



Renewable Energy & Farm Diversification Project

Our Cow Molly, run by the Andrews family in Dungworth since 1947, has built a strong reputation as a local provider of ice cream and dairy products. In these challenging times for agriculture with many small family farms disappearing, the farm has developed a reputation for innovation and sustainable practice. They have retained a pasture-fed herd, are undertaking horticultural research with Sheffield University and have reduced plastic by returning to glass bottles for some of their milk. This all shows that the farm a leading exponent of sustainable farming.



With agriculture accounting for 11% of UK greenhouse gas emissions, 62% from livestock, the challenge is to reduce emissions and to help the UK government's commitment to Net Zero by 2050, as well as making family farming financially sustainable.

Two local community organisations, Sheffield Renewables and SY Ecofit, are working with Our Cow Molly to accelerate this sustainable journey with a feasibility study looking at renewable energy production and carbon reduction on site. This study is funded by the Community Energy Fund and the aim is to make the farm carbon negative and more sustainable.

With a grant from the Government's Community Energy Fund – delivered locally by the North East and Yorkshire Net Zero Hub – Sheffield Renewables and SY Ecofit will assess the site for a variety of renewable energy production technologies. These will include expansion of the farm's solar panels, anaerobic digestion, a wind turbine, battery storage and green hydrogen. A number of partners who are experts in the field will be part of the project in establishing the viability. The project will also look to engage with the local community in gaining support for a project that will help retain the character and sustainability of the area whilst moving towards Net Zero.

Our Sheffield Farm

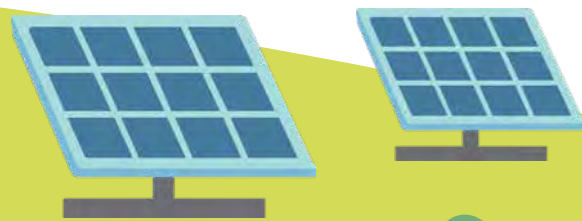


Our Cow Molly



PV solar panels

Solar photo-voltaic panels will generate electricity from the sun to power the farm and to produce green hydrogen from electrolysis.



Wind

A wind turbine produces carbon-free electricity from the wind. It is the cheapest form of green electricity and can be used to power the farm and to produce green hydrogen via electrolysis.



Carbon storage in grasslands

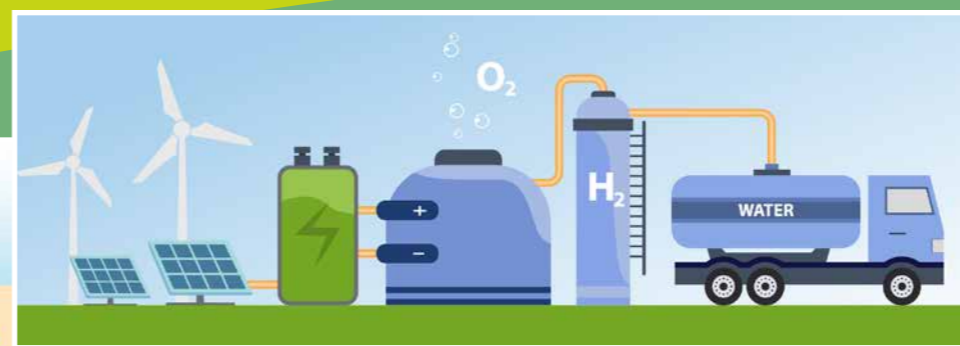
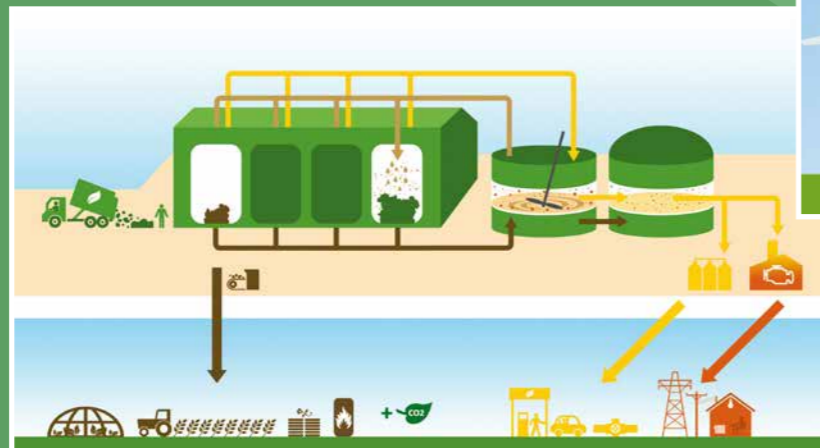
Grasslands store carbon in their soil and roots, while trees store carbon in their leaves and woody biomass.

Most large dairy farms keep cows indoors 365 days a year. The cows at Our Cow Molly enjoy 280 days a year fed on grass.



Anaerobic digestion

Anaerobic digestion (AD) is a process that uses micro-organisms to break down organic materials (cow muck) without oxygen. The process produces methane which can be used to produce electricity for the hydrogen electrolyser or biogas for fuel.



Green hydrogen

The vast majority of hydrogen produced today comes from fossil fuels, which results in carbon dioxide (CO₂) emissions. Green hydrogen electrolysis is a process that uses electricity from renewable energy sources to split water into hydrogen and oxygen, producing hydrogen without emitting CO₂.

The hydrogen can be used in heavy vehicles unsuitable for batteries. It also produces pure oxygen and hot water for industrial uses.



SHEFFIELD RENEWABLES is a community enterprise that builds, owns and operates renewable energy schemes on community buildings across Sheffield and South Yorkshire.

It is a registered Community Benefit Society, run by volunteers and owned by members. We fund, develop, own and operate renewable energy schemes which are financed through investment from members of the community, with profits being reinvested for new work and benefiting people locally and globally through our Community Benefit Fund.

As a Community Benefit Society we operate as a business, but any surplus earnings are re-invested to support new work as well as benefiting people and communities in Sheffield. We are a registered society under the Co-operative and Community Benefit Societies Act 2014. This status enables us to finance our work by selling shares, primarily to people and businesses within Sheffield.

We were formed by a group of volunteers in late 2007 who all wanted to contribute to improving the environmental sustainability of Sheffield. The organisation is overseen by the Board of Directors, with key decisions being taken by our membership, currently more than 200 people who have all invested time or money into the organisation.

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SY ECOFIT is a new Community Interest Company formed by a group of local people in 2023. It's aims are twofold

- Decarbonisation
- Community Wealth Building.



Decarbonisation includes involvement in a range of projects including renewable energy and energy reduction.

Community Wealth Building is helping Sheffield and South Yorkshire develop a green economy through re-skilling our workforce, creating jobs for our young people and retaining money in our local economy.

South Yorkshire, once a net exporter of energy now imports almost all its energy meaning a net loss to the economy. Our projects aim to retain that wealth and build a local and trusted group of suppliers and wealth-creating projects as well as decarbonising South Yorkshire.

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