



Biosolids Assurance Scheme

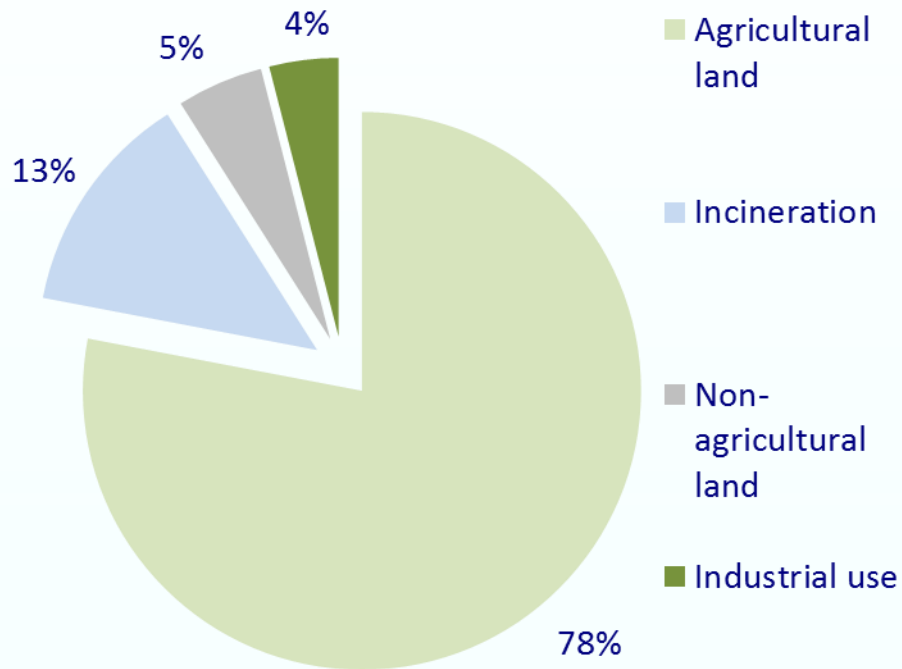
**Maintaining confidence in biosolids recycling
to agricultural land in the UK**

**Simon Black
Director
Assured Biosolids Limited**

4th December 2018

Sewage Sludge Production and Outlets

UK untreated sewage sludge output
 53 million tonnes/annum from
 8,500 wastewater treatment works



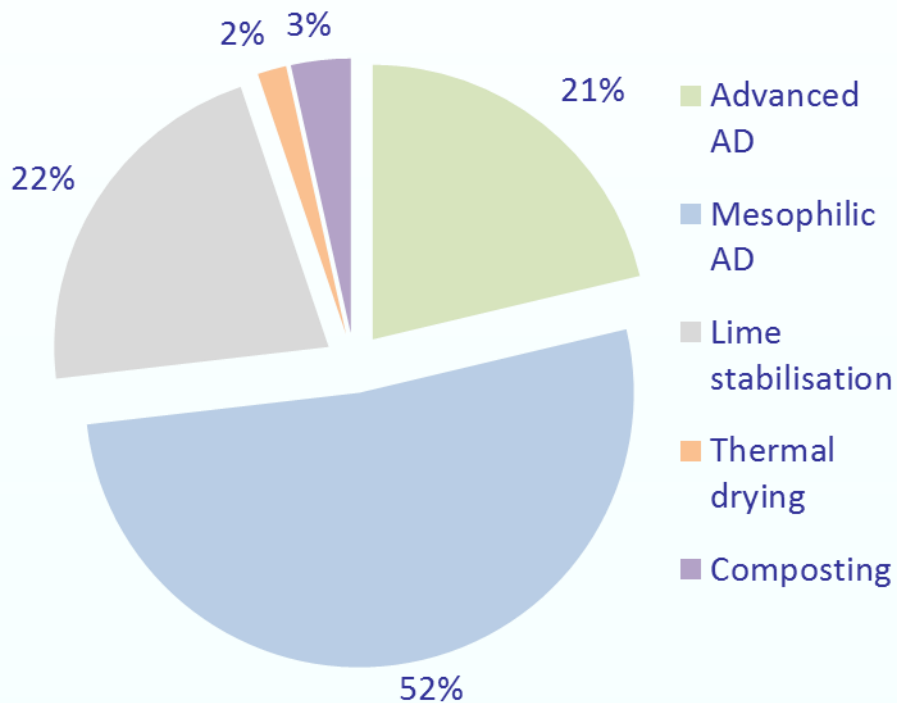
Increasing amounts are treated and recycled to agricultural land as biosolids

