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Emissions Reduction Fund Submissions  
Department of the Environment  
GPO Box 787  
Canberra ACT 2601

To whom it may concern,

### **ACOR's submission on the Emissions Reduction Fund Green Paper**

The Australian Council of Recycling (ACOR) welcomes the opportunity to provide input into the design of the Government's proposed Emissions Reduction Fund (ERF). Following our contribution to the ERF Terms of Reference public consultation process (dated 14 November 2013), this submission outlines how we see the recycling industry fitting within the broad framework of the ERF. This submission also provides comment on relevant governance considerations of the ERF in order to ensure maximum participation by the waste recycling and treatment sector. This is consistent with the position of the Government on the inclusion of recycling in the ERF as stated in the Department of the Environment's [\*A Plan for a Cleaner Environment\*](#) (October 2013, pg. 6).

### **1. Introduction & Background**

Recycling and alternative waste treatment (AWT) have previously been recognised nationally and internationally as significant sources of emissions abatement. Within Australia, it has been stated that recycling is responsible for over 15 million tonnes CO<sub>2</sub>-e of emissions abatement per annum<sup>1</sup> (2.7% of national emissions<sup>2</sup>). A global marginal abatement cost curve (MACC) for the waste industry also found that recycling is one of the lowest cost and largest scale abatement opportunities available to the waste sector. As such, it is vital that the final

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<sup>1</sup> Sourced from *The Australian Recycling Sector* – a report by Net Balance for the Department of Sustainability, Environment, Water, Population and Communities – January 2012 (<http://tinyurl.com/kcuyb2w>)

<sup>2</sup> Based on latest national emissions excluding LULCF sourced from *Australian National Greenhouse Accounts: Quarterly Update of Australia's National Greenhouse Gas Inventory – June Quarter 2013* (<http://tinyurl.com/o9zzwbs>)

design of the ERF facilitates the full participation of the recycling and AWT sector. Doing so will enable the generation of high volumes of relatively low cost abatement that also achieves significant additional economic, environmental, and social benefits.

There are two key mechanisms by which recycling and AWT achieve emissions abatement:

- a) The diversion and treatment of organic and putrescible wastes (such as paper, food, timber, garden waste etc.) avoids the release of methane that would be generated if the waste were sent to a landfill in a business-as-usual scenario.
- b) The diversion and recycling of inert & inorganic wastes (such as glass, metals, mineral oils, and plastics) helps preserve the embodied energy originally used in creating these materials, displacing the need for the energy used if these products were disposed of and replaced with virgin materials in future processes.

The treatment of organic and putrescible wastes are currently broadly recognised by the Carbon Farming Initiative (CFI). A number of methodologies, developed by private entities, enable crediting of abatement achieved through treatment of this waste, provided it is considered legacy waste (ie. was deposited prior to 1 July 2012). The diversion of paper and cardboard waste is not currently covered within the scope of existing methodologies under the CFI. This is notable considering the high lifetime emissions conversion factor (tonnes waste to tonnes CO<sub>2</sub>-e) for this waste type.

The current scope of the CFI does not recognise the abatement achieved by the embodied energy savings made through recycling or treatment of inert & inorganic wastes. Addressing this gap will be critical to ensuring maximum abatement within the sector can be leveraged.

## **2. The recycling & AWT sector within the ERF framework**

ACOR believes that the recycling and AWT sector is well placed to generate abatement under the broad framework of the ERF as outlined in the recent Green Paper. There are two key mechanisms by which the ERF is able to incentive abatement beyond business-as-usual for the sector:

- a) Recognising the abatement achieved through either avoided methane emissions (organic and putrescible wastes), or embodied energy savings (inert & inorganic wastes) – this would provide an incentive to increase the quantities of waste being diverted for recycling or alternative treatment.
- b) Only crediting net emissions abatement from recycling and treatment processes (ie. gross abatement subtract project activity emissions) – this will provide an incentive for facility operators to reduce the emissions intensity of their processes through energy efficiency and similar measures.

The proposed broad approach to generating abatement for the recycling and AWT sector under the ERF is proposed as follows:

