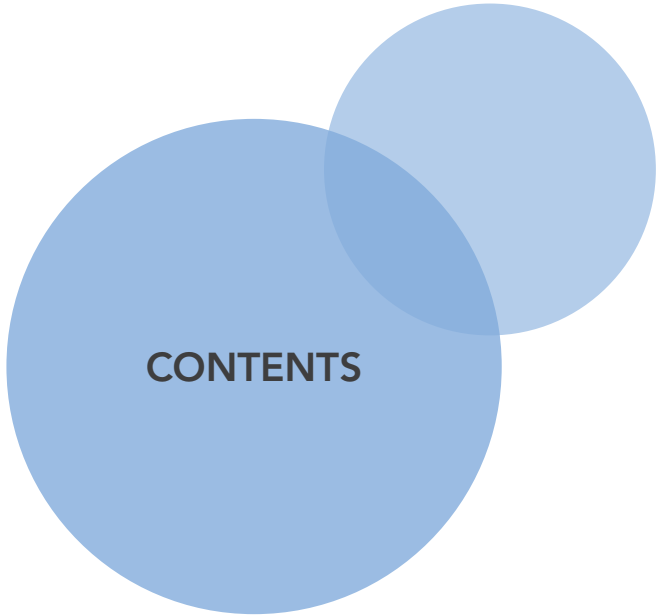


LOW CARBON WEST

A strategy for the transition to a
low carbon economy in the WAGA Region







| | | |
|----|--|----|
| 1. | INTRODUCTION | 1 |
| 2. | THE NEED FOR ACTION | 3 |
| 3. | THE REGION'S EMISSIONS | 4 |
| 4. | SECTORS FOR ACTION | 8 |
| 5. | THE ACTIONS | 10 |
| 6. | OUR COMMITMENT TO IMPLEMENTATION | 16 |
| 7. | MEASURING THE SUCCESS OF LOW CARBON WEST | 18 |



1



1. INTRODUCTION

Low Carbon West is a transitional strategy for the region encompassed by the municipalities in the Western Alliance for Greenhouse Action (WAGA).

The strategy will support the growth of this vibrant and diverse region while limiting the increase in greenhouse gas (GHG) emissions associated with that growth. Action to reduce emissions is necessary everywhere, but the opportunity and need for action are particularly clear in the WAGA region.

This is the fastest growing region in Australia, and its councils and stakeholders are well placed to demonstrate national leadership in responding to the threat of climate change. There is an opportunity to combine continued economic growth with improved carbon productivity; that is, reducing the level of carbon emitted for each unit of output across the region. Transitioning to a low carbon economy will provide a new engine for growth, creating jobs and investment opportunities.

Low Carbon West has been developed by the Western Alliance for Greenhouse Action (WAGA) with project partners LeadWest and Regional Development Australia (RDA) Western Melbourne. AECOM and Arup were jointly commissioned as the project consultants and have led the consultation, analysis and strategy development. Over one hundred people provided feedback and input to inform the Low Carbon West plan.

Low Carbon West fulfils the need for action by local government at a regional level and provides the framework implementation. A regional approach by local government allows the optimisation of resources, sharing of ideas and coordination of projects. The value of this regional approach is increasingly recognised and mirrors the broader outlook of WAGA and co-funders, LeadWest and RDA Western Melbourne.

This overarching report synthesises the key elements of the four sector specific reports for business and industry, urban growth and development, transporting people and freight and communities. Further, it establishes a vision for a Low Carbon West, presents the current and future business as usual (BAU) emissions baseline and establishes priority actions to reduce the region's emissions by 2020.

Vision

Melbourne's West will support a growing, vibrant and diverse economy and will achieve this whilst minimising the increase in GHG emissions associated with the region's growth.

Low Carbon West:

- Defines the GHG emissions for the region based on the best available existing data, and projects this profile into the future under both business as usual and action implementation scenarios;
- Defines a clear sector-based plan for GHG emissions mitigation that is bespoke to the specific characteristics and aspirations of the WAGA councils and funding partners LeadWest and RDA Western Melbourne;
- Provides the means for collaboration and knowledge sharing between WAGA councils, industry and other stakeholders to provide maximum opportunities;
- Will act as a catalyst for direct regional and local communication, and action aimed at driving reductions in GHG emissions from business, institutions, communities and individuals;
- Establishes a road map for the implementation; and
- Outlines an approach for monitoring the progress.

2

“Sustainable development ...meets the needs of the present, without comprising the ability of future generations to meet their own needs.”
(The Western Agenda)

2. THE NEED FOR ACTION

In 2012, the Victorian Government published its first biennial report on climate change and greenhouse gases, *Report on Climate Change and Greenhouse Gas Emissions in Victoria*. The report noted that “the overall warming of the climate in Victoria over the past century has been linked to GHG-related climate change. The recent decline in autumn rainfall and the southward shift in some rain-bearing weather systems may also be partially caused by greenhouse-gas related climate change. Continued global GHG emissions, depending on their level, are likely to lead to warmer conditions in Victoria, reduced rainfall in some seasons, and sea level rise.”

The relationship between GHG emissions and climate change was further reinforced in 2013 when the Intergovernmental Panel on Climate Change (IPCC) released its latest global assessment of climate change science, *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change* (Climate Change 2013: The Physical Science Basis). AR5 stated that warming of the climate system is unequivocal, and many of the changes observed since the 1950s are unprecedented over decades to millennia.

