

# Report to Environment and Economy Overview and Scrutiny

Agenda  
Item:  
**A.5**

Meeting Date: 27<sup>th</sup> November 2014  
Portfolio: Environment and Transport  
Key Decision: Yes: Recorded in the Notice Ref:KD.32/14  
Within Policy and  
Budget Framework Yes  
Public / Private Public

Title: FOOD DIGESTERS  
Report of: The Director of Local Environment  
Report Number: LE27

## Purpose / Summary:

The report provides the background information on the County Council's Food Digester project and explains the benefits to Carlisle residents. The purpose of the report is to establish a budget to enable the City Council to administer the grant funding to purchase and distribute 796 food digesters in Carlisle.

## Recommendations:

It is recommended that the Panel comment on the report to the Executive which seeks approval to the establishment of an income budget to receive grant funding from the County Council and a corresponding expenditure budget to administer the fund.

## Tracking

Executive:	15 <sup>th</sup> December 2014
Overview and Scrutiny:	
Council:	

## **1. BACKGROUND**

- 1.1** Cumbria County Council has made Waste Infrastructure Capital Grant funding available for the purchase of food waste digesters, as part of their waste minimisation programme. This is a result of funding from the Department of Communities and Local Government. Carlisle City Council has made a successful application for funding from the grant to purchase and distribute 796 discounted food waste digesters.

## **2. PROPOSALS**

- 2.1** There are two types of food waste digester available for the public to purchase at a discounted rate. Although they work differently, their use has the same objective of reducing the amount of food waste appearing in the, residual waste stream.
- 2.1.1** Green Cones: The Green Cone takes all household food waste, including vegetable scraps, raw and cooked meat or fish, bones, dairy products and other organic kitchen waste e.g. tea bags, bread etc. The Green Cone comes with a 5-litre kitchen caddy for collecting and carrying household food waste to the Green Cone. The Council has obtained funding for 400 Green Cones.
- 2.1.2** Green Johannas: The Green Johanna is a hot composter, which recycles waste food into compost. The Council has obtained funding for 396 Green Johannas.
- 2.1.3** Further information about the food digesters can be obtained from the Great Green Systems website, listed in background documents.
- 2.1.4** Householders would purchase food digesters through Great Green Systems, suppliers of the equipment, quoting their post code when making the transaction. Orders will be accepted by telephone or via the Great Green Systems website, with a link from the Carlisle City Council and Cumbria County Council websites.
- 2.1.5** The Green Cone will retail to householders at £15.00, the Green Johanna will retail at £20.00; both prices include VAT and delivery.
- 2.1.6** Cumbria County Council estimate that up to 179 tonnes of food waste per year could be diverted from collection systems by use of the food digesters.
- 2.1.7** The project to supply food digesters at a discounted rate would be completed by April 2017.

### **3. CONSULTATION**

- 3.1 Cumbria County Council have secured funding to maximise the opportunities for householders in Cumbria to minimise their waste, and agreed the distribution of the Waste Infrastructure Capital Grant funding through the Cumbria Strategic Waste Partnership membership.

### **4. CONCLUSION AND REASONS FOR RECOMMENDATIONS**

- 4.1 The project is cost-neutral to the Council, other than a small administrative overhead that can be accommodated within existing budgets. A revision to the capital programme is requested to set up an income budget of £45,370 to reflect the income received from Cumbria County Council, and a corresponding expenditure budget of £45,370 to reflect the payments to be made. An income and expenditure budget of the same values will also need to be added in to the service revenue budget as although capital in nature, this will be accounted for as Revenue Expenditure Funded from Capital Under Statute (REFCUS). The scheme will be administered by Great Green Systems on behalf of Cumbria County Council, and will not involve direct participation by Carlisle staff.
- 4.2 It is recommended that the City Council take part in this project to enable its residents to be able to purchase a subsidised food waste digester and allow them another opportunity to dispose of their food waste and promote good practise .This is also in keeping with the rest of the districts who are already participating in this project.

### **5. CONTRIBUTION TO THE CARLISLE PLAN PRIORITIES**

- 5.1
- Provide a further opportunity to promote 'Love where you Live'
  - Achieve a sustainable and balanced budget.
  - Enable residents to reduce the total amount of household waste.
  - Provide an alternative to the residents for the disposal of food waste
  - Promote working in Partnership by working with the County Council and the other District Councils

**Contact Officer:** Angela Culleton

**Ext:** 7325

#### **Appendices attached to report:**

Appendix 1: Description of Green Cone

Appendix 2: Description and Green Joanna

### Appendix 3: Comparison of both

**Note: in compliance with section 100d of the Local Government (Access to Information) Act 1985 the report has been prepared in part from the following papers:**

