



SUSTAIN NORTHERN RIVERS SUSTAIN ENERGY STRATEGIC PLAN 2014-2019

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SUSTAIN NORTHERN RIVERS – SUSTAIN ENERGY

STRATEGIC PLAN 2014-2019

GOAL OF SUSTAIN ENERGY:

The Northern Rivers has a resilient and sustainable energy system

HOW WILL WE ACHIEVE THIS?

By enabling our region to reduce greenhouse gas emissions from energy systems and increase the proportion of renewable energy sources to 20% by 2020

PRINCIPLES

Generation and distribution of renewable energy, energy efficiency and demand reduction are economic and social drivers for communities, businesses and industries. These drivers will equip our communities to strengthen local economies, protect the environment and increase our adaptive capacity to deal with changes arising from climate change.

The Northern Rivers has a strong history in renewable energy, and the production of renewable energy increased by 43% between 2010 and 2013. Despite this, the Northern Rivers continues to be heavily reliant on imported coal-based energy.

Sustain Energy works to foster communities which are better equipped to deal with the changes arising from climate change

The initiative in greenhouse gas reduction is increasingly being taken by households, towns, local government and some companies. There is an opportunity for strong integrated regional responses to the necessity for transition to a low carbon economy.

SNR partners:

- Recognise the value in having diverse distributed generation technologies embedded in the distribution network, including bioenergy, solar power, co-generation and battery systems;
- Seek to build community understanding skills relating to renewable energy and energy efficient technology;
- Acknowledge that energy efficiency and demand reduction offer the greatest potential for a self-reliant energy future;
- Support the development of a renewable energy industry to generate a employment;
- Seek to attract investment to sustainable renewable energy, energy efficiency and demand reduction projects in the Northern Rivers;

- Encourage decentralised energy technologies using local resources and reducing the need for large-scale supply infrastructure;
- Support an intelligent electricity network (smart grid) to integrate the actions of generators, distributors and consumers to deliver sustainable, economic and secure electricity;
- Support sustainable building design, planning and development which reduces the need for technological solutions to create highly energy efficient and adaptive environments (e.g. solar passive, activated thermal mass, glazing, shading, insulation);
- Support community-based approaches to energy infrastructure distribution and retail, to give communities a greater level of input and control and a greater share of the benefits.

BACK GROUND INFORMATION

Nearly all electricity in the region comes from the national grid, which in NSW is nearly 90% coal-fired. The National Electricity Market and Rules favour the dominant electricity providers, TransGrid (transmission), Essential (formerly Country) Energy (distribution) and Origin Energy (retail) and encourage them to sell as much power as possible. The region's centralised energy infrastructure leads to supply vulnerabilities and limited opportunities for resilience building.

The focus of Sustain Energy in relation to generation is on renewable energy sources which are sustainable in the long term.

For renewable energy to be feasible and sustainable it is essential to address barriers to investment, challenges of renewable energy costs and the need for a strong social license for any new industry to be developed in the region.

Potential renewable sources include:

- *Solar*: potential is high compared with southern Australia, but less than in inland and northern Australia.
- *Wind*: while potential is lower on the North Coast than further west, there may be potential in some coastal locations (only mapped for Byron Shire).
- *Geothermal*: no known high temperature resource, but there is potential for shallow low temperature generation.





- *Wave/current*: potential is unknown but likely to be considerable in view of exposure to the Pacific Ocean, the narrow continental shelf, and common winter southerly swells and summer sub-cyclonic north swells.
- *Biofuels*: considerable potential from existing crops (e.g. sugarcane), processing residues, effluent from livestock transfer facilities and abattoirs and a range of other waste streams.
- *Bioenergy*: bio-mass is potentially the region's greatest unexploited energy source, and there are currently a number of developing projects in the region; these include: a 150kW steam turbine near Tweed Heads operated by BORAL, two cogeneration plants using mainly sugar bagasse & wood waste producing 68mW of electricity owned by Capital Dynamics (Cape Byron Power) and a shell fired boiler implemented by Macadamia Processing Company to reduce energy costs. Potential bioenergy sources include agricultural outputs and bi-products, forestry waste products, food and other human-generated waste. Bioenergy should not compromise other sustainability issues such as food security (e.g. using arable land to grow biofuel instead of food crops) or regional biodiversity.
- *Micro-hydro*: there is considerable potential for smaller-scale plants utilising streamflows from the tablelands towards the coast. There is some domestic use of micro-hydro, particularly around Nimbin.

