

# **‘CLIMATE CHANGE IN W.A.’ – ISSUES PAPER**

## **Department of Water and Environmental Regulation**

### **Response from the City of Busselton**

#### **Introduction**

The Department of Water and Environmental Regulation (DWER) ‘Issues Paper’ (published September 2019) broadly outlines key issues around climate change that DWER believes are essential to plan for, mitigate against and manage effectively under a subsequently prepared ‘State Climate Policy’.

The City of Busselton (CoB) recognises and acknowledges the ever-accumulating scientific evidence for the existence of the phenomenon known as ‘climate change’, and for those associated epiphenomena in relation to it, such as global warming and sea-level rise.

As such, the City is committed to planning strategically to address identified likely impacts of climate change on our coastal municipality. The latest initiative being undertaken, for example, is a ‘Coastal Adaptation Strategy’ (Coastal Hazard Risk Management and Adaptation Plan) commissioned to examine and evaluate the most vulnerable parts of our coastline, and to prepare options and pathways designed to best manage risk in the short-, medium-, and longer-terms in a considered, timely, and properly informed way. This study is scheduled for completion in the first half of 2020.

The City concurs with the WALGA ‘Climate Change Policy Statement (2018)’, particularly where it calls for strong action, leadership and coordination in respect to planning for climate change at ALL levels of government, with effectively-funded and strategically-timed collaboration, and other assistance, by the Commonwealth and State Governments for those policies, programs, adaptation measures and coastal initiatives often being developed at a more ‘grass-roots’ level by Local Government.

The City supports the response to the ‘Issues Paper’ submitted by the ‘Peron-Naturaliste Partnership’ (PNP), a dynamic cohort of nine coastal local government authorities extending from the City of Rockingham to the City of Busselton, of which the City is an active contributory member. This response by the PNP suggests (inter alia) ways and means of building awareness, understanding and resilience in our coastal communities, and assessing/addressing appropriate pathways and actions to best respond to those clearly identified risks and hazards attributed to climate change.

Finally, the City also supports the expressed commitment of the State Government to ‘net zero emissions’ of carbon by 2050, per the ‘UN Framework Convention on Climate Change, Paris Agreement (2016)’. This commitment is not only environmentally, ethically and politically responsible, it is rightfully targeted at ensuring that W.A. ‘... captures the emerging opportunities of the low-carbon ‘transition’ and secures a competitive economy into the future.’ There is now a voluminous amount of peer-reviewed scientific literature and representative technical studies demonstrating the potentially catastrophic risks of climate change, including biota impacts and ever-escalating economic, socio-political, and geopolitical consequences. These risks are being manifested and witnessed with increasing frequency across the globe, from seemingly endless droughts, to flooding events, to increasing wildfires, to the melting of the Permafrost et al.

The City acknowledges the important challenges and opportunities generally outlined in the ‘Issues Paper’ and stresses the relevance of State-wide feedback in the advertising period, particularly from those local government authorities in the SW region (an area of the State already subjected to serious effects of climate change). It is hoped and trusted that the City’s sectional responses will help to inform and shape the proposed ‘State Climate Policy’, and enable the formulation of a meaningful and responsive long-term vision in respect to the phenomenon of climate change in the State.

## 1. Transforming Energy Generation

The Western Australian Planning Commission (WAPC) published a draft 'position paper' in 2018 proposing to supersede its current policy position, especially in relation to windfarms. This position paper was not, however, advanced to an endorsed policy outcome. Interestingly, the 'Planning and Development Act, 2005' does not yet contain a definition of 'renewable energy'.

The importance of decarbonising the electricity sector and reducing emissions to meet stated targets is well understood, but strategic policy momentum needs to be kept abreast or in front of operational planning and regulatory frameworks. This is necessary to efficiently guide and support appropriate and desirable land use responses for the generation of targeted renewable energy (e.g.).

The City of Busselton is a member of the 'Cities Power Partnership', and committed to the use of 'clean energy'. It has recently prepared an 'Energy Strategy, 2020-2025' (ES) which principal objective is to improve and progress renewable energy management scenarios within the City to '... the next level'. This base objective shall have the twin effect of reinforcing the optimisation of current energy usage as well as providing focus and aspiration in respect to the uptake of renewable energy initiatives throughout the City's organisational culture.