It is evident from such reports that there is a clear need for action by all levels of government to reduce GHG emissions using the legislative, advocacy, programmatic and leadership levers at their disposal. Low Carbon West defines the means through which the WAGA councils are able to provide their regional contribution to the challenge of emission reductions.

At a Commonwealth level, the Australian Government is committed to reducing its emissions by 5% compared with 2000 levels by 2020. There is the potential for more ambitious commitments by 2020, should a number of conditions be met in terms of a joint international agreement.

The proposed Australian Government mechanism for achieving the 5% reduction by 2020 is the *Emissions Reduction Fund*. Central to the proposed approach is the auction and purchase by the Government of emissions reductions from projects. The *Emissions Reduction Fund White Paper* estimates that, based on the current Business as Usual emissions trajectory, a reduction of 131 megatonnes of carbon dioxide equivalents (MtCO₂-e) is required in 2020. It notes that the Emissions Reduction Fund will work alongside existing programs to reduce carbon emissions to reduce emissions.

The *Emissions Reduction Fund White Paper* outlines a range of potential projects that can be included in the auction process:

- upgrading commercial buildings
- improving energy efficiency of industrial facilities and houses
- reducing electricity generator emissions
- capturing landfill gas
- reducing waste coal mine gas
- reforesting and revegetating marginal lands
- improving Australia’s agricultural soils
- upgrading vehicles and improving transport logistics, and
- managing fires in savannah grasslands.

In the context of Low Carbon West, the wide range of potential projects that are able to participate provides an opportunity for the Emissions Reduction Fund to assist in the implementation of the actions described within this strategy.

3

3. THE REGION'S EMISSIONS

The development of Low Carbon West is underpinned by an understanding of the current GHG profile of the WAGA region and the projection of these emissions to 2020. In general, the methodology used to calculate baseline emissions is consistent with that applied in the previous 2010 *Werribee Plains Energy Research Study: Towards Zero Net Emissions* report. The opportunity has been taken, through Low Carbon West, to refine this methodology by sourcing more accurate actual consumption data, which provides a greater degree of confidence in the GHG profile for the region and for each individual municipality.

In compiling the baseline emissions profile for the WAGA region, the scope of emissions has largely been restricted to the geographical boundaries of the region (i.e. the boundaries of each local government area as part of WAGA).

The following describes the scope and types of emissions from a community perspective:

Scope 1

Industrial process emissions (emissions as a direct result of an activity, such as fugitive emissions). Natural gas consumed and used, both in residential and non-residential buildings or facilities. Transport fuel consumed by residents, workers and for freight within the WAGA region. Methane and nitrous oxide releases as a result of direct activity in the agricultural industry within the WAGA region.

Scope 2

Electricity purchased and used in residential and non-residential buildings or facilities. These are scope 2 emissions, as the consumption of electricity occurs within the WAGA region while the actual emissions (for example, gases released into the air from coal-fired power plants) may occur outside of the WAGA region. If the actual emissions occur inside the WAGA region, these are assigned to the end electricity consumers as scope 2 emissions.

Scope 3

These emissions are indirect emissions not covered in scope 2. In the baseline emissions profile, scope 3 include indirect emissions associated with waste generation (municipal, commercial and industrial waste).

The baseline emissions for the WAGA region are categorised based on the relevant end use sectors. These sectors are briefly described as follows:



Residential buildings: accounts for all residential homes, units and apartments within the WAGA region, considering electricity and gas consumption.



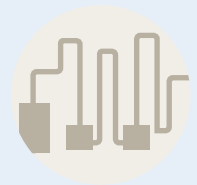
Non-residential buildings: accounts for all non-residential facilities (e.g. commercial office space, warehouses, manufacturing facilities, schools, etc.) within the WAGA region, considering electricity and gas consumption.



Residential transport: accounts for any non-freight transport within the geographical boundaries of WAGA – include journey to and from work, and other travel by private vehicle or public transport.



Freight: accounts for any road freight transport within the geographical boundaries of WAGA – this covers only heavy vehicles on the road.



Industrial processes: accounts for industrial facilities within the WAGA region that may emit direct emissions into the atmosphere as a result of its processes and activities.



Municipal waste: accounts for the waste generated by the general population (including small commercial sources) – this attributes the methane emissions generated from landfills (including those outside the WAGA geographical boundary) to waste generation.



Commercial and industrial waste: accounts for the waste generated from commercial and industrial activities – this attributes the methane emissions generated from landfills (including those outside the WAGA geographical boundary) to waste generation.



Agriculture: accounts for the direct emissions of methane and nitrous oxide from agricultural activities within the WAGA region.

The emissions data was compiled from numerous sources, including utilities data from CitiPower, Jemena and SP AusNet, the Victorian Integrated Transport Model, the National Greenhouse Inventory Total, Sustainability Victoria and the Australian Bureau of Statistics. The emissions were distributed across the WAGA councils using factors such as population, local jobs and industrial floor area. Similarly, emissions were projected out to 2020 using a range of factors, including change in population, local jobs, industrial jobs, number of

dwellings and agricultural jobs.

Figure 1 shows the emissions for the WAGA region per sector by local government area for 2012 and 2020. In terms of total emissions, the WAGA region produced 17.4 million tonnes of carbon dioxide equivalents (tCO₂-e) of GHG emissions in 2012. Under a business as usual scenario, this is projected to increase to 20.1 million tCO₂-e by 2020, representing a regional growth of approximately 15%.

