



Pacific Islands  
Development Forum



This document seeks to set an appropriate course for the Secretariat towards minimising the negative impacts that PIDF's operations have on the environment.



# Green Office *Strategy*





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We offer our sincere thanks to all who have worked with us on our journey to support an enabling environment by developing this strategy.

### **DESIGN**

The Green Office Strategy was designed in house by the PIDF Strategic Communications Unit. Photographs are acknowledged to the Strategic Communications Unit.

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# CONTENT

<b>Introduction</b>	<b>4</b>
<b>Electricity</b>	<b>5</b>
<b>Lighting</b>	<b>7</b>
<b>Air-conditioning</b>	<b>8</b>
<b>Electronic Devices</b>	<b>9</b>
<b>Kitchen Appliances</b>	<b>9</b>
<b>Water &amp; Liquid Waste Effluent</b>	<b>10</b>
<b>Solid Waste</b>	<b>11</b>
<b>Accommodation</b>	<b>15</b>
<b>Vehicles</b>	<b>15</b>
<b>Garden Equipment</b>	<b>16</b>
<b>Emissions</b>	<b>16</b>
<b>Events</b>	<b>16</b>
<b>Green Office Strategy Process</b>	<b>17</b>
<b>Communicating the Green Office Strategy</b>	<b>18</b>
<b>Action Plan</b>	<b>18</b>
<b>Conclusion</b>	<b>18</b>





# INTRODUCTION

The PIDF is a multilateral and multi-stakeholder organization focusing on a distinctive Pacific model of green growth in blue economies aligned to sustainable development principles. The PIDF also serves as the Pacific Islands south-south cooperation platform with the United Nations and is a member of the Inter-agency Collaborative Group on the Global Partnership on SIDS. We are a space for catalysing, mobilizing and mainstreaming action in support of sustainable development through green/blue economy in Pacific Island Countries. PIDF is an action-oriented platform to identify innovative solutions and works closely with international institutions to engage state and non-state actors to develop high-impact collaborations on sustainable development & poverty reduction in the Pacific Islands.

This document seeks to set an appropriate course for the Secretariat towards minimizing the negative impacts that PIDF’s operations have on the environment. The Secretariat actively promotes initiatives such as green procurement and renewable energy for offices, and is keen to implement them itself. This document aims to set up the PIDF Secretariat as a model green office that will inspire organizations across the Pacific to implement their own green office strategies. Relevant data has been collected from 2016 and 2017 to establish baseline usage data for the organization, and recommendations are made to abide by environmentally sound standards and criteria and maximize the Secretariat’s effectiveness for Members.



## Site Layout of the Secretariat

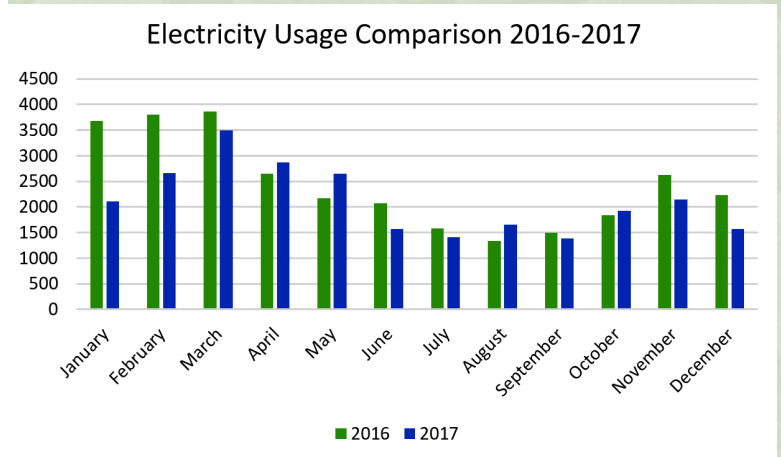
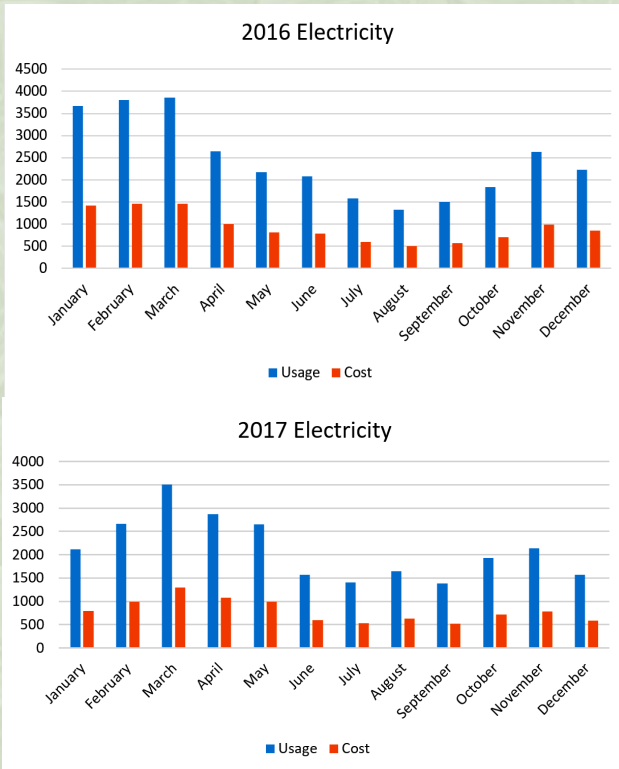
The PIDF Secretariat Headquarters is located at 56 Domain Road Suva, Fiji. The two-story building was originally designed, and used, as a residential property for many years. In the early 1980s the house was redesigned and re-fitted to accommodate the Film and Television Unit of the Ministry of Information and Telecommunications. In 2014, the building underwent refurbishment to bring it to a state befitting the headquarters of an international organization.

