



**Working together for
a world without waste**



Government challenges.
Ideas from business.
Innovative solutions.



BRIEF – Small Scale AD

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.

RASE aims to support farming and the rural industries by spreading information about the best in research, development and practice.

Small-scale AD systems have the potential to provide livestock farmers with the opportunity to combine more effective slurry management, methane abatement and decentralised energy generation in an appropriate investment that also provides a new source of income as well as driving towards UK environmental targets.

The aims for this competition are to:

- Identify manufacturers of smaller scale plant which can be installed at a lower capital cost and complexity than currently, be commercialised throughout the UK and integrated effectively with the farm business. In this case, 'plant' includes both digestion technology and pre-and post-processing options for all feedstocks and outputs. Currently, on farm installations can cost in the region of £1-2M, this programme seeks to reduce this to c£300K-£1.2M.
- 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

Although there are 66,000 livestock farms in England, only c20 have installed a small-scale on-farm AD plant.

There are a number of challenges the development of a healthy and profitable small scale sector:

- 1 Because the sector is at a pre-commercial stage, project costs are disproportionately high meaning farmers are unable to finance the build through their own reserves or with bank funding. A combination of high capital costs and high development costs leads to poor project returns/long payback periods. Banks are unwilling to accept this even with the farm offered as security.
- 2 The low number of installed plants means that reliable information on plant installation, performance and operation is not available to potential buyers. This results in a market that cannot robustly assess the offerings from technology providers to make an informed purchasing decision.
- 3 Providers of small scale, less complex technology at lower costs require assistance to commercialise in a challenging market, restricted by poor availability of finance and a lack of technical experience.

Scope

The installation of small scale plant can have numerous benefits for the rural economy including:

- Reduced odour through improved slurry management
- Ability to combine additional NVZ slurry storage requirements with AD
- Generation of additional and diversified income from sales of renewable energy
- Reduction in requirement for inorganic fertilisers
- Reduction in potential pollution through run off of nutrients to water courses
- Increased fertiliser value for manures and slurries through increasing the availability of nitrogen and other nutrients
- Energy security for the farm business
- Job creation

Research by AEA Technology estimates that a successful initiative would be capable of delivering up to 6,000 on-farm installations within the UK. The development of more attractive, low cost, small-scale, replicable, modular AD systems could be expected to stimulate farmer interest and help to develop sales in the UK and beyond.

The purpose of this open call is to identify and demonstrate existing, pre-commercial technologies that can demonstrate the goals of the programme.

The goals of the programme are to achieve:

- A reduction in the capital cost of the installation of between 20-40% from the current costs, this could be demonstrated by an increase in the IRR of small scale projects to more acceptable returns (say between 6%-12%)
- A reduction in the complexity of the installation/build eg by the use of off-site fabrication or modular technologies such that plants can be installed more quickly, on site requirements can be pre-specified and installed and disruption to on site activities is minimised
- A reduction in the complexity of operating the plant eg through the use of automation for feeding and emptying the digester or the development of instantaneous and/or off-site monitoring
- An identification of future commercialisation/roll out plans for the selected technologies

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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