Considered the Best Practicable Environmental Option - BPEO

Sewage Sludge Treatment

Various treatment technologies used to produce biosolids

73% treated by AD with advanced AD treatments gradually replacing lime treatment and conventional AD



Energy production of c.850 GWh
enough power for 260,000 homes

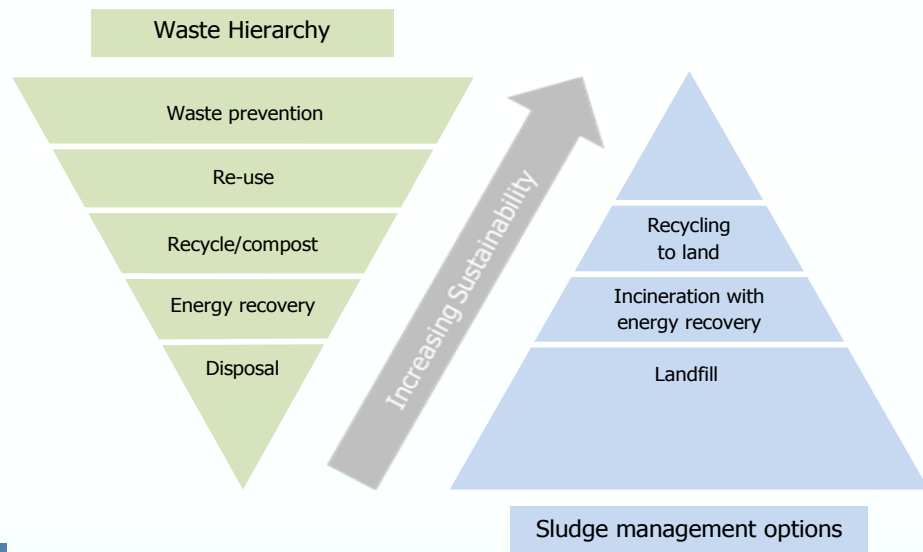
Potential for much more (> 2,000 GWh)
but may be dependent on incentives

Recycling to Agricultural Land

Aligns with UK the Government recycling strategy and the EC Circular Economy

Nutrient value to UK agriculture

£25m/annum - mainly Phosphate (4.8%) and Nitrogen (4.1%) plus Sulphur, Potash and Magnesium



Strong demand from farmers – it is worth £170/hectare in nutrients alone

Many companies sell biosolids and services effectively reducing customer water bills

Biosolids is a product with considerable value to the farming industry



Biosolids Assurance Scheme - BAS

Water Industry initiative to provide reassurance to the food chain and consumers

Brings together regulations and best practice into a single transparent Standard

Sets a minimum Standard – which protects the environment & creates a level playing field for all operators and contractors

Stakeholder input and support are essential to maintain validity and credibility

Third party audit by NSF Certification

Just achieved UKAS accreditation –
the Standard is now formally
recognised by UKAS

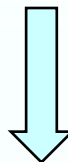
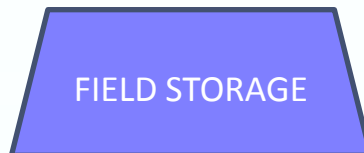
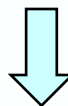
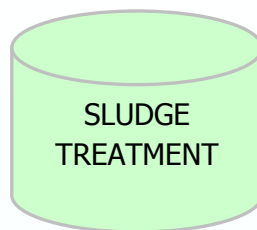


Scheme Scope

Wastewater sludges and all other input materials are subject to Source Material Risk Assessments

Scheme open to any operators within the scope - subject to avoidance of duplication

Agricultural land use only (at this stage)



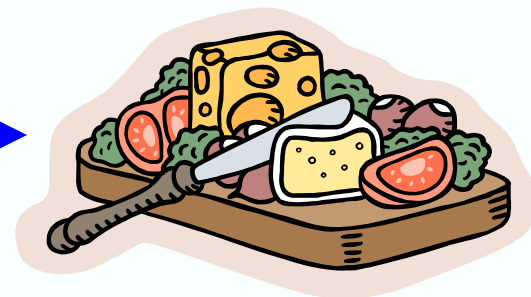
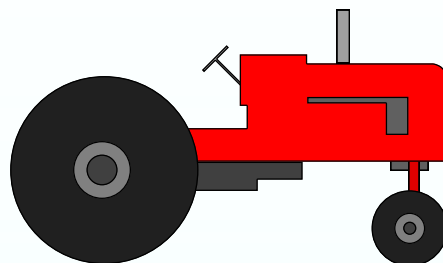
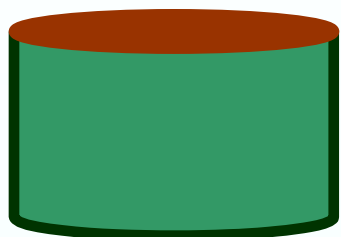
Excludes material for e.g. industrial use & incineration

