

Climate Change Action Plan 2020

Southern Midlands Council's contribution to climate change mitigation



Southern Midlands Council Climate Change Action Plan

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1.0 Introduction

All actions taken that successfully reduce emission of greenhouse gases count in the shared effort that is required to reduce the impact of climate change. As a relatively large organisation, council has a significant responsibility and the capacity to make a difference.

Council can work in a number of ways to reduce its emissions of greenhouse gases and in doing so joins with the momentum for change to new technologies that is gathering pace across our community and globally. Investment in emissions reduction projects also has financial benefits with payback of upfront costs over time as efficiencies are realised.

Aside from the benefits of acting to reduce emissions, council has a leadership role to play through its interactions with the local community, Taking action is necessary because climate change poses serious consequences for the economic, social and environmental sustainability of the region.

Council's commitment to contributing action on climate change is part of the Strategic Plan 2018-2027:

'3.5.1 Implement strategies to address the issue of climate change in relation to its impact on Council's corporate functions and on the Community.'

Two approaches to managing climate change are being taken by council:

- i) **Adaptation** – measures taken to minimising the risk and the emerging impacts associated with climate change on council assets and the community, including consideration of the longer term implications of planning decisions.

Council's approach to climate change adaptation is covered in the Southern Midlands Council Corporate Climate Change Adaptation Plan 2020.

- ii) **Mitigation** – measures taken to reduce greenhouse gas emissions as part of the across-the-board effort required to stabilise (and reduce) atmospheric concentrations of greenhouse gases. The ultimate aim of mitigation is to reduce the severity of the emerging impacts of climate change.

This document guides Council's ongoing approach to climate change mitigation, the primary goal of which is to:

- continue efforts to reduce greenhouse gas emissions over which council has control;
- assist the community to reduce emissions where possible, i.e. play a leadership role; and
- collaborate on broader scale initiatives with regional stakeholders through involvement with the Regional Climate Change Initiative.

Continuing to work on climate change mitigation builds upon work council has already undertaken, for example:

- energy auditing - monitoring electricity and fuel usage in order to assess where improvements may be made;
- adoption of an energy efficient vehicle policy;
- retrofitting the Oatlands Town Hall to improve energy efficiency;
- lighting upgrades to improve efficiency;
- installation of a solar photovoltaic system at the Kempton offices;
- natural resource management e.g. tree planting (for capture and storage of carbon in trees) and regenerative agriculture (to promote capture and storage of carbon in soils); and
- community programs such as energy efficiency advice and seminars.

1.1 Climate change trends

The climate in Tasmania's Midlands is changing which is consistent with the broader trend of rising temperatures, more frequent and severe bushfires, heatwaves, drought, extreme weather events, and changing rainfall patterns. Local evidence of climate change is borne out in both the long-term meteorological data (collected at sites such as Oatlands since 1882) and anecdotes from those who have lived in the region for most of their lives.

In terms of potential ongoing trends in climate change, Tasmania has high resolution climate modelling data from the Climate Futures for Tasmania program to draw upon. The details of how climate change is expected to play out in the Midlands is provided in detail in the Southern Midlands Council Climate Change Profile (updated and released in 2020) and viewable at: <https://www.southernmidlands.tas.gov.au/climate-change-and-energy-efficiency/> In summary, for the period 2080-2100 we can expect:

- hot days (greater than 30°C) to increase from 11 currently to more than 30;
- average annual temperature to increase by 3.4°C;
- significant reduction in the number of frosts (85% fewer);
- longer heat waves;
- higher frequency of & greater intensity of bushfires (Forest Fire Danger Index to increase by 55%); and
- heavier rainfall events interspersed with longer dry spells – declining average annual rainfall in the Midlands (minus 7.5% by 2080).

The following implications of these changes are possible if not likely:

Public Health

- Mental health issues related to: the stress of extreme events (e.g. bushfire, drought, and flood); environmental change (e.g. tree loss, new weed invasions); and crop failure/loss and associated pressures on revenue.
- Direct impact of heat waves and bushfire smoke, particularly on the elderly or those with existing chronic health conditions.

Environment

- Some species will be pushed to the limits of their tolerances by heat, drought and fire resulting in, for example, tree dieback and local species loss.

- New species of invasive weeds and pathogens are likely to be favoured by the emerging conditions, particularly reduced frosts and rising average temperature.
- Potential soil loss due to: long dry spells associated with wind; extreme rainfall events; and exacerbated stream-bank erosion from heavy rainfall and flood flows.

Infrastructure

- Extreme rainfall and flood events are likely to increase impact on, and damage to, roads and bridges.
- Longer fire season, and more frequent conditions favouring wildfire, may result in increasing frequency of damage to council and community infrastructure.

