

**BYRON SHIRE COUNCIL**  
BIODIVERSITY AND SUSTAINABILITY ADVISORY COMMITTEE MEETING



**PUBLIC ATTACHMENTS  
EXCLUDED FROM THE  
BIODIVERSITY AND SUSTAINABILITY  
ADVISORY COMMITTEE MEETING AGENDA  
OF 19 FEBRUARY 2015**

**5. STAFF REPORTS**

5.2 Byron Shire Low Carbon Strategy

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BYRON SHIRE COUNCIL



# Byron Shire Low Carbon Strategy 2014

Action on climate change and peak oil

*The Byron Shire Low Carbon Strategy 2014*

Adopted: 20 November 2014 (Res 14-594)

Formally: *The Greenhouse Action Strategy 2008*

Adopted 25 June 2004

Revised 10 April 2008

E2015/5095

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## **Mayoral Address**

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The Byron Shire is home to a vibrant and engaged community who frequently set the bar high on environmental awareness and action. Our community's expectation to address and plan for the twin threats of climate change and peak oil is evident and this is why it is with great pleasure I introduce the Low Carbon Strategy as our road map for future action. The Low Carbon Strategy is the third edition of the Byron Shire Greenhouse Action Strategy which has been actively implemented for over ten years.

It is through forward planning and our commitment to implementing the past two greenhouse action strategies and the new Low Carbon Strategy that Byron Shire Council will reduce its greenhouse gas emissions and help to reduce our community's contribution to climate change.

Local government is in a unique position to address climate change through its understanding of local issues and our flexibility to adapt to changing conditions. Now more than ever it will be the leadership shown by local government to continue efforts to address the sources of greenhouse gas emissions and prepare for the impacts of both climate change and peak oil.

Both climate change and peak oil are threats whose impacts will emerge gradually over time. This phenomenon creates a false sense of security and has hindered collaborative international action in the past. Release of the 5<sup>th</sup> Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) 2014 shows that the science is clear and the need to act now is urgent. Through the committed actions of communities such as the Byron Shire throughout the world change and transition will be made a reality.

Simon Richardson  
Mayor of Byron Shire

## Executive Summary

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The Byron Shire like many other economies is heavily reliant on fossil fuel derived products and the burning of fossil fuels for both energy production and transportation. In the midst of concerns over climate change and rising oil prices, a shift towards more sustainable energy sources presents the opportunity to improve the overall sustainability of Byron Shire while creating an economic advantage. The *Byron Shire Low Carbon Strategy* outlines Council's climate change mitigation achievements to date and maps a path for future action on greenhouse gas emission reduction and peak oil preparedness.

The enhanced greenhouse effect and human influenced climate change have dominated global discussion over the past two decades. Australia formalised its participation in an international agreement on climate change by ratifying the Kyoto Protocol in 2007 and committing to reduce the nation's greenhouse gas emissions by 5% based on 1990 levels by 2020. Since 2007 Australia's awareness of the challenges and impacts of climate change has expanded and the emergence of new future challenges such as peak oil has become apparent.

Peak oil is the theoretical date where global oil production begins a pattern of continual decline as oil reserves diminish. This has significant concerns for the cost of an array of activities that rely on petroleum based products such as transport, food, manufacturing, electricity and waste removal.

In recognition of the importance local government plays in addressing climate change Byron Shire Council set a target to reduce greenhouse gas emissions by a minimum of 30% from 2003-2004 levels by 2020. As a member of the Cities for Climate Protection program, Byron Shire Council developed the *Greenhouse Action Strategy 2004* to identify ways to reduce greenhouse gas emissions. Aware of the shared benefit from reducing reliance on fossil fuels, preparations for peak oil have now been incorporated into the third revision of the *Greenhouse Action Strategy Plan* which has been retitled the *Byron Shire Low Carbon Strategy*.

As Byron Shire Council endeavours to shift focus away from fossil fuel dependency a step towards both financial and environmental sustainability is taken as greenhouse gas emissions are lowered and costs from rising fuels prices are avoided. Furthermore the development and growth of sustainable industries to facilitate this change will bring prosperity, resilience and flexibility in the Byron Shire economy.



*First Sun Holliday Park solar hot water uses energy from the sun to heat water for the amenities, kitchen and laundry which minimises the need for electricity and hence reduces greenhouse gas emissions.*

## Background

### Climate Change

Climate change is a natural process of long term variations in climate conditions differing from the average conditions of a previous time. It is important to note that while the weather conditions may change frequently between the seasons the term climate change applies to change over decades, centuries or even millions of years. Climate change can occur as either change in weather conditions (temperature, rainfall, etc.) or change in the frequency of weather events (i.e. fewer or more rainfall events)<sup>1</sup>.

There are several factors that are known to influence climate change, they are:

- Variations in solar radiation that enters the Earth's atmosphere,
- The Earth's reflective capacity or albedo,
- The greenhouse effect,
- Volcanic and tectonic activity, and
- Biotic activity.

### The Greenhouse Effect

The greenhouse effect is a naturally occurring process which enables the Earth's atmosphere to retain heat and is essential in the provision of liveable conditions on our planet. The strength of the greenhouse effect is dependant on the amount of greenhouse gases in the atmosphere, where higher volumes of greenhouse gases increase global heat retention resulting in higher global temperatures (Figure 1). While this process has been in a natural flux for millions of years, the scientific consensus shows that human activities such as the burning of fossil fuels is releasing unprecedented amounts of greenhouse gases into the atmosphere contributing to an accelerating change in global temperature<sup>2</sup>.

