

Fuelled by organic matter produced on the farm, this pioneering power plant is also one of the most environmentally friendly of its kind. The plant is very efficient and wastes very little compared to other energy companies. Normally, central power plants pump more than 50% of the energy into the air while turbines waste 75% of the wind's energy. Now, run on muck, the cow power plant has an energy efficiency of 86%, wasting only 14%, which is a huge step toward a sustainable Northern Ireland.

The Greenhill Dairy Farm Biogas plant is the first plant in Northern Ireland in 20 years to provide sustainable heat and power for homes and businesses. The power station mimics a cow stomach and cooks animal waste at 40°C (104°F) to produce methane gas. The gas is then piped into two engines that drive generators while hot water is also produced for drying plant waste, called 'digestate,' and to pasteurise milk. This use of waste to produce valuable energy shows how rural areas and agriculture can function sustainably. Power derived from cow dung and grass silage cuts power prices for all consumers and decreases agriculture's carbon footprint. Additionally, the unit will reduce Northern Ireland's reliance on fossil fuels and prevent volatile energy prices whilst bringing new jobs to this rural area.

The 700 acre Greenhill farm delivers grass and animal waste from some 600 cows to fuel the plant. After the process of extracting methane from the manure and grass, farmers will use the residual waste, called 'digestate', as a powerful fertiliser to grow animal feed. Capturing the value from this natural cycle is essential to enable local farmers to compete internationally. Looking like a giant muffin, the plant produces 430 kilowatts of electricity per hour - enough to supply some 430 homes with electricity.

A farm AD plant has far less visual impact and noise pollution than wind turbines and delivers far more socio-economic benefits in rural areas. The farmer earns money from his waste, the plant reduces energy and fertiliser costs which stabilises his income. AD plants are also the number one job-creating renewable technology. Alfagy's research shows that widely adopted biogas plants create far more long term jobs than any other renewable technology and more money for the Government. "It is astonishing that more financial support isn't directed at biogas power plants as they create 8 times more value than other renewable technologies such as wind turbines," comments Peter Kindt, the Alfagy chairman.

Alfagy was selected by the developer for the project as the Combined Heat and Power (CHP) and gas conditioning supplier after a competition against leading manufacturers such as GE Energy, MWM and MAN. The project faced challenges in getting funding from a bank during the financial crisis that is still raging internationally. However, Alfagy's high level of quality and service convinced the bank to grant a development loan. This is considered something of an accomplishment in the current climate according to Peter Kindt. "Given the current credit crunch, this project is an important demonstration of a sustainable energy future", said Peter Kindt.

"The deciding factor for the finance of the project was our plant's world beating efficiency that produced £1.8 million more revenue than the competition. Our payback is simply the fastest in the market," adds Peter Kindt.

The Ardstraw power plant will be the 52nd biogas power plant in the UK and only the 2nd in Northern Ireland. More farmers in Northern Ireland are now considering similar projects.