The headquarters hosts approximately 20 professional and administrative staff in a centralized building. The building is fabricated from wood and concrete and relies on a combination of air-conditioning and natural ventilation for cooling. The nature of the Secretariat’s work involves the regular hosting of regional meetings and sees some staff undertake substantive international air travel. The PIDF’s primary impacts on the environment are through energy and water use, waste, procurement and travel emissions.



# ELECTRICITY

Throughout the reporting period of January 2016 to December 2017, upon which the included data sets are based, the office location was connected to the Fiji Electricity Authority (FEA) grid, now known as Energy Fiji Limited (EFL). It can be safely extrapolated from [EFL's website](#) that the baseline electricity supply to be approximately 55% renewably derived from hydro power and that the rest is generated with diesel. Overall findings and recommendations are summarized and then sources of electricity usage are explored in detail.



In 2016, the PIDF used 29,345 kWh of electricity at a cost of USD \$11,184.82. In 2017, despite an increase in the number of staff, the PIDF's electricity usage dropped an estimated\* 13% to 25,454 kWh, which saved the PIDF USD \$1,661. This drop is likely due to two initiatives the PIDF enacted in 2016-2017. The PIDF encouraged staff to limit their use of electricity in the office and, in May 2016, replaced the Halogen lamps in the lobby with L.E.D lights. The usage data is not detailed enough to measure the exact impacts of each initiative, but, presumably, both initiatives contributed to the 13% drop. However, as demonstrated in the comparison table, though the PIDF reduced energy usage in the summer from 2016 to 2017, it maintained or increased its energy use in the winter. The Secretariat electrical consumption will improve further after undertaking the planned energy efficiency initiatives.

The CO<sub>2</sub> emissions of electricity from EFL can vary from 0.3-.6kg CO<sub>2</sub> emissions per kWh depending on the ratio of hydropower and diesel used (PIDF Going Green Report). In dry years, there is less water and thus less hydropower capacity, so more diesel is needed to compensate. The Fiji Meteorological Service determined 2017 to be a dry year, so the rate of .6 kg/kWh is used here. The .3-.6 estimation is likely a lower-bound estimation. Environmental Impact Assessments from EFL state that diesel generated electricity in Fiji produces .656 kg CO<sub>2</sub> emissions per kWh, though the figure used in most global reports is .79kg per kWh. The emissions from hydro-powered electricity depend heavily on the kind of hydropower facility. EFL's estimate is most likely derived from the emissions estimates from run-of-river facilities, which can have an emissions rate as low as .52 kg per kWh. However, tropical reservoir facilities such as the Monasavu dam have a [high emissions rate](#) of 1.3-3 kg CO<sub>2</sub> emissions per kWh, and Fiji has a tropical climate as it is north of the Tropic of Capricorn. However, the majority of studies of tropical hydropower facilities have been conducted in Brazil, so for the purposes of this report, EFL's estimates are used, though it is noted that they are likely underestimates. Thus, the PIDF's electricity use in 2017 was responsible for 15.27 tonnes of CO<sub>2</sub> emissions, which costs about \$152.70 to offset through Carbonfund.

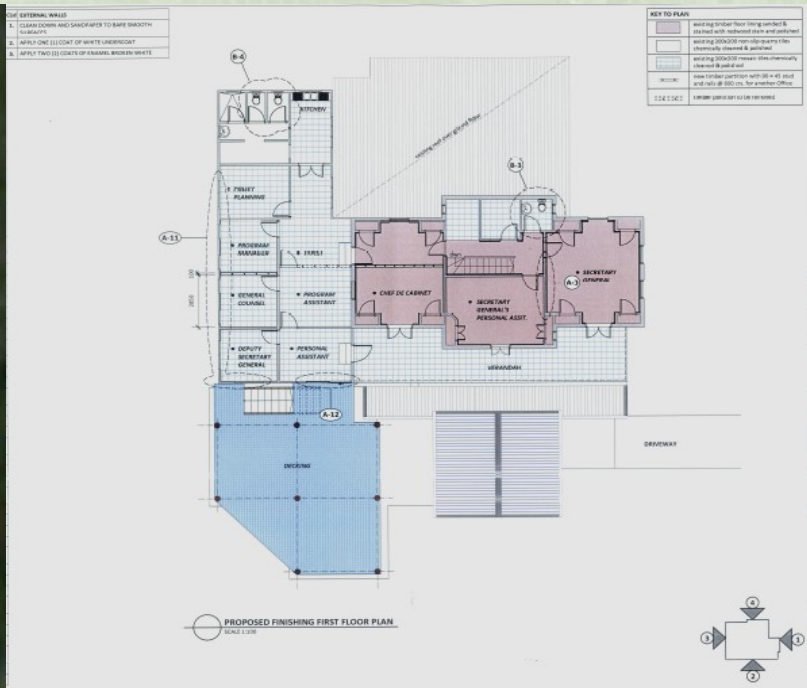
\*Data from two months were missing. The average of the preceding and following months was taken as an estimate of the usage.



## Recommendations

It is imperative that the electricity needs of the office be generated through a renewable energy source like solar as soon as possible.

A rendition of the PIDF HQ property and roof layout (layered over a Google Earth image) shows the installation plan of rooftop PV panels for the full generation of the power needed by the PIDF.