- None

**Chief Executive's -**

**Deputy Chief Executive –**

**Economic Development –**

**Governance –**

**Local Environment –**

**Resources -**

## Appendix 1

### The Green Cone

The best way to demonstrate is to take one to pieces and talk about it in the following order:

- A hole has to be dug to accommodate the unit entirely in a sunny place and if it is to be installed in clay soils with poor drainage, then the drainage must be improved with gravel, broken pots, bricks, etc and thus the hole will have to be 4/5 inches deeper than the bottom of the basket. The top of the basket should be just below ground level.
- Having dug the hole a few inches wider and deeper, assemble the unit. It is very important to follow the instructions otherwise there will be difficulties assembling it if the base is held in the ground while it is screwed together.
- Holes in the basket will be some 9 inches below the surface of the ground and therefore smells will be contained. Vermin and other animals should not be attracted. The waste is out of reach from children and pets. The soil backfilled around the unit should be of reasonable quality to allow the flow of oxygen and also worms to gain easy access as they help the process.
- The system works by the air between the two Cones heating up, using heat from the sun, and rising to form convection currents within the cone. Secondly as the air inside warms, it expands and gets forced through the holes at the bottom of the basket. As the system cools overnight the reverse occurs and fresh air is drawn back in to replace the air inside. This process feeds the natural bacteria eating the food waste.
- The decomposing waste creates heat and the internal cone acts as an insulator and thus temperatures will be higher inside a Green Cone than inside a single skin composter.
- The whole system is designed to maximise the amount of oxygen flowing over the waste and therefore the waste should not be allowed to rise above the level of the basket but there should be capacity to take the food waste from a family of about 4 people (200 kilos a year).
- Keep the soil around the Cone topped up to stop any smells escaping and to be careful when they are transferring food waste into it from the caddy so as not to drop any waste outside the Cone.
- The caddy has a replaceable charcoal filter which prevents smells escaping. The purpose of the caddy is to ensure that food and particularly meat and bones are protected and kept away from flies who would lay eggs on them which would turn into maggots in the Cone.
- The bacterial powder that comes with a Green Cone is used sparingly (like sprinkling salt and pepper) to get the process going and then each time the cone gets a caddy of food during cold weather. In the warmer months it may only be necessary to add powder once every so often. A white or grey layer will form on the food and this is a sign the system is working well.

# Appendix 1



## **Notes for “educational” speakers on the methods of installation and use of the Green Cone and Green Johanna food waste digesters**

These notes have been created to help Green Cone and Green Johanna sales people, advisors and trainers to ensure that potential users understand the differences between the two products and have the knowledge to make an assessment as to which unit will best suit their needs and garden circumstances, i.e. location and soil type.

### **1. Introduction**

- The Green Cone and Green Johanna are patented products, which are primarily designed to take all food waste, including meat, bones, dairy products, etc. The Green Johanna also takes all food waste in the proportion of around two third food waste to one third garden waste. It produces rich compost, whereas the Green Cone produces a little residue. “Normal” composters are designed only be used for garden waste and fruit and vegetable peelings as other foods could attract vermin. This is why when wanting to dispose of all food waste at home a specialist unit has to be used such as Green Cone or Green Johanna.
- These systems do away with the need for the local council to collect and treat this part of our waste (under their obligations to residents) either by sending to landfill (the most common method of disposal in this country) or transporting to a centralised composting facility or energy from waste plant. These methods use expensive and potentially environmentally damaging methods of transport and energy. Often these methods still leave a residue to deal with.
- Food waste is an organic part of our waste that requires careful handling when it comes to disposal. There are problems with it degrading quickly and so it cannot be stored for long. Once sent to landfill it breaks down anaerobically (in the absence of oxygen) and starts to give off methane, a powerful Greenhouse Gas, that is approximately 25 times more dangerous to the environment than CO<sub>2</sub>.
- It should be stressed to users that both units have been designed to ensure the presence of oxygen, i.e. they are aerobic systems, not anaerobic. The presence of oxygen means that the decomposing waste gives off carbon dioxide (CO<sub>2</sub>) not methane which, whilst it is also a Greenhouse Gas, is a far better option.

