Federated States of Micronesia

NATIONAL COMPLIANCE ACTION PLAN

to implement the

Montreal Protocol on Substances that Deplete the Ozone Layer

April 2003

Prepared by

FSM Department of Economic Affairs
with assistance from
the South Pacific Regional Environment Programme (SPREP)

Foreword

On behalf of the Government of the Federated States of Micronesia (FSM) and as Chairman of the President's Council on Environment Management and Sustainable Development, I am pleased to present the Federated States of Micronesia's National Compliance Action Plan, which is the basis for the phasing out of import of all ozone depleting substances (ODS) in the FSM by 2005.

Phasing out of ODS is an objective of the 1985 Vienna Convention on which the FSM became a Party on August 3, 1994. FSM has also subsequently ratified all ensuing Protocol and amendments thereto as a gesture of its commitment to the Convention's objectives.

The Department of Economic Affairs with the assistance from the South Pacific Regional Environment Programme, initiated two workshops for the Government and the private sector. These workshops took place in Pohnpei, which led to the development of this National Compliance Action Plan as part of the Pacific Regional Strategy to phase out ODS.

Evidently, the identified ODS in use in the FSM are the chlorofluorocarbons (CFCs), commonly known as Freon, hydro chlorofluorocarbons (HCFCs) which are the low ozone-depleting replacements for CFCs, and methyl bromide used for quarantine fumigation. Although the FSM's consumption of ODS has reduced in recent years with the rise in the use of alternative products, FSM would need to pass regulations to prohibit the import of controlled substances to ensure that FSM remains in compliance with its obligations.

With these findings, I endorse full support of all the National Government agencies to assist in the implementation of this Plan.

Endorsed this 21st day of May, 2003

Redley Killion
Vice President/Chairman, Sustainable Development Council

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1.0 INTRODUCTION

The Federated States of Micronesia (FSM) is a grouping of 607 small islands in the Western Pacific about 2,500 miles south west of the U.S. State of Hawaii, just above the Equator. FSM comprises what has been known generally as the Eastern and Western Caroline Islands. FSM is a young, independent nation created from part of the former United Nations Trust Territory of the Pacific Islands previously administered by the United States. The FSM concluded a Compact of Free Association with the United States in 1986 and became a member of the United Nations in 1991.

The diverse habitats and species, which characterize these islands, have always had a profound influence on the Micronesian peoples and their cultures. The FSM is comprised of four states: Chuuk, Kosrae, Pohnpei and Yap. The country's total land area amounts to only 262 square miles, but the territories of the FSM also include an estimated 1,506 square miles of lagoons and an Exclusive Economic Zone totaling 1,149,508 square miles. The geographic range of the FSM covers 1,700 miles from east (the State of Kosrae) to west (the State of Yap). Each of the four States centers around one or more "high islands" and all but Kosrae include numerous atolls.

This geographic dispersion, high ecological variety and the rich, cultural diversity within FSM are important factors in considering how the nation embraces the challenges and opportunities of economic development and environmental stewardship - including the nation's response to climate change and the Montreal Protocol. There are marked differences among and even within the four States, reflecting a variety of natural conditions and social structures which have evolved over thousands of years since the islands were first settled. Each State is concerned with the demands of its main island population center and rural areas as well as the unique requirements of its outer islands which can, themselves, differ markedly in terms of demographics, economics and culture. Each State has devised its own strategies for sustainable development, while an integrated perspective for the federation is provided by the national government.

The total population of FSM in 2000 was 107,008 (2000 Population and Housing Census Report). Official projections in the 1999 Statistical Year Book are that in 2003 the population is 121,942.

The state of Chuuk has the largest population in FSM with around half of the country's population. The island of Pohnpei is the site of the National Government, which is located in a purpose built center in Palikir some distance from the provincial capital of Kolonia.

Table 1.1 Populations and GDP for the States

	2001 projected Population	Percentage of Population	GDP (1996) US$ Million	Percentage of National GDP (1996)
Kosrae	8,215	7%	$15.6	9%
Pohnpei	38,922	31%	$72	40%
Chuuk	62,186	52%	$55.2	30%
Yap	12,619	10%	$22.4	12%
Total All FSM	117,257	100%	$181.6*	

* Includes US$16.4 million economic activity by National Government
(Source 1999 Statistical Year Book)

FSM's GDP in 1996 (the last year data is available for) was estimated to be US$181.6 million. Development is not uniform between the states, with Pohnpei and Chuuk having the greatest economic activity. The majority of economic activity is in the government services sector (41%), retail and wholesale activities (22%) and agriculture and forestry (17%). Tourism and fisheries are also major export earners but these have declined in importance recently, partly as a result of the Asian economic crisis in the late 1990's. Although the size of the fishing fleet has reportedly dropped significantly since 1995, there is still a relatively large fishing industry in FSM.

FSM has strong trading relations with the United States (including Guam and Hawaii), Japan and Australia. Most consumer goods, such as white-ware, come from the US or Japan. There is occasional trade in second hand Japanese goods including white-ware as well as cars. The extent of the trade in second-hand white-ware could not be identified.

Because FSM is a group of small islands, corrosion from salt air is a problem. Accordingly, such steel products as cars, refrigerators and air-conditioners, suffer from corrosion problems and require constant maintenance. The average lifespan of a new car in FSM is ten years after arrival in the country.

1.1 Purpose

As part of the process of meeting its obligations under the Protocol, the Government of FSM, in collaboration with the South Pacific Environment Programme (SPREP) Regional Consultant, has developed this National Compliance Action Plan (NCAP). The NCAP was prepared to reflect the commitment of the Government of FSM to comply with its obligations under the Montreal Protocol.

For that purpose, data on consumption of ODS is analyzed and presented as well as a strategy containing concrete actions to ensure timely phasing out. A detailed Action Plan for phasing out ODS has been elaborated and the specific projects to achieve this task have also been identified. This document provides the basis for monitoring progress of implementation of the Montreal Protocol in FSM.