Figure 1 Emissions for the WAGA region broken down by LGA and end use sector, 2012 and 2020

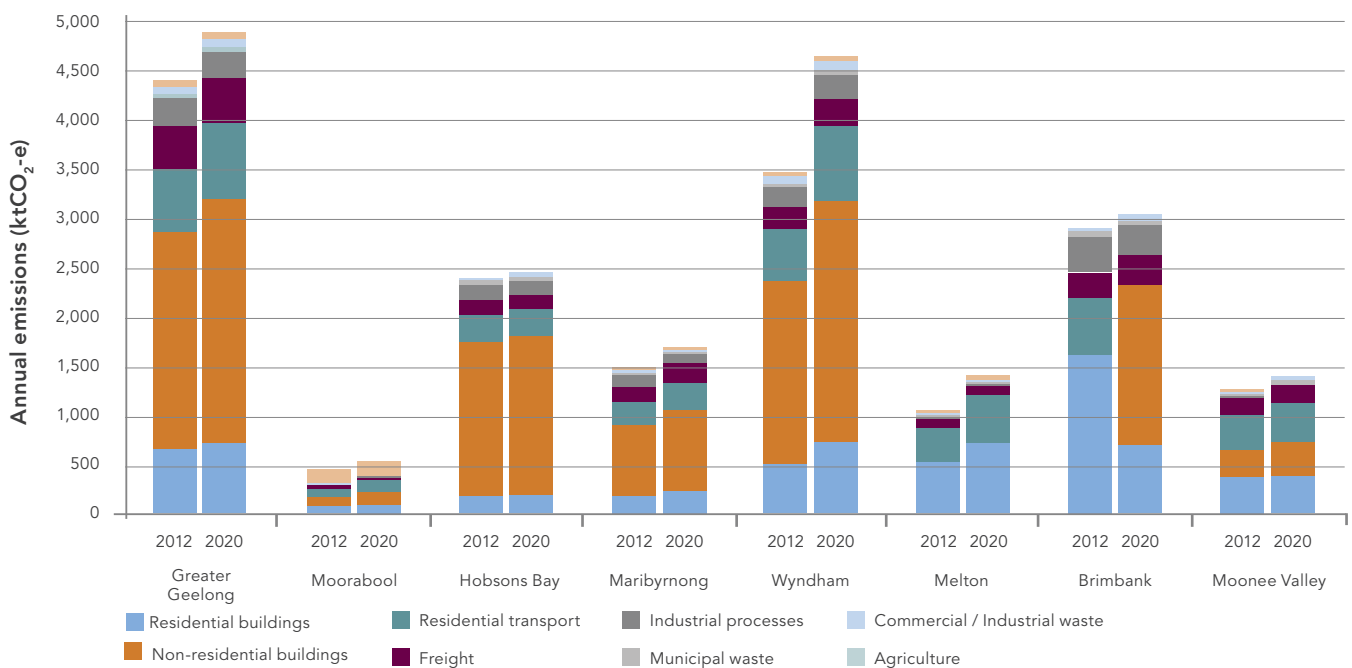


Figure 2 shows the emissions profile for the WAGA region for 2012 and 2020, by end use sector. It highlights that non-residential buildings contribute the largest proportion of emissions (46% of the region's 2012 emissions). This is followed by residential buildings (18%) and residential transport (17%). The waste and agriculture sectors only contribute a combined 4% of the region's 2012 emissions. The sectors that are predicted to experience the highest growth in emissions by 2020 are municipal waste (21%), residential transport (20%) and residential buildings (20%). Emissions from industrial processes

are anticipated to decrease by 4%.

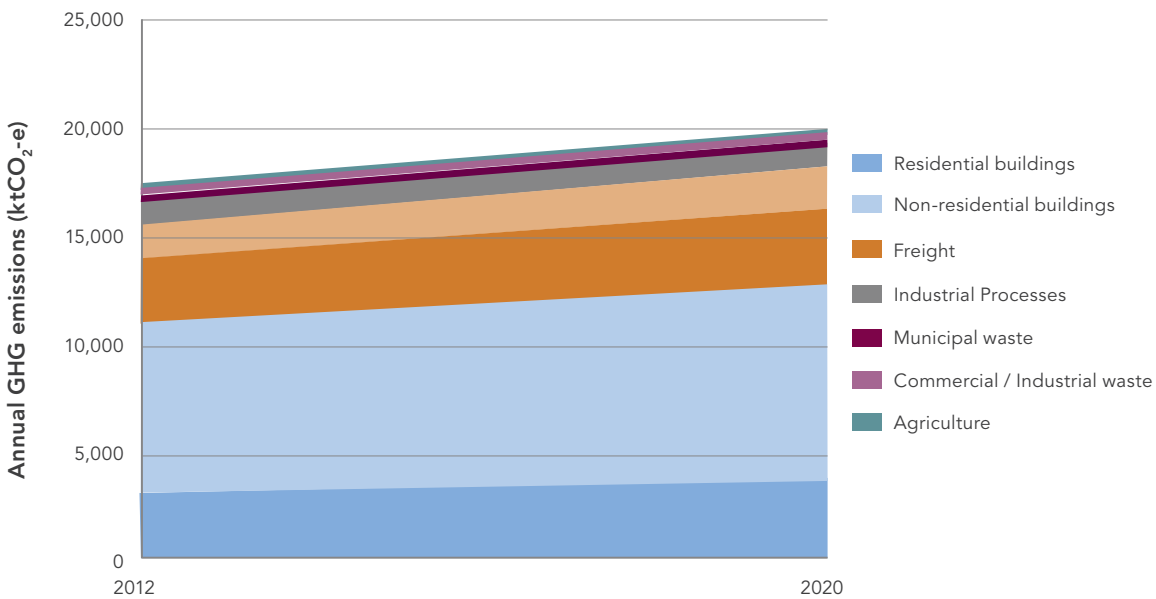
In relation to trends influencing the growth of emissions, there is currently a structural change occurring within the WAGA region and this is expected to continue over the next decade. The change is driven by rapid population growth and land development for new industrial and commercial precincts. For example, the City of Wyndham is predicted to experience the highest proportional growth out of all the local government areas in the region, with an emissions increase of 35% by 2020.