Including transport and long term storage sites

Scope ends on satisfactory application to land

Managing Biosolids to Minimise Risks to Food Safety

“Multiple Barrier Approach”



Treatment

(validated to give 2 log and 6 log reductions in *E.coli*)

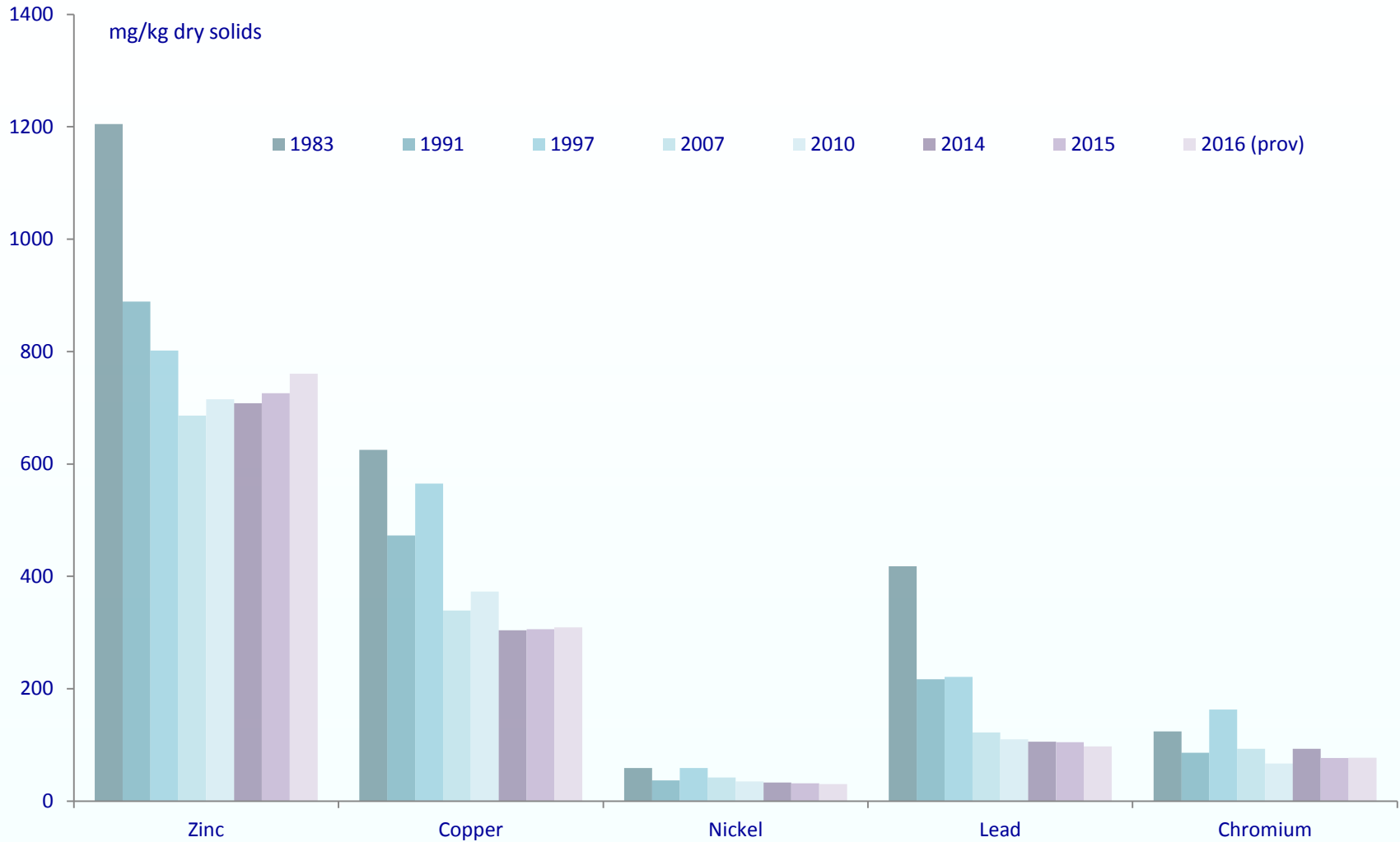
Land spreading

(maximum allowable *E.coli* concentrations)

