



# Zero Carbon Emissions Strategy - Background and context

Council has identified climate change, population growth, liveability and the local economic model as key drivers affecting the City's future.

Particularly relevant to this Zero Carbon Emissions Strategy is action on climate change and the rapid change to industry affecting the local economy.

## City of Greater Geelong Demographics (15/16)

**235,000** estimated residential population. This is forecast to grow to 320,800 by 2036. **760** Council building asset portfolio

**1,247** kilometres<sup>2</sup> area

**\$5.5 million** Council annual energy costs

**1.6%** annual population growth, or 3,860 persons per annum.

**178,000** kilowatt hours of energy generated by Council from renewables or 1.3% of total electricity used in buildings.

**2.4** persons- average household size

## Climate Change

The City of Greater Geelong accepts the Intergovernmental Panel on Climate Change (IPCC) consensus that human induced climate change is real and the associated impacts will have an affect in the region, impacts include:

- a higher risk of bushfires during summer
- more hot days and heat waves
- fewer frosts
- lower average rainfall coupled with an increased intensity of storms
- higher sea levels, leading to a greater likelihood of coastal inundation and erosion across the region

These impacts present challenges for community wellbeing, health and safety, and could produce a significant economic burden of infrastructure repair, insurance and environmental rehabilitation costs.

## Federal policy context

Significant changes in state and federal climate change policy have occurred since the Greenhouse Response 2008-2011 was developed.

The current federal government has repealed the carbon pricing legislation and replaced it with a Direct Action Policy.

The Direct Action Policy provides funding for those who can reduce emissions for the lowest cost, and is intended as the key tool to be used to meet Australia's greenhouse emissions reduction targets.

The Renewable Energy Target (RET) sets a requirement for 20 per cent of Australia's energy consumption (33,000 gigawatt hours) to be sourced from renewable energy generation by 2020.

In November 2016, the Australian Government ratified the Paris Agreement. The Agreement has been ratified by over one hundred countries and aims to limit average temperature increase to below 2°C and pursue efforts to keep warming below 1.5°C above pre-industrial levels. Ratification of the agreement supports Australia's national greenhouse gas emissions reduction target to reduce greenhouse gas emissions to 26 to 28 per cent below 2005 levels by 2030.

## State policy context

The Victorian Climate Change Act 2010 came into effect in 2011. During 2015/2016, the Victorian state government commenced the development of a Climate Change Action Package, including:

- a review of the Victorian Climate Change Act
- the development of a Victorian Climate Change Action Plan
- the development of a Victorian Renewable Energy Roadmap, and
- Victoria's Energy Efficiency and Productivity Statement June 2015.

In January 2017, the Victorian state government announced its commitment to reducing greenhouse gas emissions by releasing Victoria's Climate Change Framework. This framework sets out a long-term plan for achieving net zero emissions by 2050. Key elements of the framework include:

- legislation of a long-term target for Victoria of net zero greenhouse gas emissions by 2050
- setting a renewable energy target for Victoria for 25 per cent of electricity generated in the state to come from renewable energy by 2020 and 40 per cent by 2025
- launching the Take2 pledge program that the City of Greater Geelong has signed up to as a founding partner. Take2 is Victoria's collective climate change initiative to reach net zero emissions by 2050 and to keep global temperature rise to under 2 degrees
- the Victorian Energy Efficiency Target (VEET) scheme encourages energy efficiency improvements by businesses and industry. The scheme was strengthened in 2015 and set updated targets and long-term aspirations for the scheme.

## Local context

The City of Greater Geelong is a member of regional bodies seeking a sustainable future for the region, including Geelong Region Alliance (G21) and the Western Alliance for Greenhouse Action (WAGA). G21 is a formal alliance of government, business and community organisations working together to improve the lives of people within the Geelong region across five municipalities – Colac Otway, Golden Plains, City of Greater Geelong, Queenscliffe and Surf Coast. G21 has eight pillar groups representing the region's key priorities, which include Environment, Planning & Services and Transport.

Projects currently being delivered through the G21 Environment pillar include the Climate Resilient Communities of the Barwon South West (CRCBSW) and a feasibility study of a large scale solar plant. The CRCBSW is a collaboration between ten municipalities to understand and respond to risks and opportunities presented by future climatic changes and extreme weather events. The large scale solar feasibility study is a partnership project between the City of Greater Geelong and Barwon Water that will assess the feasibility of a solar plant (up to 3MW) at the former Corio Landfill.