This growth is associated with significant job (31% increase) and population increases (45% increase). Similarly in Greater Geelong, a number of masterplans continue to develop, such as Armstrong Creek, the largest continuous growth area in Victoria.

Coupled with this are a number of existing industrial and commercial developments that will experience future growth, such as Essendon Fields, Airport West, East Werribee Employment Precinct, the western industrial precinct, and Living Brooklyn in Brimbank.

These developments will lead to rapid population growth, changing demographics, new housing and transport choices and a changing mix of employment, as major industrial employers and emitters wind down their operations (e.g. Toyota, Hobsons Bay). The gradual departure of major industrial employers from the WAGA region is the other major structural change that will influence the WAGA regions emissions profile and growth over the coming years.

Figure 2 Projected BAU growth in end use sector emissions from 2012 to 2020 across the WAGA region

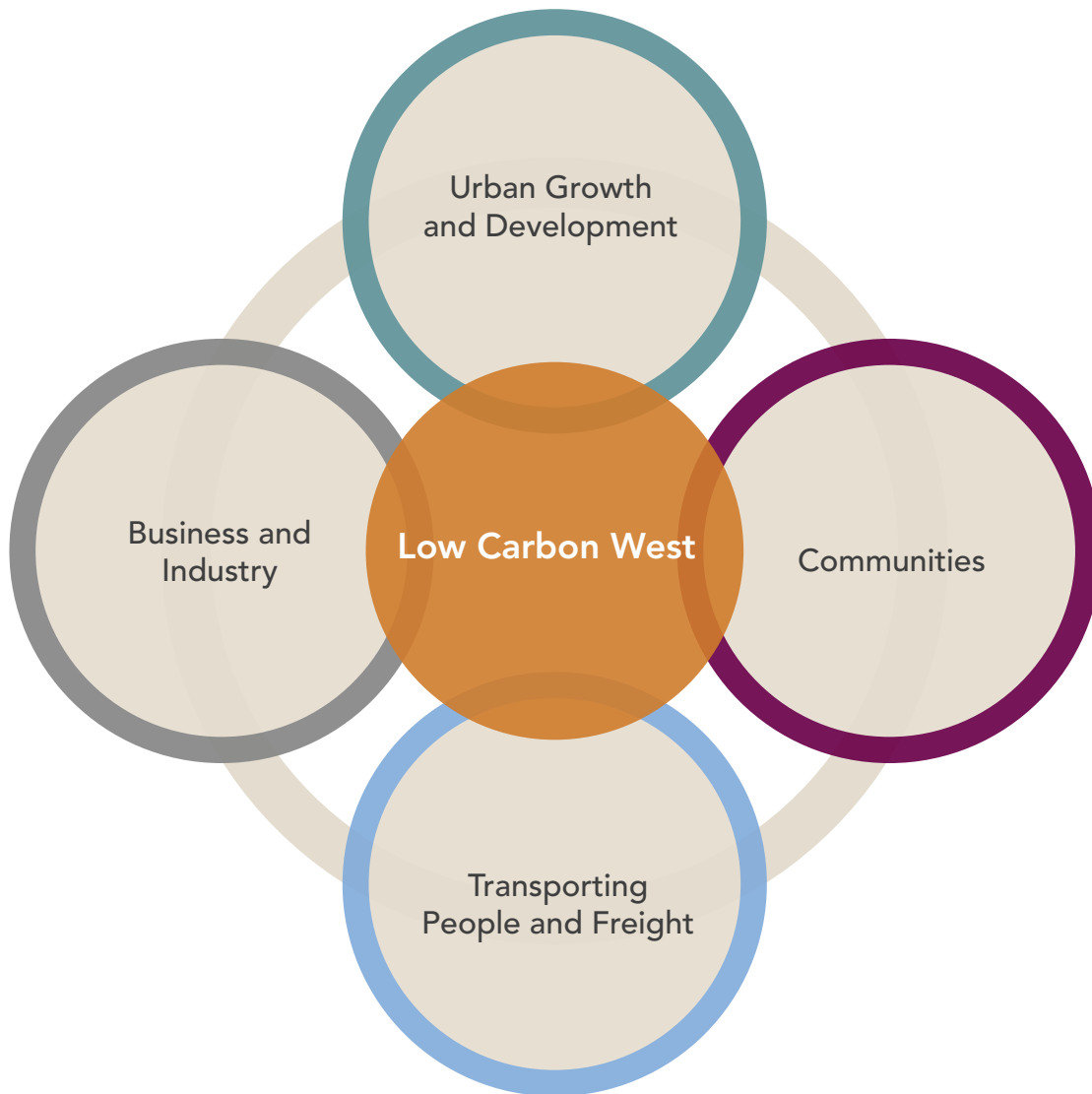


Many, but not all, of these changes are already reflected in the local government projections for population and employment and as such are incorporated into the emissions projections for 2020. However, it is also recognised that while these developments can be foreshadowed, the exact nature of development that occurs on the ground and its performance may vary and this will in turn influence the exact level of emissions that occur in the WAGA region.

