



FOR A BETTER WORLD

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13 September 2012

Ms Anthea Harris
Chief Executive Officer
Climate Change Authority
GPO Box 1944
Melbourne Vic 3001

Dear Ms Harris,

This letter is in response to the CCA's call for submissions as part of your review of the Renewable Energy Target (RET).

Visy has been a participant in the RET arrangements since the Scheme's inception and has a strong interest in future RET policy.

Summary of Visy's recommendations

There are eight issues that Visy believes need attention in the RET review. These are:

1. The Scheme should support lowest cost renewable generation
2. Procuring base load renewable energy should receive higher priority and support under the RET arrangements
3. The Scheme and related carbon pricing mechanisms should account for the full cost of non base-load renewable electricity sources
4. The Small-Scale Renewable Energy part of the Scheme should be discontinued
5. The Large-Scale Renewable Energy Target should be widened to include support for renewable heat energy
6. The Scheme's Target should be regularly re-set to achieve 20% of the prevailing national electricity demand in 2020
7. The Scheme should recognise municipal and commercial solid waste as a qualifying renewable fuel in its entirety
8. The RET arrangements should allow for direct surrender of RET certificates to the Regulator by the creating entities rather than requiring retailer intermediation

Following a brief overview of Visy's business, we provide brief comments on each of the above recommendations.

About Visy

Visy is a leading Australian privately-owned packaging and resource recovery company, with more than 120 sites across Australia, New Zealand, Thailand, Vietnam and Malaysia, and trading offices in Singapore and China. With its U.S. sister company, Pratt Industries, Visy employs around 10,000 people.

In the late 1970s Visy pioneered, in Australia, the capture of waste paper, cardboard and other recyclable fibre from domestic and commercial waste streams. Until then, virtually all this waste was landfilled. Visy has progressively built six recycled paper machines in eastern State capitals to manufacture recycled paper for the domestic and export packaging market. It is now doing the same with plastic packaging and other recyclable wastes.

Some of Visy's manufacturing processes, especially our recycled paper machines, use significant amounts of energy (electricity and thermal) for their processes. Energy represents a large part of the Company's manufacturing costs. Visy has invested heavily in energy efficiency in all its plants. We have also constructed four energy generation facilities (three in Australia and one in the U.S.A) all utilising various forms of renewable solid fuels and black liquor¹. In Australia we currently generate approximately 300 GWh per year of electricity in these facilities.

Visy is currently undertaking a major feasibility study toward construction of a 70 MW_e power station based on clean solid recovered fuels (SRF) from municipal and commercial waste streams. If constructed, the plant and its network of SRF manufacturing plants would cost in the vicinity of \$350m and would provide base-load electricity to supply the equivalent of all of Visy's NSW manufacturing power demand.

Comments on the Visy's issues and recommendations

1. The Scheme should support lowest cost renewable generation

As a major Australian manufacturing company, Visy is concerned that the RET-stimulated installation of comparatively high-cost electricity generation capacity has damaged the overall cost competitiveness of Australia's manufacturing base.

Australia's future renewable energy policy should be targeted at assisting Australia's manufacturing sector. This is because Australian manufacturing does and can provide significant social, economic and environmental benefits, but the sector is under considerable pressure from external influences.

Strong, targeted support for renewable energy adoption within Australia's manufacturing sector can play an important role in transforming the whole manufacturing sector, and thereby delivering on other national priorities at the same time as advancing renewable energy expansion and uptake. These collateral priorities include: sustainable jobs, domestic resource value-adding, regional development, upstream and downstream R&D, local servicing and support industries.

¹ To date, Visy's Brisbane generation plant has utilised a combination of coal, fibrous mill residues and WWTP biogas. The fluidised bed gasifier generation facility there is currently being transitioned to utilise a majority of cleaner fuels.

To date, the RET has led to a skewing of renewable generation towards risky, intermittent and comparatively high-cost renewable generation. This should change in the future.

The RET is linked, in policy terms, to the Carbon Pricing Mechanism (CPM). Both are directed at reducing emissions from fossil fuel sources. Now that the CPM is established, there is a strong argument for realigning the RET to focus more directly on lower emissions energy generation rather than prescribing qualifying fuels/technologies within the Act.

Should the RET continue as a result of this review, Visy believes it should be reconfigured to:

- Focus on renewable energy generation that can demonstrably deliver stable, low-risk supplies to the Grid. These include sources such as thermal treatment of biomass, including solid recovered fuels from waste, and
- Widen the Scheme's eligibility criteria to include *lower CO₂e emissions*, rather than specified renewable, *technologies*.

