Energy Developments

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Waste and Resource Efficiency Enquiry
Productivity Commission

Dear Sir/Madam,

Energy Developments Limited (EDL) welcomes the opportunity to participate in the Productivity Commission's enquiry into Waste and Resource Efficiency.

EDL is one of the world's leading developers and operators of landfill gas (LFG), remote area and coal mine methane (CMM) power projects, with over 445MW of owned capacity in Australia, USA, UK, France, Greece and Taiwan. EDL is the only Australian company recognised in the leading KLD[1] Global Climate 100 Index – an index of the top 100 firms globally that:

> *"is designed to promote investment in public companies whose activities demonstrate the greatest potential for reducing the social and economic influences on climate change".*

EDL is one of the largest renewable energy and low greenhouse emission generators in Australia with a LFG and CMM generating portfolio of 179MW. As such, EDL plays a key role in investing in and providing the renewable energy the Government will need to achieve desired emission limits.

The Terms of Reference of the Commission covers some general areas of high level interest to EDL and as such, we felt it appropriate to comment specifically as follows:

1. **What are the economic, environmental and social benefits and costs of recovering energy from waste?**

   In 1897 the Brundtland Report 'Our Common Future' internationally established energy (both it's use and supply) as the essential component to achieving ecologically sustainable development (ESD). The Organisation for Economic Co-Operation and Development (OECD) and the International Energy Agency (IEA) collaborate that energy is potentially the most significant influence on all of the three intimately related elements of ESD (economy, environment and social welfare).

   Governments have a responsibility to pursue policy and development which is in the public interest. Renewable energy policy provides a unique opportunity for government to pursue all three facets of ESD with common policy, preventing the 'trade-off' of the dimensions, such as support of environmentally costly industry to trigger significant job creation. By comparison, the support of more environmentally benign technologies, such as renewable energy, may have the same long term economic benefits without sacrificing environmental amenity (and potentially human health).

[1] KLD Research and Analytics in partnership with The Global Energy Network Institute (GENI)

The modular form of many 'waste to energy' renewable energy power stations also allows for a level of flexibility, distribution and mobility not possible for larger embedded power stations (including the logistics of fuel transport and availability).

Australia is the third most coal dependent nation behind Poland and South Africa, generating 84% of electricity from coal in the 2000/01 financial year. In 2002 approximately 57% of our anthropocentric carbon emissions were from fossil fuel energy production. It is obvious that Australia cannot significantly reduce greenhouse gas emissions (whether under international convention or not) and arrest global warming, without limiting emissions from the single largest contributing sector.

Even with increased emphasis on waste reduction and recycling, unfortunately landfill remains the only viable option in the short to medium term for disposal of some forms of waste, especially considering that per capita waste generation continues to rise in Australia.

The IPCC recognises that methane has 23 times the GWP of CO2 over a one-hundred year period (TAR), and it has been estimated that anaerobic decomposition processes within landfills are responsible for around 40% of global methane emissions. Capture of the methane is the most viable and effective means of reducing GHG emissions from existing and planned landfills.

It is undeniable that the increasing energy requirements of Australian society cannot be infinitely met by limited hydrocarbon fuel sources. Further, the government have a responsibility to ensure the security and variety of Australia's energy mix, with the energy 'monoculture' of coal fired power in Australia does nothing to limit the risks of supply disruption.

In 2005, EDL captured 7.6 million tonnes of CO_2 equivalent at the Company's LFG and CMM projects. This was equivalent to taking 1.7million petrol-fuelled cars off the road.

For Victoria alone during the 2004/05 financial year EDL's LFG power generation consumed in excess of 35,000 tonnes of methane, thereby providing net reduction in GHG emissions avoided (t CO2-e) of 642,138 (tCO_2-e).

Energy exported for the corresponding period was 154,945,794 kWh equating to 17,687 kW. If 1MW provides enough power to run approximately 1000 homes then Victoria's generation provided enough 'green power' to power in excess of 17,000 homes.

Coal fired equivalent emissions from EDL's energy exported equates to in excess of 200,000 tones of carbon dioxide equivalent emission add these emissions to the amount EDL avoided then EDL's contribution with respect to environmental benefits of waste to energy is in excess of 800,000 tonnes of CO2-e emissions avoided from its energy production activities.

These economic, environmental and social benefits should be seen as very much a positive light for the enquiry.

2. What is hindering the greater use of recovering energy from waste in Australia?

Government Policy

The 'Parer Report' (Towards a Truly National and Efficient Energy Market - CoAG, 2002) asserted that the obligations of electricity retailers imposed by the MRET represented and unjustifiable financial burden, considering the significant additional cost associated with renewable energy sources. While not arguing that the cost of implementing the scheme is immaterial, it may also be contended that the cost of increasing the proportion of renewable energy, thereby decreasing the emission intensity from the sector, should be borne by those who have historically profited from exploiting severely polluting technologies, such as fossil fuels. In this way RE policy should be seen and implemented not as an 'unfair advantage', but as 'levelling of the playing field'.

The IEA argue that government policy is essential for the establishment of renewable energy sources as a viable option for bulk power supply, and to encourage infrastructure and technology development by the private sector. Such policy must be long-term for the development of investor confidence in the viability and sustainability of the market. Further, Governments have a responsibility to pursue policy that protects the public interest

Without government involvement, the ability of businesses to implement voluntary measures requiring capital investment are significantly limited; where the current economic climate dictates that the primary responsibility of the private sector is to maximise profits for their shareholders.