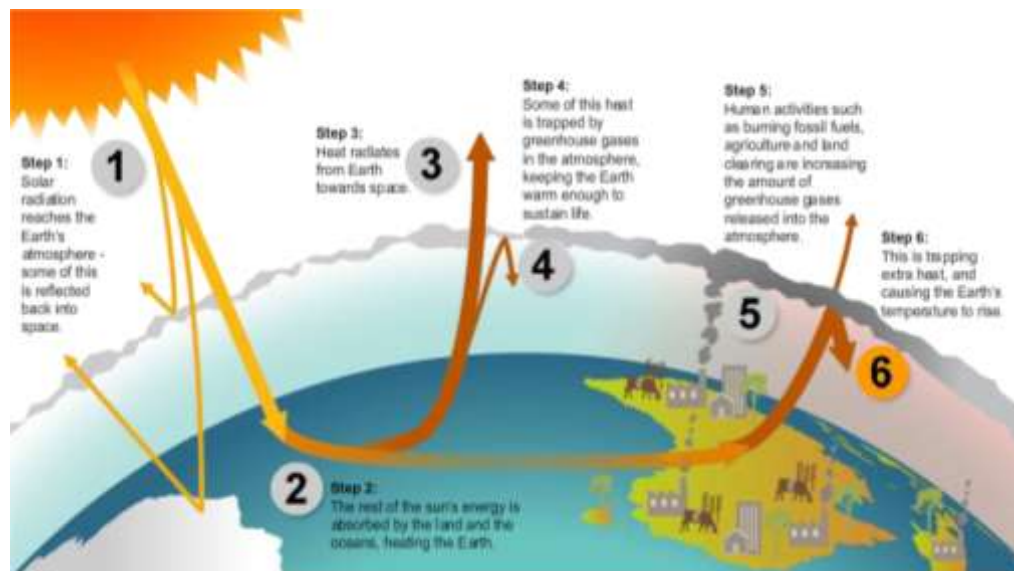


Figure 1. The greenhouse effect (source: [climatechange.gov.au](http://climatechange.gov.au))

1. Dessler, A. E. (2012) Introduction to modern climate change, New York: Cambridge University Press

2. Intergovernmental Panel for Climate Change (2007) IPCC Fourth Assessment Report: Climate Change 2007 (AR4) Cambridge: Cambridge University Press

Some of the dominant gasses which influence the greenhouse effect include (IPPC 2007):

- Water Vapour (H<sub>2</sub>O)
- Carbon Dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous Oxide (N<sub>2</sub>O)
- Chlorofluorocarbons

### ***Human Activity and Acceleration of Climate Change***

For thousands of years climate change has occurred as a natural cycle where global temperatures have slowly cooled and heated. However, recent human activity such as the burning of fossil fuels, deforestation and land-use change has altered the Earth's reflective capacity and increased the greenhouse effect, thus increasing global temperatures. While these human activities continue to occur the speed at which the temperature is rising is likely to also increase. It is this ever faster rise in global temperature that has raised concerns for the ability of both the biological and built environments to adapt to changing conditions.

The impacts of climate change are complex and interconnected and there is still a lot more to understand. Over the past ten years since this strategy was originally adopted science has been steadily narrowing the gap between to predictions of climate change scenarios and the reality of conditions being witnessed. Current climate models predict Australian temperatures to increase with more extremely hot days and fewer extremely cool days. Some of the potential impacts of increasing global temperatures that have been identified include:

- Increased length of heat waves,
- Increased frequency and severity of storm events,
- Increased frequency and length of drought events,
- Rising sea levels and ocean acidification,
- Loss of habitat, and
- Loss of biodiversity.

### ***Living in a Fossil Fuel Economy***

Fossil fuels were created through the decomposition of living organisms hundreds of millions of years ago. The most commonly used fossil fuels include: oil, gas and coal. Today's economy is heavily reliant on the use of fossil fuel products. It is virtually impossible to live a day without interacting with a product that is either made of or has used fossil fuels during its production. This is concerning as fossil fuels are non-renewable resources, meaning reserves are not replenishing at the rate of consumption. The growing demand for fossil fuels, particularly crude oil, coupled with decreasing supply has created global concern for the day when supply will not be able to meet demand.

### ***Peak Oil***

Peak oil is a theoretical point in time at which the global oil production rate climaxes. Following this date a decline in daily oil production will be observed. The true date of 'peak oil' is not accurately known with many different models showing that either peak oil is happening now, is yet to come or has already occurred. As an example Figure 2 shows peak oil production to have occurred in 2002.



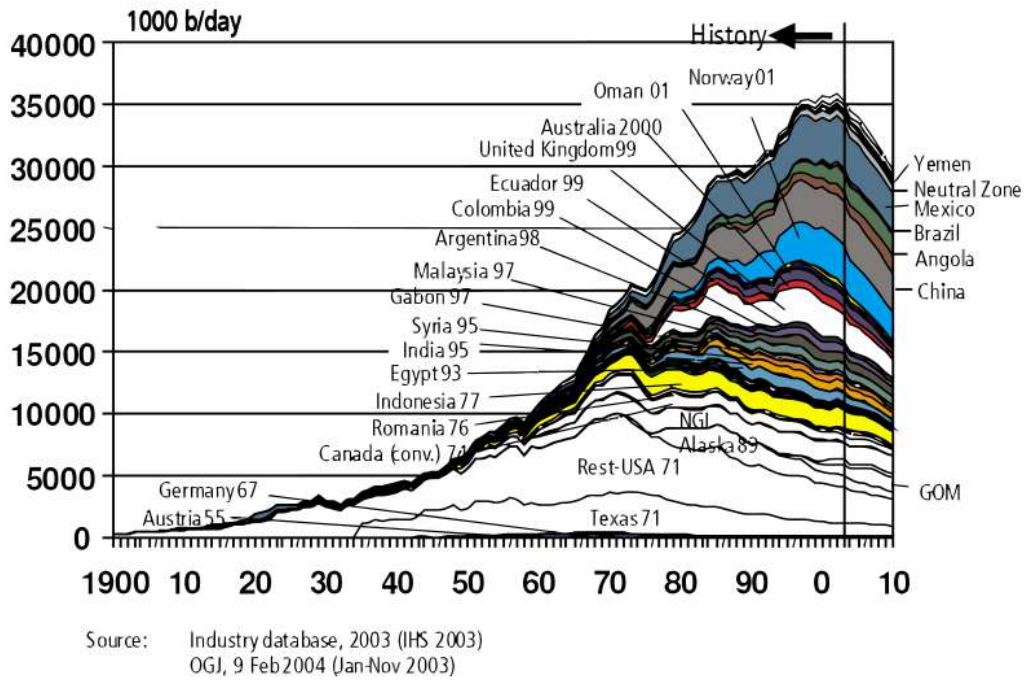


Figure 2. Production curve showing the peak production dates of oil producing countries.