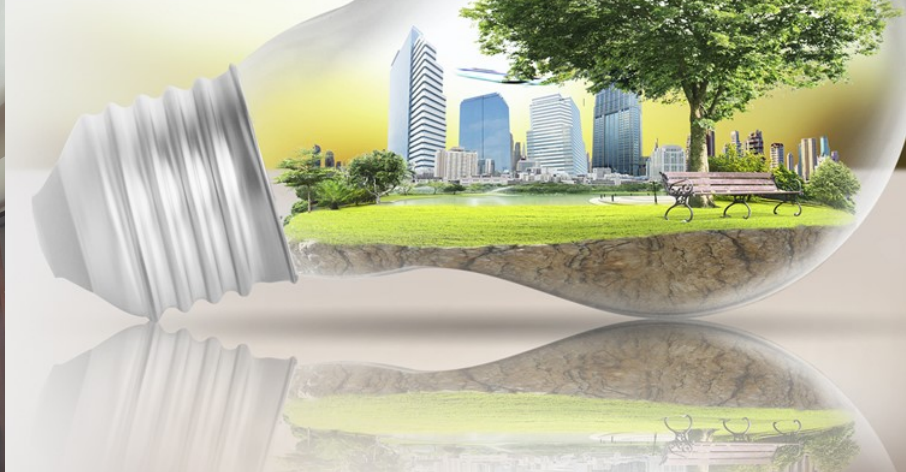
### Proposed layout of roof-top PV system

It is envisaged that the project shall consist of the installation of 24kWhp PV (Photovoltaic) panels on the roofs of the building to supply the site with needed power supply. The initiative will involve the installation of PV panels through the Solar Head of States project funded by Government of India through the India-UN Development Partnership Fund managed by the UN Office for South-South Cooperation. A budget of USD \$80,000 has been allocated for this purpose.

The PIDF could also enter into an agreement with Sunergise (or another company offering similar services depending on their competitiveness) to install and offer regular maintenance to the system.







## LIGHTING

The PIDF has 22 incandescent lights in the offices of staff members, as well as 24 more incandescent lights in common rooms and 55 L.E.D. lights in the foyer and first floor conference rooms. Staff reported turning their lights on an average of seven hours per day. The PIDF installed the L.E.D. lights in the foyer in May 2016 in an effort to reduce energy. The data does not show that the L.E.D. lights have had a significant impact on energy usage, but that is probably because there are many windows and bright natural light in the room, and the Admin Assistant who works in the foyer reported hardly turning the lights on, except at night and on cloudy days. Thus, switching other, higher-use lights to L.E.D. bulbs is likely to have a greater effect. Finally, staff were not asked about how often they turned off their lights when out of the office, but some staff reported that lights were often left on when staff went out to lunch or meetings, and were sometimes left on over the weekend.

## Recommendations

The type of lighting used in and around the PIDF HQ property must be of an ‘energy saver’ nature. Recent studies prove that energy efficient light bulbs reduce energy usage and cost less to use. Energy saver lighting also lasts up to 25 times longer than incandescent lights, and contributes around 85% less in energy bills. For the month of May 2016, the Secretariat replaced in total 55 Incandescent based lights to L.E.D with the electricity consumption showing reduction immediately. L.E.D lights are recommended for all new purchases and replacements. The type of light needed is a four foots LED tube light without the fittings (the new LED lights should be usable with the current fittings). All of the LED lights in Table 1 claim to use 50% less energy than fluorescent bulbs and to have a lifespan of 15,000-20,000 hours.

Type	Store	Cost (FJD)
Fluorescent	Vinod Patel	\$2.40
LED	Vinod Patel	\$16.50
LED - glass	Glitz	\$8.50
LED - plastic	Glitz	\$14.00
LED	Poly Products	\$12.06

Table 1. LED Lighting Quotes

Using light efficiently is also something that needs to be addressed. The simple rule of thumb is ‘an empty room does not need light’ and, the last person leaving any room must switch off lighting that is not needed. Also, as an alternative to electrical lighting, the PIDF must try its best to make use of daylight wherever possible. [It has been suggested](#) that daylight has the added benefit of improving concentration so that working environments achieve increased productivity.

To ensure that electricity is not being used in the office while the office is vacated, the PIDF shall install an electricity cut-off system that will cut the electricity off to all areas of the office except those operating the refrigerators, the security lights and any other systems that need to remain on, at a given time.

This would ensure that if anyone forgets to switch off their lights, air-conditioners or computers these would not continue to consume electricity during the night. The timer would switch electricity back on at 7am – in time for staff returning to the office. During the weekends the electricity would remain off. Vinod Patel stocks the Legrand 49750 Timer, a 24-hour timer with 230V 50Hz capacity for FJD \$165 that can be wired into the PIDF circuit by an electrician.



## AIR CONDITIONING

All sixteen staff members with an office have an air conditioning unit in their office. Staff reported using the air conditioning an average of five hours a day in the summer, and two hours a day in the winter. The biggest users of air conditioning in 2017 were the offices of the Secretary General and the Deputy Secretary General, as their air conditioning is turned on up to ten hours a day, year-round.

Some offices that do not have much of a breeze also use their air conditioning most of the day during the summer. However, staff with similar offices reported widely varying air conditioning usage, indicating that some staff can further limit their air-conditioning usage.

In 2017, some staff noted that some staff refrain from opening their office windows as this would give mosquitoes and flies access, bringing the health consequences associated with them. The installation of mosquito netting on the downstairs windows at the end of 2017 has helped staff use the windows more. However, the door next to Team Leader Programme Management office is left open all day with no mosquito netting, allowing mosquitos to get inside. The same is true for the sliding doors next to the office of Team Leader Member Capacity. All ACs installed are RS-410 (thus not contributing to ozone depletion), with the exception of the one used in the Team Leader Member Capacity's office.

## Recommendations

The use of air conditioning needs to be reduced. In a tropical country this may not be easy to do unless there are alternatives staff can use to still remain productive. Most of the offices have windows and the opening of windows may be enough for most months of the year. Screen doors should be installed on the two doors mentioned above. New and replacement air conditioning units should be type RS-410, a type that does not contribute to ozone depletion. It is recommended that the AC used by the Team Leader Member Capacity be replaced urgently preferably with a solar powered one that can serve as a trial. AC that is powered by solar is available in the local market and must be considered during the replacement phase.



