



Carbon Neutrality Action Plan 2018-2020



Contents

Executive Summary	3
Action Plan	5
1. Glossary	16
2. Purpose	16
3. Council’s Better Place Strategic Planning Framework	16
4. Scope	18
5. Background	18
6. Legislative and policy and context	19
International Action.....	19
Federal Action	19
State Action.....	19
Local Action.....	20
7. Key principles	20
8. Vision statement	20
9. Goals and strategic objectives	21
10. Methodology	21
Carbon Management Framework	21
Identifying and prioritising opportunities.....	22
Council’s Carbon Inventory.....	23
Emissions from Council contractors and leased buildings.	26
11. Infrastructure assets	27
12. Financial analysis	27
13. Implementation and reporting	28
Approach to Implementation.....	28
Achievements and future actions.....	28
Monitoring	31
Reporting.....	31
Evaluation	31
14. Key Stakeholders	31
15. Program of capital works	32
16. References	33

Executive Summary

The Bayside City Council's action plan to become carbon neutral for its operations by 2020 is a commitment to meeting community expectations that are addressed by the Council Plan 2017-2021, Goal 5 - Environment:

Council and the Bayside community will be environmental stewards, taking action to protect and enhance the natural environment, while balancing appreciation and use with the need to protect natural assets for future generations.

Carbon neutrality is also a demonstration of the Bayside Better Place Approach, whereby our dedicated professional people, with an ongoing focus on efficiency, provide core services that improve liveability for the Bayside community.

In 2008, Council committed to be carbon neutral for its operations by 2020 and in doing so, committed to use resources efficiently and to reduce its contribution to climate change. Furthermore, the Bayside Environmental Sustainability Framework (ESF), which was adopted by Council in 2016, identifies *Zero Carbon* as a strategic objective to influence Council's operations, and scheduled the development and implementation of a Carbon Neutrality Action Plan as a high priority deliverable to achieve this objective.

Climate change is a critical issue that requires global action. The current international scientific and political consensus is that immediate action is needed to maintain global warming to under 2°C by 2100. To maintain global warming under 2°C, governments and communities must take action to address this impact and adapt to the impacts of climate change. In this context, the following vision has been set:

Council's contribution to climate change is minimised by avoiding fossil fuel use, improving energy efficiency, increasing renewable energy and ensuring that Council staff have support to achieve Council's carbon neutrality goal. Council's decisions are aligned with the carbon neutrality goal; procurement, leasing and building design prioritises carbon neutrality.

This Plan describes Council's actions to become carbon neutral, including the overall objectives, timelines, resourcing and expected greenhouse gas reductions. It is aligned with Goal 1 of the ESF *Leading the Way*: for Council to operate as a model of environmental sustainability.

The following principles have been used to guide the development and implementation of the Carbon Neutrality Plan:

1. A demonstration of the commitment to address Council's contribution to climate change through achieving carbon neutrality;
2. A strong evidence-base for decision-making on action to reduce greenhouse gas emissions, assessing the economic, environmental and social impacts of actions (for example, through detailed analysis of energy efficiency opportunities at Council buildings);
3. A whole of organisation approach involving staff, contractors, suppliers and partners to avoid, reduce and offset greenhouse gas emissions;
4. Monitoring and reporting on greenhouse gas abatement using established frameworks and communication of outcomes of actions to Council and community; and
5. Ensuring actions deliver expected outcomes and learnings, and improvement opportunities are captured and incorporated into future planning.

Council will achieve the goal of carbon neutrality for Council operations by 2020 by fulfilling the following strategic objectives, which are aligned with the Environmental Sustainability Framework.

1. **Avoid greenhouse gas emissions**, by enabling Council staff to change behaviour and contribute to the achievement of Council's carbon neutrality goal
2. **Reduce greenhouse gas emissions from Council buildings and assets**, by 30% compared to 2012/2013
3. **Increase the amount of energy from renewable sources for Council operations**, by 30% compared to 2012/2013
4. **Reduce the greenhouse gas emissions intensity from Council's fleet and staff travel**, by 30% compared to 2012/2013
5. **Reduce Council's total organisational greenhouse gas emissions**, by 5% each year
6. **Accurately measure and report** on Council's greenhouse gas emissions, with independent verification.

These strategic objectives have been developed in line with best practice carbon accounting and management principles including the *National Carbon Offset Standard*, *The International Greenhouse Gas Protocol* and EPA Victoria's *Greenhouse Gas Management Framework*.

Action Plan

The detailed action plan presented over the following pages contains the following elements.

Objectives: The objectives of the Carbon Neutral Plan align directly to the goals, objectives and targets of the ESF, the energy hierarchy and national and international greenhouse gas reporting frameworks. For each objective, a measure is stated to identify the expected improvement as a result of the actions.

Actions: Actions outline the activities that Council and/or partners will undertake to achieve the strategies. These have been prioritised according to analysis of energy efficiency opportunities, solar power feasibility, and the cost per tonne of carbon abatement of emission reduction activities. **Timeframe:** The estimated year or years in which the action will take place.

Resourcing, deliverable and output and where possible, expected greenhouse gas reduction: The funding and/or staff time required to implement the action and the 'product' of the action.

Objective 1 – Avoid greenhouse gas emissions, by enabling Council staff to change behaviour and contribute to the achievement of Council’s carbon neutrality goal

Measure(s): Programs, resources and support developed and used by Council staff; Carbon Neutral goal is reflected in decision-making at Council, in particular in procurement and capital works programs.

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
1.1	Engage building users to support energy efficient use of buildings	Ongoing	Staff time	Information, awareness and behaviour change campaigns – Environmental Sustainability
1.2	Gather information on travel to and from work and travel for meetings	Ongoing	Staff time	Staff travel survey – Environmental Sustainability and Transport Planner
1.3	Introduce activities as identified in the Green Travel Plan	Ongoing	Staff time	Implementation of Green Travel Plan – Environmental Sustainability, and Transport Planner
1.4	Provide support to Council staff to help them ensure that Council’s commitment to carbon neutrality is reflected in Council activities and integrated into procurement decisions.	Ongoing	Staff time \$2,500	Sustainable Procurement Advice – Environmental Sustainability and Procurement
1.5	Reduce paper consumption and waste to landfill – Purchase carbon neutral paper to avoid emissions	Ongoing	Cost neutral (or savings)	Information and behaviour change program, Waste reduction at the Corporate Centre Carbon neutral paper purchase – Procurement Approximately 27 tCO₂-e annually

**Objective 2: Reduce greenhouse gas emissions from Council buildings and assets, by 30% compared to 2012/2013
This includes Council owned and operated buildings and other assets, and excludes public street lights.**

Measure: Emissions from buildings reduced from 2467 tCO₂-e by 740 tCO₂-e to 1727 tCO₂-e