1.2 Background - Energy Efficiency Actions 2008-19

Southern Midlands Council has been working proactively with energy efficiency since 2008. Achievements to date are provided in the table below:

Council’s energy efficiency actions 2008-2019

ACTION	PROGRESS	RESOURCING	COLLABORATORS	TIMEFRAME
Vehicle emissions reduction - by implementation of and adherence to Council’s vehicle purchasing policy.	Policy adopted	Internal	Nil	Current & ongoing
Energy usage tracking (electricity and fuel) to gauge performance, build upon the database of energy consumption, to track trends, and to establish appropriate and cost-effective ways to reduce energy consumption.	Quarterly reporting and review	Internal	Planet Footprint until 2014	2008-2014 Currently ceased
Energy audit of Council premises Conduct an audit of Council Chambers at both Kempton and Oatlands to define specific areas in which inefficiencies occur and to define actions to address the inefficiencies.	Completed	Climate Connect Grant	Dr John Todd	Completed 2011

ACTION	PROGRESS	RESOURCING	COLLABORATORS	TIMEFRAME
<p>Energy efficiency upgrade to Town Hall Oatlands - based upon outcomes of energy audits, for Oatlands Town Hall for example:</p> <ul style="list-style-type: none"> • Replacement of inefficient heaters. • Rebuild front foyer – draft proof & insulate. • Public access point 2 - side entry foyer - air-lock installed with new doors. • Double-glazed poly glass ceiling built & installed in the vaulted ceiling of the Works & Technical Services Office. • Air leaks in all opening window sashes of Town Hall sealed. All fireplaces sealed. • Roof of Works Office removed, R4.1 batts and sarking installed, iron reinstated. • Double-glazed skylight unit built & installed in council’s ‘print room’. • Perspex units retro-fitted to internal side of windows in offices and meeting rooms - for a ‘double-glazed’ effect. • Sensor-operated lighting installed at appropriate locations (toilets kitchen). 	Completed	Part CEEP Grant		Completed 2012-13
<p>Hot water service upgrades</p> <ul style="list-style-type: none"> • Heat pump hot water services installed at Oatlands and Kempton recreation grounds • Solar hot water service installed at Campania Recreation Ground 	Completed	LGEEP Grant		Completed 2014
<p>Energy efficient lighting upgrade at the Oatlands offices:</p>	Stage 1 completed	Internal	Nil	2018 onwards
<p>Energy efficiency upgrade to Council offices at Kempton:</p> <ul style="list-style-type: none"> • 10 kw grid-connected solar photovoltaic system installed. 	Completed	Internal	Nil	Completed 2018
<ul style="list-style-type: none"> • LED lighting upgrade stage 1 	Stage 1 completed	Internal	Nil	2018 onwards

2.0 Policy Context

Reporting

Tasmanian councils currently have no statutory obligation to report on their energy consumption or emissions. Since the Cities for Climate Protection local government reporting scheme ceased to be funded by the Australian Government in 2010, there has been no common standard amongst Australian local governments for corporate and community energy and greenhouse gas reporting.

Recognising this gap, the STCA developed a standardized methodology to support councils in aligning with recognized reporting frameworks. Their document ‘Southern Tasmania’s Changing Energy Use’¹ presents energy usage and greenhouse gas emissions data for each council in Tasmania’s southern region for the ten year period up until 2017. The data trend is a useful tool in determining which areas require the most attention in terms of effort to reduce greenhouse gas emissions a summary of the trends and implications for Southern Midlands Council is given in Section 3.0.

Responsibility

Scope is afforded to Tasmanian councils to address climate change under the *Local Government Act (Tas) 1993*, which describes the role of councils to provide for the health, safety and welfare of the community.² In managing and preparing for the impacts of climate change, councils are best positioned to work with communities due to their:

- core function to directly support and assist local communities;
- local knowledge and experience;
- understanding of community needs and vulnerabilities;
- key role in responding to emergencies;
- role in infrastructure design, construction and maintenance;
- role in review and update of planning schemes (in relation to identified local impacts and threats); and
- ability to effectively disseminate information and provide support to the community.

Communities expect well informed guidance from their councils in regard to these issues and understand that councils are well placed to prepare for and respond to climate change impacts.

There is also an appreciation that climate change mitigation actions can have benefits (such as improving human well-being and protecting biodiversity) regardless of the magnitude of climate change that occurs.

¹ Johnson, A. 2019 ‘Southern Tasmania’s Changing Energy Use – Information Paper: regional Greenhouse Gas and Energy Use Trends April 2019’, Southern Tasmanian Council’s Authority

² *Local Government Act (Tas)1993*. Section 20 Function and Powers.