The Western Alliance for Greenhouse Action (WAGA) is a local government partnership that brings together interested councils committed to collaboratively responding to climate change in Melbourne's western region. WAGA's membership includes: Greater Geelong, Brimbank City Council, Hobsons Bay City Council, Maribyrnong City Council, Melton City Council, Moonee Valley City Council, Wyndham City Council and Moorabool Shire Council.

Low Carbon West is a strategy endorsed by WAGA Councils and is a blueprint for transitioning to a low carbon economy.

Low Carbon West provides an opportunity for industry in Geelong to become more efficient and generate significant economic savings. A low carbon economy also has the potential to attract new investment and new industries, and create new skills and jobs. Figure 1 shows Geelong was the highest contributor to emissions in the WAGA region in 2012 and is projected to grow by 2020.



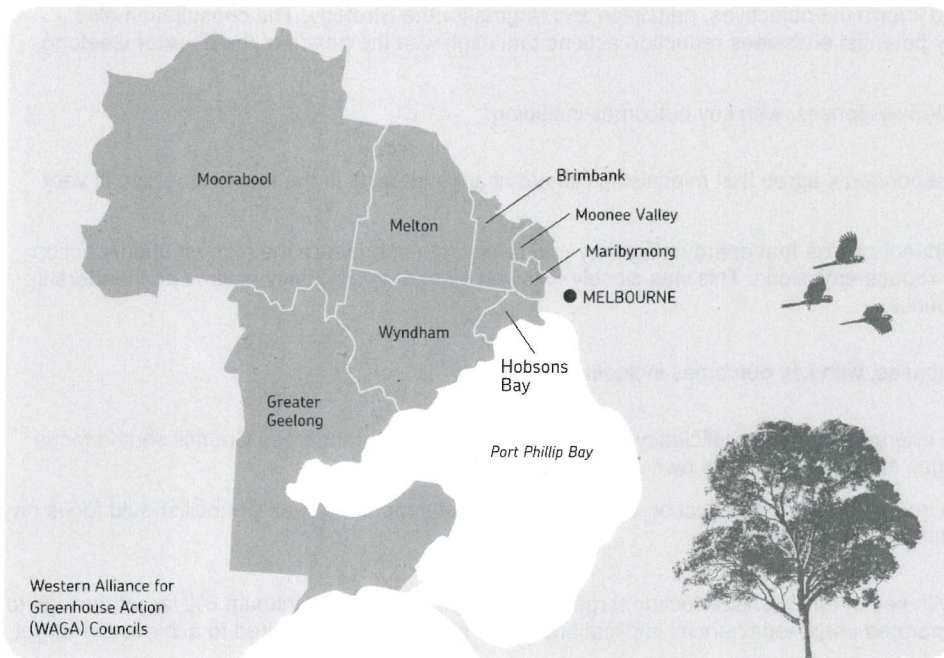
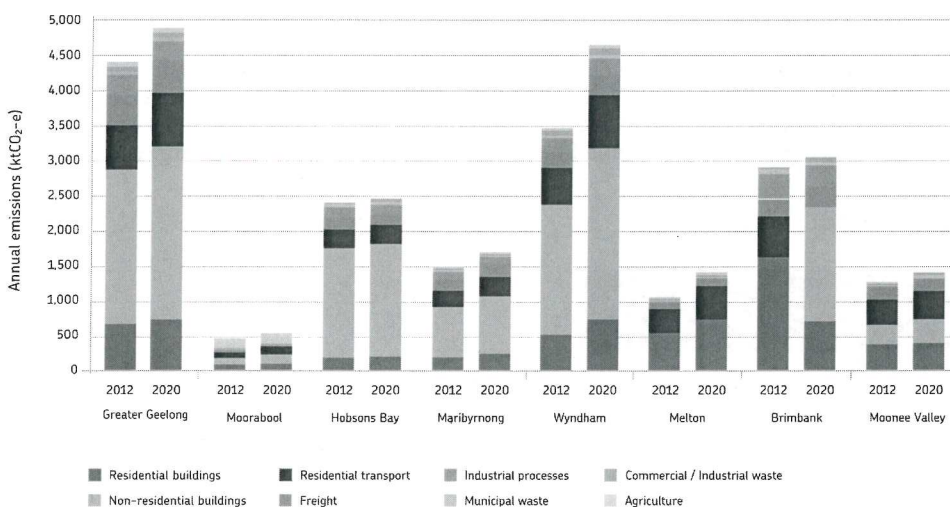