The 'vision' for the ES is:

*'Minimised energy costs and greenhouse gas emissions, through using energy as efficiently as possible and optimising our approach to generation and use of renewable energy, and to maximise returns to ratepayers through becoming a net energy generator.'*

The pre-eminent energy targets adopted by the City in the ES are:

- *To generate 100% of the City of Busselton electricity needs from renewable sources, by 2030.*
- *To reduce City of Busselton corporate carbon emissions per capita to 50% of 2017/18 levels by 2030.*
- *Develop efficiency targets for all fleet and plant by 2025.*

To help achieve these targets, the ES proposes 52 strategic actions for 10 focus areas.

Key strategic actions proposed for implementation in the short- to medium-term by the City are:

1. An integrated energy monitoring and reporting system to allow the City to dynamically and proactively manage energy-use arising from community and other facilities, together with public lighting, water pumping, and renewable energy generation (including solar energy) etc., across the organisation.
2. 208kW of solar PV Systems (including 100kW at the 'Geographe Leisure Centre', 40kW at the 'Naturaliste Community Centre', 40kW at the 'Busselton Library' and 28kW at the 'Depot') and the concomitant installation of battery storage immediately this becomes financially viable.
3. A 'mid-scale' solar farm (at Lot 27 Rendezvous Road) which, once fully operational, would itself enable the City to reach its '100% renewables target'.
4. Strategic energy efficiency upgrades at larger facilities, as recommended by the 'Energy Opportunities Analysis and Prioritisation Report (Yeoman 2018)'.
5. A 'Design for New Buildings Policy', which prescribes minimum energy efficiencies and renewable energy generation for all new and replacement City facilities.

6. LED upgrades to selected high-priority, City-owned street lighting, sporting activity centres and public open space areas.
7. Investigations into multiple resources recovery systems through the 'South-West Regional Waste Group'.
8. Moving towards electrically-operated fleet, plant and equipment as technologies mature and the price of energy storage decreases, starting with the purchase of a 'plug-in' hybrid Electric Vehicle (EV).  
  
[Getting EVs to grid is also an area of strong need, promise and interest. It is not addressed in any detail in the 'Issues Paper' but this could play a significant role in both 'stabilising' the grid and providing back-up storage. The 'Issues Paper' also mentions hydrogen fuel cell vehicles but makes no specific mention as to how the State Government proposes to design and support refuelling stations needed for the operation of such vehicles, currently a significant 'stumbling block' for this particular renewable energy technology.]
9. Viability assessments of alternative fuel sources to power the City's fleet, plant and equipment.
10. A watching brief of new and innovative technologies including 'micro-grids', virtual net metering, and peer-to-peer energy trading.

The City will be seeking an ongoing commitment from, and meaningful collaboration with, the State Government (together with relevant energy utilities and peak regulatory authorities) in order to maintain momentum and to achieve its main objectives under the 'Energy Strategy 2020-2025'.

On other matters, significant advancement is being made in both the technological and regulatory fronts, with numerous successful trials of 'micro-grids' and associated distributed energy sources technologies being implemented in Western Australia and further afield as illustrated in the 'Economics and Industry Standing Committee, 2019'.

Whether it is the use of 'smart grids', virtual power plants, community-scaled batteries, or peer-to-peer trading, such initiatives will present significant challenges and opportunities for radically changing the way the City uses, produces and stores renewable energy. The 'Issues Paper' refers to 'fringe-of-grid' and 'remote off-grid locations'. However, these technologies have clearly more mainstream applications and, as such, should be actively pursued and investigated/implemented. The State government could lead the way in this by making it easier for third parties to partner with planned trials, coordinating specialised expertise, and helping to ensure timely realisation. The City welcomes the proposed pilot introduction of community batteries ('PowerBank') in both Busselton and Dunsborough, in partnership with Western Power. Scope and demand clearly exist for a broader roll out of similar, more innovative technologies.

In terms of process, there have been some encouraging, higher-order improvements of late (for example, in the City's dealings with Western Power) but it is strongly believed that more cooperation, leadership and 'streamlining' could and should be achieved. There should certainly be more clarity and transparency in respect to the energy approval process itself, and a willingness to fully support renewable energy initiatives and projects, such as 'solar farms'.

