

Community food waste AD plant (BMAD)

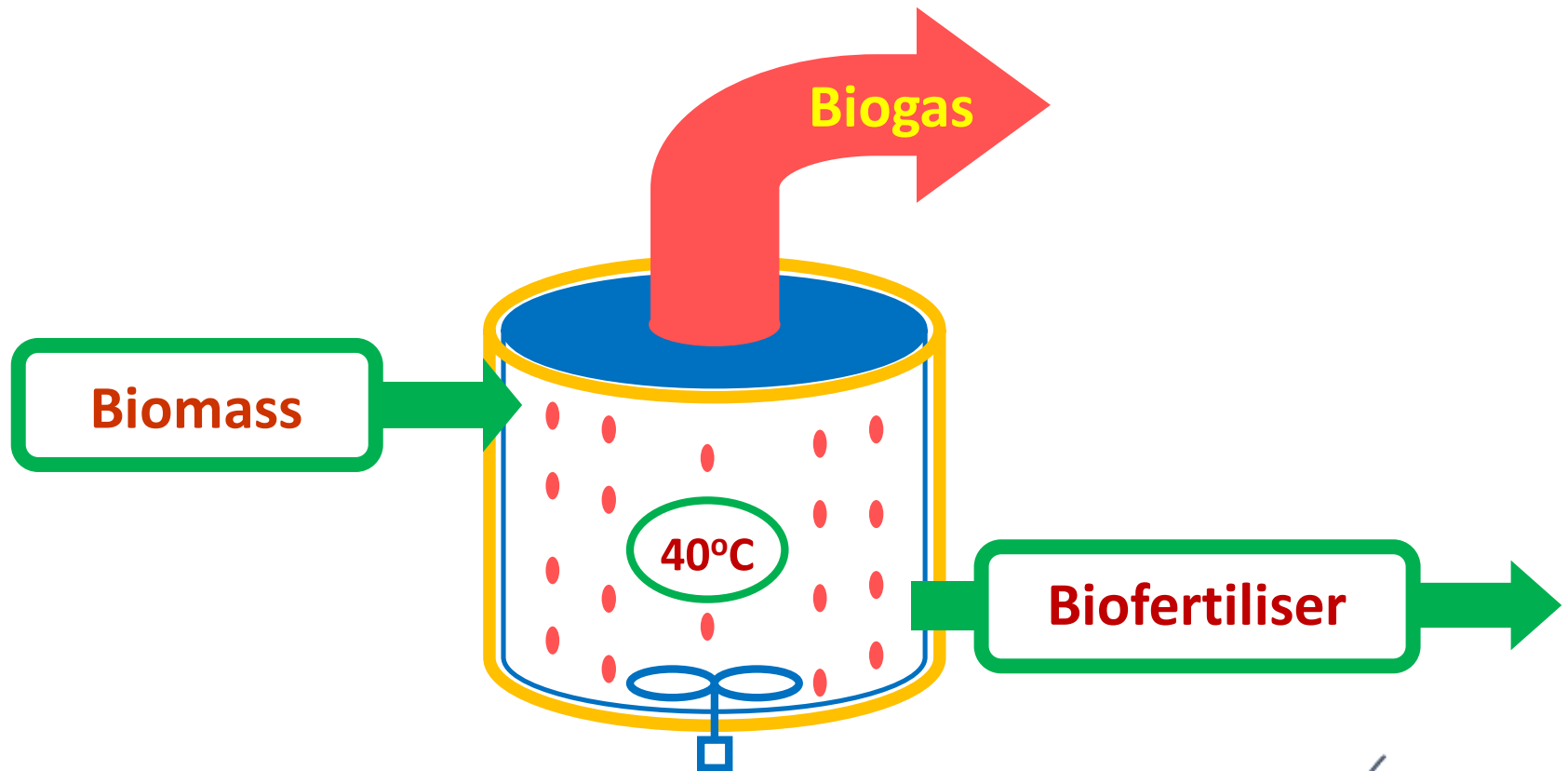
Michael Chesshire

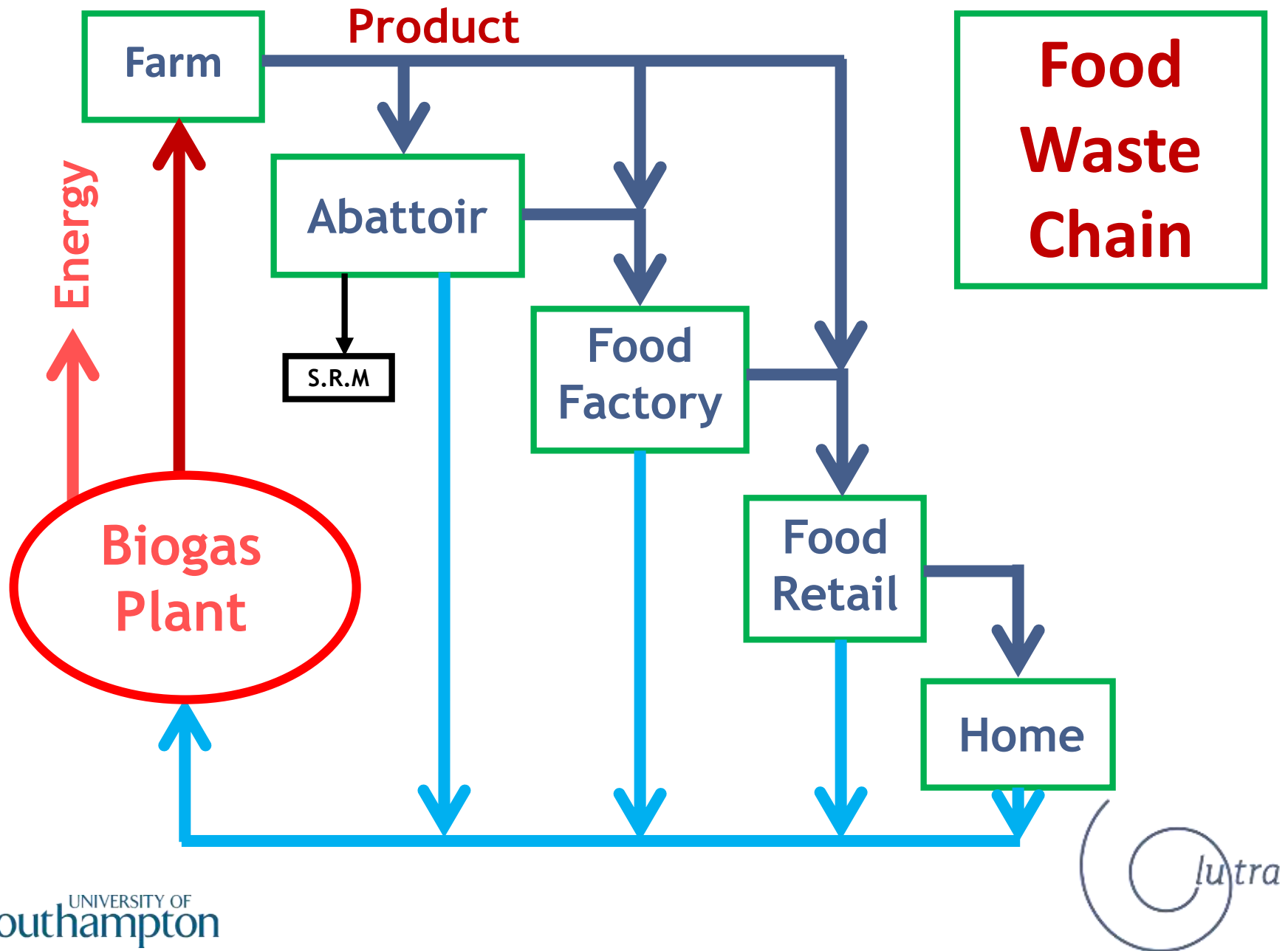
Lutra Ltd

&

University of Southampton

Anaerobic Digestion a Natural Biological Process





History of food waste AD in UK 1996-2017

1996



Pilot food waste digester, café bar in Shropshire



Pioneering community food waste digester, Shropshire

2001



Pathogen research project - with Southampton University

2004