With a peak oil date defined or not, it is highly likely that oil prices will continue to rise as oil stocks continue to decline. This will have an astounding impact on industry in the global economy, significantly raising the cost of production and operation. Furthermore, it is predicted that when global oil supply fails to meet demand, oil dependant industries will need to compete for the remaining stock or cease operations that are reliant on oil. This point in time is known as the 'oil crunch' and planning to avoid the impacts of such an event is essential for a resilient economy and society.

**Climate Change and Peak Oil: Drivers for Sustainability**

Although Climate change and Peak oil are significant challenges they can also be seen as drivers for change towards more sustainable practices. In this instance a real opportunity has been granted to solve two problems at once. Through lowering the dependence on fossil fuels both greenhouse gas emissions and operating costs can be reduced. In addition, the development of new technologies and products that are less reliant on fossil fuels will foster economic growth and resilience.



*Cycle ways encourage the use of active transport modes that reduce greenhouse gas emissions and the community's reliance on fossil fuels.*

## Climate Change in the Byron Shire

Located on the east coast of Australia Byron Shire is at high risk of experiencing the effects of climate change. Table 1 highlights some of the concerns for the environmental, tourism, residential, commercial and industrial sectors of the Byron Shire.

Table 1. Climate change related impacts for Byron Shire

Sector	Climate Change Related Impacts
<b>Environmental</b>	Loss of biodiversity caused by loss of habitat and species migration
	Sedimentation and pollution of waterways caused by flash flooding
	Habitat disturbance and damage from increased storm activity
<b>Tourism Residential Commercial Industrial</b>	Damage to key infrastructure due to increased storm activity
	Increased pressure on water security as a result of increased drought intensity and contamination from flash flooding
	Electricity outages as a result of increased storm frequency
	Flash flooding (especially in low lying areas) a result of increased storm intensity
	Coastal incursion of sea water as a result of sea level rise
	Failed data services as a result of increased storm frequency



*Byron Shire resident winners of “Beat your power bills competition” saved the most on their electricity bills by implementing a suite of easy changes in the home.*

## Peak Oil and the Byron Shire

Peak oil and the associated rise in oil prices have already and will continue to have an influence on the costs of numerous activities. Table 2 below lists examples of how rising oil costs will affect activities provided by Council.

Table 2. Potential areas of impact from rising oil prices

Activity	Impact
Road Surfacing and Maintenance	Construction and maintenance of asphalt (tarmac) will increase
Engineering Operations	Construction materials and transportation will have a higher cost
Maintenance of Parks and Reserves	Increased cost of mowing, and higher cost of fertilisers
Waste Removal	Higher costs of fuel for waste services
Wastewater Treatment	Higher energy costs with wastewater treatment
Water Supply	Higher energy costs associated with pumping and water treatment
Security and Council Rangers	Higher costs of fuel
Street and General Lighting	Higher energy costs
Air Conditioning of Buildings	Higher energy costs
Rate Collection	Financial stress related to increased cost of living may limit the ability for rate payers to pay rates
Health Care	Higher costs to travel to health centres
Transport	Higher fuel prices and lack of public transport alternatives
Tourism	Higher fuel prices, resulting in a deterrence for international/domestic travellers



*Community gardens foster community relationships, increase food security, share food growing knowledge and reduce the distance food needs to travel to the consumer. This all leads to fewer greenhouse gas emissions and a more resilient community.*

## Byron Shire Low Carbon Strategy Aim & Target

The aim of the Byron Shire Low Carbon Strategy is to:

***Mitigate climate change through reducing Byron Shire’s greenhouse gas emissions whilst improving the resilience of Council and the community for future scenarios such as peak oil.***

Byron Shire Council made a commitment to reduce greenhouse gas emissions by setting a target of 30% reduction from the 2003-2004 levels by 2020. The greenhouse gas emission reduction target allows Council to set a clear direction and actively pursue projects to contribute to meeting emissions reduction. To achieve the emissions reduction target Byron Shire Council has engaged a resource benchmarking company (Planet Footprint) to actively monitor greenhouse gas emissions from general electricity use, street lighting, heavy and light vehicle fleets and landfill. From the information collected Byron Shire Council produces an annual status report for greenhouse gas emissions which monitors the progress towards meeting the greenhouse gas emissions reduction target. Through the monitoring of greenhouse gas emissions Council has tracked a disturbing upward trend of emissions from council operations. This has been largely due the growth of new facilities such as new sewage treatment plants and community facilities such as the Byron Regional Sports Complex and Byron Bay Library. Now more than ever Council is committed to reducing its greenhouse gas emissions to turn the corner and start a trajectory down towards the adopted target.

In addition to the emissions reduction target the Byron Shire Community in conjunction with Council set a 10 year vision for the Byron Shire area. As part of the *Byron Shire Council Community Strategic Plan 2022*, Byron Shire Council has shown its commitment to creating a low carbon community, as shown in Community Outcome EN3 (Table 3).

