

## Newsletter IEA Bioenergy Task 37: 01/2019

### Task 37 Publications

#### **ICKNIELD FARM BIOGAS: An Integrated Farm Enterprise**

A recent case study of Task 37 demonstrates a perfect incorporation of a biogas facility into a farm. The farm operates as a Family Partnership in association with a nearby farm which together form a contract farming business servicing over 3,000 ha of mainly cereal growing land. The plant produces 4.4m m<sup>3</sup> of biomethane from pig manure, cereals/screenings and maize/rye. A containerized 360 kW CHP engine provides all the heat and power needed to operate the plant. The installation of biogas/biomethane plant introduced a diversification which forms an integral part of the whole farm management system. Prior to the biogas development the farm had a three-crop rotation of oilseed rape, wheat and barley. This has been replaced by a four-crop rotation consisting of: maize as a spring crop; wheat; rye for silage; and turnips. The latter provide winter grazing for 2,000 ewes from a neighboring farm

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#### **Task 37 list 2017 of biogas upgrading plants worldwide**

The list provides the latest data on biogas upgrading plants, separated in Task 37 member and non-member countries. In total 532 systems were recorded in 2017 up from 480 in 2016. Germany, UK, Sweden and France lead. Facilities are dominated by water scrubbers, chemical scrubbers, membranes and PSA

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#### **THE ROLE OF BIOGAS IN GREENING THE BREWING INDUSTRY**

Towards the end of 2018 Task 37 has published another interesting case story. With the goal to operate Austria's largest brewery GHG emission free, a digester was installed treating in a two-stage system brewers spent grains and brewery waste water. The Gösser brewery developed the concept of a "Green Brewery" with an ambition to produce beer with 100% renewable energy. The biogas from the anaerobic digestion process is used in the boiler of the brewery to substitute natural gas. Residual biogas is combusted in a CHP for electricity and heat production.

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#### **Anaerobic Digestion of Food Waste for a Circular Economy**

There is increasing awareness of the quantities of food that are lost every year across the globe; while the quality of available data varies, estimates suggest the total is around 1.3 billion tons. These losses occur at all stages of production, from pre-harvest on the farm through to post-harvest losses during processing, distribution, retailing and consumption. By far the largest proportion of this material is generated at the point of consumption, in the home or in cafeterias, canteens and restaurants. The method of choice to treat food waste is anaerobic digestion which is now undertaken commercially at a large scale. It is most widespread in the UK, where there are currently 94 digesters producing over 220 MWe of power from food processing residues, supermarket wastes and curbside collected source-separated domestic food waste. These processes are efficient, with as much as 85% of the degradable material being turned into biogas, The Task 37 brochure outlines case studies from eleven

countries, namely; Australia, Canada, China, Indonesia, Japan, Malaysia, Singapore, South Korea, Thailand, the United Kingdom and Vietnam.

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