Defra demonstration food waste digester, South Shropshire

2009



45,000 tonne per year food waste digester, Northamptonshire

2014



Lutra community food waste digester (BMAD), Shropshire



Commercial food waste collections, Ludlow



Commercial food waste collections, Ludlow



Food waste from pubs & restaurants in biobags



Food waste from Ludlow Food Centre



Compostable plates & cutlery, Hay Festival

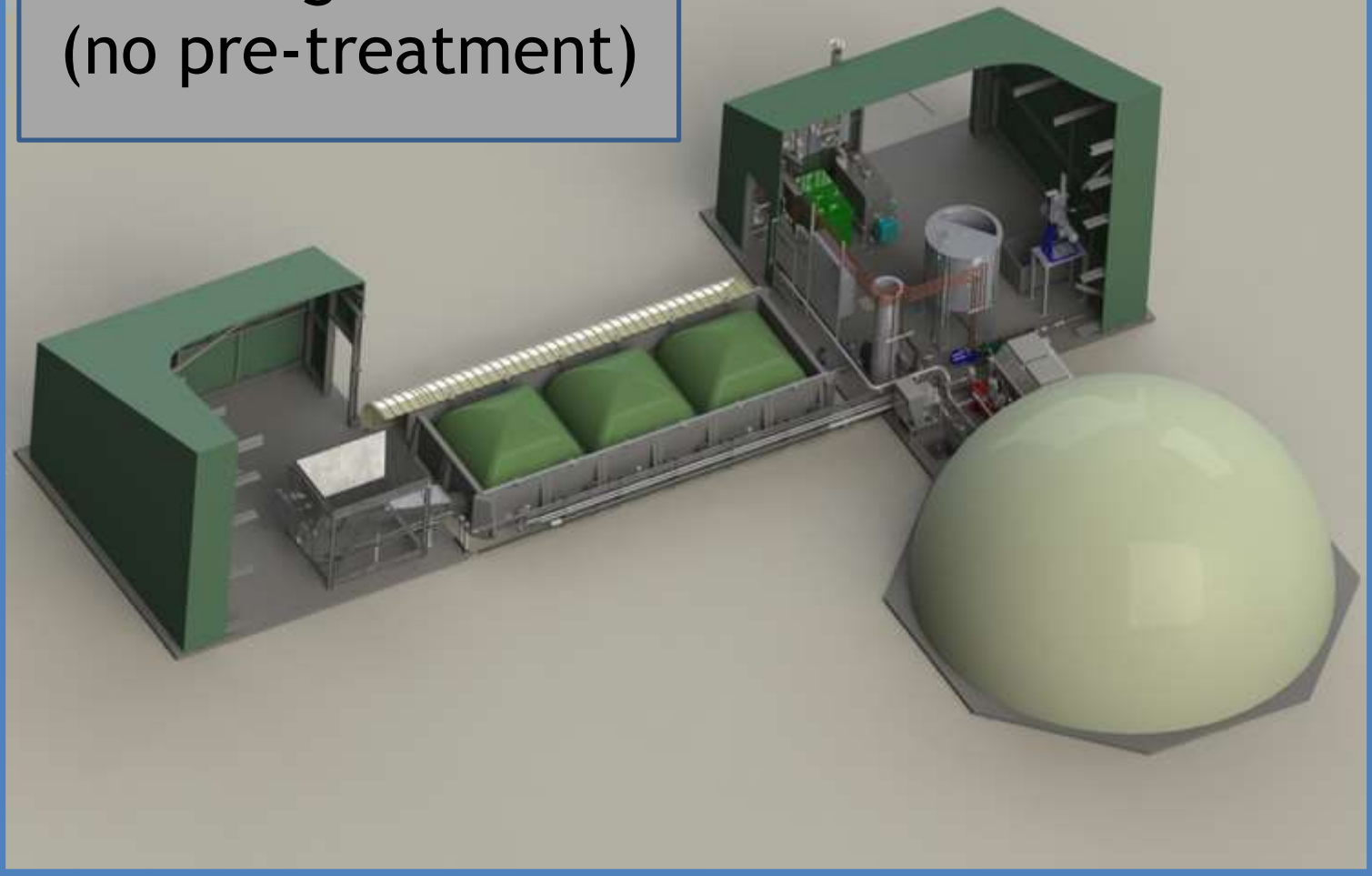


