



23 September 2022

Mr Tony Chappell
CEO
NSW Environment Protection Authority
Locked Bag 5022
PARRAMATTA NSW 2124

Via email

Dear Tony,

Response to draft Climate Change Policy and draft Action Plan 2022-2025

First, I want to applaud the NSW Environment Protection Authority (EPA) in developing a draft Climate Change Policy and draft Action Plan. This is a challenging area of public policy and regulation that will require a society and economy wide change in behaviour to have any chance of limiting the severity of the already apparent impacts of greenhouse gas pollution.

About JS Regulatory Services

JS Regulatory Services (JSRS) was established in January 2020 and provides professional regulatory services to both regulatory agencies and regulated industries. Our work often involves examining the regulatory framework around waste from both sides: the regulators and the regulated. I believe this experience puts JSRS in a unique position to provide feedback on the draft Climate Change Policy and draft Action Plan, particularly as it relates to waste.

Further information about JS Regulatory Services and the work we do can be found on our website – www.jsrs.com.au

About climate change generally

Climate change is ultimately a symptom of humans living unsustainably on this planet, specifically:

- The consumption of energy and resources at a rate greater than they can be replenished, and
- the emission of wastes into the environment at a rate greater than they can be assimilated.

While almost all other species on this planet live in equilibrium with their environment, humans, as a whole, live in great excess. This is not new information. In fact, scientists as far back as the mid-19th century were warning about the consequences of “plundering of the Earth”. However, these messages went unheeded for over a century. The exponential increase of the human population, technological advances, and a global economy underpinned by using non-renewable energy and resources have brought us to where we are today.

The linear model of consumption has caused many of the environmental issues we face today, including climate change. In reality, stationary energy generation, transport, industrial processes and waste is still mostly based on a linear model. For example, the use of the average suburban internal combustion vehicle and its impact on climate change:

- Take – oil is extracted from natural, non-renewable deposits, resulting in fugitive greenhouse gas emissions.
- Make – oil is refined into petroleum products, resulting in VOC and greenhouse gas emissions.
- Use – petroleum products are transported to service stations (resulting in greenhouse gas emissions) and stored and dispensed (resulting in VOC emissions).
- Dispose – The waste from burning the petroleum (carbon dioxide, VOCs and other gases) is emitted directly to the atmosphere.

The solution is to transition global economies to a circular model, which will not be an easy one. The argument of “What difference can NSW / Australia make globally” is a false one as there is a moral and ethical imperative for all people to make this change for the sake of future generations. The impact of human activity is undeniably changing the environment of the entire planet, already resulting in the extinction of thousands of species, and ultimately threatening our own long term survival.

General comments on the draft policy and action plan

The objectives of the draft policy are admirable. The key pillars of the draft policy are aligned with the critical areas that need to be targeted for change. The commitment to stakeholder consultation, especially with youth (who will bear the costs and impacts of the effects of climate change) is especially commendable. The draft policy approach is sound and will send a clear signal to the rest of government, industry, business, and the community of the direction of the EPA in this area.

However, the draft action plan is a combination of good new initiatives, and questionable ones.

Table 1 – Commendable draft actions

Action	Comment
New action 2(c): Partner with DPE to seek to ensure climate change is being adequately addressed by proponents of activities we'll regulate, and that approvals contain appropriate conditions.	This action will help to correct a long standing issue of better co-ordinating the planning, consent and operational aspects of development. It will always be more cost effective to design for low/no carbon development than try and convert or retrofit development after approval.
New action 4: Regularly discuss our climate change approach with the EPA's Youth Advisory Council, to ensure we're putting intergenerational equity into practice.	This action recognises the intergenerational impact of climate change and involves the generation that will bear the increased costs and impacts of climate change. However, it is hoped that this action will not just involve discussion, but listening as well.
New action 9: Progressively place greenhouse gas emission limits and other requirements on licences for key industry sectors.	While market forces are making the transition to low / no carbon options an economically sensible path, there will be a need to require some operators to make this change.
New action 10: Encourage and support our regulated community to innovate.	Another commendable action. However, similar actions in the past have created increased regulatory burden and complexity resulting in innovation becoming difficult and cost prohibitive, ultimately favouring the status quo (e.g. the resource recovery framework).

Table 2 – Questionable draft actions

Action	Comment
Continuing action 2: Engage and collaborate with climate change experts across the NSW Government, and with other jurisdictions, as the EPA develops and implements its climate change actions	Government is not the sole repository of expertise in the field of climate change. This action may limit the range of views/solutions, which has the potential to isolate and disenfranchise the businesses and communities that will need to make these changes.
New action 2(b): Progressively require and support our licensees to prepare, implement and report on climate change mitigation and adaptation plans	This action sounds familiar to the requirement to prepare Pollution Incident Response Management Plans (PIRMP). The idea of PIRMP was a good one, but its implementation was made overly complicated. To comply with the documentation requirements, the resulting PIRMP documents cost businesses a significant amount of time and money to prepare. Further, based on the work of JSRS examining these documents, have in large part failed to produce documents useful in an emergency situation.
Continuing action 4: Develop and implement programs to reduce greenhouse gas emissions from the waste sector, including our target of net zero emissions from organic waste from landfills by 2030	See section below

Specific comments on action plan – Organic waste

This is the one area of the draft action plan that needs specific attention, especially since it is by far the largest contributor to greenhouse gas emissions from waste.