Street lighting is an area essentially overlooked by the 'Issues Paper' and the City believes that the State Government is lagging, especially compared to the rest of Australia, in introducing technological advancements and regulatory changes which could assist to markedly reduce greenhouse gas emissions. Existing street light bulbs are mostly inefficient, with over half being old mercury vapour, and there has been very low LED deployment thus far.

Western Power has only recently introduced a full range of LED ‘luminaires’ to cater for all lighting requirement categories and now routinely changes all failed ‘luminaires’ to LED. While this will lead, over time, to a higher percentage of LED in the Western Power street lighting operations portfolio, clearly more action is needed to achieve such significant benefits in a shorter timeframe. Some of the barriers to increasing street lighting efficiency include non-contestability, lack of transparency, and misalignment of objectives (i.e. greater income generated from less efficient, shorter-life bulbs).

The identification of potentially viable strategic sites, and related infrastructure planning, will be undertaken by the City to establish context and options for the future development of renewable energy plants, with selected locations addressed and justified through inclusion in the City of Busselton ‘Local Planning Strategy’ (e.g.), which is currently awaiting formal endorsement by the WAPC, which is expected in December 2019. Some of the initiatives actively investigated involve the construction of a mid-scale solar farm on a previous landfill site now owned by the City, and various waste-to-energy opportunities in partnership with the ‘South West Regional Waste Group’.

Finally, it is worth noting the publication this week by the ‘Climate Council’ (est. 2013), Australia’s independent and foremost climate change communications organisation, of its report: ‘State of Play: Renewable Energy Leaders and Losers’, in which Western Australia is rated 7<sup>th</sup> in its annual ‘Score Card’ for States and Territories, ahead only of the Northern Territory, in terms of ‘progress on renewable energy’.

<https://www.climatecouncil.org.au/wp-content/uploads/2019/11/State-Renewable-Energy-Report.pdf>

## **2. Industry Innovation**

In terms of a low carbon transition, the City of Busselton, as a municipal waste generator, is currently investigating ‘resource derived fuels’ (RDF) from landfill gases, together with ‘alternate waste technologies’ (AWT), which are aimed at producing electricity and reducing greenhouse gas emissions. Furthermore, the City is considering the introduction of electric rubbish trucks and hydrogen cell recharging stations through a modified ‘waste-to-energy’ process (e.g. anaerobic digestion or similar) through close engagement with the ‘South West Regional Waste Group’.

The State Government can help invigorate and foster these and related initiatives in the City by:

- Clarifying and simplifying regulatory reporting requirements.
- Better stimulating research and development into the sustainable commercialisation of new, imminent and prospective future technologies.
- Supporting and investing in businesses active in the development of such recycling industries as spent lithium battery recycling and photovoltaic panel processing, both of which are likely to increase over the next 10 years to capture an ever-greater percentage of this localised market.

## **3. Future mobility**

The City believes that a ‘blueprint’ for cycling infrastructure is required for regional areas as well as those that have been developed for Perth and Peel. Currently, the onus remains on regional local governments to strategically plan, fund and construct this increasingly essential community-based infrastructure.

The need for increased government funding for integrated cycleway (and trail) network development becomes even more pronounced in those areas which have poor or limited access to public transportation. Regional local government authorities cannot continue to shoulder this burden alone.

The longer travel distances involved in regional Western Australia is also a deterrent to the development and 'take up' of electric vehicles. Until technology advances and charging stations become more affordable, the main focus should be on getting public transportation (taxis, buses) converted to EV. Similarly with localised courier and delivery companies (incl. Australia Post).

#### **4. [Regional Prosperity]**

#### **5. Waste Reduction**

In particular respect to the urgent need for a reduction in the generation of greenhouse gases, the State Government should be encouraging the development and improvement of 'Waste to Energy' (WTE) markets by actively supporting both emerging and commercially proven technologies. For example, incineration (like at Kwinana), pyrolysis, gasification, and/or bio-digestate (anaerobic) technologies.

A key government objective should be the expansion of both local and State-wide markets for repurposed goods, whether electricity or recycled plastics.

The cost of taking waste to landfill should be increased with the application of a State-wide levy, with funds generated used to enforce 'management of waste strategies', such as community education on issues such as illegal dumping, together with increased investment in waste processing technologies.