Solar Powered AC available locally.





## ELECTRONIC DEVICES

The three staff members that use desktop computers charge them an average of eight hours a day. The 17 staff members that use laptops charge them an average of six hours a day. There are three desktop computers in the office that are not used. The production of the PIDF's 27 devices resulted in 6.6 tonnes of CO<sub>2</sub> emissions, so the one-time offset cost of the devices is USD \$66.

Type of Computer	# of computers	Estimated tonnes of CO <sub>2</sub> Emissions	Cost to offset (USD)
Desktop PC	6	2.4	\$24
Laptop	17	3.4	\$34
Laser Printer	3	.6	\$6
LCD Monitor	1	.2	\$2
<b>Total</b>	<b>27</b>	<b>6.6</b>	<b>\$66</b>

Table 1. One-time device CO<sub>2</sub> emissions and cost

## Recommendations

The PIDF's policy of procuring laptops for all staff shall be retained. Laptops use only a quarter of the energy that desktops do and can be easily transported to meetings to reduce paper usage. The only desktop used in the office would be at reception, and it must be placed on Power Management Mode to ensure efficient power usage. Power Management must also be switched on for all laptops, printers and photocopiers. Staff with laptops must be occasionally reminded to keep their laptops clean, both physically and technically, so that there are minimal issues with them. Two methods of ensuring efficient power usage are unplugging the laptop from its charger when the battery is full and switching off the power point on the outlet. Employees should be asked to time how long it takes for their laptop battery to fully recharge and then set a timer for themselves every time they charge their computer to remember to unplug it or flip the switch, until it becomes habit.

## KITCHEN APPLIANCES

### Refrigerator

There are two refrigerators in the office. One is a full-size refrigerator with a two star [energy rating](#) that consumes 668kWh per year. The freezer side is completely empty and the refrigerator side is usually less than 10% full. The other refrigerator is a mini refrigerator and is usually half full. There is no energy rating specified on the mini refrigerator.

### Kettle

Every staff member uses the two kettles in the office for hot water. Each staff member uses the kettle an average of two times a day. About half of employees reported that the kettle was heated up twice a day for the whole floor to share, so they almost never had to reheat the water in the kettle. The other half reported reheating the water in the kettle every time they wanted some.



### Coffee Maker

Seven staff members use the coffee pot, and all reported that there were one or two people that usually brewed the coffee and shared with everyone.

### Microwave

Less than half of staff members said they used the microwave, and those that did tended to only use it once or twice a week, at most.

## Recommendations

The PIDF should replace the full-size refrigerator downstairs with an energy-efficient mini refrigerator. An energy certified refrigerator can generate around 15% savings on electricity bills. The Minimum Energy Performance Standards and Labelling Program came into effect in Fiji for refrigerators and freezers in 2012 and the Secretariat shall comply with those standards in the purchase and replacement of refrigerators. The PIDF might also consider buying a more energy efficient hot water kettle that will keep the water warm for longer to reduce the number of times the kettle needs to be reheated. Signs should be hung near the appliances in both kitchens

## Water and Liquid Waste Effluent

No controls are currently in place to either catch water in reservoir tanks or regulate effluent and contaminants going into the wastewater/sewage lines. Minimal liquid waste is generated, but measures have yet to be instituted to prevent solid waste and chemical contamination of the waste water sewage lines. Water usage by the office is currently unregulated, and metering is handled on an individual office basis by the Water Authority of Fiji (WAF) without any direct review by staff at regular intervals with the exception of billing cycles.

Water bill records are incomplete for 2016-2017. There is only full usage data for October 2015-April 2016 and October 2017-January 2018. There is partial usage data from June 2017-September 2017. The period of May 2016-May 2017 is unaccounted for. Given the lack of data, the best description of the PIDF's water usage that can be found is an estimated average usage per month. These calculations exclude wastewater, as there was no adequate data on wastewater consumption.

Timeframe	Usage (m3)	Cost (FJD)	Months*	Usage (m3) /Month
October 2015-January 2016	84	44.44	3	28.66
January 2016-April 2016	98	51.84	3	32.66
July 2017-September 2017	51**	96.76	2	25.50
October 2017-January 2018	95	50.25	3	31.66

\*A few months were double-counted, so in those cases bills were assumed to be quarterly and cover three months.

\*\*This figure is estimated from the cost using the standard rate of \$.529 per m<sup>3</sup> of water as no usage data was in the records.

The average average monthly usage is 29.62 m<sup>3</sup>. There is no clear difference between 2016 and 2017 usage. So, the highly estimated water usage of the PIDF in 2017 is 355.44 m<sup>3</sup> of water. The total water usage, including wastewater, is definitely higher as the PIDF paid \$345.28 FJD total to the WAF in 2017 but at a rate of \$.0529 the 355.44 m<sup>3</sup> of water would only cost \$188.02 FJD.

Assuming that it takes 1 kWh of electricity to pump and treat 100 litres of water, there are .006 kg CO<sub>2</sub> emissions per litre of water. So, the PIDF's water usage is responsible for .00213 tonnes of CO<sub>2</sub> emissions.

## Recommendations

The PIDF should keep comprehensive, clear records of water bills. This should be simple as WAF has begun emailing electronic copies of bills. In the short-term, all products containing toxic pollutants should be removed from the office premises and not used. In the long term, a water harvesting and a water storage system for the recycling of rainwater and a solar water pump should be installed. A water harvesting plan needs to be developed.





