

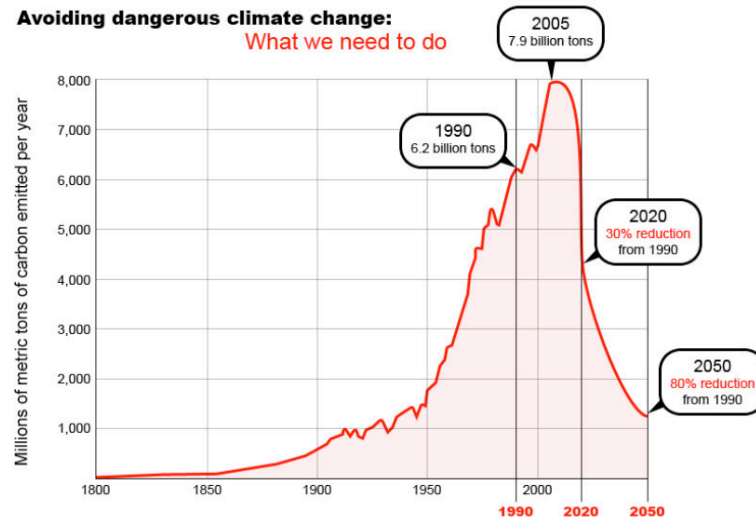
Renewable Energy and Energy Efficiency

for
local communities & households

What's the problem?

- Climate change
- Declining resources
- Growing & developing populations
- Over-consumption
- Impact = Population x Affluence per capita x Technology intensity

Climate change



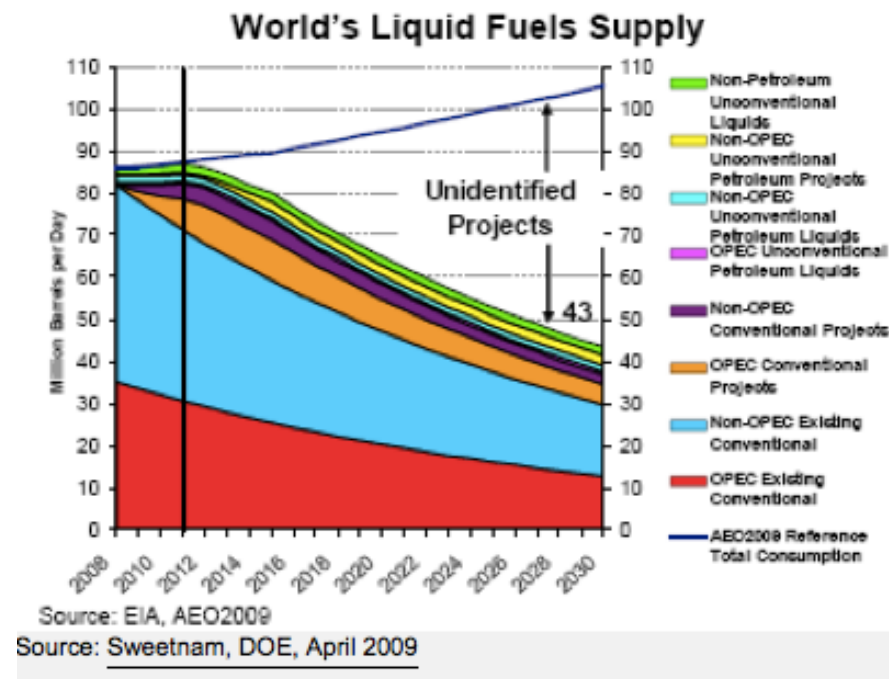
A general consensus amongst the scientific community is that to avoid a dangerous or catastrophic level of climate change, global temperature rise should be kept as far below 2 degrees Celsius as possible. It is estimated that achieving this will require developed countries to be emitting 30% less carbon than we did in 1990 by the year 2020, and 80% less than we did in 1990 by the year 2050.