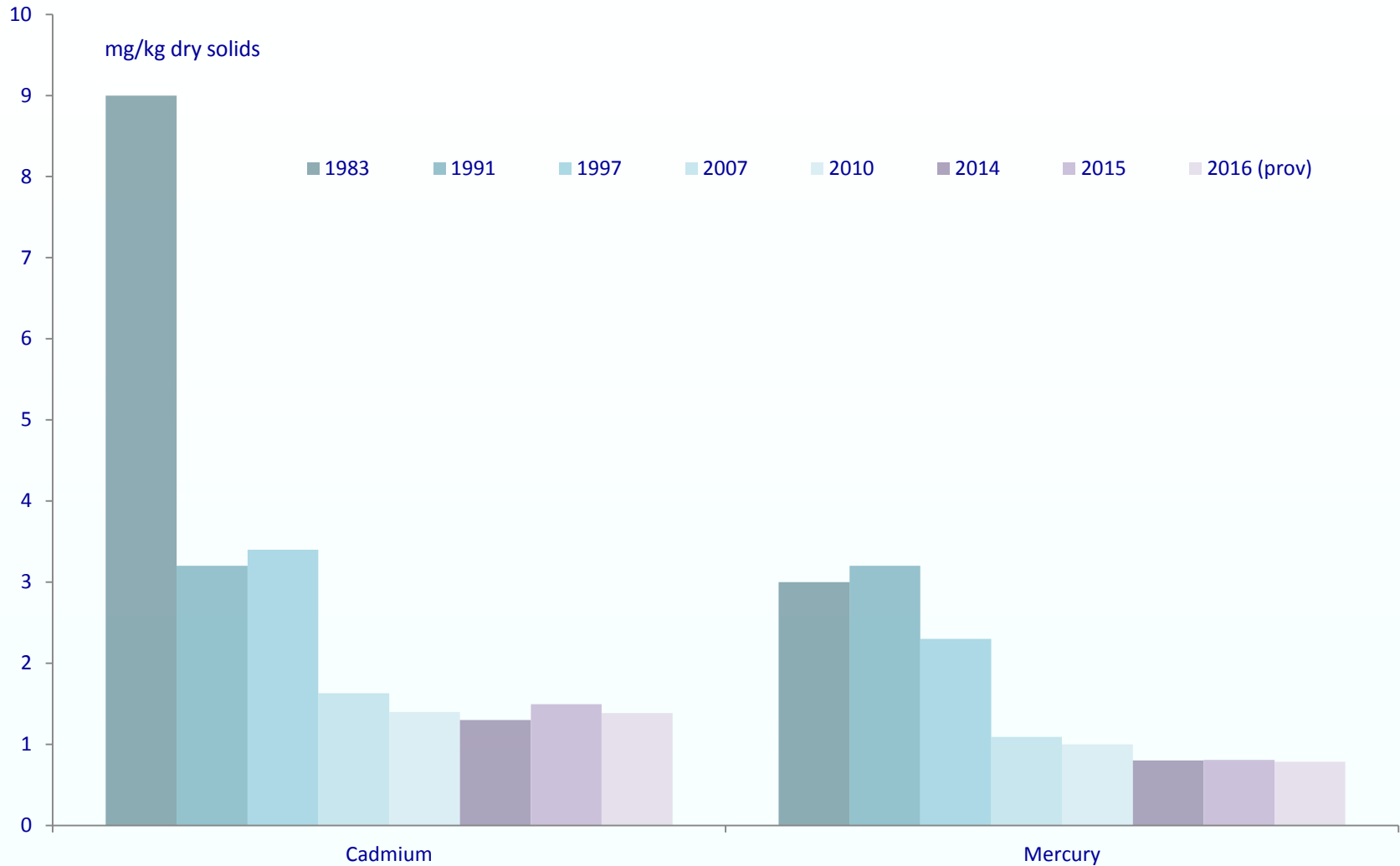
Food crops

(harvest intervals)

Heavy metal concentrations in biosolids



Heavy metal concentrations in biosolids





Persistent Organic Pollutant (POP) Research



The **UK Water Industry Research** Chemicals Investigation Programme (CIP) is ongoing

Work from 2009 – 2013 broadly showed that of the compounds detectable in biosolids, the estimated soil concentrations after biosolids applications were considered to pose a low risk from an environmental and human health perspective i.e. they were below the Predicted No Effect Concentrations (PNEC).