Figure 1: Emissions for the WAGA region broken down by member council and sector in 2012 and projected to 2020 (Source: Low Carbon West)



The decline in traditional sectors such as automotive manufacturing is changing the availability of economic opportunities for businesses and individuals. Diversification of the economy and skills development will support the continued growth of local job opportunities. Council is committed to showing leadership in supporting the community to make this transition, with support to Clean Technology industries. Clean Technologies are defined as economically viable products, services and processes that harness renewable materials and energy sources, dramatically reduce the use of natural resources and cut or eliminate emissions and wastes.

Future Proofing Geelong (FPG) is a group of partners that collaborate on sustainability across industry, business, education, government and community. FPG launched the Low Carbon Growth Plan (LCGP) for Greater Geelong in 2011. The LCGP identifies a range of opportunities that can be implemented now within Greater Geelong to transition to a low carbon economy for the whole community.

Most recently the City has been developing a 30-year vision as part of the Our Future project. Sustainability and resilience within a changing climate context are key themes that are shaping this vision.

## Development of the Zero Carbon Emissions Strategy

During 2014/15, Council gathered feedback on emissions reduction opportunities through:

- surveys of the community and council staff
- workshops and one-on-one interviews with community and business stakeholders.

The aim of the consultation was to inform the objectives, principles and targets for the Strategy. The consultation also provided an opportunity to identify potential emissions reduction actions that align with the needs of the Greater Geelong region.

The community survey received 325 responses, with key outcomes including:

- Over 80% of community respondents agree that minimising climate change impacts in the Geelong region is very important
- A majority of survey respondents agree that energy efficiency and renewable energy are the highest priority action CoGG could implement to reduce emissions. This was closely followed by energy efficiency actions and leadership being demonstrated by Council.

The staff survey received 59 responses, with key outcomes including:

- Staff prioritised renewable energy and energy efficiency actions as the most important areas Council should focus on to reduce greenhouse gas emissions within its own operations
- Staff prioritised renewable energy and waste reduction actions as the most important areas Council should focus on to reduce community greenhouse gas emissions.

In 2016 Council was presented with seven emissions reduction target options ranging from a minimum 8% target through to a 100% target. Each option incorporated projected financial implications and a mix of actions required to achieve the target.

In September 2016, Council endorsed a 50% emissions reduction option.

## Strategic Framework

The Zero Carbon Emissions Strategy is underpinned by strategic directions set out in Council's City Plan and Environment Management Strategy 2014-2017. It is also supported by abatement opportunities identified in the Low Carbon Growth Plan for Greater Geelong. The Environment Management Strategy 2014-2017 supports the Zero Carbon Emissions Strategy through the strategic priority: Council Leadership – Greenhouse and Energy and the One Planet Living Principle: Zero Carbon.

Figure 2: City of Greater Geelong – Strategic Framework

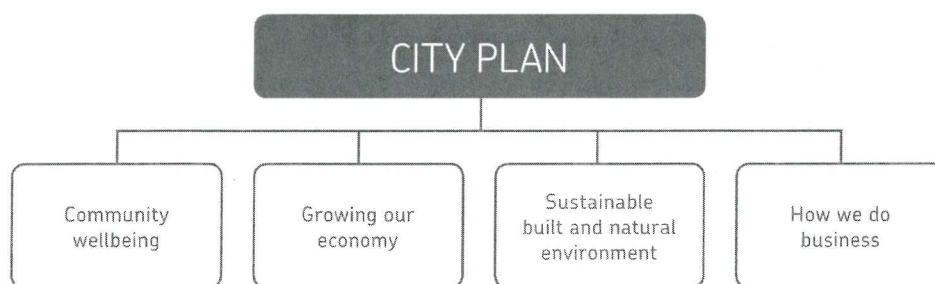


## City Plan 2013-2017

The City Plan 2013-2017 is the key document that guides Council activities. It has four strategic directions:

1. Community wellbeing
2. Growing our economy
3. Sustainable built and natural environment
4. How we do business

Figure 3: City Plan – Strategic Directions



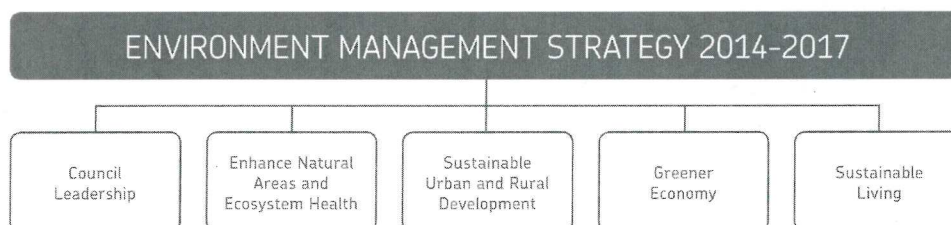
### Environment Management Strategy 2014-2017

The Environment Management Strategy 2014-2017 (EMS) is guided by the ten principles of the One Planet Living framework. The development and implementation of the Zero Carbon Emissions Strategy is a key action of the EMS.

The EMS identifies five strategic priorities:

1. Council Leadership
2. Enhance Natural Areas and Ecosystem Health
3. Sustainable Urban and Rural Development
4. Greener Economy
5. Sustainable Living

Figure 4: Environment Management Strategy – Strategic Priorities

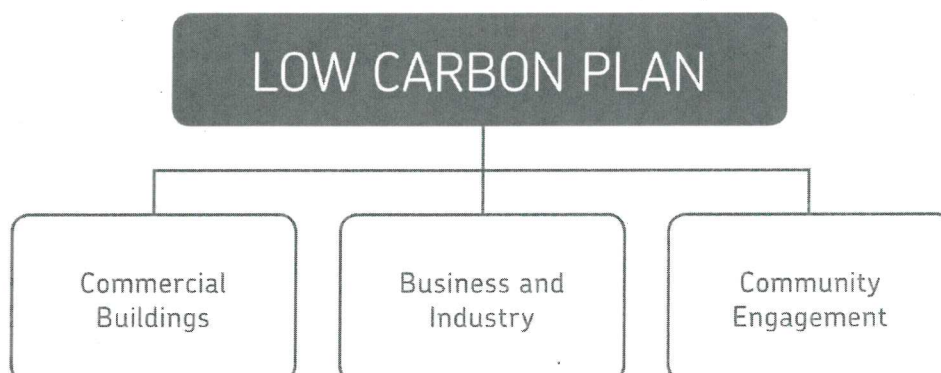


### Low Carbon Growth Plan for Greater Geelong

In 2015 the Low Carbon Growth Plan was updated, three primary areas of focus were identified:

1. Commercial Buildings
2. Business and Industry
3. Community Engagement

Figure 5: Low Carbon Growth Plan for Greater Geelong: Focus Areas



### One Planet Living



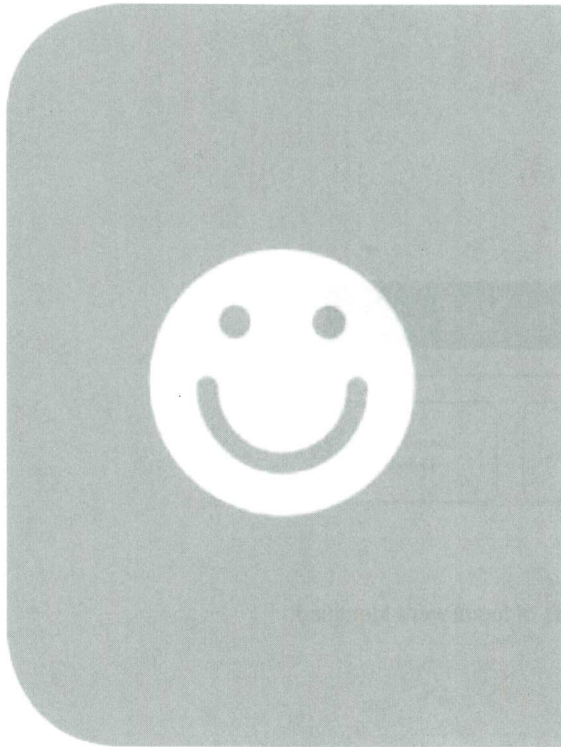
The City of Greater Geelong is a certified One Planet Living Council. One Planet Living is an internationally recognised framework to guide Council's corporate and community environment and sustainability objectives.