4

4. SECTORS FOR ACTION

The strategy is divided into four sectors: business and industry, urban growth and development, transporting people and freight, and communities.



The strategy is organised into these sectors to align with the key stakeholders that will be implementing the actions detailed within the sector reports. This is intended to streamline the delivery of information, making Low Carbon West more accessible, easier and quicker to implement. To track the success of each sector in implementing these actions, the baseline and projected emissions have been redistributed based on the four sectors.

Figure 3 illustrates how the emissions categories have been assigned to each sector. Note that there are several instances where an emissions category is included in two different sectors. This is necessary where there is joint responsibility in delivery actions. Because there are emissions categories that are included in more than one sector, it is not correct to sum the emissions total for the four sectors.

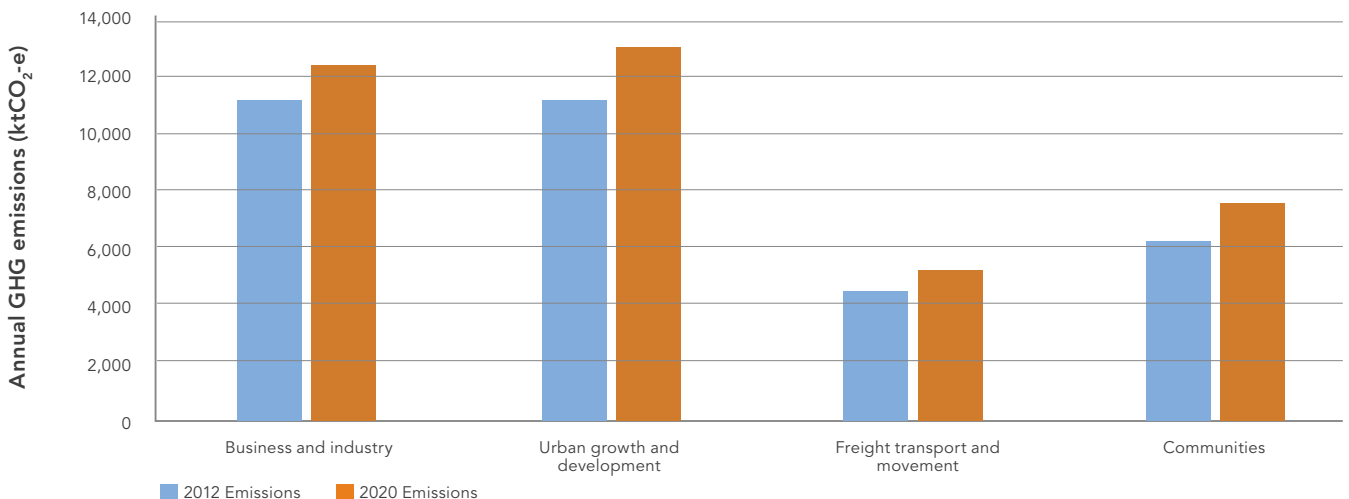
Figure 3 Distribution of emission end use sector in the four sector reports



Emissions from the communities sector are projected to grow at the greatest pace, by around 20% to 2020. This is largely driven by strong growth in residential buildings and associated municipal waste. Similarly, emissions from transporting people and freight will also grow strongly, by around 18% to 2020.

This growth is largely attributed to an increase in emissions from residential transport, and to a lesser extent, emissions from freight. The sector emissions are broken down in more detail within the individual sector reports. The expected trends are highlighted in Figure 4.

Figure 4 Emissions for the WAGA region for 2012 and 2020 by sector



5

5. THE ACTIONS

Through the development of Low Carbon West, a long list of 57 regional actions across all sectors was produced. Surveys and discussion were used to reduce this list to a shortlist of 24 actions. There are factsheets available online for each of the shortlisted 24 actions. These detail how emissions reduction and costs have been estimated and include notes from consultation sessions, such as the strengths, weaknesses, opportunities and threats for each action.

Upon further consultation, several actions were removed from the shortlist, leaving 20 key actions that form the basis of Low Carbon West. Of these, there are seven actions related to the communities sector. These 20 actions were qualitatively assessed and prioritised based on the following indicators:

- **Emissions benefit** – What is the extent of the emissions that are avoided as a result of implementation?
- **Cost effectiveness** – What is the financial investment required to achieve the emission reductions?
- **Co-benefits** – Does implementing the action lead to benefits beyond emissions reductions, such as the creation of local jobs or local economic growth?
- **Speed of implementation** – How quickly can the actions be implemented and completed, particularly before 2020?
- **Business or stakeholder support** – How supportive would businesses and other key stakeholders be in progressing the action?
- **Leadership or innovation** – Does the action help the WAGA region become a leader or show innovation in the sector?
- **Ease of implementation** – How great are the barriers to implementation of the action?