## Solid Waste

### Paper

The PIDF purchased 80 reams of copy paper with 0% recycled content in 2017. The consequence of this paper usage is .057 tonnes of CO<sub>2</sub> emissions, which would cost \$5.69 to offset (Carbonfund calculator). Almost all staff reported printing double-sided and black-and-white when possible. Executive Assistants reported using the most paper at 200-600 sheets per week. The Secretary General reported a usage of 200 sheets per week, and the Deputy Secretary General, Admin Assistant, and Coordinator Member and Partner Services reported using about 100 sheets in a week. It is important to note that the PIDF buys 40,000 sheets of paper in a year, and employees' weekly estimates add up to 69,923 sheets of paper per year, so the above numbers are likely overestimated. Below, findings from staff interviews are examined to show how paper is used at the PIDF.

- **Meeting Procedure:** Seven staff named meetings as the primary reason for printing documents. There is a sense that documents need to be printed for meetings. Extensive documents are printed both for internal and external meetings. Usually those attending the meeting are not asked if they would like a printed copy. Rather, copies are provided as a part of standard meeting procedure.
- **Habits:** Two staff members said that they printed documents out because it was easier for them to read the printed documents and mark the pages.
- **Communication/Time Management:** One staff member said that printing documents and putting them on a pile on their manager's desk was the best way to bring their attention to the documents.
- **Administration:** Staff reported using paper for time cards, report books, invoices and petty cash forms, and financial reports.
- **Publications:** Staff members reported printing PIDF publications and bringing them along on trips and to meetings.
- **Reuse:** All staff members said they reused paper when asked. A few provided specific examples of systems they had created, such as using shredded paper when packing documents and gifts for travel.

There is a bin for collecting paper by the printer. When it is full, the Admin Assistant calls the recycling company South Pacific Waste Recyclers to come and pick it up. The Recyclers have been picking up the paper since 2016. Most staff members knew where the bin was and how it was picked up.

## Recommendations

### Reducing Printing and Photocopying

Power Management should be switched on for all printers and photocopiers. The onus is on the staff at the PIDF to print or photocopy work that needs to be presented as a 'hardcopy'. For example, documents that are considered still 'work in progress' can be saved to disk and not printed until a version of the document is finalised and ready for distribution. In cases where printing of drafts are necessary, then these can be printed using 'Draft Mode', which allows documents to be printed using less toner and ink than normal.

These documents will not look as clean or as crisp as regular documents, but are great for quickly printing out versions of your documents as you refine them. Some simple ways of minimising paper wastage is to use both sides of paper for printing, distribute documents more by emails and to store office manuals, policies and control documents online. Below are specific recommendations based on findings from interviews conducted about 2017 paper usage.



- **Meeting Procedure:** Procedures for internal and external meetings should be set so that every meeting is a mini green event. For example, every internal meeting should be paperless and the PIDF should ask the host of every meeting they attend for a soft copy of documents for the meeting or that just one set of documents be printed for the table. Institute an ask first, print later policy for internal and external communications.
- **Habits:** Staff members need to make personal choices about whether or not they are willing to change their comfortable habits to avoid wasting paper.
- **Administration:** The PIDF's archive and filing systems should be updated to paperless record-keeping systems. Paper forms such as time sheets and petty cash forms should be submitted electronically.
- **Publications:** Develop electronic publications and limit printing them where possible. Continue to focus on developing paperless communication methods.

## Recycling Paper

Bins just for recycling paper should be put in the offices of the Team Leader Program Management, Security, Reception, the Assistants to the Secretary General and the Deputy Secretary General, and one each in the three main, shared office spaces. In the morning when the support staff check the rubbish bins, they should collect all the paper from the small bins and put it into the paper bins. Or, staff members should take out their own at the end of the day. The PIDF must engage with South Pacific Waste Recyclers to collect office waste paper for recycling and create a policy to buy only chlorine-free paper with a high percentage of recycled content. Buying 50% recycled content would decrease paper footprint to .46 tonnes, which costs USD \$4.63 to offset through Carbonfund. 100% recycled content paper would decrease paper footprint to .36 tonnes which costs USD \$3.57 to offset through Carbonfund. Paper made from alternative materials, such as hemp, bamboo, and organic cotton should also be considered.

## Plastic

Staff reported disposing of only a few pieces of plastic in a week, if any. Most of the plastic they said they disposed of at work was from takeaway food and drink packaging. The two work-related plastics reported were the plastic bags the newspapers come in and plastic bags from office supplies. Staff reported throwing plastic away, though some said they kept and reused the plastic bags. In May 2018, large reusable plastic bags were set up in the office for collecting recyclables, but most staff were not aware that they existed.

## Recommendations

Focusing on reducing plastic waste is important, especially because the PIDF initiated the plastic phase-out and supports the Last Straw campaign, even though the office does not produce a large volume of plastic. Staff often brought up the glassware and dishware available in the PIDF kitchens as a positive substitute. The new place to put plastics should be communicated to the whole staff.

## Food

Staff members reported very little food waste other than meat bones. Those that did have extra food shared or brought it home. A compost was set up in 2017, but staff were not trained in how to use it properly, so it was overrun with cockroaches. There is potential for a small but steady stream of appropriate food scraps to the compost as coffee and tea are popular and some staff eat a lot of fruit. Furthermore, paper towels are used in the bathrooms and kitchens and they are thrown out. As of June 2018, new compost bins with clear instructions have been placed in each kitchen and the bin outside was cleaned. The staff were notified of the change and the Support Staff takes the bins out every afternoon.

