



Image from Central Park Sydney

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SUSTAINING A GREENER FUTURE

At the United Nations Sustainable Development Summit last year, world leaders adopted the 2030 Agenda for Sustainable Development, which included a set of 17 Sustainable Development Goals (SDGs) to end poverty, reduce inequality and injustices, and protect the planet to be achieved by 2030.

In Australia, there are many individuals, non-government organisations, and private groups working towards achieving positive, sustainable outcomes for the environment. This issue of Watermark explores some of these.

1. SUSTAINABILITY SUCCESS SNAPSHOTS

Renewable energy sources produced 14.6% of Australia's energy in 2015, up from 13.5% for the previous year.

Power generation from both solar and wind sources increased by 20% in 2015.

Five new wind farms and eight new solar farms, with the power generation capacity of more than a megawatt, were completed in 2015.



Image from the Clean Energy Council

The Victorian Government is introducing a permanent legislative ban on coal-seam gas mining in the state later this year. A moratorium on coal seam gas exploration and development is currently in place.

Earlier this year, Australia's biggest energy utility, AGL, announced that it would quit coal seam gas exploration as part of a move towards becoming part of the sustainable energy sector.

At the start of this year, supermarket giants Woolworths, Aldi and Coles all pledged to remove plastic microbeads from their personal care products by the end of 2017.

Before the end of the year, the Queensland Government will issue a Discussion Paper on a plastic bag ban. The Victorian Greens have lodged a bill to ban the bag and other damaging plastics.

"The notion of the common good also extends to future generations. The global economic crises have made painfully obvious the detrimental effects of disregarding our common destiny, which cannot exclude those who come after us. We can no longer speak of sustainable development apart from intergenerational solidarity" - Pope Francis, Laudato Si

2. ONE CENTRAL PARK, SYDNEY

If you have driven through the Broadway-end of Sydney, you may have noticed the tall glass building with extensive vertical gardens, pictured on Page 1. This is One Central Park, part of the project which aims to be one of Australia's greenest and most self-sufficient mixed-use urban developments. The complex will, ultimately, offer a collection of boutique shops and chain stores, residential areas, office space, and restaurants. Some of the sustainable features include:



POWER

Central Park is projected to have its own low-carbon natural gas power plant, which will generate heating and cooling for 3,000 residents and 65,000 square metres of retail and commercial space in 14 buildings. It is forecast that the natural gas energy plant could reduce greenhouse gas emissions by as much as 190,000 tonnes over the 25-year life span of the plant. This is equivalent to removing 2,500 cars off the road every year for 25 years.



Central Park's recycled water network houses the largest membrane bioreactor recycled water facility in the world. Designed to supply water to 4,000 residents and more than 15,000 visitors and workers daily, the recycled water network harnesses water from multiple sources. These include:

- Rainwater from roofs
- Storm water from impermeable surfaces
- Irrigation water from all vertical gardens



Image from Central Park Sydney

3. BROKEN HILL - FROM A SILVER CITY TO A SOLAR CITY



Image from Australian Renewable Energy Agency

Since the 1880s, Broken Hill has been known as the "Silver Town" of Australia, due to the lead-zinc-silver ore belt that stretches through the centre of the city from which the world's largest mining company, BHP Billiton, started. Due to declining ore productivity and a changing global minerals market, Broken Hill is looking to reinvent itself by transitioning to becoming a "Solar City".

In January 2016, AGL Energy Limited (AGL) opened the Broken Hill solar plant, a \$150 million project predicted to generate enough electricity to power 17,000 homes. Together with a sister plant in Nyngan, the Broken Hill solar plant is part of Australia's largest utility-scale solar voltaic (PV) power project.

HOW DO SOLAR PANELS WORK?

- Solar panels are comprised of many smaller units called photovoltaic cells. Each of these is made of two wafer-thin layers of silicon, placed on top of each other to make a sort of silicon sandwich.
- The top layer of the silicon "sandwich" is adjusted so that its atoms are unstable – it has one too many electrons. The bottom layer is adjusted so that its atoms are also unstable – only it has one too few electrons. This sets up the pre-conditions for electricity to be produced.
- When the solar panel is exposed to light, it energises the electrons in the top layer enough so that they begin to flow to the bottom layer. Metal contacts are attached to either side of the cell so that once the light hits, electricity can flow through the circuit.
- Once an electric current has been established, all that remains is to put it into use. A power inverter is often attached to the solar panel, and will convert the electricity from Direct Current (DC) to Alternating Current (AC), making it ready to be transported through the power grid to businesses and homes.

4. AN INTERVIEW WITH MACQUARIE UNIVERSITY SUSTAINABILITY OFFICER BELINDA BEAN



1. How do you define sustainability?

“Anything that works towards creating a better future - for people and the planet.”

