National Compliance Action Strategy

to implement the

Montreal Protocol on Substances that Deplete the Ozone Layer

in the

Republic of Palau

Prepared by the Office of Environmental Response and Co-ordination
with assistance from the South Pacific Regional Environment Programme (SPREP)

1.0 Introduction

The Republic of Palau is the westernmost archipelago in the Caroline Islands of Micronesia. The curved archipelago is comprised of approximately 450 islands of which only eight are continuously inhabited. It lies to the north of Papua New Guinea, and to the east of the Philippines. The Republic has jurisdiction over territorial sea to 3 nautical miles offshore, an Exclusive Fishery Zone (3 to 12 nautical miles offshore), and an Exclusive Economic Zone 12-200 nautical miles offshore, encompassing 237,830 square miles.

Until 1995, the Republic of Palau was a United States administered United Nations Trusteeship. Total land area of the republic is 363 square kilometres with a coastline area of 1,519 kilometres. The climate is tropical (hot and humid) with terrain varying geologically from the high mountainous main island of Babeldaob to low coral islands usually fringed by large barrier reefs. Palau's natural resources include the largest tropical rainforest in Micronesia, minerals (especially gold), marine products and deep sea minerals. Its population in 2000 was 19,129 people according to the 2000 Census. The island of Babeldaob accounts for 80% of Palau's landmass. The most populated island, however, is Koror Island with nearly 70% of the residents of Palau. Koror is the site of the Government, the port facilities and most CFC using businesses.

Palau's GDP was estimated to be US$129.6 million in 1998, the most recent year that data is available for. Virtually all economic activity is in the government and service sector, especially tourism with Palau receiving 65,000 visitors in 1999. There is a small fishing industry based on Koror.

Palau has strong trading relations with the United States (including Guam), Singapore, Taiwan, Japan and to a lesser extent the Philippines. Most consumer goods, such as white-ware, come from the US or Japan. There is reported to also be a trade in second hand Japanese goods including whiteware as well as cars. The extent of the trade in whiteware could not be identified.

Because Palau is a small group of islands, corrosion from salt air is a problem. Accordingly steel products, such as cars and also refrigerators and air-conditioners, suffer from corrosion problems. The average life of a car in Palau is in the order of ten year after arrival in the country because of the corrosion.

1.1 Purpose

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

For that purpose, data on consumption of ODS is presented and analysed, 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 it identified. This document

provides the basis for monitoring progress of implementation of the Montreal Protocol in Palau.

Palau 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 strategy will be funded through the Regional Strategy even though they are included in the NCAP. The budget is therefore presented as part of the Regional Strategy and not this NCAP.

Specifically the NCAP:

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

1.2 Status

On 29 May 2001, Palau ratified the 1995 Vienna Convention on the Protection of the Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer. At the same time it also ratified: the 1990 London Amendment; the 1992 Copenhagen Amendment; the 1997 Montreal Amendment; and the 1999 Beijing Amendment to the Montreal Protocol.

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. The ratification was confirmed by the Congress in July.

Palau 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.

According to the data presented in this NCAP and submitted to the Ozone Secretariat, Palau must freeze its consumption of CFCs at 1.46 ODP tonnes from 1 July 1999.

Because Palau only became a Party in May 2001 it is not possible to determine whether it is in compliance. This NCAP has used the consumption data for 2000 to estimate compliance. Because Palau was not obliged to comply with this obligation at the time this is only an indication. In 2000 imports of CFCs had fallen to 0.67 ODP (see below), which is well below the maximum level of 1.46 ODP tonnes.

Table 1.1 Maximum allowable consumption under Montreal Protocol

Year	Montreal Protocol percentage reduction	Maximum consumption (ODP tonnes)
Base Year	0%	1.46

2000	0%	1.46
2001	0%	1.46
2002	0%	1.46
2003	0%	1.46
2004	0%	1.46
2005	50%	0.73
2006	50%	0.73
2007	85%	0.219
2008	85%	0.219
2009	85%	0.219
2010	100%	0

The average consumption of CFCs for 1995-97 was equivalent to 0.08 kg per capita (population 19,129). This is well below the threshold to receive assistance from the Multilateral Fund.

Palau does not produce ODS. All ODS are imported.

