

**Submission
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INQUIRY INTO 'ENERGY FROM WASTE' TECHNOLOGY

Name: Mr Gerry Gillespie

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ReTuRning ORGaNics TO SOIL

Gerry Gillespie

The Alternative to Incineration

There is no context in Australia in which setting fire to reusable and recyclable materials makes sense. Especially organic waste. Only materials which are organic in origin will burn. If you remove all of the materials in any waste stream, which can be recycled and all the materials which can be composted, there is little, if anything left to burn.

Given the depleted condition of Australia's agricultural soils, burning compostable resources that can provide much needed carbon and nutrients is a terrible waste.

Around 70% of the resources in our waste streams is organic material which can be turned into high-quality compost and returned to our soils. Australia has more than 450 million hectares of land under cultivation and according to the NSW DPI, on average these soils have less than 1% organic material in them. (*NSW DPI van Zweiten*)

History has shown us that using compost on soils raises soil organic material and increases the human ability to continue to grow food on that land. (*Next Gen Project – Wollondilly*)

Increased soil organic material helps retain moisture, expands biological soil diversity, increases nutrient transfer, sequesters soil carbon to help reduce the effects of Climate Change, reduces farmers input costs and increases profits - all of which provides us with more reliable sources of food.

At a recent Soil Carbon conference, I attended at Chantilly in France, a document from the UN was discussed in detail which states that due to continuing soil degradation, humans have reached a point world-wide where we only have enough soil left for 60 more harvests using industrial agriculture's chemical methods. <https://www.scientificamerican.com/article/only-60-years-of-farming-left-if-soil-degradation-continues/>

This means under current management systems soils are degrading so quickly your own grandchildren's children will not have enough soil for food production. Protecting our soils is a very urgent priority for all of us. We can help do this with compost.

More than half of the waste we produce is organic material. If buried in landfill it creates methane but when incinerated it creates dioxin, furan and toxic ash. When composted this same material can help us ensure the long-term viability of our food production systems.

All clean organic material can go back to soil as quality compost if we get the material separated out from our waste streams and converted into quality compost.

Organic waste is the principal tool we have to reconnect the public to the soil as their food producer and as such, the issue of separating organic waste from other wastes should be seen as a soil and food issue, not a waste or recycling issue.

A large number of councils around the world now have source-separation systems for organic waste to reduce that waste in landfill. In Australia food organics and garden organics are increasingly collected together. In the more successful of these programs such as City to Soil, used in Armidale NSW, the simple message given to householders is that 'we need this material clean because it is going back to soil to grow food'. This simple education campaign has been enormously effective.

Given the right tools, information and motivation, householders are readily prepared to ensure that their organic waste contains no contaminants such as metals, glass or plastic and can be used to ultimately grow food.

Regulation

Even in the best of councils, however, if the individual who is supporting organic collections and source-separation of organic waste moves on, it is possible that interest will fall away unless enthusiasm and education are kept up at the highest possible level.

Several years ago, in a presentation at the annual Waste Conference in Coffs Harbour, respected educator, Grahame Collier, of T Issues Consultancy pointed out that Australians began recycling in earnest about the same time they started using seat belts in cars to save lives. Compliance with mandatory seat belt law was 'now around 98%', where compliance with recycling at the time was around 40% plus.

The only thing which created this difference was regulation. It is clear that if we want to achieve a nationally supported and beneficial result to reduce organic waste and increase diversion we need to take responsibility for the outcome as a national population and under regulation. It has been done before.

There is much talk about the need to build a model for the circular economy, where the end product of a process is the input for another. Reconnecting the community to the soil through their organic waste is the perfect circle of sustainability for such a circular model.

The Problems

One of the greatest issues facing agriculture is soil degradation. In addition to succession, the division of land, the ownership of property and the weather, are the ever-increasing costs of production and the demand from retailers for lower prices.

Described by one farmer as the only business where you 'buy retail and sell wholesale', farming is under ever-increasing financial pressure.

However, along with all these issues, is the disconnect between the producer and the consumer. In this context, one big problem facing agriculture is a lack of awareness by the consumer of on-farm production costs and production difficulties.

