

Environmental protection controls on methyl bromide

Kathleen Mackie

Environment Australia, Sustainable Industries and Atmosphere Division, GPO Box 787, Canberra, ACT 2601

Abstract. The developed world has made great inroads into reducing the use of many ozone-depleting substances since 1987, when countries signed up to the Montreal Protocol on Substances that Deplete the Ozone Layer. Reductions in the use of damaging substances such as chlorofluorocarbons (CFCs) have been remarkably swift.

In the case of methyl bromide, the rate of reduction in its use has necessarily been more gradual. Its quarantine use, such as for treatment of stored grain before export, has so far been exempt from any phase-out under the Protocol. Nevertheless, with the increasing availability of viable alternatives in a range of applications, there is mounting international pressure to restrict these uses.

This paper summarises the potential international controls on the use of methyl bromide, and on actions the stored grains industry and government can explore to responsibly manage its use and prepare for any phase-out.

Methyl bromide and the Montreal Protocol

Methyl bromide is an ozone-depleting substance regulated under the Montreal Protocol on Substances that Deplete the Ozone Layer, which is a United Nations treaty. Australia is a party to the Protocol.

In 1995, the parties to the Protocol voted to phase out some uses of methyl bromide by 2005, predominantly its use in horticulture as a pre-planting soil fumigant. It was perceived at that time that alternatives to methyl bromide were not readily available for quarantine and pre-shipment (QPS) fumigations. As a result, QPS uses of methyl bromide were exempted from the 2005 phase-out. Now, however, there is growing international pressure for QPS uses to be limited as alternative treatments progressively become more readily available and the ever-increasing use of methyl bromide for QPS poses a growing threat to the ozone layer's recovery. This paper focuses primarily on this rising pressure for controls on QPS use, particularly in terms of what the grain storage industry and the Commonwealth Government will need to do to respond to it.

However, a related issue — of some limited non-QPS use by some grains storers, which may be subject to the 2005 phase-out — first requires to be explored briefly.

Non-QPS uses of methyl bromide: 2005 phase-out

Any methyl bromide consumer whose use of the substance does not fall within the Montreal Protocol's definition of QPS uses needs to be aware that such uses are being phased out from 1 January 2005. They also need to be aware that

Environment Australia is running a process whereby they can seek a formal exemption from that phase-out, and that the closing date for this is rapidly approaching.

The Montreal Protocol defines QPS uses of methyl bromide as follows:

Quarantine applications with respect to methyl bromide, are treatments to prevent the introduction, establishment and/or spread of quarantine pests (including diseases) or to ensure their official control, where:

- i. Official control is that performed by, or authorised by, a national plant, animal or environmental protection or health authority;*
- ii. Quarantine pests are pests of potential importance to the areas endangered thereby and not yet present there, or present but not widely distributed and being officially controlled.*

Pre-shipment applications are those non-quarantine applications applied within 21 days prior to export to meet the official requirements of the importing country or existing official requirements of the exporting country. Official requirements are those which are performed by, or authorized by, a national plant, animal, environmental, health or stored product authority.

Significantly, the definition for quarantine uses of methyl bromide stipulates that the 'quarantine control' must be an *official government control*. This is an important distinction: fumigations to meet only commercial or contractual requirements do not fall within this definition.

Similarly, pre-shipment applications must only be used to meet official government requirements. They must also

take place within 21 days before the export of the treated product.

For any consumer of methyl bromide whose use of the substance does not fall within these definitions, it is vital for them to note that such uses are to be phased out in Australia from 2005. Where the distinction between QPS and non-QPS uses is not clear, Environment Australia's Ozone Protection Section can assist with determining into which category a particular use falls.

QPS uses of methyl bromide

There are two main reasons for the rising international pressure against QPS uses of methyl bromide: the emergence of alternatives, and a global increase in QPS consumption in recent years.