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
2.1	<p>Implement energy efficiency opportunities at Council owned and operated buildings as per audit and feasibility study recommendations.</p> <p>Data Source: Audits (CarbonetiX and Ironbark Sustainability)</p>	2017/2018 - 2019/2020	\$150,000 (approx.) included in LTFP (long term financial plan)	<p>Annual Sustainable Building Program: Energy Efficiency</p> <p>Corporate Centre lighting project, estimated reduction 150 tCO₂-e;</p> <p>HVAC efficiency opportunities, estimated reduction 193 tCO₂-e;</p> <p>Energy efficiency at other large buildings, estimated reduction 72 tCO₂-e.</p> <p>Note: this excludes Sandringham Family Leisure Centre and small leased buildings.</p> <p>(For more detail on the annual capital works program see Section 15, Program of Capital Works.)</p>
2.2	<p>Implement energy efficiency actions identified in previously undertaken audits including improvements made as part of a planned buildings maintenance upgrade program and in accordance with Council's Sustainable Infrastructure Policy.</p>	2017/2018 - 2018/2019	Staff time	<p>Annual Sustainable Building Program: Energy Efficiency</p> <p>Hot water, heating and cooling, lighting and appliance upgrades where feasible. Opportunities in small buildings amount to an estimated reduction of approximately 500-600 tCO₂-e.</p> <p>Opportunities identification/audits and capital works planning – Environmental Sustainability,</p> <p>Project management – City Assets and Projects</p>

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
2.3	Develop guidance on thermal comfort to support energy efficiency actions linked to heating/cooling of buildings.	2018	Staff time	Guidelines for Thermal Comfort Environmental Sustainability with input from City Assets and Projects and Occupational Health and Safety Advisor
2.4	Develop and implement minimum standards and guidelines to be used for all buildings and assets and identify appropriate rating tools to inform infrastructure planning, design, build and ongoing building use.	2017/2018-2018/2019	Staff time	Sustainable Building Technical Specifications - technical guidance for low-carbon procurement and minimum standards for buildings, assets and infrastructure.
2.5	Develop and maintain technical support for project managers, to ensure infrastructure such as new buildings, building renewals and building maintenance are assessed for sustainability in their design phase.	Ongoing	\$5,000 once; \$1,000 annually after 2017/2018	Ecologically Sustainable Design assessment tool – Environmental Sustainability will develop the tool; Capital project managers will apply the tool

Objective 3: Increase the amount of energy from renewable sources for Council operations, by 30% compared to 2012/2013

Measure: Renewable energy increased from 6,908kWh to 8,908kWh

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
3.1	Install renewable energy at Council owned and operated buildings (Information Source: Solar Feasibility Study 2016)	2017-2020	\$200,000 (approx.) included in LTFP	<p>Annual Sustainable Building Program: Renewable Energy</p> <p>Feasibility studies and preparation of the program and capital funding bid for Solar on Council buildings – Environmental Sustainability in consultation with service delivery areas; Project Implementation – City Assets and Projects</p> <p>Opportunities at Council buildings expected to amount to 407 tCO₂-e and 364,464 kWh annual electricity production</p>
3.2	Implement monitoring and reporting on renewable energy generation at Council buildings	2018/2019	\$10,000 once off cost, included in LTFP	<p>Renewable energy monitoring program developed. Monitoring equipment installed, data and reporting received and used to report on renewable energy production – Environmental Sustainability</p>
3.3	Review Procurement Policy to include criteria to require and ensure greenhouse emissions reductions in procurement for building and assets works and contractors	2019	Staff time	<p>Specific reference in Council’s Procurement Policy to ‘low carbon’ procurement – Environmental Sustainability and Procurement</p>
3.4	Ensure quote/tender specifications and contracts reflect Council’s carbon neutral goal, including Council’s energy procurement	2018	Staff time	<p>Requirements in specifications and contracts that require contractors and other service providers to report on greenhouse gas emissions in works for Council, and provide evidence of actions to reduce greenhouse gas emissions in major contracts (e.g. procurement of offsets).</p>

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
3.5	Explore opportunities for the procurement of off-site renewable electricity to replace fossil fuel, non-renewable energy.		Staff time (initially) Cost to be confirmed	<p>Assessment of opportunities for off-site renewable energy procurement with a defined approach to the procurement of identified opportunities.</p> <p>Environmental Sustainability and other local governments and/or greenhouse alliances, and renewable energy generators</p>

Objective 4: Reduce the greenhouse gas emissions intensity of Council's fleet and staff travel, by 30% compared to 2012/2013

This means increasing the use of active transport and less greenhouse emission intensive modes of transport.

Measure: Emissions Intensity of fleet reduced from 238.6 gCO₂-e/km to 167 gCO₂-e/km

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
4.1	Continue to purchase smaller, fuel efficient vehicles	Ongoing	Existing resources	Fuel efficient vehicle purchase – Finance, with input/advice on minimum standards from Environmental Sustainability Emissions reduction: 44tCO₂-e
4.2	Continue to purchase alternative fuel, low emissions vehicles e.g. hybrid and electric vehicles	Ongoing	Existing resources	Fuel efficient vehicle purchase – Finance, with input/advice on minimum standards from Environmental Sustainability Emissions reduction: 26 tCO₂-e
4.3	Review Fleet Policy to ensure it encourages the purchase of fuel efficient vehicles and use of alternative modes of transport	2018	Staff time	Fleet Policy review - Finance
4.4	Implement EcoDriver education program to encourage fuel efficient driving (including exploration of the appropriateness of incentives to reduce kilometres travelled)	Ongoing	\$5,000	EcoDriver training program – Human Resources to include in staff induction and annual training calendar. Estimated fuel use reduction of 17 per cent (based on SECCCA EcoDriver trial results)
4.5	Prepare Council's Green Travel Plan to reduce greenhouse gas emissions from staff travel	2018	Staff time	Green Travel Plan for Council staff – Environmental Sustainability Provision of data on vehicle use and kilometres travelled – Fleet/Finance

Objective 5: Reduce Council's total organisational greenhouse gas emissions, by 5% each year				
Measure: From 9,938 tCO ₂ -e in 2012/2013 to 6,940 tCO ₂ -e in 2019/2020				
Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
5.1	Upgrade remaining streetlights – both Council and shared roads (work with VicRoads) <ul style="list-style-type: none"> • VicRoads engagement – advocate to VicRoads to upgrade lights • Technical feasibility – advocate to VicRoads to undertake feasibility of replacing remaining High Pressure Sodium and Mercury-Vapour lamps with LED 	2020	Staff time	Advocacy and negotiation with VicRoads – Environmental Sustainability with input from City Assets and Projects Project scoping, feasibility and capital works planning – City Assets and Projects - Initial cost estimate \$825,000* (*preliminary cost estimate)
5.2	Energy efficiency upgrades at community buildings (including Sandringham Family leisure Centre)	Ongoing	\$50,000 incl. in LTFP	Energy efficient hot water upgrades Lighting, heating and cooling and appliance upgrades Start with energy efficient hot water (where feasible)
5.3	Install Renewable Energy at community buildings. Identify suitable buildings such as recreation centres, sports pavilions and kindergartens for implementation based on recommendations of the solar feasibility study and other planned upgrades (e.g. maintenance upgrades and other capital works projects).	2017-2020	\$190,000 included in LTFP This may change based on review into building use	Sustainable Buildings Program: Renewables at Community Buildings Development of annual program – Environmental Sustainability; Implementation – City Assets and Projects Estimated reduction 631 tCO₂-e (including Sandringham Family Leisure Centre)
5.4	Engage tenants of large leased facilities to identify energy efficiency opportunities	2018/2019	\$1,000	Monitoring, information and behaviour change program to quantify energy consumption and emissions and to promote energy efficiency at community buildings
5.5	Engage tenants of small leased facilities to reduce energy consumption and related costs and to quantify emissions from leased buildings	2018/2019 and 2019/2020	\$2,500	Monitoring, information and behaviour change program to quantify energy consumption and emissions and to promote energy efficiency at community buildings