2. How did you become involved/interested in sustainability?

“I had no idea what I wanted to do when I left school. I studied Marketing at University - I figured that no matter what I ended up doing, I'd need to be able to sell it. I was taught that another word for people is “consumers”. I learned that you keep them consuming with strategies like planned and perceived obsolescence. I was the only one to question the ethics and sustainability of these concepts. I had always known there were environmental problems in the world, but I always thought “they” would fix it. It was at this point in my life, I started to think about who “they” were - and did “they” need help? I undertook a self-appointed minor in sustainable consumption, focusing my assignments and research in this space. That led me to a Masters in Sustainable Development and my whole adult life being dedicated to sustainability.”

3. What have been some highlights this year?

As Macquarie University's Sustainability Officer, I'm tasked with creating a cultural shift towards sustainable behaviours. I run a small permaculture garden on campus to showcase regenerative, small-space urban growing techniques. In my personal life, I make a game out of lightening my footprint and creating a positive impact. I make 90% of my meals from scratch using local, organic and packaging-free ingredients. I live in a chemical-free tiny home with minimal possessions. I travel locally and support local growers, sellers and artists.

4. What work for the future have you got planned?

I see myself living on a sustainable farm, growing an abundance of natural produce and promoting holistic health. I see cities embracing urban permaculture, with green roofs, green walls and community gardens. I feel a sense of community returning and an awakening to our own potential. I see organisations solving problems and creating wins for environment, economy and society simultaneously. The biggest obstacle we have to overcome is fear - our own self doubt, self-limiting beliefs and uncertainty. We can achieve anything we put our minds to. And it's going to be awesome!

5. PINGALA - A COMMUNITY SOLAR COOPERATIVE

Pingala is a not-for-profit, Sydney based organisation which is committed to Community Renewable Energy projects. Pingala is unlike other renewable energy organisations in that it does not take payment for solar installation directly from the business or group. Instead, Pingala runs community activation campaigns to promote the project and find community investors. The idea is transition to solar energy and build sustainable communities. Additionally, businesses which use Pingala pay a small fee to lease the solar equipment, the revenue from which covers Pingala's costs and goes towards funding new projects.

Pingala has recently partnered with the environmentally-conscious Young Henry's Brewery in Newtown, Sydney, to install solar panels on the roof of the Brewery. It is predicted that this will save up to 130 tonnes of greenhouse gases a year. launched in late August of this year, the shares sold

When the project was launched in late August of this year, the shares sold out in under nine minutes. Fifty-six investors now hold shares in the solar farm. In response to this, the secretary of Pingala, Tom Nockolds, states “Communities themselves are stepping up and realising that if the politicians and policy makers aren't going to create the right environment to accelerate the renewables rollout, then they themselves can just get on with the job.”



Image from ProBono Australia

6. ECO-FRIENDLY TOILET PAPER THAT BUILDS



Currently, 2.3 billion people in the world do not have access to a toilet. 900 children under the age of five die from diarrhoea-related diseases each day

In 2012, three young Australians (in response to statistics such as the ones above) founded “Who Gives a Crap”. This is an environmentally-friendly toilet paper company which donates 50% of all profits to sanitation project organisations such as WaterAid. Through using forest-friendly materials to make toilet paper, Who Gives A Crap has saved an estimated 30,797 trees, 74 million litres of water, and 5,922 tonnes of greenhouse gases. Furthermore, since 2012, Who Gives a Crap has donated \$428,500 to fund hygiene and sanitation projects overseas. To learn more about their impact, visit:

<https://au.whogivesacrap.org/>

REFLECTION



We rejoice and give thanks for earthworms,
bees, ladybirds and broody hens;
for humans tending their gardens, talking to
animals,
cleaning their homes and singing to themselves;
for rising of the sap, the fragrance of growth,
the invention of the wheelbarrow and the existence
of the teapot, we give thanks.

We celebrate and give thanks.
Amen.

- A prayer by Michael Leunig

Watermark is a regular publication of the
Conference of Leaders of Religious Institutions in
NSW.

7. CLINGWRAP ALTERNATIVE

Each year, Australians use 1.3 million tonnes of plastic, of which more than 50% ends up in landfill or the oceans. Food packaging constitutes a significant proportion of this. In response to this “crisis of plastic” a number of small businesses now make beewax wraps, which are a non-toxic and eco-friendly alternative to cling wrap. The wraps are made from organic cotton fabric, natural beeswax, coconut oil and tree resin, are washable, and can last up to one year. Find out more at:
<http://www.honeybeewrap.com.au/>



Image from HoneyBee Wrap

WHAT CAN YOU DO?

Watch “The Story of Stuff”: A 20 minute online movie about the way we make, use and throw away all the stuff in our lives.

Read “The Big Earth Book” by James Bruges:
An easy to read book which explores environmental, economic and social ideas to save our planet.

Bring a re-usable mug with you when you go to your local coffee store. Many cafes will offer a discount on your drink if you bring your own cup - helps protect the environment and your bank account at the same time!

Switch your Superannuation to a company that invests in sustainable projects. Australian Ethical Super, for example, invests in solar, geothermal, hydro and wind companies such as Vesta. Find out more here:

<https://www.australianethical.com.au/>