

## *Sustainable Summit*

Bringing together an international group of people for a multi-day conference uses significant amounts of energy and other resources. Travel to and from the conference location, consumption of food and drink, using paper for notes and energy for lighting, cooling and computer use mean that any event like the International Young Professionals Summit will have a significant impact on the environment.

Of course there are positive social effects that will, hopefully, offset the energy and resource costs of running the Summit. There will be energy costs in everything we do, and it is our actions that determine whether these costs are justified. However, there are also ways of directly reducing the ecological costs required to produce the goods and services we consume and assimilate the wastes we generate.

A simple way of doing this is to follow the three Rs: **Reduce** necessary resource consumption and waste (buying items with less packaging, using energy efficient lights or not using lights at all, printing double-sided on paper), **Reuse** items where able (using multi-use rather than disposable items) and **Recycle** waste (many different paper, plastic and metal materials can be recycled).

The next few pages will detail some small, practical things that delegates can do at the Summit and afterward to reduce the ecological impact of our lives. It also contains some management-side practices that Griffith University and Summit organisers have implemented to reduce resource consumption, as well as ideas you can use at home.

### *What IYPS is doing:*

#### **Paper:**

- As much material as possible is being made available electronically, reducing paper usage. Newsletters and other announcements will be presented electronically, rather than being printed and distributed.
- Toner, printer and fax cartridges are now recycled, and turned into recycled plastic park benches, rulers and other products. One such bench can be found in the EcoCentre.

#### **Energy:**

- All facilities use energy-efficient compact fluorescent lamps that use 75% less electricity and can last ten times longer, saving energy and replacement labour. In many places, these lights are controlled by an integrated system that enables dimming and turns them on and off using motion sensors. Computers have power-efficient features enabled.
- Offices at Griffith University use natural ventilation and separate air conditioners, keeping total energy consumption to a minimum.
- Only cold water is supplied in the toilets, keeping water-heating energy consumption low.
- Griffith University only plants native greenery that is adapted to our climates and needs less water to survive.

#### **Transport:**

- Encouraging delegates to use Brisbane's public transport system. Griffith University sits on a major bus route with buses to the city running every fifteen minutes for most of the day (every ten minutes during peak hours). Details of public transport options have been included in your delegate kit.

**Food:**

- Vegetarian options are available at all IYPS meals.
- A re-usable travel mug will be provided in your delegate kit, eliminating the need for disposable Styrofoam or plastic cups – please use this for water, coffee etc.
- Fair trade tea and coffee will be available at morning and afternoon tea in the common rooms.
- The majority of food wastes from meals will be used to feed local livestock through established programs at Griffith.

**Water:**

- The accommodation provided has a variety of water-efficient fittings installed.
- Griffith University has waterless urinals and rainwater tanks installed, and time-controlled taps in the toilets. All new buildings and refurbishments must comply with a checklist of sustainable practices of design, including measures that reduce water consumption.

## Why are these strategies important?

### *Paper*

Paper is made from cellulose fibre, the source of which can be pulped wood, or a variety of other materials such as rags, cotton, grasses, sugar cane (very popular), straw or waste paper. More recent innovations have seen paper made from hemp, banana leaves, and even recycled money. Wood pulp is the most common source material for the manufacture of virgin paper (paper which has no recycled content). There are different sources of waste fibre used as a source material for manufacturing recycled paper.

Mill Broke is “waste” paper that has never been used, either printers’ off cuts or rolls damaged during production. When mixed with water the fibres are freed into pulp, which can then be used to make paper. Paper that is made primarily with Mill Broke is not generally recognised as being recycled. The recycling of paper that has been printed on and used is known as “post-consumer waste”. Papermaking fibres can typically be recycled 5-7 times before they become too short to be recycled again. At this point virgin pulp must be introduced into the process to maintain the strength and quality of the fibre. For usage in normal printing and photocopying, paper with 50% or more post-consumer waste is generally regarded as being environmentally sound.

The World Resources Institute reports that in the last 30 years, per-capita consumption of paper has increased by over 86 per cent. Industrial countries use ten times as much paper per person as developing nations. And demand is expected to increase - global consumption of industrial wood products is predicted to rise by more than 50 per cent in the next 12 years.