2. Procuring base load renewable energy should receive higher priority and support under the RET arrangements

Currently the RET encourages generation technologies that provide part-time supply – especially wind and solar. Electricity purchasers pay an unreasonably high premium to compensate for the interruptible nature of the majority of Australia's current renewable electricity supply.

Consistent with the above recommendation on lowest cost renewable generation, Visy believes the Government should provide greater policy support and recognition to non-interruptible base load supply of low emissions generation.

Visy's current and proposed SRF (energy from waste) plants provide a good example of this type of non-interruptible base load supply.

3. The Scheme and related carbon pricing mechanisms should account for the full cost of non base-load renewable electricity sources

Typically, estimates of the levelised cost of electricity generation do not include the costs of distribution or the costs of network redundancy to cater for supply interruptions. This approach to costing highlights a problem inherent in the RET; that is, there is no recognition of the true cost of providing gas peaking or other rapid response generation to offset downtimes in supply from intermittent RET sources. Such "externality" costs, particularly the use of rapid response gas turbines to cover the interrupted period, are smeared across the entire market, and the particular interruptible renewable supply entity tends to escape having these costs attributed to it.

Visy believes the Government should adopt a "full cost" approach when assessing the relative merits of types of renewable generation.

4. The Small-Scale Renewable Energy part of the Scheme should be discontinued

Visy is concerned that the continued operation of the SSRES is distorting the market for renewable electricity, in particular, and for electricity, generally.

The SRES was introduced in an attempt to remedy a policy shortcoming in the former MRET. While the separate SRES has enabled a quarantining of its high transaction costs from the LRET, the uncapped nature of the SRES means it will continue to erode the role of the LRET. Significant feed-in tariff support for small scale Solar PV under the SRES further distorts the sustainability and true contribution of the SRES to achieving *lowest cost renewable electricity* for Australia. Since the commencement of the MRET the costs of solar PV generation have reduced significantly, and the continuation of artificial support for PV further distorts the market and is therefore unjustified.

Visy believes the Government should discontinue the SRES part of the Scheme. In the very least, the SRES target should be capped to reinstate some measure of market equilibrium with regard to the cost generation in the small scale generation segment.

5. The Large-Scale Renewable Energy Target should be widened to include support for renewable heat energy

Visy believes the LRET should be widened to include support for renewable heat energy as it presently does for electricity.

We have made numerous representations to government regarding the need for Australian energy policy to encourage the greater utilisation of heat as a valuable energy resource. This present RET review provides the ideal time to remedy this shortcoming.

The serious under-exploitation of heat energy in Australia contrasts with the situation with our major overseas competitors, for example:

- Last month, the U.S. Obama administration made an executive order² to recognise and promote combined heat and power (CHP) in Government-sponsored clean energy policy. The announcement is focussed on the U.S. manufacturing sector and seeks to enhance energy efficiency efforts with measures to expand the use of CHP. Programs cited for augmentation to implement this order include "providing incentives for the deployment of CHP and other types of clean energy, such as set asides under emissions allowance trading program state implementation plans, grants, and loans..."
- Even before the recent Obama policy announcement, the US was recognising the importance of heat capture through CHP investments. McKinsey reports³ that "... NPV-positive deployment of combined heat and power systems could increase from 85 GW in 2008 to 135 GW in 2020, representing a substantial opportunity to increase efficiency in primary energy and drive 1,390 trillion BTUs of primary energy savings, reduce facility-level energy costs by \$77 billion, and abate greenhouse gas emissions by 100 megatons of CO₂e."
- Europe passed a formal cogeneration directive in 2006, binding member states to specific action. According to COGEN Europe, CHP provides 11% of the

² The White House. 2012. *Executive Order - Accelerating Investment in Industrial Energy Efficiency* Washington. (<http://www.whitehouse.gov/the-press-office/2012/08/30/executive-order-accelerating-investment-industrial-energy-efficiency>).

³ Granade, H.C., Creyts, J., Derkach, A., Farese, P., Nyquist, S., and Ostrowski, K. 2010. *Unlocking energy efficiency in the U.S. economy*. McKinsey & Company

EU27’s total electricity production today, placing cogeneration ahead of wind, solar and biomass combined, in terms of the amounts of electricity generated.

