

Department of Water and Environmental Regulation
Joondalup WA

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To whom it may concern.

In light of the Climate Crisis we are now facing due to inaction of governments around the world, I am pleased at last note that our WA government is taking on some of the issues, albeit too late to mitigate much of what lies ahead for us all.

We all face extraordinary changes within our own lives, but also generally in the wider global community. We have all had an impact on the changes, and the consequences affecting us all are now unavoidable. So, even though I welcome this document as a look at what needs to happen, I can't help urging more action, and now! We, as the biggest, but one of the least populated states, should be showing the way, as to how change can happen. I would love to call my state the one which says to the others, and indeed to other countries "Yes We Can!"

We all have a vital part to play in the future, as we face our daunting situation, and many of us have been doing our best for decades to mitigate our own and hopefully other's impact. However, we need strong and brave governments to make the bigger and more important decisions needed. Living in Esperance, we can at times think that all must be ok around the world, as we live in such a pristine and isolated place. But sadly it is not, and we need to realize we are all stuck here together on this incredible planet in space!

I thank you for allowing us to have a say as community members as to what we feel needs to be done.

Yours Sincerely

Sue Starr

SUBMISSION

CLIMATE CHANGE IN WESTERN AUSTRALIA ISSUES PAPER

SEPTEMBER 2019

INTRODUCTION

It gives me some relief to read in the Minister's forward and the introduction, that the challenges facing WA in particular are recognized.

I am particularly pleased to read in the last paragraph of introduction that we don't need to choose between reducing emissions and protecting our state's economy and industries. The challenges of the future can be met with technology, investment, enthusiasm, commitment and benefits.

International and National Context

I find it disappointing and infuriating that our national government only sees fit to look at the very minimum reduction of emissions we have signed up to, and then not even adhering to that minimal benchmark. Even though we are a small contributor globally, per capita we have a huge impact and a responsibility to do more. In fact, all the countries around the world, which are classed as 'minimal contributors add up to 80% of global emissions, so surely we have to keep pushing for our real impact to be reduced.

Issues and opportunities for Western Australia

We do have many issues in WA, being so vast I see as an impediment, although we have a huge diversity of landscapes and climate within our state, so as to make the most of all the opportunities ahead, and address all the issues outlined within this document.

1. TRANSFORMING ENERGY GENERATION

Because we live in such a vast state, there needs to be more and easier access to renewable energy for rural communities, farms and stations. We need to support the set up of standalone power grids for this, and I realize this is beginning to happen.

One of the ways to reduce energy use, is to ensure that all buildings are built to be properly energy efficient, and any retrofit to older houses to energy efficiency standards be supported by interest free loans. I realize there already exists a standard, but according to my own research, this standard is not always adhered to and it is not enforceable. We built our home 31 years ago, and even back then understood what was needed in design to make it energy efficient. Now, we come to Perth, and see thousands of houses, jammed together, with no airflow, huge in size with hardly any greenery surrounding them, and air conditioners essential for their owner's comfort!

It is encouraging to see many houses and indeed businesses with their own solar panels, but the energy efficiency of the buildings also must be taken into account.

Also, as an aside comment, since the breakdown of the nuclear family of 2 adults and their children, and the 46% breakdown of relationships, many people are living in a house alone, sad but true fact. Homes have become so huge, that their energy needs (even for one person) has grown.

Overseas, some countries are using interconnected solar power within small hubs or suburbs, sharing their generation, feeding back and forth. I would love to see this happening with the new technologies being advanced all the time. We need to support and embrace all the new technologies that will help us get to this point.

Living in Esperance, we have reached our Horizon Power quota of rooftop solar voltaic systems which can be installed. This seems crazy to everyone here, given our remoteness. The Esperance Community Power Project has ambitious plans to move to a 100% renewable target supplying wind power for our area in the future, and they have sound backing locally, but such projects may need government help.

2. INDUSTRY INNOVATION

I read only recently that the first mine in WA has recently gone off grid to produce it's own renewable energy. This has to be the way forward to reducing the load on the whole state.

I am pleased to see the government has committed 10million to a renewable Hydrogen Fund, and hopefully this will grow in the future, and hydrogen will become a part of the whole energy mix.