Food waste & compostable beer glasses, Ludlow Spring Festival



Grass cuttings

Plug-flow (no pre-treatment)



BMAD design



Forklift & weigh cell



BMAD reception building with auger feeder



BMAD biogas utilisation



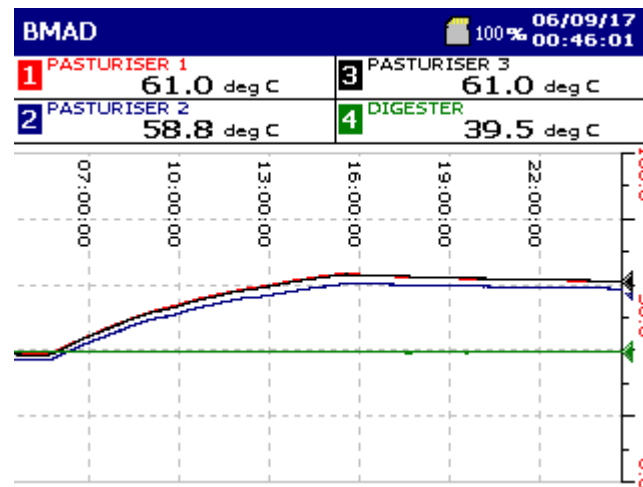
Digestate fibre from BMAD for local gardens



Spreading digestate on a field neighbouring BMAD

BMAD Compliance

- Full planning permission
- Environment Agency T25 exemption
- Full approval under ABP regulations



