Land, Bioenergy & Waste: Land for Bioenergy

This lever controls the sub-levers listed in the table, and ambition levels are for the end year shown on the right-hand side.

In 2015, just under 2% of arable land in the UK was used for bioenergy crops. Around half of this land was for biofuel for the UK road transport market .

Management of woodland and production of wood products produces waste material that can be used for energy generation. Arable land produces straw that is currently used for animal bedding but can be used for energy generation. Manure from livestock can also be collected for energy generation. The amount that can be practically and economically collected depends on the farming practices employed. Pasture-based livestock farms would struggle to collect animal waste, whilst more intensive farms are more readily able to collect and store slurry.

Key Interaction

The total amount of UK biomass produced is dependent on the amount of land used for growing bioenergy and the yield controlled by the Farming Yield & Efficiency lever. Any bioenergy demand not met by UK biomass is satisfied by imports. However, dependency on large quantities of imported biomass may not be possible in reality and would result in a less robust energy system.

Land is finite so land for bioenergy is in direct competition with forestry and other uses. The land area needed for livestock and food crops can be reduced using the Farming Yield & Efficiency lever, so freeing it up for forestry and bioenergy.

Level 1

Land for bioenergy remains unchanged from today's levels. There is a small increase in the amount of farm waste used for energy.

Level 2

Rapid expansion of land for bioenergy.

Level 3

Land for bioenergy is at the upper limit suggested by an ETI study[1].

Level 4

All suitable arable and grassland is used for growing bioenergy crops[2]. The manure from intensive farms is collected and most is used for energy. The remaining farms are extensive (pasture based) systems. Manure cannot be practically collected from these farms.

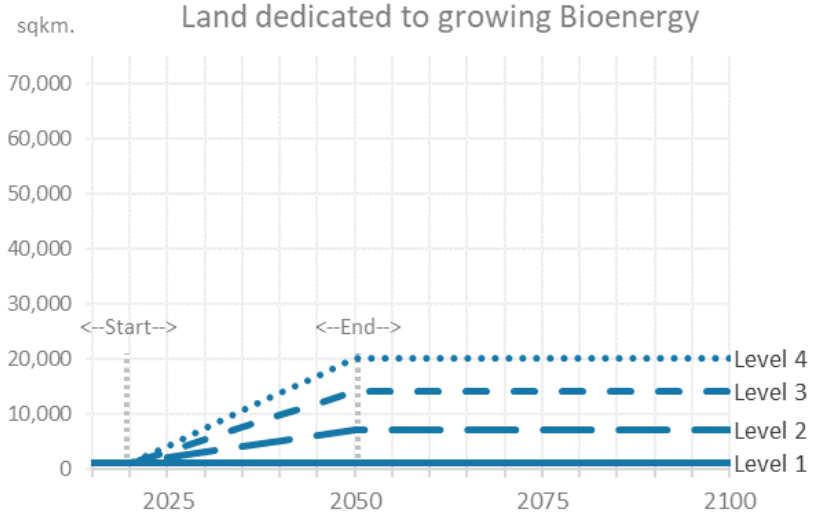
[1] https://d2umxnkyjne36n.cloudfront.net/insightReports/160519_BI2012_D12_Extension-report_v2-1_FINAL.pdf?mtime=20170725131030

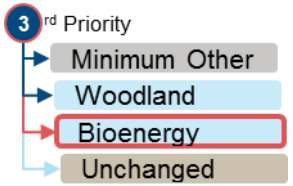
[2] https://www.eti.co.uk/insights/delivering-greenhouse-gas-emission-savings-through-uk-bioenergy-value-chains

Default Timing

Start year: 2020, End year: 2050

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Land Area - Bioenergy	km².	930	930	7,000	14,000	20,000
Share collected for energy						
Straw	share	19%	19%	38%	69%	100%
Manure	share	0%	10%	13%	17%	20%





Lever Priority

Land for Bioenergy is the third priority for land, after land for food, livestock and settlements ('Minimum Other') and land for Woodland.

If insufficient land is available land for bioenergy will not be applied. If lever settings do not require land to be converted it retains its original usage.