The aim of One Planet Living is to help people, projects and organisations work within the limits of our planet's natural resources.

One Planet Living uses ten principles as its framework:

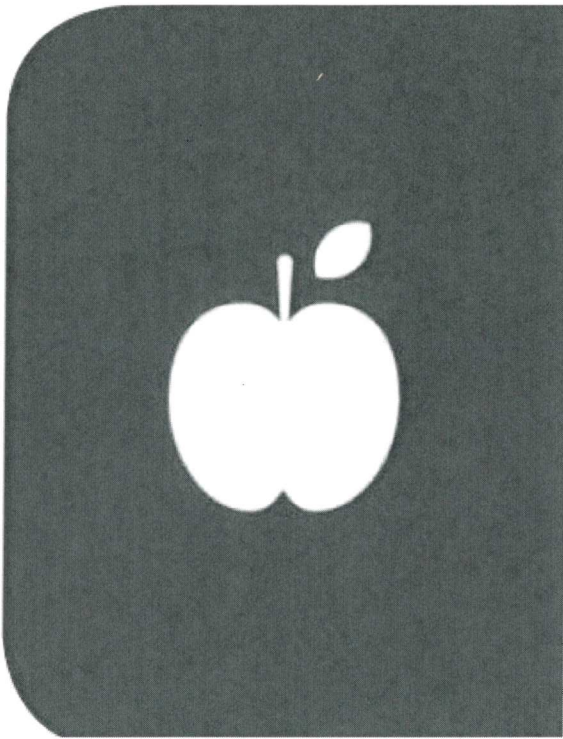


Table 1: One Planet Living Ten Principles



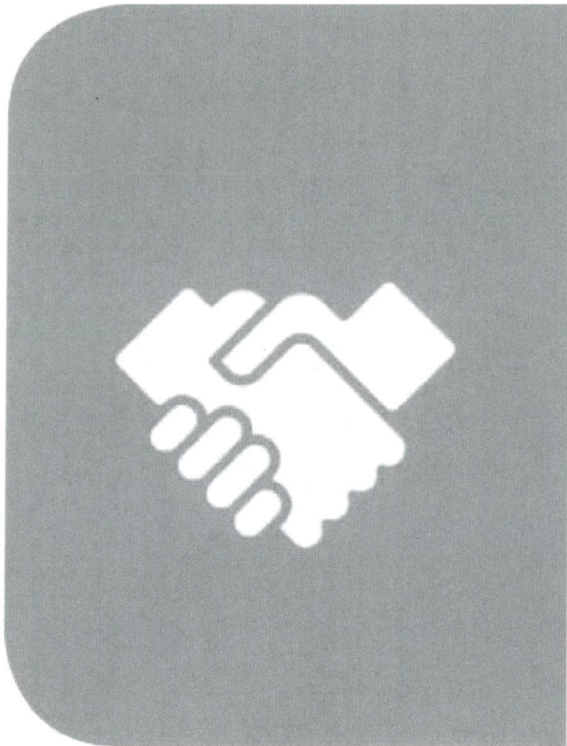
**Health and happiness**

Encouraging active, sociable, meaningful lives to promote good health and well being



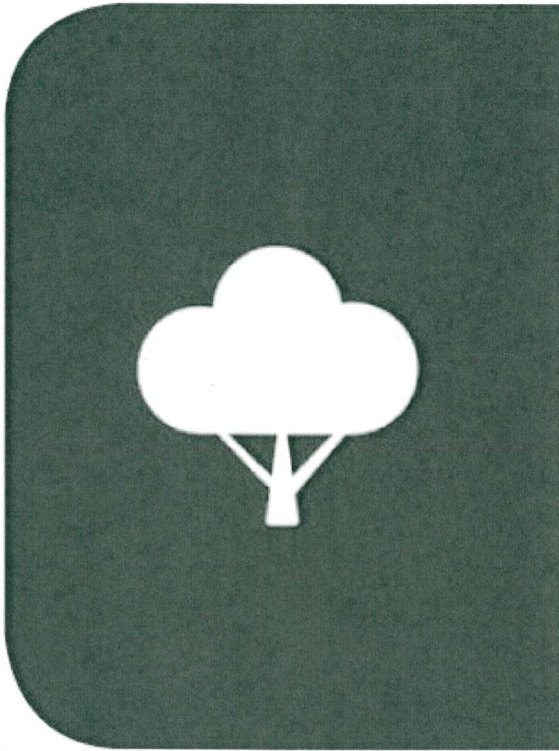
**Local and sustainable food**

Supporting sustainable and humane farming, prompting access to healthy, low impact, local, seasonal and organic diets and reducing food waste



