ENVIRONMENTAL SUSTAINABILITY SUB-COMMITTEE

Meeting in the Conference Room, Operational Services Area, Level One of Civic Centre, 10 Watson Terrace, Mount Gambier, on Tuesday 5th April 2016 at 7:30 a.m.

MINUTES

PRESENT: Cr I Von Stanke (Presiding Member)
Crs D Mutton and P Richardson

COUNCIL OFFICERS: Daryl Sexton, Director - Operational Services
Aaron Izzard, Environmental Sustainability Officer
Sarah Moretti, Administration Officer - Operational Services
Ashlee Lavia, Administration Trainee

APOLOGIES: Cr Von Stanke moved the apology received from Cr S Mezinec be accepted.

Cr Mutton seconded Carried

COUNCIL MEMBERS AS OBSERVERS: Nil

WE ACKNOWLEDGE THE BOANDIK PEOPLES AS THE TRADITIONAL CUSTODIANS OF THE LAND WHERE WE MEET TODAY. WE RESPECT THEIR SPIRITUAL RELATIONSHIP WITH THE LAND AND RECOGNISE THE DEEP FEELINGS OF ATTACHMENT OUR INDIGENOUS PEOPLES HAVE WITH THIS LAND.

MINUTES: Cr Von Stanke moved that the minutes of the previous meeting held on Tuesday, 2nd February 2016 be taken as read and confirmed.

Cr Mutton seconded Carried

QUESTIONS: (a) With Notice - nil submitted.
(b) Without Notice – nil received.

1. ENVIRONMENTAL MANAGEMENT – Programme Management – Environmental Sustainability Initiatives – Electric Vehicles Opportunities - Ref. AF11/407

Goal: *Environment*
Strategic Objective: *(i) Support initiatives that value and preserve our unique environment and contribute to environmental sustainability*

The Presiding Member reported:

(a) The City of Mount Gambier Council has a long history of supporting environmental initiatives across a wide range of areas. Within the area of transport, Environmental Sustainability Officers have aimed to increase active transport options and improve the perceptions of walking and cycling within the community;

(b) another approach is to create a more sustainable transport sector by exploring and supporting new technology which can reduce the environmental impact caused as a result of transport. If a more sustainable transport sector is to be achieved, reducing emissions from vehicles is essential. For this reason electric vehicles, charged on renewable energy, could provide a solution;

(c) Council has begun an initial investigation into the potential and feasibility of supporting the roll out of electric vehicle charging infrastructure in the city, following an enquiry by a member of the Community Action for Sustainability (CAS) group;

(d) Electric Vehicle Information:

As a technology which is still emerging and continues to be improved, electric vehicles (EVs) still have a higher purchase price than standard petrol vehicles. EVs in most ways look and handle similar to standard petrol vehicles. The main difference is that EVs are cars that have a battery and run on electricity; where as 'normal' cars have a fuel tank and run on liquid fuels, such as diesel or petrol. As the EVs operate using a battery, the range, recharging and environmental impacts are different.

The batteries are all rechargeable so they can be used over and over before they need to be replaced. They are also generally recyclable which means that less waste is created from their use. Despite needing to use high levels of energy to manufacture the battery, without an internal combustion engine, EVs create zero emissions whilst in use (if recharged with renewable energy). This leads to reduced levels of air pollution as well as noise pollution.

Whilst there are many companies that manufacture EVs, each car will have a different range and recharging requirements based on the battery used. Most EVs generally use lithium ion battery packs up to a 24 kilo Watts per hour (kWh) capacity, which provide a range of 100-150km between charges. An exception is the Tesla EVs which use lithium ion battery packs with 70-85 kWh capacity, which have a significantly higher range of 350-540km between charges.

The different battery sizes utilised mean that only certain cars can be charged by certain charging infrastructure.

There are a number of EV charging infrastructure options, those which are for private use installed at individuals' homes, and those which are for public use installed in public places. For the purpose of this report, infrastructure for public use will be covered;

(e) with respect to public charging infrastructure there are a number of options which can be used.