1.3 Assistance received

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

The South Pacific Environment Programme (SPREP) through its regional programme for the implementation of the Montreal Protocol in the Pacific region employed a regional consultant to assist with the development of the NCAP in Palau. Palau has also received assistance to take part in other activities and to develop its NCAP. This assistance includes:

- A one-day workshop for government departments and small industrial enterprises conducted by the SPREP Regional Consultant, Mr. Iain M^{c}Glinchy . Findings and data from the report on the consultant's visit were used to develop the NCAP.
- A representative from Palau participated in the three day workshop in Apia, Samoa in April 2001 on implementation of the Montreal Protocol in the Pacific with the assistance of the NZ Government.
- A representative from Palau attended the OEWG in July 2001 with assistance from the Ozone Secretariat.

2.0 Current Situation

2.1 Current and Forecast Consumption

2.1.1 Current Consumption

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

Chlorofluorocarbons (CFCs)
The following are the best estimates of Palau's consumption based on the survey carried out during the visit by the international consultant. These have been confirmed by workshops with industry as a good estimate of past consumption.

Table 2.1 Consumption of CFCs in Palau (metric tonnes)

Substance	ODP	1995	1996	1997	1998	1999	2000
CFC-11	1.0	0.5	0	0	0	0	0
CFC-12	1.0	1.148	0.984	1.510	1.637	0.345	0.508
CFC-115	0.6	0.116	0.139	0.93	0.70	0.144	0.165
ODP Tonnes		**1.72**	**1.07**	**2.07**	**2.06**	**0.43**	**0.61**

Note: CFC-502 is a mixture of 51.2% CFC-115 and 48.8% HCFC-22. It is reported here as CFC-115. The HCFC-22 component is reported separately.
All figures are metric tonnes
ODP means ozone depleting potential.

There is no known data for before 1995.

The Government submitted this data to the Ozone Secretariat in Nairobi in September 2001 in order to comply with its historical data reporting obligations.

Hydrochlorofluorocarbons (HCFCs)
Although they are ozone depleting and controlled by the Montreal Protocol, Palau is only obliged to report the total quantity of HCFCs imported into Palau each year from 2001, which is the year it ratified. Palau has submitted the following data to the Ozone Secretariat Palau is not required to reduce its consumption of these substances at this time.

Table 2.2 Consumption of HCFC-22 in Palau

Year	**1998**	**1999**	**2000**
Metric kg	1,424	2,068	1,275

The use of HCFCs is increasing in Palau, corresponding to the rise in use of the HCFC-22 in air conditioning and refrigeration equipment.

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.

Other ODS consumption
There has not been any consumption of bulk halons in Palau at any time as there are no halon servicing facilities in the country. There are a small number of halon fire extinguishers in Palau, but these are not serviced, or are sent off island for servicing.

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 Palau, as there are no facilities likely to use them.

2.1.2 Forecast CFC consumption

CFC consumption in Palau is dropping as supplies from the US and Japan become more costly. However, demand remains high, especially in the mobile air-conditioner (MAC) (i.e. vehicle air-conditioning) sector. It is estimated that more than 80% of Palau's current consumption is for servicing MACs.

The size of the vehicle fleet in Palau in 2000 was approximately 6,000 vehicles. It is assumed that 90% of all vehicles registered in Palau before 1995 (the year most car manufacturers switched to HFC-134a in MACs) were fitted with CFC-12 MACs. This is equivalent to 4100 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 (approx 2lb). Note: 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 1.3 tonnes (2,900 lb). However, the survey carried out during the international consultant's visit could only identify imports of 506kg (1,120 lb) in 2000.

This implies that if alternative sources of CFC supplies can be identified, such as from China or the Philippines, Palau's CFC consumption could rise steeply in future years. Palau is particularly at risk from illegal imports from the Philippines which is only 800km away and easily reachable by small vessels.

It would appear that unlike most other PICs, Palau would have a high and possibly rising demand for CFCs for at least the next ten years, or for as long as "new" second hand vehicles with CFC-12 MACs continue to be imported. This clearly puts it in a situation where it would be in non-compliance with the Montreal Protocol within a few years if no other actions were taken.

Table 2.3 Forecast ODS consumption in ODP tonnes

Year	Montreal Protocol Maximum consumption	Forecast consumption if no other intervention
2001	1.69	1.3
2002	1.69	1.3
2003	1.69	1.3
2004	1.69	1.3
2005	0.845	1.3
2006	0.845	1.3
2007	0.2535	1.3
2008	0.2535	1.3
2009	0.2535	1.3
2010	0	1.3

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

2.2 Industry Structure

All ODS consumed in Palau are used in the refrigeration and air-conditioning service sector.

