



**Working together for
a world without waste**



Government challenges.
Ideas from business.
Innovative solutions.

Optimisation of Anaerobic Digestion

AN INTRODUCTION TO SBRI

SBRI is a mechanism which enables public sector bodies to connect with innovative ideas and technology businesses to provide innovative solutions to specific Public Sector challenges and needs.

The Public sector is able to find innovative solutions by reaching out to organisations from different sectors including small and emerging businesses. New technical solutions are created through accelerated technology development, whilst risk is reduced through a phased development programme. SBRI also provides applicants with a transparent competitive and a reliable source of early-stage funding.

SBRI competitions are open to all organisations that can demonstrate a route to market for their solution. The SBRI scheme is particularly suited to small and medium-sized business, as the contracts are of relatively small value and operate on short timescales. Developments are 100% funded and focus on specific identified needs, increasing the chance of exploitation. Suppliers for each project will be selected by an open competition process and retain the intellectual property generated from the project, with certain rights of use retained by the contracting Authority. This is an excellent opportunity to establish an early customer for a new technology and to fund its development.

SUMMARY

Funding Body

WRAP works in England, Scotland, Wales and Northern Ireland to help businesses and individuals reap the benefits of reducing waste, develop sustainable products and use resources in an efficient way.

WRAP has a specific focus on the development and growth of a safe and sustainable AD industry in the UK and is working to deliver specific actions from Defra's AD Strategy and Action Plan.

The aims for this competition are to:

- Facilitate technology transfer from other industries that may have solved similar challenges to those currently facing the AD sector
- Demonstrate the most effective proposals
- Disseminate advice, data and best practice guidance to the sector to enable it to reap the benefits of the demonstration projects

Background and Challenge

WRAP data indicates there are 68 operational AD plants in the UK of which 44 process food waste and 28 process farm derived feedstocks.

AD has been used in the UK to treat waste water for many years, but the use of the technology for other feedstocks is still a developing industry. This means that there are a number of challenges facing the sector.

- 1 There is a lack of reliable operational data from a large number of plants that is available to be used for technology development and plant optimisation.
- 2 As a developing sector, AD does not have a deep pool of experts on whom operators can call either when specifying and purchasing new plant, or for operational issues or simply to ensure assets are performing to their greatest capacity.
- 3 The opportunities for technology transfer from other sectors are limited by the ability to access these sectors.
- 4 The AD sector in the UK is relatively small, with limited resources. Plant development is often funded from personal reserves before bank or equity funding can be secured meaning there is little incentive to spend on new technology to optimise existing solutions.
- 5 Access to new research and development taking place in the sector can be challenging for plant developers who are focussed on building their business up, securing funding or operating their plants.
- 6 Financing for AD is extremely hard to secure both in general terms of a constrained market and in comparison with other renewables or sustainable developments.

All of these barriers are hampering the development of a more efficient and more profitable industry.

Scope

The purpose of this open call is to identify technologies, processes and/or modifications from any sector that will enable the optimisation of the AD process from feedstock reception through processing and the resulting outputs.

The goal of the programme is to make AD work better, quicker or more cheaply resulting in more profitable plants.

- Better – getting more outputs from the same inputs by making assets perform more efficiently or by improving processes.
- Quicker – increasing the speed of throughput or processing without compromising output quality.
- Cheaper – reducing the cost of some or all parts of the process to improve profitability.

Some key areas have been identified by the sector as requiring a specific focus:

- Pre-processing (ie reception and pre-treatment of feedstocks of all types)
 - Inline or instant feedstock testing for contaminants, biogas yields, nutrient levels etc
 - Pre-treatment of feedstocks to improve digester operation, gas yields, digestate quality and/or manageability

- Processing – improving efficiencies and reactor performance, inline monitoring of reactor performance and health, optimisation of digestion biology
- Outputs
 - Biogas – cheaper technologies for gas use, better gas storage options and a reduction in methane losses (covering both existing gas use options such as CHP and new technologies such as fuel cells or liquefaction)
 - Digestate – nutrient extraction and improving quality through technology or process optimisation, efficiencies in separation and application processes
 - Other issues – better uses of heat, inline quality monitoring and uses for CO2

This call is not limited to the areas listed above, applicants may apply with solutions that address other challenges and that meet the evaluation criteria.

APPLICATION PROCESS

Directions on how to enter this competition and the Invitation to Tender can be found at

www.wrap.org.uk/DIAD

More information on other SBRI competitions may be obtained at www.innovateuk.org.uk/sbri

www.wrap.org.uk/DIAD

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