I am also pleased to learn of the Future Battery Industry Strategy and Future Battery Industries Cooperative Research Centre. Surely battery storage is the way to go, heading forward.

I agree that 'Investment and leadership is required to ensure we move beyond the processing of precursor materials into the manufacture of battery components and battery cells, and development of service technologies and expertise'.

3. FUTURE MOBILITY

Every time we visit Perth, we are astounded by the amount of cars on the road. Being a vast sprawling city, and with more and more people living on their own, it has become a massive problem. I don't think public transport will ever be efficient in it's capacity to provide low cost transport to people around the urban area. The reality is that it's spreading at a rapid rate, and only with more hybrid or electric cars (along with more efficient high density housing), will this problem be overcome. When computers arrived on the scene, (yes I can remember that), their use promised a lifestyle of people working at home and only commuting when necessary, but sadly that is not the case. Every day, at the same time, thousands retrace their route, to the same place for the same time, to return home again. To me, one way of reducing this impact on everyone is to stagger the business hours of offices and retail outlets, so as to stretch the traffic over a longer period. Eventually, electric vehicles will be on the road, but without better strategies for congestion, they will still clog up the roads. We're glad we live in Esperance!

My thoughts;

- a. Living in a town 8 hours travelling time from Perth, doesn't afford us the option for an electric vehicle, as yet.
- b. People are always put off by the cost of electric or hybrid vehicles, but they don't seem to consider the fact that they will cost a lot less over their lifetime, due to using much less fuel, or none!
- c. From my own research, it seems many people who would like to use public transport more, are put off by the lack of parking at the train stations, and the security issue.
- d. I urge the installation of charging stations around WA as the best way forward, but again, realizing the challenges of our vast state, that may be some time off.

As a comment, we live in a society of preciousness, where children have to be dropped off at their school, instead of being walked there, where people get in their car and drive to the gym, instead of riding a bike or walking there. We have become a car loving society, (not always small economical cars either) which I find frustrating and sad.

I am pleased to read about the Blueprint for Future Perth and Peel Cycling Network. Let us hope this comes to fruition, and in the future many more cycle/walking pathways will be planned.

4. REGIONAL PROSPERITY

We have travelled throughout our vast state, but it has to be said, that some of the areas used for grazing, and even some farming landscapes will not be ecologically sustainable as we head towards a warmer climate. The leaseholders/owners of these properties may have to be compensated to leave them, but not before eradicating the feral animals which have decimated some areas – Eg; goats in the Murchison.

However, there is also scope for some areas to be destocked and opened up for tourism, and I realize this is already happening. These people need backing and updated laws, which allow them to make the changes needed to preserve the integrity of their landscapes, after generations of damage has taken place with overstocking. Even in the southern areas of the state the rain is not falling where it used to and frost has become a major problem, given the clear days and skies.

My thoughts;

- a. I live in Esperance, and even though on the south coast and recipient of some of the historical rain patterns, the fronts bringing that rain have certainly been drawn more towards the Antarctic (even in my lifetime) presenting fewer fronts and less rain.
- b. I feel there needs to be requirements enforceable by law to ensure that all rural properties have a percentage of natural bush cover, whether existing or established, to minimize the fracturing of biodiversity, which has already happened in so many places. Corridors need to be maintained, extended or established to allow animals to move through the landscape, no matter what we humans are using it for. Some properties down this way have planted trees in rows in their paddocks, leaving the width of farm machinery to be able to drive between them. It makes such sense to lessen the impact of soil loss due to erosion, protection for animals, and encouragement of predatory insects to help farmers cope with pest invasions.
- c. Farmers will have to follow the principals of regenerative farming, to ensure the building blocks of microbiology are kept in the soils, for their long term health, but also to entrap carbon being lost into the atmosphere.
In Esperance over the past few decades, mono culture has been established with the planting of tree crops. The financial benefits of these crops has fallen short of expectations, so now many are being bulldozed into hedgerows and burnt! That is an incredible waste of carbon, which should be left in rows in the paddocks to help reduce erosion, provide habitat and gradually add nutrients back into the soil. I find the practice of burning this rich carbon source appalling!
- d. I would expect that carbon offset markets would come from people who have to use air travel for business or pleasure, since the efficiency of that may be a long way off. Anyone who eats meat I feel should pay a little extra towards the impacts meat production has on our landscape. The ground, (especially in vulnerable and fragile areas) can be decimated by hooved animals, reducing the grounds natural capacity to hold carbon.
- e. The government and all West Australians will need to be educated about the benefits of carbon farming, and that we all have an impact. The ancient soils of our state need protection for their long term viability, or we will end up being a desert state, as Queensland is fast becoming. There must be enforceable laws, and removal from land, for those people who bulldoze natural vegetation on the land they occupy, simply to advance their profits. The ground underneath them belongs to us all and we need to fight to protect it, for the long term.