- The UK Government actively supports CHP policy as part of its goal of achieving a 60% reduction in carbon dioxide emissions by 2050. It has set progressive targets to source its government electricity use from CHP systems. Other UK measures to encourage CHP growth are financial incentives, grant support, a greater regulatory framework, and government leadership and partnership. In particular, the UK exempts companies that invest in CHP from its Climate Change Levy, and expects this single incentive will deliver around 7 GW of new generation capacity, and reduce emissions by 3.2 million tonnes of carbon dioxide.
- The International Energy Agency believes that expansion of cogeneration in France, Germany, Italy and the UK alone will effectively double the existing primary fuel savings by 2030, dramatically cutting greenhouse gas emissions.

It is clear that Australian energy policies and programs, including the RET, have been dominated by *electrical* energy, mainly because mandated renewables schemes have been mediated via electricity retailers.

Visy has previously suggested that the RET policy be modified to incentivise heat capture when it occurs as part of an industrial cogeneration circuit. This will enable our manufacturing sector to grasp this heat opportunity.

Heat capture and utilisation is relevant in several major industrial sectors in Australia, such as sugar, refining and pulp and paper. Visy has most experience in the pulp and paper industry. These facilities can play a major role in harnessing heat from combustion processes, particularly those involving renewable fuels. Some mills have already invested in a certain level of cogeneration, which Visy defines as the simultaneous or serial production of electricity and heat.

Cogeneration involves the utilisation of the waste heat from primary electricity generation as an energy source for industrial processes - which may include further electricity generation via combined cycle, which can achieve *up to 45% higher energy conversion efficiencies* than conventional grid power generation (see Table 1).

Table 1 – Comparative fuel efficiency of various forms of electrical generation

Type of Generation	Nominal fuel efficiency	Fossil-fuel offset potential (C-intensity)	Current relative unit cost of generation
Brown coal conventional	25% - 35%	Nil (1.3 t/MWh)	Low
Black coal conventional	30% - 40%	Nil (1.0 t/MWh)	Low
Gas-fired Open Cycle	30% - 40%	Nil (0.7 t/MWh)	High (peak power only)
Gas-fired Combined Cycle	45% - 55%	Low (0.5 t/MWh)	Medium
Cogeneration (Natural Gas)	70% - 85%	Med (0.3 t/MWh)	High (i.e. needs initial investment incentive)
Cogeneration (Renewable)	70% - 85%	Max (0 t/MWh _e) (0 t/MWh _{th})	Very high (i.e. needs initial investment incentive)

However such investments are costly compared with conventional power systems, and it is unsurprising that, in the absence of targeted Government facilitation, Australia lags behind other jurisdictions in this aspect of modern energy development.

The data in Table 1, which compares the nominal fuel efficiency of various forms of electrical generation technologies, show that natural gas or renewable-fuelled *cogeneration* can capture up to *twice the useful energy* as systems that don't invest in heat capture.

Visy's proposals to Government to include heat in the RET mechanism include limiting its application to cogenerated heat from renewable electricity generation in industrial processes. Heat capture could be rewarded by crediting it through Renewable Energy Certificates on the same basis as renewable electricity, that is: 1 MWh_{thermal} = 1 MWh_{electrical}.

6. The REC Scheme's Target should be regularly re-set to achieve 20% of the prevailing national electricity demand in 2020

Visy is concerned that the RET has been based on forecasts and projections of Australian energy demand/supply which have not matched present realities. This means the burden of obligation is being applied to an artificially high energy supply base.

Visy believes that the review should provide for a more dynamic Target which is regularly re-set to achieve 20% of the prevailing national electricity demand by 2020.

Figure 1⁴, derived from successive AEMO National Electricity Forecasting Reports for NSW, demonstrates the problem with adhering to projections which may not match current market realities.