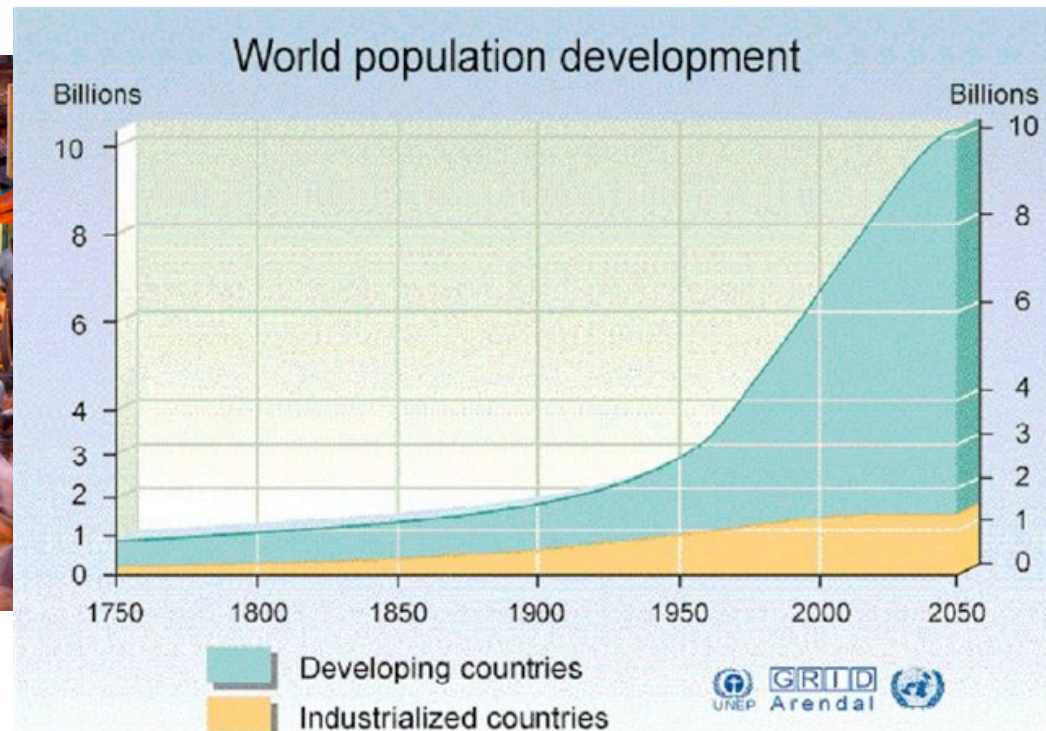
- 2010, 2005 & 1998 warmest years on record (WMO)
- Aust: annual av. temp. up by 0.9°C since 1910
- Target < 2°C and < 350ppm CO₂
- GHG emissions need to peak by 2015

Declining resources

- Crude oil production peaked in 2006
- Need four new Saudi Arabias over next 25 years to maintain current production levels (IEA Chief Economist)
- Possible 20-30% reduction in global oil availability by 2020 (Ian Dunlop, ASPOG)



Growing & developing populations



Over-consumption

WWF Living Planet Report 2010

- Over past 4 decades, global ecological footprint has increased 150%
- Overshoot is now 50% beyond Earth's capacity to sustain us
- Av. Australian footprint 6.83 gha - no. 8 behind UAE, Qatar, Denmark, Belgium, U.S., Estonia & Canada
- Need 3 planets to sustain av. Aust lifestyle
- “Sustainable” footprint is < 1.8 gha/person

More info

- *Collapse: How societies choose to fail or survive* - Jared Diamond
- *The Great Disruption: How the climate crisis will transform the global economy* - Paul Gilding
- *The Coming Famine: the global food crisis and what we can do to avoid it* - Julian Cribb
- *Storms of My Grandchildren: The truth about the coming climate catastrophe and our last chance to save humanity* - James Hansen
- *The Transition to a Sustainable and Just World* - Ted Trainer