## Recommendations

Support staff should continue to monitor the compost pile regularly. When the pile has built up enough mass and it turns into rich soil, the soil should be used in the maintenance of the grounds. Staff should be encouraged to create their own compost piles at home or bring compostable waste to work to add to the pile. Washable dish towels made of recycled materials should be used in the bathroom and kitchen instead of paper towels. But, if paper towels are used, they should be unbleached and have high recyclable content. Paper towels can be composted, so a bin just for paper towels that just have water and biodegradable soap on them can be placed in the bathrooms and that can be added to the compost daily by Support Staff as well.



## Other

The PIDF staff throw away about 18 Styrofoam takeaway boxes a week. No staff members reported disposing of glass products, and only three reported using disposable metal products regularly.

## Recommendations

Staff should be encouraged to bring their lunch from home. If they are buying takeaway meals, they should be encouraged to take with them reusable containers.

## E-Waste

Currently there are no complete Electronic Waste recycling solution in Fiji. However Waste Recyclers (Fiji) Ltd. do collect E-waste from which they extract certain components (including batteries and other metal components) while properly disposing of the remainder. PIDF should however keep an eye on other more complete E-waste recycling opportunities as they arise in Fiji.

## Procurement

Items that the PIDF procures include paper, vehicles, and even electricity, but this section will specifically examine the office supplies PIDF purchases every month. The PIDF spent \$910.95 a month on office supplies in 2017. The items that the PIDF buys have not been screened through a Green Procurement process. Two-thirds of the budget goes toward a monthly office hygiene service. The PIDF buys the Nambawan recycled toilet paper that the South Pacific Waste recyclers produce, except when it is not in stock.

Items	Quantity (total weight)	Brand	Total Price per Month
Instant Coffee	1 bottle (200g)	Nescafe	\$16
Brew Coffee	1 bag (1kg)	Caffe Aurora	\$25
Powdered Milk	10 packets (450g)	Rewa Powder	\$60
Tea Bags	2 packets (200 bags)	Royal Tea	\$9
Sugar	4kg	Fiji Sugar	\$8
Biscuits	10 packets (3.75kg)	FMF	\$15
Washing Paste	2 packs (200g)	Axion	\$4
Toilet Paper	6 packets (72 rolls)	Nambawan	\$30
Paper Towels		Rentokil	\$366.20*
Office Hygiene**		Rentokil	\$377.75
Total			\$910.95

Table 2. Monthly Office Supplies 2017

\*As of March 2018, the PIDF purchases 2 cartons of Tork paper towels (400 sheets) for \$30 a month.

\*\*Includes soap in bathrooms and servicing of sanitary bins and air fresheners.

## Recommendations

A Green Procurement Plan should be developed by the Secretariat. There are opportunities to buy alternative, more sustainable products. The PIDF should purchase the office products it highlights on the Pacific Green Bazaar, when possible, as it purchases Nambawan toilet paper. For instance, the PIDF should purchase [Bula Coffee](#), or [Tanna Island Coffee](#), and [Organic Earth Fiji Soap](#). Those products may be somewhat more expensive, but the cost can be covered by finding an alternative to the current costly hygiene service. These green procurement decisions will also pay off through publicity and relationship-building opportunities.



	2016			2017		
	# of trips	CO <sub>2</sub> /Passenger (kg)	CO <sub>2</sub> /trip (kg)	# of trips	CO <sub>2</sub> /Passenger (kg)	CO <sub>2</sub> /trip (kg)
Secretary General	11	6076.2	552.3818	6	8655.35	1442.558
Deputy Secretary General	5	2903.8	580.76	8	2635.2	329.4
Team Leader Member Services	4	767.4	191.85	2	708.4	354.2
Team Leader Program Management	3	2140.3	713.4333	10	6442.7	644.27
Team Leader Research Policy & Evaluation	3	881.1	293.7	1	31.9	31.9
Team Leader Member Capacity	2	566.4	283.2	1	1596.2	1596.2
Climate Change Advisor	2	534.7	267.35			
Team Leader Strategic Communications	1	343.7	343.7	2	4745.5	2372.75
Executive Assistant DSG	1	343.7	343.7			
Team Leader Corporate Services	1	343.7	343.7			
Staff Subtotal	33	14901	451.5455	29	24992.95	861.8259
Leaders	4	2500.4	625.1	4	4300.3	1075.075
Total	37	17401.4	470.3081	33	26615.05	806.5167

**Table 4. Flight Emissions for 2016 and 2017**

Emissions calculated via the [ICAO emissions calculator](#). The [Travelmath calculator](#) was used as a supplement where necessary.

## Travel-Flights

Secretariat staff travel routinely within the region and beyond by plane. In 2016, PIDF staff went on 37 round-trip flights and were thus responsible for 17401.4 kg of CO<sub>2</sub> emissions. In 2017, the number of trips decreased slightly to 33, but staff went on longer flights, so the PIDF was responsible for 26615.05 kg of CO<sub>2</sub> emissions. There was a 68% increase in the PIDF's aviation emissions from 2016 to 2017. In 2017, the PIDF was responsible for 26.615 tonnes of CO<sub>2</sub> emissions, which costs about USD\$266.15 to offset through Carbonfund.

## Recommendations

### Limit Travel

The PIDF staff should travel only when absolutely necessary. In the Pacific, minimizing travel is difficult because of the non-responsiveness of national counterparts, the complicated airline connections in the region and the poor IT infrastructure in many Pacific Island countries that do not allow for trouble-free video conferencing.

### Invest in video-conferencing facilities

As a regional organisation and having a large number of international partners PIDF needs to invest in a good video-conferencing facility and would replace some of the travel currently being made.

