.gov.au/atmosphere/ozone/publications/split-systems.html>

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This paper is intended as a basis for consultation with stakeholders. It should be regarded as a working document prepared by the Ozone Protection and Synthetic Gas Section of the Department of the Environment and Water Resources.

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Why read this paper?

In response to concerns raised by the refrigeration and air conditioning industry, the Australian Government is examining the issue of the unlicensed installation of split-system air conditioners in Australia and the potential for subsequent environmental damage.

This is your chance to provide input into these discussions.

The options outlined in this paper are not the only possibilities. You are welcome to contribute novel solutions to the problem or refinements to the options suggested here.

The Australian Government Department of the Environment and Water Resources invites your comments on this paper, in particular focusing on:

- evidence of the extent of the problem of unlicensed installation
- strengths and weaknesses of the options proposed in this paper
- refinements to improve the proposed options *and/or*
- alternative solutions to the options included in this paper.

Comments must be submitted in writing (either hard copy or electronically) and must be received no later than 5pm Canberra time on Friday 13 April 2006. Your comments should be addressed to:

Chris Young
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Your contact details needed

If you are preparing a submission in relation to this paper, please include your name, address, telephone number and, if applicable, your company or organisation and email address along with your comments/suggestions.

Privacy

Comments received will be treated as public information unless marked as confidential. If you wish your submission to be kept confidential, please ensure that you state this.

Introduction

Australia continues to lead the world in phasing out and managing ozone depleting substances. The Australian Government supervises the orderly phase out of these substances in accordance with its commitments under the Montreal Protocol on Substances that Deplete the Ozone Layer. This international agreement is one of the most successful multilateral environment protection agreements and is helping with the expected recovery of the ozone layer by 2065.

The most important cause of this recovery is, and has been, the effective management of ozone depleting substances. Australia's approach has been based on highly successful partnerships between industry, the community and all levels of government and in many cases, we are well ahead of the Protocol requirements.

Split system air conditioners are becoming increasingly popular in Australia and, since the phase out of chlorofluorocarbons (CFCs), the refrigerants in these units are either ozone depleting substances (ODS) in the form of hydrochlorofluorocarbons (HCFCs) or synthetic greenhouse gases (SGGs), mostly hydrofluorocarbons (HFCs). An improperly installed split system could vent these gases to the atmosphere, use significantly more energy and be significantly more expensive to operate than a properly installed unit.

The best way to ensure that a split system is properly installed is for it to be installed by a licensed technician. Indeed, it is illegal in Australia for anyone other than a licensed technician to undertake such an installation. Despite these restrictions, the Australian Government and the refrigeration and air conditioning industry are concerned about the apparently high levels of illegal installation in Australia and the consequent harm done to the environment. The purpose of this paper is to explore ways of ensuring that only licensed technicians complete this work.

This paper will only look at the refrigerant handling component of installation as electrical work should be left to qualified electricians.

Split system air conditioners

Split system air conditioners are fixed units with separate indoor and outdoor sections that are connected by refrigerant piping. The two sections have separate functioning units. The outdoor unit is the compressor and the indoor section is the fan unit.

A correctly installed split system air conditioner will run efficiently and will have minimised or avoided emissions at the time of installation.

Poor installation could not only void the warranty but is likely to increase emissions.

The problem

The vast majority of split systems sold in Australia come pre-charged with an HCFC or HFC refrigerant – substances which are controlled under Australian law. Section 111(1) of the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995* states that ozone depleting and synthetic greenhouse gas refrigerants can only be handled by a licensed technician which means that all installers of split system air conditioners must be licensed. In addition, it appears that controls on the supply of refrigerant that work well in other parts of the refrigeration and air conditioning industry, are not as effective with split systems.

The Australian Government recognises that additional controls on the supply and installation of split systems may be needed to ensure that they are installed only by licensed technicians, thereby ensuring that emissions of ozone depleting substances (ODSs) and synthetic greenhouse gases (SGGs) are minimised.

What should be happening - what is happening

ODSs and the SGGs that are used to replace them are controlled in Australia under the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* and the *Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995*.

Under the Act a pre-charged equipment licence is required to import any refrigeration and air conditioning equipment that contains an HCFC or HFC refrigerant charge.

The end use regulations for the refrigeration and air conditioning sector came into full force on 1 July 2005, replacing sections of state and territory ozone protection legislation.

Under the regulations, it is an offence to:

- handle a refrigerant without an appropriate Refrigerant Handling Licence *and*
- acquire, possess or dispose of refrigerant without a Refrigerant Trading Authorisation.