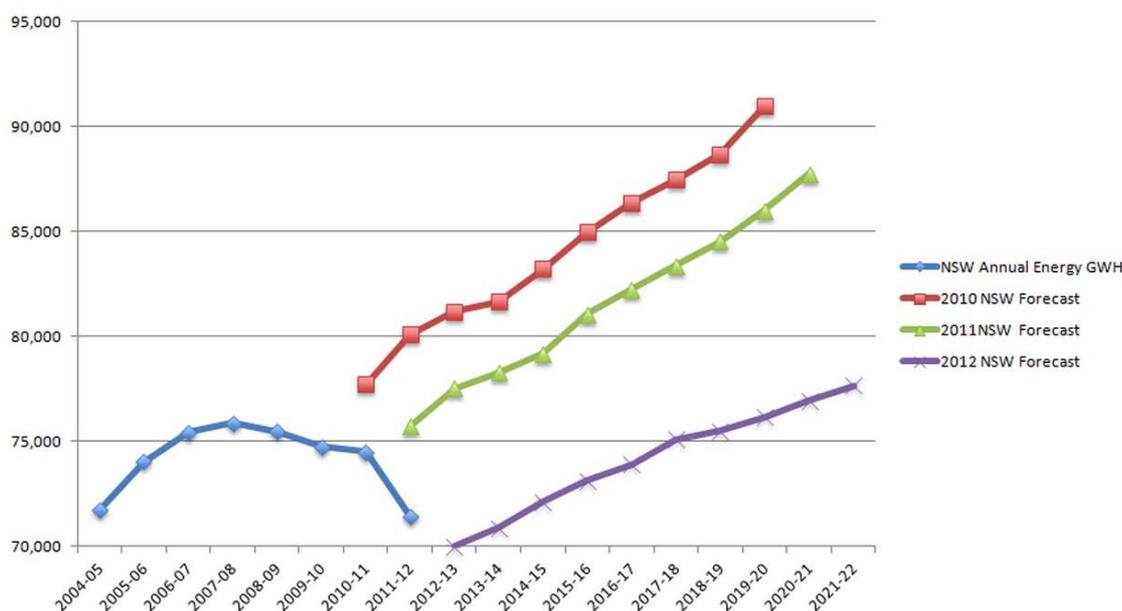


Figure 1 - NSW Energy Demand Forecasts and Actual (MWh)

⁴ Graphic source: Sydney Morning Herald 20 July 2012 - <http://www.smh.com.au/business/how-dodgy-forecasts-inflate-your-energy-bill-20120727-22xxf.html>

Figure 1 shows that the 2010 forecast of the 2011/12 demand was 80,000 MW, which turned out to be some 12.7% higher than the *actual* demand for 2011/12.

Visy acknowledges that the reverse may occur when the economy is operating at a high pace. However, the point is that the RET should reflect, as closely as possible, the actual market demand at any point in time. Otherwise, serious market distortions and uncompetitive conditions may result from the operation of the RET, especially for energy-intensive industries.

7. The Scheme should recognise municipal and commercial solid waste as a qualifying renewable fuel in its entirety

As noted above, Visy is currently undertaking a major feasibility study toward construction of a 70 MW_e power station based on clean SRF from municipal and commercial waste streams.

Visy believes that energy from waste should have stronger focus and prominence in the RET's suite of renewable generation options than it currently enjoys. This is because, when converted with the right technology, this fuel can contribute to an increase in the amount of renewable energy in Australia. Visy estimates that, if widely adopted, Australian SRF could produce as much as 570 MW of base load electricity. This generation would be underpinned by a continuous supply of solid fuel derived from municipal and commercial waste streams.

Visy proposes that a revised RET should permit waste-derived solid fuel, including that sourced from municipal and commercial wastes, to be considered "renewable" in its entirety. This is because, as well as a significant component of the waste being organic in nature (and thus, as is presently the case, qualifying for REC-creation), the *source* of the fuel is itself demonstrably renewable; that is, able to be supplied in perpetuity.

The present RET recognition of only the organic fraction of waste-derived fuel is complicated by the fact that the task of defining the "organic fraction" of such fuel is becoming increasingly complex. This is due to, among other new products, an increasing proportion of bio-derived plastics being included in Australian waste streams. Exact figures on their representation in the waste stream are unavailable, however it is expected that the proportion of total plastics which are bio-sourced and biodegradable will increase over time. Accounting for such waste as "organic" is not feasible. This highlights the arbitrary nature of classifying different components of waste as "renewable" or "non-renewable".

It is ironic that the RET currently recognises landfill gas (especially methane) as a renewable fuel, but there is less recognition for energy from solid waste *before* it enters the landfill.

The intrinsic renewability of solid waste as a fuel source is evidenced by the fact that, despite government policies aimed at reducing municipal and commercial solid waste *generation*, this waste will continue to be generated by society as a result, in the least, of simple population increase.

The trend is demonstrated in Figure 2 for the Sydney Metropolitan Area⁵, which shows that even with the most aggressive waste minimization policies, waste volumes will continue to increase over time. Even under the most aggressive waste reduction scenario, there will be 2 million tpa of waste generated in Sydney alone, into the future. A more realistic “business as usual” scenario puts the number at around 8 million tpa. Visy argues that, notwithstanding the need for complementary technologies to pre-extract recyclables and minimize waste generation, the continuing availability of waste that will otherwise flow into our cities’ landfills, should be viewed by governments as a long-term source of fuel for cleaner energy generation.