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
5.6	<p>Work with contractors (large Council contracts – Citywide, Campeyn and Waste Contractors) to quantify Scope 3 emissions (particularly from fuel use) and reduce emissions through efficiency and offsets.</p> <ol style="list-style-type: none"> 1. Use the Greenhouse Gas Protocol Corporate Value Chain Scope 3 standard to quantify emissions 2. Review baseline emissions 3. Work with contractors to avoid/reduce emissions/offset 	2017/2018	Staff time	<p>Environmental Sustainability, in partnership with Procurement and contract managers e.g. City Assets and Projects</p> <p>Current Estimated Baseline (to be confirmed): 3800 tCO₂-e</p>

Objective 6: Accurately measure and report on Council's greenhouse gas emissions, with independent verification

Measure: Council's carbon inventory verified bi-annually

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
6.1	Seek bi-ennial independent verification of Council's carbon inventory to ensure accuracy and consistency	Commence 2017/2018	\$5,000 every 2 years	Environmental Sustainability to manage: Reporting on resource consumption – emissions reporting (with contractor) Monitoring at Council buildings and community buildings Monitoring and reporting on actions and associated emissions reductions implemented as part of the Sustainable Buildings Program Independent verification of Council's greenhouse gas inventory
6.2	Account for additional Scope 3 emissions from reticulated water supply, employee commute and emissions from contractors as per agreed criteria.	Ongoing	Staff time	Estimated reduction: Additional 3800 tCO₂-e
6.3	Join the Victorian Government's 'Take2' program, and engage staff and the community on Council's 'Take2' pledge, specifically, implementation of the Carbon Neutrality Action Plan	2017/2018	Staff time	Join the 'Take2' program and monitor actions – Environmental Sustainability
6.4	Report to Council and the community via Council's Environmental Sustainability Framework reporting program and Council's Annual Report.	Ongoing	Staff time	Report on progress towards carbon neutrality – Environmental Sustainability

Action Item No	Action/s	Timeframe	Resourcing (annual unless otherwise specified)	Outputs, roles and responsibilities and expected greenhouse gas reduction (where relevant)
6.5	Purchase offsets according to agreed criteria for 2019/2020 financial year.	2021	\$9,000 - \$135,000 (depending on type of offset purchased)	<p>Offsets procurement</p> <p>Develop agreed criteria for the purchase of offsets to ensure they are purchased from a reputable source and preferably from sources within Australia.</p> <p>If all emissions reduction activities are implemented, and Scope 3 emissions are added, the estimated reduction is approximately 8,000 tCO₂-e to be offset.</p>
6.6	Implement monitoring, reporting and evaluation process (refer to section 14)	2021	Staff time	<p>Currently, if all efficiency measures for Scope 1, 2 and 3 emission reduction measures are implemented, and recommended additional Scope 3 emissions are added to the inventory, initial estimates of the amount to be offset is approximately 8,000 tCO₂-e.*</p> <p>(*Note: this figure needs further refinement because it is greatly influenced by the initial estimate of Scope 3 emissions resulting from contractor activities.)</p>

1. Glossary

Carbon neutral	Carbon neutrality is achieved when the net greenhouse gas emissions associated with an organisation's activities, products, services and events are equal to zero.
Offset	Council will not be able to reduce its emissions to zero through energy efficiency, renewable energy, procurement and process improvements. Therefore, Council will purchase offsets to reduce its emissions to net zero. Purchasing one tonne of 'carbon offset' means there will be one less tonne of carbon dioxide (or an equivalent greenhouse gas) in the atmosphere than there otherwise would have been.
Greenhouse gases (GHGs)	There are six GHGs which are considered to be key contributors to global warming. These are Carbon dioxide (CO ₂), Methane (CH ₄), Nitrous oxide (N ₂ O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulphur hexafluoride (SF ₆). Carbon dioxide is considered the most significant GHG due to its increasing prevalence within the atmosphere.

2. Purpose

The purpose of this Plan is to identify Council's approach to achieving carbon neutrality, including actions, timelines, estimated costs and associated emissions reductions in order that Council reduces its net emissions to zero.

3. Council's Better Place Strategic Planning Framework

This Plan will help to make Bayside a better place by reducing Council's contribution to climate change and its impact on the environment, by reducing both consumption of purchased energy and its associated costs.

The relationship between the Carbon Neutral Plan, the Community Plan and the Environmental Sustainability Framework is represented in Figure One overleaf.

The Community Plan identifies the high value that the Bayside community places on the natural environment and the benefits gained from living in an area where the air, water and land are free from contaminants and pollutants. The beaches and foreshores are the most valued environmental asset, with their protection and maintenance a first order priority.

The Community Plan recognises that members of the Bayside community understand that managing the environment requires more than just local effort. They consider a major priority to be greater leadership from all levels of government in relation to climate change in order to make Bayside, Victoria and Australia more sustainable. The community also recognises Council's role in advocating for outcomes that deliver high environmental standards and protection. The Bayside community's aspiration is that by 2025, both community and Council will be environmental stewards, taking action to protect and enhance the natural environment and balancing appreciation and use with the need to protect natural assets for future generations.

Through the development of the Community Plan, the community envisages that Bayside will be a better place when Council and the community are using resources efficiently and minimising the use of non-renewable resources. It recognises that Council can minimise its environmental impact by using resources efficiently and through the use of renewable energy.

