Quick facts

- Since 1979 the world's ozone layer has been decreasing, especially in southern latitudes such as Australia and the Pacific where it has dropped 10–12 per cent each decade[3]. In general, a drop of just 1 per cent in atmospheric ozone is equivalent to an increase of 1–2 per cent in ultraviolet (UV) radiation from the sun. Increased UV radiation may cause higher rates of skin cancer, eye damage and other ailments, plus reduce plant growth.

- The 1987 Montreal Protocol global treaty was signed by 149 countries, including 12 Pacific countries, and is committed to phasing out hydrochlorofluorocarbons (HCFCs) and to reducing relative baselines by 10 per cent by 2015.

- Australia, New Zealand and Fiji are the major suppliers of HCFCs and other refrigerants, but in recent years, China (including Taiwan) and the United States, have started supplying HCFC-22 as well as other alternatives. Such diverse import channels make the monitoring of imports and exports more challenging.

- To help combat the effects of climate change, Australia-Pacific Technical College (APTC) is training students on ways to better manage refrigerants that contain ozone-depleting substances (ODS), such as hydrochlorofluorocarbons (HCFCs). This training is part of the Certificate III in Refrigeration and Air Conditioning (RAC), which is being delivered at the APTC in Samoa.

- APTC has partnered with the United Nations Environment Programme (UNEP) to develop and deliver workshops for RAC tradespeople in 12 Pacific Island countries. This includes the creation of a "toolbank", or cache of tools, which is stored by a local agency and then loaned to tradespeople throughout the Pacific.

[3] *Case study: Ozone layer depletion and the Montréal Protocol, extract from the 'Ozone Layer Protection: The Unfinished Journey', Report of the Auditor General of Canada to the House of Commons 1997 (modified for the internet July 2013), www.statcan.gc.ca/edu/power-pouvoir/ch5/casestudy-edudecas/5214797-eng.htm*

APTC
AUSTRALIA-PACIFIC TECHNICAL COLLEGE
CREATING SKILLS FOR LIFE

Australian Government
Department of Foreign Affairs and Trade

Reducing Energy Consumption the Sustainable Way

APTC
AUSTRALIA-PACIFIC TECHNICAL COLLEGE
CREATING SKILLS FOR LIFE

APTC Corporate and Student Services Office
PO Box 10885, Nadi Airport, Fiji Islands
13 Commercial Street, Namaka, Nadi

Phone: +679 672 87787
Fax: +679 672 87787
Email: enquiries@aptc.edu.au

www.aptc.edu.au

Improving **practices** to **combat climate change**

Australia-Pacific Technical College is training and educating people in the Pacific on how to manage harmful refrigerants to help preserve the environment and reduce energy consumption.

Gabi with fellow APTC students during the RAC workshop series in 2013

Image here

Products displayed at the RAC workshop series in 2013

Since 1979 the world's ozone layer has been shrinking, especially in southern latitudes such as Australia and the Pacific where it has dropped 10–12 per cent each decade[1]. In general, a drop of just 1 per cent in atmospheric ozone is equivalent to an increase of 1–2 per cent in ultraviolet (UV) radiation from the sun. Increased UV radiation may cause higher rates of skin cancer and eye damage, as well as reduce plant growth.

To help combat the effects of climate change, Australia-Pacific Technical College (APTC) is training students on how to better manage refrigerants that contain ozone-depleting substances (ODS), such as hydrochlorofluorocarbons (HCFCs). This training is part of the Certificate III in Refrigeration and Air Conditioning (RAC), which is being delivered by APTC at its Samoa campus.

APTC is also committed to educating tradespeople, suppliers and policy makers in the Pacific to find ways to improve the management of, or avoid refrigerants that are harmful to the environment. As part of this initiative, APTC conducted a RAC workshop series for tradespeople in 2013, initiated an international conference and coordinated a refrigerant recovery project after Cyclone Evan in Samoa.