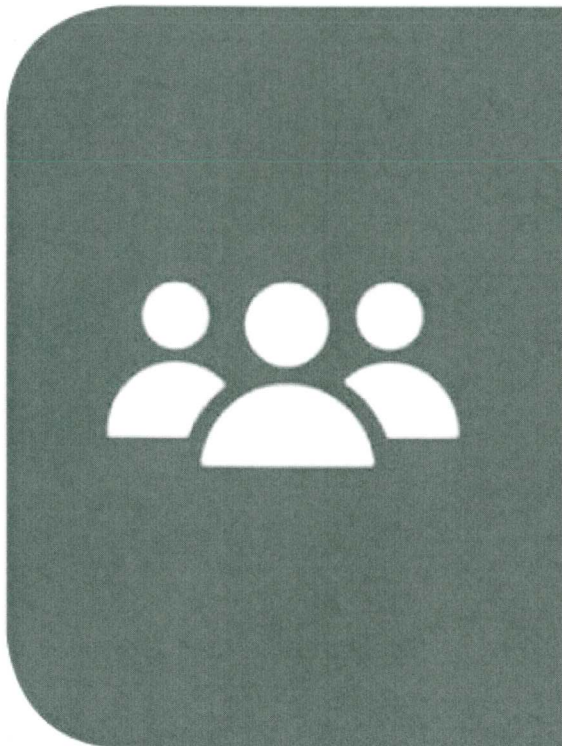
**Equality and local economy**

Creating bioregional economies that support equity and diverse local employment and international fair trade



#### **Sustainable materials**

Using sustainable and healthy products, such as those with low embodied energy, sourced locally, made from renewable or waste resources



#### **Culture and community**

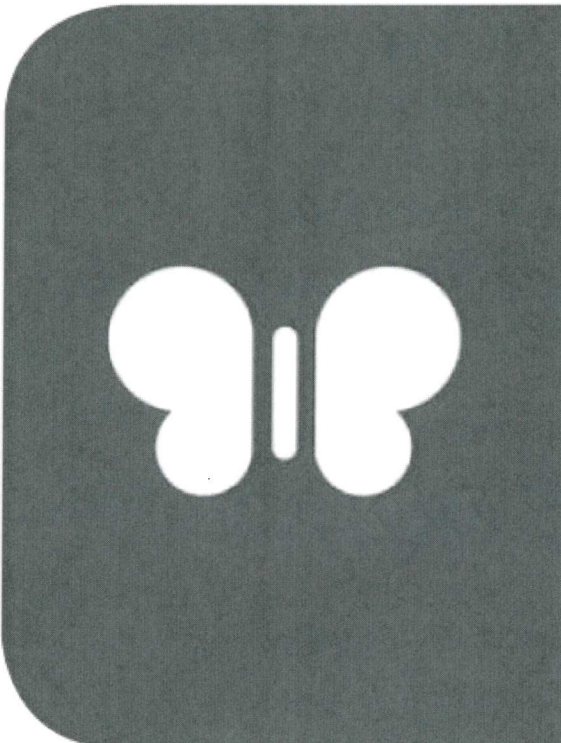
Respecting and reviving local identity, wisdom and culture, encouraging the involvement of people in shaping their community and creating a new culture of sustainability





