



Methane to Markets

The Kindersley Centre, Berkshire

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defra

Department for Environment
Food and Rural Affairs



Methane to Markets

Food Waste Opportunities

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Summerleaze – organic growth from aggregates to Anaerobic Digestion

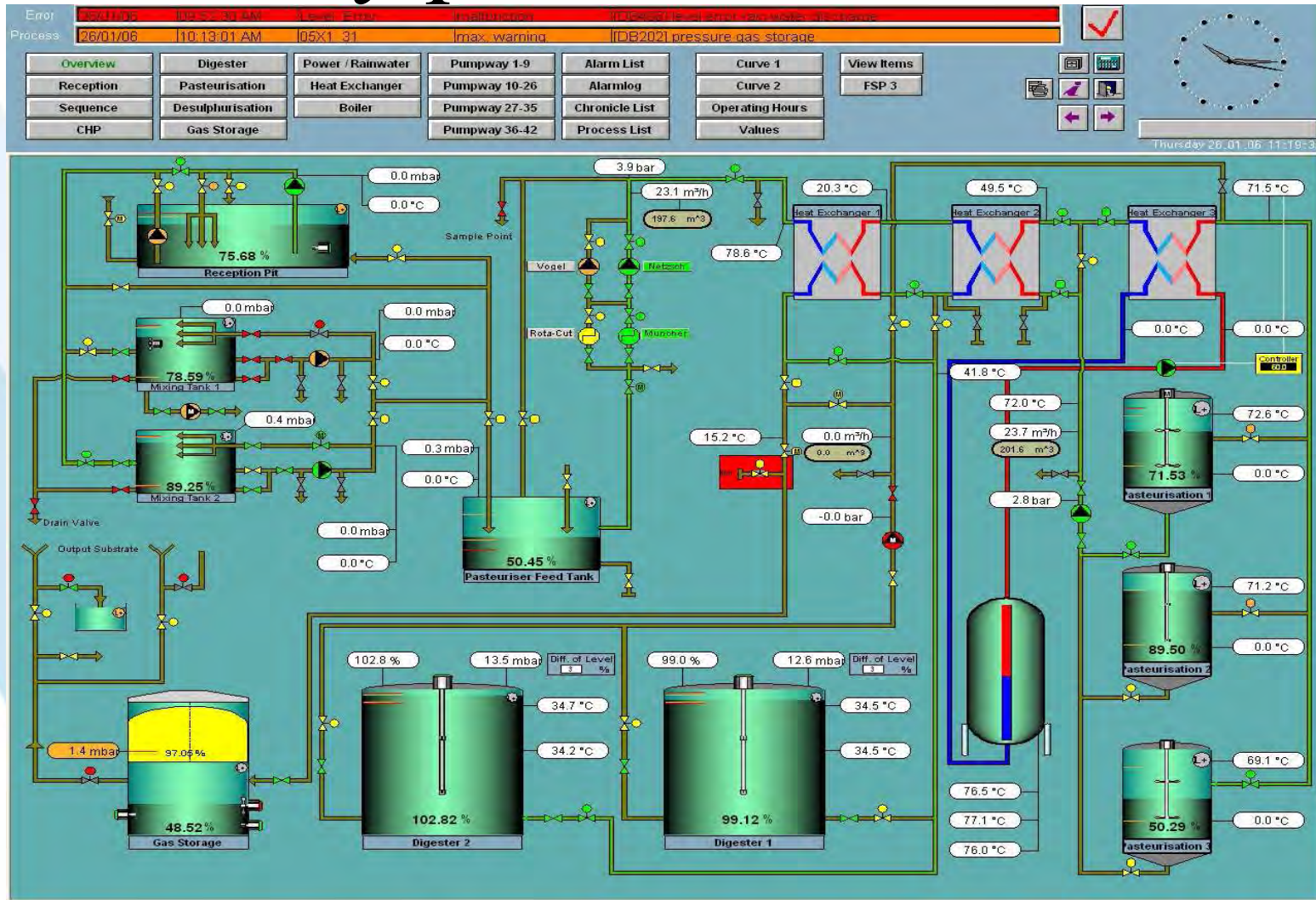


Methane to Markets

Holsworthy Background

- Concieved 1992
- £3,850,000 EAGGF Grant awarded 1997
- NFFO 4 contract awarded 1997
- Construction completed December 2002
- Total cost £7,800,000
- Farmatic goes bust 2003
- Holsworthy Biogas PLC goes bust 2005
- Summerleaze purchases plant in March 2005
- 90,000t/a throughput
- 2.7MW installed capacity

Holsworthy process outline



Reception



Mixing Tank



Blending tank



Secret Ingredient!



Pasteurisation and maceration



Digesters



Storage Tanks



On farm storage and use



Spot the difference.



DeSulphurisation



Gas Management



Engines



Odour Control



Hard Lessons



Harder lessons



New Investment

• Thermal Oxidiser	£150,000
• Mixing Tank 2	£180,000
• Transport Fleet	£130,000
• CHP3	£150,000
• Steam Boiler	£200,000
• Storage bags	£500,000
• Site infrastructure	£400,000
• Gas Management	£120,000
• Health and Safety	£100,000
• Licensing	£120,000
• Total	£2,050,000
• <u>Plus with initial cost</u>	<u>£10,000,000</u>

Holsworthy Feedstocks

Feedstock	Dry Matter	Tonnes per year	Energy Output (kWhrs/tonne)	Gate Fee (£'s per tonne)
Cattle Slurry	6%	50,000	75	0
Industrial effluent	3%	8,000	250	10-20
Solid food waste	30-50%	11,000	600	30-40
ABP's	15%	15,000	200	40-50
Water	0	9,000	0	0
Total	12%	95,000	150	15

UK Food and Agricultural Waste

Market Potential

- 6,189,000 t/a food waste
- 50,000,000t/a animal slurries
- = >400MW at Holsworthy gas production rates
 - What types of waste?
 - Reliable figures?
 - Chemical composition?
 - Suitable technology?
 - Alternative treatment methods?
 - Contaminants?
 - Long term gate fees and electricity prices?
 - Outlet for digestate?
- High risk activity!

Developing the UK market - Digestate Application

- Stabilised, pasteurised (70°C 60mins), enriched, mineralised
- Allows some farmers to use no fertiliser
- Worth up to £4.30/tonne
- Raw Cattle slurry and Sewage Sludge exempt from waste management licensing
- License fee for every 50 hectare block
- Pre-notification – 35 days to approve.
- Classed as Organic manure though 70% N as Ammonium.
- Waste Carriers License for inter-farm transfer
- Marketing of “Waste”
- Spreading already controlled by cross Compliance, Single Farm Payment, Water Framework Directive, Nitrates Directive, COGAP
- Encourages De-nitrification
- Manufacture of N fertiliser accounts for 37% of farm energy usage (Soil Association)
- Energy intensive alternative treatment methods – rendering/composting/incineration.

New Plants

