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Waster Generation and Resource Efficiency Inquiry
Productivity Commission
LB2 Collins Street East
MELBOURNE VIC 8003

10 February 2005

Re: *Productivity Commission Inquiry into Waste Generation and Resource Efficiency*

Dear Sir/Madam

AGL welcomes the opportunity to provide comments on the Productivity Commission Issues Paper, Waste Generation and Resource Efficiency. AGL is not directly involved in the waste management industry. The focus of this submission is on the substantial benefits created as a result of landfill gas electricity generation facilities developed by AGL.

Should you require further information on any matters raised in this submission, please contact Tim Nelson, Manager Environment Policy and Strategy on (02) 9921 2516 or by email at tanelson@agl.com.au.

Yours sincerely

Mary Darwell
Manager
Group Environment

AGL SUBMISSION ON WASTE GENERATION AND RESOURCE EFFICIENCY

1. Introduction

AGL is a leading energy company, with significant electricity and gas customer bases in South Australia, Victoria and New South Wales. AGL also owns gas and electricity distribution networks and a number of electricity generation assets including Loy Yang Power (minority investment), a number of major hydroelectric power stations, the Hallett peaking power station in South Australia and the Somerton peaking power station in Victoria.

AGL is also one of Australia's most experienced developers of landfill gas generation facilities. The focus of this submission is on this aspect of the waste industry. The submission provides information on facilities that have been developed by AGL as well as possible policy levers that could be used to increase the uptake of landfill generation operations.

2. Benefits of Landfill Generation

There is increasing international concern about rising greenhouse gas emissions as a result of human activity. Increased emissions are thought to be causing climate change. Climate scientists have stated that significant emission reductions are required over the coming decades to prevent dangerous climate change.

The Australian Government has established a range of policies to reduce greenhouse gas emissions. These include: Greenhouse Challenge Plus; the Greenhouse Gas Abatement Program; Low Emissions Technology Development Fund, Renewable Energy Development Initiative and the Mandatory Renewable Energy Target.

Much of the focus of these policies has been on the stationary energy sector. This is understandable given that stationary energy is the most significant contributor to Australia's greenhouse gas emissions. However, there are many cost effective ways of reducing greenhouse gas in other sectors such as waste and transport.

Waste disposal creates significant greenhouse gas emissions. The Australian Greenhouse Office has estimated that around 10 million tonnes of carbon dioxide equivalent (CO₂e) is produced each year as a result of waste disposal. This is around 1-2% of total national greenhouse gas emissions.

The greenhouse gas produced by waste disposal is primarily methane. Landfill gas is a methane-rich biogas produced by decomposing organic waste in garbage tips and dumps. Landfill generation facilities significantly reduce greenhouse gas emissions by converting the methane produced by decomposing material into carbon dioxide. Methane has a 'global warming potential' twenty-one times greater than carbon dioxide.¹

Landfill gas generation reduces greenhouse gas emissions in two ways. Firstly, the emissions from landfills are reduced through the conversion of methane into carbon dioxide. Secondly, the electricity generated displaces the need to produce electricity from other emission producing fuels (such as coal).

At present, these emission reductions are recognised through the following government policies:

- Greenhouse Friendly. Where AGL flares methane at landfill sites, it is able to create Greenhouse Friendly certificates under the Greenhouse Challenge Plus program. These certificates can then be sold to consumers seeking to 'offset' their own greenhouse gas emissions. AGL's offset product Green Balance™ allows customers to purchase sufficient Greenhouse Friendly certificates to offset the emissions associated with their electricity consumption.

¹ Global warming potential refers to the heat trapping potential of a greenhouse gas.

- Mandatory Renewable Energy Target. For each MWh of electricity produced, AGL is able to create Renewable Energy Certificates. These certificates can then be used by electricity retailers to meet their obligations under the Mandatory Renewable Energy Target scheme.
- NSW Greenhouse Gas Abatement Scheme. Under the NSW Greenhouse Gas Abatement scheme, AGL is able to create NSW Greenhouse Gas Abatement Certificates for the avoided methane emissions where electricity generation is in place. These certificates can then be used by electricity retailers to meet their obligations under the NSW Greenhouse Gas Abatement scheme.

In addition to producing significant greenhouse related benefits, these landfill generation facilities also improve local environmental outcomes. By capturing and burning methane, odours from landfills are reduced.

3. AGL's Landfill Facilities

AGL has developed a number of landfill flare sites that convert methane into carbon dioxide to reduce greenhouse gas emissions. However, where possible AGL also installs generation units to produce electricity as a result of burning the waste gas. This allows 'green' energy to be produced (at significantly lower greenhouse intensity than most other types of conventional generation).

AGL's Australia-wide landfill generation and flaring projects include:

Project	Description	Approximate Abatement tonnes CO ₂ -e pa
Rockingham City Council landfill gas extraction	AGL-built, owned and operated landfill gas extraction and generation system in Baldivis, Western Australia. The landfill site has a complex extraction system that delivers landfill gas into one 1 MW generator and one 600 kW generator.	47,000 generation
Gosnells City Council landfill gas extraction	AGL-built, owned and operated landfill gas extraction and generation system in Orange Grove, Western Australia. The system consists of over 100 wells to capture and deliver the landfill gas into two 1.1 MW generators.	44,100 generation
West Nowra Recycling and Waste Depot	AGL-installed system to extract methane gas from the West Nowra Recycling and Waste Depot, NSW. The gas is then used to generate electricity.	23,900 generation
Hobart City Council's McRobies Gully site	AGL-installed landfill gas flaring facilities to burn waste gas. Commenced flaring March 2004.	22,900 flaring <i>16,000 additional generation</i>
Glenorchy City Council's Jackson Street site	AGL-installed landfill gas flaring facilities to burn waste gas. Commenced flaring April 2004.	23,800 flaring <i>16,000 additional generation</i>
Gregadoo landfill gas extraction	AGL-owned and operated landfill gas extraction and flaring facility at Wagga Wagga, NSW (in agreement with Gregadoo Council).	8,800 flaring

Project	Description	Approximate Abatement tonnes CO ₂ -e pa
South Morang landfill gas extraction	AGL-owned and operated landfill gas extraction and flaring facility at South Morang, Victoria (in agreement with City of Whittlesea Council).	7,600 flaring

In addition to these landfill gas facilities, AGL is also involved in sewage abatement projects. For example, in cooperation with Melbourne Water, AGL has installed 8 MW of generation capacity at the Werribee Sewage Plant.

4. Policy Levers for Increasing the Uptake of Landfill Operations

The primary barrier to increasing the uptake of landfill generation is the lack of a national market for greenhouse abatement. While the NSW Greenhouse Gas Abatement Scheme, Mandatory Renewable Energy Target and Greenhouse Challenge Program all provide financial incentives for landfill flaring and generation activities, a national market-based measure for reducing emissions (such as an emissions trading scheme) would provide more scope for reducing greenhouse emissions in the waste sector.

A national emissions trading scheme would allow new sites to be developed. As landfill generation is a cost-effective way of reducing emissions, participants in other sectors may be incentivised to purchase abatement created as a result of landfill flaring and generation. Once a policy is in place, the market would be best placed to determine the most appropriate sites for new generation facilities (based on cost and availability of transmission or distribution network).

To ensure that generation opportunities are maximised, councils should be encouraged to manage emissions in a way that suits their particular circumstances. Specific regulatory requirements should be avoided with broad outcomes-based requirements in place instead. This will allow councils and operators of landfill generation facilities flexibility to manage emissions in the most efficient (and commercially attractive) manner.