Government incentives

for households

NSW Home Savers Rebates

- Scheme closed on 30 June 2011; applications must be submitted by 5pm on Friday 30 September 2011
- > **330,000 rebates** issued to NSW households to Sept 2011, i.e. 1 in 8 households
- Saved > **4 million tonnes(??)** of GHGs
- Govt says, “it has served its purpose.”
- More info: www.savepower.nsw.gov.au

Blue Mountains LGA

- Popn. almost 77,000; approx. 28,000 households
- Total of **5,396 rebates** to 30 June 2011
- **15th** highest out of 154 LGAs in NSW
- Rainwater tank **1,106** [cf. 1,134 in Penrith with pop. 172,000]
- Hot water system **2,879** [cf. 2,821 in Penrith]
- Ceiling insulation **207** [cf. 386 in Penrith]
- Water-efficient w/machine **955** [cf. 1,626 in Penrith]
- Dual flush toilet **249** [cf. 254 in Penrith]
- Hot water circulator **0**

Federal programs

- **National Rainwater & Greywater Initiative** – introduced in 2009; scheme now closed. Rebates still available for rainwater tanks or greywater treatment systems purchased by 10 May 2011 – applications close 10 November 2011.

More info from Dept of Sustainability, Environment, Water, Population and Communities:

<http://www.environment.gov.au/water/programs/nrgi/index.html>

- **Green Loans** scheme closed – substitute **Green Start** program cancelled; funds reallocated to provide accredited assessors with further training and limited financial assistance (and to assist disaster-affected communities and “other Govt priorities”).

What's still available in NSW?

- **Home Power Savings Program** – free energy audit & energy saving kit for up to 220,000 low income (concession card) households

www.savepower.nsw.gov.au or 1300 662 416

- **Fridge Buyback** - \$35 cash back for min. 10 y.o. working second fridge, min. 250L capacity; at least 26,000 fridges have been collected for recycling

www.fridgebuyback.com.au or 1800 708 401

Energy Efficiency for Small Business Program

Office of Environment and Heritage

<http://www.environment.nsw.gov.au/sustainbus/smallbusenergy.htm>

- *Eligibility*: employ up to 10 people or spend around \$20,000 p.a. on electricity
- subsidised energy assessment (pay \$75 or \$150)
- tailored Energy Action Plan
- receive up to \$5,000 rebate to cover half the cost of any improvements installed under EAP; also receive up to 4 hrs free support
- receive a Certificate of Participation

What's still available at Federal level?

Renewable Energy Bonus Scheme

- **\$1,000** rebate for **solar** hot water system
- **\$600** rebate for **heat pump** hot water system

More info:

www.climatechange.gov.au/solarhotwater

Eligibility criteria

- replacing an existing electric storage HW system with a system eligible for min. 20 STCs
- have *not* received assistance under Home Insulation Program for that address
- must be principal place of residence (i.e. not for holiday homes)
- home owners, renters & landlords all eligible to apply
- must be installed & certified by qualified electrician and/or plumber
- retailers/installers can't apply on your behalf
- applications must be received within 4 months (122 days) of installation

NB. Rebate is in addition to STCs – value of discount is av. \$1,000 (usually at point of sale).

Solar PV incentives

- At least 120,000 households in NSW and > 300,000 Australia-wide have installed solar PV systems; > 300 MW capacity already installed.
- Solar feed-in tariff (FIT) no longer available for new connections in NSW.
- Existing customers receive either 60c/kWh or 20c/kWh to 31 December 2016.
- IPART inquiry into fair pricing of Solar Feed-in Tariff – submissions closed 12 September 2011.

Solar Feed-in Tariffs: Setting a fair and reasonable value for electricity generated by small-scale solar PV units in NSW.

Energy Issues Paper (August 2011) available at:

<http://www.ipart.nsw.gov.au/electricity/electricity.asp>

- NSW government to prepare a Solar and Renewable Energy Action Plan.

