

Site Selection Criteria for Biomethane Plants

Selection of a suitable site for a biomethane plant is vital to the success of the project and requires careful consideration of social, economic and environmental performance factors. To develop biomethane plants, planning applications must be submitted to the local authority. There are no standardised guidelines relating to biomethane plants set out by local authorities. Here are some suggestions for selecting a suitable site for a biomethane plant.

Tips:

- Minimise the distance to feedstock supplies, especially for heavier feedstocks with lower biomethane yields, such as cattle slurry. This minimises the energy required to transport materials to the biomethane plant and minimises the traffic impact. Consider how many feedstock suppliers will be required.
- Try to keep >200 metres from dwellings. This is not a legal requirement but locating within 200 metres of dwellings would likely cause disruption. Selecting a site which is on land zoned for industrial use is not a requirement but may help to secure planning permission.
- Minimise the distance from the biomethane plant to the nearest point on the natural gas grid. Connecting to the distribution network of the grid (which is at low pressure) is easier than connecting to the transmission network of the grid (which is at high pressure). If the biomethane plant is within roughly 5 kilometres of the natural gas grid, a direct grid connection may be put in place. For longer distances, biomethane will need to be transported by trucks, which is typically less cost effective.
- Select a site which has level ground – avoid steep hills.
- Estimate the land area requirement for the site. To date, planning applications tend to involve an area of roughly 1 hectare per 10 GigaWatt hours of annual biomethane production capacity. The amount of land required for the desired energy production depends on the feedstock(s) used.
- Minimise traffic impacts. Biomethane plants typically involve movements of heavy goods vehicles (HGVs) primarily transporting feedstocks, biomethane and digestate to and from the plant. Minimising the number of HGV journeys along narrow (single lane per direction) roads helps to reduce the impact of the development on local traffic and helps to secure planning permission.
- If digestate is intended for land spreading as fertiliser, consider the availability of suitable land nearby for this.