Consultation on the Green Paper on the Management of Bio-waste in the EU published last 3rd December 2008 by the European Commission.

RREUSE is the specialised European network of national and regional social economy federations and companies with activities in reuse, recycling and composting. Its member organisations combine both social and environmental objectives at an equal level. For many years, RREUSE members have been involved in the source separated collection of organic waste for composting. In some cases, the resulting compost is marketed back to the public and, in others, it is used by the project in its own horticultural activities.

RREUSE members are also involved in the recycling and re-use of furniture, white goods, textiles, electrical goods and dry recyclables such as paper and glass.

Question 1: Waste prevention is at the top of the EU's waste treatment hierarchy. From your experience, what could be specific bio-waste prevention action at EU level?

Behaviour change is a key component to waste prevention but there are several levers that could help this.

There is evidence to suggest that source separation of food waste in households encourages those householders to reduce the amount of waste created because the amount becomes more evident and visual. So therefore source separation is, in itself, a waste prevention measure.

More support for local community based home composting programmes to encourage more households to take up composting. Including providing information and support such as home composting advisors. Where home composting projects have been initiated there has been a significant reduction (30% in Greece)[1] in overall household waste production. The Government sponsored home composting programmes that have existed in England have recruited volunteer individual 'Master Composters' but have not systematically engaged with or included the community sector, which would have significantly increased the reach and impact of the programmes. More Community organisation involvement is expected in the Scottish Home Composting Programme.

Promoting households grow their own food can also act as an incentive (in regions where this can be applied). Actively producing one's own food stuffs such as allotment schemes in the UK is also a powerful behaviour change tool – the effort involved in growing it is much more appreciated and therefore, it's less likely to be wasted. The

[1] Kirkitsos, P, and Homatidis, D.. *Household Composting in the Municipality of Petroupoli*.ERS, Report, Athens, 2008.

more this is done the greater the understanding of the cycle of food production, food waste, composting, soil health and food production – which will reinforce home composting and source separation behaviours.

Furthermore, specific retail practices could be discouraged such as buy one get one free on highly perishable food products, and suitable portion options for smaller families or households. The redirection of perishable food stuffs nearing their sell by date to charities serving the homeless and vulnerable (such as Fareshare in the UK) should also be encouraged, or ideally legislated for.

As well, wholesale markets of fresh produce are currently trying to implement waste reduction programs some include sending organic waste for animal feed[2]. 70% of members of the wholesale markets have in place or are currently implementing waste reduction programs[3]. These type of initiatives can be examined and reduplicated.

There should also be restrictions on supermarkets rejecting fruit and vegetables on 'cosmetic' grounds thereby leaving growers with crops that will be wasted for no good reason.

The Flanders practice of commercial chickens being 'retired' to householders for the disposal of kitchen waste (and less intensive egg production) should be rolled out across the EU and the APBR legislation amended to allow this in countries (such as the UK) where this practice is currently restricted and where it is possible to be applied.

Public awareness is an important factor and driver for waste prevention and should be included in any and all actions related to biowaste prevention.

Question 2: Do you see benefits or disadvantages of further restricting the amount of biodegradable waste that is allowed on landfills beyond the targets already set in the EU Landfill Directive? If yes, should this be done on EU level or left to decide by Member States?

In the short term existing targets need to be met first (enforcement of fines); no further restriction is required until these targets are met. This will probably have forced changes in collection and technologies used. Composting and Anaerobic Digestion should be employed pushing requirements for clean segregate (separate collection) that will drive the reductions to landfill and compliance with the targets. National fines need to remain in place or be implemented where none exist.

In the long term, biowaste diversion from landfill targets should be increased **and include** separate collection targets and this should be done at an EU level.

[2] http://www.wuwm.org/wuwmsite/scripts/news/news.asp?ID=402

[3] *Michel Escoffier, (FFMIN, France)* , WUWM Discussion Paper on Wholesale Markets and Environmental Protection

Question 3: Which options for the treatment of bio-waste diverted from landfills would you prefer to see strengthened and what would you see as their main benefits? Do you think that the choice of the treatment of bio-waste diverted from landfills should benefit from a wider and more consistent use of life-cycle assessment studies?