1. Standard Universal Chargers – There are a number of universal chargers provided by various companies, which are all suited to most electric vehicles apart from Tesla. The chargers can provide up to 7.2kW of direct current (DC). Depending on the charging infrastructure company, cost of installation will differ. One company; Chargepoint, estimates installation at $500-600 plus GST. The operating costs are based on the amount of electricity used.
2. Tesla Destination Chargers- These chargers are located in convenient locations such as restaurants, hotels and shopping centres. These types of chargers are suited only to Tesla vehicles and provide up to 20kW of DC power. For this reason these types of chargers are suited only to Tesla vehicles, as other electric vehicles do not have large enough batteries. Based on this charging capacity, a 120km range per hour can be achieved with destination chargers. Installation costs for destination chargers are estimated at $2500, with electricity costs estimated at $3 per hour.
3. Tesla Supercharger Stations- The supercharger station consists of multiple Tesla Model S chargers working in parallel to provide up to 120kW of DC power directly to the battery. For this reason these types of chargers are suited only to Tesla vehicles, as other electric vehicles do not have large enough batteries. Based on this charging capacity, a 600km range per hour can be achieved with Superchargers. Additionally, Tesla pays for 100% of the installation and operating costs for the Supercharger Station;

(f) electric Vehicles and Mount Gambier:

When considering what place EV infrastructure has in Mount Gambier, the market as well as the benefits and costs are important.

The EV market has slowly been developing and the technology used for EV manufacturing is improving year by year. This changes the range the cars can travel as well as the prices. The demand for EVs within the local community in Mount Gambier will be impacted by these factors and the number of residents who will benefit from public EV chargers will likely be minimal.

Despite this, there is a potential benefit presented through the tourism opportunities of those who own EVs from other cities. If public chargers were to be installed this gives the City of Mount Gambier added value for visitors to the region. Additionally, it can be seen as an important step towards supporting the future of sustainable transport and highlights the Council's role in leading the region in this area.

The costs which could be associated with having EV chargers installed goes beyond the prices indicated above. The chargers will need a space to be installed and this takes up land and/or existing parking spaces. A suitable location and an appropriate lease agreement would need to be reached in order to reduce the costs of installing the infrastructure. Additionally, the details of access to the electricity network needs to be addressed adequately.

(g) based on the current battery sizes and ranges of EVs in the market, Tesla cars are likely to be the only cars which can reach Mount Gambier from other cities. This means the Council will need to strike a balance between supporting the existing and realistic options of Tesla charging infrastructure and avoiding giving the Tesla company an advantage over other manufacturers of EVs.

Cr Von Stanke moved it be recommended:

(a) The report be received and contents noted;

(b) Council provide Alan Richardson with a copy of this report.

Cr Richardson seconded **Carried**

2. ENVIRONMENTAL MANAGEMENT – Environmental Waste Management and Education Program – City of Mount Gambier 2016 Waste Audit Results - Ref. AF11/408

Goal: *Environment*
Strategic Objective: *(i) Use every opportunity to increase the level of understanding and awareness of the necessity of environmental sustainability*

The Presiding Member reported:

(a) Over a two week period in February 2016 City of Mount Gambier staff conducted a waste audit of household rubbish, recycling and organics bins. The purpose of the audit was to see what Mount Gambier residents are doing well, and where improvement needs to be made in relation to the way we manage our waste. It will also serve as a baseline before the large kitchen caddy trial is initiated in the 2016-2017 financial year;

(b) over the two weeks, 95 household general rubbish and 95 recycling bins were audited, as well as 25 organic waste bins. The contents of each was sorted by hand (tongs). Bins were randomly selected and sorted in large batches, preserving anonymity;

(c) what Mount Gambier Residents are Doing Well:

General Rubbish (small green bin)

- Generally there was not much glass or beverage containers in the rubbish bins.

Recycling (large blue bin)

- There was not a great deal of contamination in the vast majority of recycling loads.

Organic Waste (large green bin)

- There was minimal contamination. The organics bin was the least contaminated of all three bins, only 1% contamination – an excellent result.

(d) What Mount Gambier Residents Need to Improve:

General Rubbish (small green bin)

- Put food in the organics bin or home compost – over 35% of the content of the general rubbish bins was food waste.
- Try not to waste food in the first place – there were many full or half full packets and containers of food in rubbish bins.