Small-scale Renewable Energy Scheme

- Small-scale Technology Certificates (STCs) – formerly called RECs
- Available for all small generation units including grid-connected and off-grid solar, wind & micro hydro.
- Solar Credits – typical value **\$2,976** for **1.5 kW** system (31 STCs x 3 x \$32 ea)
- Multiplier reduces to 2 from 1 July 2012 – 30 June 2013 (value \$1,984)
- Multiplier reduces to 1 from 1 July 2013 – 30 June 2020 (value \$992)

Typical daily solar energy production in Sydney region

<i>1 kW</i>	<i>1.5 kW</i>	<i>2 kW</i>	<i>3 kW</i>	<i>4 kW</i>
3.9 kWh	5.85 kWh	7.8 kWh	11.7 kWh	15.6 kWh

Is it worth it?

- 1–2 kW system typically displaces an average of 25–40% of your av. household electricity bill.
- Without a gross feed-in tariff, payback period on a 1.5kW system has gone from 4 yrs to 20+ yrs (with elect. price 19c/kWh and 50% export to grid and \$25 STC price)
- ATA says, “We don’t need to justify the payback times of our cars or holidays, why should you justify sustainable improvements to the home?”
- Local company Aussie Solar has installed **5,116** solar PV systems across NSW - currently offering nett FIT of 40c/kWh for first 12mths after installation.



Accredited GreenPower

www.greenpower.gov.au

What is it?

- Includes new R.E. generation since 1 Jan 1997 – solar, wind, hydro, biomass (e.g. from landfill, sewage treatment, agricultural waste)
- Excludes projects with unacceptable environmental impacts, e.g. hydro where significant river diversions have taken place or biomass waste from high conservation value forest
- Available in all states/territories – 42 accredited products (from 10% to 100% R.E.) offered by 30 providers (at 31 Dec 2010)
- Audit reports & list of providers available from: www.greenpower.gov.au

Who buys GreenPower?

- 50% commercial; 43% residential; 7% local government
- Almost 50,000 Aust organisations (incl. almost 12,000 in NSW)
- > 748,000 residential customers (incl. > 172,000 in NSW)
- Vic. has most GreenPower sales (28%), followed by Qld (27%) and NSW (25%)
- NSW residential customers declined by 7.4% from Q1 to Q4 2010 while commercial customers increased 84.5%
- Total decline of 8.9% in Aust residential customers in 2010 (in every state except Tas, ACT & NT) while commercial customers increased approx. 30%
- Total GreenPower sales declined 3.7% in 2010 from 532,554 MWh to 512,886 MWh
- Default “opt-in” pilot program under investigation (50,000 customers to be surveyed to identify barriers to uptake)

Why buy GreenPower?

- Demand drives investment over and above the Renewable Energy Target.
- If all households bought 100% GreenPower by 2020 Australia would be powered by 50% renewable energy.
- If all households took up 10% GreenPower, R.E. usage would increase 3-fold, equivalent to annual investment of \$230 million in R.E. and reduction of 5.5 million tonnes CO₂.

How to choose GreenPower

- Compare electricity offers at: www.myenergyoffers.nsw.gov.au
- Most retailers offer 10% GreenPower at no extra charge and fixed rate of \$1 p.w. for 25% GreenPower.
- Typical 100% GreenPower cost for household using 4,000 kWh p.a. or 11 kWh/day:

Integral (now Origin) - \$396 p.a. or approx. \$1/day

INgreen Future - 27.85c/kWh compared with standard 21.85c/kWh

Origin Daily Saver and AGL Freedom - \$220 p.a. or approx. 60c/day

Living Greener

- Everything you need to know about:
 - saving energy & water
 - reducing waste
 - travelling smarter
 - rebates & assistance

Living Greener www.livinggreener.gov.au

Sustainable Blue Mountains
www.sustainablebluemountains.net.au

BMCC Sustainability Initiatives

Targets:

- **20%** reduction in **energy** (elect/gas) use by 2013-14, below 2007-08 levels
- **10%** reduction in corporate **GHG emissions** (street lighting/elect/gas/fleet/waste) by 2013-14, below 2007-08 levels
- **20%** reduction in Council's potable **water** consumption by 2010, below 2002-03 levels