The roll out of an additional waste bin for food organics and green organics (FOGO) should be encouraged by government with increased public education through various media, school promotions, etc. to get communities thinking about recycling more responsibly (and even pressuring local government authorities to commit to more). The identification, construction and utilisation of *regional* waste processing facilities, particularly for recycled waste, should be a priority consideration of government.

A bipartisan political approach to the issue of waste management, and policy/regulation/funding in respect to it, should be sought in order to guarantee reliable and ongoing investment.

At a more localized level, individual households need to be better educated to 'waste less, compost more', perhaps through the formation of (e.g.) 'composting/gardening groups', or the election of 'waste ambassadors'. The establishment of a network of 'community farms' (such as 'Collingwood Farm' in Melbourne) and the creation and organisation of 'food production cells' should also be promoted. One such program, for example, is designed around creating 'cells' or groups of people who may live in the same street, or local neighbourhood, and register with the appropriate authority/local government authority as 'organics producers' or 'organics users'. Once registered, the users take the organic waste and compost it to use on a dedicated community vegetable patch. People who have registered are then allowed to source the results of the garden.

#### **6. Safe and Healthy Communities**

More State government engagement is required in relation to such things as:

- Offering greater incentives for developers in creating 'off-grid' sustainable communities. Example [www.liveatthecape.com.au](http://www.liveatthecape.com.au)

- Providing regulatory inducements and related incentives to the building industry by promoting and *requiring* energy-efficient building designs in both domestic and commercial contexts. The broader community wants to move away from ‘cookie cutter’ project homes that don’t respond cleverly to lot lay outs, solar orientation, presentation to the street/laneway etc. and that exacerbate reliance on air conditioning and other potentially wasteful energy uses.
- Encourage the more energy-efficient retrofitting of older homes, such as is done in Victoria through the ‘Australian Energy Foundation Project’, and which assists those on lower incomes and special needs (who wouldn’t otherwise have an opportunity) to retrofit.

## **7. Water Security**

The City is currently engaged in two comprehensive strategic appraisals aimed at reducing the municipality’s reliance on groundwater and/or Scheme water in the irrigation of community infrastructure and strategic land assets such as sporting ovals, recreation facilities, and public open space areas.

These are the ‘South West Non-Potable Water Supply Needs Study’ (Dunsborough), and the ‘South West Treated Wastewater Re-Use Scheme’ (in collaboration with the Water Corporation).

## **8. Liveable Towns and Cities**

Better ‘urban forest’ planning is needed, particularly in new subdivisions that are sometimes devoid of (or limited in) vegetation in the street verges and streetscapes, and therefore prone to the creation of ‘heat islands’. Planning for urban forest outcomes, with attention to paths, cycle ways and trails, and improved connectivity and accessibility to community services and facilities, would be an ideal response to certain climate change opportunities mentioned in the ‘Issues Paper’. The potential for this is implicated to varying degrees by funding, water allocation rights, and reticulation needs for the establishment and maintenance of plant outs. There are also potential conflicts with some requirements of bushfire planning.

The City currently operates a ‘Street Tree Planting Program’ to introduce more shade trees into streets and neighbourhoods and thereby reduce the urban heat island effect.

## **9. [Resilient Infrastructure and Businesses]**

## **10. Protecting Biodiversity**

The majority of biodiversity impacts listed in the ‘Issues Paper’ are already occurring in the City: loss of flora and fauna species (including endemic species), an increase in pathogens and weed species, loss of coastal vegetation, reduced water flows and worsening water quality, increased bushfire risks, elevated salinity in wetlands and estuaries, and so on.

As a result, the City will need to increase its control and management of threatening processes underway in bushland and coastal reserves, with subsequent associated financial and resourcing implications. The City also undertakes significant revegetation of bushland reserves, in partnership with community volunteers, and road verges (through its annual ‘Street Tree Planting Program’) to create and enhance vegetated buffers and habitat corridors.

The importance of ecological (vegetation/habitat) linkages and the preservation and protection of remnant native vegetation are recognised in City of Busselton Scheme and policy requirements, and include targeted incentives for subdivision and land use in regard to specialised (albeit dated) and quid



pro quo strategic initiatives such as the 'Busselton Wetlands Conservation Strategy' (2005) and the 'City of Busselton Biodiversity Incentive Strategy' (2011). However, there is a growing gap in knowledge on species distribution and abundance, especially when dealing with new weeds and pathogens fostered by changing weather conditions under the influence of climate change.