"I think we have a responsibility to be involved because we are delivering an Australian qualification, which is internationally recognised, and there is a big focus on sustainability," says Michael Moller, RAC and electrical trainer at the APTC School of Trades and Technology in Samoa.

Michael notes that encouraging more environmentally friendly refrigeration and air conditioning practices is important for preserving the environment and reducing costly energy consumption.

"Energy prices here in the Pacific are two to three times more than the cost in Australia," he says. "Energy consumption from high energy-consuming refrigeration and air conditioning systems accounts for 50-60 per cent of a country's energy needs."

This is a significant expense for residents in the Pacific, many of whom live below the poverty line[2].

For APTC graduate and now RAC business owner, Gabirieli Waqavanua (better known as Gabi), the training provided him with the opportunity to better understand the importance of developing good practices when working with RAC.

"APTC broadened my vision, not only about my work, but also about the environment," says Gabi. "If you do your job the environmentally friendly way, in the long term you can save [your client] money, and that's what APTC taught us."

Gabi also adds that this approach results in satisfied and loyal clients, which is good for his business.

"If there are tradespeople out there who really want to upskill their knowledge then APTC is the pathway to a better future," says Gabi.

However, training students in this area is only the first step to improving practices in the industry. According to Michael, APTC trainers teach students about what to do and why it is important, but when they return to work, their workplaces often lack the proper tools and support.

"The students have a great awareness of environmental issues and the consequences of their service practices but without the right equipment, it is impossible [to implement]," says Michael.

To address this issue, APTC has partnered with the United Nations Environment Programme (UNEP) to develop and deliver workshops for RAC tradespeople in 12 Pacific Island countries. This includes the creation of a "toolbank", or cache of tools, which is stored by a local agency and then loaned to tradespeople throughout the Pacific.

The toolbank is especially useful for tradespeople who cannot afford the equipment from overseas that is needed to conduct environmentally friendly refrigeration and air conditioning servicing and practices.

APTC began delivering the RAC "train the trainer" workshop series in mid-2013. By the end of 2013, nine Pacific Island countries had received the training, with each workshop attracting between 20 and 40 participants per country.

The workshops show tradespeople how to use a refrigerant identifier to recognise and then avoid using or buying counterfeit refrigerants. They also elaborate on the steps to recover refrigerant from a split-type air conditioning unit to prevent the release of ozone-depleting substances into the atmosphere.

UNEP sponsors the training as part of the International Montreal Protocol Compliance Assistance Programme, with support from local agencies in each Pacific host country.

According to Artie Dubrie, Regional Network Coordinator for Pacific Island Countries, UNEP Regional Office for Asia and the Pacific, the initiative maximises the use of tools and equipment provided through the Montreal Protocol Multilateral Fund.

"It gives the refrigeration industry association and young professionals a leading role in assisting and educating the public on good refrigeration practices and in the protection and care of our environment," says Artie.

[1] *Case study: Ozone layer depletion and the Montréal Protocol, extract from the 'Ozone Layer Protection: The Unfinished Journey', Report of the Auditor General of Canada to the House of Commons 1997 (modified for the internet July 2013), www.statcan.gc.ca/edu/power-pouvoir/ch5/casestudy-edudedecas/5214797-eng.htm*

[2] *2013 Human Development Report—The Rise of the South: Human Progress in a Diverse World, United Nations Development Program (UNDP)*

Opening employment opportunities

When Gabi Waqavanua enrolled in the Certificate III in Refrigeration and Air Conditioning (RAC) at APTC, he didn't envisage that on graduation day he would be handing out cards for his new business.

"The best part of my APTC training was when they guided us through how to start up our own business," says Gabi.

Gabi worked in the air conditioning trade for eight years and then tutored at a local university. In 2010 he decided it was time to go back to work in the industry, but he knew that he would need to be upskilled and to learn about the latest RAC technology if he wanted to get a job, so he enrolled in the RAC course at APTC.