Some achievements

- Thermal blankets at Springwood pool (funded under NSW Public Facilities Program - Demonstration Projects) - saving 1,710 MWh electricity in first 10 yrs
- Solar collectors at Glenbrook pool (annual emissions reduced by 188 tonnes; payback period was 2 yrs)
- Energy efficient lighting in Katoomba HQ & Springwood carpark (nr railway station)
- Roof insulation in 10 community buildings
- Water saving fixtures at Katoomba depot
- Gas connection for heating/cooking at Mid Mountains Community Centre
- Online water/energy monitoring at key sites

Some BMCC 2011-12 proposals

- Halitech systems for large oval lights (allows control by sports clubs via mobile phone)
- ‘Back to base’ irrigation feedback system
- Solar collectors at Lawson pool
- Energy efficiency upgrades at Springwood & Katoomba aquatic centres (lighting, air conditioning, hot water, etc.)

NSW Public Facilities Program - Community Savers projects

- Grants of up to \$40,000 each for non-profit community groups to undertake simple low-cost water & energy savings upgrades
- 444 community groups received a total of \$10.2 mill.
- Saved an estimate total 2.2 billion litres of water & 84,410 tonnes of GHG emissions over the first 10 years
- average reduction of \$4,986 p.a. in energy & water bills

Local recipients

- **Brahma Kumaris** retreat centre at Leura received \$40,000 for solar hot water – saving approx. 296 MWh of electricity and 317 tonnes of GHGs in first 10 yrs
- **Lawson Bowling Club** received \$23,745 for energy efficient lighting, auto timers & solar hot water – saving > 170 MWh of electricity and > 182 tonnes of GHGs in first 10 yrs
- **Mikayla Children's Centre** at Katoomba received \$20,417 for rainwater tanks and water-efficient toilets/taps – saving 2.6 million litres in first 10 yrs
- **Gunedoo Child Protection Service** received \$17,000 for improved lighting and new hot water & heating systems – saving 32 tonnes of GHGs and 260,000 L in first 10 yrs

Clean Energy Future package

- **Low Carbon Communities** grants program - \$330 million (increase of \$80 mill.)
- \$200 million for energy efficiency upgrades to council & community-use buildings
- plus 2 new initiatives to support low-income households in overcoming 'energy efficiency barriers' and to improve their 'energy and financial sustainability'
 - \$100 million Low Income Energy Efficiency program
 - \$30 million Household Energy and Financial Sustainability Scheme

Consultation paper will be available at:

<http://www.climatechange.gov.au/government/initiatives/low-carbon-communities.aspx>

New Energy Savings Initiatives

- Proposed national scheme would place obligations on energy retailers to find & implement energy savings in households & businesses.
- Will replace state-based schemes in NSW, Vic & SA
- Prime Minister's Task Group on Energy Efficiency undertaking consultation process on national scheme.

Dept of Climate Change and Energy Efficiency to register for more info:

<http://www.climatechange.gov.au/government/initiatives/energy-savings-initiative.aspx>

Some other community sustainability projects

- **Lithgow hospital** – opened 1998; one of the most energy efficient in NSW; uses 1/3 less power than any similar hospital; geothermal heating/cooling
Details here: <http://centroc.com.au/shinyhalo/?p=444>
- **Katoomba hospital** – gas cogeneration (heat+power) unit installed in 2011 as part of energy efficiency programs co-ordinated by Sydney West Area Health Service
- **Seed Pods Project** – pilot program in 5 early childhood centres to improve energy & water efficiency and encourage ongoing sustainability projects (e.g. eco-gardening)

Community Action

- **Transition Towns** – creating sustainable, resilient local communities adapted to cope with the challenges of peak oil and climate change

More info:

<http://transitionsydney.org.au/tscontent/what-and-why-transition>

- **Transition Blue Mountains** -

<http://transitionbluemountains.org.au>

Focuses on Energy, Transport, Housing, Food, Waste, Heart & Soul

ENERGY

- **Alternative Technology Association** – Blue Mts sub-branch
- Meets last Wednesday of each month at Varuna Writers Centre, 141 Cascade St, Katoomba from 7pm
- More info: www.ata.org.au
- Contact: Garry Barbuto garrybarbuto@hotmail.com

What more could we do?