2.1 Alignment with council's Strategic Plan

Council's approach to climate change mitigation has the following alignment with Council's Strategic Plan 2018-2027:

1. INFRASTRUCTURE

1.1 ROADS

1.1.1 Maintenance and improvement of the standard and safety of roads in the municipal area

1.1.1.11 Incorporate the use of recyclable materials (e.g tyres/glass) into road pavements and pathways

1.4 LIGHTING

1.4.1b Contestability of energy supply

1.4.1.3 Adopt new technology as it arises to reduce lifecycle costings; for example energetically pursue the implementation of LED lights for replacement of street lighting

3. LANDSCAPES

3.2 NATURAL

3.2.1 Identify and protect areas that are of high conservation value

3.2.1.4 Facilitate and encourage voluntary native vegetation conservation agreements to conserve & protect high priority native vegetation communities

3.2.1.5 Use a collaborative approach to recognise and protect natural values on private land only where:

(i) the land contains natural values Council has deemed to be of high conservation value at the local

level,

(ii) existing spatial information provides a reasonable level of surety as the presence of those values,

(iii) the values are not already afforded a reasonable degree of protection by higher levels of government, and

(iv) the patch size is sufficiently large to ensure long term environmental sustainability.

3.2.2.1 Actively pursue grant opportunities & projects in relation to preservation of bushland remnants, weed management, vegetation, and regenerative agricultural techniques

3.5 CLIMATE CHANGE

3.5.1 Implement strategies to address the issue of climate change in relation to its impact on Council's corporate functions and on the Community

3.5.1.2 Continue implementation of Council's Climate Change Action Plan

3.5.1.3 Continually improve energy efficiency and assist the Community in energy efficiency initiatives

3.5.1.4 Establish collaborative partnerships with other Councils, key stakeholders and other tiers of government, that strengthen Council's response to climate change

3.5.1.5 Investigate options to potentially develop a Solar Array Panel/bank to generate power to be used at the community level and excess back to the grid

4. LIFESTYLE

4.1 COMMUNITY HEALTH & WELLBEING

4.1.1 Support and improve the independence, health and wellbeing of the community

4.7 PUBLIC HEALTH

4.7.1 Monitor and maintain a safe and healthy public environment

4.7.1.7 Maintain an Emergency Management Plan for the Southern Midlands local government area that will provide safeguards for the health & safety of the Community

6. ORGANISATION

6.2 SUSTAINABILITY

6.2.8 Minimise Council's exposure to risk

6.2.8.1 Continue to refine Council's Risk Management Strategy/Practices and work within the framework of the MAV Insurance risk management model and ISO 31000 – 2009

3.0 Regional energy use trends

Councils have an important role in supporting communities to ensure relevant information is available to enable informed decision making. The provision of current and accurate energy and greenhouse data by councils helps it and the community to know where effective action can be taken towards a transition to a future where reducing carbon emissions is an important consideration.

An STCA report³ released in 2019 provided data on energy use and emissions for councils of the southern region for the ten year period ending 2017. Data presented in the report was sourced from accurate metered data obtained from energy service providers. Key messages from the report are as follows:

- Greenhouse gas emissions for southern Tasmania increased by 6% or 147,200 tonnes of carbon dioxide (tCO₂-equivalents) comparing 2016-17 to 2006-07. Most of this increase was due to increased energy use by industry, followed by the forestry sector, the commercial sector and then the residential sector. The only sector to show reduced emissions for the ten year period was the transport sector (-21%). This suggests that factors such as vehicle efficiency improvement and changes in preference for fuel type are contributing to lower emissions.
- Commercial sector electricity use grew by 27% over the ten year period, while residential sector electricity usage grew by 21%. This is largely due to an increase in connections but also due to a shift towards heat pumps (as opposed to heating fuels) as the preferred method of home heating.
- In 2016-17, the municipal sector was responsible for emissions of 2,585,000 tCO₂-equivalents, an increase of 6% over ten years. Southern Midlands Council's contribution was 60,600 tCO₂-equivalents, an increase of 7% over the ten year period.
- There are 14,000 more onsite renewable electricity generation systems than there were 10 years ago in southern Tasmania, including solar photovoltaic, micro-wind and hydro. Approximately 40 million kWh of electricity was contributed to the grid from these systems in 2016-17. There are 3,500 solar hot water systems across southern Tasmania.
- Within the Southern Midlands municipal area, 338 renewable energy systems were installed by 2016-17 (approximately 1 in 12 premises, compared to the regional average of 1 in 10 premises).