Current sustainable energy initiatives in the region include:

Households: Byron and Lismore LGAs have the highest uptakes of rooftop solar panels in rural NSW, but there is much scope for improvement. Even these LGAs have only 5% of households with PVs and the statistics for solar hot water systems are similar.

Communities: some NGOs have received funding for community projects such as the Nimbin Community Solar Farm (Nimbin Neighbourhood and Information Centre). The region is characterised by a significant number of intentional communities, which have established their own distributed energy systems separate from the main power grid. There is a growing interest in community investment and co-generation projects, such as the proposed Lismore Solar Farm Project.

Public authorities: Councils in the *Cities for Climate Protection* project committed to a 20% reduction in corporate and community emissions by 2012. Others have longer-term climate change strategies — e.g. Byron Council is committed to a 20% reduction in Council emissions by 2020 and Lismore City Council has made a commitment to a 100% renewable energy target for Council electricity use. Most Councils have started to measure their own emissions. Some Councils (e.g. Coffs Harbour) and public authorities (e.g. Lismore Base Hospital) have taken advantage of grants for renewable energy and energy efficiency installations. Others have introduced energy savings plans including changing streetlights to LEDs. Ballina Shire Council is committed to construct a 4000sqm slow-pyrolysis processing plant at Ballina's Waste Facility, which will process a large proportion of the region's wood waste, biosolids and municipal organic waste. The facility is supported by a Federal Government grant and is expected to be



operational by 2015. Tweed Shire Council has established a small landfill waste energy plant and have also set up a Solar Community scheme. Byron Bay and Clarence Valley Councils have constructed landfill gas extraction & flaring systems at their land fill sites to reduce CO2 emissions.

Private sector: Cogeneration plants at the Condong and Broadwater sugar mills with capacity to generate a combined 68mw of electricity were purchased in 2013 by Swiss based company Capital Dynamics. The plants, which cost to construct, are not currently operating to capacity, due in part to the absence of cane trash separation plants. Other businesses in the region have benefitted from State government programs like Sustainability Advantage and Energy Saver programs. Two such businesses are Lismore Workers Club which in 2013 installed a 100kw peak power solar system after participating in the Sustainability Advantage program and Lismore's Norco Cooperative Limited which in 2013 completed a major capital investment that included new energy efficient evaporate cooling units to reduce energy consumption in their frozen storage areas. Norco undertook a subsidised energy audit under the NSW Energy Saver program.

SUSTAINABILITY PRINCIPLES FOR A REGIONAL ENERGY RESPONSE

Sustain Energy recognises the complexity of energy policies for the region and recommends the following sustainability principles to guide any future regional energy approaches:

1. Ensure inter- generational equity
2. Maintain biological diversity
3. Employ the precautionary principle, i.e. exercise caution in a context of uncertainty, particularly where this is a risk of harm
4. Ensure sustainable use of natural resources
5. Enhance social and economic wellbeing, using sound environmental and social indicators
6. Strengthen community participation and ensure social license.

VALUE FOR OTHER REGIONS

The work of Sustain Energy provides opportunities beyond the Northern Rivers by demonstrating the steps required to determine what opportunities exist for reducing greenhouse gas emissions and making the shift to a regional, low carbon economy.



STRATEGIES AND RATIONALE

Sustain Energy has prioritised the following strategies for the reasons stated below:

Strategy	Rationale
1: Reduce greenhouse gas emissions from energy use in the Northern Rivers	Reducing greenhouse gas emissions is the key to climate change mitigation. Ideally, the aim should be for a zero-emissions energy economy. All greenhouse gas issues must be considered, including CO ₂ , methane and others.
2: Increase the proportion of renewable energy to 20% by 2020	In order to increase the self-reliance of the region, and achieve a secure energy future, there is a need to significantly increase the amount of energy generated from renewable sources.
3: Reduce energy demand and increase energy efficiency	Achieving significant and sustainable emissions reduction requires an integrated and targeted program that combines demand management and efficiency strategies.
4: Facilitate local energy distribution	Small and medium scale local projects offer the greatest potential in securing a diverse regional energy economy.
5: Promote adaptation to climate change	Issues relating to climate change such as regional changes to weather patterns, higher variances in temperatures, extreme storm events etc are likely to create additional energy demand challenges. Adaptation to climate change (eg building design) will be key to reducing the impact of climate change on the region.
6: Strengthen the capacity of Sustain Energy	The greater the capacity, the more can be achieved by the group on behalf of the SNR partners.



