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Case Study

Biodiesel from European oilseed rape

The EU Renewable Energy Directive (RED), sets “default” greenhouse gas savings for all biofuels based on assumptions about typical fertiliser use, yields, transport distances and energy inputs for each particular feedstock and region. Actual data can be used instead to give more accurate calculations of the carbon savings achieved.

We have been working directly with a European producer to understand more about the energy and fertiliser used in the production and processing of its oilseed rape biodiesel, and how this impacts upon carbon emissions.

A number of key carbon saving practices have been identified at the farm and processing plant.

On the farm

Oilseed rape is sourced from a cooperative of mixed and arable farms in the region. These farms have reduced the carbon emissions associated with growing the crops by:

- > *Increasing yield by 11%*.*
- > *Reducing the requirement for inorganic fertiliser application by 80%*. The farms practicing manure and slurry spreading on their land, sourcing from local livestock farms. Due to the high nutrient and organic matter content of manure, this practice replaces the need for inorganic fertilisers, the production and application of which is energy and carbon intensive.*
- > *Cutting the amount of fuel used farm machinery by 28%*.*



At the Oilseed Rape Conversion Plant

The producer has reduced the amount of carbon emissions produced during the conversion of rape oil to bioethanol by:

- > *Achieving a 25% reduction* in energy (electricity and natural gas) consumption at the processing plant.*
- > *Producing increased quantities of co-product, reducing carbon emissions. This is because the co-products have increased carbon content compared to biodiesel.*

ASSUMED SAVING UNDER RED:

38%

ACTUAL SAVING:

68.9%

*In comparison to RED default values