GLOBAL OLIVINE WESTERN AUSTRALIA

Sustainable* Resource *Recycling* & *Recovery

Inquiry into Waste Generation &
Resource Efficiency
Productivity Commission

30th June 2006

Dear Sirs

Draft report on Waste Generation and Resource Efficiency a welcome expression of common sense thinking, providing Australians with a real opportunity to make progress on their waste management challenges.

Global Olivine applauds the courage shown by the Productivity Commission in publishing the conclusions made in its draft report. The Draft Report on Waste Generation and Resource Efficiency is a welcome breath of clear and pragmatic thinking.

However, some of the key findings of the Commission are based on incomplete information, consequently some of the report's conclusions are poorly founded.

Further, key findings are shaped by a remit that seeks to simplify the Commission's task. Separately considering the issues of hazardous waste and the greenhouse implications of waste may make the Commission's task more manageable, but it reduces the significance of key issues and externalities that must be considered if the overall interests of the community are to be best served. Consequently we believe key report outcomes are as well founded as they could be.

The purpose of this submission and the supporting documentation is to provide the Commission with more complete information. In so doing we will demonstrate that eliminating waste is indeed realistic and that through understanding how this can be achieved, the Commission will better understand the extent to which the current systems of waste management in Australia continue to waste resource and opportunity and generate externalities that have far reaching implications.

In so doing, we hope to provide the Commission with additional material that will allow a more balanced approach to the development of Australia's waste management capabilities. In so doing the people of Australia will have the confidence that their best interests are indeed being served.

Zero Waste is a Realistic Goal

Global Olivine waste attracted to Western Australia by the assertion of some State Bodies that they were adopting 'Zero Waste' Goals and Global Olivine, through its Sustainable Resource Recycling Facility (SRRF) design is able to deliver this in and economically and environmentally sustainable fashion. Economically means waste processing at a price which in most States of Australia will compete with the disposal cost of landfill.

In 2001 Global Olivine was awarded environmental approval to develop an SRRF in Kwinana, Western Australia. The design has subsequently been granted environmental approval in the UK, satisfying strict European Union guidelines.

Detail of how this is achieved is found in the document 'GO SRRF Business Overview with Background Requirements June 2006.pdf. In summary though, the facility is able to offer a Zero

Waste/Zero Landfill solution for 1.4 million tonnes of waste each year. The types of waste the SRRF can treat include; household waste, sewage sludge, biomass wastes, both hazardous and non-hazardous hospital wastes, commercial and industrial wastes, rubber tyres, waste oils and hazardous wastes excluding radioactive waste.

Our proposals also included provision of Construction and Demolition waste recycling at strategically located transfer stations. An example of how services would have been provided to Perth's regional councils is attached as 'Final Mindarie EOI.pdf'. Mindarie Council rejected this proposal in favour of locally controlled alternatives.

The SRRF delivers true Zero Waste solutions by using proven technologies that effectively take the waste by-products of one process and use these as a raw material for manufacture of other products. If the facility had been established in Kwinana, it would have ensured that the admirable efforts of the Kwinana Industries Council to mitigate wastes through cooperative efforts of industry, were taken to a new and unprecedented level.

The SRRF was also permitted to generate 100,000 tonnes of potable water each day through desalination of seawater. The desalination would have been powered by energy recovered from the waste processed by the SRRF, 70% of which is renewable on account of the large amount of biomass material contained in waste. The SRRF could generate enough power for several hundred thousand tonnes of potable water each day. The balance of the energy not used to desalinate water, would be made available locally, displacing fossil fuel generation.

Zero Waste is practical. Achieving it requires the adoption of an holistic approach and economies of scale. The scale that economic delivery of Zero Waste requires, typically necessitates that waste authorities cooperate and that State Government's acknowledge the wider benefits an SRRF can deliver. Such cooperation is not presently forthcoming, but might be achieved if all authorities were required to adopt best practice approaches.

***Adopting a Best Practice Approach to Waste* Management**

The Commission favours a best practice approach that seeks to factor in all expected costs and benefits of a given option. We agree with this approach but would suggest it should also factor in the costs associated with the lost opportunities associated with any given waste solution. For example, waste in a landfill represents a massive loss of opportunity and value.

The fact that we have yet to establish operations in Australia is a reflection of the authorities in WA to adopt this type of approach. It is a consequence of two of the key constraints the effective waste management services being developed in Australia that the Commission identifies in its report.