**What we can do:**

- Use recycled paper: Generally, try to use locally made recycled paper made from waste products (whether post-consumer waste or other another material like cane fibre) or plantation timber; it has much less of an ecological impact than paper made from native forests.
- Re-use one-sided paper and recycle double-sided paper: this reduces the burden placed on our natural resources, through reducing the rate of deforestation and plantation harvesting as well as saving both energy and water. The reuse of one tonne of paper saves enough energy to heat the average home for six months, save 30,000 litres of water, 1,500 litres of oil, and 3 cubic metres of landfill space. The IYP has provided paper bins and / or trays in the workshop rooms, common areas and accommodation so as to facilitate recycling and reuse of paper.
- Print and photocopy on both sides. Newer photocopies installed at Griffith University are set to print double-sided by default. Other printer / photocopiers can easily be directed to do so. The printing options panel in your software should enable this.

## Energy

Energy production is a major contributor to greenhouse gas emissions. In Australia, black coal continues to dominate the pattern of energy production (as it has done for at least the last 20 years), accounting for nearly half of total energy production. Uranium accounted for 30% of total production, followed by crude oil and natural gas, both of which accounted for 9% of total production. Renewable energy production accounted for less than 2% of total production, despite many electricity suppliers now offering green energy programs that allow consumers to buy electricity from natural sources such as wind, solar, hydro and biomass.

In a household situation, it is estimated that 50% of total energy consumption is used for space heating, 25% for hot water, 9% for cooking, 7% for refrigeration, 5% for other appliances and 4% for lighting.

Saving energy doesn't necessarily mean making sacrifices. You can reduce your environmental impact by simply changing the way you use energy -- change a few habits, use your appliances differently, or choose more efficient appliances.

### What we can do:

- Turn equipment off when not in use: lighting, cooling and computing all take up significant amounts of energy. Turning off lights, using ceiling fans or improving insulation and ventilation systems, and switching computers off (computers in standby use about a third of their usual energy) can help save energy and money.
- Use power-efficient equipment: Energy rating labels help you to compare the running costs and energy efficiency levels of different models of appliances. By selecting the most energy efficient appliance you can reduce energy use and costs. Most major household appliances now carry energy rating labels. Products with a high star rating sometimes cost more to buy but will save you money through consistently lower energy bills.
- Fix (or report) heating, cooling or ventilation problems and inappropriate lighting immediately.
- Reduce hot water usage: heating water is an energy intensive exercise, and reducing hot water usage is a simple way to reduce energy consumption.

## Transport

Perhaps the simplest and most effective thing a person can do to reduce the impact they have on the environment – from air and water quality to land use – is to reduce reliance on motor vehicles. From the mines that produce ore and the vast plantations that grow rubber, to massive pollution from processing and manufacturing metals and components which are shipped across the globe, cars create substantial pollution even before they are driven. When they are driven, cars contribute 20% of all global greenhouse emissions, and produce poisons like carbon monoxide, nitrogen and sulphur oxide, aldehyde, lead and benzene. Eighty-five percent of all air pollution in cities is caused by motor vehicles, and their pollutants left on roads runs off into streams and oceans, making them one of the largest contaminant sources of urban run-off.

Air travel is another source of pollution: for every hour in flight, 50 litres of kerosene are used and 125 kg of CO<sup>2</sup> emitted per passenger.

### What we can do:

- Use a bicycle - it creates no pollution, promotes an active body and is fun and inexpensive.
- If the distance is too great, you have too much to carry or you have an injury or disability, catching public transport is the next best thing. Buses, trains and ferries create less pollution, congestion and noise. The cost of public transport is also much less than maintaining a car and paying for parking. The city of Brisbane currently has more than 160 gas buses (the other 600 buses run on ultra low sulphur diesel). Compared to most ordinary diesel buses, gas buses produce:
  - \* 99% less carbon monoxide

\* 82% less hydrocarbons

- \* 94% less nitrogen oxide
- \* 15% less carbon dioxide and greenhouse gases
- \* 60% less noise
- If you cannot take public transport, consider carpooling or using an ultra low emissions vehicle (such as a hybrid car).

## Food

The majority of our used land on earth is utilised for growing food. What food we choose to buy influences what farmers decide to grow, where and how it is grown, how it is processed and how far it is transported. All of these things have a significant impact on the environment.

