

International Energy Agency

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Ludlow Food Waste Digester

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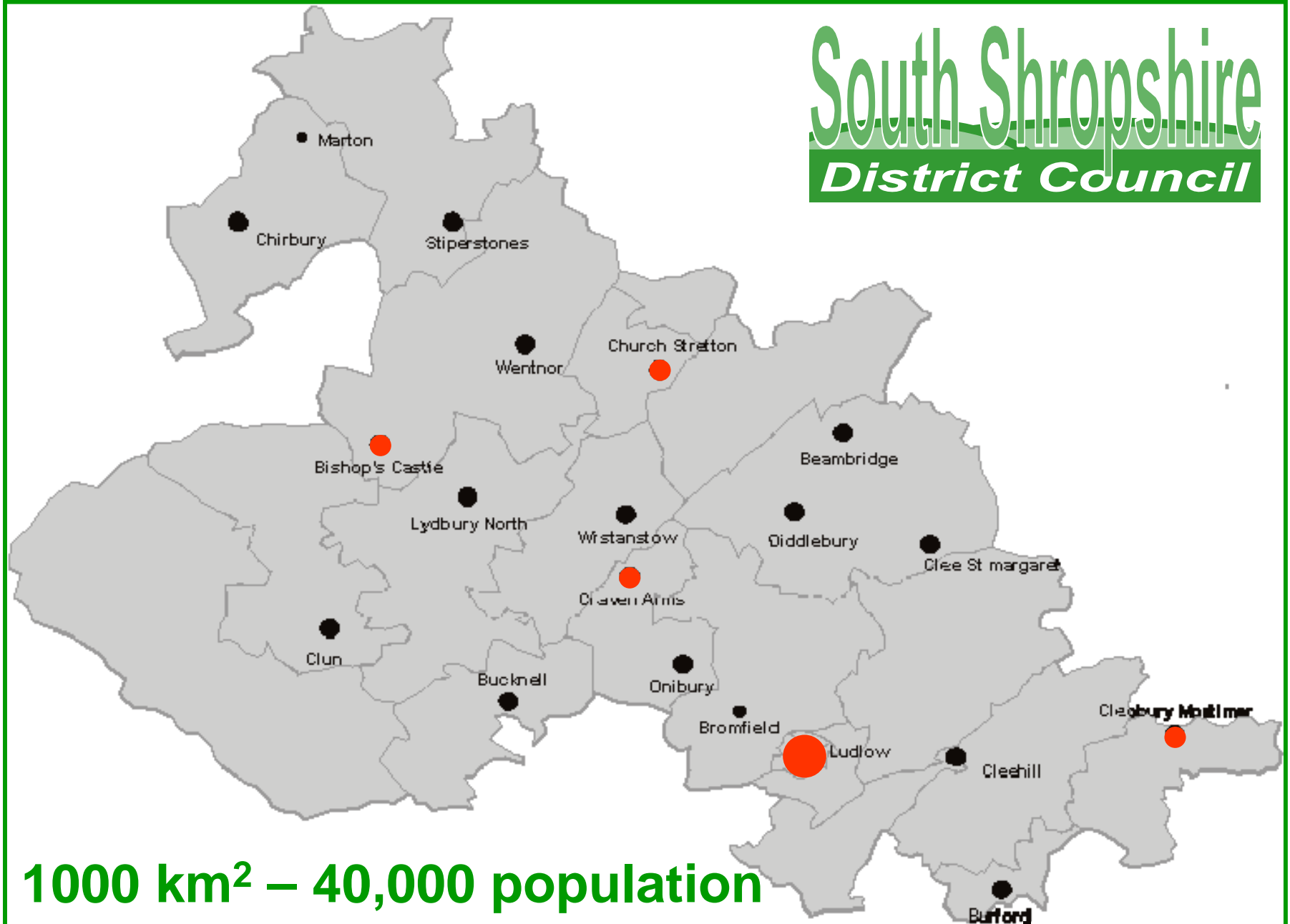