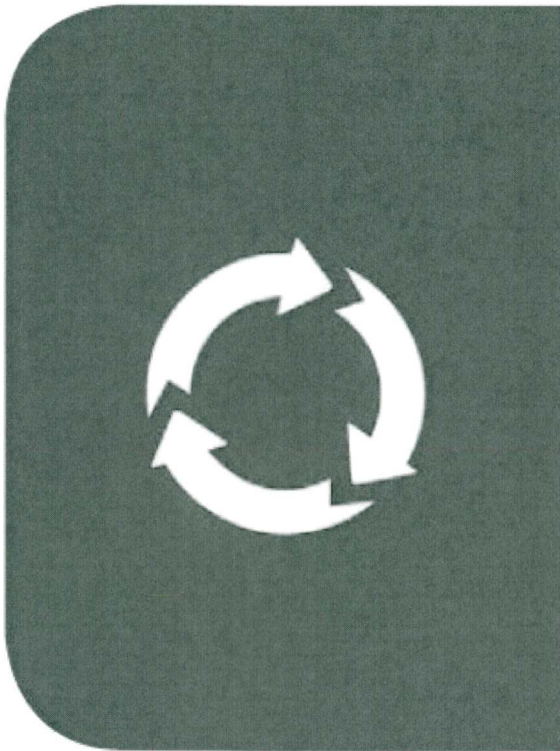
**Sustainable transport**

Reducing the need to travel, and encouraging low and zero carbon modes of transport to reduce emissions



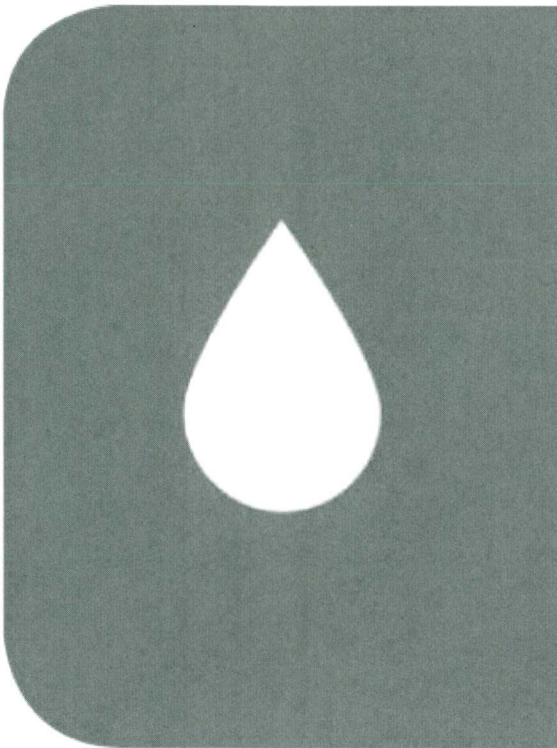
**Land use and wildlife**

Protecting and restoring biodiversity and creating new natural habitats through good land use and integration into the built environment



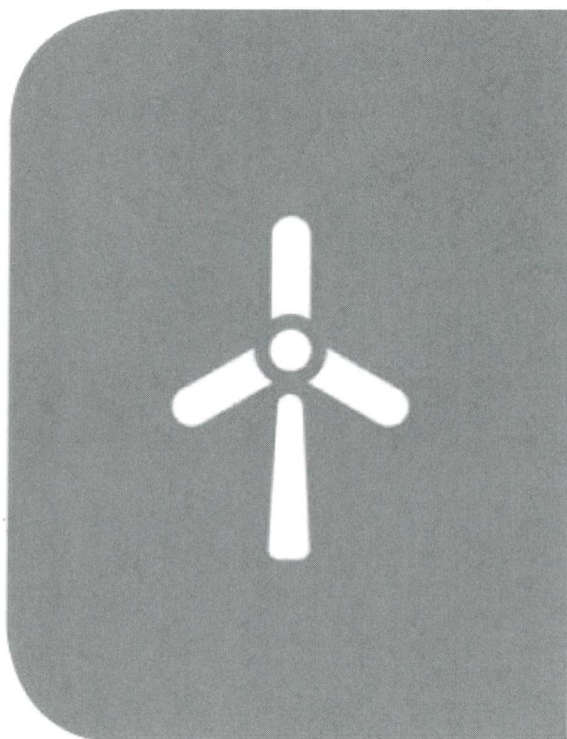
**Zero waste**

Reducing waste, reusing where possible, and ultimately sending zero waste to landfill



**Sustainable water**

Using water efficiently in buildings, farming and manufacturing. Designing to avoid local issues such as flooding, drought and water course pollution



### **Zero carbon**

Making buildings energy efficient and delivering all energy with renewable technologies

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