2.2.1 Importers of ODS into Palau

Refrigerants are imported into Palau from a wide range of countries: Singapore, USA, (including Guam), Philippines, Taiwan and China. Most non-ODS refrigerants are imported from Guam or the mainland United States.

It is now very difficult and expensive to import CFCs from the US or Guam which used to be the dominant supplier, despite the physical distance. Most local suppliers are now importing from Asian suppliers. Because of the relatively small volumes being shipped, and the freight costs, the costs of CFC-12 in the local market is rising.

The largest importer of refrigerants in Palau is Ace Hardware. As well as selling refrigerants to customers in the refrigeration service sector, the parent company (West Caroline Trading Company (WCTC)) owns a number of hotels and supermarkets and imports refrigerants for their own use. In total, six companies were identified that import CFCs and other refrigerants. These are:

- Surangel and Sons
- Ace Hardware/WCTC
- Hong Kong Market
- Koror Wholesalers
- DMG Refrigeration
- S&S Video

There are also reported to be a number of smaller companies that 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 one off shipments in past years and an allowance has been made for these shipments in the estimates of consumption in 1995-97 presented below. Monitoring and controlling these imports will be a priority of the NCAP.

2.2.2 Users of refrigeration and Air Conditioning equipment

There is only a limited amount of industry in Palau and no manufacturing facilities using ODS. As far as can be determined the only use of ODS in Palau is 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 Palau is for servicing existing refrigeration and air-conditioning equipment.

There are a large number of refrigeration and air-conditioning workshops especially in comparison with other Pacific Island Countries. At least fourteen private companies and several Government agencies have been identified that are involved in servicing refrigeration and air-conditioning equipment. In addition most of the major resorts and hotel chains have in-house technicians that carry out day-to-day servicing on refrigeration and air-conditioning equipment. A list of names for the refrigeration service companies identified during the international consultant's visit is attached as Annex 1.

Although by law, all wholesale and retail companies must be owned by a Palauan national, most service companies are staffed by technicians from the Philippines and who received their training there

Mobile air-conditioning units (MACs)
As already noted, there is a large vehicle fleet in Palau for the size of the population. In common with many other countries in the Pacific region, and despite driving on the other side of the road from Japan, the vehicle fleet has recently seen a large influx of second-hand Japanese vehicles. There are also many new and used US assembled vehicles imported into Palau as well. Some vehicles are brought back to Palau by residents returning from overseas. Working mobile air-conditioning units are reasonably common. According to the service shops, the loss of refrigerants from vibrations due to the poor state of the roads, combined with corrosion from the sea air, means that the use of refrigerants in this sector is relatively high. Accordingly this sector represents the largest use in Palau accounting for 70- 80% of the use of CFC-12 in Palau. Most of the fourteen private workshops and the Public Works Department work with vehicle air-conditioning

All servicing of CFC-12 units is carried out with CFC-12. The non-ozone depleting refrigerant HFC-134a is now commonly used in the newer units and this is used for servicing these vehicles.

Stationary (Building) Air-conditioning
There are no large centralised air-conditioning equipment (chillers) in Palau that use CFCs as refrigerants. Although a number of large hotels, public buildings and shopping centers have centralised systems, all use HCFC-22 as the refrigerant. There are reported to have been CFC-using chillers the past, but these have now been replaced with HCFC-22 equipment.

Air-conditioning using small window units, split systems and in some cases, larger water-cooled units, is very common. The 2000 census reported that 50% of all domestic buildings have at least one air-conditioning unit. These units are imported from a wide range of countries and all are using HCFC-22 as the refrigerant. There is no obligation for Palau to control the imports of HCFCs or equipment using HCFCs at this time.

Commercial refrigeration
There are four large supermarkets in Koror and smaller convenience stores are widespread. Most of the refrigeration units are 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. Globally the supply of CFC-502 is now very small and many counties can no longer obtain imports of this. Accordingly, many companies, including those in Palau 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.

There are three major fishing companies in Palau: Palau Federation of Fisheries Association (PFFA), the Palau International Trades Inc.(PITI) and the Palau Marine Industrial Corporation (PMIC). All three companies maintain a 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. PMIC was reported to have an ammonia based freezer system.