- **Retro-fitting workshops** – targetting low income households; need local tradespeople willing to donate hours on a regular or casual basis.
- Bathurst, Dubbo & Armidale hold annual **Sustainable Living Expos** – 3,000 attended Bathurst's expo in March 2011, 700 attended Dubbo's expo last year and Armidale's expo has been running for 5 years.
- Lithgow City Council has a Rainwater Tank & Domestic Appliance **Rebate Program**
- Penrith City Council is offering 900 free **household energy assessments** under the Y Green Western Sydney Project (job creation for young people via Aust Govt Job Fund)
- **Energymark (CSIRO)**- small group of households get together for 8 meetings to explore practical ways to reduce household energy usage. More info: www.energymark.com.au

TRANSPORT

- **Getting Around in Community Project (GAIC)** – 3 yr project to develop & trial sustainable transport options for the Blue Mts, e.g. walking groups, walking buses, cycling & bike sharing, public transport, car-pooling for work, study or shopping.
- Co-ordinator: Suzan Mehmet
- More info at: http://www.mmnc.org.au/sustainable_transport.html
- **Blue Mountains Transport Guide** available at: <http://www.bmcc.nsw.gov.au/sustainableliving/bluemountaintransportguide>

What more could we do?

- **Western Sydney Carpool** www.wscarpool.org
- Also on Facebook; carpoolers located in Blackheath, Lawson, Hazelbrook, Winmalee, Warrimoo, Glenbrook
- **Go Get** car share scheme: www.goget.com.au
- Local resident Anya Favot is keen for people to register to get a car(s) based in the Blue Mts. Contact her via anyafav@hotmail.com

HOUSING

- **Sustainable House Day** – every September
www.sustainablehouseday.com
- We need more people to open up their sustainable homes & gardens.
- **EcoHomes Tours** – next one Saturday 16 October 2011 (fully booked)
- Join the mailing list: www.ecohomestour.com.au
- **Blue Mountains Co-housing Initiative** - aims to create an intentional, intergenerational & sustainable community
- Contact: Gilo Holtzman giloh@cohousing.org.au
- More info: <http://bmcohos.blogspot.com/>

What more could we do?

- Bathurst City Council has built a **demonstration Sustainable Lifestyle house.**

WASTE

- Get involved: nominate for BMCC's Waste and Resources Reference Group by 4 November.

www.bmcc.nsw.gov.au/yourcommunity/wastemanagement/referencegroup

or phone Dindy Boutagy 4780 5566

What more could we do?

- Penrith City Council has occasional **e-waste** drop-off days
- Lithgow City Council has an **E-waste Recycling** Program

Political & grassroots action and community education

- **100% Renewable Energy** campaign <http://100percent.org.au>
- Currently campaigning to ensure proposed windfarm development guidelines don't inhibit the industry in NSW.
- Participate in events and actions with your local climate action group:

Katoomba Area Climate Action Now <http://katoombacan.org/>

Aust Youth Climate Coalition supports
a
Clean Energy Future

“...the *old* way of doing things doesn't have to be the *only* way of doing things.”

“...in the competition between the past and the future, it's better to back the **future**.”

THE MORRISON- JONES HOUSEHOLD EARTH CHARTER



We choose:

- **HOPE** instead of Fear.
- **AWARENESS** instead of Denial of global environmental problems.
- **SURVIVAL** of the planet - including humans and all other species - instead of individual Greed and Selfish interests.
- **INDIVIDUAL and COMMUNITY ACTION** instead of Apathy or Blaming others.
- **THE FUTURE** instead of the Past.
- **POSITIVE CHANGE** instead of a dysfunctional 'Status quo'.

We believe saving civilization is not a spectator sport. FEEL FREE TO JOIN US!