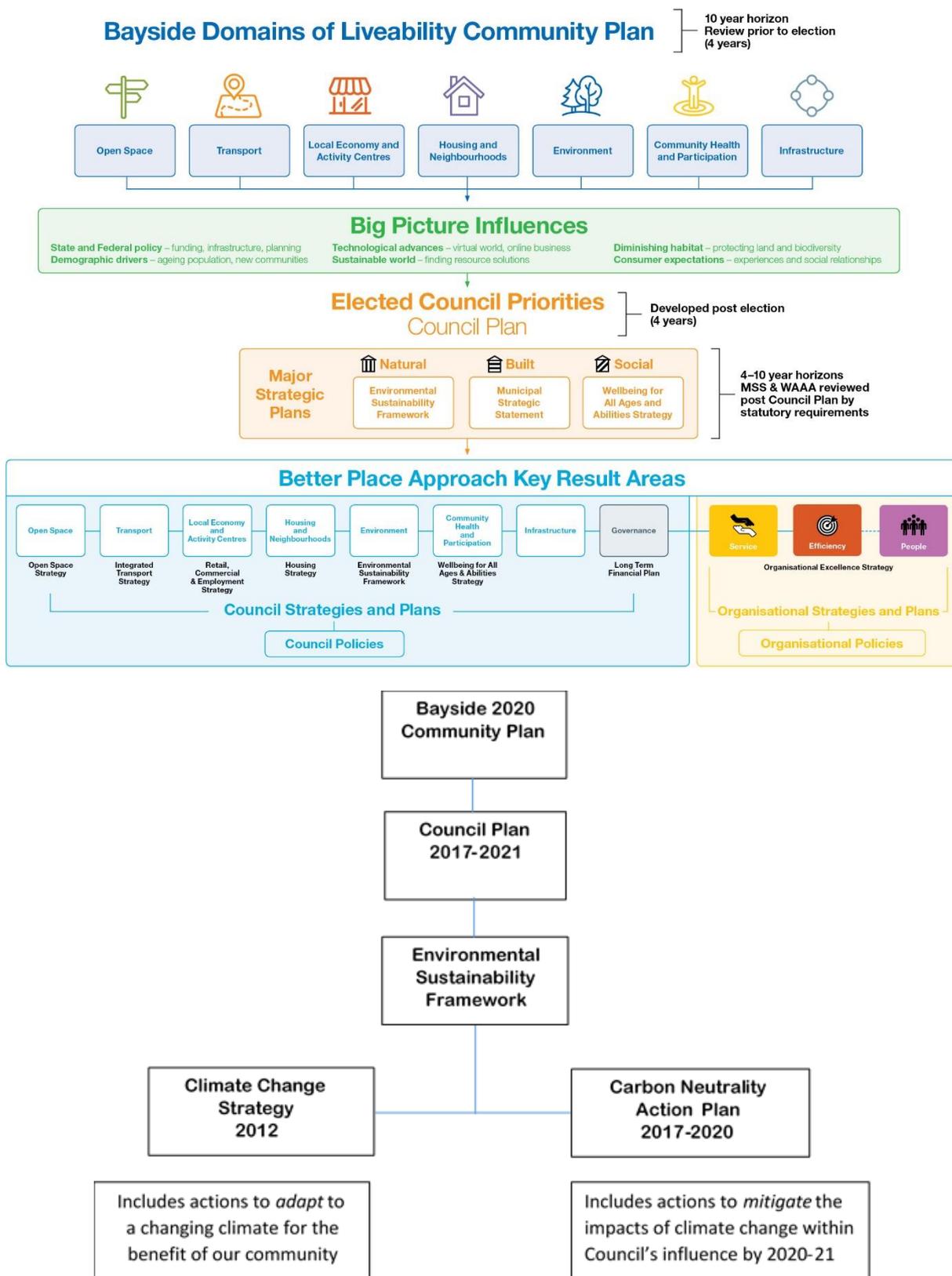


Figure 1. The relationship between the Carbon Neutrality Action Plan and the Community Plan

4. Scope

The Plan applies to greenhouse gas emissions resulting from Council operations. The way in which Council approaches activities to reduce greenhouse gas emissions will depend on whether Council has operational control over the emissions source or whether it is under the control of another entity, such as a contractor carrying out works for Council or electricity use by the tenant of a leased building.

The Plan does not apply to community emissions generated by the Bayside community. The Environmental Sustainability Framework identifies objectives to work with the community to help reduce greenhouse gas emissions and adapt to the expected impacts of climate change.

5. Background

In 2008, Bayside City Council committed to achieving carbon neutrality for its operations by 2020. This goal was driven by community expectations and Council's desire to show leadership in reducing its emissions and hence its contribution to climate change.

Since the adoption of its target to be carbon neutral by 2020, Council has sought to understand its greenhouse gas emissions sources, set its emissions boundary and report on emissions. It has identified many energy efficiency opportunities and implemented many energy efficiency activities. Council has conducted research to identify further emission reduction opportunities such as energy efficiency in its buildings and renewable energy, and map a potential path to carbon neutrality.

In 2015, Council conducted a review of progress towards its carbon neutrality goal. This assessed Council's current greenhouse reporting arrangements and identified a potential pathway towards carbon neutrality. This review also explored the carbon offset market to ensure that Council is prepared for the purchase of offsets commencing in the 2019/2020 year. The findings and recommendations of the review were reflected in Council's Environmental Sustainability Framework.

Becoming carbon neutral has the following benefits:

- Meeting the community's expectations for Council to reduce its greenhouse gas emissions and lessen its contribution to climate change
- Understanding Council's major sources of greenhouse gas emissions sources and quantifying them
- Clarifying what greenhouse gas emissions are within and beyond Council's control
- Identifying opportunities for greenhouse gas emissions reductions, which can lead to improved efficiency and cost savings
- Building understanding and commitment to greenhouse gas emission reduction across our organisation
- Influencing Council's supply chain and procurement decisions to ensure that Council suppliers and contractors reduce their environmental impact
- Potentially, impacting positively on the environment through the purchase of carbon offsets with identified social and environmental benefits.

6. Legislative and policy and context

International Action

The United Nations Framework Convention on Climate Change is the international instrument for action on climate change. The Paris Agreement was developed in 2015 and builds upon the Convention, bringing nations to a common cause to undertake ambitious efforts to combat climate change and adapt to its effects. The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels. It also aims to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius and help countries adapt to the unavoidable impacts of climate change.

Federal Action

In Australia, action is needed by national, state and local governments. Businesses and the community need to understand their role in minimising their greenhouse gas emissions, while being supported to respond to, and prepare for, the expected impacts of climate change.

The Australian Government ratified the Paris Agreement in November 2016. Under the Paris Agreement, Australia has committed to reduce emissions by 26 to 28 per cent below 2005 levels by 2030. This will see emissions per capita halved and the emissions intensity of the economy fall by around 65 per cent. The Australian Government has a number of initiatives in place to meet the target.

State Action

The Victorian Government released its Climate Change Framework in 2016. The Victorian *Climate Change Act 2017* provides the cornerstone of the Framework; it legislates greenhouse gas reduction targets and renewable energy targets. It will commence operation on 1 November 2017. The Victorian *Climate Change Adaptation Plan 2017-2020* sets out how the government will work with business and the community to maximise the opportunities and plan for the unavoidable impacts of climate change. Local Councils have obligations under the *Climate Change Act 2017*, related to greenhouse gas reduction targets, actions to achieve the targets, reporting on greenhouse gas emissions and progress towards meeting targets. This Plan sets out Council's targets and associated actions and identifies its approach to monitoring, reporting and evaluation and verification.

The Victorian Government has a goal that Victoria will produce zero net emissions by 2050, and through Sustainability Victoria, is running the 'Take2' pledge program to help meet this target by creating momentum and commitment to fight climate change and to help keep the global temperature rise to under two degrees. Pledging enables Council to state its commitment in relation to reducing greenhouse gas emissions as a result of council activities. The 'Take2' pledge is:

"Working together, we pledge to play our part and take action on climate change for Victoria, our country and our planet."

Local Action

To inform its policy and program development, Sustainability Victoria carried out social research, which found that 78 per cent of Victorians think climate change is an issue that requires urgent action now, and that the majority of Victorians (87%) want action from local government on climate change¹.

In 2012 Council adopted its *Climate Change Strategy – A Plan for Council’s Operations*. This provides the framework in which risks to both Council and the community as a result of the expected impacts of climate change have been identified. The *Climate Change Strategy* identifies Council’s action plan to manage and respond to climate change risks and to minimise its contribution to climate change. As well as adapting to climate change impacts, local government has an opportunity to show leadership and reduce its contribution to climate change.

In 2017, Council developed the Bayside Community Plan which identified a desire for environmental and sustainability improvements. The Council Plan 2017-2021 includes a strategy “to be carbon neutral by 2020”.

7. Key principles

The following principles guide the development and implementation of the Carbon Neutral Plan:

1. A demonstration of the commitment to address Council’s contribution to climate change through achieving carbon neutrality;
2. A strong evidence-base for decision-making on action to reduce greenhouse gas emissions, assessing the economic, environmental and social impacts of actions (for example, through detailed analysis of energy efficiency opportunities at Council buildings);
3. A whole of organisation approach involving staff, contractors, suppliers and partners to avoid, reduce and offset greenhouse gas emissions;
4. Monitoring and reporting on greenhouse gas abatement using established frameworks and communication of outcomes of actions to Council and community; and
5. Ensuring actions deliver expected outcomes and learnings, and improvement opportunities are captured and incorporated into future planning.

