

Bioenergy imports

In 2013 Ireland imported 1.1 TWh/y of liquid and solid biofuels from overseas producers.

The International Energy Agency (IEA) estimates that 4–8 million km² of land could be used globally for growing energy crops by 2050. That area would produce around 42,000 TWh/y of bioenergy. The IEA assumes that 40% of this bioenergy would be exported from the producer countries, with potential global supply of 17,000 TWh/y.⁶⁵ If exports were split equally across the global population then the maximum 'fair market share' for the Ireland would be about 12 TWh/y. The 2050 Calculator assumes that the bioenergy imported is already processed ready to use, and is half in solid and half in liquid state, as replacements for coal and oil respectively.

Considerable uncertainty remains about these estimates (including uncertainty about the potential for plant breeding and technology enhancements to improve yields), and there are important questions about the sustainability and impacts of bioenergy imports.

Trajectory 1

Trajectory 1 assumes Ireland does not import any bioenergy by 2050, with the amounts of bioenergy imported gradually declining from 2013 levels to zero.

Trajectory 2

Trajectory 3 assumes that by 2050 Ireland is importing its fair market share under the assumptions outlined above. This means a 10-fold

increase of imports, using about 2,300 km² of land in other countries (approximately equivalent to the size of County Meath), providing up to 12 TWh/y of bioenergy.

Trajectory 3

Trajectory 3 assumes that by 2050 Ireland is importing over its fair market share under the assumptions outlined above. This means a 16-fold increase of imports, using about 3,500 km² of land in other countries (approximately equivalent to the size of County Clare), providing up to 18 TWh/y of bioenergy.

Trajectory 4

Trajectory 4 assumes that by 2050 Ireland is importing around double its fair market share under the assumptions outlined above. This means a 20-fold increase of imports, using about 4,500 km² of land in other countries, providing up to 24 TWh/y of bioenergy.

Interaction with other choices

In the 2050 Calculator bioenergy is only imported if there is demand for it, up to the maximum limit allowed under the chosen trajectory of imports and after all domestic bioenergy has been used up. For example, if Trajectory 2 imports is selected (maximum 12 TWh/y) but only 10 TWh/y is demanded, then only 10 TWh/y will be imported.

Figure 41. Bioenergy imports, (TWh(primary energy))/yr