Recycling (large blue bin)

- Take lids off bottles and empty the contents.
- Don't put recyclables inside plastic bags.
- Make sure all containers and packages are empty and clean of food waste.

Organic Waste (large green bin)

- Put food scraps in the organic waste bins – but no packaging.
- Don't put any plastic in the organics bin.

(e) Mount Gambier residents are doing a reasonable job of managing their waste, but improvements can definitely be made. The overall results are similar to those of the audit conducted in 2012;

(f) the result that is of the most concern is the amount of organic material in rubbish bins, particularly food scraps. Over 35% of the contents of rubbish bins was food scraps, and a further 9% was garden organics. When organic material is buried in landfill it creates leachate and methane, which both have the potential to pollute the environment. It is also a waste of resources, as organics can be composted and returned back to the land on gardens and farms;

(g) in order to significantly reduce the amount of organic material in rubbish bins, and contamination overall, numerous actions can be continued and new ones initiated:

- Continue waste education activities.
- Continue the bin tagging program.
- Have a more stringent penalty system for contaminated bins.
- Alter the bin collection system. Current best practice for councils in diverting organics away from landfill is to have a weekly universal organics service with kitchen caddies, and fortnightly rubbish and recycling collection;

(h) the Blue Environment report prepared for Council in June 2014 recommended a staged approach to altering the bin collection arrangements. The first step was giving kitchen caddies with compostable bags to subscribers to the green organics service;

(i) to this end, a large trial will be undertaken in the 2016-2017 financial year. Kitchen caddies and rolls of compostable will be given to the first 2,000 subscribers to the service who want them. It is intended to do another more targeted waste audit in February 2017, to ascertain the results of the trial on moving food scraps out of rubbish bins and into organics bins or home compost;

(j) for the full results from the February waste audit see the City of Mount Gambier Waste Profile 2016 (was attached).

Cr Von Stanke moved it be recommended:

(a) The report be received;

(b) investigate implementing a more stringent penalty system for contaminated bins;

(c) in February 2017 conduct a targeted waste audit to ascertain the results of the 2016-2017 kitchen caddy trial.

Cr Mutton seconded **Carried**

3. ENVIRONMENTAL MANAGEMENT – Council Carbon Emissions – Potential for Carbon Neutrality - Ref. AF12/388

Goal: *Environment*
Strategic Objective: *(i) Systematically build Council as an as an environmentally sustainable organisation*

The Presiding Member reported:

(a) Background: Council Support for Environmental Sustainability

The City of Mount Gambier has a history of strong support for Environmental Sustainability. As a response to the importance of environmental sustainability, at the November 2007 Council meeting Council established an Environmental Sustainability Working Party (ESWP), to assist Council to achieve its environmental sustainability goals and objectives. The EWSP is now known as the Environmental Sustainability Sub-Committee (ESSC).

At the 20 May 2008 Council meeting, Council formerly adopted the Natural Step Framework, to be used as a planning tool to enable Council to integrate environmental and social considerations into strategic decisions as well as daily operations. Council has undertaken many environmental sustainability projects since the establishment of the ESWP in late 2007 and adoption of the Natural Step Framework. Council is not yet meeting the conditions of the Natural Step Framework, but is moving in the right direction. In order to adhere to the Natural Step Framework Council's emissions should be trending downwards towards carbon neutrality.

Council's Strategic Plan, Beyond 2015, strongly features environmental sustainability. Environment is one of the seven goals contained within the document, and as such, has a section devoted to environmental sustainability.

The City Development Framework Futures Paper, and the Draft Community Plan, also strongly feature environmental sustainability, with one of the main four categories being "Our Climate, Natural Resources and Heritage". As such, they also have a section devoted to environmental sustainability.

Council has adopted the CHAT Tool, to be used to assess the holistic outcomes of potential projects and programs. This ensures that along with the financial components, the environmental and social components are also considered – leading to more holistically beneficial projects. The tool is easy to use, systematic and measurable.