8. Vision statement

Council’s contribution to climate change is minimised by avoiding fossil fuel use, improving energy efficiency, increasing renewable energy and ensuring that Council staff have support to achieve Council’s carbon neutrality goal. Council’s decisions are aligned with the carbon neutrality goal; procurement, leasing and building design prioritises carbon neutrality.

¹ Sustainability Victoria 2017 – Climate Change Social Research

9. Goals and strategic objectives

The goal of the Carbon Neutrality Action Plan is to achieve carbon neutrality for Council operations by 2020.

Council will achieve this goal by fulfilling the following strategic objectives which are aligned with the Environmental Sustainability Framework.

1. **Avoid greenhouse gas emissions**, by enabling Council staff to change behaviour and contribute to the achievement of Council's carbon neutrality goal
2. **Reduce greenhouse gas emissions from Council buildings and assets**, by 30% compared to 2012/2013

This includes Council owned and operated buildings and other assets, and excludes public street lights.

3. **Increase the amount of energy from renewable sources for Council operations**, by 30% compared to 2012/2013
4. **Reduce the greenhouse gas emissions intensity from Council's fleet and staff travel**, by 30% compared to 2012/2013
5. **Reduce Council's total organisational greenhouse gas emissions**, by 5% each year
6. **Accurately measure and report** on Council's greenhouse gas emissions, with independent verification.

Reporting includes all greenhouse emissions reduction activities and progress towards Council's carbon neutrality goal, ensuring accuracy and transparency of Council's carbon inventory through independent verification.

10. Methodology

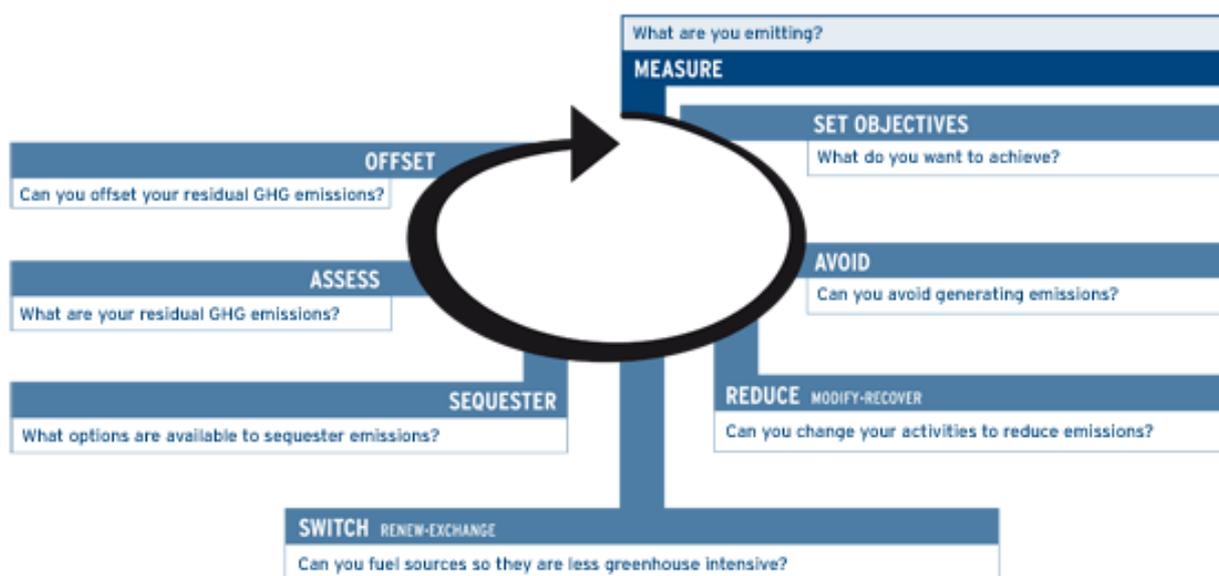
Carbon Management Framework

Council will adopt the following carbon management framework, which is based on EPA Victoria's carbon management framework shown below in Figure Two. It incorporates the energy hierarchy and will guide the development and prioritisation of actions:

1. **Measure and set objectives:** Develop a greenhouse gas inventory to quantify emissions attributed to Council's business and identify objectives for greenhouse gas emissions reduction.
2. **Avoid emissions - Council leadership:** Council will lead the way to ensure that its activities are aligned with its carbon neutral goal. Council processes, such as procurement will support achievement of the carbon neutral goal through the provision of behaviour change programs and technical guidance and support.
3. **Implement energy efficiency works:** Working across Council and with partners to achieve greatly improved energy efficiency in Council buildings and other assets such as public streetlights, buildings fixtures and fittings, incorporating low-carbon asset design, building maintenance and upgrade practices, specification of construction materials and fixtures and fittings.

4. **Where feasible, install renewables:** Work across Council, with contractors and energy suppliers to replace existing fossil fuel-based generation with renewable energy, which includes on site generation as well as the consideration of sourcing energy from large scale renewable projects.
5. **Switch to lower impact fuels:** Work across Council, with suppliers and contractors to switch end-use energy supplies from highly carbon-intensive fossil fuels in transportation, buildings, and industry to lower emission fuels (e.g. hybrid and electric vehicles in Council fleet rather than unleaded petrol).
6. **Assess, Sequester and Offset:** Council will assess residual emissions resulting from its operational emissions and work with external offset providers to purchase greenhouse gas abatement to reduce net organisational emissions to zero. Offsets will be purchased according to a criteria established based on the best outcome (environment, social and economic) for each tonne of greenhouse gas abatement. When an offset is purchased from a third party it is helping to fund a project that will reduce emissions in another location.

Figure Two: EPA's Carbon Management Framework²



Identifying and prioritising opportunities

The proposed pathway to carbon neutrality includes the results of energy efficiency opportunities assessments and a comparison of the cost of one tonne of greenhouse gas abatement for a range of energy efficiency and renewable energy actions. The following approach has been used to prioritise actions:

1. Maximise carbon reduction
2. Prioritise lowest marginal cost of abatement
3. Look for co-benefits

Community engagement with key stakeholders (both internal and community stakeholders) during the development of Council's Community Plan, ESF and Climate Change Strategy has contributed to the development of this Plan. The Plan draws on the results of energy

² http://www.epa.vic.gov.au/business-and-industry/lower-your-impact/carbon-management-at-work#_offset

opportunities audits and a Solar Feasibility Study. It is consistent with best practice carbon accounting and greenhouse gas management principles, including the National Carbon Offset Standard³, EPA Victoria's Greenhouse Gas Management Framework⁴ and the International Greenhouse Gas Protocol⁵.

Council's Carbon Inventory

In accordance with the National Carbon Offset Standard, Council has established its emissions boundary, collected data on identified emissions sources and catalogued emissions sources within the boundary and calculated the carbon account attributable to the organisation. Using 2012/2013 as its base year, it has identified sources within its organisational boundary as follows:

- Buildings and other assets – purchased electricity and gas
- Street lights – purchased electricity
- Fleet – purchased fuel
- Waste from council operations
- Purchased copy paper
- Staff air travel

Within the organisational boundary, emissions are categorised as resulting either directly or indirectly from Council's emissions. Direct emissions are generated directly from sources owned or controlled by the organisation, for example, emissions from Council's vehicle fleet. Indirect emissions are emissions produced from activities at a Council asset, for example electricity use in Council owned and operated buildings.