The prioritised actions are presented below, with Regional Action (RA) #1 being the highest priority. These actions are discussed in more detail in the individual sector reports.

| RA# | Actions | Description | Emissions benefit (ktCO2-e) | Proportion of WAGA 2020 (%) emissions | Applicable sector | Emissions benefit | Cost effectiveness | Co-benefits | Speed of implementation | Business or stakeholder support | Leadership or innovation | Ease of implementation |
|-----|---|--|-----------------------------|---------------------------------------|---|-------------------|--------------------|-------------|-------------------------|---------------------------------|--------------------------|------------------------|
| 1 | Bulk-buy scheme (non-residential) | Create bulk-buy schemes for solar PV panels to be installed in new non-residential buildings | 853 | 4.3 | Business and industry, Urban growth and development | H | H | H | H | H | M | M |
| 2 | Industrial energy reporting and resource efficiency plans | Establish a program for smaller industrial energy users to report on energy use and develop resource efficiency plans, and work with large industry energy users to sign up to voluntary agreements for emissions reductions | 813 | 4.1 | Business and industry | H | H | H | H | H | M | M |
| 3 | Environmental Upgrade Agreements (EUAs) | Facilitate EUAs for energy efficient plant (for both commercial buildings and industrial processing facilities) | 215 | 1.1 | Business and industry | H | H | H | H | H | M | M |
| 4 | Promote Urban Sustainability Atlas | Promote sustainability measures to the community through the Urban Sustainability Atlas, particularly for new buildings to identify opportunities for solar PV installations at a proposed location | 12.6 | 0.06 | Urban growth and development, Communities | M | H | H | M | H | H | H |
| 5 | Large-scale renewable energy generation | Advocate for Large-scale Renewable Energy Generation in WAGA region (large-scale solar) | 257 | 1.3 | Business and industry | H | L | H | L | M | H | L |

| RA# | Actions | Description | Emissions benefit (ktCO2-e) | Proportion of WAGA 2020 (%) emissions | Applicable sector | Emissions benefit | Cost effectiveness | Co-benefits | Speed of implementation | Business or stakeholder support | Leadership or innovation | Ease of implementation |
|-----|---|--|-----------------------------|---------------------------------------|------------------------------|-------------------|--------------------|-------------|-------------------------|---------------------------------|--------------------------|------------------------|
| 6 | Industry training | Fund and facilitate industry training for energy efficiency or building tune-ups | 61.3 | 0.3 | Business and industry | M | H | H | H | H | M | M |
| 7 | Rental retrofits | Work with real estate agents to make properties more sustainable through retrofits | 7.7 | 0.04 | Communities | M | H | H | H | M | M | H |
| 8 | Mapping of high thermal-use areas | Conduct mapping of demand for heating and cooling to identify priority areas for low carbon district heating. The heat map will be an enabler for investment in low carbon district generation | 76.4 | 0.4 | Business and industry | M | H | H | M | H | M | M |
| 9 | Planning scheme amendment (residential) | Implement planning scheme requirements for high performance buildings / Advocate for reforms to improve national building standards (such as the National Construction Code) | 41.3 | 0.2 | Urban growth and development | M | H | H | M | M | H | M |
| 10 | Bulk-buy schemes (residential) | Create bulk-buy schemes for energy efficient and renewable technology, such as PV, solar hot water and efficient lighting to reduce the capital cost for individual consumers. | 8.3 | 0.04 | Communities | M | H | H | H | M | M | M |

 High  Medium  Low

| RA# | Actions | Description | Emissions benefit (ktCO2-e) | Proportion of WAGA 2020 (%) emissions | Applicable sector | Emissions benefit | Cost effectiveness | Co-benefits | Speed of implementation | Business or stakeholder support | Leadership or innovation | Ease of implementation |
|-----|--|--|-----------------------------|---------------------------------------|--|-------------------|--------------------|-------------|-------------------------|---------------------------------|--------------------------|------------------------|
| 11 | Freight business network | An action to establish a regional network of freight businesses and implement a reporting scheme has the potential to significantly reduce emissions associated with the sector. | 172 | 0.9 | Business and industry, Freight, transport and movement | M | H | H | M | M | H | L |
| 12 | Car-share program for residents | Establishing (or extending) a formal car share scheme in the region. (e.g. Flexicar) | 16.7 | 0.08 | Freight, transport and movement, Communities | M | M | H | H | H | M | M |
| 13 | Recycling promotion and education | Run recycling promotion and education programs, to consolidate and build upon current programs | 38.4 | 0.2 | Urban growth and development, Communities | M | M | H | M | M | M | M |
| 14 | Organic waste program for households | Implement organic waste diversion and compost distribution back to households | 27.3 | 0.1 | Urban growth and development, Communities | M | M | H | M | M | M | M |
| 15 | Carpool matching for residents | A network and / or apps to encourage residents in the West to share cars for common trips (e.g. to and from work) | 10.0 | 0.05 | Freight, transport and movement, Communities | M | M | H | M | M | M | M |
| 16 | Implement cool roofs program (non-residential) | Implement a 'White Roofs' or 'Cool Roofs' program | 31.8 | 0.2 | Business and industry, Urban growth and development | M | L | M | H | H | M | H |
| 17 | Waste-to-energy facility | Establish a waste-to-energy facility in the region | 64.2 | 0.3 | Business and industry | M | L | H | L | M | H | L |