Coal and diesel fuel use are responsible for the greatest share of emissions across southern Tasmania. Coal and associated products (including coke), are mainly used in the manufacturing sector, principally for the production of cement, lime and plaster. Greenhouse gas emissions from electricity generation are relatively low per capita for Tasmanians as approximately 90% of electricity comes from renewable sources – the remainder is imported to the state from the national grid through Basslink.

³ Johnson, A. 2019 'Southern Tasmania's Changing Energy Use – Information Paper: regional Greenhouse Gas and Energy Use Trends April 2019', Southern Tasmanian Council's Authority

Proportions of greenhouse gas emissions for Southern Tasmania by fuel type for 2016-17 were:

- Automotive diesel oil 25%
- Black coal & coke 22%
- Automotive gasoline 15%
- Electricity (from coal & gas) 15%
- Natural gas 13%
- Petroleum products 6%
- LPG 3%
- Aviation turbine fuel 1%

Understanding the greenhouse gas emissions data and emerging trends listed above is an important step gaining perspective and context, and also in understanding what types of actions are required next in order to make a useful contribution to lowering greenhouse gas emissions.

4.0 Energy Efficiency

4.1 Introduction of hybrid or electric vehicles to Council's fleet

Electric or hybrid vehicles

An area of opportunity to reduce daily emissions is through usage of more efficient transport such as hybrid or electric vehicles. The choice of models and the potential efficiency gains is improving, together with greater range for electric vehicles e.g. now greater than 300 km for a Nissan Leaf electric vehicle. There are also options for hybrid/electric trucks which would be a significant fuel saving investment for council to make. Hobart City Council has invested in several electric vehicle hybrid 6.5 tonne work trucks and hence have experience for Southern Midlands Council to draw upon.

Vehicle recharging

Investment in an electric vehicle requires a means of recharging. Relatively inexpensive domestic or business-scale options are now available that operate through single-phase or three-phase power. An electric vehicle (EV) charging unit could be coupled to solar panels with battery storage system whereby solar energy stored during the day could be used to recharge an electric vehicle overnight. Due to the relatively high cost of battery storage systems, a cost-benefit analysis of the economics of this option would be prudent.

It is also prudent to consider an electric vehicle charging station for the general public, as the use of electric vehicles increases so does the requirement for charging points. Locations such as Oatlands, which is a reasonable distance from Tasmania's major centres, represents a point of potential need for recharging.

It is important that electric vehicle charging points are made more available in Tasmania to support the increasing desire of individuals to reduce emissions and to cut loose from dependence upon fossil fuels. Council can play a leadership role here by assisting with making charging points available.

For community usage, a ‘Mode 4 DC Rapid Charge Unit’ would be ideal as these can recharge a vehicle in as little as 30 minutes. This infrastructure is expensive (at least 30K) and requires analysis and planning prior to investment. Grants to support this infrastructure have been available at times from both the Tasmanian Government and Aurora Energy. Rapid charge infrastructure can provide public relations benefits and spin off benefits for the town(s) in which they are located. Travellers with electric vehicles would be encouraged to a site with a ‘rapid charger’ and there would be associated benefits for the local economy as drivers waited for their vehicle recharge.

Potential short to medium term vehicle fleet efficiency actions

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Improve efficiency performance of council's vehicle fleet - Develop & implement an EV integration plan for council's fleet.	Internal			High	2020
Hybrid vehicle purchase – an interim measure towards a more efficient vehicle fleet.	Internal	>2100 kg CO2 equiv. per annum (based upon 20K km/yr)	Save the cost of ~ 800L of fuel/yr	High	By 2021
Electric vehicle purchase – commit to emissions reduction and set an example to the community by introducing an electric vehicle to the fleet. EV's are now becoming an attractive option as prices fall and range increases. An additional bonus is low running cost and low maintenance costs.	Internal	>4200 kg CO2 equiv. per annum (based upon 20K km/yr)	Save the cost of ~ 1600L of fuel/yr	High	By 2022
Electric vehicle charging infrastructure: For council vehicle charging: For a cost of approximately \$2000, Council could invest in a charging unit to power an electric vehicle (7kW single-phase or 22kW three-phase).	Internal	Dependent upon proportion renewable energy used for charging. (at least 90% in Tasmania)	Dependent upon drawing from the grid or own solar generated power	High	By 2022
Electric vehicle charging infrastructure for public usage: For community/public usage An EV charging station for community use should be considered – grant opportunities to be pursued for installation of an electric car charger at a strategic location in the midlands.	Grant funded or business partnership			High	By 2022

<p>Electric/hybrid truck research – potential purchase – research with a view to purchase of an electric/hybrid truck. This would amount to significant diesel savings and assist in reducing council’s greenhouse gas emissions. Hobart City Council have experience with 6.5 tonne trucks – SMC could consult HCC regarding their performance and cost effectiveness.</p>	Internal	>6000 kg CO2 equiv. per annum (based upon 50K km/yr)	Save the cost of ~ 4000L of fuel/yr	High	2020
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4.2 Ongoing solar electricity and energy efficiency projects