FSM intends to be actively involved in the Pacific Regional Strategy to implement the Montreal Protocol in the Pacific region. Most of the activities outlined in this Plan will be funded through the Regional Strategy even though they are included in the NCAP. The budget for all activities is therefore presented as part of the Regional Strategy and not for this NCAP.

Specifically the NCAP:

- Is a reflection of the commitment of the Government of FSM to achieve compliance with its obligations under the Montreal Protocol;
- Provides an assessment of the consumption of ODS in FSM from 1995 to 2010;
- Identifies the actions that the Government intends to take in order to fulfill its obligations under the Protocol; and
- Identifies the nature and extent of the assistance sought by the Government of FSM from the Multilateral Fund to support its efforts to protect the ozone layer and meet the Protocol's objectives.

1.2 Status

FSM became a Party to the 1985 Vienna Convention on 3 August 1994 and a Party to the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer on 6 September 1995. It ratified all of the four amendments: the 1990 London Amendment; the 1992 Copenhagen Amendment; the 1997 Montreal Amendment; and the 1999 Beijing Amendment to the Montreal Protocol on 27 December 2001.

Accordingly, it is required to control the consumption of Chlorofluorocarbons (CFCs), halons, methyl chloroform (1,1,1-trichloroethane), carbon tetrachloride, hydrochlorofluorocarbons (HCFCs), hydrobromofluorocarbons (HBFCs), "other halogenated CFCs" and methyl bromide at this time.

FSM is classified as operating under Article 5 of the Montreal Protocol and as such is entitled to assistance from the Multilateral Fund to comply with its obligations. However, FSM does not produce or export ODS. All ODS are imported.

According to the data presented in this NCAP and submitted to the Ozone Secretariat, FSM must freeze its consumption of CFCs at 1.22 ODP tones from 1 July 1999.

In 2000 imports of CFCs had fallen to 1.041 tons, which are below the maximum consumption level of 1.22 ODP tons allowable under the Protocol (see Table 1.2 below).

Table 1.2 Maximum allowable consumption under Montreal Protocol

Year	Montreal Protocol percentage reduction	Maximum consumption (ODP tons)
Base Year	0%	1.22
2000	0%	1.22
2001	0%	1.22
2002	0%	1.22
2003	0%	1.22
2004	0%	1.22
2005	50%	0.61
2006	50%	0.61
2007	85%	0.18
2008	85%	0.18
2009	85%	0.18
2010	100%	0.00

Based on the data in table 1.2 and 2.1, the average consumption of CFCs for 1995-97 was equivalent to per 0.01 kg capita (population 117,257). This is well below the threshold to receive assistance.

1.3 Assistance Received

FSM has not received any financial assistance from the Multilateral Fund or any other agency for phase-out activities.

The South Pacific Regional Environment Programme (SPREP) through its regional program for the implementation of the Montreal Protocol in the Pacific region employed a regional consultant to assist with the development of the NCAP in FSM. The assistance includes:

- Two one-day workshops for government departments and small industrial enterprises conducted in Pohnpei by the SPREP Regional Consultant, Mr. Iain McGlinchy. Findings and data from the report on the consultant's visit were used to develop the NCAP.

- A representative from FSM was invited to attend a three-day workshop held in Apia, Samoa in April 2001 on the implementation of the Montreal Protocol in the Pacific with the assistance of the New Zealand Government, but the representative was unable to participate in such a workshop.

2.0 CURRENT SITUATION

2.1 Current and Forecast Consumption

2.1.1 Current Consumption

As far as it can be determined, aside from the use of methyl bromide as a fumigant, the consumption of ozone depleting substances (ODS) in FSM is exclusively in the refrigeration and air conditioning sector. The only controlled substances in use in FSM are CFCs, HCFCs and methyl bromide. There are no manufacturing facilities using any ozone depleting substances in the country. All use of the controlled substances is in the servicing of existing equipment.

NOTE: When preparing this Plan it was only possible for the consultant to visit Pohnpei state. The consultant was unable to collect data on consumption of any ODS in the other three states. Because of this lack of data, total national consumption has been estimated based on state GDP figures (shown in the table 1.1 above), using Pohnpei as the reference. It is assumed that the US$16.4 million activity of the National Government is uniformly distributed across all four states. Accordingly, Pohnpei State represents 44% of all economic activity and it is assumed, consumes 44% of all ODS consumption. This calculation is likely to overestimate FSM's consumption of CFC-12 because although Pohnpei only represents 44% of economic activity, it has more than 60% of the vehicle fleet – which are the largest users of CFC refrigerant in the country. There is little or no transshipment of ODS between the states, so there is no "double counting" by using this technique.

Chlorofluorocarbons (CFCs)

The only CFC identified as still being used in Pohnpei State is CFC-12. In past years CFC-502 (a mixture of roughly half CFC-115 and half HCFC-22) has been used as the refrigerant for freezing operations, but no consumption (import) of this refrigerant was identified in recent years. A few pieces of supermarket equipment are known to still use this substance. CFC-11 has also been imported in past years for use as a solvent, but there is no reported consumption of this CFC since 1996.

The following are the best estimates of FSM's consumption based on the survey carried out during the visit by the SPREP consultant. These amounts have been discussed with industry representatives in Pohnpei and are considered a good estimate of past consumption.

Table 2.1 Consumption of CFCs in FSM (metric tons)[1]

Substance	ODP	1995	1996	1997	1998	1999	2000
CFC-11	1.0	0.103	-	-	-	-	-
CFC-12	1.0	1.072	1.052	1.082	0.825	1.206	1.041
CFC-115	0.6	0.264	0.158	0.158	0.053	-	-
ODP Tons		**1.33**	**1.15**	**1.18**	**0.86**	**1.21**	**1.04**

[1] As discussed in the text above, these figures have been calculated by dividing imports for Pohnpei State by 44% to extrapolate for the whole country.
There is no known data for before 1995.

Hydrochlorofluorocarbons (HCFCs)

Although Hydrochlorofluorocarbons (HCFCs) are ozone depleting substances and controlled by the Montreal Protocol, FSM is only obliged to report the total quantity imported into FSM each year from 2001, which is the year in which it ratified 1992 Copenhagen Amendment. FSM has submitted the following data to the Ozone Secretariat in Nairobi.