To be eligible to obtain a licence a person needs to have appropriate qualifications or be able to demonstrate that they have the necessary skills or experience to minimise emissions and competently carry out the work covered by the licence.

In effect, only a person holding a Refrigerant Handling Licence is allowed to install a split system. In many cases, they (or the company they work for) also will need to have a Refrigerant Trading Authorisation in order to have stocks of the gases needed to re-charge or charge a system to the correct pressure.

In practice, evidence from industry suggests that a significant number of installations of split systems are not being done by licence holders and, in many cases, are being done poorly. This can damage equipment, vent refrigerant into the atmosphere and cause the units to run inefficiently; costing the consumer more on their power bill and causing the further unnecessary emission of greenhouse gases.

This has been caused, at least in part, by the very strong expansion of the split systems market in Australia. Originally these systems were expensive items sold primarily through specialist retailers. The units have now become, in some cases, cheaper than the cost of installing them and can be bought from department stores, online through auction houses, from some supermarkets, as well as from the more traditional sources such as electronics retailers. Anecdotal evidence suggests that end-users are increasingly attempting DIY installation or engaging unlicensed people. It has been suggested that this is occurring because a licensed installation is too expensive (compared to the price of the unit) and there are not enough licensed installers available to meet demand during peak periods.

What could be done

Outlined below are five models designed to improve compliance with the regulations. These are suggested as additions to, rather than replacements for, the current regulations.

These are by no means the only possibilities. Stakeholders are invited to suggest alternative solutions or refinement to the existing solutions by submitting a comment on this paper to the Department of the Environment and Water Resources using the contact details on page 1.

Solutions do not necessarily have to involve further regulation. Non-regulatory options to improve compliance are also welcome.

Option 1 – payment for installation at the time of purchase

This option requires the end-user to pay for installation at the same time as purchasing the air conditioner. It also obliges the retailer (or supplier) not to sell a split system without including installation by a licensed refrigerant handler (LRH).

How it could work

- All retailers that sell split systems would register with the regulator.
- Retailers would need to develop relationships with an LRH in their area.
- The customer would be obliged to arrange and pay for installation through the retailer at the time of purchase.
- Retailers would be obliged to maintain records of all units sold and hold them for inspection or provide reports to the regulator on a regular basis.

Benefits

- The consumer is protected through the use of an appropriately skilled installer and future warranty claims are not jeopardised.
- The manufacturer and retailer are protected from unnecessary warranty claims.
- All sales of split systems would be accompanied by licensed installation.
- All split systems installed are traceable.
- Installers can be held accountable for the installation of every unit.

Drawbacks and problems

- Not all sales are made in person. There is an online market for split systems and online retailers, especially non-specialist auction houses and the like, so it may be difficult to regulate effectively.
- The purchaser of an item may not necessarily be the end user. For example, a developer might buy items in bulk for installation in a block of units or similar and may on-sell unused items.
- All retailers of split systems will require registration and registration might require application fees to cover administration costs.
- All retailers will be required to complete reports to comply with registration regulations. There will be costs associated with compliance.
- Relationships between retailers and LRHs might lead to preferred or exclusive supplier arrangements which might lock other suppliers out of the market. Such relationships

might become forms of Third Line Forcing in contravention of s47(6) of the *Trade Practice Act 1974*¹.

- The large number of retailers in Australia leads to questions about the capacity of the regulator to ensure that all vendors of split systems are included on the register.

¹ Third Line Forcing occurs when a person (or organisation) sells something to another person on the condition that they also purchase a good or service from a third party.

Option 2 – restricted specialist retailers

This option requires the sale of split system air conditioners to be restricted to registered, specialist retailers. It would need to work in conjunction with the requirements of Option 1 (above).

How it could work

- Retailers that want to sell split systems would need to demonstrate their competence and ability to ensure compliance with the installation requirements and would have to register with the government or industry body.
- It would be an offence for unlicensed people or organisations to sell split systems AND/OR wholesalers and importers to supply split systems to unlicensed people for resale.
- Registered retailers would need to comply with the requirements of Option 1.

Benefits

- The number of licensed retailers would be limited and more manageable from a compliance point of view than in Option 1.
- Specialist retailers would be able to provide better advice to customers on the appropriate system for their needs, potentially saving money in both upfront purchase price and ongoing running costs.
- See the benefits listed for Option 1.