Current work to 2020 is studying the fate of POPs in different treatment processes. Initial outcomes confirm (as expected) that metal concentrations increase with dry solid losses from digestion treatments, whilst pharmaceutical substances remained constant indicating a partial degradation. Many pharmaceuticals were below the limit of detection (LoD) and the others were below their proposed risk thresholds.

The Water Industry is committed to continually researching any emerging issues.

Key Documents

Scheme Overview – structure, policy, objectives, scope and outline

Hazard Assessment – links to the Standard requirements

The Standard including a Source Material Risk Assessment module



Standard Guidance Notes

Audit Protocols – instruction to the Certification Body and guidance to Applicants/Members

Scheme Applicant & Member Protocols





Certificate Of Conformity

Registration Number:
NSFBAS/002/1/15

Certificate Valid From:
25th May 2018

Certificate Expiry Date:
25th May 2019

Certificate Issue Date:
30th May 2018

Certificate Issue Number: 3

Awarded to:

Severn Trent Water

Severn Trent Centre
2 St Johns Street
Coventry
CV1 2ZL

Standard:



Biosolids Assurance Scheme
Issue 4, 1 January 2018

BAS

BIOSOLIDS ASSURANCE SCHEME

The Treatment, Transport, Temporary
Field Storage and Application to Land

The process of the production and recycling of Certified Biosolids
The appendix contains details of the certified operations of:
Severn Trent Water