The first is a slavish adherence to a waste hierarchy based on idealism that ignores the true costs and benefits approach being advocated by the Commission.

That this costs benefit approach is ignored is perhaps a symptom of the second key issue raised in the report. Specifically, that local government is not capable of effectively managing the waste issue. In the case of the SRRF proposed for Kwinana, we would suggest that the inability to effectively manage waste and strategic asset development goes beyond a local government level.

The SRRF proposed for Kwinana offers benefits for waste management, renewable energy generation and water supply. The failure of the facility to be established was a result of the failure of the various layers of local, regional and state government to overcome their vested economic and political interests. In WA local Government, either directly or indirectly owns much of the waste management infrastructure. At the time our development activity was greatest, the State Government owned and controlled much of the power generation infrastructure and provision of water and sewage services. The vested interests of the various layers of government rendered them incapable of coordinating their efforts so that the best interests of the community are served.

What this means for WA is that the majority of waste in the Perth area continues to go to landfill, many of which are owned by local government entities, where the value locked up in the waste resource is lost. That which does not go to landfill is treated in the types of 'composting' processes the Commission has identified as being of questionable benefit while attracting substantial additional cost. Again, ownership of these types of facilities is typically vested in one of the many local government entities. Ownership is significant, as the asset base of local government entities typically drives the incomes of the people involved.

Additionally, the failure of the SRRF to be established means that where Perth could be getting 100,000 tonnes of potable water from a renewable energy powered desalination facility, it is now getting that water from a fossil fuel powered desalination facility. Ironically, this facility, commissioned by the State owned Water Corporation, is located on the same site Global Olivine had proposed for its SRRF.

Adopting a best practice approach to development of a waste management system cannot be achieved unless all costs and benefits, including those associated with lost opportunities and downstream benefits are taken into account*

Limited scope of the Commission's report compromises ability to establish true costs and benefits

The Commission has limited the scope of its draft report findings to non hazardous wastes and suggests that greenhouse gas and related energy usage issues should be considered separately. While this may make the Commission's report writing more easy, it constrains its ability to consider the wider benefits that are accrued by a facility such as the Global Olivine SRRF.

While the waste management industry has developed niche operations based around waste types that typically separate hazardous wastes from non-hazardous wastes, the fact remains that all wastes must be effectively handled if the community is to be best served.

The community being best served is a key finding of the Commission and it is a belief shared by Global Olivine. It is what has lead Global Olivine to develop a process that can effectively handle **all** wastes including hazardous wastes in a process that is safe, low cost and environmentally sound.

Importantly, neither landfills nor `composting' facilities offer solutions for hazardous wastes. Typically, these wastes are dealt with in high cost specialist landfills that are located substantial distances from the place of generation. Costs associated with transport and handling are considerable and the long term environmental impacts and implications are significant. The Global Olivine SRRF handles all hazardous wastes on-site and offers a low cost approach that encourages people to dispose of their waste responsibly rather than dump them. This approach has a range of benefits including increasing industry efficiency.

Limiting the scope of the Commission's report to household, non-hazardous commercial and industrial wastes and construction and demolition wastes, means that responsible authorities may not be required to consider the cost and benefit implications associated with handling hazardous wastes when they are contemplating waste management solutions. Given that they have ultimate responsibility for ***all*** wastes, this over simplification runs the risk of delivering a compromised approach where society does not receive the greatest level of benefit and pays excessive costs.

Responsible authorities must be required to consider the impact a proposed waste treatment system will have on the totality of the wastes, hazardous and non-hazardous that arise in their region.

***The importance of considering energy* in *overall resource* efficiency**

The Commission's report suggests that Greenhouse Gas issues associated with waste should be considered separately from resource efficiency and waste related issues. The risk of adopting this approach is that when resource efficiency and waste solutions are considered, not factoring Greenhouse Gas issues into the decision making process will mean the balanced approach advocated by the Commission is compromised.

Additionally, Global Olivine has a real concern that even if energy were properly considered in the best practice and balanced approach for waste solutions, the significance of the energy balance associated with our resource usage is not properly considered. For the balanced approach to have the maximum possible efficacy, it must be applied across an entire product lifecycle.

For example, many States in Australia advocate the banning of plastic bags in favour of options such as paper and calico. The argument is that this approach means less oil is used as we produce less plastic. However, paper and calico bags have a greater energy input during manufacture and transportation to market that typically negates any benefits that may be derived from not producing plastic bags.

