

Renewable energy incentives for farmers

Written for the *Organic Grower*, spring 2012

Renewable energy incentives – Making them work for farmers and growers

There have recently been several changes to the system of incentives for producing renewable energy. The changes have been heavily criticised, however with good returns still available under existing schemes and new incentives recently introduced, renewables are still a great business opportunity and diversification option for farmers and growers.

Before discussing some of the renewable energy options available, it is worth noting that energy efficiency is every bit as important as generation and can have a quicker payback. When considering your farm's energy, you should take the following approach; first reduce energy use, then increase energy efficiency, and finally consider generation from renewables.

Renewable electricity generators – the Feed-in-Tariffs system

Feed-in-tariffs are the government incentive paid for every unit of energy produced from renewable technologies generating electricity, such as solar photovoltaic (PV) panels, hydroelectric, anaerobic digestors and wind turbines. The rates available for various technologies as of April 2012 (until a review in October 2012) are listed below:

<i>Technology & Capacity</i>
<i>Solar PV*</i> : up to 4kW; 4–10kW; 10–50kW; 50–250kW; >250kW
<i>Hydroelectric</i> : up to 15 kW; 15–100 kW; 100–2MW; >2MW
<i>Anaerobic digestion</i> : up to 250kW; 250–500kW; >500kW
<i>Combined Heat and Power</i> (up to 2kW, only 30k units)
<i>Wind</i> : up to 1.5kW; 1.5–15kW; 15–100kW; 100–500kW; 500–1.5MW; >1.5MW

Renewable technologies and FiT payments from April 2012 (Source: Ofgem) *Solar PV prices shown are the higher rate of payment

All technologies also receive a 3.2p/kWh export supplement for energy exported to the national grid (ie not consumed on site).

One of the best options for farmers is solar PV, as large roof spaces found on many farm buildings may be suitable and installations are unobtrusive. As of March this year,

there is now a top and lower rate (21 vs 9p/kWh for systems under 4 kW) for solar PV installations. The reduced rate is paid for installations on properties which do not meet minimum energy efficiency standards as assessed in a mandatory pre-installation Energy Performance Certificate (EPC). An EPC (applicable for domestic and non-domestic buildings) examines the energy efficiency of a property based on its age, construction, insulation levels and a range of other factors including boiler type and age. A qualified Energy Assessor is required to complete the assessment which should take around an hour, depending on the size of the property. This service is usually provided by the installers, however independent assessors can also be hired.

If the property does not reach Band 'D' (the levels run from 'A' to 'G') then the lower rate is paid. Only properties rated Band 'D' or above (61% of UK domestic buildings are in band 'D') qualify for the higher (21p) rate.

This change has been introduced to incentivise home and business owners to make energy efficiency improvements; you can get a good idea of whether your property might reach Band 'D' at the Energy Saving Trust website, by using the 'Home Energy Check' tool (<http://www.energysavingtrust.org.uk/In-your-home/Home-Energy-Check>).

Older properties including many farmhouses do not score highly on an energy assessment as the materials and techniques used when built did not benefit from current standards of construction materials and regulations. There are however some simple measures you can take to boost your rating– make sure your loft has insulation of at least 270 mm/10 inches, energy saving lights are used wherever possible (free programmes exist for loft insulation– speak to your energy supplier), and any window seals are not worn out. To really boost your rating consider upgrading to a new condensing boiler, installing double or secondary glazing, fitting Thermostatic Radiator Valves on your radiators and upgrading any hot water cylinders.

Proposed future changes to feed-in-tariffs would see a gradual reduction in payments for new systems installed of around 5% every 6 months. This would only apply to systems installed after the reduction, all payments for existing PV systems are guaranteed for 25 years, with other technologies guaranteed for 20 years, and rise in line with inflation. Contrary to popular belief, the payments come from a small levy on energy bills, not from general taxation.

This creates an added incentive to install systems as soon as possible, especially as there is another cut in the rate due to come into force on the 1st July for solar (to

around 16.5 / 13.6 p/kWh for systems under 4kW – exact rates to be confirmed), and October for other technologies (exact details also to be confirmed).

Of considerable advantage to farmers is the recent news that many technologies eligible for FiTs no longer require planning permission when installed on farms, as this cuts down on the risk and delays any project will face and makes it easier to find external financing if necessary – for which banks are increasingly willing to lend.

Renewable heat technologies – the Renewable Heat Incentive

The government’s new Renewable Heat Incentive (RHI) payment scheme was introduced for renewable heat technologies installed in non-domestic buildings in November 2011, and is expected to offer payments for residential installations in summer 2013 following a consultation. Installations completed before this date will still be eligible for the payments once they start.

Technologies which benefit include ground and water source heat pumps, biomass boilers, solar hot water panels, and Anaerobic Digestors (which also produce clean electricity and a natural fertiliser, therefore generate income from FiTs as well as a potential source of fertility).

The non-domestic payment rates available for the various technologies are set out in the table below:

<i>Technology & Capacity</i>
Solar hot water
Solid biomass, including from municipal solid waste – up to 200 kWth
Biomethane and biogas combustion (not landfill)
Ground source & water source heat pumps, and geothermal – up to 100 kWth
Solid biomass, including from municipal solid waste – 200 to 1000 kWth
Ground source & water source heat pumps and geothermal – 100 kWth and above
Solid biomass, including from municipal solid waste – 1000 kWth and above
Renewable heat technologies and RHI payments from April 2012 (Source: DECC) *Tier 1 = payment for first 1,314 hours use, Tier 2 = all subsequent hours of use

Payments are guaranteed for 20 years and will rise in line with inflation. Some farmers may be able to avoid the cost of buying biomass pellets for use in boilers and stove

burners by sourcing offcuts and natural wastage from their own land. Domestic biomass and heat pump installations completed before the payment regime starts in 2013 will also be eligible for a grant of £300–1,250 providing the system is installed in a property without mains gas supplies (this is not required for solar thermal grants). The DECC website (<http://tinyurl.com/c73b4bm>) has more information.

Choosing a technology

There are several key considerations to bear in mind when deciding which renewable energy to install. For example the outside space required for ground source heat pumps is around 10–80m per kW installed (or roughly double the building's area), while wind turbines require sufficient wind speeds and a buffer zone to the nearest buildings. There is no 'one size fits all' approach and each site should be examined on a case by case basis. You should always consider the energy 'hierarchy' when considering your farm's energy use: reduce use, increase efficiency, then consider renewable generation options. The Farm Carbon Cutting Toolkit is an organisation established by farmers, for farmers, which can help guide you through this maze and choose the technology which best suits you and your business; visit our website to find out more.

Source: <http://www.farmcarbontoolkit.org/resources/articles/renewable-energy-incentives-for-farmers>