

TITLE: [CNR-CM] Renewable Energy Action Plan

SUBMITTED BY: Natural Resource Management

mhm



Leaving a Legacy
Looking out for future generations

LINKAGE TO INTEGRATED PLANNING AND REPORTING FRAMEWORK:

1	Leaving a Legacy
1.1	Natural Resource Management
1.1.4	Environmental Sustainability - To support Council, businesses and the community to achieve the best possible combination of environmental, social and economic outcomes.

ROLE: **Leader**

SUMMARY OF REPORT:

This item was considered at the Council meeting held 26 October 2017 where it was resolved as follows:

"that this item be deferred to the Council meeting of 2 November 2017."

This item is now included on this Agenda for consideration.

Council engaged energy consultants, 100% Renewables, to investigate how Council could reduce energy use and become self-sufficient in renewable energy.

From the consultants' report, Council has prepared a Renewable Energy Action Plan (REAP) for electricity use in Council facilities. The REAP outlines how Council may in a staged approach become more self-sufficient in renewable energy:

The stages include:

Phase One (2017 - 2022):

- implement twenty energy efficiency and rooftop solar projects to reach a target of 25% of Council's electricity (baseline 2016/2017) being self-generated from solar by 2022.

Phase Two (2022 - 2025):

- once industry predictions of a 40% decrease in solar storage costs take shape, report back to Council on the cost-effectiveness of increasing solar and adding batteries to reach a target of 50% of Council's electricity self-generated from solar, by 2025

Phase Three:

- keep a watching brief and revisit the REAP after Phase One and Two have been completed to reassess the business case for meeting the remainder of Council's electricity needs through possible self-generation or purchase of renewable energy options.

Taking a strategic approach to delivery of REAP projects and embedding energy management practices across Council is recommended, including the appointment of a part-time Energy Projects Manager.

RECOMMENDATION:

That Council:

- 1. Adopts the Renewable Energy Action Plan including:**
 - Staged renewable electricity targets for Council:**
 - 25% of Council's electricity use self-generated from solar by 2022, compared to 2016/2017 use;**
 - 50% of Council's electricity use self-generated from solar, incorporating storage, by 2025, compared to 2016/2017 use,**

noting that the target deliverables are subject to funding and cost reduction foreshadowed.
- 2. Submits funding requests in the 2017/2018 September Budget Review and the 2017/2027 Long Term Financial Plan for \$2.2 million which includes \$1M for water and sewer facilities, \$1.2M for general fund facilities, and/or seek grant funding where possible, to complete the Phase One energy efficiency and solar projects in the REAP which will include \$937,506 to be expenditure in 2017/2018, \$883,137 in 2018/2019 and \$413,721 in 2019/2020.**
- 3. Submits funding requests as part of the 2018/2019 budget cycle to amend the 2017/2027 Long Term Financial Plan to include \$3 million for street lighting upgrade in 2020/21, subject to a further detailed business case.**
- 4. Requests a report to be brought forward to Council on the cost-effectiveness of increasing solar and adding batteries to reach the 2025 target of 50% of Council's electricity self-generated from solar, once industry predictions of a 40% decrease in solar storage costs compared to 2016/2017 take shape.**
- 5. Endorses the use of \$50,000 per annum from the existing Climate Change Funds for a part time Energy Projects Officer on a fixed term basis to implement the Phase One REAP projects and help Council implement strategic energy management systems and practices.**
- 6. Notes that savings generated from these projects will all be used to pay back the initial capital investment, with the ongoing savings to be allocated to renewable energy assets.**

REPORT:

Background

A Renewable Energy Action Plan (REAP) has been prepared to describe renewable electricity targets and projects at Council facilities. The plan describes how Council can:

- reduce greenhouse gas emissions from Council's energy use by 50%
- reduce electricity use
- become self-sufficient in renewable energy, based on a staged approach
- consider the scale and feasibility of large-scale renewable energy generation once less risky, more reliable options are pursued first.

Preparation

Energy consultants, *100% Renewables*, were engaged to analyse options to reduce electricity use and use more renewable energy.

Their methodology involved:

1. A review of Council's current electricity use and projected consumption
2. Stakeholder consultation involving site visits to Council facilities, a Council workshop involving community renewable energy advocates Tweed Climate Action Now (Tweed CAN), and discussions with facility and finance managers
3. Identification and analysis of energy efficiency and renewable energy options including draft business cases
4. Financing and delivery options and timeframes.

Council has reviewed the technical analysis and advice provided in the *100% Renewables Renewable Energy Study*, October 2017, and compiled the REAP in response.