Along with the national need to keep the farmer financially viable there is an urgent need to raise community awareness of the importance of food production given that 93% of the food consumed in Australia is grown here. (ABS)

While it may be opportune for economists and retailers to search elsewhere for cheaper food in the short term, it is dangerous - socially, politically and structurally - to assume we can purchase a substantial percentage of our food supply offshore.

Raising awareness of the need for food security, quality and quantity is crucial to our national and individual survival.

The biggest social and political opportunity for Australian agriculture, indeed for agriculture everywhere, is to make the individual consumer aware of the importance of the producer for their very existence.

The genesis of this opportunity lies in the very soil itself.

The Opportunity

In recent media comments in support of the Product Stewardship Act, Australia's Federal Minister for the Environment, Josh Frydenberg noted that 'the cost of food waste to the economy is around \$20 billion each year'.

According to statistics used in developing the National Waste Strategy we spent around \$11 billion per year managing more than 50 million tonnes of waste – and up to 70% of the wasted materials we produce are organic.

While soil organic material can be built up in soils through good management, it can also be added through the use of compost and biologically active products.

When considered in terms of agricultural use, the 40 million tonnes of organic waste available in waste streams is not going to raise Australia's organic soil levels by any great amount when applied as compost but it will do nothing for the

soil if it is burnt.

Application to horticultural farms producing local vegetables would see all possible compost production from organic waste used within easy reach of urban centers, once an appropriate collection and reuse scheme was in place. *(Next Gen Project – Wollondilly)*

The potential of diverting this organic material back to Australia's farms as a clean source-separated product brings with it the key to engaging the entire community in a focus on the importance of soils. We all eat, so we all need to be involved at some level in food production.

To enable organic waste to be used in agriculture as a clean, quality product, it must first be collected separately from all other waste products.

For this to be achieved we need to use the right tools, the right motivation and the right information.

In communities where such programs have been rolled out successfully with the correct engagement strategy, it has been possible to have the urban community re-engage with the importance of farming and soil to their daily existence.

Recycling of organic waste, coupled with the message that the process is about helping to sustain agriculture, resonates with every community member, because it is about food. It is about the future and it is about both the urban and farming family.

At their very essence, humans understand the importance of food. The reuse of organic material, clearly is not a waste issue, it is a food issue.

Encouraging the conversion of organic material into compost and then to soil is the only practical means we have of re-engaging the urban community with the farmer as the producer of their food - it also brings to the conversation the local and national political power necessary to make this increasingly urgent shift.

To date, organic recycling programs have been implemented as a waste management or recycling strategy - not as a food strategy. And when implemented, they all carry varying educational messages and use different tools.

Waste management programs are generally seen as providing solutions to problems, not in building new opportunities for the community.

The diversion of organic waste to agriculture is such an opportunity. It requires slightly different collection systems, new jobs in composting and new employment positions in getting compost to farms.

The savings made by diverting material from landfill can be channeled into creating new opportunities for the waste industry, the compost industry and the farming industry. *(Next Gen Project – Wollondilly)*

The Solution

The conditions of the soils of Australia are a national issue of great importance. While farmers may be the guardians of the soils on their farms, on behalf of us all, it is the very soils they farm which feed our children and us.

The soil is your mother – everything you have been and will be depends on the quality of the food you eat. Yet nationally we have been very poor at developing strategies to protect our soils and our farmers' ability to continue to produce food.

In 2009 a document titled *Managing Australia's Soil: A policy discussion paper* was produced by the National Committee on Soil and Terrain. After a great number of iterations and public and private meetings, it died in the ditch of political argument.

A beautifully drafted document, it promised at last to be the foundation stone of new policy to protect our soils and our food in partnership with Australia's farmers, for the benefit of the entire community.

This document and its intent need to be revived, but there is much we can do right now with the tools we have at hand.

It would seem logical that the first thing we need to ensure is that organic waste no longer goes to landfill and certainly not to incineration! This can be readily achieved with a simple national law banning the dumping of any organic waste into either landfill or a furnace.

Experience in other countries has demonstrated that a simple diversion of organic waste from landfill will only encourage the existing waste industry to build multi-million dollar incinerators at the expense of ratepayers which pollute our atmosphere and create toxic waste, while losing all organic benefit and social connection.