Householders should be encouraged to home compost and, where this is either unwelcome or not possible, Community Composting should be encouraged, by the provision of mandatory recycling credits that reflect the real economic value of the activity. Composting of green waste should be encouraged at a much smaller scale and on a widespread local level to implement the proximity principle. The only reason that large centralised facilities exist is the drive for diverted tonnages and contractors' economies of scale. There is no need for garden and parks waste to be collected in large quantities and transported for centralised composting, as it requires very little specialised processing plant.

Future food security demands healthy soils so soil health cannot be allowed to suffer for the sake of energy production. The demand for energy needs to be reduced, otherwise there is danger that action to mitigate climate change by the use of renewables will instead have the unintended effect of diverting much needed organic matter away from soils. The figure of 3.2% of EU soils being upgraded (if all EU biowaste was composted and used) is not a reason to abandon the practice of composting for agricultural benefit. Instead it needs to be complemented with no-till methods of farming and more diverse cropping that has less impact on soil health.

Anaerobic Digestion of catering and food wastes (and other very wet biowastes) should be strengthened with the emphasis on smaller scale more localised facilities to cut down on transport and to encourage gas use for heating and cooking in local buildings – it doesn't necessarily have to be cleaned up for injection into the national gas grid pipelines. The main benefit is the retention of nutrients and organic matter but a close secondary benefit is the production of renewable energy.

Another significant benefit of composting and AD of separately collected biowaste, is that one of the main outputs and benefits besides the environmental ones listed, is the social parameter. Composting and AD of separately collected biowaste acts as a driver for job creation, training and volunteer opportunities, which is not the case for MBT and energy recovery from incineration. This can be seen in community composting projects. This additional labour is often engaged in utilising the compost for educational, horticultural, and amenity and environmental improvements utilising the compost. This results in increased biodiversity, more local and fresher food production and more community engagement thereby extracting maximum 'added value' from a low value product

Finally, once the above-mentioned methods have been exhausted -the treatment of residual waste that has a biowaste fraction. Incineration of mixed waste without a minimum % energy recovery from embodied energy should be taxed as for landfill.

Any treatment option would surely benefit from life-cycle assessment and comparison of the different treatments could drive the implementation of the best environmental options.

Whilst RREUSE is in principle supportive to "life-cycle thinking" as an approach to better account for environmental implications of different strategies and options, we

firmly warn decision-makers, and the European Commission, against use of LCA in the field of biowaste management without proper consideration of current limitations of the instrument. As it has been already remarked at scientific level[4], unfortunately current LCA methodologies do not take into proper account soil-related benefits of using compost. This is a constraint in the use of life-cycle thinking in the field of biowaste, that seems well known to the EC, too, given the mandate to the Joint Research Centre, Institute for Environment and Sustainability, to try and define a "Guidance" on proper application of LCAs to biowaste, an effort which is still far from being finalised, yet, with common directions at EU level.

As a matter of fact, many of the so called "compost offsets", and notably some of the most important ones, are still far from being fully acknowledged:

- this is partly due to some intrinsic limitations of international methodologies (in that, for instance, the IPPC methodology for accounting of Greenhouse Gases (GHGs) sets an arbitrary cut-off for C to be considered as "sequestered" at 100 years, which disregards the importance of whatever prolonged lock-up of C before 100 years, and trivialises related effects in terms of levels of organic matter in soils
- on the other hand, induced beneficial effects of organic matter in soils (improved workability, improved water retention, suppressive power that reduces energetic input for production and application of pesticides, etc.) are extremely site-specific and even crop-specific, hence difficult to model in LCAs.

Nevertheless, there is evidence that the potential magnitude of these effects may on itself overturn results of LCAs in favour of composting relative to other bio-waste management options, once duly taken into consideration[5].

Question 4: Do you think that energy recovery from bio-waste can make a valuable contribution to sustainable resource and waste management in the EU and meeting the EU's renewable energy targets in a sustainable way and, if so, under which conditions?

Yes, with source separated anaerobic digestion of food waste, but as previously stated it should not be at the expense of soil organic matter and its benefits.

Incineration with energy recovery from bio-waste does not make a valuable contribution to sustainable resource and waste management in the EU and meeting the EU's renewable energy in a sustainable way as it reduces the energy efficiency due to its moisture content.