Table 2.2 Consumption of HCFCs in FSM[1]

Year		ODP	1998	1999	2000
Metric Tons	HCFC-22	0.055	5.3	4.7	5.2
ODP Tons			0.29	0.26	0.29

[1] As discussed in the text above, these figures have been calculated by dividing imports for Pohnpei State by 44% to extrapolate for the whole country.

The use of HCFCs is far greater than for CFCs because of the presence of a number of large ocean going tuna fishing companies. Foreign owned companies usually purchase their HCFCs elsewhere (e.g. Fiji, Hawaii, Guam), but there are a relatively large number of FSM based companies. There has also been a rise in the use of the HCFC-22 in air conditioning and refrigeration equipment, but this is dwarfed by its use in the Fisheries sector.

As with CFC data, there is no data for imports into states other than Pohnpei. National totals have been calculated by dividing consumption in Pohnpei by 44% to get a national total.

In addition to the import of HCFC-22 there may be a small amount of HCFC being imported as components of mixtures used to service equipment that once used CFCs, but so far this is negligible and none was identified in the survey by the international consultant.

Bulk Halon Consumption

There has not been any consumption of bulk halons in FSM at any time as there are no servicing facilities for halon fire extinguishers in the country. The FSM Telecommunications Corporation reported that all of their major facilities in each state are protected by halon 1301 fixed systems. The company is reported to have some back up stocks of halon in case there is a fire.

There is also a small number of handheld halon fire extinguishers in other locations in FSM, but these are not serviced, or are sent off island for servicing.

Methyl Bromide Consumption

Methyl bromide is used in FSM for quarantine and pre-shipment fumigation. All fumigation is carried out by the Quarantine Services of the FSM Department of Economic Affairs.

There are no national controls on the import or use of methyl bromide, but it is covered by some State level controls. Although there may be controls on the import and use of methyl bromide at the State level, the FSM National Government has yet to produce legislation on this.

The FSM National Government quarantine officials reported that they would normally use approximately 100kg (220lbs) per year of methyl bromide for quarantine fumigation. The National Government Quarantine Office is the only known user of methyl bromide in the nation.

There is no known use of methyl bromide for soil fumigation or pest control in FSM.

As there have been no imports of methyl bromide for any uses other than quarantine and pre-shipment, the total allowable imports for uses other than QPS after 2002 will be zero. The consumption of methyl bromide is not dealt with in the NCAP.

Other ODS Consumption

There is no reported use or consumption of any other ODS, i.e. methyl chloroform, carbon tetrachloride, "other CFCs" and HBFCs. It is extremely unlikely that anyone would wish to export any of these substances to FSM, as there are no facilities likely to use them.

2.1.2 Forecast CFC Consumption

CFC consumption in FSM is dropping as supplies from the US and Japan becomes more costly. However, potential demand remains high, especially in the mobile air-conditioner (MAC) (i.e. vehicle air-conditioning) sector. It is estimated that more than 80% of FSM's current CFC-consumption is for servicing MACs. To forecast future CFC demand it is therefore necessary to look at the potential consumption in the MAC service sector.

The total number of registered vehicles in FSM in 1998 was 7,061 vehicles (1999 Statistical Yearbook). Of these nearly 4,000 (57%) were in Pohnpei State. Chuuk, despite having a larger population than Pohnpei, had only 359 registered vehicles. Assuming linear growth in the size of the fleet since 1998, then the vehicle fleet in 2001 is estimated to be 8,000 vehicles.

It is assumed that 90% of all vehicles registered in FSM before 1995 (the year most car manufacturers switched to HFC-134a in MACs) were fitted with CFC-12 MACs. This is equivalent to 4,800 vehicles. Since that time there has been a large influx of second-hand Japanese vehicles fitted with CFC-12 MACs, so the actual population of vehicles fitted with CFC MACs is likely to have remained static or increased since 1994. Based on international averages, each vehicle normally requires the equivalent of a full charge of refrigerant every two and half years. The average charge is around 800 grams. NB 800 grams is greater than the average size for a car to account for use by larger vehicles such as buses. Given these assumptions, the demand for CFC-12 in the MAC sector should be around 1.5 tons. This is less than the calculated national consumption of 1.04 tons in 2000.

Table 2.3 Maximum CFC-12 Demand Calculation

Number of vehicles on road with CFC-12 MAC	4,800
Assumed charge size (kg)	0.80
Number of years per recharge	2.5
Maximum expected demand for CFC consumption in FSM for MAC servicing	1.536 metric tons
Actual consumption in 2000	1.004 metric tons
Potential increase in demand for CFCs	0.532 metric tons

The difference between calculated demand and actual demand implies that if alternative sources of CFC supplies can be identified, such as from China or the Philippines, FSM's CFC consumption could rise steeply in future years.

It is reasonable to assume that in the absence of regulations to control the quantity of CFC able to be imported or controls on the import of vehicles with CFC MACs, the demand for CFC-12 for servicing MACs would remain at around 1.5 tons per year at least until 2005, when the vehicles with CFC-MACs being imported would be a minimum of ten years old. After that time demand would decline slowly as the vehicle fleet aged.

Table 2.3 Forecast ODS Consumption in ODP tons

Year	Montreal Protocol Maximum Consumption	Forecast Consumption if no other intervention
2001	1.22	1.5
2002	1.22	1.5
2003	1.22	1.5
2004	1.22	1.5
2005	0.61	1.5
2006	0.61	1.4
2007	0.18	1.3
2008	0.18	1.2
2009	0.18	1.1
2010	0.00	1.0

It is clear that assistance to reduce the use of CFCs in FSM's MAC sector will be the highest priority of FSM's NCAP.

2.2 Industry Structure

2.2.1 Importers of ODS into FSM

Refrigerants were imported from a wide range of countries: Singapore, USA, (including Guam and Hawaii), Philippines and India. Most non-ODS refrigerants were being imported from Guam or the mainland United States.