Table 3. Excerpt from the Byron Shire Council Community Strategic Plan

<p><b>EN3</b></p> <p>A low carbon community that integrates:</p> <ul style="list-style-type: none"> <li>a) food security</li> <li>b) renewable energy</li> <li>c) climate change</li> <li>d) non-renewable resource constraints, including peak oil and</li> <li>e) economic and social prosperity and resilience.</li> </ul>	<p><b>EN3.1</b> Implement initiatives that address climate change.</p> <p><b>EN3.2</b> Promote water and waste minimisation – avoid, reduce and reuse waste.</p> <p><b>EN3.3</b> Encourage low consumption lifestyles and environmentally aware practices.</p> <p><b>EN3.4</b> Implement initiatives to prepare Council assets for climate change and peak oil impacts.</p> <p><b>EN3.5</b> Promote reduced energy consumption, increased energy efficiency and the local provision of renewable energy.</p> <p><b>EN3.6</b> Support initiatives that enhance socio-economic prosperity and resilience at the local level.</p>
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## Byron Shire Greenhouse Action Strategy 2008

### Completed Actions from 2008 to 2014

The following section outlines the actions completed from the *Byron Shire Greenhouse Action Strategy 2008*. Actions not completed from the 2008 Greenhouse Action Strategy have been updated and included in the new 2014 Low Carbon Strategy.

Table 4. Completed actions from the Byron Shire Greenhouse Action Strategy 2008

Action	2013 Status	Responsibility	Outcome
Modify tendering and contract procedures to require double sided submission of all Council tenders and contracts from applicants.	<b>Alternative Action Taken Complete</b>	Corporate and Community Services	The use of tenderlink has superseded this action to electronic submissions. Other actions for paper reduction can be identified such as agendas and possibly technology developments payroll. The 3 weekly cycle of Council meeting will reduce council's paper use for agenda printing
Investigate use of timers for hot water heating in Council administration building.	<b>Complete</b>	Corporate and Community Services	Zip efficient water heaters installed in all kitchenettes (September 2010). Timers run hot water systems from 7am to 4pm and automatically shut off when not in use for more than 2 hours.
Design new Byron Bay library to incorporated ESD principles	<b>Complete</b>	Corporate and Community Services	The new Byron Bay Library achieved a 5 Star green building rating and opened in 2013.
Establish a community garden in Mullumbimby.	<b>Complete &amp; Expanded</b>	Corporate and Community Services	Both the Mullumbimby Community Garden and the Shara Community Garden have been established.
Install solar films in Council Chambers to reduce reliance on air conditioning.	<b>Complete</b>	Corporate and Community Services	Solar films installed on windows in administration building 2009. As part of the renovations happening in July August 2013 solar films installed on the vertical windows of the Council chambers to reduce glare and heat load during summer.
Consolidate information technology network servers from 25 to 15 units.	<b>Complete &amp; Expanded</b>	Corporate and Community Services	As of May 2013 a consolidation of Council's current 12 servers were reduced to 7

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Action	2013 Status	Responsibility	Outcome
Revise Council's Management Plan to maintain sustainability focus	<b>Alternative Action Taken</b>	Corporate and Community Services	The Byron Shire Community Strategic Plan 2022 aligned with sustainability focus. Published 2012
Evaluate tenders for design and construction of Valances Road Sewerage Treatment Plant against greenhouse gas generation	<b>Complete</b>	Infrastructure Services	The Waste Water Treatment facilities have been installed. The decommissioning of sewage treatment plants at Mullumbimby, Brunswick Heads and South Byron and the commissioning and upgrade to sewage treatment plants at Valances Road, West Byron, Bangalow and Ocean Shores is complete.
Implement methane gas capture / flaring at Shire landfill	<b>Complete</b>	Infrastructure Services	Council installed a basic landfill gas collection and flaring system to reduce odours and greenhouse emissions in 2010/11. It captures gas from existing vents and destroys odour and methane by combustion in landfill gas flares. Trial flare expanded to the current flare July 2011.
Investigate options for recycling of household organic waste	<b>Complete</b>	Infrastructure Services	Organic waste collection due for implementation August 2015.
Finalisation of Byron Shire Bike Plan	<b>Complete</b>	Infrastructure Services	The Plan was adopted by Council in August 2010 and the prioritisation of works has been conducted via the section 94 plan. Additional funding is required to access the 50/50 RMS funding opportunities.
Review Light Fleet Procedures to integrate with Green Fleet Guide	<b>Complete</b>	Infrastructure Services	The vehicle ratings in the Green Fleet Guide have been used as criteria for selection of vehicles for Council's fleet. This will occur as part of the annual review.

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Action	2013 Status	Responsibility	Outcome
Installation of energy efficient lighting at Bangalow Sports Fields	<b>Commenced</b>	Infrastructure Services	Energy efficient lighting has been installed on new projects such as Tom Kendall Oval, Pine Ave No2, Mullumbimby netball and soon Lofts Oval at Brunswick Heads and Jeff Schneider field at Bangalow. Product information suggests that there is a 40% saving in power costs when using these lights over conventional technology.
Upgrade street lighting to improve energy efficiency	<b>Complete</b>	Infrastructure Services	A bulk upgrade of streetlights occurred during 2011/12 financial year. Rollout of LED lighting being installed at Main Beach.
Install power factor correction (PFC) devices at pumping and sewerage treatment sites in Byron Bay, Ocean Shores and Mullumbimby	<b>Complete</b>	Infrastructure Services	Power factor correction devices have been installed on all electric drives where it has been viable.
Install 'jockey pumps' at major sewerage pumping stations to reduce energy usage during low flow periods	<b>Alternative Action Taken</b>	Infrastructure Services	Where applicable, Variable Speed Drives for pumps to operate at lower kilowatts (amps) at lower flows have been installed.
Create biosolids management strategy to determine a long term option for disposal of biosolids from sewerage treatment plants that minimizes greenhouse gas emissions	<b>Complete</b>	Infrastructure Services	Biosolids are delivered to a variety of farms for agricultural fertiliser