Domestic refrigerators
Domestic refrigerators are common, with virtually all households having a refrigerator. Most units are imported from the US or Japan and have therefore been CFC-free since 1995. Equipment is also imported from other countries, most noticeably Taiwan, but the refrigerant in these was not identified in the survey by the international consultant. It was reported to be CFC-free.

There are reported to be imports of second hand domestic refrigerators from Japan. These are sold very cheaply and are often in poor condition when they arrive in Palau. It is not clear if the import of these refrigerators is a regular occurrence.

Servicing of domestic refrigerators and commercial display cabinets was common. The tropical conditions meant corrosion of the mild steel pipe work was a major problem and therefore units had a fairly short life before they needed repairs. The uneven voltage and power cuts also meant compressor failures were relatively common. Technicians at the workshop for the private sector reported it was common to re-charge refrigerators every one or two years. (This compares with only once in 20 years in a country like New Zealand or Australia).

Servicing is still done with CFC-12 in older units and HFC-134a in the new units. None of the technicians have used any of the low- or non-ozone depleting "service blends" instead of CFCs.

2.2.3 Fumigation

Methyl bromide is already regulated in Palau under the Pesticide Regulations issued under the Environmental Quality Protection Act. These regulations are administered by the PEQPB.

Palau has no reported use of methyl bromide for any uses including Quarantine and Pre-Shipment (QPS) uses. Methyl bromide has not been imported since 1990.

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

Office of Environmental Response and Coordination (OERC)
The Office of Environmental Response and Coordination (OERC) is the agency responsible for ensuring Palau's compliance with the Montreal Protocol and overseeing development of the NCAP.

The President of the Republic of Palau under Executive Order 189, mandated the OERC to manage and implement the Republic's Enabling Activities for the United Nations Framework Convention of Climate Change (UNFCCC) the United Nations Convention on Biological Diversity, the Convention on Desertification and other environmental initiatives such as the Vienna Convention on the Protection on the Ozone Layer and the 1987 Montreal Protocol .

OERC is mandated to assist in all environmental initiatives within the Republic and develop a broad and coordinated planning approach to all environmental issues.

The Steering Committee for OERC includes the National Weather Service, the Ministry of Resources and Development, the Ministry of Health, the Ministry of State, the Ministry of Administration, the Association of Governors, the Palau Public Utilities Corporation, the Belau Tourism Association, the Palau Conservation Society, the Palau International Coral Reef Center, the Palau Environmental Quality Protection Board, the Chamber of Commerce, and representatives from the Senate Committee on Resources and Development and the House of Delegates Committee on Resources and Development.

The OERC is also a member of two existing organizations, the Marine Resources Pacific Consortium (MAREPAC) and the Soil Conservation Resource Council (SCRC). OERC coordinates with the MAREPAC to address marine issues such as coral bleaching and other climate change related phenomena that Palau is and will increasingly face in the future. OERC also coordinates with SCRC on terrestrial issues such as agricultural practices, soil erosion, forest health, and watershed management. OERC also assists the Sustainable Tourism Committee in the development of Palau's long-term sustainable tourism plan.

The Office of Environmental Response and Coordination (OERC) chairs the Mitigation Committee created by the Vice President to prepare the Republic for the predicted 2002 El Nino event. The Mitigation Committee, the two working groups, MAREPAC, and the SCRC address issues pertaining to biodiversity, desertification, and ozone depletion. These issues are interlinked with climate change and OERC addresses them as interconnected issues.

The Steering Committee members are also members of the Mitigation Committee, the Energy Working Group, the Vulnerability and Adaptation Working Group, MAREPAC, and SCRC. Because of this, on-going discussions regarding Palau's obligations under the international environmental conventions and the most appropriate mitigation and adaptation methods and practices for Palau are continually discussed, planned, and implemented where ever possible and as current resources permit.

The Palau Environmental Quality Protection Board

The Palau Environmental Quality Protection Board (PEQPB) was established by Public Law NO1-58, enacted in 1981. The PEQPB was destined as an instrument to effect the declared national policy of: creating conditions "..under which humankind and nature can coexist in productive harmony, and fulfil the social, economic and other requirements of present and future generations of the Republic." The PEQPB has the authority to promulgate regulations to assure safe drinking water and limit the discharge of pollutant in the environment, enforce regulations and issue permits and establish criteria and standards for classifying air, land and sea. PEQPB regulates hazardous wastes in Palau including unwanted chemicals. Ozone Depleting Substances are unwanted chemicals. The PEQB will be responsible for developing and implementing control under the NCAP.