Since the end of 2000 it is reported to be very difficult and expensive to import CFCs from the US or Guam which used to be the dominant suppliers of refrigerants, despite their physical distance. Most local suppliers are now importing from Asian suppliers.

The largest importer of refrigerants in FSM is Ace Hardware. In total, nine companies were identified that import ODS refrigerants into Pohnpei State, although several now only import HCFCs and non-ozone depleting CFC replacements. No information on importers was obtained in other States. The importers identified in Pohnpei are:

- Pohnpei Ace Hardware
- Pohnpei True Value Hardware
- Ambros & Co Inc
- Construction and Power Sources
- PCR Car Repairs
- Pohnpei Fishing Company (HCFC-22 Only)
- Micronesia Longline Fishing Company (MLFC) (HCFC-22 Only)
- Sokehs Shopping Center
- Palm Terrace

There are also reports that a number of small companies may import one-off shipments, but which usually purchase their supplies from one of the major importers. It was not possible to identify the consumption of these shipments in the past years and an allowance has been made for them in the estimates of consumption in 1995-97 presented in table 2.1.

2.2.2 Users of Refrigeration and Air Conditioning Equipment

There is a limited number of industries in FSM and no manufacturing facilities using ODS. As far as can be determined, the only use of CFCs in FSM is solely in the refrigeration and air-conditioning sector. There are no reports of any new equipment being installed using CFCs as the refrigerant in recent years. Therefore all ODS consumption in FSM is for servicing existing refrigeration and air-conditioning equipment.

There are only a few refrigeration and air-conditioning workshops in Pohnpei State. However, the three fishing companies and the larger supermarkets have fulltime staff, working on refrigeration and air-conditioning equipment. At least four private companies and several Government agencies were identified that were involved in servicing refrigeration and air-conditioning equipment. These may occasionally use local contractors for larger jobs. There is no available information on the number of technicians in the other states. Using the state GDP data, it is assumed that there are 9 independent workshops (4/44%) servicing refrigeration and air-conditioning equipment in the country.

Mobile Air-Conditioning Units (MACs)

As noted in section 2.1.2 there are approximately 8,000 vehicles on the road in FSM and a large number of these are fitted with CFC-12 air-conditioning units. In common with many other countries in the Pacific region, and despite driving on the right-hand-side of the road, the vehicle fleet has recently seen a large influx of left-hand-drive second-hand Japanese vehicles. There are also many new and used US assembled vehicles imported into FSM. Residents returning from overseas also bring vehicles into FSM.

According to the auto shops, the loss of refrigerants from vibrations due to the poor condition of the roads, combined with corrosion from the sea air, means that the use of refrigerants to maintain systems is relatively high. Accordingly, this sector represents the largest use with 80- 90% of the use of CFC-12, an estimate of approximately 800 – 900 kg of CFC-12 per year, in FSM.

All servicing of CFC-12 units are carried out with CFC-12. The non-ozone depleting refrigerant HFC-134a is now commonly used in the newer units. It is also used for servicing these vehicles. Consumption of CFC-12 has been rising in Pohnpei as CFCs are used to service the “new” Japanese cars.

Stationary (Building) Air-Conditioning

Only a few buildings in Pohnpei, most noticeably the Telecommunications Facility and the public hospital have centralized air-conditioning systems that use HCFC-22 as the refrigerant. There are no examples of CFC-using air-conditioning equipment in Pohnpei and no reported examples in any of the other states. The CFC-11 reported as imported in 1995 was used for cleaning refrigeration equipment, a process known as flushing where the CFC-11 is used to remove oil, however this practice has ceased now.

Air-conditioning using window units, split systems and in some cases, larger water-cooling units, is very common in public buildings, but rare in private dwellings. The 2000 census reported that only 5% of those houses that had electricity had air-conditioning. The units that are present are imported from a wide range of countries and all are using HCFC-22 as the refrigerant. There is no obligation for FSM to control the imports of HCFCs or equipment using HCFCs at this time.

Commercial Refrigeration

There are six large supermarkets in Kolonia, the main town of Pohnpei, and smaller convenience stores are widespread. Most of the refrigeration units were reported to be using CFCs and HFCF-22. Newly installed units in the supermarkets are using HFC-134a and HCFC-22. Servicing of older equipment is still usually done with CFCs.

There is still a small amount of refrigeration equipment using CFC-502 as the refrigerant and it must be phased-out as a CFC. Globally, the supply of CFC-502 is now very small and many countries can no longer import it. Accordingly, many companies, including those in FSM, have already replaced their older equipment with new equipment using non-ozone-depleting refrigerants. Most new commercial refrigeration equipment now uses the zero-ozone depleting refrigerants R404A. HCFC-22 was also in widespread use for low temperature refrigeration.

During discussions with repair shops and fishing companies in Pohnpei, no equipment were identified that continued to use CFCs as the refrigerant. Discussions about facilities in other states also failed to identify any large commercial refrigeration equipment that still uses CFCs. If any facilities are identified they may be able to be retrofitted to an alternative refrigerant with financial assistance from the Multilateral Fund. If this is necessary a separate application for assistance will be made to the Multilateral Fund.

The Fishing Industry

In addition to international fleets using FSM's ports, there are four major fishing companies in Pohnpei: Pohnpei Fisheries Corporation (PFC), Micronesian Longline Fisheries Corporation (MLFC), National Fisheries Corporation (NFC) and Caroline Fisheries Corporation (CFC), Inc. These companies maintain a range of shore-based freezers, cool store operations and ice-making equipment. It was reported that all freezers are now CFC free, with most now using HCFC as the refrigerant. Caroline Fisheries use ammonia based freezer systems which is also included on their boats. (NB Ammonia is not an ozone-depleting substance or a greenhouse gas. It is a very efficient refrigerant for large scale uses, but has the drawback of being toxic in relatively small quantities. The use of ammonia as a refrigerant is rare in the Pacific.)