SUSTAIN ENERGY STRATEGIC PLAN 2014-2019

Action	Strategy number/s	Tasks	Indicators/Measures
<p>Review, inform and align with other local, regional, state and national strategies</p>	<p>All</p>	<p>Sustain Energy members scan for relevant strategies and share with other members via Teamwork PM and Sustain Energy meetings.</p> <p>Sustain Energy Working Group, acting as a referral point, will work to inform member agencies and stakeholders on impacts of proposed new and updated strategies, policies and plans which are relevant to SNR</p> <p>Establish and maintain an up to date list of relevant strategies on Sustain Energy’s webpage (or link to an existing list maintained by another reputable source)</p> <p>e.g. BZE (Built Environment, Stationary Energy) RDA Energy Position Statement, REAP, CEC, ARENA, etc</p>	<p>Teamwork PM messages and links</p> <p>Standing agenda item in working group meetings and progress reported in minutes</p> <p>Contributions to submissions prepared and recorded in Teamwork PM</p> <p>Relevant submissions are stored in Teamwork PM</p> <p>Updated list of strategies maintained on or linked from Sustain Energy’s webpage</p>
<p>Develop Energy Assessment Framework as a tool for decision making in relation to any form of energy under consideration</p>	<p>1, 2, 4, 6</p>	<p>Sustain Energy develop framework</p> <p>Circulate to key brains trust members (eg NCEF) for feedback and input.</p> <p>Promote to all relevant stakeholders</p>	<p>Framework completed</p> <p>Number of member organisations which adopt or refer to the Framework</p> <p>Sustainability principles are applied rigorously to decision making in relation to any form of energy under consideration .</p> <p>SNR partners and the community are informed and aware of the full range of sustainability</p>



Action	Strategy number/s	Tasks	Indicators/Measures
			<p>issues and considerations</p> <p>New energy industry operates within social license guiding principles.</p>
Collaborate with Sustain Transport	6, 5	<p>Support Sustain Transport in encouraging local take-up of Electric Vehicles (EVs) and creation of EV infrastructure in the region.</p> <p>Inform and encourage appropriate applications of integrated domestic EV charging facilities and domestic power supply storage capabilities.</p>	<p>Number and nature of collaborations with Sustain Transport</p> <p>Number of EV charging stations installed</p>
Promote energy efficient and sustainable building design	3	<p>Identify, link, support and promote regional initiatives in energy-efficient design e.g. :</p> <ul style="list-style-type: none"> • Sustainable House Day; • 7 Sibley Street Sustainable Living Hub; • Tweed Home Expo; • Sustainable/natural building materials (eg strawbale, hemp masonry, timber, bamboo); • Mullumbimby community gardens; • Workshops, etc. 	<p>Number and nature of projects identified and delivered</p> <p>Number and nature of links and relationships developed, maintained, contributed to and participated in</p> <p>Outcomes of support or involvement</p>
Raise awareness of energy storage innovations	4, 2	<p>Promote energy storage technology for both on and off grid applications, through digital and print media and workshops.</p>	<p>Number of workshops held</p> <p>Number of media etc articles produced/printed</p>
Assist in making the sale of renewable energy generated in	4	<p>Identify barriers.</p> <p>Investigate and promote creative solutions.</p>	<p>Barriers and solutions identified</p>