2.4 Policy Framework

As party to the Montreal Protocol, Palau has accepted the responsibility to phase out ODS in the country. 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 co-operation between government and importers to conduct awareness campaigns with the public and industry.

Controls on the imports of ODS, especially of CFCs and other ODS refrigerants will be prepared under the Environmental Quality Protection Act. Regulations placing bans on ODSs will be developed in a consultative process to minimise economic disruption and ensure support from private industries and the public for NCAP programs. This NCAP strategy will form the national policy on ozone protection.

2.5 Government and Industry response

2.5.1 Government response

The Government of Palau has only very recently ratified the Montreal Protocol. The development of the NCAP is its first response to implementing the Montreal Protocol. It has done this in co-operation with the International Consultant from SPREP. With the assistance of the consultant the Government carried out tow workshops on the Montreal Protocol. It has also conducted several further workshops as part of developing the NCAP. The OERC has also published a number of news letters and articles in newspapers to raise awareness of the Montreal Protocol in the general public.

2.5.2 Industry response

Because of the trading relationship between Palau 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 HFCs that was conducted in 1995. This was carried out by an Australian organisation, AESOP which is a voluntary programme 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 on converting existing equipment to non-CFC refrigerants.

In addition to the 1995 Australian course, at least one of the Palauan technicians has worked in the US or Guam and have been accredited by the US EPA and are able to buy refrigerants in the US. The training for these courses included the use of recovery and recycling equipment and retrofitting procedures.

3.0 Implementation of the Phase Out Strategy

The phase out strategy is an accelerated programme under the Montreal Protocol. The is both technologically and economically viable for Palau, provided the necessary assistance is received. Palau'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 Republic of Palau 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, inline with other countries in the region as part of the Regional Strategy.

Adoption of an early phase-out date will send a strong signal of Palau'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, NGOs, and other government and international agencies.

3.2 Action Plan and Projects under the NCAP

3.2.1 Action Plan

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

1. Maintain compliance with the Montreal Protocol while preparing an economically viable accelerated phase-out program.
2. Establish a National Ozone Unit (NOU) office to co-ordinate, implement, and monitor the phase-out program.
3. Prohibit any new activity related to the import, production or use of ODSs in new equipment
4. Ban of import of ODS-using and ODS-containing equipment (including new and second-hand domestic refrigerators using CFC-12 as the refrigerant)
5. Introduction of controls on the import (and export) of all ODSs (including licensing, taxation and/or quotas as appropriate)
6. Strengthening ODS import/export monitoring program by developing a licensing system.
7. Consideration of system of fiscal incentives/disincentives in favour of non-ODS alternatives and transitional substances.
8. Implement and monitor training of customs officers to ensure proper control of import and export of ODSs and information collection and submission
9. Implement and monitor training of refrigeration service technicians in good practices of refrigeration to minimise the use of ODSs and mitigate their emissions into the air during the service of refrigerators
10. 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 Palau will continue to meet its obligations under the Montreal Protocol.

The implementation of the NCAP will require the establishment of a National Ozone Compliance Centre (NOCC) to be responsible for ensuring that Palau meets its requirements under the Montreal Protocol. Among other things, the Centre will establish a Palau National Ozone Committee comprised of other government departments, public and private sector

organisations, and NGOs with interests in the ozone issue to provide policy advice and technical support for the NCAP.

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 Palau will provide office space, some office equipment and administrative support for this position.

This position, which will be known as the National Ozone Compliance Center (NOCC), will be established under the PEQPB. The NOCC will be staffed for three years (2002 – 2005). A position will be established as the equivalent of 37% of a full time position for the three 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 and third 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 licence scheme using the existing Environmental Quality Protection Act and administered by the Palau Environmental Quality Protection Board (PEQPB). New regulations will be needed to do this.

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

To be successful, the licence scheme will require co-operation from the importers and the customs officers. It may also require amendments to the version of the Harmonised System (HS) (The internationally agreed system of classifying traded goods and recording import statistics) that Palau 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, if these are consistent with the Montreal Protocol.

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

Palau 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 licences will be used to track imports. This will be implemented at the same time as the licence system for CFCs. These licences will be issued on demand by PEQPB, with no restrictions as to the quantity imported. However, it will be a condition of the licence that the importer report the actual quantities of HFCF imported to PEQPB.

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 Palau. 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 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 Palau 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 were legitimate "essential uses", such as for aircraft.

Palau 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).