Domestic Refrigerators

Domestic refrigerators are common in urban areas, but the 1994 Census reported that only half of the households in FSM had electricity. There is no official data on rates of ownership of refrigerators or changes in the number of households with electricity since 1994. Those refrigerators that sold are mainly imported from the US or Japan and have therefore been CFC-free since 1995. Equipment is also imported from other countries, most noticeably Taiwan. All equipment identified was reported to be CFC-free.

There were no reports of imports of second-hand domestic refrigerators from Japan. These are occurring in other countries where units are sold very cheaply and are often in poor condition when they arrive in the countries. If imports are occurring they are not a regular occurrence.

The FSM National Government will develop regulations to prohibit the import and sale of refrigerators containing CFCs, as their ongoing imports creates a demand for CFCs to service them. Their disposal also creates problems for waste disposal.

Servicing

Servicing of domestic refrigerators and small commercial display cabinets is common. The tropical conditions meant corrosion of the mild steel pipe work, which is a major problem and therefore units had a fairly short life before they needed repairs. The uneven voltage and power shortages also meant compressor failures were relatively common. One technician reported that it was common to re-charge refrigerators every one or two years. Thus, a lifespan of commercial refrigeration equipment in the FSM is less than 5 years.

Servicing of existing equipment is still done with CFC-12 in older units and HFC-134a in the new units. None of the technicians were aware of or had used "service blends" instead of CFCs

2.2.3 Fumigation

FSM has no reported use of methyl bromide for any uses other Quarantine and Pre-Shipment (QPS) uses. As there have been no imports of methyl bromide for any uses, the total allowable imports for uses other than QPS after 2002 will be zero.

2.3 Institutional Framework

The Department of Economic Affairs, Environment and Sustainable Development Unit (SD Unit) is the implementing agency for the Montreal Protocol in FSM. The SD Unit will coordinate the NCAP, formulate and develop appropriate legislation, report to the Montreal Protocol's Ozone Secretariat and Multilateral Fund and participate in public and industry awareness campaigns.

FSM intends to establish a National Committee to review the development and implementation of the NCAP and this will continue to function under the NCAP. The National Committee is currently made up of:

Table 2.4 Composition of FSM National Committee

Offices/Units	Organization
Environment and Sustainable Development Unit	Department of Economic Affairs
Environmental Health Unit	Department of Health, Education & Social Affairs
T3 Program	Department of Health, Education & Social Affairs
Agriculture Unit	Department of Economic Affairs
Multi-lateral Affairs Unit	Department of Foreign Affairs
Legal Affairs	Department of Justice
Customs & Revenue Division	Department of Finance
Fisheries Corporation Representation	Fisheries Industry
Representative	Chuuk State Government
Representative	Yap State Government
Representative	Pohnpei State Government
Representative	Kosrae State Government
Representative	Private Sector

Environment and Sustainable Development Unit (SD Unit)

The Department of Economic Affairs through its Environment and Sustainable Development Unit is the implementing focal point responsible for ensuring the FSM's compliance with the Montreal Protocol and overseeing the development and implementation of the NCAP.

The SD Unit is responsible for managing and implementing activities for the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), and other environmental conventions, protocols, treaties and agreements such as the Vienna Convention on the Protection of the Ozone Layer and the 1987 Montreal Protocol. This Unit is mandated to advise, make recommendations, and formulate policy on matters affecting environmental management and sustainable development initiatives; ensure that the utilization of resources is done in an environmentally sound and sustainable manner that will improve the quality of human life without compromising the ability of future generation to use the same resources; assist in all environmental initiatives within the country and develop an integrated holistic planning approach to the three pillars (such as environment, social and economic) of sustainable development; and monitor and ensure that international responsibilities and obligations of the FSM with regards to ratified conventions, protocols, treaties and agreements that are related to the environment and sustainable development are implemented appropriately.

President's Council on Environmental Management and Sustainable Development (SD Council)

The SD Unit also acts as the Secretariat for the President's Council on Environmental Management and Sustainable Development. On April 11, 1995 the President of the FSM signed Presidential Order 14 establishing a Presidential Advisory Council on Environmental Management and Sustainable Development (SD Council). This Council is the appropriate forum with the mandated responsibility of reviewing proposals for their merits and discussing FSM's environmental and sustainable development concerns. One of the vital functions of the SD Council is to advise and make recommendations to the President on matters affecting the environmental management and sustainable development of the Federated States of Micronesia, including compliance with global environmental commitments and obligations in connection with the UN Commission for Sustainable Development, Agenda 21, the Programme of Action for the Sustainable Development of Small Island Developing States, the Convention on Biological Diversity, the Framework Convention on Climate Change, the Law of the Sea and other international and regional programs and treaties addressing environmental management and sustainable development.

The Sustainable Development Council is comprised of the Office of the President, Department of Economic Affairs, Department of Health, Education and Social Affairs, Department of Foreign Affairs, Department of Justice, National Oceanic Resources Management Authority, Department of Finance and Administration, Department of Transportation, Communication and Infrastructure, Office of Disaster Control, FSM Weather Services Office and all State Environment and Protection Agencies. Other State, National and non-governmental agencies are invited to participate in a non-voting capacity in SD Council activities from time to time by the Chairman.

2.4 Policy Framework

As a party to the Montreal Protocol, FSM has accepted the responsibility to phase out ODS in its national jurisdiction. The policy framework within which the phase out of ODS will be managed is based on four tenants: government restrictions on imports, industry initiated support for new systems and technology, training of service technicians and Customs Officials, and cooperation between government and importers to conduct awareness raising campaigns with the public and private industry.

Controls on the imports of ODS, especially of CFCs and other ODS refrigerants will be prepared under the FSM Environment Protection Act (FSMEPA). Placing bans on ODSs will be developed in a consultative process to minimize economic disruption and ensure support from private industries and the public under the NCAP activities. This NCAP strategy will form the national policy on ozone protection.

2.5 Government and Industry Response

2.5.1 Government Response

The development of the NCAP is the Government's initial response to implement the Montreal Protocol in FSM. It has been prepared in cooperation with the Consultant from SPREP. With the assistance of the consultant, the Government carried out two workshops on the Montreal Protocol.