West Midlands Region

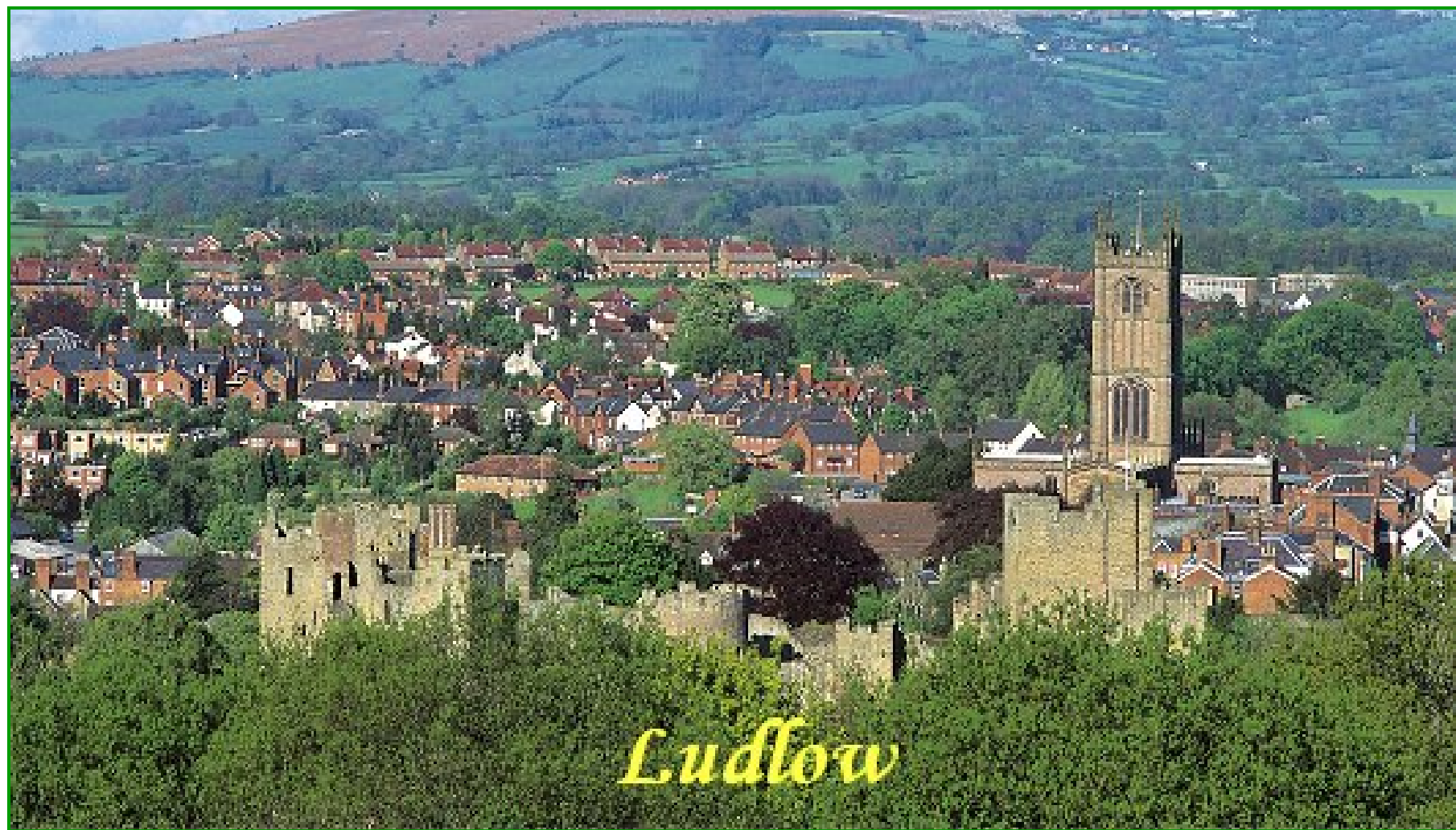


South Shropshire

District Council



1000 km² – 40,000 population



Public / Private Partnership since 1998

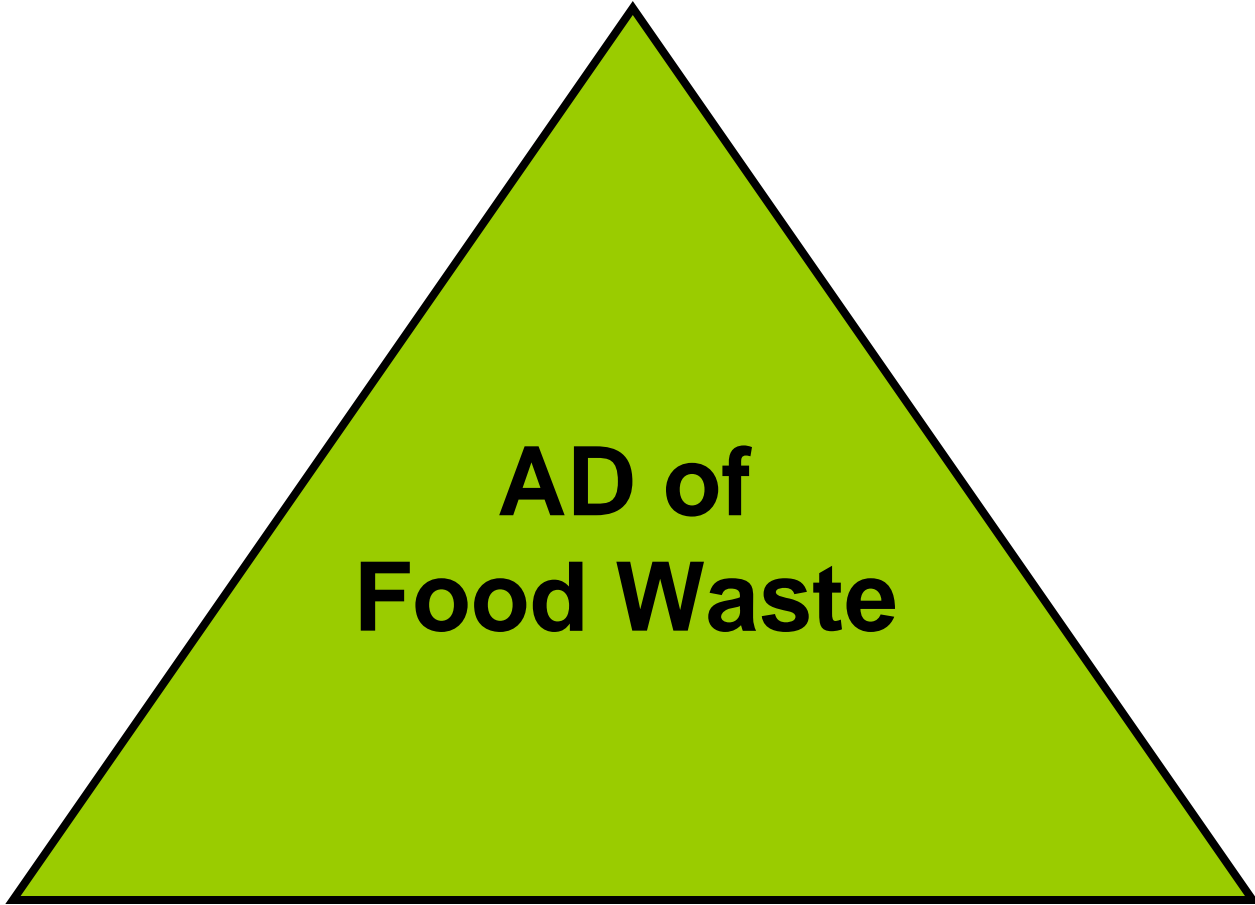


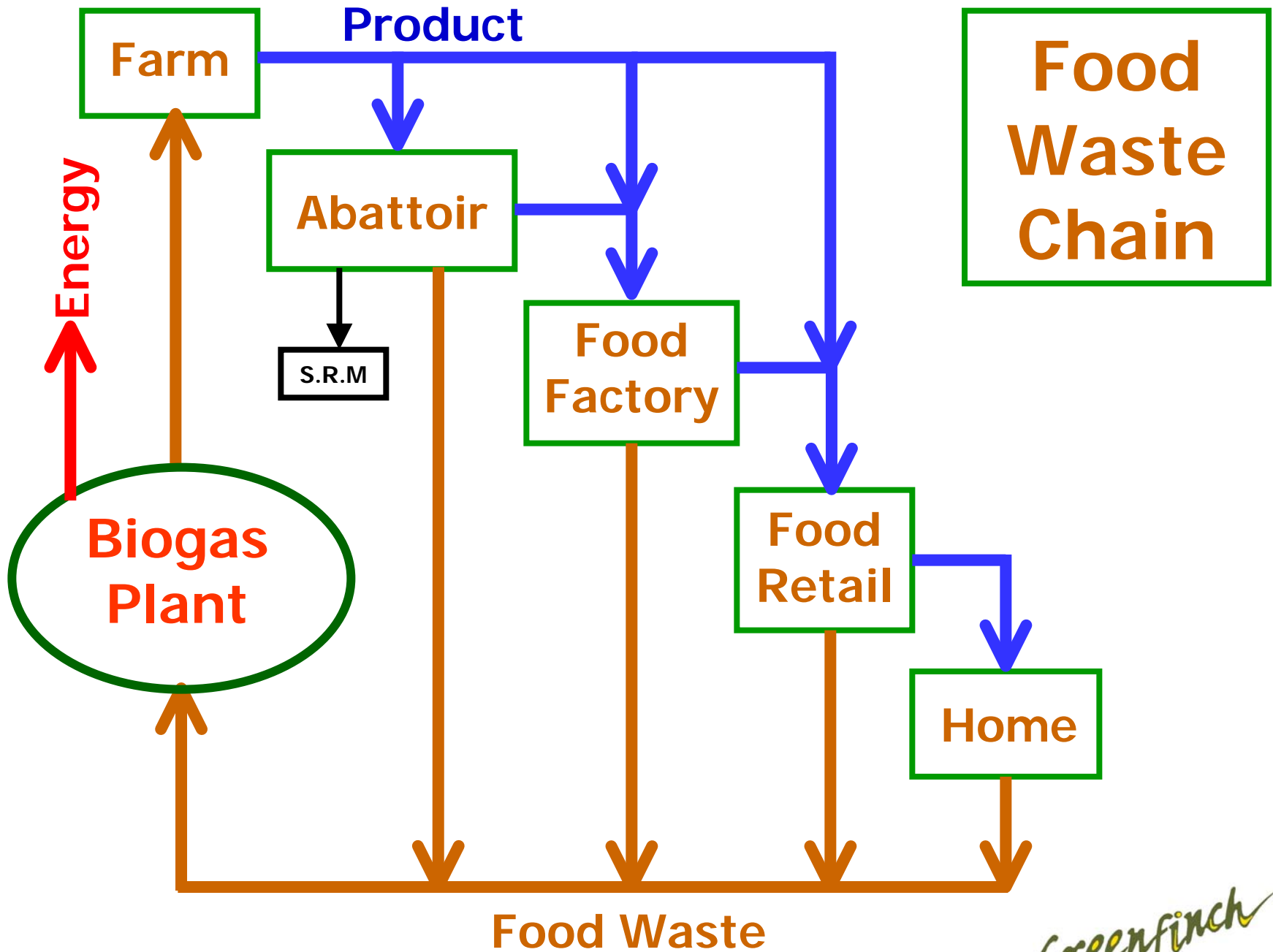