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Action	2013 Status	Responsibility	Outcome
Conduct greenhouse gas emission audit of Council waste operations	<b>Complete</b>	Infrastructure Services	The landfill gas flare was installed in 2011. Council then went onto registered as an accredited carbon offset credit generator in May 2013 for the waste emissions generated at the landfill. Revenue raised from sale of carbon credits was used for operation and expansion of the landfill gas flare system.
Install solar films on West Byron Wetlands Interpretive Centre	<b>Complete</b>	Infrastructure Services	Solar films have been installed.
Modify position descriptions to require applicants to demonstrate commitment to sustainability principles in recruitment selection criteria	<b>Complete</b>	Organisation Development	Sustainability criteria incorporated into many position descriptions and used for performance planning and review.
Reduce reliance on hard copy / paper files in legal services area through transition to electronic media storage and double-sided printing both (internally and through stakeholder lobbying).	<b>Ongoing</b>	Organisation Development	All of Council's panel solicitors are registered E-lodgement users, which enables Council documents to be filed electronically rather than in hardcopy. Council now uses electronic storage media, e.g. CD and memory storage devices, when transferring large volumes of documents to external sources, such as solicitors, reducing paper use. This will continue to be implemented as much as possible.
Conduct community incentive Solar Hot Water Heating campaign	<b>Complete</b>	Sustainable Environment and Economy	Byron Shire community solar hot water campaign conducted from April - June 2008, including public presentations and a negotiated additional Byron Shire discount. The campaign resulted in over 100 solar hot water installations. Subsequent Northern Rivers regional solar hot water campaign conducted from Sept. - December 2008.



**BYRON SHIRE COUNCIL**

Action	2013 Status	Responsibility	Outcome
Northern Rivers Food Links Project	<b>Complete</b>	Sustainable Environment and Economy	<p>Regional food project that aims to secure a sustainable food future for the region. Through a number of funding streams, the project sought to mitigate climate change impacts associated with food production and distribution and strengthen community resilience to climate change and peak oil impacts.</p> <p><b>Projects benefiting the Byron Shire included:</b></p> <ul style="list-style-type: none"> <li>• Source identification labelling in stores</li> <li>• Sustainable Food Directory</li> <li>• Mullumbimby Community Garden access up grade, signage and harvest festival</li> <li>• Sustain Food Website - linking produces/retailers/consumers</li> <li>• Sustainable Farm Planning</li> <li>• Regional Distribution Project</li> <li>• Northern Rivers Landshare</li> <li>• Farmers Market Network Development</li> <li>• Skilling the Community</li> <li>• Virtual market place linking producers, retailers and consumers</li> <li>• Local Government Resource Kit</li> </ul>
Create sustainability portal on Council's website	<b>Complete</b>	Sustainable Environment and Economy	<p>Visit: <a href="http://www.byron.nsw.gov.au/sustainability">www.byron.nsw.gov.au/sustainability</a> Pages on all Council's sustainability programs and community information, including sustainable living fact sheets and resources, energy and water efficient rebate information and community initiatives.</p>

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Action	2013 Status	Responsibility	Outcome
Northern Rivers Carpool Scheme	Ongoing	Sustainable Environment and Economy	Website developed by regional alliance of Councils to facilitate on-line carpooling matches. Visit: <a href="http://www.nrcarpool.org">www.nrcarpool.org</a> . Now over 1700 members and recently released a new app. Five other regions around Australia have taken up a licence to do the same project. Splendour in the grass using Northern Rivers Carpool site to link attendees.
Ethical Catering Policy	Ongoing	Sustainable Environment and Economy	Policy outlines Council's food ethics and catering expectations. Adopted June 2010.
Byron Shire Climate Change Adaptation Implementation Action Schedule	Complete	Sustainable Environment and Economy	Byron Shire Climate change Adaptation Implementation Action Schedule developed through risk analysis process and adopted by Council on 10 June 2008 (Res. 10-408)
Byron Shire Community Gardens Policy	Complete	Sustainable Environment and Economy	Policy developed to support and guide community gardens across Byron Shire.
Beat Your Power Bills Energy Efficiency Competition	Complete	Sustainable Environment and Economy	With the aim to save more energy than the previous years winter and spring energy consumption entrants each received an energy saving package full of tools, tips and tricks and were set on their way. The result of this competition was an average consumption reduction of 28% over the winter period and 21% over the spring period.



*Solar panels on the Brunswick Heads Community Centre reduce greenhouse gas emissions by supplementing the centre's energy use with electricity made from the sun.*

Byron Shire Low Carbon Strategy 2014

The *Byron Shire Low Carbon Strategy 2014* assists Council and the community to pursue opportunities for a low carbon, less oil-reliant future. It also assists in the development of a resilient, flexible and sustainable environment, society and economy amidst the pressures of rising oil prices and climate change. The *Low Carbon Strategy 2014* was developed through consultation with the Biodiversity and Sustainability Committee and Council's executive management.

The *Byron Shire Low Carbon Strategy 2014* lists proposed projects and has been divided into both topic themes and Council division. Eight topic themes are listed within the *Byron Shire Low Carbon Strategy 2014* they include: carbon, energy efficiency, transport, staff and community engagement, waste, peak oil and water. Each action has been given an identifying number, a unique name and a short description outlining what is to be achieved. Additionally each action has been linked to the *2013-17 Byron Shire Council Delivery Plan* to ensure that projects align with the overall direction of Council's four year plan. Table 5 defines the column headings of the *Low Carbon Strategy 2014*.

Table 5. Legend for the *Byron Shire Low Carbon Strategy 2014*

<b>Action ID</b>	Identification number for action
<b>Name</b>	Name of the action
<b>Description</b>	Brief description of action activity
<b>2013-17 Delivery Plan Linkage</b>	Action linkage with delivery program number from the <i>Byron Shire Council Revised Delivery Program 2013-2017</i>
<b>Council Responsibility</b>	Council division responsible for implementing the action
<b>Theme</b>	Action sustainability theme
<b>Scheduled Year</b>	Year in which the action is planned to be completed



*The Northern Rivers Carpool website matches people travelling to work and study so that may start to carpool together. Carpooling is an excellent social way to reduce fuel usage and greenhouse gas emissions at the same time.*