As part of this course, Gabi was taught how to assess systems, write reports and provide quotes, and it was this training that led him to consider starting his own business. "It is training not just to become a tradesman, but also a business manager. I realised that I had the skills, the trade background and the vision to start my own business," says Gabi.

APTC trainer Michael Moller believes the training not only equips students with the skills and knowledge of the trade, but also business nous and confidence. "I think the great benefit to students like Gabi was to open up employment options and to give him the information and knowledge that he needed to start his own business," Michael says. "They leave APTC with a much greater confidence in the trade and awareness of what the trade has to offer."

Gabi says he wants to make sure his business is a success by providing quality services and solutions to customers. He also encourages other tradespeople to strive to meet international standards in their industry.

"APTC has really encouraged and motivated me to not just get the job done, but to also do it right," says Gabi.

Customer service is key

As part of its Certificate III in Refrigeration and Air Conditioning (RAC), APTC teaches students about all aspects of their trade, not just about how to repair and service systems. Students learn about international standards for occupational health and safety, customer service and account management.

For APTC graduate and business owner, Gabi Waqavanua, having an international standard qualification and customer service skills are what makes his business a success. "Some [local contractors] just do the job to get the work done, but at the end it costs a lot in maintenance and return jobs rather than doing the right thing the first time," says Gabi.

Doing a good job and building a relationship and trust with the customer means that he gets long-term repeat business, and now, according to Gabi, "they just pick up the phone and call me straight away rather than getting quotations from another company". "I have been giving them the right advice, which saves them money and helps their business," he says.

Gabi's team also develops a maintenance plan for the lifetime of each refrigeration and air conditioning unit they install, so customers get the maximum from their systems. This includes giving professional advice about energy consumption and how different products can save electricity.

"We tell them about maintaining the system and how it's better for the environment – it helps their business and the environment," says Gabi.

International partnerships

APTC takes a holistic approach with its training for the refrigeration and air conditioning industry, working not only with students, but also with local agencies and tradespeople.

In addition to delivering the Certificate III in Refrigeration and Air Conditioning and a best practice workshop for tradespeople across 12 Pacific countries (in partnership with the United Nations Environment Programme - UNEP), the APTC team also initiated and coordinated an international symposium and is helping with the Cyclone Evan recovery project.

The "Regional Ozone2Climate Technology Symposium" in late 2013 was a first for the Pacific Islands, attracting over 200 participants.

By educating people about new technologies and alternatives available to ozone-depleting substances (ODS), the Symposium aimed to assist the 12 Pacific countries bound by the provisions of the Montreal Protocol. This global treaty was signed by 149 countries and was introduced to phase out hydrochlorofluorocarbons (HCFCs) and reduce the relative baseline use of ODS by 10 per cent by 2015.

"We initiated the symposium as an awareness campaign for the Pacific," says Michael Moller, APTC trainer, adding that "contractors and technicians in the Pacific were not aware of the current ODS-replacement and energy-saving technologies available to the market."

Annie Gabriel from the Ozone and Synthetic Greenhouse Gas Policy Section at the Department of the Environment in Australia, says the work of APTC and partners such as UNEP in raising awareness and education via workshops, the symposium and other approaches is important.

"APTC has been an integral player in delivering training on refrigeration and air conditioning services to the Pacific region, including the importance of good management of used refrigerants during servicing of equipment and at the point of disposal of refrigeration and air conditioning equipment," says Annie.

APTC was also involved in the Cyclone Evan clean-up and ODS Recovery Project in 2013 in Samoa.

The cyclone left a trail of costly destruction and unmanaged refrigerants in damaged machines. The APTC team was able to collect and recover the ODS and help owners repair their systems.

For this project, APTC partnered with the Samoa National Ozone Unit (NOU) in the Ministry of Natural Resources and the Environment (MNRE), Samoa Refrigeration Engineers Association (SREA), and the National University of Samoa (NUS). All these organisations support the 1987 Montreal Protocol.

Front page image: Gabi Waqavanua