Government subsidies for fossil fuel power generation (ranging from tax benefits, research and development grants and exploration funding) have encouraged the artificially low price of carbon based energy. Lack of similar financial support for the renewable energy industry has laid the foundations for limited market penetration, continuing high costs for research and development, excessive financial risks, depleted investment, prohibitive regulatory obstacles and limited availability of both products and information. The comparatively diminutive market share of renewable technologies also prevents the industry from developing the political sway exercised by the established technologies.

Stagnation of the MRET prevents the renewable energy industry from developing the economy of scale required for the industry to become competitive with existing carbon based technologies. Federal government reluctance to confirm long-term support for the target exaggerates market uncertainty, impeding the industries development of the economic base and political influence required to become self sustaining. It also renders the market small and inefficient compared to coal based power generation, itself benefiting from significant government subsidy, and reinforces the perception that renewable energy remains a largely 'experimental' field that can never significantly provide for the energy needs of the Australian population.

The 2% target initially announced by the government was later converted to 9500 GWh, based on an inventory of 1997 renewable energy contributions and predicted 2010 generation levels. However, subsequent modelling suggests the a 9500GWh MRET will only contribute 0.5% additional renewable energy contribution by 2010.

Further limitations to the industry arise from the government's continued diversion of funds from renewable to 'clean coal' research. This point is illustrated by renewal of the Cooperative Research Centre for Greenhouse Gas Technologies (devoted to fossil fuel industries) funding up until 2010, while discontinuing funding for the only Cooperative Research Centre for Renewable Energy. It is important to remember that emissions from 'clean coal' technology are still expected to be significantly higher than for renewable technologies.

Included in the area of government inadequate support is the process for new project assessment and approval. Under-resourced government departments are unable to quickly process applications for new projects, needlessly delaying initiation dates and therefore delaying the benefits that will flow from such developments.

The governmental intransigence over setting an adequate RE target has had the effect that longer tem investments in projects that receive only a renewable benefit are effectively totally stalled. EDL strongly supports a market based solution to greenhouse emission reduction (such as the NSW GGAC scheme) rather than direct subsidy but currently at the national level there is great intransigence on this issue and it is severely hampering investment in generation options. The likelihood is Australia will end up with some form of state based/endorsed trading scheme coupled with multiple subsidy schemes – which, while far better than no action at all, is clearly not a preferred economic solution.

Research and Development Funding

There are a number of technologies that show promise in terms of extracting more useable energy from waste streams but are clearly at this time not proven commercially and have inherent risks in their development. Incentives to develop these technologies would be welcomed, although we would also like to note that given the UK and European developments (and we have operating businesses in these jurisdictions) in emission trading schemes the required price signals for more innovative development projects is appearing to show some traction.

The issue for EDL is that there are no effective schemes in Australia to support R&D in waste utilisation through generation and any investments we may want to make in such technology developments would be in the European context due to the more favourable policy directives toward energy extraction from waste. We invite the PC to examine the growing dynamics of both investment and technological development being generated by these EU schemes, and to consider that they are not technology specific subsidy schemes (not picking winners) – they rely on market forces for delivery which as we have stated EDL supports and considers to be supported by the operation and effectiveness of other emission reduction trading schemes (SOx, NOx, etc.) in various parts of the world.

GOC Ownership

One concern to EDL is that the waste management "market" is fragmented between private and public sector operators. It has always been our experience that where the counterparty in a developing market is a GOC it invokes lopsided decision making –

while they often consider themselves to be “commercial” they are not accountable for bad investment decisions – there is no real market discipline on them in the same way as private sector capital investment. It is our contention that reform in this area is well overdue.

Electricity Regulations
Waste to energy generators are often small power installations with limited resources. However comparatively similar resources are required to operate in the electricity industry as much larger energy producers and retailers. Use of standing exemptions often places limitations on the eligible counterparties for export and sale, which does not allow generators to fully test the market in all situations.

Further support of small embedded renewable generation by organisations such as NEMMCO would ease the burden on smaller operators in this respect. In addition, certain generation sites have the viability for greater generation but are unable to expand because of network limitations. This is a critical issue that EDL considers the Commission can make material and informed comment on through other work it has undertaken on the energy sector. The barriers to embedded generation within low and medium voltage networks are real and restrict our business every working day. Far more LFG gas would be utilised and not flared if these matters were dealt with more equitably and it is a low cost option to increasing resource utilisation “low hanging fruit”.

3. **Are there particular products or locations for which recovering energy from waste would be the most efficient approach to waste management?**

   There is no debate as to the abatement benefit of LFG generation. All landfill locations should be encouraged to investigate the viability of energy generation from that site. LFG extraction is only economically viable in landfills over a certain size and of a certain design. Planning of future landfills with regard to these principles would increase the percentage of gas able to be captured. Massive opportunities for increased capture of gas exist from waste digestion. More funding should be made available for these areas.

EDL would like to thank the Productivity Commission for the opportunity of presenting to its enquiry. If any issues require clarification of further discussion please do not hesitate to contact us.

Yours faithfully,

Original signed by
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