## BYRON SHIRE COUNCIL

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
1	Monitor Energy and Fuel Consumption	Continue to work with Planet Footprint (or alike) to manage Council's energy and fuel data to identify wastages and document consumption	24, 45	Corporate and Community Services	All	1
2	Caravan Park Energy Audit	Conduct detailed energy audit of all Council owned caravan parks	22, 45	Corporate and Community Services	Energy Efficiency	1
3	Sustainable Investment	Investigate environmentally and financially sustainable investment opportunities as well as the potential for divestment opportunities away from non environmental/ethical activities	24	Corporate and Community Services	All	1
4	Solar Energy Contract Implications	Investigate contractual implications of the installations of large scale solar energy projects on Council's electricity contracts	24, 45	Corporate and Community Services	Renewable Energy	2
5	Paper Reduction	Investigate ways to minimise paper use in the organisation (eg Digitising Council meeting agenda's and payslips)	5, 22, 24, 45, 46	Corporate and Community Services	Staff Engagement	2
6	Sustainable Office Products	Implement Sustainable Office Products Initiatives (eg eco stationery)	45, 46	Corporate and Community Services	Staff Engagement	2

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
7	Fuel Shock Emergency Management Plan	Incorporate fuel supply shocks as potential risk scenario in business continuity plan	47, 53	Corporate and Community Services	Peak oil	2
8	Video Conferencing	Implement video conferencing ability for staff to attend regional meetings remotely	13, 45	Corporate and Community Services	Peak oil	3
9	Depot Energy Efficiency Upgrades	Conduct a request for quotation on energy efficiency upgrades at the Depot	22, 45, 46	Infrastructure Services	Energy Efficiency	1
10	Administration Building Energy Efficiency Upgrade	Improve energy efficiency of air-conditioning system and lighting at administration building as per Australian Standards and WHS	22, 45, 46	Infrastructure Services	Energy Efficiency	1
11	BRSCC Energy Efficiency	Investigate energy use patterns at the BRSCC and identify efficiency opportunities	22, 35, 45, 46	Infrastructure Services	Energy Efficiency	1
12	BRSCC Solar Hot Water	Install solar hot water at the BRSCC	22, 35, 45, 46	Infrastructure Services	Energy Efficiency	1
13	Depot Energy Efficient Lighting	Improve quality of lighting at depot as per Australian Standards and WHS with the view to improving energy efficiency. (eg. LED lighting retrofit)	22, 45, 46	Infrastructure Services	Energy Efficiency	1

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
14	Wastewater Treatment Energy Efficiency	Investigate opportunities for energy efficiency throughout waste water treatment network. As per resolution 13-107.3	45	Infrastructure Services	Energy Efficiency	1
15	Wind Energy Investigation	Purchase a wind energy meter for monitoring site specific potential for small-medium scale wind energy generation	46	Sustainable Environment and Economy	Renewable Energy	1
16	Large Scale Solar Power	Investigate feasibility of large scale solar at Council facilities (eg STW, depot, BRSCC, Admin building, caravan parks)	22, 45, 46	Infrastructure Services	Renewable Energy	1
17	Organic Waste Collection	Implement collection and re-use of household organic waste in the Byron Shire to produce a high quality product appropriate for re-use in food and land restoration systems	22, 46, 56	Infrastructure Services	Waste	1
18	Resource Recovery Education	Reduce organic waste to landfill and increase awareness of organic and general recycling in the household (incl plastic minimisation)	14, 17, 45, 46, 47, 56	Infrastructure Services	Waste	1
19	Organic Waste Reuse	Investigate local uses of residential organic waste collected	14, 17, 45, 46, 47, 56	Infrastructure Services	Waste	1

## BYRON SHIRE COUNCIL

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
20	Commercial Organic Waste Collection	Develop commercial organic waste collection strategy for business and industry	14, 17, 45, 56	Infrastructure Services	Waste	1
21	Park and Ride Scheme	Implement a park and ride scheme for Byron Bay as per Council resolution 14-293	14, 22, 45, 46	Sustainable Environment and Economy	Transport	1
22	Biofuel Production	Investigate biofuel potential of new organic waste collection	45, 56	Infrastructure Services	Transport	2
23	Electric Fleet Vehicles	Investigate opportunities for the use of electric vehicles for parking officers/rangers/inspectors where applicable along with the potential for an integrated charge station network for the Byron Shire.	22, 45, 46	Sustainable Environment and Economy	Transport	1
24	Electric Vehicle Charging Stations	Install electric vehicle charging stations throughout the shire	22, 25, 45, 46, 47	Sustainable Environment and Economy	Transport	2
25	Eco-friendly Priority Parking	Implement priority/designated car parking spaces for carpooling and electric/hybrid vehicles	14, 45, 46, 47	Infrastructure Services	Transport	2
26	Water and Energy Audits	Conduct energy and water audit of Council facilities to identify efficiency improvements (e.g. lighting, insulation, tap locks, hot water)	22, 45, 46	Infrastructure Services	Energy Efficiency	2

## BYRON SHIRE COUNCIL

STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
27	Street Tree Planting	Increase public street plantings	22, 40, 46, 47	Infrastructure Services	Carbon	2
28	Energy Efficient Street Lighting	Investigate further streetlight and public lighting options for energy efficiency including creative environmental design elements and public safety	22, 40, 45	Infrastructure Services	Energy Efficiency	2
29	Electricity Meter Upgrades	Identify electricity meters that can be upgraded to time of use or telemetry to take advantage of appropriate electricity tariffs	13, 22	Infrastructure Services	Energy Efficiency	2
30	Timers on Hot Water Systems	Investigate opportunities to install timers on hot water systems in Council facilities (eg childcare centres)	45, 46	Infrastructure Services	Energy Efficiency	2
31	Small Scale Renewable Energy Generation	Identify sites for small scale renewable energy generation (eg. solar/wind)	22, 45, 46	Infrastructure Services	Renewable Energy	2
32	Leachate Management Energy Efficiency	Reduce energy consumption at landfill by minimising volumes of leachate transported offsite	45	Infrastructure Services	Energy Efficiency	2



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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