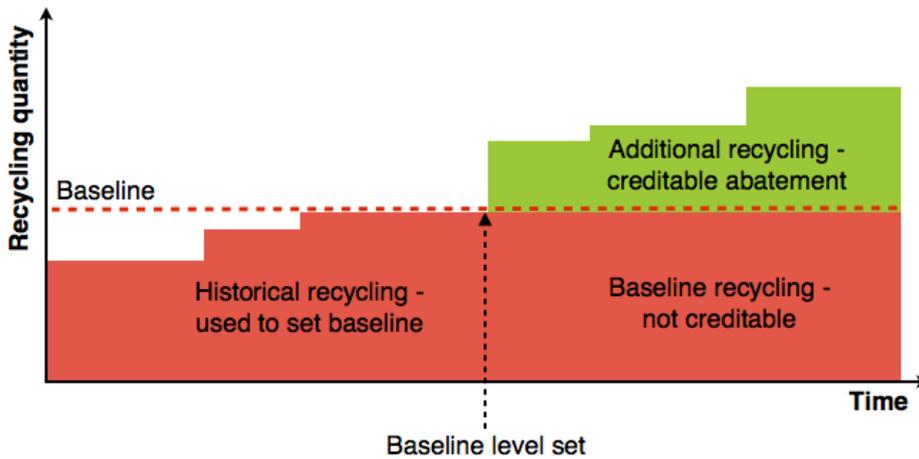
1. The baseline quantity of each waste type being diverted for recycling or alternative treatment each year will be determined in accordance with the requirements of the ERF. A baseline may need to be established for specific waste types within each waste stream. For example, baseline quantities could be established for high-density polyethylene (HDPE), low density polyethylene (LDPE) within the plastics stream etc.
2. Abatement would be recognised for quantities of waste diverted or recycled above this baseline only. This would ensure that abatement was additional to a business-as-usual scenario. In order to prevent leakage, it would need to be demonstrated that the additional quantities of waste being diverted would genuinely have otherwise been sent to landfill within Australia and are not being sourced from another recycling or AWT operator, or sourced from overseas.
3. The gross emissions abatement of waste diversion for each waste type, either through avoided methane or embodied energy savings, would be calculated according to emissions factors outlined in the methodology.
4. The emissions associated with the recycling or waste treatment process (the ‘project emissions’) would be calculated using the processes of the National Greenhouse & Energy Reporting (NGER) Act and as per the requirements and emissions boundary of the methodology.



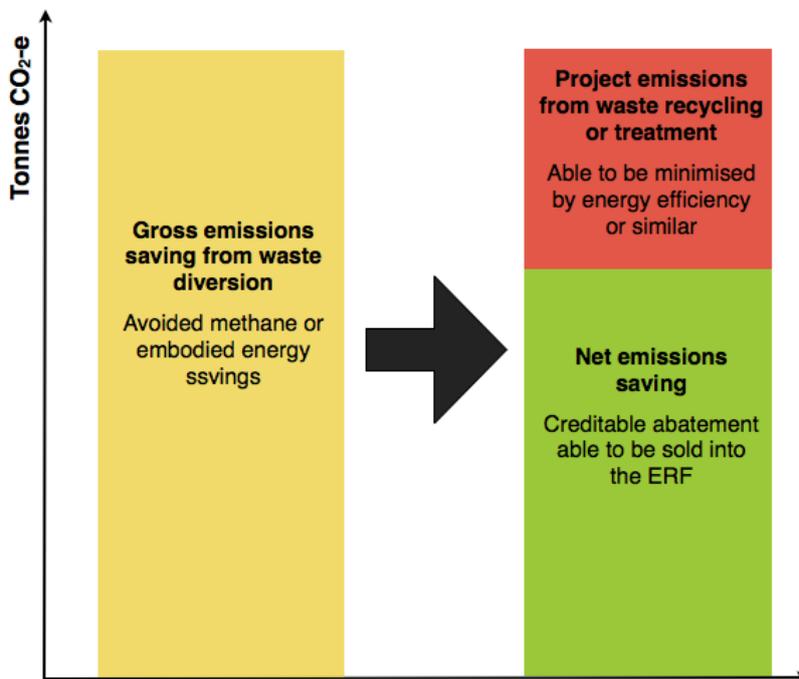
5. The net emissions abatement (gross abatement subtract project emissions) would be creditable and able to be sold into the Emissions Reduction Fund.

This broad process is outlined in Figures 1 & 2 as follows.

**Figure 1: Determining creditable abatement (recycling example)**



**Figure 2: Determining net emissions abatement**



In order to calculate gross emissions savings, it is proposed that a series of emissions factors would be developed for each waste type and included within the relevant methodology determination. For avoided methane emissions via the recycling or treatment of organic

wastes, NGER emissions factors would be able to be utilised. It is proposed that data from independent peer reviewed studies is used to develop emissions factors for calculating gross embodied energy savings from the diversion of inert & inorganic wastes. This would be based on the energy required to generate a set quantity of each material from virgin sources, with consideration given to where this energy is typically sourced (gas, grid electricity etc.). Additional research may need to be undertaken in order to develop these emissions factors for some waste types. It is important to note that in some cases, such as Alumina, rigorous baseline emissions factors for virgin material production have already been established for the purposes of Emissions Intensive Trade Exposed (EITE) activities.

An important element of the proposed process will be minimisation of the project activity emissions (those emissions generated during waste recycling or treatment). This may be achieved through a range of industrial energy efficiency measures (or similar) and will lead to a greater quantity of net emissions abatement. ACOR is aware of a number of recycling and waste treatment plant operators who are currently considering upgrading equipment and processes to improve energy and carbon efficiency. Through considered design, the ERF process may provide the incentive required to implement these changes.