REAP overview

1. Current electricity profile: *100% Renewables'* review of Council's recent pattern of electricity use highlighted Council's achievement in maintaining a stable energy use profile despite increasing population and service demands. Solar installations at five of Council's facilities generates almost 1% of Council's electricity use currently.
2. Strategic directions: the REAP seeks to deliver on key areas of importance for Council:
 - Stakeholder input: Key messages from stakeholder groups have been taken into account in the development the plan, including the need to describe tangible, achievable projects that Council can reasonably deliver within available budgets and staff resources.
 - Reducing greenhouse gas emissions from Council's energy use
 - Reducing electricity use (improving energy efficiency)
 - Pursuing Council's aspirational goal of becoming self-sufficient in renewable energy
 - Considering investment in large scale solar energy systems
3. Clarifying Tweed Shire Council's renewable energy target: a staged approach to pursuing Council's aspirations to be self-sufficient in renewable energy is recommended, based on achievable and affordable renewable energy targets for electricity
4. Phase One efficiency and renewable projects to 2022: A full list of costs and savings are included in the REAP for 20 energy efficiency and renewable energy projects, costing \$5.2 million based on current industry pricing, and offering a payback of 5.2 years. The projects would reduce Council's consumption of electricity from the grid by

an estimated 5,000 MWh per year, or 25% of Council's electricity use compared to 2016/2017.

5. Phase Two solar and storage projects to 2025: 10 additional projects are highlighted as technically possible and bring Council's self-generation of renewable energy to 50%. Reduced costs for storage technology of around 40% compared to 2016/2017 pricing are expected in the next two years. At this point, or when a positive return on investment can be demonstrated, the economic feasibility of these projects should be reviewed. Currently, the estimated cost of \$5.3 million for these projects and estimated \$530,000/year savings suggests these initiatives are currently only marginally cost effective.
6. Phase Three: The scale of potential grid-connected self-generation at Council sites, and the potential to purchase renewable energy directly from other generators or retailers is considered but not recommended at this time due to the significant changes that are predicted in policy and the energy sector over the next two to five years.
7. Energy management practices: Embarking on an organisation-wide uptake of renewable electricity projects and assets will also require:
 - Appointment of an Energy Manager
 - Development of an Energy Policy
 - Embedding energy considerations into equipment purchases and building designs
 - Funding from a variety of sources
 - Regular review of the REAP.

OPTIONS:

1. Adopt the REAP.
2. Do not adopt the REAP and seek further information.

CONCLUSION:

The Renewable Energy Action Plan establishes a staged plan for Council to achieve interim targets for self-sufficiency in renewable energy, by implementing energy efficiency and renewable electricity generation projects at Council facilities that offer a good economic return from investment, and reasonable certainty that the technology we use will deliver what is promised.

The plan enables Council to:

- seek and assign funds to progress priority efficiency and renewable energy projects at Council facilities
- set achievable targets for renewable electricity generation, electricity use and associated greenhouse gas emissions reductions
- progress towards becoming self-sufficient in renewable energy by producing 50% of our total electricity use using renewable energy by 2025
- understand the scale of future renewable energy system investments needed to become self-sufficient in renewable energy, and potential lines of inquiry to pursue
- embed strategic organisational energy management practices into Council's equipment and facility design, purchasing, projects, facilities, asset maintenance, monitoring and reporting processes.

COUNCIL IMPLICATIONS:**a. Policy:**

Procurement Policy v1.6 will apply to purchasing processes.

b. Budget/Long Term Financial Plan:

- Notes funding requests for the 2017/2018 September Budget Review and the 2017/2027 Long Term Financial Plan for \$2.2 million which includes \$1M for water and sewer facilities, \$1.2M for general fund facilities, and/or seek grant funding where possible, to complete the Phase One energy efficiency and solar projects in the REAP which will include \$937,506 to be expenditure in 2017/2018, \$883,137 in 2018/2019 and \$413,721 in 2019/2020.
- Notes funding requests for the 2018/2019 budget cycle to amend the 2017/2027 Long Term Financial Plan to include \$3 million for street lighting upgrade in 2020/21, subject to a further detailed business case.
- Allocates \$50,000 per annum from the existing Climate Change Funds for a part time Energy Projects Officer on a fixed term basis to implement the Phase One REAP projects and help Council implement strategic energy management systems and practices.
- Notes that savings generated from these projects will all be used to pay back the initial capital investment, with the ongoing savings to be allocated to renewable energy assets.

c. Legal:

Not Applicable.

d. Communication/Engagement:

Consult-We will listen to you, consider your ideas and concerns and keep you informed.

Input to the development of the plan was sought from Tweed Climate Action Network (CAN) as a community advocacy group with a strong interest and technical capacity to contribute to the plan. As the plan contributes to the Community Strategic Plan objective of decreasing the carbon footprint of the Tweed community and progressing towards 100 per cent self-sufficiency in renewable energy, with a focus on Council's own footprint, wide community input has not been sought at this stage.

As the REAP relates to cost-effective approaches for how Council manages its own electricity costs, public consultation has not been sought. Following a review of the REAP after the implementation of Phase 2, should Council decide to pursue the large scale generation of renewable energy, extensive community engagement would be essential.

UNDER SEPARATE COVER/FURTHER INFORMATION:

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| Attachment 1. | Renewable Energy Action Plan - Electricity in Council Facilities (ECM 4826728) |
| Attachment 2. | Renewable Energy Study (<i>100% Renewables</i> , October 2017) (ECM 4826986) |
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