Action	Strategy number/s	Tasks	Indicators/Measures
the Northern Rivers more viable		<p>Hold workshops to promote strata unit renewable energy options.</p> <p>Promote positive regulatory changes with specific reference to the Australian Energy Regulator and equitable feed in tariffs.</p> <p>Support efforts to establish a local or locally focused energy retailer.</p>	<p>Number of Workshops held eg with owners, strata managers and real estate agents</p> <p>Nature and number of interactions with eg AER</p> <p>Local/locally focused retailer established</p>
Support network innovation	4	<p>Facilitate a trial of virtual net metering or a local use of system tariff.</p> <p>Advocate for the needs of Community Owned Renewable Energy (CORE) projects in relation to grid connection.</p> <p>Research the opportunities and risks of smart metering and deliver best known information to community.</p> <p>Support innovative grid development projects.</p>	<p>Number and nature of any trials, and SNR involvement</p> <p>Number and examples of advocacy undertaken</p> <p>Nature of research undertaken and findings</p> <p>Number and nature of information delivered to the community</p> <p>Number and nature of support provided to CORE projects</p> <p>Number and nature of grid innovations</p>
Facilitate local generation	2	<p>Support existing initiatives including Ballina pyrolysis plant and Cape Byron cogeneration units.</p>	<p>Number and nature of support provided</p> <p>Number and number of projects supported</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		<p>Support the establishment of community owned solar farms/CORE.</p> <p>Investigate/develop investment packages for bioenergy production across regional industries.</p> <p>Promote innovative generation sources.</p> <p>Research and identify suitable locations for bioenergy generation.</p> <p>Overcome barriers to making local generation economically viable.</p>	<p>Number and nature of investment packages sources/developed</p> <p>Number and nature of Involvement in removal of barriers</p>
Support community-owned or financed renewable energy	2, 4, 5	<p>Promote the financing of renewable energy by existing local financial institutions.</p> <p>Support community owned or financed renewable energy initiatives, including locally focused retailers.</p> <p>Participate in relevant conferences on community energy collaboration and share information.</p>	<p>Number and nature of support provided</p> <p>Number and nature of projects financed</p> <p>Number and nature of conferences and info shared</p>
Develop and maintain a resource repository	All	<p>Develop and maintain an internal resource repository.</p>	<p>Repository established in Teamwork PM and resources uploaded</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		<p>Nominate a member to undertake website management.</p> <p>Establish access for nominee to enable maintenance and updating of Sustain Energy website.</p> <p>Web management nominee to receive training/support to maintain website.</p>	<p>Nominee is able to make changes to website</p> <p>Website is maintained and up to date</p> <p>Nominee undertakes training</p>
Seek to inform and respond to energy policies	All	<p>Monitor incentives, other financial and non-financial support, feed-in tariffs etc.</p> <p>Identify barriers and strategies for addressing them.</p> <p>Sustain Energy Working Group, acting as a referral point, will work to inform member agencies and stakeholders on impacts of energy policies</p> <p>Publish submissions on Sustain Energy webpage, where appropriate</p>	<p>Nature of monitoring activities</p> <p>Number and nature of barriers identified</p> <p>Number and nature of strategies identified</p> <p>Number and nature of contributions made</p>
Deepen our understanding of regional energy use	All	<p>Collect and collate regional energy consumption and pattern data</p> <p>Seek funding and partnerships to develop a regional energy action plan (including a carbon abatement cost curve)</p>	<p>Number and nature of regional energy use data gathered, analysed and communicated to group</p> <p>Funding secured for regional energy action plan</p>