Global increases in QPS consumption of methyl bromide have been mirrored within Australia. As shown in Figure 1, the amount of methyl bromide used for QPS purposes has risen dramatically in the past seven years. By 2000, Australia's total domestic consumption amounted to almost two-and-a-half times the amount consumed in 1996. (The reduction in use over the past two years is at least partly due to the impact of drought on crop production and export volumes.)

Of course, there are many valid justifications for QPS uses of methyl bromide. While there may be alternatives to its use, those alternatives are not always feasible. For example, while phosphine can be used to fumigate stored grain, pests are becoming increasingly resistant to it, and phosphine fumigations take much longer to perform, a serious economic factor for many operators.

But there is a view by some parties to the Montreal Protocol that introducing phase-out obligations would be useful in providing the incentive required for industry and governments to focus more intently on developing and moving to alternatives. There have already been formal

proposals in the Montreal Protocol for QPS uses to be restricted.

In 1998, the European Community tabled a proposal in the Protocol for QPS consumption to be frozen. Australia, together with several other parties, strongly opposed the proposal, which was ultimately unsuccessful.

Nevertheless, as a compromise, the parties instructed the Protocol's technical advisory bodies to make an evaluation of the availability of alternatives for QPS uses. This evaluation has been completed. It acknowledges that significant hurdles apply where an industry is attempting to move to an alternative. These include the registration process, and difficulties in obtaining regulatory acceptance from government agencies in the countries involved. However, it also identifies available alternatives for a broad range of QPS uses, a factor that is likely to maintain the pressure for QPS uses to be reduced.

All industry sectors in Australia using methyl bromide for QPS need to be prepared for any phase-out proposals. The Commonwealth Government also needs to understand the issues facing Australian industry, in order to be able to form a negotiation position to take to the Montreal Protocol. As a general principle, Environment Australia acknowledges that any international proposal for a freeze or phase-out of QPS uses needs to take into account the *actual* capacity of methyl bromide users to move to alternatives within a suggested time frame. Drawing on its broad knowledge of the circumstances faced by at least some industries in Australia, Environment Australia is not certain that any near-term phase-out could reasonably be accommodated in Australia at this stage.

Environment Australia's intention is therefore to work one-on-one with each of the sectors in Australia using methyl bromide for QPS, and determine with them what scope they may have for reducing their use, and what problems they may face in achieving such a reduction.

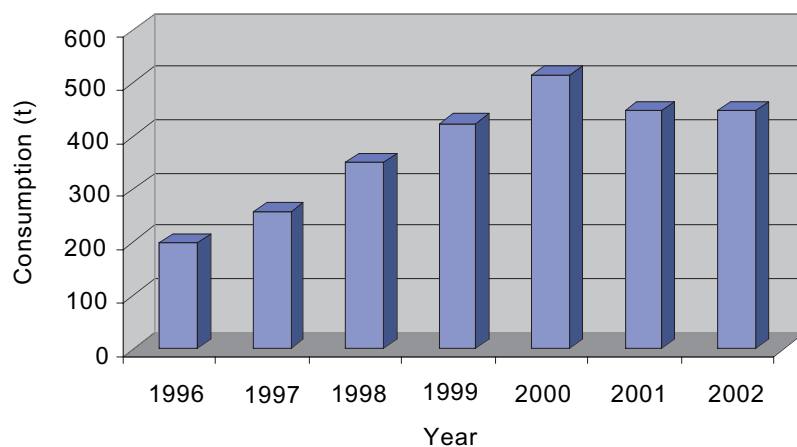


Figure 1. Amounts of methyl bromide used for quarantine and pre-shipment fumigations in Australia, 1996–2002.

QPS use in Australian grain storage

The figures for methyl bromide use in Table 1 were gathered during a survey of fumigators and distributors conducted in 2001 for the Commonwealth Department of Agriculture, Fisheries and Forestry Australia. Because not all distributors and fumigators agreed to take part in the survey, there are some gaps in the data, but it provides a useful indicative picture nonetheless.