Emissions sources are categorised in relation to the source of the emissions and the extent of operational control Council has over the emissions sources.

Scope 1 includes greenhouse gas emissions that are generated on-site from Council activities.

Scope 2 greenhouse gas emissions are those from purchased electricity consumed at Council owned and operated buildings and other assets.

Scope 3 includes greenhouse gas emissions from the full fuel cycle of Council's energy purchases, i.e. the extraction, production and transport of fuels and energy, as well as emissions from other activities or goods and services associated with Council activities.

Bayside will continually reassess the relevance of additional emissions sources for inclusion in the inventory.

³ Commonwealth of Australia, 2017; The National Carbon Offset Standard for Organisations

⁴ http://www.epa.vic.gov.au/business-and-industry/lower-your-impact/carbon-management-at-work#_offset

⁵ World Resources Institute and World Business Council for Sustainable Development, 2004: The Greenhouse Gas Protocol: A Corporate Reporting and Accounting Standard

Table 1: Bayside City Council’s organisational greenhouse gas emissions boundary 2016/2017

Emissions source
Scope 1 : Direct emissions – emissions that are generated on site from Council’s activities
Emissions from fuel use in Council’s fleet vehicles
Emissions from natural gas use in Council owned and operated buildings
Scope 2: Indirect emissions from purchased electricity consumed by the Council
Emissions from purchased electricity for Council owned and operated buildings
Scope 3: Optional reporting category which includes all other indirect emissions sources, e.g. purchased electricity at Council owned, leased buildings
Emissions from purchased electricity for Council owned, leased buildings*
Emissions from purchased gas for Council owned, leased buildings*
Emissions from use of the reticulated water supply
Emissions from Council’s contractors and consultants (to be included from 2018/2019)
Emissions from air travel
Emissions from the production of purchased paper
Emissions from Council generated waste to landfill (not community waste to landfill)
Emissions from purchased electricity for streetlights
Full fuel cycle for emissions from fleet fuel use and electricity and gas use at Council owned and operated buildings.

*currently includes only Sandringham Family Leisure Centre and Council Depot

Figure 3: Council's greenhouse gas emissions from Council operations including streetlights for financial years 2012/2013-2016/2017 (actual) and predicted emissions from 2017/2018-2019/2021

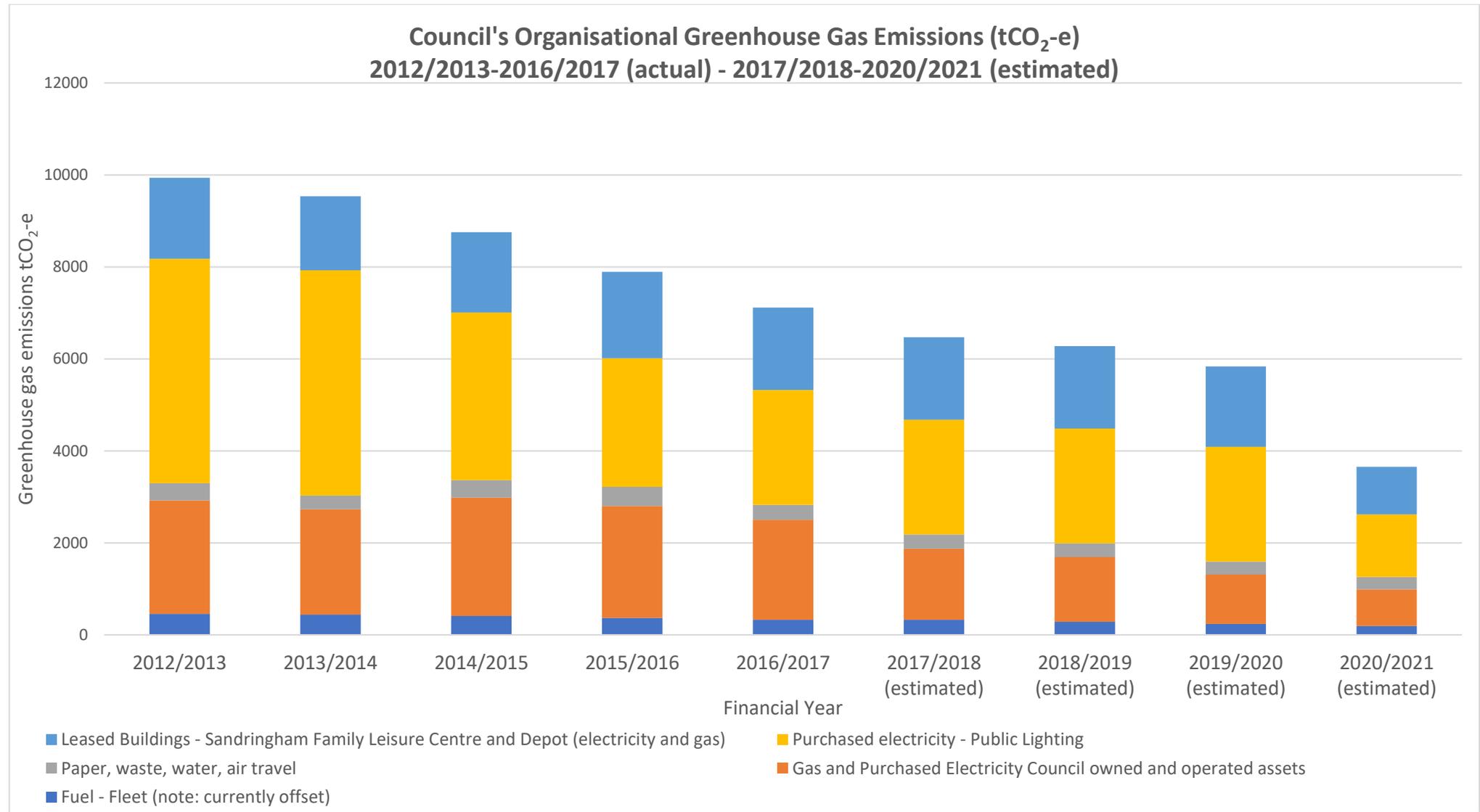
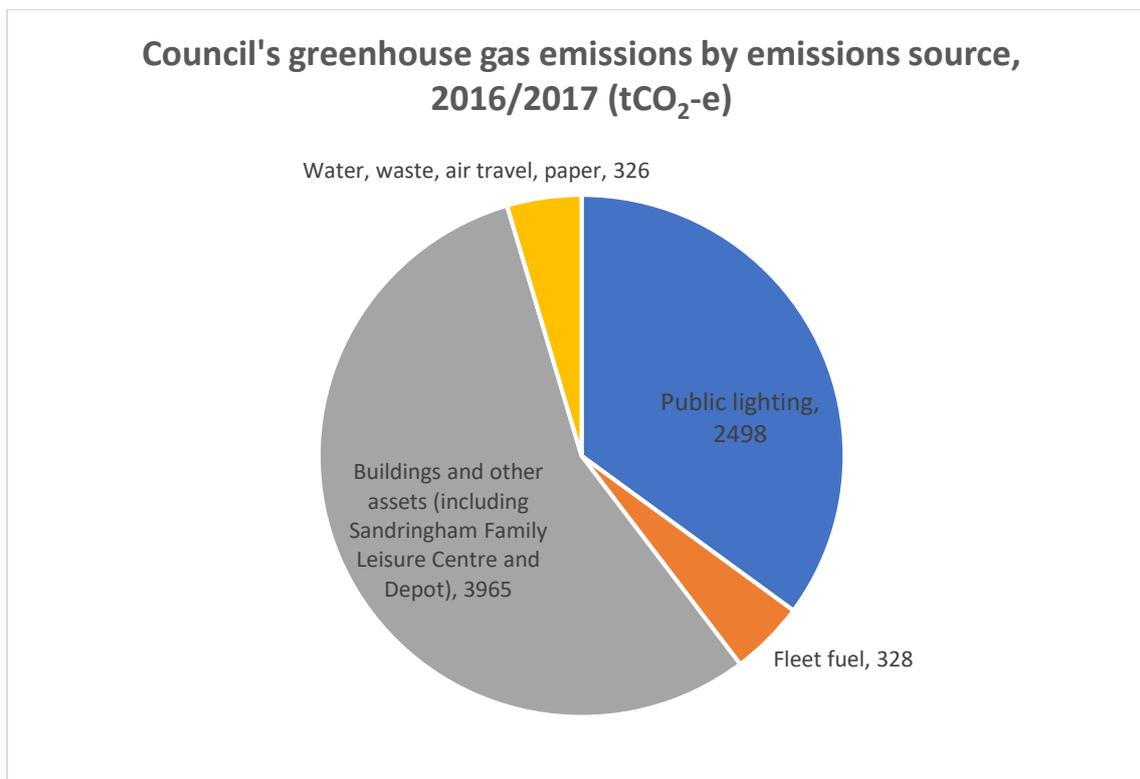