Drawbacks and problems

- The range of products and providers in the marketplace would be limited, perhaps leading to less choice for the consumer and increased costs through reduced competition.
- The availability of split systems in rural and regional areas might be restricted.
- The size of the range of potential unlicensed retailers is not reduced, increasing the cost and lowering the efficacy of enforcement.
- See the drawbacks listed for Option 1.

Option 3 – voiding warranties for unlicensed installations

This option puts pressure on the end-user to ensure installation by an LRH by making it a condition for warranty repairs or replacements.

How it could work

- It would become an offence to honour the warranty on a split system not installed by an LRH.
- Manufacturers, perhaps through retailers at the point of sale, would advise customers that warranty or compliance certificates are invalid unless signed by a licensed technician.
- The installer would complete an installation report, which would then be returned to the manufacturer, so they can note that the warranty is valid. The report would include the technician's name and licence number, as well as the unit serial number. If the report were not completed and returned to the manufacturer prior to any warranty claim being made, the warranty would be voided.
- A mechanism would be developed to allow end-users and manufacturers to check that technicians held the appropriate licence.

Benefits

- There is no need to register retailers or monitor individual sales as in Options 1 and 2 lowering administration and compliance costs and complexity.
- Competition amongst LRHs is maintained, increasing choice and potentially lowering costs for consumers.
- The impact on manufacturers of warranty repairs prompted by poor quality, unlicensed installation, is lowered.

Drawbacks and problems

- The reputation of manufacturers who deny warranty service may be damaged.
- Compliance costs are transferred to manufacturers to maintain records of licensed installations.
- Problems may be created with warranties and Part 5A of the *Trade Practices Act 1974*. For example, if a unit was installed by an unlicensed operator and there was a fault but the fault was not due to the installation, could the warranty still be invalidated? This is probably not compatible with the requirements of the *Trade Practices Act* in that the basic warranty implicit in all sales of goods cannot be voided.

Option 4 - nitrogen charge regulation

A nitrogen charge regulation would require that all split systems be sold with a nitrogen (or other inert gas) holding charge rather than with a refrigerant charge.

How it could work

- The sale of split systems containing anything other than a nitrogen holding charge would become an offence.
- The customer would be advised at the point of sale that the system did not contain refrigerant, and that to make the unit work an LRH would need to be engaged to install the unit, at which time the appropriate charge of refrigerant would be added.
- The LRH would install the unit and charge it with gas at the same time.

Benefits

- The focus is shifted from attempting to control the units to controlling the gas. This is much easier and carries a much lower compliance cost for government and industry.
- End use regulations controlling the purchase and sale of refrigerants are already in place and existing enforcement mechanisms could be used – lowering administrative costs.
- The risk of gas leaking from units damaged in transit or storage is removed.

Drawbacks and problems

- The cost of installation to the customer may increase by a small amount as they would need to purchase the gas at a retail price.
- The cost of split system air conditioners may increase for consumers because special steps would need to be taken to de-gas systems already charged during manufacture.
- Some manufacturers may withdraw from the Australian market as the costs of compliance could make participation in Australia's relatively small market unviable.
- Broad compliance checks of retailers would be required to ensure that units had not been re-gassed between import (or manufacture) and retail stages. Similarly to Options 1 and 2, this could carry relatively high compliance and enforcement costs especially as individual units might have to be tested.
- Full refrigerant charges may be vented to the atmosphere overseas as unscrupulous manufacturers adapted production line pre-charged units for the Australian market.
- The quality of products could be compromised because the charge in a pre-charged unit is more finely calibrated during manufacture than is possible in the field.

Option 5 - pre-paid installation fund

An amount (which should be at least two thirds of the average price of an installation) would be paid per unit by the importer or manufacturer into an industry fund. This cost would be passed down the line to the consumer who is given the amount worth of installation by a licensed refrigerant handler (LRH). The LRH claims the amount from the industry fund.

How it could work

Option A

At the point of manufacture, a serial numbered sticker would be attached to each unit (at the same time as the Minimum Energy Performance Standards (MEPS) sticker). It could include the elements in the sample on the next page.

At the time of import, the importer is liable for the amount per split-system imported. This would be paid quarterly, at the same time as the refrigerant levy, to a special-purpose industry fund.

OR

Option B

At the point of import, a serial numbered sticker would be attached to each box. The stickers would have been purchased from the regulator for the amount each. It would be an offence to supply (or offer to supply etc) a split system without such a sticker. It could include the elements in the sample below.