## Appendix 2



### Green Johanna

To demonstrate, show the base plate with its ventilation channels first before assembly as this is an important part of how the unit ensures flow of oxygen over the waste:

- This is the Rolls Royce of composters. It has a unique patented base plate which is specifically designed to ensure that air flows through it and up the sides of the composter. The holes in the middle are to aid drainage.
- Heat from the composting process draws air in at the base which flows up the sides in the unit and is vented out at the top through the holes under the lid handles.
- The lid can be rotated to increase or decrease ventilation. This has the effect of controlling the escape of heat and so the vents under the lid should be more closed in winter to maintain a warmer compost. A "winter jacket" is available at extra cost for extremely cold climates.
- The holes are specifically small to prevent vermin entering the Green Johanna.
- The Green Johanna should be located on soil, grass or gravel but not on concrete or other solid surface. The process will produce a certain amount of liquid (leachate) which must be allowed to drain into the ground to ensure pets and children in particular do not come into contact with it.
- Initially 4/5 inches of twigs, etc should be placed at the bottom of the Green Johanna, followed by a layer of soil and then a mixture of food and garden waste in layers. It should produce compost in six months, which can be accessed through the doors at the sides.
- Ensure the doors are correctly aligned before closing and pressed firmly down so they cannot be opened easily. The rim of the unit should be partially covered by the door when in position and a screw hole should be visible at the top of the door. It is recommended to screw the door shut whilst composting.
- The ideal mix is 2/3rd food waste to 1/3rd garden waste. This is because garden waste has a higher carbon content to balance the nitrogen in food waste. The addition of garden wastes helps to maintain air gaps in the material.
- Once a couple of layers of alternating material have been added, plunge the stirring stick into the mixture and draw out to mix and aerate. This should only be done to the most recent layers as if you dig too deep you will disturb the process deeper down and the compost may lose heat.
- Starch based biodegradable or compostable bags can be put in a Green Johanna. However, it is important that they are opened up with the stirring stick to allow oxygen to reach the food waste. Care should be taken with "bio" bags as not all are actually compostable. Refer to the manufacturer if in doubt.
- Good composting is about maintaining a balance between Nitrogen (in food and green garden material such as grass) and Carbon (from woody garden materials but also from

## Appendix 2

- Dog waste can go in a Green Cone although this should be in limited amounts. Avoid other pet waste such as cat litter as this may contain antibacterial agents and also its quantity could quickly overwhelm the Cone.
- If food waste is rising quickly and does not appear to be breaking down some weeks after first installation or there is an offensive odour coming from inside the Cone, this may be an indication that it is not working well. This may be caused by poor drainage or insufficient sunlight reaching the Cone. A solution may be to dig it out and create more drainage underneath or relocate if it is too shaded.
- Biodegradable bags of all kinds should be avoided in the Green Cone. This is because if they contain food waste, tests have indicated that the food can go "anaerobic" and bacteria cannot reach it in the closed bag before the bag itself degrades. This then causes the Green Cone to slow down and with continued use it is likely to stop working altogether.
- After at least one year of use the system may need emptying. If the level of material stays at or above ground level without appearing to go down after leaving for a couple of weeks, then it is likely to be full. More commonly this occurs after 2 or more years and depends on many factors. The top cones should be unscrewed and put to one side. The most recent material placed in the Cone should be removed and kept aside to be returned after emptying the rest of the residue. This is because the recent material will not have digested completely and will need to go back to do so. The residue taken out should be dug into the soil in the garden to improve its structure and add nutrient. Avoid leaving on the surface in case it attracts vermin or birds.



## Appendix 3

Buy your  
**GREEN JOHANNA**  
for just **£20**  
instead of £108.90!

Every tonne of food waste we throw away causes 4.5 tonnes of CO<sub>2</sub> emissions.

Help the environment and use a **GREEN JOHANNA** in your garden to make compost from your food and garden waste.

It eats all the food you don't – even meat and bones. Add garden clippings and produce nutrient-rich compost for your plants.

Simply stand your **GREEN JOHANNA** on a flat surface in a shady part of the garden – on grass or soil.

### TOP TIP!

Pick our **Green Johanna** if you want to add garden waste

3 easy  
ways to  
order:



By post  
Complete  
the form  
overleaf



Online at  
[www.greatgreensystems.com/  
promotions/ggscumbria](http://www.greatgreensystems.com/promotions/ggscumbria)

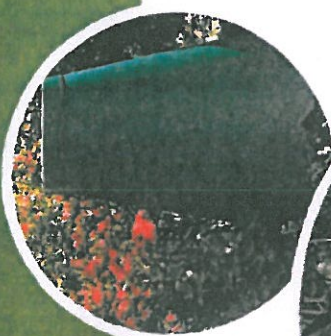


Freephone  
**0800 013 1304**

or for more information email [cumbria@greatgreensystems.com](mailto:cumbria@greatgreensystems.com)

Get a  
**GREEN CONE**  
for just **£15**  
instead of £79.50!

**GREEN CONE** accepts all cooked and uncooked food waste – even meat and bones. Just dig your **GREEN CONE** into a sunny spot in the garden and let nature do the rest, reducing the contents to a small amount of residue.



Make  
your own  
compost!



**FREE**  
4.5 litre  
kitchen  
caddy!