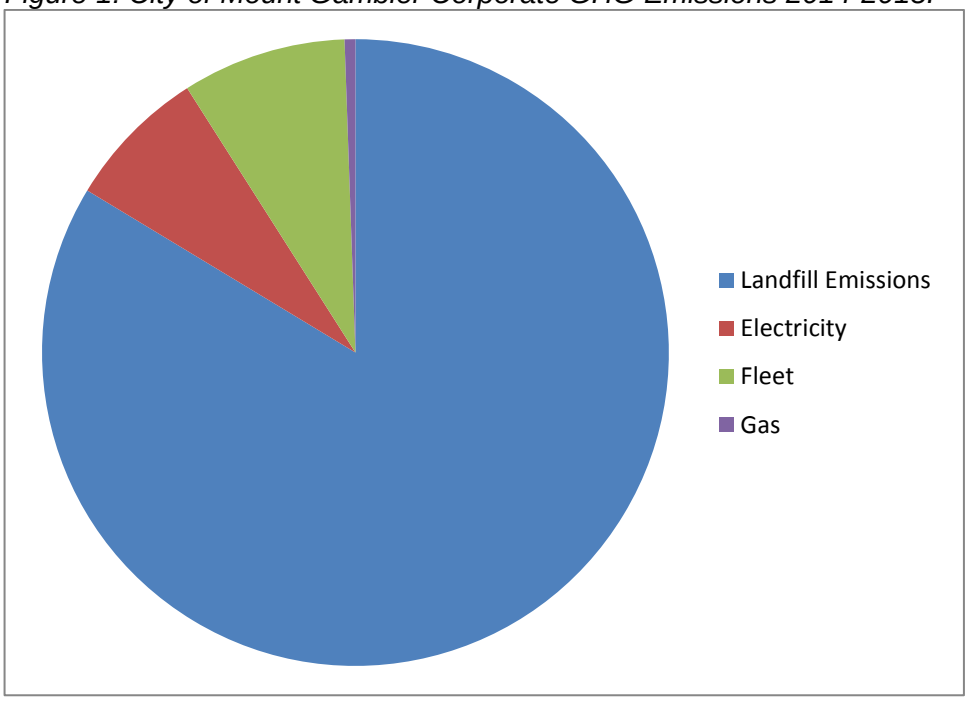
(c) City of Mount Gambier Greenhouse Gas Emissions 2014-2015:

The City of Mount Gambier's corporate greenhouse gas (GHG) emissions for the 2014-2015 financial year were approximately 9,312 tonnes CO2-e. That figure includes emissions from electricity, gas, fleet and waste deposited in Caroline Landfill. Details are in Table 1 and Figure 1 below:

Table 1: City of Mount Gambier Corporate GHG Emissions 2013-2014.

Source of GHG Emissions	Emissions Tonnes CO2-e	% of Total Emissions
Landfill gas emissions	7,790	83.7
Fleet (vehicles and plant use)	788	8.5
Electricity (excluding street lighting)	682	7.3
Gas	52	0.6
TOTAL	9,312	100

Figure 1: City of Mount Gambier Corporate GHG Emissions 2014-2015.



Annual emissions are currently trending upwards, largely due to an increased volume of waste being deposited to landfill from contractors.

(d) Climate Change Predictions for Mount Gambier:

In April 2015 URPS prepared a report for the SENRMB, SELGA and RDA Limestone Coast on climate projections for the Limestone Coast[1]. These projections were based on expert climate information provided by the IPCC (Intergovernmental Panel on Climate Change), CSIRO and the Bureau of Meteorology. While there is natural variability in the climate of the Limestone Coast region, human influenced global warming will create a different future climate with warmer and drier conditions.

The following are some of the climate change predictions for Mount Gambier:

- Median annual maximum temperature is projected to increase from baseline conditions by 1.1ºC to 2.9ºC by 2090, while extreme heat could increase from 21 days per year over 35ºC to 31 days per year by 2070.
- While median annual rainfall is tending towards a decrease, the extremes are projected to increase. There is high confidence that the intensity of daily rainfall events will increase. This will result in more intense storms.
- General fire weather danger is projected to increase from 9% to 29% by 2090.
- By 2050 Mount Gambier will experience a climate more similar to Penola. By 2090, Mount Gambier will have a climate more similar to Perth.

[1]Limestone Coast (2015) Climate Projections Report, prepared by URPS and Seed Consulting Services as part of the consultancy led by URPS for the Limestone Coast Regional Climate Change Adaptation Plan Project.