Figure 4: Council's annual 2016/2017 greenhouse gas emissions by source



Figures Three and Four show that energy use in buildings and other assets is the largest source of Council's greenhouse gas emissions. Public street lighting makes up a large proportion of emissions, followed by the Sandringham Family Leisure Centre and the Depot, which Council leases to tenants (and for which Council collects data). Council will investigate the purchase of renewable, off site electricity, and while not represented in Figure Three, this would further reduce emissions from buildings and public lighting.

In future, emissions from Council's contractors (e.g. fuel use as a result of Council activities) will be included in Council's organisational emissions boundary. While Council cannot directly control contractor emissions, it can influence emissions reductions for these activities. Council will work with contractors and through procurement processes to more accurately estimate these emissions, reduce and offset as appropriate.

While Council does not have operational control of tenants in its leased buildings, Council will work with tenants in community buildings to assist in reducing greenhouse gas emissions as appropriate and as agreed as per lease and licence agreements.

Emissions from Council contractors and leased buildings.

A preliminary review of emissions from contractors and service providers has been estimated to add approximately 3,800 tonnes of carbon dioxide equivalent to Council's emissions inventory. Council currently collects data on energy consumption in its two largest leased buildings however does not collect data on the remaining buildings. As such, Council cannot currently accurately quantify emissions from the majority of leased buildings.

11. Infrastructure assets

The following assets are prioritised for energy efficiency works and/or renewable energy installation (i.e. solar panels). The works will be informed by energy efficiency opportunities audits and the solar feasibility study.

Table 2: Assets prioritised for Energy efficiency and renewable energy installation

Council owned and operated buildings	Community buildings	Other assets
Libraries	Recreation Centres	Fleet
Maternal and Child Health Centres	Sporting pavilions	Public lighting – shared lights (VicRoads lights)
Corporate Centre	Sandringham Family Leisure Centre	
Senior Citizens Centres	Council Depot	
Community Centres		

12. Financial analysis

The estimated costs and annual greenhouse gas emissions reductions over the life of the Plan are shown below.

Table 3: Estimated Costs and greenhouse gas emissions reductions, grouped by Action Type.

Action	Estimated Total Cost (\$)	Estimated annual emissions reductions (tCO₂-e)
Avoidance: Behaviour change, Procurement, Sustainable building design and practices	13,000	Not quantifiable
Energy efficiency	758,000	1,000
Renewable energy	1,170,000	800
Sustainable Transport	15,000	135
Offsets	To Be Confirmed Estimated Range from 9,000-135,000	Residual emissions after avoidance, energy efficiency and renewable energy actions
Monitoring, Verification and Audit	20,000	Not Applicable

13. Implementation and reporting

Approach to Implementation

Council will focus on reducing greenhouse gas emissions from sources that it directly controls, and/or can be accurately measured. Priority is placed on funding activities that will directly reduce energy use and the reliance on fossil fuels. This includes reducing greenhouse gas emissions from the following sources:

- Buildings and other Council assets
- Transport (fleet)
- Public lighting and street lights

It is not practical for Council to set reduction goals and/or to commit to actions to reduce emissions from its contractors and consultants, because it does not have control over their operations and cannot accurately measure emissions without relying on a third party for the information. Council can however, influence the following greenhouse gas emissions sources and activities:

- Community buildings leased by Council to tenants
- Commercial buildings leased by Council to tenants
- Building tenants and users
- Council staff
- Procurement (including service providers such as consultants, contractors and banking)
- Materials selection (i.e. reducing the embodied energy in materials).

The activities to achieve our Carbon Neutral goal can be broadly described under the following areas:

- Behaviour Change – educating and enabling our staff, contractors, building users, and service providers to reduce their environmental impact
- Capital Works – installing more energy efficient technology and renewable energy to improve our buildings and assets
- Procurement – buying goods and services that reduce our environmental impact, and purchasing offsets
- Monitoring and Reporting – ensuring we are accurately measuring our progress.

Achievements and future actions

The following is a list of actions to date and future actions, to achieve the strategic objectives of the Carbon Neutrality Action Plan.

1. **Avoid greenhouse gas emissions**, by enabling Council staff to change behaviour and contribute to the achievement of Council's carbon neutrality goal

Activity to date

- Work with sports clubs to improve energy efficiency through the 'Save it for the Game' program.
- Encourage staff to participate in the 'Eco-Driver' efficient driving program.
- Provide sustainable transport options for staff as alternatives to car travel, e.g. Myki cards for staff travel for work purposes.

- 'Working Greener' behaviour change campaigns focussed on paper use reduction and waste management at Council buildings.

Future actions

- Engage staff in actions and initiatives to encourage energy efficiency at Council buildings through the 'Working Greener' Program.
- Continue to reduce emissions from Council's fleet and from staff travel, through the 'Eco-Driver' efficient driving program
- Increase awareness of Council's carbon neutral goal and the role of all staff in supporting its achievement (e.g. living within set thermal comfort parameters).
- Work with suppliers and contractors to better understand emissions and identify opportunities to help achieve Council's carbon neutral goal.
- Ensure Council policies, programs and procurement practices reflect and are aligned with Council's carbon neutral goal.
- Ensure that Council's Building Maintenance Team has suitable guidance and support to implement energy efficiency measures as buildings are upgraded.
- Provide Council staff with support to design, build and maintain reductions in greenhouse gas emissions in buildings.
- Join the Victorian Government's 'Take2' program to demonstrate Council's commitment to reducing emissions.

2. Reduce greenhouse gas emissions from Council buildings and assets, by 30% compared to 2012/2013

Activity to date

Energy Efficiency works at Council Buildings:

- Bayside Corporate Centre (in progress)
- Beaumaris Library (complete)
- Brighton Library (in progress)
- Brighton, Beaumaris and Hampton Senior Citizens Centres (complete)
- Installation of energy efficient fixtures and fittings (e.g. LED lighting, air conditioners) at several Council buildings as maintenance and upgrades occurs (ongoing).
- MV80 Mercury Vapour street lights, while not Council's assets, have been upgraded to more efficient fluorescent and LED lights or removed which saves electricity consumption and costs, greenhouse gas emissions and maintenance costs. Over 5,000 lights have been upgraded and almost 300 removed and not replaced.
- Energy efficiency opportunities studies and audits have been completed to better understand energy efficiency opportunities at Council's buildings.