### What we can do:

- **Become a vegetarian:** Animal agriculture is an inefficient way of producing food, since feed for farm animals requires land, water, fertiliser, and other resources that could otherwise have been used directly for producing human food. Animal agriculture's dependence on higher yields accelerates topsoil erosion on our farmlands, rendering land less productive for crop cultivation and resulting in the conversion of wilderness to grazing and farm lands. The United Nations has linked animal agriculture to a number of other environmental problems, including: contamination of aquatic ecosystems, soil, and drinking water by manure, pesticides, and fertilisers; acid rain from ammonia emissions, greenhouse gas production, and depletion of aquifers for irrigation. The 1.28 billion cattle populating the earth graze on nearly 28% of the planet's landmass. Approximately half the grain produced worldwide - much of it in developing countries - is used for consumption by animals for dairy, egg and meat production in the West. In Australia, 85% of land clearing occurs to make way for cattle and sheep grazing. The production of meat, poultry, dairy and wool are further responsible for 18% of water use and nearly 20% of water pollution across the nation. The easiest way to avoid these environmental impacts is a vegetarian or vegan diet. While a vegetarian diet excludes meat, a vegan diet removes all animal products - meat, dairy, eggs, and by-products such as gelatine. By reducing meat and dairy consumption you can alleviate land degradation, slow forest clearing, conserve water and reduce pollutants entering the soil. Further, the United Nations reported that a vegetarian diet can feed many more people than an animal-based diet: it estimated that the 1992 food supply could have fed about 6.3 billion people on a purely vegetarian diet, 4.2 billion people on an 85% vegetarian diet or 3.2 billion people on a 75% vegetarian diet.
- **Eat organically grown food:** organic agriculture is a system that depends on healthy ecosystems to produce healthy food. By eliminating the use of synthetic fertilisers and pesticides, organic farming aims to create healthy, soils, and plants which are naturally more pest and disease resistant.
- **Eat locally grown food:** Buying food that is locally produced significantly reduces the energy that goes into transportation. Elements of a product can collectively travel tens of thousands of kilometres, so buying locally can have a great effect on greenhouse gas emissions and other pollutants. Buying food that is produced locally can also often mean less processing and less packaging: better for you and better for the environment.

## Water

From Savewater.com.au

Of all the water in the world, only 3% is fresh. Less than a third of 1% of this is available to humans. The rest is frozen in glaciers or polar ice caps, or is deep within the earth, beyond our reach. To put it another way, if 100 litres represents the world's water, little more than half a tablespoon of it is fresh water available for our use.

However, fresh water is essential to our existence, it allows us to produce food, manufacture goods and sustain our health. In fact, about 60% of our body is comprised of water.

Global water consumption has risen almost tenfold since 1900, and many parts of the world are now reaching the limits of their supply. World population is expected to increase by 45% in the next 30 years, whilst freshwater runoff is expected to increase by 10%. UNESCO has predicted that by 2020 water shortage will be a serious worldwide problem.

One third of the world's population are already facing problems due to both water shortage and poor drinking water quality. Effects include massive outbreaks of disease, malnourishment and crop failure. Furthermore, excessive use of water has seen the degradation of the environment costing the world billions of dollars.

In Australia, our own cultural icon, the Snowy River, has been reduced to about 1% of its original flow. Most of Australia (including Brisbane) is currently under water restrictions.

There is often a high amount of 'embodied water' associated with many items we use or consume. For example:

- It takes 41 500 litres to produce a kilo of meat
- It takes 500 litres to produce one orange
- It takes 1 340 000 litres to produce 1 tonne of aluminium
- It takes 50 litres to produce a copy of Saturday's newspaper
- It takes about 5000 litres of water to create one kilogram of rice.
- It takes 4 litres to produce a bottle of beer

There are also many hidden effects of excessive water consumption. These effects include:

- The need to build more dams. This has severe environmental effects such as destruction of wilderness, creation of greenhouse gases from rotting vegetation, reduced stream flows and degraded ecological health. It's also very costly!
- Maintaining other infrastructure for water supply and use. This includes costly upgrades and maintenance of pipes, sewers and treatment facilities. One metre of stormwater drain costs about \$2000 to install.
- Erosion, salinity and desertification. Water consumption for agriculture alters the natural water cycle in many areas of Australia. This degrades production areas and exacerbates other environmental problems such as land clearing and desertification. Salinity is said to directly cost Australia over 1.5 billion dollars a year, but true figures are probably a lot higher than this.
- Degradation of water bodies. Many of our rivers, wetlands and bays are degraded. This is partly due to the high levels of water extracted, as well as polluted surface runoff and stormwater flushed into them.

### What we can do:

- Use water efficient fittings on showers, taps and toilets.
- Use water-efficient washing machines and dishwashers and do not use them until a full load is assembled. Keep showers short, and don't keep the tap running unnecessarily.
- Fix (or report) leaks immediately.
- Be careful not to spill chemicals (including fertilisers) into areas where they can then flow into the stormwater system.