Signed on behalf of NSF Certification Ltd

Anita Roberts
Director, Agriculture EMEA

Biosolids Assurance Scheme Certificate Appendix

Organisation/Company Name: Severn Trent Water

Registration Number(s): NSF/BAS/002/1/15

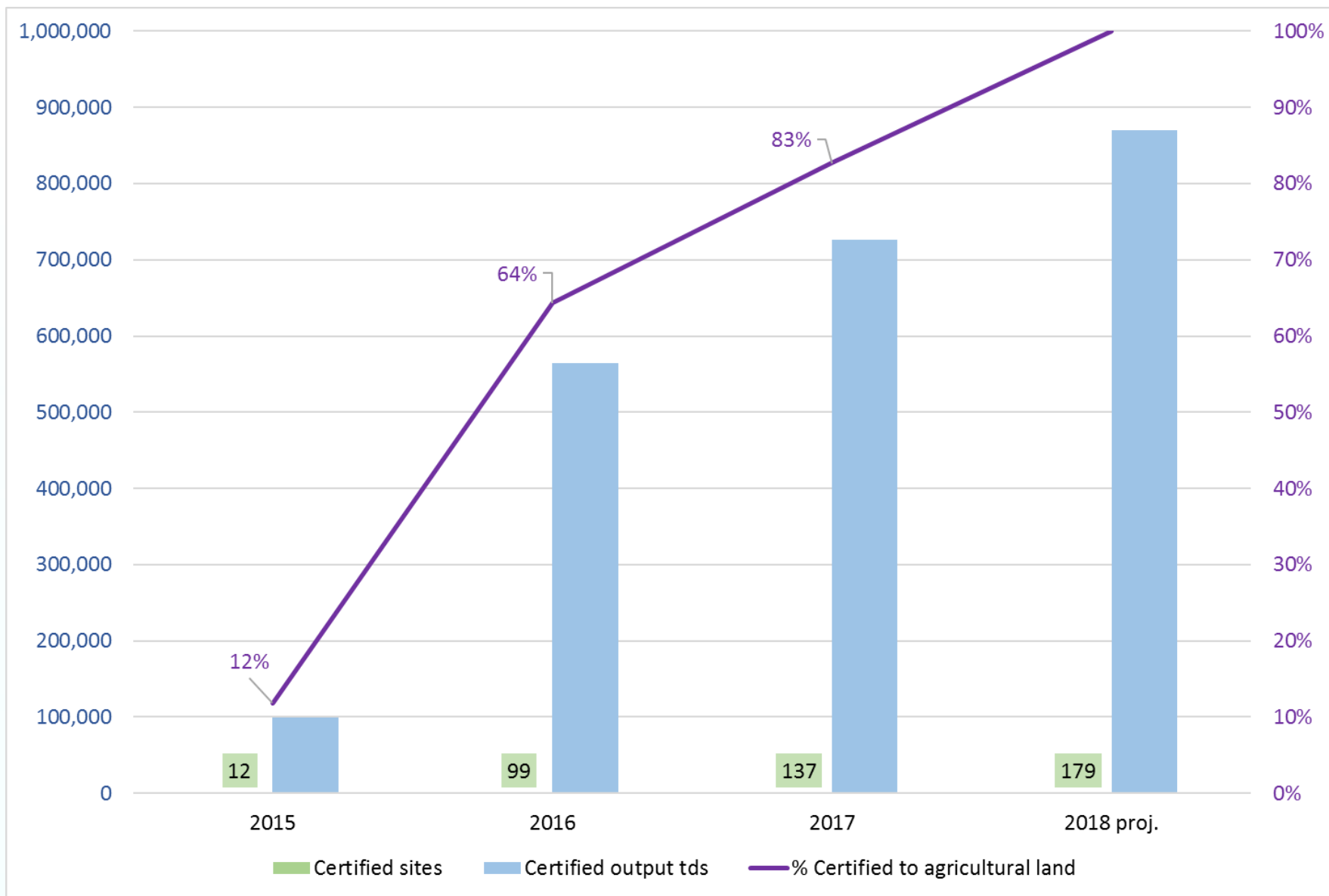
Certificate Expiry date: 25th May 2019

Certified Processing Facility (Treatment Site) Details:

Processing Facility (Treatment site) Name	Processing Facility (Treatment site) Address	Certification Scope-Treatment	Certification Scope-Transport and Storage	Certification Scope-Field Application
1. Alfreton	Alfreton STW, Park Lane, Alfreton, Derbyshire, DE55 7RQ	Yes	Yes	Yes
2. Barnhurst / Old Hattons Farm	Barnhurst Sewage Treatment Works, Oxley moor Road, Wolverhampton, WV9 5HN / Old Hattons Farm, Cartwright Lane, Coven, Wolverhampton, WV9 5BD	Yes	Yes	Yes
3. Brancote	Brancote STW, Tixall Road, Stafford, ST18 0XX	Yes	Yes	Yes
4. Claymills / Etwall Farm	Claymills Sewage Treatment Works, Meadow Lane, Claymills, Near Burton, DE13 0DB / Etwall Farm, Eggington Road, Etwall, Derby, DE6 6NP	Yes	Yes	Yes
5. Derby	Derby Sewage Treatment Works, Megaloughton Lane, Spondon, Derby, DE21 7BR	Yes	Yes	Yes
6. Finham	Finham STW, St Martins Road, Finham, Coventry, CV3 6SD	Yes	Yes	Yes
7. Hayden	Hayden STW, Hayden Lane, Cheltenham, GL51 0SP	Yes	Yes	Yes
8. Hinckley	Hinckley Sewage Treatment Works, Brookfield Road, Hinckley, LE10 2LL	Yes	Yes	Yes



BAS Certification Progress



Technical Advisory Committee (TAC)

A group of industry experts and food chain stakeholders that assist ABL to maintain and develop the Scheme Standard and Audit Protocols

To ensure that the food supply chain has a high level of confidence in the Scheme



The TAC will:

- Review relevant issues
- Evaluate an evidence base
- Make recommendations to ABL

Ensure that the requirements remain practicable and achievable

Provides public information on the Scheme and biosolids recycling in general

Shares key documents including The Standard, Guidance Notes, Hazard Assessment, Approved Lab List

All Certificates of Conformity are visible to provide transparency on which companies and their activities have achieved certification



Hosts further documents including:

- Position statements (incl. microplastics and E.coli) with more to follow.....
- Important documents (e.g. Safe Sludge Matrix)

<https://assuredbiosolids.co.uk>



Biosolids Assurance Scheme - Summary



BAS Certified Biosolids = responsibly recycled premium quality products

Strongly supported by food chain stakeholders

Dovetails with farm QA schemes = reassurance

Technical Advisory Committee enables the Scheme to evolve to market needs

Is supported by a promotional website, where key documents and certification achievements will be published - <http://assuredbiosolids.co.uk/>



**BAS Certified Biosolids will be recognised
as the quality control Benchmark**



Q & A

