



The number of AD plants in the UK is growing year on year.

A DEFRA report on AD in 2014 states that the UK would reach 5TW of electrical power to the grid by 2020 and with more rules coming into force regarding which food waste cannot go to landfill sites, this will represent a further drive for the markets expansion.

Like any new market the early projects are the proving ground for new technologies and processes. DEHN as a global leader in providing services in the area of surge and lightning protection and has become aware of an area that is being overlooked in the drive to develop the AD market.

Lightning is not as frequent in the UK as it is in other parts of the world, but any AD/biogas site is subject to the same risk assessments as any other hazardous area according to BS EN 62305 and the basic methodology in BS EN 1127.

The NFU produces a guide to risk assessments for smaller farm based plants and those not associated with connection to the National Grid.

AD /Biogas sites all have ATEX zones and according to the guidelines from the HSE, a risk assessment to look at sources of ignition in the ATEX zones is a given.

Please click [here](#) for more information to the ATEX Directives on the HSE website.

By the nature of the design of these sites they are often not afforded lightning protection. One solution could be in the form of isolated masts to direct the lightning strike into the ground. This means the actual strike point is kept outside the inner most ATEX zones where ignition would be most likely. Also the sites are exposed to the effects of indirect strikes as the LV power supply and other cables within the installation are not often protected with surge protection devices.

“Safety and availability thanks to lightning and surge protection”



The risk of a lightning strike can only be mitigated against if a lightning protection system is fitted following from a risk assessment to BS EN 62305 being carried out. Both BS EN 62305-2 and BS EN 1127 gives a starting point of a level 2 lightning protection system. This will recommend or strongly encourage the deployment of an isolated lightning protection system, not a cross bonded system.

The isolated system solves many installation problems associated with cross bonded systems in explosive/hazardous areas as the conductor and other components can be approved for zones 1, 21, 2, and 22 for gas and dust.

AD/Biogas sites are not always manned so the risk to human life in the calculation might appear low, however the location of the AD site to motorways, housing developments and commercial property needs to be a consideration. A failure to be able to provide a complete risk assessment in the event of an explosion would be very costly and reveal a lack of due diligence.

For advice on aspects of AD/Biogas risk assessments leading to lightning protection design service and accredited installers, please contact DEHN UK Limited on 01484 859111 or email info@dehn.co.uk