(e) Recent Climate Observations for Mount Gambier:

In 2015 Mount Gambier had its hottest October and December on record. It also set a record for number of days 35°C or above in December. Mount Gambier experienced its driest year since 1982.
The current El Nino event, combined with the long term warming trend produced by global warming, saw numerous climate records set for the year:

- December was the hottest on record.
- 9 days >=35°C for the month – a new record.
- 42.8°C on the 19th December was the second hottest December day on record.
- October was also the hottest on record for Mount Gambier (and South Australia as a whole).
- February 2015 was one of the hottest on record.
- Driest year since 1982, and the 5th driest year on record.
- Rainfall was 72% of the long term average.
- Only 3 months of 2015 had above average rainfall.

(f) City of Mount Gambier Renewable Energy & Green Power:

For a number of years Council has purchased 20% green power for all its electricity accounts. This ensures that the equivalent of 20% of Council's electricity comes from renewable energy installations such as wind farms. It should be noted however that the cost for green power is *over and above* the cost for conventional electricity i.e. it does not actually reduce Council's consumption of 'black power'.

In May 2015 Council installed a 57kW solar system on the roof of the Library. It is also in the process of installing solar systems at the Depot, Carinya Gardens and the Waste Transfer Station. These systems will result in direct electricity and financial savings.

(g) Green Power:

Council purchases green power through LGA Procurement. With figures provided by them the following calculations for purchasing 100% green power have been made:

- Cost for sites that use above 160 MWh p.a. would be: $40,060 (excludes Civic Centre)
- Cost for sites that use below 160 MWh p.a. would be: $16,647
- Total cost would be $56,707
- Currently Council pays $4,911 p.a. for 20% green power.
- Purchasing 100% green power would mean an increase of $51,796 p.a.

The Civic Centre is excluded from the above calculations as the bills are received through Country Arts SA. The site uses 50% green power.

Electricity for street lighting is excluded from the above calculations as they are scope 3 emissions.

As mentioned in the previous section of the report, it should be noted that the cost for green power is *over and above* the cost for conventional electricity i.e. it does not actually reduce Council's consumption of 'black power'. Council would be paying for the same amount of black power that it currently does, but would also be paying for an equivalent amount of green power, essentially paying twice.

Given this fact, it is recommended that Council cease purchasing green power, and instead focus on installing solar power systems on its facilities, and then purchasing carbon offsets for any black power purchased.

(h) Landfill Emissions:

Council's total emissions for 2014-2015 were 9,312 Tonnes CO2-e. Of these, 7,790 t were from landfill. If emissions from waste from other sources (for 2014-2015) were removed, the 2014-2015 landfill emissions would be 7,749 tonnes. This is because of legacy waste, that is, all waste that was deposited prior to 2014-2015.
In 2014-2015 the City of Mount Gambier deposited 7,529 tonnes of waste (MSW – municipal solid waste e.g. kerbside rubbish, and C&I – commercial and industrial waste e.g. from businesses) into landfill. The total lifetime emissions from this waste would be 8,697 tonnes (over a period of 168 years, which is the NGER Federal Government default period). Without action to reduce emissions, a tonne of standard MSW will release a total of approximately 1.2 tonnes of carbon pollution. A tonne of C&I will release a total of approximately 1.1 tonnes of carbon pollution.

The vast majority of landfill emissions are created by organic matter, items such as food scraps and garden waste. Significant amounts of organics continue to de deposited in Caroline Landfill each year. Options for reducing the amount of organic matter include:

- Changing the kerbside bin collection to a weekly organics bin with an organics bin, kitchen caddy and compostable bags provided to each household in Mount Gambier. The rubbish bin and recycling bins would be fortnightly. If the kerbside system is changed Council may be able to access funding through the Source Separated Organic Waste method of the Federal Government Emissions Reduction Fund.
- Charging a carbon levy on every tonne of MSW and C&I deposited at the landfill by contractors, including those that serve other municipalities, to purchase carbon offsets for emissions produced by that waste. If a contractor can independently verify that their waste does not contain any organic material then they would not have to pay the carbon levy. The levy price should be reviewed annually to reflect the carbon market and what Council pays for carbon emissions. When calculating the levy it needs to be kept in mind that 1 tonne of MSW releases 1.2 tonnes of emissions, and 1 tonne of C&I releases 1.1 tonnes of emissions.