I am happy to learn about the Collie Futures Fund. We do need to provide adequate help for people whose lives will be impacted (and are already) with the demise of fossil fuel mining and power generation.

5. WASTE REDUCTION

I am surprised that the government's goal to reduce waste falls very short of my expectations. I would have thought that 75% target of waste generated to be reused or recycled by 2030 is not enough, given that education about such issues is becoming mainstream – at last!

My Thoughts;

- a. Right at this moment, there are small businesses around the state which are doing their bit in recycling plastics, albeit only some types of plastic. They will need ongoing support to grow their businesses, get more plastics out of the waste stream, and provide jobs for many. There is only ONE manufacturer of products such as park benches, bollards, walkways etc in AUSTRALIA! Replas is in Victoria, and they can't cope with the amount of soft plastic they are receiving. They are the ONLY place where soft plastics are recycled. We need to have at least one of these factories in each state, especially here where transport to Victoria is a huge cost to any recycling venture. As we know, Asia has been receiving our plastics, and returning some of them to our doorstep because of contamination! We must be responsible for our own waste and not send it to any country, especially those whose environmental practices leave much to be desired. Personally, I would like to see more of the public refusing plastic, and I have been endeavoring over many years to educate people about this very issue, by way of the Home Environmental Network. I established this education program in the late 1980's while living in Karratha, but it is a very long and tiring effort to try and make people realize and take responsibility for what impact they have, even in their small homes. Big businesses need to offer better options for packaging, to we can try and make choices which create less waste, especially plastic! In Esperance we don't have good soil and growing our own food is very difficult. Given that, some devoted growers come together once a fortnight to have a growers market, where packaging is totally avoided. Most things in the supermarket are covered in plastic. RedCycle is supposed to be receiving the plastic coming from Woolworths, but with my own research, I doubt that this is making it's way to Victoria for recycling (as promised by the supermarket). It seems to be going to Asia, therefore, will be back and in landfill soon or already!
- b. All households, businesses and governments must already know how to reduce their waste, unless they've had their heads in the sand! Because so many people aren't gardening anymore, it makes sense to have each shire recycling green and organic waste into commercial compost, which can be given back to those of us who are gardeners. The amount of food waste still going to landfill is appalling, and must be stopped. Commercial suppliers of food must also have access to composting, so we can recover all the food waste, and use it back on our poor soils to generate carbon holding capacity! The container deposit legislation will help with littering of containers, although many of the road verges, both on country roads and within the Perth region are terribly impacted with rubbish, mostly containers. I would love to see a statewide cleanup (each shire doing their own section) to get rid of all this once we have the container legislation in place.

I am happy to hear about the FOGO system, but it should be rolled out to regional centers as well ASAP.

6. SAFE AND HEALTHY COMMUNITIES

As mentioned, we are one of the most vulnerable states when it comes to drying climate and the impacts of that.

I feel sorry for the Emergency Services, each and every time they are needed to fight some fire which has been lit by some ignorant human/s. We need laws which take into account the impact these fires have on the community, but also our unique flora and fauna. Laws need to be changed to deal with such offenders. I do also realize however, that dry thunderstorms (more of which will be driven by the changing climate) are also the reason many fires are ignited.

My Thoughts;

- a. Personally for our household, we have our own firefighting equipment, sprinklers on house and shed roofs and a good plan.
- b. My biggest concern about the future of WA's climate is to do with our unique biodiversity. Humans will always look after one another and offer protection whenever they can, but our flora and fauna are suffering immensely under the impact of climate change, and will need more resources to protect them. It is very arrogant of us to assume we are the only species that matters into the future.
- c. Each community needs to have access to resources needed for fighting fires, and given the capacity to use their local knowledge of their region to do this.