Future Actions

Energy Efficiency in Council Buildings

- Continue to reduce greenhouse gas emissions produced in Council buildings through energy efficiency improvements. In particular works at the following buildings:
 - Corporate Centre heating and cooling upgrades, lighting upgrades and building management system improvements
 - Brighton Library and Council Chambers lighting upgrade
- Energy efficient lighting and appliance upgrade at other Council buildings
- Explore opportunities to reduce greenhouse gas emissions from public lighting

3. **Increase the amount of energy from renewable sources for Council operations,**
by 30% compared to 2012/2013

Activity to date

- Solar panels have been installed on the following buildings:
 - Brighton Seniors Citizens Centre (8kWp)
 - Beaumaris Senior Citizens Centre (8kWp)
 - Bayside City Council Corporate Centre (99kWp)
 - Beaumaris Library (45kWp)
 - Beaumaris Community Centre (5kWp)
 - Toilet Block, Hampton (1.36kWp)

Future Actions

- Increase the amount of on-site renewable energy at Council owned community buildings
 - Install solar hot water and/or energy efficient hot water at Council buildings
 - Explore options for procurement of off-site renewable energy.
4. **Reduce the greenhouse gas emissions intensity from Council's fleet and staff travel,**
by 30% compared to 2012/2013
- Continue to reduce fleet greenhouse emissions through driver behaviour, providing alternatives for car travel and through smaller and/or more fuel efficient vehicles (including alternative fuels).
 - Continue provision of Myki cards for staff travel for work purposes.
 - Downsize number and size of Council fleet vehicles and purchase smaller, more fuel efficient vehicles
 - Continue to deliver the 'Eco-Driver' efficient driving program for Council staff
5. **Accurately measure and report** on Council's greenhouse gas emissions, with independent verification.

Activity to date

- Council reports in line with the Greenhouse Gas Protocol Corporate Standard and the National Carbon Offset Standard. It reports on its organisational emissions in its Annual Report.

Future Actions

- Biennial verification of Council's carbon inventory
- Work with Council's largest contractors, consultants and service providers to quantify and report on greenhouse gas emissions attributed to services provided to Council.
- Continue communication and engagement with the Victorian State Government and the Bayside community regarding Council's carbon neutral commitment and progress towards carbon neutrality.
- Report on progress towards carbon neutrality objectives through the ESF reporting frameworks.

6. **Reduce Council's total organisational greenhouse gas emissions,** by 5% each year

Activity to Date

Offset residual emissions

- Council currently offsets its vehicle fleet emissions with *Greenfleet*. Through the purchase of *Greenfleet* offsets, trees are planted in Australia to restore forests, sequestering carbon and creating biodiverse habitats.

Future Actions

- Encourage (and where appropriate require) contractors to offset greenhouse gas emissions attributed to their fuel emissions resulting from work for Council
- Use Council's procurement process to encourage the purchase of reduced greenhouse gas emissions options for goods and services
- Identify criteria for the purchase of offsets and ensure that Council offsets its residual emissions in line with established criteria.
- Identify criteria for offsets to ensure that their purchase meets the needs of Council and the community.

Monitoring

Council will implement the following programs to monitor its progress towards carbon neutrality:

- Real time monitoring of energy use at Council's Corporate Centre
- Monitoring of energy consumption data for Council buildings, provided by Council's energy provider
- Monitoring of contractor greenhouse gas emissions, in particular fuel emissions
- Monitoring of fuel consumption from Council's fleet
- Monitoring of renewable energy production on Council owned and operated buildings.

Reporting

Annual reporting through Council's Annual Report and Environmental Sustainability Framework will be provided on the Council website, and in Council newsletters as appropriate.

Council will have its greenhouse gas emissions inventory audited by an independent auditor to ensure that it meets the *National Carbon Offset Standards*.

Evaluation

Council will evaluate the implementation of actions and use its greenhouse gas emissions inventory to measure progress against targets. It will measure the outcomes of its work and document the implementation of programs and activities, quantifying the resultant greenhouse gas emissions reductions and residual emissions to be offset. The emissions inventory and annual greenhouse report will be independently verified to provide confidence to Council and the community.

14. Key Stakeholders

While the Plan is an internally-focussed document related to Council's operations, it is a demonstration to the community that Council is committed to using resources wisely, reducing its contribution to climate change and investing now in renewable energy to eventually reduce ongoing costs. The Plan also contains a commitment to join the Victorian Government's 'Take2' initiative, a pledge program for community members and organisations to play their part in limiting global temperature increases to below 2°C. The *Bayside Climate Change Action Group* has been engaged in the development of the Plan.

Table 4: Carbon Neutrality Action Plan Stakeholders

Stakeholder group	Internal/ External	Role
Council staff	Internal	Align activities with Carbon Neutrality Action Plan, participate in behaviour change programs, develop policies in accordance with the carbon neutral plan. Take sustainable transport options as appropriate.
Council contractors	External	Report on emissions resulting from work for Council.
Tenants of leased/licensed buildings	External	Liaison for renewable energy. Partner in behaviour change programs.
Bayside residents	External	Information provision to community on progress towards carbon neutrality
Sustainability Victoria	External	'Take2' Program administration

15. Program of capital works

The following capital works projects/programs are required to achieve the strategic objectives of the Carbon Neutral Plan.

Table 5. Planned Capital Works

Priority (or timeframe)	Capital project	Estimated costs	Resourcing
2017/2018-2019/2020	Sustainable Building Program: Energy efficiency at Council owned and operated buildings	\$150,000 annually (approx.)	Capital Expenditure
2017/2018-2019-2020	Sustainable Building Program: Renewable energy at Council owned and operated buildings and community facilities	\$390,000 annually (approx.)	Capital Expenditure
2017/2018-2019/2020	Sustainable Building Program: Energy efficiency at community buildings	\$50,000 annually	Capital Expenditure
2018/2019-2019/2020	Plan and Upgrade VicRoads lighting *Note – further work is to occur to investigate feasibility and explore project and its funding arrangements with VicRoads	\$825,000 (estimated and to be confirmed)	VicRoads and Council Capital Works program

With the exception of VicRoads street lighting works, the capital costs above have been considered and included in Council's long time financial planning.

16. References

Point Advisory, 2015; Carbon Neutral Status Review and Action Plan: Reports One to Four
Enhar, 2015; Solar PV Feasibility Study and Energy Efficient Hot Water

Bayside City Council: 2012; Climate Change Strategy 2016: A Plan for Council Operations

World Resources Institute and World Business Council for Sustainable Development, 2004:
The Greenhouse Gas Protocol: A Corporate Reporting and Accounting Standard,

EPA Victoria, 2014: EPA Victoria's greenhouse gas inventory management plan, Publication
1562.

Municipal Association of Victoria, 2010: The Victorian Local Government Guide to reducing
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Sustainability Victoria 2017 – Climate Change Social Research



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We acknowledge the Boonwurrung people of the Kulin Nation as the traditional owners of this land and we pay respect to their Elders past and present.

We acknowledge that together we share a responsibility to nurture this land, and sustain it for future generations.