The data suggest the greatest uses of methyl bromide for QPS fumigations are associated with the export of grains, cottonseed and hay.

At the time of this conference, Environment Australia had already begun discussions with some of the larger operators in the grains export industry to determine what scope might exist for a transition to the use of alternative treatments in their grains storage. These discussions form part of a broader framework.

A draft *Quarantine and pre-shipment strategy for methyl bromide* was previously prepared for Environment Australia by an independent consultant. While that draft provided a useful starting point, Environment Australia has noted a range of concerns from industry about the recommendations it proposed for particular industry sectors, and the ways that they could reduce their use or emissions.

Environment Australia is therefore now starting a process of liaising directly with specific industry sectors to quantify their use methyl bromide, and to identify what problems there might be with alternatives, what government might be able to do to assist with tackling those problems, and what steps industry itself might be able to take to tackle them.

Environment Australia intends to develop an initial 12-month agreement with each of the sectors affected, agreeing on steps that both industry and the Commonwealth can take during that period to explore and quantify possible reduction measures. At the end of the 12 months, Environment Australia will revisit the agreement with each sector, and determine at that time whether or not it may be appropriate to adopt short, medium or long-term reduction targets for that sector.

In the case of the stored grains industry, Environment Australia has already started liaising with some of the bulk handlers, namely Grainco, Graincorp and Ausbulk.

Clearly, however, it is vital to ensure that all relevant parties in the grains storage industry are included in such consultations. Environment Australia therefore intends to convene a round-table meeting in the second half of the 2003 calendar year to focus on this issue. The round table will include representatives from relevant government agencies, such as Environment Australia and the Australian Quarantine and Inspection Service, as well as the broadest possible range of industry operators with a direct interest in this issue.

Any company using methyl bromide for QPS treatments of grains is strongly urged to contact Environment Australia as soon as possible, and to organise to participate in this round table.

Possible regulation of end use by Environment Australia

At the time of this conference, a bill was before Commonwealth parliament proposing a number of changes to the *Ozone Protection Act*. These include a proposal to enable the Commonwealth Government to develop and implement nationally uniform end-use regulations of ozone-depleting substances, including methyl bromide. If the bill is passed, Environment Australia's goal will be to introduce end-use regulations on methyl bromide before the end of 2004.

Over the next 6–8 months, Environment Australia intends to consult with industry on the appropriate form of these new controls. At this stage, Environment Australia proposes the controls could include a requirement for distributors and end users to report who is using imported methyl bromide, and for what purposes. This would allow the Commonwealth Government to better identify precisely what quantities are being consumed by specific industry sectors.

Depending on industry sectors' performance in assessing the potential for reducing their use emissions, Environment Australia could also consider imposing controls on the quantities that can be consumed by specific industry sectors. For example, 2–3 years from now, Environment Australia might be able to identify with a particular sector an agreed reduction target, which could then be implemented through regulation. Alternatively, if

Table 1. Estimated percentages of QPS methyl bromide use in Australia (2000).

Exports	%	Imports	%
Grains	28.1	Timber packaging	8.4
Cottonseed	21.8	Wood furniture	5.4
Hay	12.6	Timber	3.4
Rice	5.4	Fresh fruits & vegetables	1.7
Fresh fruits & vegetables	1.2	Machinery and parts	1.7
Dried nuts & fruits	1.3	Cut flowers	1.6
Timber packaging	0.9		

there are any industry sectors that do not appear to be making reasonable efforts to explore and move to alternatives, Environment Australia might also consider imposing restrictions on their maximum consumption quantities. It should be stressed, however, that this is being identified now only as an option; the Commonwealth Government will have to work closely with affected sectors, such as the stored grain industry, in determining what sort of regulations may ultimately be enacted.

Environment Australia will be providing interested industry sectors with the opportunity to participate in the development of the proposed regulations in the near future. Environment Australia's website will be kept updated with information on the consultations, including dates and locations, and instructions on how to get involved, at <http://www.ea.gov.au/atmosphere/ozone/>.