I am pleased to read that the impact of climate change on health services, and the impact of those services on the environment is being addressed. That is a huge issue of concern.

7. WATER SECURITY

It's true we are very vulnerable, being the most affected state with lack of rainfall and rising temperatures. We must ensure the future of our water resources will be managed with extreme care into the future. What has not been mentioned below is the impact the mining industry has on our finite water resources. I know that some communities around our state are crying out for more to be done to force mining companies to recycle and reuse all their water requirements. Their water use is impacting on the longevity of regional towns and it must be addressed. It does worry me that many companies are from overseas now, and the environmental laws they are used to are either non-existent or at the very least, fall short of what we expect.

My Thoughts;

- a. So many people just don't get the fact that turning on our taps to get good clean water is a privilege, and we need to appreciate that water. As a gardener, I realize that retaining water and nutrients in our soil is of vital importance to allow the moisture to last longer. Personally I use bentonite clay in our poor soil to help do both jobs, which allows me to minimize our watering regime. Mulch is also essential for retaining moisture in the soil. The importance of both of these issues should be promoted as much as reducing watering days for gardens. Gardens, and especially native gardens are essential to lessen the impact of heat reflection in the expansive suburbs of Perth. Succulents as well, although not natives, survive on very little water, attract wildlife for protection and pollen, and are a fire retardant.
- b. I am not sure about other jurisdictions, but would assume any water restrictions must be beneficial. Hopefully, by now everyone has efficient toilets and water outlets within their homes. However, one thing which often annoys me, is that in some hotels, huge baths are a part of the bathroom design, and I hate to think that visitors from other countries may not know how precious our water is, and may use these without concern. Surely hotels and resorts should reduce their installation, and even remove them in places like Kalgoorlie!
- c. Water security and agriculture will be an ongoing and divisive issue. Obviously, ground cover helps to maintain carbon, nutrients and moisture, and surely reducing stock rates must help with this. We may have to help by offering interest free loans for fencing or hedgerows to create smaller paddocks for stock in order to allow better pasture growth. On this point, fencing has always been used in Australia for stock control. However, we all know of their expense, the impact of their loss during fires and floods, and I can't help thinking shouldn't we be encouraging landholders to plant something such as saltbush to create hedgerows, such as in the UK and Europe. I realize our climate is much more harsh, but fencing is an ongoing and expensive cost, and provides no habitat for animals, birds and insects.

I know from speaking to people around the state, that crops grown in one area of our state are then trucked and used for fodder for stock in another area! I find this amazing, and it

proves that eating animals has a huge impact on our whole environment, including the transport of fodder, then the transport of animals to abattoirs. As far as food crops, we may need to once again offer interest free loans so farmers can net their delicate food crops, thereby reducing evaporation and soil moisture loss.

I have wondered for many decades, why can't we work towards somehow saving the storm water from ending up in the ocean (along with all the plastic waste gathered on the way). There must be engineering expertise, which could design ways to hold on to this precious resource. At the moment, it is going straight into the ocean, then we are paying extraordinary amounts of money to desalinate it for our use! Seems crazy to me!

8. LIVEABLE TOWNS AND CITIES

As mentioned earlier, it is vital that we build our homes, business premises and inner city buildings with the changing climate at the forefront of design.

There are plenty of examples both within Australia and around the world, where those more proactive than our country, have been designing and building structures to lessen their impact on the climate.

My Thoughts;

