



# BIO ——— IN THE DAIRY SECTOR.

## ECONOMY

The dairy value chain is quite simple, milk farms obtain milk from the cows and milk is treated by dairy industry to get different products (milk, butter, cheese, yogurt). This industry produces byproducts as milk whey that ususally is not valorised, or it is valorised into low-value byproducts.



## Example of a business model in the bioeconomy: Carbery

**Carbery Group** defined a circular economy concept to valorise everything from milk but the water.



When milk arrives to **Carbery** facilities, the first step is to skim off the milk's fat. Fat is used for butter production.

Then, milk is ready for producing cheese. **Carbery** produced cheddar and mozzarella cheeses. The by-product from this process is the milk whey.



Proteins from the milk whey are stripped to obtain whey protein ingredients, suitable for food applications.

In the other hand, the whey permeate, that contains lactose, is used to obtain bioethanol.



The distillate of the bioethanol goes to an anaerobic digester to produce biogas that feeds the 8% of the energy supply of **Carbery Group**.

The sludges from the anaerobic digestion are treated to get a organic fertilizer, suitable to be used by the local farmers. This last step closes the loop.



Founded in 1965

>700 employees

Cooperatively owned

Processes milk from 1200 dairy farmers in Ireland

Processes 596 million litres milk per year

Produces 12 million litres of bioethanol per year



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Infographic prepared by  
 innovarum

Coordinator - Cooperativas Agro-alimentarias de España:  
Susana Rivera  
[rivera@agro-alimentarias.coop](mailto:rivera@agro-alimentarias.coop)