Environment

**AD of
Food Waste**

Community

Economy





**Greenfinch R&D
AD of Food Waste
(1996 to 2003)**

Café-Bar Waste 1996 to 1999



Kitchen Waste from Households 1999 to 2001

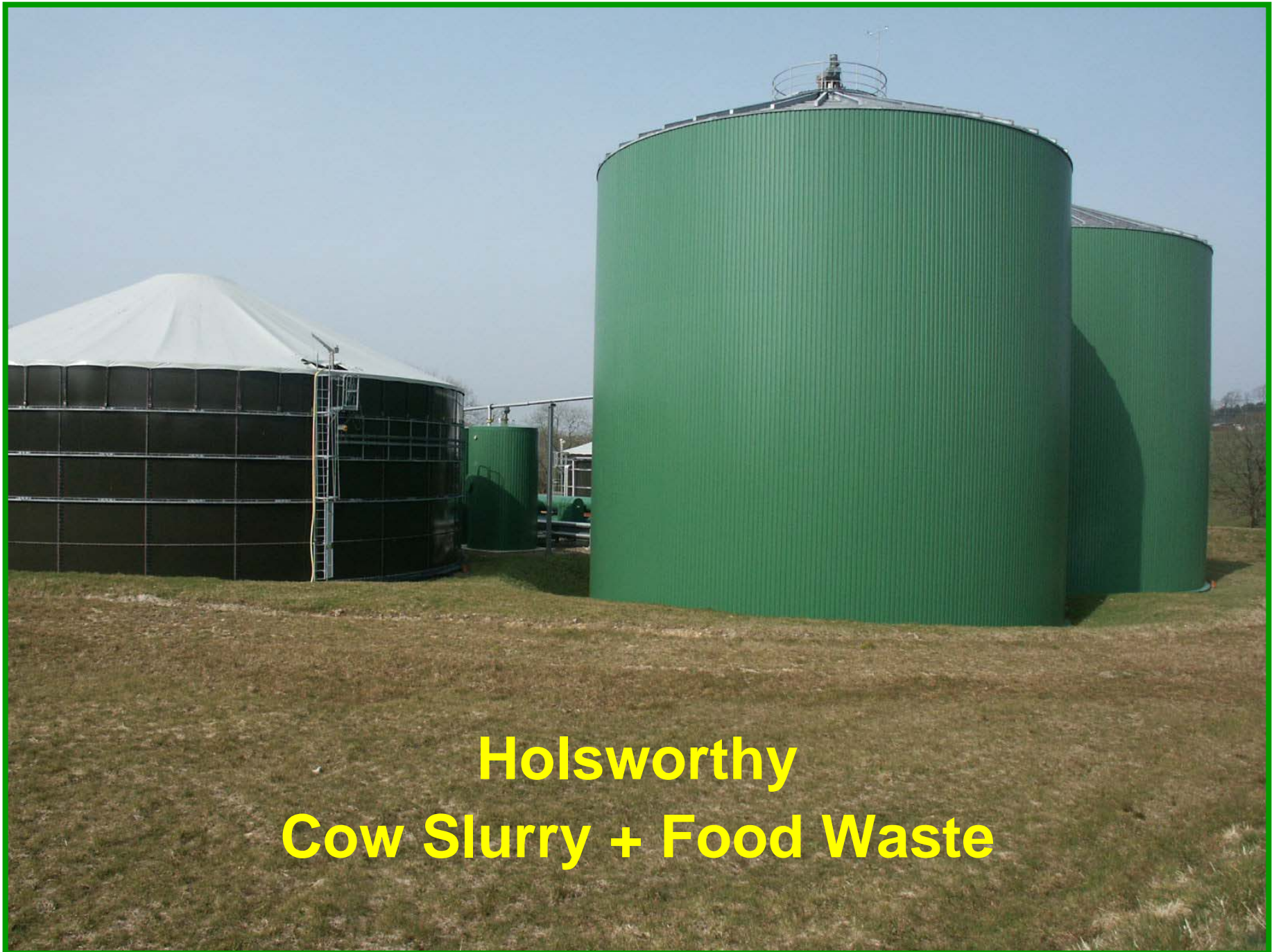


Mesophilic / Thermophilic Trials 2001 to 2003



UK Context

- WRAP estimates that each UK household produces about 250kg of food waste per year, representing one third of food purchased.
- In total households produce 7 million tonnes of food waste per year.
- There is a further 10 million tonnes from commercial catering and from food processing.
- This food waste must be diverted from landfill, and has the potential for the production of renewable energy through AD.