2.5.2 Industry Response

Because of the trading relationship between FSM and the United States, most technicians, equipment suppliers and owners of major pieces of refrigeration and air-conditioning equipment are aware of the likely phase-out of CFCs. Not all technicians have the skills or knowledge to use the new replacements for CFCs and many companies are unsure how to obtain information on the phase-out and which refrigerants were going to be phased-out.

A number of technicians took part in a two-day course on CFC recovery and recycling and on the use of HCFCs that was conducted in 1995. This was carried out by an Australian organization, known as the AESOP, which is a voluntary program for retired engineers. The 1995 course only covered theory and had no practical component. All technicians have expressed strong interest in being able to attend a new training course on the use of the new non-CFC refrigerants and the conversion of the existing equipment to non-CFC refrigerants.

Virtually all, if not all technicians in Pohnpei were trained in the Philippines. Although there are one or two expatriates from other countries, there are no technicians identified that have trained or worked in the US or Guam.

3.0 IMPLEMENTATION OF THE PHASE OUT STRATEGY

The phase out strategy is an accelerated program under the Montreal Protocol. This strategy is both technologically and economically viable for FSM, provided that the necessary assistance is received. FSM's ODS consumption is already below the Montreal Protocol's limits and continuation of this trend will be ensured with the implementation of these phase-out activities.

3.1 Strategic Statement by the Government

The Federated States of Micronesia is committed to its obligations under the Montreal Protocol and the Vienna Convention and is prepared to undertake an accelerated CFC

phase-out target date of 31 December 2005, in line with other countries in the region as part of the Pacific Regional Strategy.

Adoption of an early phase-out date will send a strong signal of FSM's environmental commitment to the global community. These target goals will be achieved with the support of the Multilateral Fund and the Pacific Regional Project in collaboration with the private and public sectors, civil society, and other government and international agencies.

3.2 Action Plan and Projects under the NCAP

3.2.1 Action Plan

In order to ensure FSM's compliance with the Montreal Protocol the following Action Plan has been developed.

- Maintain compliance with the Montreal Protocol while preparing an economically viable accelerated phase-out program;
- Establish a National Ozone Compliance Center (NOCC) within the SD Unit to co-ordinate, implement, and monitor the phase-out program;
- Prohibit any new activity related to the import, production or use of ODSs in new equipment;
- Ban import of ODS-using and ODS-containing equipment (including new and second-hand domestic refrigerators using CFC-12 as the refrigerant);
- Introduction of controls on the import (and export) of all ODSs (including licensing, taxation and/or quotas as appropriate);
- Strengthening ODS import/export monitoring program by developing a licensing system;
- Consider a system of fiscal incentives/disincentives in favor of non-ODS alternatives and transitional substances;
- Implement and monitor training of customs officers to ensure proper control of import and export of ODSs and information collection and submission;
- Implement and monitor training of refrigeration service technicians in good practices of refrigeration to minimize the use of ODSs and mitigate their emissions into the air during the service of refrigerators; and
- Conduct public awareness campaign on necessity and means for protection of the Ozone Layer of the Earth and the government's commitment to phase out ODSs.

Education, training, legislation, regulations and other incentives will ensure that FSM will continue to meet its commitments under the Montreal Protocol.

3.2.2 Projects

The essential government actions include the assignment of an ODS focal point which will implement and monitor NCAP activities, drafting new or revised legislation and

regulation, conducting public awareness and education campaigns, acquiring new technology, and developing training and licensing programs.

All Projects set out in the Action Plan will be implemented as part of the Pacific Regional Strategy. The budget for these projects is presented as part of the overall Regional Strategy.

National Support

National Support is necessary in order to develop regulations and to carry out the other tasks in the strategy. The Government proposes to hire a part time person to work on developing the regulations and on the other tasks set out in this proposal. Funding for the salary costs and some other costs, such as equipment will be requested from the Multilateral Fund. The Government of FSM will provide office space, some office equipment and administrative support for this position.

The implementation of the NCAP will require the establishment of a National Ozone Compliance Center (NOCC) to be responsible for ensuring that FSM meets its requirements under the Montreal Protocol. Among other things, the Center will establish a FSM National Ozone Committee comprised of other government departments, state officials, public and private sector organizations, and NGOs with interests in the ozone issue to provide policy advice and technical support for the NCAP.

The NOCC will be established under the Environment and Sustainable Development Unit of the Department of Economic Affairs at the FSM National Government. This center will be staffed for two years (2003 – 2005). A position will be established as the equivalent of 37% of a full time position for the two-year term. For the first year, while regulations are being prepared, a greater number of hours may be needed (up to 70% of full time), with less (20% of full time) in the second year. The government may adjust this balance of hours within the overall funding. Following the introduction of legislation, the key tasks would be to manage the import permit system for HCFCs and continue any ongoing public education campaigns. The NOCC would also oversee the development and implementation of the certification scheme for refrigeration technicians.

Legislation and Regulations

In order to be able to comply with the Montreal Protocol and to meet its own goal of a 2005 phase-out target, the Government will need to establish a system to monitor and control CFC imports. This will be done by introducing an import license scheme using the existing laws such as the FSMEPA and administered by the FSM NOCC. New regulations will also be needed to further ensure FSM's compliance through this license scheme.

The license scheme will prohibit the import of all CFCs, HCFCs and all other ozone depleting substances unless the NOCC has issued an import license. Once issued, a license will have a requirement that the holder must report the actual level of imports to the NOCC each year. The amount of licenses issued each year will be reduced in accordance with the phase-out schedule agreed by the Government.

To be successful, the license scheme will require cooperation from the importers and the customs officers. It may also require amendments to the version of the Harmonized System (HS), (the internationally agreed system of classifying traded goods and recording import statistics) that FSM is currently using to allow identification of the individual controlled substances. These issues will be resolved during the development of the regulations.

The regulations will allow exemptions for essential uses after 2005, as long as these are consistent with the Montreal Protocol.

UNEP will also be requested to provide assistance in designing an import permit system, as part of its Pacific wide program of assistance.

Development of these regulations will be a high priority and they should be in place as quickly as possible in order to ensure ongoing compliance.