Policies that are driven by public perceptions and the politicians' response to those perceptions, rather than developing policies which respond to reality, are in danger of doing Australians and their environment a huge disservice.

The report does contain data that recognises the greenhouse gas implications associated with waste and the benefits recovering energy from the waste can bring. It also notes that much of the energy recovered from waste is classed as renewable. The fact is that if the waste produced in Australia was processed in Global Olivine SRRFs, the energy generated would be equivalent to that produced by two nuclear power stations. More than 20,000,000 MWh each year! 70% is renewable energy and massive amounts of methane would be prevented from going to atmosphere where, as the report notes it is at least 21 times more potent as a greenhouse gas than Carbon Dioxide.

While it is often suggested that recovering energy from waste is a waste of energy, this argument simply does not match reality.

Waste is a valuable source of energy that is predominantly biomass. When a modem efficient energy recovery process uses this waste material as a fuel, the overall resource efficiency of a society is enhanced and its environmental impact reduced.

Using levies to drive change where change produces tangible benefits

The Commission does not advocate the use of levies to drive change in waste management practices. This view seems to be based on the fact that levies are currently being used to drive waste management decisions in the direction of systems and processes that add little benefit but considerable cost.

In providing a Zero Waste option, the Global Olivine SRRF takes 1,000,000 tonnes of waste and each year, even with doorstep collection of recyclables, achieves the following:

- Generation of ***1,100 MWh*** of electricity each year 70% of which is green
- Production of ***235,000 tonnes*** of aggregates and concrete products
- ***7,000 tonnes*** High grade cement additives
- ***25,000 tonnes*** recovered ferrous metals
- ***7,000 tonnes*** of recovered non-ferrous metals
- Recovered mercury **2 *tonnes***
- Recovered colloidal sulphur ***3,000 tonnes***
- Recovered hydrochloric acid (34%) ***25,000 tonnes***
- Glass products ***75,000 tonnes***
- Oil products ***15,000 tonnes*** (90,000 tonne capacity)
- White ware, Electrical & Electronic Equipment (WEEE Goods) treatment ***15,000 to 30,000 tonnes***

- Waste to landfill **0 *tonnes***

The Commission's approach has determined that a modem landfill with gas reticulation has external costs of as little as $5. If the lost opportunities are factored in, then we would suggest the costs are significantly higher. A million tonnes of waste in such a landfill would generate around 1/60'" of the power an SRRF is capable of delivering and all other materials are lost. What is the opportunity cost associated with these lost materials?

Were a 'composting' facility to receive the waste rather than an SRRF, around 1/10th of the power an SRRF is capable of generating would be produced and approximately 90% of this power would be used to run the composting facility. The 'compost' product will typically end up in a landfill as few market exist and while some materials are recovered for recycling purposes, typically these must be sent elsewhere to be turned into something useful. The by-products of an SRRF on the other hand are added value and have direct application.

The Commission has identified that a best practice approach that quantifies all costs and benefits should be used. While the Commission may not favour one waste disposal route over another, unless a mechanism is employed that ensures the costs associated with a given waste treatment process are properly reflected in the price charged for that service, then the best practice approach will have no teeth. If it is not levies, then another mechanism will need to be found that acknowledges the massive opportunity costs current waste management systems fritter away.

Unless change is forced upon the waste management system, the waste management system will not change. Too many people are making too much money to seriously care about something as trivial as the environment.

A glimmer of hope

No less a person as Albert Einstein is quoted as saying:

"Problems cannot be solved by thinking within the framework in which they were created. "

The Global Olivine SRRF represents a vision of effective waste management. The Productivity Commission can make recommendations that allow this vision to become a reality or it can allow the current waste management system to continue to grow fat on the back of providing an essential service while delivering limited environmental benefit.

The Commission's report identifies a major problem in the waste management sector in Australia

The Productivity Commissions report offers a glimmer of hope for a future in Australian Waste Management that does not include landfills. These represent the most appalling waste of resource and a massive liability, future generations will be required to clean up. They are completely unsustainable.

Meaningful change in the waste management sector is possible. It simply requires courage on the part of the politicians of Australia to do what they were elected to do - act in the best interests of the community they serve!

if the Productivity Commission does not recommend that the Federal politicians of Australia act to address the waste problem, then a real opportunity will be lost and the cost to Australia will be great.

We wish you well with your efforts!

Yours sincerely,

Norman Daffen

for Global Olivine Western Australia Ltd