Holsworthy
Cow Slurry + Food Waste



Bedfordia Biogen Pig Slurry + Food Waste

Financing the Ludlow Food Waste Digester

- **Total capital cost of project, including visitor centre - £1.8million**
- **Capital funding from Advantage West Midlands as part of the environmental technologies business development programme.**
- **Capital funding plus revenue funding from Defra as part of the New Technologies Demonstration Programme, investigating processes to divert biodegradable municipal waste from landfill.**
- **Formation of community company (not-for-dividend), 50% South Shropshire District Council, 50% Greenfinch.**
- **Biocycle South Shropshire Ltd has the contract to operate the biodigester.**



Permits

- Planning: Application to Shropshire County Council in January 2005; permission granted in March 2005.
- Waste Management License: Application to Environment Agency in August 2005; license issued in February 2006.
- Animal By-Products Approval: Application to Animal Health Agency to EU Standard in October 2005; temporary approval issued in February 2006, and full approval in January 2007.
- Biofertiliser Land Use Exemption: First application to EA granted for biofertiliser to land in January 2007.

Construction of the Ludlow Food Waste Digester



June 2005





October 2005



March 2006

First Period of Operation

March to December 2006



Co-Mingled Kitchen & Garden Waste

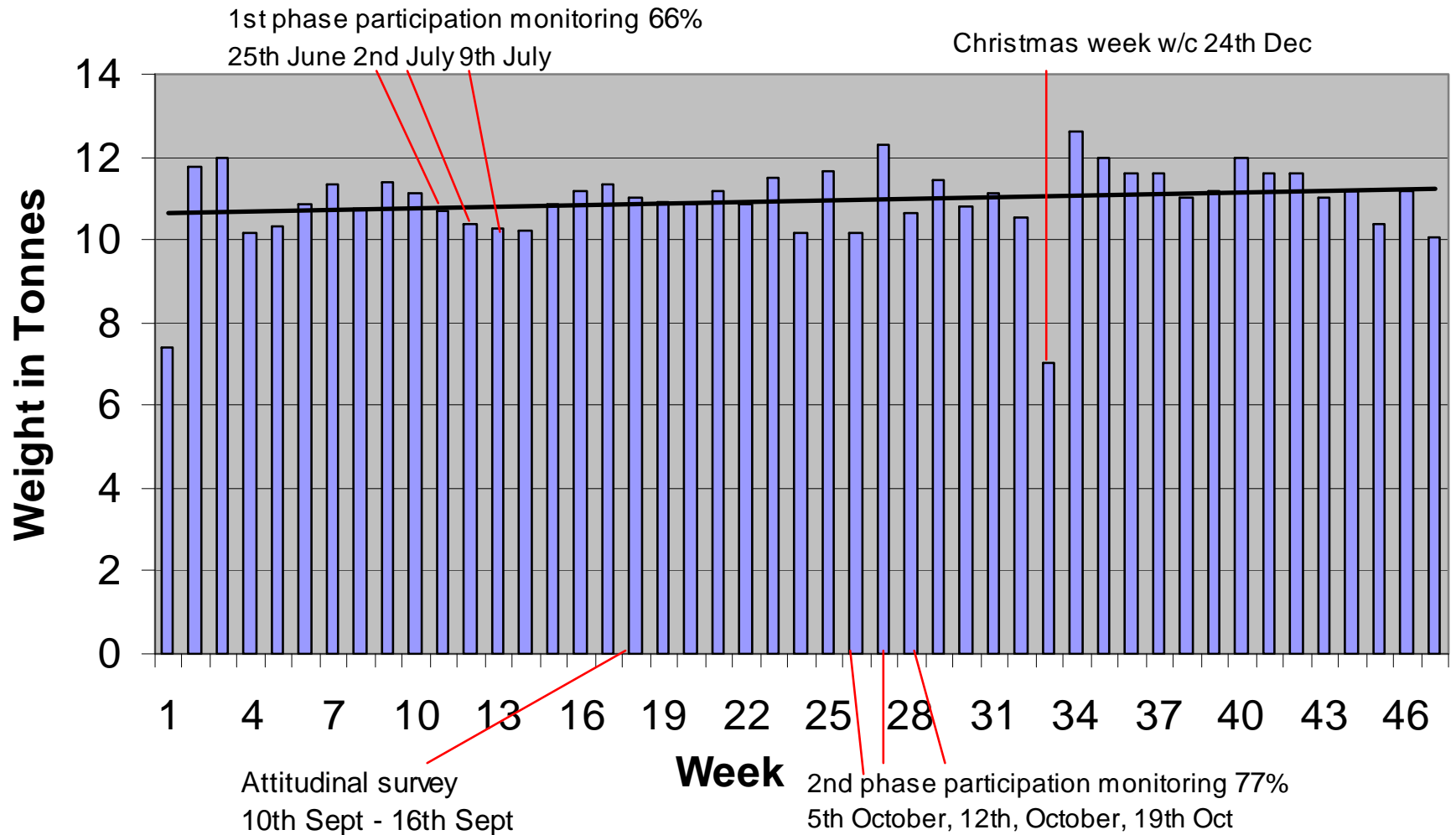
**Second Period of Operation
January 2007 to April 2008...**