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Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
33	Industry Consultation on Peak oil Strategies	Approach Infrastructure Australia and Engineers Australia on their recommendations to prepare for peak oil in regard to heavy vehicle fleet	17, 47	Infrastructure Services	Peak oil	2
34	Micro Hydro-Electricity	Investigate feasibility of micro hydro turbines in reticulated water supply network	22, 45, 46	Infrastructure Services	Renewable Energy	Aspirational
35	Extend Landfill Gas Capture System	Investigate opportunities for utilising heat produced from landfill gas flare with mindfulness to neighbouring residents	22, 45, 46	Infrastructure Services	Waste	3
36	Promote Composting	Investigate options to encourage composting	14, 45, 46, 47	Infrastructure Services	Waste	2
37	Water Harvesting	Encourage and promote safe water harvesting and reuse for residents and businesses	14, 17, 22, 45, 46, 47	Infrastructure Services	Water	3
38	Fuel Efficient Fleet Policy	Review Council's fleet policy to ensure fuel efficiency (in L/km) and safety are the predominant factors in fleet decisions	22, 45, 46	Infrastructure Services	Transport	2
39	Using Biogas/Bio-diesel Fuels	Investigate opportunities for the use of biogas/ bio-diesel in Council fleet and encourage a local biofuels industry	14,17, 22, 25, 45, 46	Infrastructure Services	Transport	2

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

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Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
40	Byron Shire Bike Plan	Identify funding opportunities to facilitate the implementation of the Byron Shire Bike Plan	14, 16, 45, 46, 48	Infrastructure Services	Transport	2
41	Improve Bike Plan	Review bike plan to seek new opportunities for improvement	22	Infrastructure Services	Transport	2
42	Fuel Efficient Route Maps	Investigate feasibility of route mapping for fuel efficiency via in vehicle GPS in Council's fleet	13, 45, 47	Infrastructure Services	Transport	3
43	Promoting School Bus Network	Promote school bus network to reduce number of students driven to school	14, 45, 46	Infrastructure Services	Transport	Aspirational
44	Travel Reduction	Conduct an in house staff engagement initiative to identify new fuel saving and travel reduction techniques	5, 6, 45, 46	Infrastructure Services	Staff Engagement	3
45	Fuel Efficient Driving	Conduct staff education/ training for fuel choice and fuel efficient driving techniques	5, 6, 45, 46	Infrastructure Services	Staff Engagement	3
46	Byron Bay Library Energy Efficiency	Assess energy use and benchmark the Byron Bay Library to other similar buildings in Australia	22, 34, 45, 46	Infrastructure Services	Energy Efficiency	3

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

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Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
47	Water and Sewer Energy 'Smart Metres'	Install 'smart meters' across Shire water and sewerage assets to provide centralized monitoring of energy consumption as opportunities arise	45	Infrastructure Services	Energy Efficiency	3
48	Alternative Solutions to Fossil Fuels	Investigate alternatives to bitumen use that do not rely on fossil fuels	22, 45, 47	Infrastructure Services	Peak oil	Aspirational
49	Public Bicycle Hire	Investigate implementing a public bicycle hire scheme in the Byron Shire (eg Brisbane model)	14, 17, 25	Infrastructure Services	Transport	3
50	Sport Field Energy Efficient Lighting	Continue to install energy efficient lighting and lighting controls in sport fields where possible	22, 40, 45	Infrastructure Services	Energy Efficiency	Ongoing
51	Public Toilet Energy Efficient Lighting	Incorporate energy efficient lighting and natural lighting options in upgrades of Council's toilet blocks with regard for public safety	22,40, 45	Infrastructure Services	Energy Efficiency	Ongoing
52	Revolving Energy Fund	Continue to implement and replenish projects from the Revolving Energy Fund	24, 45, 46	Infrastructure Services	Energy Efficiency	Ongoing
53	Tree Planting in New Developments	Amend DCP 2010 to ensure developers establish street plantings in new sub-divisions	40, 42, 43	Sustainable Environment and Economy	Carbon	1

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Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
54	Environmental Levy	Investigate opportunities to continue and expand the special levy to implement the Low Carbon Strategy	45	Sustainable Environment and Economy	All	1
55	Virtual Net Energy Metering	Work collaboratively with Essential Energy, energy retailers and the Australian Energy Regulator to develop Virtual Net Metering in the Byron Shire	13, 16, 17, 22, 45	Sustainable Environment and Economy	All	1
56	Community Engagement Climate change and Peak oil Planning	Biodiversity & Sustainability committee to workshop with staff potential methods of reducing greenhouse gas emissions and improving peak oil preparedness under the current planning system and proposed planning reforms and identify opportunities to participate	14, 17, 45, 46, 47, 53	Sustainable Environment and Economy	All	1
57	Large Scale Event Sustainability	Develop strategy to improve the sustainability and minimise the environmental impact of large events (eg festivals) in the Byron Shire	28, 46	Sustainable Environment and Economy	Community Engagement	1
58	Bangalow and Suffolk Park Community Gardens	Support the creation a community garden at Suffolk Park and Bangalow	15, 40, 46, 47	Sustainable Environment and Economy	Peak oil	1
59	Ethical Catering	Update list of eligible caterers for the Ethical Catering Policy and promote to staff	45, 46	Sustainable Environment and Economy	Peak oil	1

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Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
60	Byron Shire Renewable Energy	Support renewable energy projects throughout Byron Shire where possible	17, 25, 45, 46, 47	Sustainable Environment and Economy	Renewable Energy	1
61	Carbon Offset Tree Plantings	Investigate carbon offset potential of biodiversity/conservation stimulated tree plantings as a potential revenue generation source	40, 42, 43, 46	Sustainable Environment and Economy	Carbon	2
62	Carbon Farming	Promote carbon farming initiatives including soil health, revegetation, bio char and farm forestry	14, 42, 43, 46	Sustainable Environment and Economy	Carbon	2
63	Low Carbon Transport	Encourage and promote low carbon transport options to the community	22, 45, 46	Sustainable Environment and Economy	Transport	2
64	Climate Change Mitigation and Peak Oil Planning	Incorporate climate change mitigation and peak oil preparedness into local planning strategies	18, 45, 46, 53	Sustainable Environment and Economy	All	2
65	Community Solar Campaign	Conduct a community incentive solar campaign (eg Council facilitated bulk purchase scheme including options for low income residents)	14, 16, 17, 45, 46, 47	Sustainable Environment and Economy	Community Engagement	2