 High
  Medium
  Low

| RA# | Actions | Description | Emissions benefit (ktCO ₂ -e) | Proportion of WAGA 2020 (%) emissions | Applicable sector | Emissions benefit | Cost effectiveness | Co-benefits | Speed of implementation | Business or stakeholder support | Leadership or innovation | Ease of implementation |
|-----|--|--|--|---------------------------------------|--|-------------------|--------------------|-------------|-------------------------|---------------------------------|--------------------------|------------------------|
| 18 | Voluntary planning incentives for high environmental performance (non-residential) | Provide planning benefits or incentives for high performance building applicants | 1.7 | 0.01 | Urban growth and development | L | H | H | M | H | H | M |
| 19 | Voluntary planning incentives for high environmental performance (non-residential) | Implement planning scheme requirements for high performance buildings, and advocate for reforms to improve national building standards (such as the Building Code of Australia) | 1.3 | 0.01 | Urban growth and development | L | H | H | M | H | H | M |
| 20 | Advocacy for WIFT | Continue to promote the West as an ideal site for a freight intermodal transfer station. A freight consolidation centre such as WIFT would bring together rail and large truck-based freight to a central facility for distribution to the Melbourne region. The centre reduces the demand for heavy trucks on road networks in Melbourne and shifts a degree of interstate freight mode share from trucks to rail, which is less emissions-intensive. | -1130* | 5.6 | Business and industry, Freight, transport and movement | L | M | H | L | H | H | L |

* This action would deliver an environmental benefit at a Victorian and national level but will increase emissions within the WAGA region.

H High M Medium L Low

The actions removed from the shortlisted 24 include the following three and one action that was amalgamated:

- Public transport subsidies
- Residential white roofs program
- Implement Intelligent Transport Systems (ITS) to monitor and manage traffic flow

The above actions were removed due to a combination of the following factors:

- Minimal or negligible emissions benefit
- High cost and resource requirements
- Inappropriate action for WAGA to take
- Difficult to implement effectively

5.1. How far do the actions get us?

Low Carbon West provides a comprehensive suite of actions for limiting the growth of GHG across the WAGA region to 2020. The contribution that the actions in their entirety make towards emission reductions is provided in Figure 5. Note that the action to advocate for a freight consolidation centre (RA#20) is not included in the graph as the emissions impact is more appropriately measured at a state or national level, beyond the WAGA region.

The remaining 19 actions are estimated to result in an emissions benefit of approximately **2,700 ktCO₂-e** per annum by 2020. This would reduce projected emissions in the WAGA region by **14%** in 2020 compared to business as usual. The actions effectively halt growth in emissions, with the 2020 business-as-usual emissions of approximately **20,000 ktCO₂-e** being reduced to less than **17,000 ktCO₂-e** (including a reduction of approximately **300 ktCO₂-e** due to industry changes in the WAGA region). This equates to an actual decrease in emissions of approximately **2.5%** by 2020, compared to the 2012 baseline. This reduction is achieved as the population and number of dwellings in the WAGA region increase by approximately 20% by 2020.

WAGA may consider building on Low Carbon West to set an overall or sector-specific emissions reduction targets. This could help enable the tracking and reporting of progress in reducing the region's emissions.

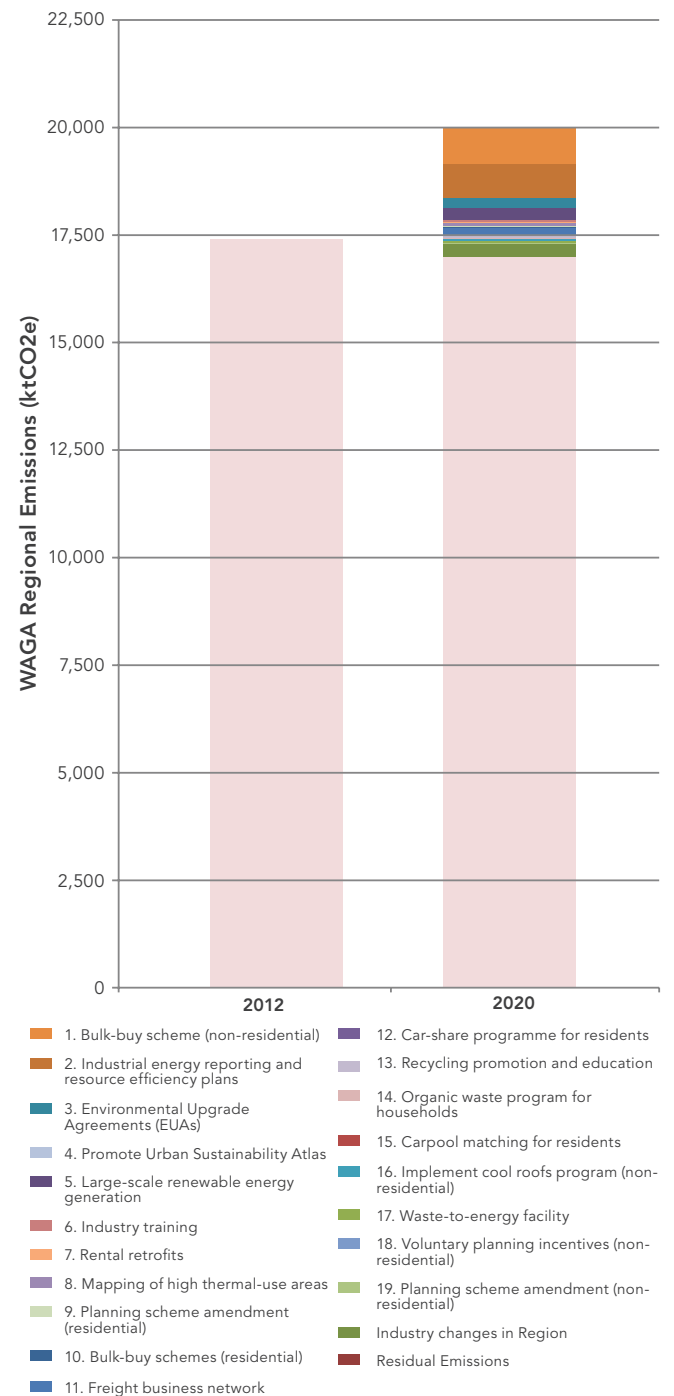
5.2. The West to the rest

WAGA is an alliance of eight councils in Melbourne's West. As an alliance, the ability to advocate for action on behalf of its member councils to state and federal governments, to industry and business and to the community is critical to ensure the successful implementation of Low Carbon West.