## 11. Strengthening Adaptive Capacity

As touched upon in the Introduction, the City has commissioned a 'Coastal Adaptation Strategy' (CAS) for a defined (and vulnerable) 'study area' including the north-facing sandy coastline from the City's municipal boundary with Capel, at Forrest Beach, Wonnerup, to Point Dakin in Dunsborough, a distance of approximately 30-kilometres. Also included are the nodal settlements of Eagle Bay, Bunker Bay, Yallingup and Smiths Beach. The remainder of the City's west coast is predominantly situated in the Leeuwin-Naturaliste National Park and is therefore excluded from the CAS, although the project findings will be shared with the Department of Biodiversity, Conservation and Attractions to assist with its future planning and management protocols in regard to this wonderful natural asset.

The aim of this project is to spatially identify the current and projected extent of risk to private assets, public infrastructure and environmental/social/cultural values from coastal hazards arising from predicted sea level rise. It shall establish short- and long-term adaptation pathways, including financial modelling for such pathways and funding options for coastal management over a 100-year timeframe.

In terms, especially, of the epiphenomena of global warming and sea-level rise, and their impact on coastal assets, the City believes the following recommendations and observations to be of paramount importance for the State Government to actively engage in and *act upon*:

- The establishment of a 'State Coastal Authority', with the following main focus points:
  - Securing full control and allocation of coastal management funding.
  - Development controls in coastal areas.
  - Infrastructure management in coastal areas.
  - Land resumption powers in coastal areas.
- A more proactive, integrated and committed role being taken that includes deeper awareness and 'alignments of strategic purpose and intention' with relevant authorities, advisory bodies, and targeted initiatives, Australia-wide; for example:

### The Australian Coastal Councils Association Inc.

In January and February 2019, the 'Australian Coastal Councils Association Inc.' conducted a survey of coastal councils to collect information on the issues of major current concern in Australia's coastal areas.

After considering the findings of the survey, which were presented to delegates attending the 'Australian Coastal Councils Conference' at Kiama, NSW (6-8 March 2019), representatives of the coastal councils in attendance endorsed both the need for effective actions to reduce greenhouse gas emissions and for **five key policy initiatives**, which are outlined in the following communiqué:

*We call on the Australian Government to adopt the following key policy initiatives with the aim of developing a coordinated national response to deal with coastal hazards including rising sea levels, more severe extreme weather events, and widespread coastal erosion:*

### **1. Resources to Manage the Coast on behalf of all Australians**

*Introduce a national funding formula to provide the resources necessary to manage and maintain the coast effectively on behalf of all Australians, including the funds needed to increase the adaptive capacity of councils to address climate impacts.*

### **2. Allocate Financial Assistance Grants to address coastal hazards**

*Broaden the range of 'disabilities' listed under 'Financial Assistance Grants' to include factors such as the vulnerability of coastal areas and communities to coastal hazards.*

### **3. Intergovernmental Agreement on the Coastal Zone**

*Develop a coordinated national approach to coastal governance through an 'Intergovernmental Agreement on the Coastal Zone', in co-operation with Federal, State, Territory and Local governments. This would clearly define the roles and responsibilities of each tier of government in relation to coastal zone management.*

### **4. National Coastal Policy**

*Ensure that the 'Intergovernmental Agreement on the Coastal Zone' forms the basis for a 'National Coastal Policy' which outlines the principles, objectives and actions to be taken to address the challenges of integrated coastal zone management for Australia.*

### **5. Increase funding for Australian climate research programs**

*Allocate increased levels of funding for Australia's climate science research programs conducted by CSIRO, and other research bodies, including the restoration of funding for the 'National Climate Change Research Facility' (or the establishment of a similar body) together with continuing support for 'CoastAdapt'. This is essential to ensure that appropriate guidance in relation to responding to coastal hazards is accessible to Australia's coastal councils so that coastal communities and assets are adequately prepared to address the adverse effects of climate change impacts.*

*The scale of dealing effectively with coastal hazards along Australia's vast coastline requires a national approach, national leadership and national funding. We therefore call on the Australian Government to play a lead role in addressing these challenges in consultation with local government authorities, which are knowledgeable in relation to these matters and more closely connected to their communities.*