### Offset Emissions

Emissions should be calculated for every flight as it is booked and cost of offset should be presented when presenting cost for approval. The PIDF should establish an emissions offset policy to explicitly incorporate the environmental cost of travel into decision-making. The offset policy should not be to clear staff's conscience and thus encourage them to travel as much as they want. The primary aim should be to travel as little as possible. If the travel cannot be avoided, one should stay as long as necessary in that country to fulfil all the tasks the PIDF needs done in that country. The organisation should also combine visits to different countries that are close to each other to avoid travelling long distances. An analysis of available flight connections in the region and between Pacific island countries with an indication of distances and costs needs to be performed.





## Accommodation

Staff reported staying in a hotel for work a total of 194 overnights in 2017. Those overnight stays were responsible for 4.05 tonnes of CO<sub>2</sub> emissions and would cost USD \$40.49 to offset (Carbonfund).

## Recommendations

Limit overnight stays and, where possible, use accommodation that has green credentials / certification.

## Vehicles

The staff estimated that they attended 586 meetings and events in Suva in 2017. They used a PIDF car when possible and otherwise they called a taxi. They reported attending an estimated 591 meetings and events in Fiji (outside of Suva) in 2017. Some used a PIDF car, though most used their private cars, taxis or the bus. The PIDF has two cars in its fleet, a Toyota Prado 2017 with license plate CD 27 from the Fijian government fleet, and a Toyota Corolla with license plate PIDF 2 from the Turkish government. The average CO<sub>2</sub> output for CD 27 is 225.7g/km and 167.7g/km for PIDF 2. The staff use the PIDF 2 car, with the exception of the Secretary General, who has CD 27 reserved for his personal use. John started a trip logbook was started in late October 2016 and it continued until June 2017. The Driver has not had forms for the logbook for a year at the writing of this Strategy, so the data is incomplete. In 2017, the PIDF 2 car was driven 5,534 km from January to June and the CD 27 was driven 3,655km January to May. So, in 2017, the PIDF 2 went about 11,068km and emitted 1.86 tonnes of CO<sub>2</sub> and CD 27 went about 8,772km and emitted 1.98 tonnes of CO<sub>2</sub>. Fuel receipts from November 2016 to June 2017 indicate that the PIDF 2 travels about twice as much as CD 27 on average, so these estimates are likely off.

## Recommendations

It is recommended that the following be considered when the Vehicles are replaced during purchasing or leasing arrangements: <https://www.car-emissions.com/cars/model/Toyota/>. Serious consideration should be given to procuring plug-in electric vehicles, particularly when solar power has been installed. When possible, staff should plan ahead and carpool when using the PIDF car to cut down on taxis and distance travelled. The Driver should be supplied with a logbook so mileage can be properly tracked. Electronic alternatives to a paper logbook, such as GPS trackers, should be considered.

## Commutes

Thirteen employees reported commuting to work by taxi or private car. Based on rough mileage estimates derived from time estimates, the average one-way commute by car is 4.44 miles. Four employees reported commuting to work by bus. The average one way bus commute was estimated to be 5.54 miles. The rest of the staff reported walking to work. The combined effect of each employee's round-trip commutes in a year (estimated to be 245 work days) releases 12.50 tonnes of CO<sub>2</sub> emissions, which costs USD \$124.98 to offset (Carbonfund).

## Recommendations

Encourage employees to walk or bike to work. A few employees live within 2 miles of the PIDF yet still commute by car. If employees are unwilling to walk, bike, or bus, perhaps a morning carpool can be arranged for those who live near the office. The PIDF should also install a sheltered bike rack for employees and visitors using bicycles.



## Garden Equipment

The Garden Equipment tools owned by the Secretariat, which produce emissions, are as follows: Brush Cutter used for 65hrs/annum @ average output of CO<sub>2</sub> is 20Kg CO<sub>2</sub> e/ hr= 1.3 tonnes per year

## Recommendations

It is recommended that the brushcutter be replaced by one that runs on a rechargeable electrical motor and that is cordless. A number of these are on the market. It is proposed that one is procured.

## Emissions

In total, the PIDF was responsible for emitting 70.31 tonnes of CO<sub>2</sub> emissions in 2017. Aviation emissions comprise 38% of the PIDF's emissions, so steps to reduce the number and distance of flights taken by PIDF staff would significantly reduce the PIDF's footprint. The next large category of emissions is the total CO<sub>2</sub> emitted by employees' round-trip commutes throughout the year. Commutes are responsible for 18% of the PIDF's emissions, so the PIDF should assist employees in finding more environmentally friendly modes of daily transport. The PIDF began offsetting its emissions at COP23, but it does not yet have an emissions offset policy.

Categories	Tonnes of CO <sub>2</sub> emissions	Cost to Offset (USD)
Flights	26.69	\$266.15
Electricity	15.27	\$152.70
Commutes	12.50	\$124.98
Vehicles	3.84	\$38.40
Devices	6.60*	\$66.00*
Accommodation	4.05	\$40.49
Garden Equipment	1.30	\$13.00
Paper	.06	\$5.69
Water	.002	-
Total	70.31	\$707.41

**Table 3. Emissions for 2017**

All categories calculated via Carbonfund except flights and vehicles. See data in subsections for details.

\*a one-time cost

## Recommendations

The PIDF should set emissions reduction goals and institute an emissions policy. These steps should be taken in pursuit of carbon neutrality certification from a carbon offset certification company. Carbonfund estimates are used in this report for consistency, but the PIDF should seek out ways to offset carbon emissions by investing in projects in member countries, such as mangrove replanting.

## Events

In May 2018, the PIDF produced a [Green Events checklist](#). It covers areas such as waste, energy use, printing and supplies, travel, and food and catering during events.

## Recommendations

Create a spreadsheet and for each event that the PIDF hosts, log each of these data points in the spreadsheet:

- Number of days
- Number of attendees
- Type of transport each attendee used and their estimated round trip distance



- Hotel nights per attendee
- Meals per attendee
- Whether the hotel they stayed in was upscale or not

Then use the Carbonfund events emissions calculator to calculate the event's emissions. The PIDF should also use the Green Events Checklist and logo to move towards more sustainable meeting practice.