Each sector report defines a range of actions to be pursued by the WAGA councils. Successful implementation of a range of these, such as amendments to the Planning Scheme (RA#7 and RA#19), will rely on the agreement of others, who would recognise the benefit of such actions to the WAGA community. Low Carbon West provides the foundation to start the necessary conversations with those key stakeholders.

There is increasing need and opportunity to work with local government alliances and councils outside the WAGA region. There are not only economies of scale but opportunities to expand marketing of initiatives, to engage the Victorian Government, and to attract large investors and stakeholders.

Figure 5 Actions emissions summary for the WAGA region



5.3. Beyond direct actions

Low Carbon West focuses on actions that result in a direct emissions benefit. However, there are other important actions that do not directly reduce emissions, such as research and development projects. There is potentially a future expanded role for WAGA in research and development, and in piloting of new technologies and materials. While these actions may not result in a direct emissions benefit, there is opportunity to realise significant savings indirectly where these activities catalyse others to act.



6. OUR COMMITMENT TO IMPLEMENTATION

Low Carbon West provides the framework and defines the areas for further action. It is recognised however that this is just the starting point. The strategy is designed to encourage flexibility in the approach to implementation, the development of pilot studies and market testing before committing significant resources to implementation. Given the breadth of actions contained within Low Carbon West, trials and further analysis are necessary to ensure the efficient use of resources to not only realise the GHG emissions identified, but to secure other economic and social benefits associated with the actions.

6.1. Allocation of responsibility

While WAGA has primary responsibility for Low Carbon West, the implementation will require input and action from all member councils with the support of LeadWest and RDA Western Melbourne. An adequately resourced and secure platform is crucial to the success of Low Carbon West.

WAGA's future governance structure, the financial commitment from WAGA councils, opportunities to access federal and state government funding and collaboration with other stakeholders with funding are all key elements to the platform supporting Low Carbon West. Implementing Low Carbon West will be a focus as WAGA reviews its strategic plan in 2015.

6.2. Improving the effectiveness of implementation

The successful implementation of actions contained within Low Carbon West is not guaranteed. Resources must be allocated to review the implementation process and to ensure that lessons are learnt as initiatives progress. This process should include an assessment of implementation risks and feasibility, and the likelihood of achieving results.

On an annual basis, further scoping, project planning and flexibility is required to prioritise actions. WAGA must be nimble and able to adapt to external changes such as declining costs of technology and altered political landscapes. This provides the opportunity to add new actions and update existing actions to keep up with changes in the technology and policy context.

Furthermore, additional elements are crucial in ensuring Low Carbon West's successful implementation. They include:

- Prototyping and market testing: If the actions are not what the community or the market require, then they will not be successful. There can be limited flexibility once a large project plan and contracts are in place. Extensive consultation with the stakeholders, in conjunction with prototyping and pilot programs, should be enacted to ensure that the actions will achieve the desired response and success. This should be an iterative process, with feedback being incorporated into the delivery and design of the proposed initiative.
- Avoiding duplication: Before any particular action is enacted, consultation and research should be undertaken to have a full appreciation of any potential duplication or similarities with other local or regional initiatives. The identification of overlap could reduce the costs and resources associated with implementation if lessons learned can be shared, or even if entire processes are made redundant (e.g. scoping studies). WAGA has limited resources at its disposal, and these should be used in the most efficient and focused way.
- Communications and consultation: Proactive communications and consultation is pivotal to the success of Low Carbon West. From engaging with businesses, industry and government, to the local community and environment groups, communications and consultation is necessary to create buy in and maximise uptake of the initiatives contained within Low Carbon West. A communications and consultation plan should be developed to support the implementation of the strategy.



7. MEASURING THE SUCCESS OF LOW CARBON WEST

Low Carbon West is a comprehensive plan for reducing regional GHG emissions in the WAGA region over the coming years. To understand the effectiveness of these actions in mitigating emissions, WAGA will develop a monitoring and evaluation plan towards the end of 2014. WAGA staff will be responsible for the measurement and evaluation of Low Carbon West, and progress reporting to the WAGA Executive Committee.

The monitoring plan will be delineated by sector and consist of a series of key performance indicators (KPIs) based on the actions prioritisation framework within Low Carbon West. In addition, the monitoring plan will define the reporting timeline and format. As the actions cover a breadth of sectors, the information sources to inform progress in each sector will also differ. A significant part of setting up the monitoring framework will be the identification of data sources. The data sources used to develop the 2012 current baseline provide the primary means of tracking the level of emissions reduction over the coming years.

The KPIs are likely to cover:

- Communications and advocacy with key stakeholders of Low Carbon West
- Engagement with industry through action implementation
- Co-benefits associated with implementation
- Number of projects identified, funded and implemented for each action
- Barriers or challenges associated with implementation
- Project case studies / fact sheets developed, in particular demonstrating leadership or innovation in the WAGA region
- Implementation resources and costs incurred and required over the coming year to support further implementation of Low Carbon West
- Overall energy and emissions savings by action, sector, by LGA and for the region.

Simple reporting templates will be set up to capture this information in a consistent format.