Action	Strategy number/s	Tasks	Indicators/Measures
Research and influence energy consumer attitudes and behaviour	2, 3	<p>Determine regional consumer attitudes and use behaviours.</p> <p>Consult with and collect available data from energy retailers, government and industry groups</p> <p>Include uptake of solar hot water, solar PV, home insulation, green power, use of carbon offsets, use of other incentives, rebates and feed-in tariffs.</p> <p>Identify and promote any available monitoring and mentoring programs</p> <p>Promote any available rewards, incentives and awards programs</p>	<p>Data identified and collated from available sources</p> <p>Monitoring and mentoring programs, incentives and rebates identified and promoted</p>
Identify and promote emerging renewable energy sources	2	<p>Remain abreast of potential regional renewable energy sources with regard to scale; existing and required infrastructure; sustainability (longevity); and environmental impact</p>	<p>Presentations received from proponents of emerging technologies</p> <p>Potential needs and impacts of technology researched and reviewed</p>
Support Northern Rivers Bio-Hub/s	2	<p>Support existing projects.</p> <p>Facilitate industry partnerships for bioenergy, biofuel, biomass and biogas anaerobic digestion.</p>	<p>Number and nature of support provided</p> <p>Number and nature of industry partnerships</p> <p>Bio-hub forum outcomes distributed</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		<p>Biohub action plan: write up and distribute the outcomes of the 6 Dec 2013 biohub workshop.</p> <p>Provide leadership in identifying and developing bio-hubs in prime locations.</p> <p>Broker cooperation between industries and local government to increase commitment to bio-hubs.</p> <p>Obtain and disseminate models for bio-hubs.</p> <p>Support the development of social license for sustainable bio energy (see above re Energy Assessment Framework).</p>	<p>Number of potential bio-hubs identified</p> <p>Nature of brokerage provided</p> <p>Outcomes of such brokerage</p> <p>Number and nature of models</p> <p>Social licenses developed</p>
Support skills development in emerging renewable energy industries	2	<p>Support the delivery of high priority actions from the Skilling for Change Implementation Plan</p> <p>Work with local training organisations to develop relevant training opportunities to address skills gaps</p>	<p>Number or regional and local stakeholders which make a commitment to deliver actions</p> <p>Funding secured to deliver high priority strategies</p> <p>3 high priority courses developed and pathways to learning and employment identified and communicated</p>
Increase energy literacy in the Northern Rivers	All	<p>Disseminate tools to further energy efficiency, including:</p> <ul style="list-style-type: none"> Professional development for regional stakeholders; Consumer decision making tools and 	<p>Number of tools disseminated and methods</p> <p>Number and nature of professional development opportunities facilitated</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		<p>energy literacy tools;</p> <ul style="list-style-type: none"> • Decision making tools/models and checklists at different scales of use and application (domestic, rural and industrial); • Checklists and fact sheets for energy efficiency and demand management. <p>Showcase case studies of energy efficiency and demand management successes.</p> <p>Develop program that:</p> <ul style="list-style-type: none"> • Supplies information • Targets behaviour change • Targets specific audiences and market segments. <p>Encourage regional participation in Australia wide targeted energy efficiency campaigns e.g. EEIG resources 'Green House Around the Corner' for community centres and adult learning groups. Create links to promote and make these resources available to other sectors.</p> <p>Organise a Sustainable House Day event for Lismore and Byron Shires. Encourage other shires to also stage events.</p> <p>Encourage and promote skills training being</p>	<p>Number and nature of case studies documented and showcased</p> <p>Number and nature of programs developed</p> <p>Number and nature of program delivery</p> <p>Literacy increases (eg surveys/feedback)</p> <p>Number and nature of participation opportunities networked regionally</p> <p>Sustainable house day series of events staged in September 2014</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		made available regionally in energy efficiency and renewable energy.	Nature of training available
Partner with relevant others and seek funds to develop a Regional Carbon Budget	1, 2, 3, 6	<p>Collaborate with the whole of SNR to seek funds and to develop a Regional Carbon Budget e.g.:</p> <ul style="list-style-type: none"> • Develop a regional carbon abatement curve which identifies the current emissions baselines, current sequestration across various industries and optimal regional carbon abatement opportunities; • Develop a regional carbon budget which includes carbon sequestration and methodologies for the ongoing measuring of regional carbon data. 	<p>Level of engagement by SNR partners</p> <p>Partnerships developed</p> <p>Funds secured</p> <p>Regional Carbon Abatement Curve developed</p> <p>Regional Carbon budget developed</p>
Support delivery of energy demand planning and management programs		<p>Support appropriate demand planning and management programs (e.g. Smart Meters, Smart Grid);</p> <p>Support energy efficiency programs (e.g. Sustainability Advantage and Sustainable Urban Business programs);</p> <p>Support bulk purchase/supply programs;</p> <p>Support regional carbon offset and sequestration programs (consistent with</p>	<p>Number and nature of support provided</p> <p>Number and nature of programs</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		NCOS and CFI; partnering with agricultural sector)	
Facilitate consumer access to regional renewable energy	1, 2, 4	Work in partnership with local energy distributors to prepare an information kit for consumers about renewable energy, what it is, how it is made within the Northern Rivers region, how consumers and businesses can generate their own renewable energy, and how to support renewable energy more generally.	Partnership formed with local energy distributors Information kit prepared and available on the Sustain Energy website Information kit adopted and disseminated by Sustain Energy members and others
Develop Renewable Energy Investment Briefs	1, 2, 3	Develop sustainable business models and investment briefs, including: <ul style="list-style-type: none"> • Policy enablers and constraints • Profitability, economies of scale • Transitioning supplies • Economies of integration (i.e. closed loops, mixed supply) • Competition, greenhouse gas calculations Promote and market opportunities for investment in local renewable energy generation and supply to industry.	Number and nature of briefs developed Number and nature of promotions and industries
Support existing renewable energy industry	1, 2	Maintain regular contact with renewable energy industry representatives by: <ul style="list-style-type: none"> • Nominating a Sustain Energy member as the industry contact/rep ; and 	Sustain Energy Industry rep is nominated and has a standing agenda item to inform Sustain Energy about industry developments