A possible solution for reducing emissions from waste already deposited at the landfill would be to install a landfill 'biofilter' on top of the closed cells. A landfill biofilter essentially funnels landfill gas to a central point where the gas passes through special organic material that is covered in bacteria that convert methane to carbon dioxide. This reduces emissions as carbon dioxide is a far less potent greenhouse gas than methane. The approximate cost for the design and construction of a landfill biofilter is not known at this stage. Another option that produces a similar result is landfill gas flaring. At this point in time gas flaring is not feasible, but it may be in the future.

(i) Carbon Offsets:

In order to align with the Natural Step Framework Council's emissions should be trending downward towards carbon neutrality. Council should work to reduce its emissions as much as possible, but it will always have a certain level of emissions that will be required to be offset.

In terms of purchasing carbon offsets to offset its greenhouse gas emissions of 9,312 Tonnes CO2-e for 2014-2015 Council has numerous options:

- Purchase foreign offsets, such as those from a wind power project in China for a cost of $1.10 per tonne – total of $10,244.
- Purchase offsets from a revegetation project in Western Australia for a cost of $12.65 per tonne – total of $117,797.
- Purchase offsets through an organisation such as Greenfleet for a cost of $15 per tonne – total of $139,680. Greenfleet are flexible in terms of where their offsets are located and could possibly plant them within the region if suitable sites are available.

It should be noted that it is highly unlikely that offsets could be located within the municipality of the City of Mount Gambier. It would require 23.28 hectares of land to plant enough trees and other vegetation to offset just one year's emissions.

It should also be noted that legislation covers the terminology of carbon neutrality. In order to be able to officially call itself 'carbon neutral' Council would have to engage an independent auditor to undertake a carbon audit, which could cost in the order of $20,000-$50,000, just for the audit. Without this expensive process Council could still state publicly its total emissions and that it purchases offsets to that amount, but not specifically call itself 'carbon neutral'.

(j) Conclusion:

Mount Gambier's climate is warming up, and under the current warming trend could be as hot as Perth by 2090. Global warming is the result of many small amounts of emissions adding up to change the climate. In order to be in line with the Natural Step Framework, and eliminate its contribution to human influenced global warming, Council needs to trend its emissions downwards and become carbon neutral.

In order to do this, Council could implement the following:

- In the 2016-2017 financial year purchase carbon offsets from Australian projects for Council's 2015-2016 GHG emissions. Council's 2015-2016 emissions are expected to be the same order as its 2014-2015 emissions. Continue to purchase carbon offsets each financial year. These offsets are expected to cost in the order of $140,000 p.a. – if Australian offsets are purchased.
- In the 2016-2017 financial year cease purchasing green power. Continue to invest in solar power systems on Council facilities.
- Commence charging a carbon levy on every tonne of MSW and C&I taken to Caroline Landfill by contractors. The levy is expected to be approximately $18 per tonne. Exact details to be determined in line with the annual review of Council's Fees and Charges.
- Continue Council's annual energy efficiency program and related budget.
- Continue to explore and install renewable energy.

Cr Von Stanke moved it be recommended:

(a) The report be received;

(b) The Committee recommend to Council that as from 1st July 2017, the City of Mount Gambier endeavour to operate in a carbon neutral environment, including a possible levy and on landfill customers to offset carbon emissions from the landfill.

Cr Mutton seconded **Carried**

4. ENVIRONMENTAL MANAGEMENT - Environmental Sustainability Sub-Committee - Reports for Information - Ref. AF12/377

The Presiding Member reported:

(a) Environmental Sustainability Program 2016 - Project Progress

The current table outlining projects for 2016 is attached to the agenda for Members information.

moved it be recommended:

(a) The report be received;

(b) item (a) as above be received and noted for information.

seconded

MOTIONS WITHOUT NOTICE - Nil

The meeting closed at 7:55 a.m.

CONFIRMED THIS DAY OF 2016.

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PRESIDING MEMBER

5 April 2016
AF12/377
SM