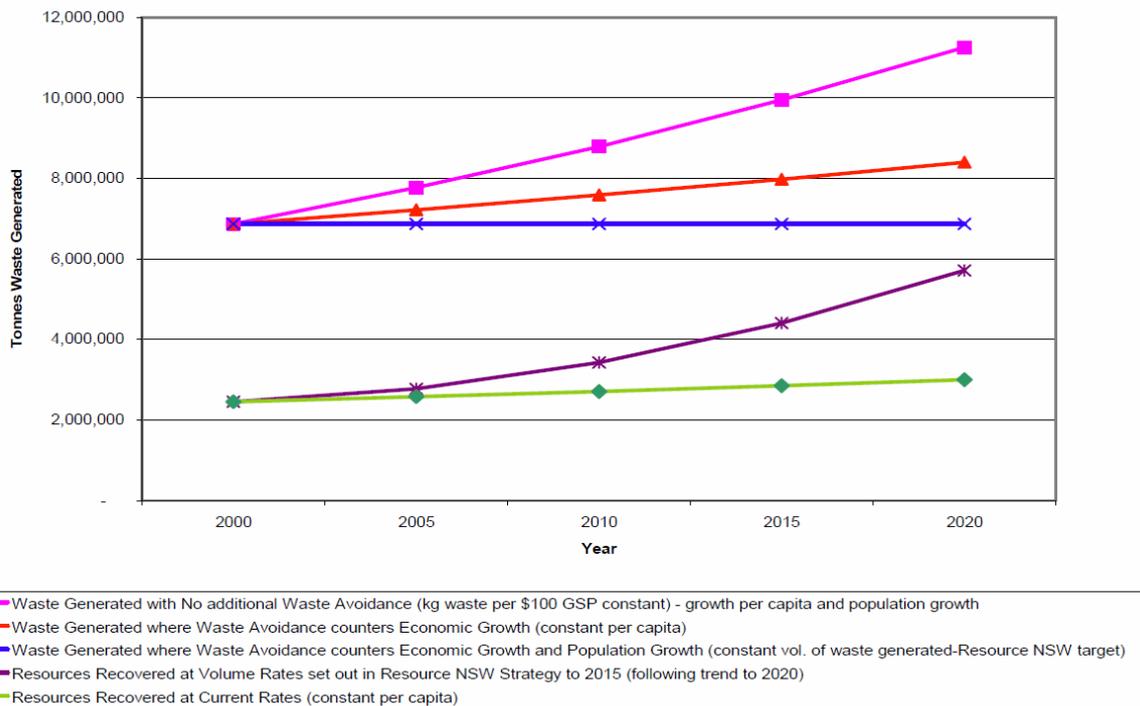


Figure 2 - Trends for waste generation in Sydney, NSW

As well as energy recovery *per se*, energy from waste also makes sense on overall environmental sustainability grounds. Extracting energy from waste materials otherwise destined for landfill is higher up the waste hierarchy, and there are many other co-benefits of this approach. The eco-efficiency of thermal treatment of waste for electricity (and heat) generation, compared with other waste management options (such as mechanical-biological treatment or landfill) is well documented⁶.

⁵ Source: The Great Waste Debate, Total Environment Centre, 2003.
www.tec.org.au/component/docman/doc_download/97-great-waste-debate-discussion-paper-and-epr

⁶ See, for example, Schmidt, I. and Kicherer, A. BASF eco-efficiency analysis for residual waste disposal. Ludwigshafen (translated by Heike Sittel & Philipp Schmidt, Pathmann, May 2006).

8. The RET arrangements should allow for direct surrender of RET certificates to the Regulator by the creating entities rather than requiring retailer intermediation

Visy has participated in the NSW GGAS arrangements as a Large User since the Program's inception and has seen the benefits of direct acquittal of carbon abatement certificates (NGACs) rather than through an electricity retailer.

Currently RET certificate cost pass-through is opaque, and there is evidence of value leakage through third party intermediation.

Visy believes the RET arrangements should provide for direct surrender of RECs to the Regulator as a means of improving transactional efficiency and lowering costs of Scheme participation.

Visy appreciates being given the opportunity to submit these comments, and would be pleased to provide further information to the RET Review team on the above or any other relevant matters, if required.

Yours sincerely,



Bill Hurditch
Project adviser