First, the action to generate biogas from anaerobically digested organics should **NOT** be promoted as an action, except in situations where it is feasible as an on-site energy solution (e.g. large scale dairies and feedlots). This action is grossly misguided for many compelling reasons, including:

- Generating biogas from anaerobic digestion is a high investment, high maintenance, and high risk solution to managing organic waste.
- There is a parasitic load requirement in anaerobic composting, where a significant proportion of gas / energy is required to heat and drive mixers, etc.
- Anaerobic digestion can generate a significant odour nuisance if not designed, built, and operated competently.
- The process is susceptible to generate fugitive emissions, like any gas processing, transfer and storage infrastructure. Keeping in mind that biogas is predominantly methane which has a global warming potential up to 30 times that of carbon dioxide.
- The digestate (sludge) from anaerobic digestion is typically high in ammonia, requiring further treatment and processing (often being composted) before being able to be used as a soil amendment material.

At a visit to IFAT 2022 in Munich in June this year, I had a very enlightening conversation with a representative from DRANCO nv that makes biogas plants for household wastes. He told me that while he would happily take money from Australian companies to build biogas plants here, he did not understand the logic behind the push, especially when, in his words:

“The worst place in Australia for the generation of solar energy is always going to be better than the best place in Europe to do the same.”

The misconceived incentivisation of biogas plants is only reinforced when looking at the state of agricultural soils in NSW. Soil carbon is central to biological, chemical and physical processes required for healthy, productive, and resilient soils. Soils are also capable of storing up to three times more carbon that can be stored in the atmosphere or terrestrial vegetation. However carbon continues to be depleted from our agricultural soils.

Key facts about soil carbon in NSW

- Around 50% of soil carbon in NSW agricultural soils has been lost since European settlement.
- Between 2006 and 2020, the amount of soil carbon loss in NSW agricultural is estimated to be 166.6 million tonnes – around 2,200 times the weight of the steelwork in the Sydney Harbour Bridge

There is a huge carbon resource in NSW that is currently being literally wasted that could be used to reverse this trend of soil carbon loss, but actions to date fail to be bold enough, are poorly co-ordinated and/or only have had limited impact.

Key facts about organic waste in NSW

- Only 44 out of the 128 Councils in NSW have a household organics collection service.
- On average, 51% of the household kerbside residual bin is organic. This has only slightly improved in the last decade.
- Currently only about 49% of the total organic waste stream is recycled in NSW.
- About 70% of the organics recycled go to urban amenity (Council gardens, roundabouts, bagged potting mixes, etc).
- Only 10% of the organics recycled (less than 5% of the total organic waste stream) is returned to agricultural soils.

With proper planning and incentivisation, there is the potential here for a state-wide, 50-year circular economy program that collects and processes **ALL** organic wastes generated in NSW that also replenishes agricultural soil carbon stocks.

Moving processed organics from processing facilities in metropolitan areas (where most waste organics are generated) to rural and regional areas can be low emissions as well, using the existing rail infrastructure. Land for storage of processed organics is not a limiting issue. Even existing small waste facilities could be used as stockpile sites for processed organics so that they are available when windows in farming operations allow for them to be applied.

Such a program will also cross over all three pillars of the draft climate change strategy and produce significant other benefits, including:

- significantly reducing net greenhouse gas emissions from landfills,
- reducing explosion and fire risks, odour and leachate impacts from landfills,
- increasing the stability, resilience and productivity of agricultural land,
- increasing additional carbon sequestration in agricultural soils,

- providing income and employment opportunities, especially in rural and regional areas of NSW, and
- increases access to FOGO / recycling collection in rural and regional areas (through backloading of materials on the rail network back to processing facilities in metropolitan areas).

Suggested actions

To tackle the entire issue of greenhouse gas emissions from waste, it will require bold and courageous action by Government. But this action does not have to be to the detriment of the citizens of NSW. In fact, it can be aligned with other State and Federal policy imperatives as well as providing economic opportunity, including in rural and regional areas.

A large scale vision, like the one outlined above, is likely too large for any single company to take on all aspects of. However, with the correct policy signals, an environment can be created for business to work together to deliver the vision. These policy signals would have to include:

- **Immediately ceasing all incentivisation for large scale anaerobic digestion of organic wastes** – large scale biogas generation projects are unlikely to deliver the greenhouse gas reduction benefits anticipated. They are also resource intensive and produce waste that requires further processing before being able to be used productively.
- **Changing the legal definition of waste** – The current definition of waste in the *Protection of the Environment Operations Act 1997* was developed during the height of the linear economy. This definition needs to change to align with a circular economy. Like it or not, there is a stigma around “waste” being applied to land.
- **Mandatory household FOGO collection state-wide** – This is a necessity to capture the vast majority of organics currently going to landfill. This service also needs to be full FOGO (not just garden organics only). There may be difficulty in implementing this in rural and regional areas, but the timing can be linked with the delivery of processed organics to rural and regional areas, so backloading options are available.
- **Banning organic waste to landfill** – The decomposition of organic waste in landfill is the engine that creates the greenhouse gas emissions from the waste sector. Stop fuelling the engine! Again, this can be signalled in advance, but this is a critical change that must be made.
- **Incentivise the filling composting and transport infrastructure gaps** – these gaps have already been identified, but the ones related to processing and transporting organics need to be prioritised.

A mechanism to potentially tie all this together exists already – A Protection of the Environment Policy (PEP) in Chapter 2 of the *Protection of the Environment Operations Act 1997*. The restoration of soil carbon aligns with the objectives of the EPA and also manages the cumulative impact on the environment of human activities. The operation of a PEP can assist in considerations for consent and licensing for infrastructure development. By focusing on soil carbon, by default you also address the capture and reprocessing of organic waste and the greenhouse gas issues, without having to specifically address them in the PEP.

I sincerely hope that this submission has assisted in the consideration of the draft Climate Change Policy and draft Action Plan 2022-2025. If you would like to discuss these ideas further, please contact me.

Yours sincerely,



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JS Regulatory Services