It must be remembered that 30% of everything that goes into an incinerator comes out as toxic ash, destined for landfill.

We have a better tool in Australia that could achieve the diversion of clean source-separated organic material to farmer's soils - **The Product Stewardship Act**.

The Act was passed into law in 2011. It has three levels – **Voluntary, Co-regulatory and Mandatory**.

The Voluntary area is seen as the area where most recycling will happen, however, it has no direct legal force. The Co-Regulatory section is intended to develop as a partnership model between industry and government where the outcome can be covered by regulation but protected by Government. It is currently in use to ensure that computers, TVs, e-waste and other materials are recycled under the protection of regulation by the Federal Government.

The third area is Mandatory. This places a legal obligation on all parties to take certain actions in relation to a product. This includes arrangements for recycling products at the end of their life.

The use of national legal obligation means that the Federal Parliament, on behalf of the population, accepts liability for a recycling scheme and guarantees its success by predetermining the outcome.

It may be possible for the states to regulate this in part but their ability to cooperate in other areas of waste policy leaves much to be desired.

While there is inevitable resistance to using regulation in such a way because it means change, and there is always resistance to change, regulation in this area has precedents in history.

The Government of Scotland for example, determined that from the 1st of January 2014, all business had to recycle glass, plastics, paper, cardboard and metals and separate out organic waste for collection.

Rather than create chaos, as warned by waste operators, it has generated many hundreds of new business opportunities for waste operators and many, many more jobs in the waste and recycling industries. <http://www.bqlive.co.uk/2015/02/03/organic-recycling-firm-continues-to-grow-a-year-on-from-new-regulations/>

This shift happened because the change was regulated in the Scottish Parliament and the responsibility for the outcome was taken by all of the people of Scotland - together.

Prior to the shift in Scotland, the San Francisco Board of Supervisors in 2009 passed the Mandatory Recycling and Composting Ordinance, which introduced the law which made recycling and composting compulsory.

The input cost of farming in Australia rises every year. Reducing those cost by any means without creating a negative impact on production has to be a good thing.

The return of all our clean organic waste to our soils, around 40 million tonnes per annum, will mean an overall reduction to the cost of farming.

However, engaging the community in the return of their organic waste to our soils as a means of helping sustain agriculture reconnects the city to the soil, in a way that has long been lost to our urban communities.

The Product Stewardship Act could direct all councils to include the source-separation of organic waste as a mandatory element in all tenders for domestic waste collection.

Such regulation would state that organic waste must be clean, source-separated and turned into high-quality, nutrient laden compost complying with the Australian

Compost Standard and delivered to a farm within a given distance of the point of collection. Councils could be required to keep records of tonnage, quality and delivery.

Similarly, all commercial and industrial waste collectors would be required to collect source-separated organic waste, with similar outcomes to domestic collections. The Australian population and its Parliament through the **Product Stewardship Act** could protect the entire system under law.

The active pursuit of this concept by the Government of NSW on behalf of its population would go a long way to seeing it implemented.

Conclusion

Regulation is often seen as a last resort in a democracy. However, we already use regulation under law when driving on our roads to constrain social behavior and to pursue social outcomes.

The need to preserve our agricultural base is fundamental to the future of our national existence. The soil is the foundation stone of our human economy. We get food, clothing, housing and medicine from the soil. Up to 70% of all industrial inputs come from the soil. (*Chino – ANOR*). Awareness of the true value of soil and its need for protection should be enshrined in law.

Urban households and businesses in Australia continue to spend \$11 billion dollars annually on the management of waste. Much of this is spent on putting organic waste into landfill.

While it appears that incinerators make money by generating energy, they actually make money through gate fees. They are built and paid for using household rates.

Using precisely the same investment, the same vehicles and the same contractors, we can separate out our organic waste and recyclables the same way that San Francisco and Scotland now do.

We can divert a lot of the funds we are putting in landfill into creating new jobs protecting our soils.

The removal of organic waste as a clean source-separated product for use on farms will mean that the 'yuk' factor is taken out of our mixed waste. It is when we mix food into our general waste that our waste problems begin.

In addition, raising the awareness in the urban community of the farmer as the producer of their food is key to the nation's future and future of us all.

The soil is our mother, it warrants our protection.