Any ban on imports could be accompanied with an exemption process, administered by the PEQPB, 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 such 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

Palau 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 Palau. If illegal imports of CFCs become common or widespread, it will undermine the whole NCAP by postponing the phase-out and by penalising those who remain law abiding. Unlike most Pacific Islands, Palau is relatively close to a large neighbouring country, the Philippines, which still has access to supplies of CFCs. Because Palau is only 800km (500 miles) from the Philippines there is a real risk of smuggling and training for Customs Officers will be particularly important.

It is proposed that training 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 PEQPB on recognition of pesticides. This training should take three or four days to complete and will include the Palauan 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 hand two portable refrigerant identification units and where there is doubt about the accuracy of labelling they would send samples to a central laboratory (possibly in the USA or another country) 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 into Palau 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 Palau 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 programme 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 subsidised training. It is proposed that the training will be carried out at the Palau Community College. The training will be provided by a suitable qualified trainer from overseas under the Pacific Regional Strategy. The trainer will develop a course in consultation with the NOCC and deliver this training in Palau in 2002 or early 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 requested 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 have the necessary skills to implement it, many countries, both developed and developing, 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 PEQPB will approve specific courses for workers in the sector. The courses will be those proposed in the section above, held at the Palau Community College 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 subsidised training. Participants who passed an exam would receive a "certification" certificate that they can hang on workshop walls. 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 Palau from Japan. Most of these are fitted with CFC MACs when they arrive. The use of CFCs to service these older unit 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 workshops 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 Palau at present. 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 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 20 units at a cost of US$2,500 per unit (i.e. a subsidy of US$1,250 per machine)

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

Public awareness
Because of the high use of CFCs in car air-conditioning in Palau, 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 Palau. Aside from developing regulations, public education would be a key task of whoever is hired 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 Strategy

The lead agency responsible for implementing and managing the NCAP programs will be the National Ozone Compliance Centre established under the PEQPB. However, given the complexity and cross-sector nature of the plan, it will be necessary for the NOU to collaborate with a number of other agencies and organisations, 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 Customs department and collated by the NOU office for data reporting needs.

Palau Community College
The Institute 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.
- The 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.
- Ban 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 office within EQPB	Mar 2002	Enabling Activity	PEQPB
2	Establishment of PNOC	Mar 2002	Enabling Activity	NOCC
3	Public Awareness and Education	Nov 2001	Enabling Activity	NOCC
4	Establishment of Licensing	Dec 2001	Regulation on	NOCC

	System		Restricted Imports and Exports	Customs Department Attorney General's Office
5	Establishment of Monitoring System	Jan 2002	Data Reports under Article 7	Customs Department NOCC
6	Training of trainers	2002	Reduction of Consumption	NOCC Palau Community College Customs Department
7	Training of Customs Officials	2002	Reduction of Consumption	NOCC Palau Community College Customs Department
8	Training of technicians	2003 2004	Reduction of Consumption	NOCC Palau Community College
9	Consideration of tax incentives to promote use of substitutes and alternative technologies	July 2002	Reduction of imports and usage of CFC	NOCC Customs Department Attorney Generals Office Department of Finance
10	Ban on new installations and equipment using controlled ODS	Jan 2002	Elimination of new demands	NOCC Customs Department Attorney Generals Office Chamber of Commerce

3.3.2 Consumption implications

Palau has already reduced its consumption by nearly half from its base level. The actions set out in this plan are to ensure that Palau maintains its current trend in consumption and achieves a sustainable phase-out by 31 December 2005 as planned. 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 Palau implement its NCAP or it could quickly find itself in a position of non-compliance.

3.4 Budget and Financial Program

The implementation and management of this NCAP has as a prerequisite the establishment of a National Ozone Compliance Centre under the EQPB. 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 co-ordinate public education campaigns, operate and staff the NOU office, 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

Cool Crafts Enterprises
DMG Refrigeration
FST Refrigeration
HP Auto Services
Ministry of Health (Hospital maintenance)
NECO Group
Nikko Resort
Palasia Hotel
Palau Refrigeration and Air-Conditioning
Palau Transportation
PPR Resort
Public Works Department
Refrigeration and Air-Con services
S&S Video Plus
SGV
Surangel and Sons
Palau Federation of Fisheries Association (PFFA)
Palau International Trades Inc. (PITI)
Palau Marine Industrial Corporation (PMIC)
Western Caroline Trading Company (WCTC)