**BYRON SHIRE COUNCIL**

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
66	Energy Monitoring	Invest in a set of removable energy monitors to allow for sub metering of Council assets for energy audits and project savings verification	45	Sustainable Environment and Economy	Energy Efficiency	2
67	Child Care Centres Energy and Water Audit	Conduct energy, water, waste and chemical use audits at child care centres	22, 45, 46	Sustainable Environment and Economy	Peak oil	2
68	Staff Resource Education	Develop staff education program focussing on paper and computer use etc (eg 'Green Points' Rewards program)	5, 45, 46	Sustainable Environment and Economy	Staff Engagement	2
69	Composting Toilets	Investigate opportunities for the installation of composting toilets in sewerred areas and large events to reduce load on sewer system	22, 45, 46	Sustainable Environment and Economy	Waste	2
70	Sustainability Advantage Program	Promote OEH Sustainability Advantage Program to private businesses	5, 17, 46	Sustainable Environment and Economy	Community Engagement	2

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
71	Community Council Services	Investigate decentralising Council community services to the public where appropriate eg use community centres/libraries one day/week or month for public access to Council services	13, 46, 47	Sustainable Environment and Economy	All	3
72	New Development Energy Efficiency	Review and amend DCP 2014 to ensure new subdivisions feature energy efficient or renewably powered street lighting and public transport considerations	38, 41, 45, 46, 47	Sustainable Environment and Economy	Energy Efficiency	3
73	Commercial and Industrial Energy Efficiency	Investigate amending DCP 2014 relating to commercial and industrial developments to include energy efficiency provisions	38, 41, 45	Sustainable Environment and Economy	Energy Efficiency	3
74	Energy Efficiency Planning Framework Input	Investigate opportunities to incorporate proposed energy efficient standards into NSW planning strategic planning framework and proposed codification and make representations as opportunities permit	18, 41, 46	Sustainable Environment and Economy	Energy Efficiency	3
75	Food Production on Public Land	Promote food production on public land & develop map for Shire (online) with fruiting trees	14, 17, 40, 46, 47	Sustainable Environment and Economy	Peak oil	3

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STAFF REPORTS - SUSTAINABLE ENVIRONMENT AND ECONOMY

5.2 - ATTACHMENT 1

Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
76	Review Low Carbon Strategy	Conduct annual review and update of the Low Carbon Strategy to monitor implementation and relevance	45	Sustainable Environment and Economy	All	Ongoing
77	Cross Departmental Collaboration	Work across Council to support implementation of Low Carbon Strategy	5, 17, 45	Sustainable Environment and Economy	All	Ongoing
78	Sustainability Achievements	Council to promote widely its sustainability achievements to public and staff	14, 45, 46	Sustainable Environment and Economy	All	Ongoing
79	Climate change Adaptation Strategy	Conduct annual review of climate change adaptation strategy to improve delivery and relevance to the Byron Shire	53	Sustainable Environment and Economy	All	Ongoing
80	Sustainability Education	Deliver community sustainability education initiatives to reduce community environmental impact.	14, 16, 17, 46, 47	Sustainable Environment and Economy	Community Engagement	Ongoing



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Action ID	Name	Description	2013-17 Delivery Plan Linkage	Council Responsibility	Theme	Scheduled Year
81	Northern Rivers Carpool Project	Promote and support the Northern Rivers Carpool project	16, 45, 46	Sustainable Environment and Economy	Community Engagement	Ongoing
82	Sustainability Portal	Maintain an up to date sustainability portal on Council's website	13, 23, 46	Sustainable Environment and Economy	Community Engagement	Ongoing
83	Showcase Byron Bay Library	Utilise the Byron Bay Library as a platform for environmental education to the wider community showcasing its sustainability features	14, 17, 34, 46	Sustainable Environment and Economy	Community Engagement	Ongoing
84	Support Community Gardens	Continue to support existing community gardens	14, 17, 40, 45, 46, 47	Sustainable Environment and Economy	Peak oil	Ongoing
85	Northern Rivers Food Links Project	Continue to support outcomes of the Northern Rivers Food Links Project	14, 16, 45, 46	Sustainable Environment and Economy	Peak oil	Ongoing
86	NBN and WiFi	Investigate opportunities that technology developments (eg NBN and/or WiFi) create for remote working	13, 45	Organisation Development	Peak oil	2
87	Sustainability Engagement	Support coaching and mentoring for sustainability across the organisation via internal staff engagement	5, 46	Organisation Development	Staff Engagement	2

## Conclusion

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With future increasing oil prices and rising global temperatures Council is taking action to prepare for changes and mitigate their effects. Encompassing themes of carbon, energy efficiency, transport, staff and community engagement, waste, peak oil and water the *Byron Shire Low Carbon Strategy 2014* outlines a list of actions. Once completed the strategy will assist the reduction of greenhouse gas emissions and drive a shift away from the reliance on fossil fuels. This Strategy which was created through community consultation showcases the active and adaptive approach Council is taking to lead improvement in environmental, social and economic resilience.

The coupling of greenhouse gas abatement and peak oil preparedness into one strategy has highlighted a unique opportunity where efforts to reduce the use of fossil fuels will contribute to a reduction in greenhouse gas emissions and a cost avoidance from the increasing price of such fuels. By supporting the growth and development of sustainable industries the Byron Shire will not only benefit the environment but will be endowed with a more resilient, flexible and prosperous economy.

As a stopping place for people from all around the world projects such as the installation of energy efficient street lighting, the development of community gardens and the implementation of bicycle plans will advocate the Byron Shire as a global leader in sustainability. As a living document the *Byron Shire Low Carbon Strategy 2014* will continue to grow and react to future changes enabling the Byron Shire to thrive as a community rich in a culture of environmental awareness.