As covered in the answer to question 3, considerable thought must be given before considering incineration of bio-waste even when it is regarded as energy recovery. It could in fact be argued that considerable thought must be given to energy recovery

[4] See for instance: Favoino, E., Hogg, D.: "*The potential role of composting in reducing greenhouse gases*", Waste Management & Research, Vol. 26, No. 1, 61-69 (2008)

[5] Grontmij Nederland, IVAM *"A Life Cycle Assessment for Vegetable, Fruit and Garden Waste; Review of the LCA accompanying the 2003 Netherlands National Waste Plan"*, Report to the National Dutch Waste Management Plan, Amsterdam 2004

from any form of waste as it can be considered too much of an end of pipe solution and removes any incentives for action higher up in the waste hierarchy. Pragmatism is required in relation to general energy consumption as energy recovery is only likely to, in effect, 'reward' greater consumption with a greater production of energy. This promotes a completely disjointed approach to the waste hierarchy.

In any case segregated food residue collection should be mandatory with the choice of treatment (compost or AD) left to national/regional/local authorities.

Question 5: Do you see a need for promoting bio-waste recycling (i.e. compost production or use on land of composted material) and, if so, how? How can synergies be achieved between bio-waste recycling and energy recovery? Please provide the necessary evidence.

Yes, there is an absolute need to promote bio-waste recycling via composting and AD. This can be achieved by:

<u>Setting specific targets</u> for source separation of bio-waste.

The source separation of organic waste has a massive impact on the resultant quality of the finished compost, particularly compared to compost-like product produced through treatments for mixed municipal wastes. It is vital that this is recognised by the legislator. While mixed waste derived compost, or compost-like output should not be applied to land or to be sold to householders.

Bio-waste strategy should maximise the opportunity for the production of a quality product. The legislation should state that at this time only source separated organic wastes can produce a product that is fit to be used on agricultural land and called a product for retail or wholesale commerce. Mixed waste systems do not guarantee a similar level of quality.

It will be up to manufacturers of such equipment to prove to the EU that their equipment is suitable to guarantee quality levels where mixed waste is used for landfill cover or fuel. This would still provide a use for such material where municipalities have taken short term decisions not to source separate, while giving incentives to introduce source separation.

Targets for the source separation of biodegradable waste must be set. Bio-waste strategy must include strict targets for either the source separation of organic waste or production levels of quality compost and digestate products for the following reasons:

- Soils across the EU are suffering from problems associated with declining organic matter content.
- Decomposing organic matter produces methane in landfill sites and causes incinerators to burn at lower temperatures due to its water content.
- Composting will become less economically viable if the strategy only includes quality control measures on composting sites. The cost per ton of composting will be increased without any incentive to treat organic material in this way. Some statutory incentive to process source separated material by either anaerobic digestion or aerobic composting must be included so that composters

can afford to meet the quality control and processing requirement elements of the strategy.

To enable the development of composting facilities, these targets should be set in a way which increases over a period of a few years rather than an absolute ban on the land filling and incineration of organic wastes starting on a certain day.

If there is a funding system, which will enable the development of source separation collection systems and of for composting and anaerobic digestion facilities, there is no reason why local authorities will not be able to meet these targets.

It would be desirable for source separation targets to be set not only for municipal biodegradable waste. There is considerably more organic waste being produced by commercial and industrial waste, that would not be covered by the directive, should it only focus on municipal waste. For example, Packed bio waste (e.g. bread, meat, vegetables) from commercial sites such as shops and supermarkets is being separately collected, packaging removed and the bio-waste composted Member States such as Finland.

Promotion of Green Public Procurement

The public sector should have targets that require it to use more sustainable products, so that it sets a visible example to other sectors. This should include the use of source separated waste derived compost and mulch products, wherever possible.

Provision Of Support For Community Composting

Community sector activity principally flourishes when there are support mechanisms in place to encourage its development. This can be seen in the UK where there are three principle networks in place to support and develop community sector recycling, re-use and composting initiatives. For example, the Furniture Re-use Network is supporting the development of community sector facilities around the UK to dispose of for electrical and white goods in compliance with the WEEE Directive. In a similar way, the Community Composting Network is working with projects to develop composting schemes for catering waste that are compliant with the Animal By-Products Directive and the corresponding UK legislation . These projects are drivers for job creation, training and volunteer opportunities.