The previously described approach to crediting net abatement is consistent with both currently approved CFI methodologies for the waste sector as well as international carbon offset programmes such as the Clean Development Mechanism (CDM). The existing methodologies for waste diversion under the CFI offer a good foundation for crediting abatement from avoided methane emissions. These methodologies, however, are required to be expanded to other putrescible wastes such as paper & cardboard and timber (and their methods of recycling and treatment), as well as addressing the fundamental issue of only being applicable to legacy wastes. In the context of inert & inorganic wastes such as plastics, glass, mineral oils, and metals, methodologies approved under the CDM provide a strong foundation to how embodied energy savings from recycling can be measured and credited.<sup>3</sup> These CDM methodologies recognise the additional economic, environmental and social benefits available

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<sup>3</sup> Examples include *AMS-III.AJ: Recovery and recycling of materials from solid wastes* (<http://tinyurl.com/mwgzaoz>) and *AMS-III.BA: Recovery and recycling of materials from E-waste* (<http://tinyurl.com/k3h3n64>)

through incentivising inert & inorganic waste diversion, such as helping to address the rapidly increasing global problem of toxic E-waste.

It is acknowledged that there are a number of potential issues that are required to be addressed in order to fully integrate the recycling and AWT sector into the ERF framework. These issues primarily relate to the crediting of abatement achieved through the embodied energy savings of recycling or treating inert and inorganic waste streams. These are:

- Reliability of substitution assumptions – it has been noted that the recycling of one tonne of material (eg. plastic) may not necessarily mean one tonne of the same virgin material production is avoided. ACOR suggests that research is undertaken to better determine what this substitution ratio is for each waste stream and that the aforementioned emission factors and methodology for each waste stream incorporate this accordingly. It is also suggested that the precedent set for landfill waste diversion under the Greenhouse Friendly programme is considered for the inclusion of recycling and AWT in the ERF. That is, the minor potential for minimally overstating abatement is measured against the need for administrative simplicity and the other benefits that flow from supporting increased levels of these activities.
- Double counting – it has been noted that embodied energy savings through recycling (claimed by the recycling facility) may already be captured by the virgin material processing facilities reducing their emissions below baseline, thus double counting abatement. ACOR suggests that this is unlikely, provided the ERF takes the approach of establishing baselines for facilities based on emissions intensity per unit of output. For example, simply increasing recycling of a material at one plant, such that another plant is using less virgin material, would not see the emissions intensity of the virgin material plant decrease. Furthermore, a detailed understanding of where virgin materials were being displaced combined with the data available through sources such as NGERs would enable this double counting to be avoided through the correct set up of the ERF administrative framework.
- Establishing baselines – it is acknowledged that in the case of some materials streams, limited formal data currently exists on what constitutes ‘business-as-usual’

recycling. In these cases, it is proposed that additional research would be undertaken to develop this baseline level for each waste type, based on either the previous financial year, or a multi-year average, as per the final requirements of the ERF.

### **3. ERF governance considerations**

In order to ensure maximum participation by the sector, the governance requirements of the ERF will need to be carefully considered. First and foremost, the program should represent the minimum possible administrative burden for participating organisations. The very low levels of participation under the current iteration of the CFI and its overly burdensome requirements demonstrate the importance of addressing this barrier to entry.

ACOR supports the government's preference of broad 'top down' methodologies that are applicable to a large range of circumstances. It is noted that the 'bottom up' methodology approach of programmes such as the CDM have created unnecessary complication and duplication. ACOR also supports the government's intention to expedite the methodology and project approval processes in order to ensure participation in the ERF will be possible on or shortly after the intended start date of 1 July 2014.

ACOR supports the concept of a risk-based approach to determining the frequency of project audits. Indeed, it may be considered that the processes of recycling and waste treatment are well understood and relatively low risk from an emissions abatement perspective as opposed to other activities such as bio-sequestration. ACOR believes that minimising the financial and administrative burden of external project audits will be one of the most essential components to facilitating participation in the ERF. The idea of allowing access to shorter reporting (and thus crediting) periods is also welcomed. In the context of the waste recycling and treatment sector, it will be important that the total quantity of abatement is able to be recognised at the time of diversion (for organic wastes) or at the time of treatment (for inert & inorganic wastes).

ACOR recognises the desire of the Government to enter into a small number of large-scale contracts under the ERF as opposed to large number of small-scale contracts. As such, ACOR encourages the Government to ensure that the administrative and governance arrangements of



the ERF facilitate the involvement of whole-of-industry level project aggregators. As an example, ACOR is willing to explore the possibility of aggregating abatement on behalf of the recycling and waste treatment industry, contingent on adequate resources and support being provided.

Yours sincerely,

**Grant Musgrove**

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