## Green Office Strategy Process

The Team Leaders Research Policy and Programme Management wrote the first draft of the Green Office Strategy and most of the recommendations. A summer intern conducted a baseline survey of staff and collected baseline electricity, water, accommodation, flight, vehicle, and procurement data with the assistance of the Admin Assistants and Coordinator Accounts and Administration. A list of supporting documents and sources referenced are at the end of this document.

## Recommendations

### Record Relevant Data

The following is a list of data that should be regularly tracked in a centralized location so it doesn't have to be tracked down for every audit. Since different staff members are responsible for different sections of data, the document should be on a collaborative platform such as Google Drive or OneDrive.

- Electricity usage on a monthly basis (take care to input the data for when the electricity was used, not for when the PIDF was charged, and to record the kWh used for all of the three meters)
- Water usage on a monthly basis
- Number of nights staff and leaders spend in hotel rooms in a year
- Flight record (if that isn't normally kept)
- One document with a running list of clearly dated green office initiatives and notes on their effect
- Weighing how much paper is picked up by the recycling company and recording that data (to measure how much is being thrown out)
- Log of miles and mileage for each vehicle

### Conduct Green Audit Biannually

July 2019, Team Leader Research Policy and Evaluation will conduct a Green Audit to assess the PIDF's progress in achieving the goals of this Strategy and set new goals for the PIDF. Team Leader Research Policy and Evaluation will conduct a Green Audit on a biannual basis from then on. If the list of data above is regularly recorded, conducting a green audit and updating the Green Office Strategy should be easy.

### Achieve Green Office Certification

The PIDF should aim to fulfil the [criteria](#) of the WWF Green Office Program. The PIDF will fulfil the criteria if it acts on the recommendations outlined in this Strategy in a timely manner. The PIDF should pursue [Green Office certification](#) by July 2019.





## Communicating the Green Office Strategy

### Internal

- Introduce the Strategy to management. Ensure that each Team Leader is dedicated to pursuing the recommendations of the Strategy. Give each manager a tailored list of what they can be doing and how they can get the people that work for them on board.
- Circulate the Strategy internally via email to all staff.
- Introduce the Strategy to every staff member individually with an individualized plan for what they can do moving forward. Show them their personal estimated office footprint compared to the average staff member, and the summarized footprint of the organization. Where they are above average, ask them to help lead the rest of the staff to start practicing such behaviours, too. Introduce the goals of the Strategy, and ask them how they can help achieve those goals.
- Conduct staff training to encourage energy and waste-saving behaviours identified in the Strategy.
- Managers should ensure that their team members are clear about what responsibilities they have in implementing the Strategy in accordance to an action plan.
- The next Green Office Audit will be conducted in July 2019 and energy and waste-saving goals need to be identified to be met on that date.

### External

- July 2019, a communications strategy should be developed to communicate the success of the Strategy to the PIDF's partners. Tools such as the baseline interview and the Strategy should be provided to partners to encourage them to adopt similar changes.
- An online dash-board should be developed to indicate progress on the implementation of this Strategy.

## Action Plan

An action plan will be developed to help implement this strategy with clear timelines and responsibilities.

## Conclusion

The Secretariat's main environmental impacts are from electricity usage and emissions from flights and commutes. Electricity usage and commute emissions can be partially addressed through thoughtful initiatives to change employee's behaviour. But stronger commitments will need to be made to create noticeable change. Reducing flight emissions requires careful evaluation of the worth of every overseas meeting, and offsetting emissions is a financial commitment for an organization with a small budget. It is noted that PIDF is working with international partners to reduce emissions arising from the transport sector, including by using sustainable aviation fuel for domestic and international aviation. Though larger projects such as rooftop solar panels are expensive, they would raise the profile of the PIDF and send a message to the PIDF's partners that the PIDF is committed to the ideas it promotes.

**This Version:** July 2019



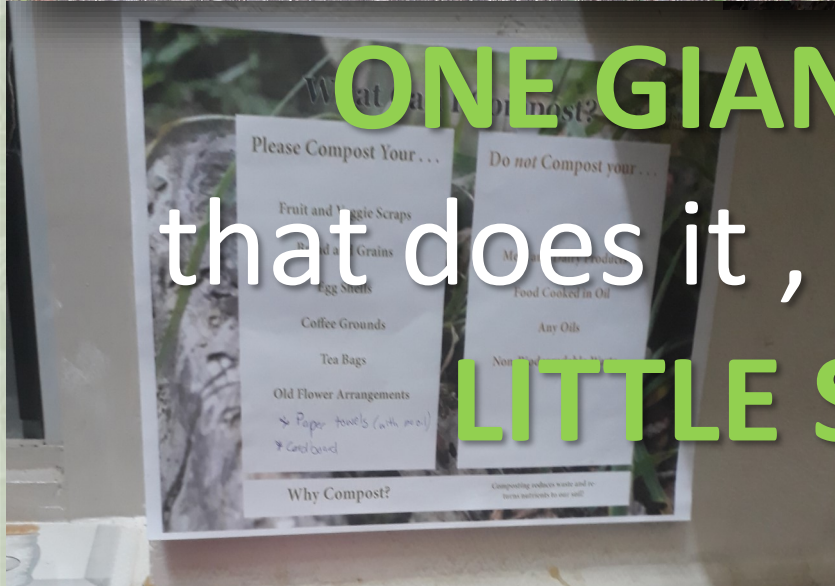


There is no

**ONE GIANT STEP**

that does it, it's a lot of

**LITTLE STEPS**







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