The Soil Strategy and resulting Bio-waste strategy should also ensure that this level of support is applied across the EU. This type of support would include best practice guidance on the establishment of projects, facilitation of networking between projects and the provision of training support.

Funding Support

The Soil Strategy and the Bio-waste policy should be accompanied by funding opportunities, which enable community sector organisations to raise the funds for the development of composting facilities.

Payment For Service Provision

One of the major factors which influences the success of community composting schemes is their ability to meet long-term revenue costs. In the UK, some local authorities will pay community groups for service provision through recycling credits, contracts or service level agreements. Groups that do not receive this kind of financial

support are heavily funding- dependent and, as a result, potentially unsustainable as a result. It would be very useful if the payment of recycling credits to community groups could be made obligatory rather than voluntary as it is the case at present.

One method to ensure that more groups can receive an income for their activities is to standardise the ways in which community groups can monitor and quantify the tonnages they are diverting. If standard procedures are adopted for this, then local authorities can be confident that any payment they make will help them meet themet targets.

Again, the need for Soil Organic Matter (SOM) has to take precedence over the need for energy. SOM cannot be replaced by any other means than the application or integration of biological matter, whereas other non-fossil fuel means of producing energy are available (wind, solar, hydro with new methods being developed).

Composting credits for the use of compost in fertilisation as well as for waste diversion would be very useful. These would be small but, iif comparing to LCA examining the use of man-made or imported mineral fertiliser (phosphate), this could be massively significant in terms of C-footprint. The use of combined AD & Composting methods would achieve synergy (ERC & Eunomia, Report for GLA, Jan 2008).

Question 6: In order to strengthen the use of compost/digestate:

-- Should quality standards be set for compost as a product only or also for compost of lower quality still covered by the waste regime (e.g. for applications not linked to food production)?

Quality standards should only apply to higher quality composts because their application to land means that, if that land is brought into production for food growing later, it needs to safe to do so.

However, a major reduction in cost of obtaining quality standards is also necessary to introduce for smaller compost producers (especially Community Composters) because they produce good quality compost but, as they cannot afford to apply for a quality standard, they would therefore be included in with sub-quality producers.

The proposed exemption to the permitting regime in England allows compost produced under an exemption (T23) to be spread under an exemption (U11 & U12) and this currently seems to be a good solution. However, it still leaves smaller producers without a quality mark and it is now impossible to say whether this will be a problem in the future.

-- Should rules for the use of compost/digestate (e.g. limits on pollutant concentration in compost/digestate and land on which compost/digestate is applied) be set ?

Yes - as currently on time, frequency etc of application, soil conditions, topography, groundwater drainage conditions etc. Except for where the environmental risk is deemed to be very low as under a proposed exemption in England – see above.

-- Which pollutants and concentrations should these standards be based on?

This point needs to be further investigated. Good starting points are the Sludge Application Levels and the CLEA and Dutch list or (national equivalent) levels. It is necessary to include a monitoring protocol over time where repeated applications are contemplated.

There should be a comparison done of existing standards across the EU resulting in the most rational and safest standard being used to benchmark the others.

-- What are the arguments for/against the use of compost (digestate) from mixed waste?

Arguments for: carbon capture, OM recycled to land, recycling of nutrients, major secondary and trace.

Arguments against: Greater risk of unrecognised/undetected pollution. Not all pollutants can be envisaged or tested for.

There is no specific reason why source separation should not be used in all cases.

Question 7: Is there any evidence of gaps in the existing regulatory framework concerning the operational standards for plants which do not fall under the IPPC scope and if so, how should this be addressed?

The 50t/day for composting plants is perhaps too high. A second tier >25-<50t system needs to be in operation for composting plants. There is a vast range of exempt and otherwise described tonnages across the member states - standardisation of this is required, but without discouraging practice or development.

Question 8: What are the advantages and disadvantages of the abovementioned bio-waste management techniques? Do you see regulatory obstacle preventing the further developments and introduction of these techniques?

No. New technologies or uses will stand on their own merits. It is impossible to regulate for the future, unless by providing for a reviewing and evaluation cycle.