Action	Strategy number/s	Tasks	Indicators/Measures
		<ul style="list-style-type: none"> • Ensure Northern Rivers renewable energy industry reps are included in Sustain Energy communications and invitations to Sustain Energy/member events <p>Notify Northern Rivers renewable energy industry reps of strategy/policy developments</p> <p>Consult and discuss Northern Rivers renewable energy advocacy requirements with the local industry as required</p> <p>Seek renewable energy industry review of Sustain Energy Strategic Plan</p> <p>Invite Northern Rivers renewable energy projects to submit case studies about themselves and their projects for the Sustain Energy webpage and as part of the Renewable Energy Investment Briefs action (above).</p>	<p>Relevant correspondence distributed to local industry network via Industry rep</p> <p>Industry reps discuss advocacy needs with Sustain Energy members</p> <p>Industry rep comments are incorporated into Sustain Energy plans and correspondence</p> <p>Sustain Energy website contains case studies of local Renewable Energy initiatives</p>
Maintain regular communications	6	<p>Maintain communications Between Sustain Energy and:</p> <ul style="list-style-type: none"> • SNR via annual forum; • Other SNR Working Groups - via the Conveners • The Northern Rivers community – via website, targeted media, community forums • North Coast Energy Forum – target 	<p>Annual forum attended by Sustain Energy members</p> <p>Sustain Energy submits annual summary of achievements to forum</p> <p>Convener provides other SNR working groups' Conveners quarterly updates</p>



Action	Strategy number/s	Tasks	Indicators/Measures
		<p>emails</p> <ul style="list-style-type: none"> • Brains Trust – via targeted emails • Broader energy network – via NCEF website and newsletters, emails where relevant. <p>Maintain and build profile of Sustain Energy and SNR – use SNR branding where possible.</p>	<p>Convener advises other conveners of issues arising through the Sustain Energy which may be relevant to them, wherever possible.</p> <p>Sustain Energy Website developed and maintained</p> <p>Number and nature of any media.</p> <p>Number and nature etc. of any forums (e.g. NCEF).</p> <p>Communications with NCEF maintained.</p> <p>Number and nature of emails to brains trust etc</p> <p>Number and nature of contributions made to NCEF website and newsletters.</p>
<p>Foster key partnerships and relationships</p>	<p>All</p>	<p>Support the North Coast Energy Forum to encourage peer-support, provide mentoring, and collaborative advocacy and assist with the engagement of key regional stakeholders, organisations and community group in the network.</p> <p>Develop a strong and collaborative working relationship with Essential Energy.</p>	<p>Collaboration between Sustain Energy and North Coast Energy facilitated network</p> <p>Number and nature of relationships</p> <p>Regular correspondence and meetings held with regional general manager of Essential Energy and collaboration on funding applications</p>



Action	Strategy number/s	Tasks	Indicators/Measures
Collaborate with North Coast Energy Forum	All	Include North Coast Energy Forum members in brains trust Regular communications. Collaborate in North Coast Energy Forum planning and implementation.	Nature of collaboration Number of joint projects delivered
Monitoring and Evaluation	6	Annually review Sustain Energy Strategic plan.	Action Plan Reviewed Amendments made