FSM is not required to control the level of import of HCFCs at this time, but must collect information on the amount of imports of HCFCs. As with CFCs, to ensure future data reporting of HCFCs, a form of import licenses will be used to track imports. This will be implemented at the same time as the license system for CFCs. These licenses will be issued on demand by the NOCC, with no restrictions as to the quantity imported. However, it will be a condition of the license that the importers report the actual quantities of HFCF imported to the NOCC.

Controls on the remaining substances are necessary to ensure ongoing compliance with the Montreal Protocol. Using the new regulations, the Government will also prohibit the import of all halons, “other CFCs”, 1,1,1-trichloroethane (methyl chloroform), carbon tetrachloride, and hydrobromofluorocarbons (HBFCs). None of these substances are known to have any use in FSM. The regulations will allow exemptions for essential uses if these are consistent with the Montreal Protocol.

In addition to prohibitions on the import of the "bulk substances" the Government will develop regulations to prohibit the import of all refrigeration products containing CFCs, including both new and second hand products. This is to avoid receiving “junk technology” and to reduce future demand for CFCs to service the equipment. It will also ban the import of all building air-conditioners using CFC as the refrigerant.

Because there are non-ozone depleting alternatives for many uses of halon fire extinguishers, the Government has agreed to prohibit the import of halon fire extinguishers as well as bulk substances. Such a ban will help prevent FSM from becoming a dumping ground for unwanted equipment and prevent local companies becoming reliant on a technology that is now no longer manufactured. The ban will be accompanied by an exemption process, in case there are legitimate “essential uses”, such as for aircraft.

FSM will amend the existing Pesticide Regulations to ensure that there are no further imports of methyl bromide for any uses other than those allowed by the Montreal

Protocol for "Quarantine and Pre-Shipment" (QPS). The country needs to look into the use of other non-ODS substances other than methyl bromide for pesticide and quarantine purposes.

Any ban on imports could be accompanied with an exemption process, administered by the NOCC, to allow case-by-case exemptions for “essential uses”.

Financial incentives

The Government will investigate the possibility of introducing financial incentives to promote the use of non-ozone depleting substances to replace CFCs through reductions in import duty and the like. It will also investigate the possibilities of reducing import duties on equipment such as recovery and recycling machines needed to protect the ozone layer.

Training for Customs Officials

FSM does not produce any CFCs and therefore all of its CFC consumption must be imported. It follows that border controls will be vital to ensure that the Government’s policies are implemented. In particular it will be important to ensure that CFCs are not smuggled into FSM. If illegal imports of CFCs become common or widespread, it will undermine the whole NCAP by postponing the phase-out and by penalizing those who remain law abiding.

It is proposed that training will initially be provided by an overseas expert. Following that, a course can be developed for Custom's own training for future years. It is suggested that a group of officers be trained. These may be the same ones who received training from the NOCC on recognition of pesticides. This training should take three or four days to complete and will include the FSM legislation, the Montreal Protocol recognition of packaging and storage containers and training in the use of the refrigerant identification equipment.

As well as the provision of training, it will be important to provide portable refrigerant identification equipment. It is envisaged that field officers would be provided with two hand-held portable refrigerant identification units and where there is doubt about the accuracy of labeling they would send samples to a central laboratory (possibly in the United States, Australia or New Zealand) for legal testing. The training providers should also assist with the development of policies for sampling of shipments of refrigerant gases.

The funding for the training and provision of refrigerant identification equipment will be under the budget for the Regional Strategy.

Training for refrigeration and air-conditioning technicians

To successfully introduce the new non-CFC refrigerants to the country, FSM will require new skills for technicians. The new refrigerants require new handling procedures and new lubricants. It will be vital that training is provided quickly in the use of refrigerants other than CFCs if FSM is to be able to implement a phase-out date of 2005. It will also be important that technicians have the necessary skills to fix existing leaks and reduce future ones, to ensure that equipment continues to function without disruption.

It is proposed that a training program be developed to teach these skills. The courses would teach recovery and recycling and good engineering practices as well as issues relating to the legislation and ozone depletion. Those who attended would receive free or subsidized training. It is proposed that the training will be carried out at the College of Micronesia-FSM and T-3. A suitable qualified trainer from overseas under the Pacific Regional Strategy will provide the training. The trainer will develop a course in consultation with the NOCC and deliver this training in FSM in 2003. Assistance with increasing the skills of the teaching staff at the college, identifying any necessary new training equipment and developing the course content are to be provided by an international consultant under the Pacific Regional Strategy. The consultant will also be responsible for teaching the first courses.

Licensed Technicians and Workshops

In order to ensure that technicians using CFCs have a good understanding of the Montreal Protocol, and the necessary skills to implement it, many countries require technicians to undertake formal training and to sit an examination to become licensed technicians.

The Government proposes to develop a voluntary certification scheme. Because of the small community involved, and the public expectation for workers to follow good practices, the Government considers a voluntary certification scheme will be as effective as a mandatory scheme.

The NOCC will approve specific courses for workers in the sector. The courses will be those proposed in the section above, held at the College of Micronesia-FSM and T-3 and would teach recovery and recycling and good engineering practices as well as issues relating to the legislation and ozone depletion. Those who attended will receive free or subsidized training. Participants who passed an exam would receive a "certification" certificate that they can display in their shops. They would then be able to advertise their businesses or staff as having been accredited by the Government. The Government could periodically publish lists in the newspapers (or other media) of those workshops whose technicians had passed such courses. If there is evidence of lack of participation, the Government may look at linking access to refrigerants to only those who are certified. However, this restriction is not proposed initially.

Provision of Recovery and Recycling Equipment

As noted above, a relatively large numbers of second hand vehicles are being imported into FSM from Japan. Most of these are fitted with CFC MACs when they arrive. The use of CFCs to service these older units is a large area of potential ongoing demand for CFCs. Reducing this potential demand is a matter that the Government considers to be a priority if it is to ensure ongoing compliance with the Montreal Protocol. In addition to training technicians to reduce and repair leaks properly, the Government wishes to promote the use of recovery and recycling machines.