A photograph showing a kitchen waste disposal setup. On the left is a small, grey, rectangular kitchen caddy with its lid open, revealing a green plastic bag filled with food scraps like potato peels and vegetable pieces. To its right is a large, blue, rectangular wheeled bin, also with a green plastic bag on top that has 'Leamington District Council' printed on it. In front of the blue bin are two more green plastic bags, one of which is full of food waste. The entire scene is set on a light-colored tiled floor against a white wall.

Kitchen Caddy & Starch Bags



Food Waste Collected 14th May '07- 29th Feb '08







March 2006



Food Waste in Starch Bags

A photograph of an industrial food waste shredding facility. A long, black conveyor belt is filled with a thick layer of shredded food waste, including visible pieces of orange, green, and white material. The conveyor belt is supported by a metal frame and runs alongside a grey brick wall. In the background, a control panel with several buttons and lights is mounted on the wall. A large, horizontal metal pipe is visible in the foreground, partially obscuring the lower part of the conveyor belt. The overall scene is industrial and functional.

Shredded Food Waste



Buffer Tank

**Primary
Digester**

**Secondary
Digester**

**Biogas
Storage**

Process Tanks

A photograph of a utility room containing a CHP (Combined Heat and Power) unit and a standby boiler. The CHP unit is a large, light grey metal cabinet with a digital display and control buttons on its front panel. To its right is a red standby boiler with the brand name 'Hoval' printed vertically on its side. A network of silver-colored metal pipes with various valves and fittings runs across the ceiling and along the walls. The room has a concrete floor, white structural pillars, and a brick wall in the background. The entire image is framed by a thick green border.

CHP & Standby Boiler



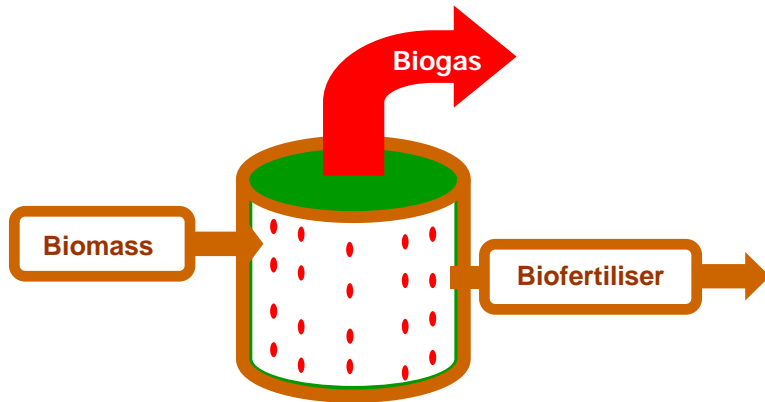
Solid Biofertiliser

A green John Deere tractor is shown from a front-three-quarter view, pulling a large silver cylindrical tank. The tractor has large, treaded tires and a yellow wheel rim. The tank is silver with some text and a logo. The vehicle is moving through a field of dry, brown grass. In the background, there are rolling hills and a small village under a blue sky with scattered clouds. The text "Liquid Biofertiliser" is overlaid in yellow at the bottom.

Liquid Biofertiliser

Anaerobic Digestion of Food Waste

A Low-Carbon Process





Greenfinch

www.greenfinch.co.uk