Procurement of solar panels, new technology, efficient lighting and other actions has made a difference to council’s energy consumption and reduced the organisation’s greenhouse gas emissions. Council has had a reasonable record of commitment to energy efficiency actions, however, there is always more than can be done. Installation of solar panels and energy efficiency actions invariably save council money with the payback on initial investment often as short as a few years. Solar energy providers now utilise software to determine return on investment and also volumes of emissions avoided through installation of solar technology enabling considered investment decisions to be made.

A potential way forward would be for council to commit a budget allocation on an annual basis for energy efficiency and greenhouse gas mitigation activities. Each year options could be tabled with the most cost effective project, or those signifying the greatest community need, to be prioritised.

Potential short to medium term solar and energy efficiency actions

(to be subjected to an annual discussion and project cost-benefit and prioritisation meeting)

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Solar PV battery storage coupled system for the Oatlands depot roof – invest in a solar photovoltaic system - Cost benefit analysis has been undertaken for this project.	Internal (Funded 2020)	Refer to Case Study in accompanying document	Refer to Case Study in accompanying document	High	By 2021
Improve energy efficiency of council buildings/properties – implement targeted relatively low cost actions to improve energy efficiency at council buildings – potentially choosing to budget for improvements to be made at one property per year.	Internal or grant	Low - in Tasmania grid electricity is currently from 90% renewable sources	Example - conversion of 100 CFL lights to LED saves ~\$1200/yr in electricity costs	Moderate	Ongoing
Technology upgrades based upon energy efficiency – policy to support – seek opportunities to improve energy efficiency, including during upgrade of electronic devices and equipment. Develop an energy efficiency ‘procurement policy’ to support.	Internal	Minimal		Low	Ongoing

4.3 Community energy efficiency activities

Southern Midlands Council has committed to a series of initiatives to inform the local community of the implications of climate change on health, business, environment and community infrastructure. Council understands the importance of assisting the community with some of the challenges that arise from climate change, particularly the need to consider and address the way energy is used. Initiating energy efficiency actions not only contributes to the reduction in greenhouse gas emissions but assists the community to cope with rapidly increasing energy costs. Community energy efficiency initiatives are listed below.

Community support energy efficiency initiatives

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
‘HEAT’ toolkit – The Home Energy Awareness Toolkit is available for loan to residents to undertake in-house assessments of energy usage and to attain advice on appropriate efficiency measures.	Funded by Hobart City Council	NA	High	Moderate	Current & ongoing

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Provide community resources on: climate change, energy efficiency, and renewable energy through Council's web site, ratepayer newsletter and personal consultation.	Internal	NA	High	Moderate	Current & ongoing
Energy efficiency promotion by example Promote council's efforts with energy efficiency e.g. the retrofit to the Town Hall through various media when the opportunity arises.	Internal + CEEP grant	NA	High	Moderate	Current & ongoing
Promote Materials reuse, provide facilities for the community to be more resourceful & to reduce waste to landfill. Look to set up a materials re-use centre at the Oatlands waste transfer station. Re-use of materials locally means less trips to the city are required to purchase new goods, hence a reduction in fossil fuel usage.	Internal + grant			High	2021

4.4 Regional Collaboration

Opportunities for Southern Midlands Council to collaborate on energy efficiency measures are developed primarily through involvement with the STCA's Regional Climate Change Initiative (RCCI). The RCCI is a forum established in 2008 involving southern councils for: sharing information on approaches to climate change; collaboration on climate change adaptation and mitigation projects; networking and planning.

RCCI achievements to date:

- Sharing of ideas and inspiration for approaches to energy efficiency and suppliers;
- HEAT (Home Energy Audit Toolkit) kit developed for the community;
- Development of climate change adaptation plans for every council;
- Development of a regional climate change adaptation strategy;
- Forum for collaboration with the University of Tasmania on climate change data sharing and development of information relevant to local government areas;
- Report on energy usage and greenhouse gas emission trends for the Southern Region; and
- Preliminary work on development of regional solutions to green waste management e.g. pyrolysis for biochar production.

5.0 Land Care

5.1 Trees, landscape & carbon

Biodiverse natural environments are resilient to change and have been able to rebound from the impact of extreme events that occur from time to time over many thousands of years. The climate change we are now experiencing is occurring rapidly relative to the rate of climate change that has occurred in the past. In biodiverse natural vegetation communities this change is likely to favour some species and disadvantage others with the likely outcome that there will be a shift in species composition. In the Midlands the eucalypt *E. viminalis* (white gum) has been subject to ‘dieback’ for some time. This is now being seen in other species.