The use of recovery and recycling equipment allows service shops to re-use any CFCs that are extracted from the customers' equipment at the time of servicing, especially in motor vehicle air-conditioning units (MACs). Any CFCs that are recovered from MACs

can be re-used, either in the same piece of equipment or in another piece of equipment later on. This is done instead of releasing the refrigerants to the atmosphere, as is the case in most workshops in FSM. While the use of recovery and recycling equipment on its own will not reduce leakage from MACs, it will reduce the amount of CFCs consumed during service.

The Government wishes to request funding, through the Multilateral Fund and the Pacific Regional Strategy, to be able to offer a 50% subsidy on the cost of purchasing these machines. If this is approved, the subsidy would only be offered to companies whose technicians have completed the approved training course. Funding would be sought to allow the purchase of up to 13 units at a cost of US$2,500 per unit (i.e. a subsidy of US$1,250 per machine) up to a maximum of US$16,000.

With each subsidy a Memorandum of Understanding will be signed between the National Government and the service shops to set up a maintenance schedule for the equipment and maintain accurate records available to the NOCC on a monthly basis to monitor the recovery program.

Public Awareness

Because of the high use of CFCs in car air-conditioning in FSM, a campaign to encourage owners to use certified technicians and to ensure that their systems are properly repaired will be important to the success of the phase-out of CFCs in FSM. Aside from developing regulations, public education would be a key task of the hired personnel to implement the Protocol. There is already a considerable body of material available from UNEP that the Government intends to adapt to local needs. The major task will be to translate this material into the local language and distribute it in the community.

3.2.3 Roles in Implementing the Plan

The lead agency responsible for implementing and managing the NCAP programs will be the National Ozone Compliance Center (NOCC) established under the SD Unit of the Department of Economic Affairs at the National Government. However, given the complexity and cross-sector nature of the plan, it will be necessary for the NOCC to collaborate with a number of other agencies and organizations, the principal ones being:

Customs Department

The Customs Department will enforce proposed regulations controlling the importation of ODS. Data recorded of all imports detailing the type and amount of ODS entering the country is stored at the Division of Customs and Revenue of the Department of Finance and Administration of the National Government and collated by the NOCC for data reporting needs.

FSM T3 Program and COM-FSM

The T3 Program and the College of Micronesia-FSM will run the training and certification courses for trainers and technicians outlined in the National Support project.

3.3 Timeframe and Consumption Implications of Action Plan

3.3.1 Timetable

The schedule for implementing activities to meet the Protocol objectives and its effects on ODS consumption is presented in Table 3.1. Of these activities, the ones that will lead directly to a reduction in consumption levels are:

- Monitoring of ODS imports and exports through a licensing system, new refrigerant identification equipment and well-trained Customs Officials;
- Training of technicians in good service practices and the use of recovery and recycling equipment and retrofitting;
- Fiscal policy measures to encourage the development of economically viable and attractive ODS free technologies; and
- Banning the use of ODS based technologies in new installations.

Table 3.1 Schedule for the Action Plan

Action	Description	Schedule	Impact	Implementing Agency
1	Establishment of NOCC within the Department of Economic Affairs SD Unit	June 2003	Enabling Activity	NOCC
2	Establishment of NOCC	June 2003	Enabling Activity	NOCC
3	Public Awareness and Education	June 2003	Enabling Activity	NOCC
4	Establishment of Licensing System	Dec 2003	Regulation on Restricted Imports and Exports	NOCC, Division of Customs, Department of Justice
5	Establishment of Monitoring System	Jan 2004	Data Reporting under Article 7	NOCC, Division of Customs
6	Training of Trainers	2003	Reduction of Consumption	NOCC, T3 Program, COM-FSM, Division of Customs
7	Training of Customs Officials	2003	Reduction of Consumption	NOCC, T3 Program, COM-FSM, Division of Customs
8	Training of Technicians	2003-2004	Reduction of Consumption	NOCC, T3 Program, COM-FSM
9	Consideration of Tax incentives to promote use of substitutes and alternative technologies	July 2003	Reduction of imports and usage of CFCs	NOCC, Division of Customs, Department of Justice
10	Ban on new installations and equipment using controlled ODS	Jan 2004	Elimination of new demands	NOCC, Division of Customs, Department of Justice

3.3.2 Consumption Implications

FSM has already reduced its consumption by nearly half from its base level. The actions set out in this plan are to ensure that FSM maintains its current trend in consumption and achieves a sustainable phase-out by 31 December 2005 as planned, with Zero consumption and its status of full compliance with the Montreal Protocol. Because of the very real possibility of illegal imports from the Philippines it is vital that FSM implements its NCAP.

3.4 Budget and Financial Program

The implementation and management of this NCAP has as a prerequisite the establishment of a National Ozone Compliance Center (NOCC) under the Department of Economic Affairs. For this purpose, a National Support Project is submitted for approval as part of the Pacific Regional Strategy. Funds allocated through the Pacific Regional Strategy will be used to coordinate public education campaigns, operate and staff the NOCC, train technicians and Customs Officials, set up a certification program, and purchase new CFC recovery and recycling and detection equipment.

Annex 1

Refrigeration and air-conditioning workshops identified during visit

T3 Program
Caroline Fisheries Corporation, Inc.
National Fisheries Corporation
Division of Customs and Tax, FSM Finance
PCR Auto Repair Shop
Pohnpei Metal Works
Pohnpei State Department of Economic Affairs
Pohnpei Economic Development Authority
Ambros & Co.
Pohnpei Ace Hardware
FSM Department of Justice
Agriculture Unit, FSM Department of Economic Affairs
FSM Telecommunications
Micronesian Longline Fisheries Corporation
SPC Plant Protection Officer
Pohnpei Fisheries Corporation
Power Source, Inc.
FSM Department of Transportation, Communications & Infrastructure
Pohnpei State Department of Health (Maintenance Division)
Pohnpei State Department of Public Works
FSM Federation of Fisheries Association (PFFA)
Pohnpei Utilities Corporation