## **For and On behalf of the City of Busselton**

**Attachment:** City of Busselton 'Energy Strategy 2020-2025'



ENERGY  
STRATEGY\_final draft



# Past and Current Energy Initiatives (Energy Action Plans)

- ✓ Annual monitoring and reporting of the City's energy use, cost and carbon emissions.
- ✓ Completion of energy audits for the City 5 largest facilities and implementation of a wide range of recommendations to improve energy efficiency.
- ✓ Set up of the City's Green Taskforce to oversee a whole of organisation staff behaviour change program.
- ✓ Installation of a geothermal system at the Geographe Leisure Centre.
- ✓ Purchase of a bike fleet for use by City staff.
- ✓ Installation of solar hot water systems at the Busselton Jetty Park and Winderlup Court units (Aged person homes).
- ✓ Upgrade of all lighting to LED at the Geographe Leisure Centre.
- ✓ Installation of more energy efficient public lighting, including LED, solar and wind powered on the Busselton and Dunsborough foreshores, public boat ramps and Busselton Jetty.
- ✓ Provision of teleconferencing capabilities to reduce car-based travel for meetings.
- ✓ Installation of 100kW solar system on the new City of Busselton Administration Building.



## Energy Strategy 2020/2025




2 Southern Drive, Busselton  
Locked Bag 1, Busselton WA 6280  
(08) 9781 0444  
city@busselton.wa.gov.au  
www.busselton.wa.gov.au






# Energy Profile



\$825,612


3,416,864 kWh



Electricity

157 accounts

including 13 contestable accounts




5000+

Streetlights

\$838,872

Solar Panels


133.9 kW



195,074 kWh

6%


of total electricity use



Gas

613,521 MJ

\$21,443




Cars

117

\$236,884

369,139 L fuel




Trucks and major plants

89

\$714,816

187,335 L fuel



Annual Sustainability Reserve

\$100,000

# Vision

Minimised energy costs and greenhouse gas emissions, through using energy as efficiently as possible and optimising our approach to generation and use of renewable energy, and to maximise returns to ratepayers through becoming a net energy generator.

# Targets

- To generate the equivalent of 100% of the City of Busselton electricity needs from renewable sources by 2030.
- To reduce City of Busselton corporate carbon emissions per capita to 50% on 2017/18 levels by 2030.
- Develop efficiency targets for fleet and plant by 2025.

# Scope

- Stationary use (electricity and gas)
- Street lighting
- Waste (restricted to landfill gas emissions, waste-related energy generation)
- Fleet and plant

# Focus Areas

- Monitoring and Reporting
- Efficiency upgrades to facilities
- Leased sites
- Design/Procurement for new facilities
- Public lighting
- Rooftop solar
- Mid-scale solar
- Waste
- Fleet and Plant
- Behaviour and organisational change

# Key Proposed Strategic Actions

- 1 An integrated energy monitoring and reporting system, which allows to dynamically and proactively manage energy use from the City's facilities, public lighting and water pumping and renewable energy generation including solar energy across the organisation.
- 2 208kW of solar PV Systems, including 100kW at the Geographe Leisure Centre, 40kW at the Naturaliste Community Centre, 40kW at the Busselton Library and 28kW at the Depot and installation of batteries when financially viable.
- 3 A mid-scale solar farm at Lot 27 Rendezvous Road, to allow the City to reach its 100% renewables target.
- 4 Strategic energy efficiency upgrades at large facilities as recommended by the Energy Opportunities Analysis and Prioritisation report (Yeoman 2018).
- 5 A Design for New Buildings Policy, which specifies minimum energy efficiency and renewable energy generations for all new City's facilities.
- 6 LED upgrades of high priority City-owned streetlighting, sporting facilities and Public Open Space.
- 7 Investigations into multiple resources recovery systems through the South West Regional Waste Group.
- 8 Towards more electrically operated fleet, plant and equipment as technologies mature and the price of energy storage decreases, starting with the purchase of a plug-in hybrid electric vehicle (EV).
- 9 Viability assessments of alternative fuel sources to power the City's fleet, plant and equipment.
- 10 A watching brief of new and innovative technologies including microgrids, virtual net metering and peer to peer energy trading.