Council has played a long-term role, particularly in conjunction with the Midlands Tree Committee, in working with the local community to establish trees and to enhance and protect the natural assets of the municipal area.

Council’s natural resource management (NRM) activities related to climate change mitigation are listed below.

Land care actions linked to climate change mitigation

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Tree planting projects (community) – continue to resource the Midlands Tree Committee for tree planting initiatives for farms and in the community.	Internal and grant funds	Establishing trees to sequester carbon.	High	High	Current & ongoing
Tree planting initiatives (carbon abatement) – Develop a program to establish trees at identified council or community sites primarily for the purpose of capturing carbon from the atmosphere.	Internal and grant funds	Establishing trees sequester carbon & assist in offsetting council’s emissions.	High	High	New initiative
Conduct landscape restoration initiatives - undertake scientifically informed strategic NRM projects as opportunities arise. Focus on landscape ecology, including protection of important remnants, connectivity and weed management. Collaboration with Natural Resource Planning, and NRM South is important.	Internal + Potential Biodiversity Hotspots Grant + Biodiversity Fund Grant	High carbon offsetting potential	NA	High	Seek opportunities

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Education and awareness – Encourage, through education and awareness, the conservation of remnant bushland. Raise awareness of native vegetation issues, and planting opportunities relative to the Midlands.	Internal	High carbon offsetting potential	High	High	Current & ongoing

5.2 Farming community programs

Farmers have an important role to play in managing the cycling of carbon between the atmosphere and the soils. Soil carbon is one of the greatest global reservoirs of organic carbon which can be held as plant litter, humus and charcoal. Maintaining or building soil carbon levels can have a wide variety of benefits for farm productivity due to improved soil structure and health. Farm management techniques can assist in removing carbon from the atmosphere and storing for hundreds of years as stable organic carbon compounds in the soil.

Farmers do face a number of challenges in achieving soil carbon increases. Rainfall patterns in the midlands have become unpredictable. A degree of predictability in rainfall timing has been a driver for managing annual cropping cycles in the past and key to achieving adequate farm productivity. As mentioned earlier in this plan, the Climate Futures data for Tasmania points to increasing rainfall variability with longer dry spells interspersed by increasingly heavy rainfall events. There are challenges for farmers in being able to maintain desired ground cover and prevent soil loss across all seasons. Environmental pressures together with some management techniques can lead to a decline in soil carbon resulting in degradation of soil health, poorer soil quality and reduction in the soil’s capacity to retain moisture. In the past, Southern Midlands Council, has collaborated with NRM South to deliver information on innovative management techniques that can address soil health issues and assist farmers to increase their soil carbon.

One example is the technique of ‘pasture cropping’ which has been shown to have measurable benefits on soil health, farm productivity, and a reduction in soil loss. The maintenance of constant ground cover through a carefully managed cycle of grazing and direct drilling of crops into perennial pastures increases microbial activity in soils and contributes to increasing the storage of carbon in the soil. More carbon in the soil allows for better retention of moisture. As a result, ‘pasture cropping’ is one of the approaches believed to have great potential to build farm resilience and sustainability.

Council’s potential approach to assist farmers with soil carbon and regenerative agricultural techniques is provided below.

Actions to assist farmers in regenerative agriculture and soil carbon activities

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
<p>Provision of Information. Provision of information, hosting seminars and running field days on themes such as water efficiency, soil carbon, pasture cropping, benefits of perennial grasses, use of biochar as a soil conditioner. A series of initiatives conducted with assistance from stakeholders was completed between 2008-2011.</p>	Internal + Landcare Australia grant	Potentially high carbon offsetting potential	Moderate	High	Ongoing dependent upon key stakeholder support and resources
<p>Support farmers – Support farmers who are willing to adopt new techniques with planning, mapping and monitoring.</p>	Internal	NA	Moderate	High	On hold – dependent upon Council resources

5.3 Policy on coal mines and fracking

Fossil fuels are carbon dense and on combustion release carbon dioxide to the atmosphere. Fossil fuels are Tasmania’s primary source of greenhouse gas emissions. There has been speculation in recent years that parts of the midlands will be opened up for coal mining and also extraction of coal-seam gas by ‘fracking’.

Effort to mitigate global warming requires sincere effort to minimise the opening of new fossil fuel ventures and advocacy for renewable energy alternatives instead. This is both the right thing to do and something that has significant community support, and as a consequence, reputational benefits for council.