- a. The key barriers to improving efficiency is that everyone wants a huge home, with more than one bathroom, more than three bedrooms and even more than one living room! Our home is a very modest three bedroom, one bathroom house which we built ourselves, facing north, and having protection on the windows facing west. We also have good curtains on all the windows and insulation in the roof. We have a solar hot water system, so very rarely need electricity to boost it's warmth. We have a light coloured tiled roof, which reflects heat. It takes just a few minutes to heat or cool our house, on the rare occasions when we need a bit of that back up. We built our home almost 40 years ago, when our children were small and we still can't believe that everyone isn't building in that way. Greed has overcome common sense, and so many houses are underutilized, creating wasted use of resources.
- b. I would assume anyone who can read should know what's required to make our homes or workplaces more efficient. Once again, in the long term, the cost of work done to retrofit a property will pay off with energy saving in the future.
- c. There may be guidelines for energy efficiency in new homes built, but it seems they are not always signed off on, according to my research. We are always astounded when we visit Perth, how expansive the new suburbs are, and how many black roof tops are common within these massive sea of residences. Surely by now, it must be known that a white roof will reflect heat, keeping the house cooler!
- d. Climate change will affect the liveability of every neighborhood, region city and town around the whole world – we are not immune.
- e. While on the subject of residential new suburbs, I am appalled at the amount of urban bushland which disappears (usually with stealth) to create another bare patch of land, sterilized and dug up, ready to be built on. What happens to all the wildlife which lived within these precious areas?

I realize that developers must set aside a certain percentage of land for 'green space', but laws need to change so that more original green spaces are left to support the threatened fauna and flora within our vulnerable state. Everyone who purchases in one of these mass produced suburbs, should be educated as to the importance of greenery. Dwarf varieties of many trees can now be purchased and some should be planted in every yard of every home!

There are also new varieties of lawn, which are water wise and tough. They can reduce the heat reflected from fencing walls and paving in all these areas.

9. RESILIENT INFRASTRUCTURE AND BUSINESS

My Thoughts;

- a. The key climate risks for all industries and resource sectors will be rising temperatures, ocean rise, storm surge, lack of rain and water scarcity, drier degraded soils, higher risk of fires and floods and intense storms and tornadoes. All of these issues will have to be addressed globally, as everyone will be facing the same challenges.
- b. We have taken action to minimize the impact of climate changes in and around our property and business.
- c. I have all the information I currently need, and I know how to research for more.
- d. Many millions of dollars will have to be spent on mitigating the effects especially around the coast line, and insurance companies are going to refuse some people insurance. This has been known for decades.

The road network in WA will be an ongoing issue of upgrading and extending. I realize, having travelled to all other states, that our road system is second to none, given the size of our state and the amount of taxpayers contributing to funding. Many of the regional roads are constantly needing attention, but it has to be said that the update (and hopefully extension) of the rail system originally used for grain transport must be on the agenda. Apart from the safety issue, the massive trucks carting grain around our state have a huge impact on the road conditions. All of us living in regional WA have to use the roads in order to travel to Perth for various reasons, sometimes several times a year. These trips become hazardous and scary at grain carting time.

10. PROTECTING BIODIVERSITY

'Western Australia is internationally recognized for its diverse habitats and endemic plant and animal species'.

With these words ringing in my head, I feel compelled to ask then; Why on earth are we still chopping down precious forests in our southwest, allowing urban bush land to be bulldozed to make way for housing, and not forcing landowners to regenerate cleared and degraded land in their care. We will not survive without biodiversity, and we have the benefit of an incredible state covering many different landscapes.

It gives me some hope to read that the government has promised to set a target for increasing WA's conservation estate by 5 million hectares, or 20% by 2023 – 24. I will live in hope that this actually happens!

11. STRENGTHENING ADAPTIVE CAPACITY

Making resources available to regional centers and communities will be essential, to allow each area to do the best they can to adapt to the challenges of the climate changes which will impact on us all. As pointed out, each area will have their own set of circumstances making them vulnerable to changing climatic conditions. Whether people like it or not, we will all have to bear the brunt of these costs, as 30 years ago, when we began to learn about the climate change impacts, nothing was done. Now we are paying the price, and will continue to do so.

My Thoughts;

- a. I think there will always be gaps in the availability of knowledge, given that many people STILL do not have the capacity to acknowledge that we DO have a real and worsening problem with a climate crisis. There are solutions for much of it, but denial is not a policy for change.
- b. The barriers to the adoption of effective climate action and adaption are; IGNORANCE, GREED and APATHY!

I read with interest the increase of funding for the DPIRD. I hope that money made available to them will be used to repair some of the damage caused by land clearing, over stocking and over fishing, for the long term benefit of their livelihoods, and indeed for us all. We can no longer continually take from our fragile land, and must respect the fact that we are only a part of the natural system and not above it.