Options A and B continue

The sticker serial numbers would be registered on a database, maintained by the regulator, to be acquitted firstly against the levy paid and ultimately against the claim made by the LRH. This database would be partially searchable by the public and by LRHs to ensure that the rebate had not already been claimed for a particular split system unit.

The importer would pass the amount cost down the line to the wholesaler or the retailer as appropriate. In the end, the cost would be passed on to the end-user as part of the purchase price of the unit.

When an LRH installs the unit, they give the consumer the face value of the sticker as a discount on the price of the installation.

The LRH completes an installation docket which includes the serial number from the sticker, their licence details, the name and contact phone number of the person for whom they installed the unit, and the address at which the unit was installed. The docket could be an original and two carbon copies. The original is returned to the regulator administering the programme and this amount is then reimbursed to the LRH. The second copy is given to the customer as their record of the installation (possibly also as the tax invoice for the work) and the third copy is retained in the book as a record for the installer.

It may be possible for the LRH to claim the rebate through a web-enabled database and submit original dockets periodically to acquit the online claims and for auditing.

Note: This is just a sample to illustrate Option 5. This is not an authorised design nor should it be implied that the Australian Government will be using this or any other label design in the future.



Australian Government
**Department of the Environment
and Water Resources**

This unit contains refrigerant and MUST be installed by a licensed refrigerant handler.

Tell the customer that they have already paid the first \$x of the cost of installation and can only get this back through the holder of a refrigerant handling licence.

Outline the benefits of using a licensed refrigerant handler (other than getting the money back).

Get your money's worth; use a licensed refrigerant handler to install this unit.

To find a licensed refrigerant handler in your area, log on to

<http://www.arctick.org/index.php>

Benefits

- The end-user has a vested interest in compliance as they have already paid for most of the installation.
- Only an LRH can access money in the special fund, giving the end-user a vested interest in having the unit installed legally.
- Compliance is relatively easy to ensure because the only two things required are a sticker on a product sold and a truthful installation docket. The first is verifiable through visual inspection, the second auditable through having the contact details of the end-user.
- Compliance by an LRH can be audited through the collected details of the end-user.
- Compliance by importers can be audited against the reports required by their pre-charged equipment licence.

Drawbacks and problems

- This requires the creation and maintenance of a database, partially accessible online and would require industry or government funding.
- Importers (manufacturers) and retailers would carry financial burdens until they on-sold units.
- This option delays part of the payment for service for LRHs. The system would need to ensure prompt reimbursement.
- It may create GST issues. The amount is not part of the value of the goods being provided at each step in the supply chain, it is part of the value of the service being provided by the LRH. For GST purposes, this option would need to ensure that the installation amount was not included as part of the price of the unit.
- It would require the gathering and storing of personal information of the end-user. Privacy and consent issues would need to be addressed and rules would need to be created around the collection, storage and use of the information.
- A monitoring and compliance mechanism would be needed within the industry body or government. Powers would need to be clarified and costs met.
- This option may create a market for uncharged units being imported (which would not require a sticker), then being charged with refrigerant once in the country. They could then be sold cheaper than units with the sticker. This may be addressed through broadening the scheme to include all split system units regardless of the charge, if any, that they contain.

How any changes will be made

The development of any new regulations, if they are required, will be undertaken in close consultation with all the affected sectors of the industry and other stakeholders.

The industry will be given ample notice of any new requirements and sufficient time to make the changes to business processes to comply.

We need your feedback

The options outlined in this discussion paper provide a starting point for a system which will protect our environment and the air conditioning and refrigeration industry.

Good government policy that benefits industry, the consumer and the environment must be based on sound information. Please take the time to consider the options contained in this paper and make a submission.

Please write to us or email your thoughts to:

Chris Young
Ozone and Synthetic Gas Team
GPO Box 787
Canberra ACT 2601
split-systems@environment.gov.au

By no later than 5pm Canberra time on Friday 13 April 2006.

Glossary

Handling	The sale, purchase, storage and transport of <i>scheduled substances</i> .
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
LRH (Licensed Refrigerant Handler)	A person holding a Refrigerant Handling Licence in accordance with the regulations of the <i>Ozone Protection and Synthetic Greenhouse Gas Management Act 1989 (Cth)</i> .
ODS (ozone depleting substance)	Any substance deemed to be a substance that either individually, or in combination with other substances causes the destruction of stratospheric ozone; and included in the schedules to the Act.
SGG (synthetic greenhouse gas)	The following gases are defined as synthetic greenhouse gases: <ul style="list-style-type: none">• Hydrofluorocarbons (HFCs),• Perfluorocarbons (PFCs).