The economy of the Midlands is reliant on its foundation as a producer of high quality, high value agricultural produce and also a growing tourism industry focused on heritage and quality products. Development of coal mining, or other fossil fuel extractive industries, has potential to tarnish the established reputation of the midlands, and may have a negative impact on the established industries.

Political support for fossil fuel extractive industries has potential to embroil the region in controversy and create long lasting conflict. For example, a coal mine in the midlands would compete with agriculture for water, a very significant issue given the emerging trend to lower average annual rainfall across the midlands.

Policy Proposal – coal & gas

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Discuss, with the view to implementing, a policy detailing council’s stance on new fossil fuel extractive industries in the Southern Midlands	Internal	Potentially huge	High	High	By June 2020

6.0 Waste Management

6.1 Waste Logistics

Waste management is a significant logistics operation for Southern Midlands Council and the burning of fossil fuels is implicated throughout the operations. The municipality covers a large geographic area, hence significant distances are travelled each week for collection of household waste and recyclables from dispersed small communities. The higher the weight of materials being handled, the higher the fossil fuel usage and the higher the greenhouse gas emissions. Effort to reduce waste volume makes sense for a number of reasons, including the direct contribution it makes to emissions reduction.

Higher waste volumes collected at council’s waste transfer stations equates to more frequent truck movements to transport the waste to landfill at Copping. These trucks are inefficient fuel users. In the case of the Oatlands site, each round trip required for collection and disposal is about 200 km. There are currently 21 truck trips made per fortnight to service council’s three waste transfer stations. Hence, minimising and reducing waste has the potential to reduce emissions from waste transportation.

There is also the issue of encouraging re-use of materials. This is something that could be done so much better at council’s waste transfer stations. It’s fair to say that all new materials produced have resulted in release of greenhouse gases during their production. Large distances travelled by Midlands residents to hardware outlets to purchase materials also releases greenhouse gases. Hence, efficient segregation of reusable materials at waste transfer stations is a contribution council can make to greater resource use efficiency and indirect greenhouse gas emission reduction from the local community.

Waste management logistics changes focused on emissions reduction

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
<p>Rationalise the number of waste transfer stations & resource share. Investigate ways to reduce the number of waste transfer stations managed by council & replace with a resource sharing arrangement at a sub-regional facility e.g. at the Brighton Industrial Estate. Greater efficiencies in facility location and waste handling result in lower greenhouse gas emissions.</p>	Internal or grant funded	Moderate	High	Low-moderate	By 2025
<p>Reduce waste amounts by increasing recovery effort Ensure there is on-site rigour with on site segregation of materials and ensure that WTS's are set up to be fit for this purpose. Implement a materials re-use centre (tip shop style) at the Oatlands WTS. Efficiency in materials usage and lower volumes of waste directly relate to emissions reduction.</p>	Internal	Low	High	High	By 2022

* Greater detail on waste management issues and options is given in the Southern Midlands Council Waste Management Strategy 2020.

6.2 Organic materials

Approximately 60% of material (by weight) currently disposed of to landfill in Tasmania is organic material⁴. Organic 'waste' is a broad term that comprises: garden clippings, pruned material, larger lopped material; light garden waste such as weeds and grass from lawn mowing; and kitchen waste such as fruit, vegetables and bread.

Southern Midlands Council endeavours to segregate as much of the coarse woody organic material as possible from the waste stream by providing organic 'waste' drop-off points at each of the three waste transfer stations. However, there is currently no means provided for residents to segregate putrescible kitchen and light organic garden materials, so if residents are not composting this material or feeding it to animals, it most likely ends up in the waste stream. Not only does this dense, and often heavy, material incur a disposal cost to council, it's rapid decomposition results in the release of greenhouse gases such as methane into the atmosphere.

⁴ Waste Management 2020 and beyond (2011) – Blue Environment for SWSA

Council currently has not employed a consistent methodology for dealing with the coarse woody organic material dropped off at its waste transfer stations. Impediments to primary processing of organic material (e.g. shredding for mulch) include:

- handling and chipping cost;
- variability in quantity and quality - organic waste dropped off at the waste transfer stations can comprise of anything from grass clippings to woody material of variable size; and
- potential contamination with metals and other materials that have the potential to foul or damage mulching machinery.

The separation of organic ‘waste’ at the waste transfer stations is a first step, however, council has struggled to move beyond this point due to the issues listed above. Mulching, either in house or through a third party, can produce a value-added product that may be sold as garden mulch, compost and soil conditioner. Reducing stockpiles efficiently will free up space required for managing council’s space-constrained waste transfer sites.