BMAD Monitoring

- Monitoring since 2014
- 35 parameters recorded manually every day
- Each dolav is weighed on arrival and recorded when loaded to the hopper
- The number of bags each pub collection is recorded

BMAD KPIs

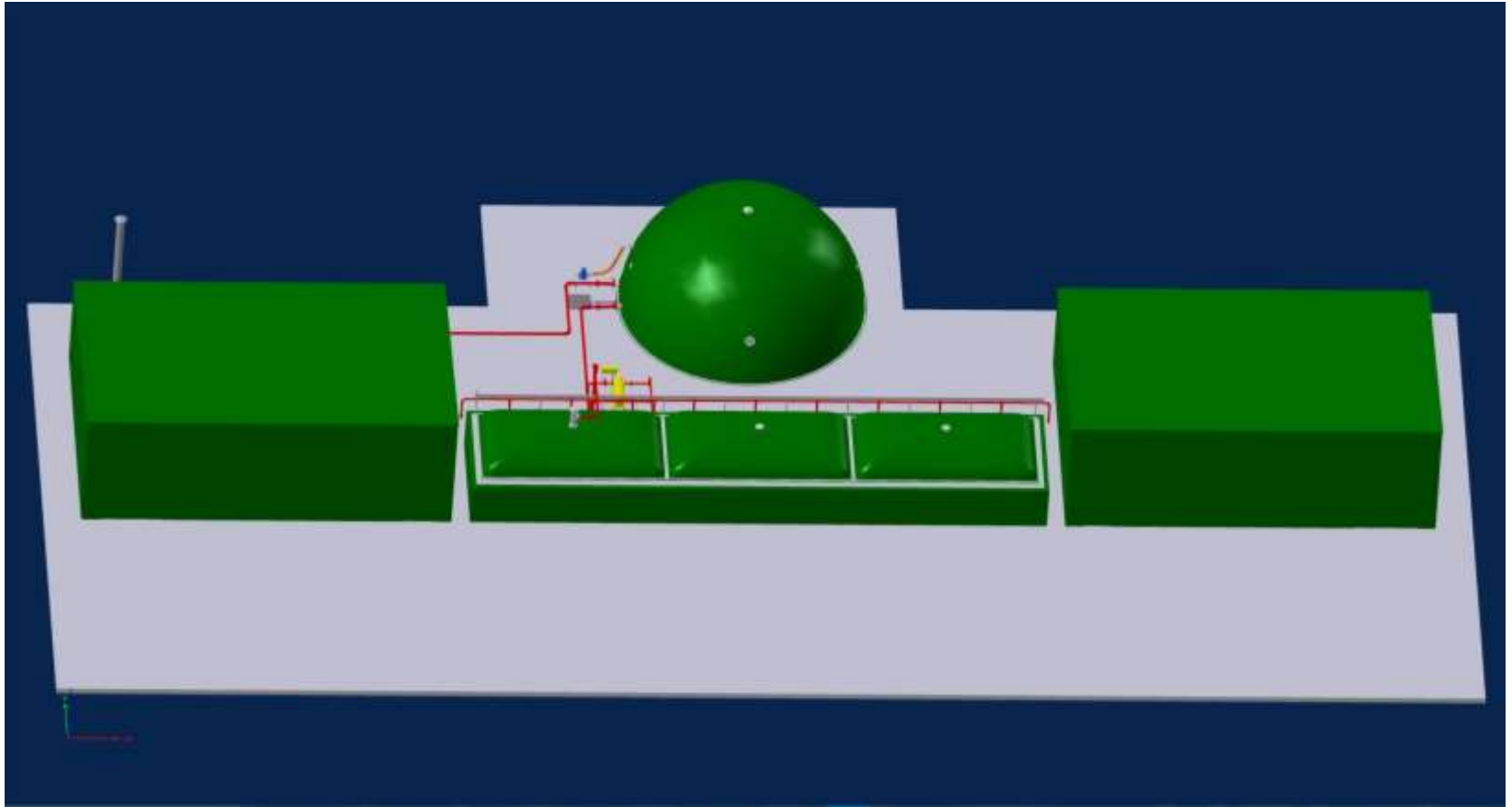
Since January 2016:-

- 65kg/week of food waste collected per pub/restaurant/school
- 125m³ CH₄ per tonne food waste
- >80% reduction of VS
- Results achieved without pre-treatment

BMAD Mass Balance

Since January 2015:-

<u>Inputs</u>	tonne
Food Waste	144.3
Cooking Oil	3.1
Grass Cuttings	11.3
Washwater	24.1
Total Inputs	182.8
<u>Outputs</u>	
Digestate	131.0
Biogas	47.8
Total Outputs	178.8
Mass Balance	4.0



Design concept for 1000 tonne/year community food waste AD plant

Thank you