Another potential solution to production of greenhouse gases during composting is utilisation of technologies such as gasification and/or pyrolysis for processing organic ‘waste’. Pyrolysis for example, involves processing of organic matter at high temperature in the absence of oxygen to produce a number of outputs, including biochar (a stable carbon rich soil conditioner), syngas, activated charcoal, heat and bio-oil. This technology has the potential to create employment, maximise energy efficiency, generate several income streams (sale of energy, production of a high value products) and reduce greenhouse gas emissions. Because of this potential, it makes sense to develop a business case to investigate: potential feed stock types and volumes; the most appropriate technology; location of a pyrolysis plant; most suitable operator; outputs; costs and benefits.

Council’s role in progressing such an initiative is yet to be defined, but as a local collector of woody and other organic material it should view itself as a player. Whether such a project is developed on a regional scale, and who the major collaborators would be, would be ascertained as part of the development of a business case.

Proposed approach to mitigate emissions from organic ‘waste’

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
<p>Mulching/chipping of green ‘waste’– generating a value-added, saleable products from woody green waste (Potential regional collaboration project) Currently Barwick’s are able to provide a chipping service for \$10 m³ cut + approximately \$2500 to transport their machinery to the site. Approx. 1000 m³ can be done in a day – so once per year may be feasible. There is also potential to involve the ‘Soil First’ composting operation situated locally on Interlaken Road.</p>	<p>Part internal – potential regional initiative for rural councils</p>	<p>Moderate</p>	<p>Moderate</p>	<p>High</p>	<p>Subject to available funding and momentum for project through the LGAT Regional Waste Forum</p>
<p>Food organics 1 – regional collaboration. Food organics can comprise up to 50% by weight of the domestic waste stream⁵, hence, diversion of this organic material to alternative processing can significantly reduce the cost of waste disposal. In rural Tasmania the issue of food organics in the waste stream is assumed to be lower than average due to the higher likelihood of feeding to chickens, stock, dogs, or composting for vegetable gardens.</p>	<p>Regional coordination is required.</p>	<p>Moderate</p>	<p>Low</p>	<p>High</p>	<p>Subject to regional coordination through LGAT waste forum</p>
<p>Food Organics 2 - Community education & awareness Undertake an awareness-raising program whereby residents are informed of waste management issues, particularly in relation to keeping food organics and garden materials out of the waste stream. The campaign would focus on the positive options available for composting / processing organic matter.</p>	<p>Internal</p>	<p>Low</p>	<p>Moderate</p>	<p>High</p>	<p>By 2022</p>

⁵ Waste Management 2020 and beyond (2011) – Blue Environment for SWSA

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
<p>Waste to energy initiative – a proposal to efficiently utilise green ‘waste’ from organic material collection points. To be processed by pyrolysis to produce renewable energy and other outputs such as biochar. Subject to: development of a business case by a consultant; Clarification of council’s role; and determining a lead proponent.</p>	Regional - grant	Potentially high	Moderate	High	Subject to grants

6.3 Procurement & new infrastructure

Procurement of infrastructure and new technology can make a big difference to an organisation’s energy consumption, waste minimisation and greenhouse gas emissions, and is an opportunity to lead the community by example.

6.3.1 Utilising recycled products

Consideration and utilisation of materials that are recycled, or part recycled, is an important step for council to take. This may include use of crushed glass or crushed construction waste in road base, or procurement of products made from recycled plastics or wood-plastic composites.

All goods and materials have what is know as embodied energy content, that is the energy input that is required to produce the goods. Utilisation of goods and materials that are recycled or have a high content of recycled materials not only assists in solving a waste disposal issue, it supports industries that have developed recycling solutions and it reduces the embedded energy content of goods and materials utilised by council.

Procurement and new infrastructure – new Policy

ACTION	RESOURCING	EMISSIONS REDUCTION BENEFIT	COST BENEFIT	COMMUNITY LEADERSHIP / PR BENEFIT	TIMEFRAME
Alternative materials uptake – Develop Policy – Develop a policy in relation to procurement to: where possible ensure that materials and goods that are recycled or have component recycled content: paper, plastics, road base, wood-plastic composites e.g. decking, outdoor seating, wheelie bins, bollards, fencing.	Internal	Moderate	Moderate	Moderate	Ongoing
Develop a policy to guide procurement of materials with low embodied energy and products that can be easily recycled at the end of their life.	Internal		High	High	Ongoing

7.0 Implementation of this Plan

Proposed implementation of this Plan is through a Council workshop in April-May of each year. The aim of the workshop will be to:

- review energy efficiency actions and achievements of the current financial year;
- discuss priorities and costed proposals for the upcoming financial year across all fields i.e. energy efficiency upgrades, electric vehicle(s), land care initiatives, waste management projects and policy;
- discuss ways of funding and progressing identified project priorities; and
- undertake minor revision of the Climate Change Action Plan in light of achievements and review of priorities.