

Agricultural green waste: sustainable alternative management and uses

Introduction

The Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009 makes it an offence to dispose of waste by burning. An initial five-year exemption was provided for the permissible disposal of waste by burning where it was done as a final measure after the preferred alternatives had been assessed, the local authority was notified and the material to be burned consisted only of uncontaminated wood, trees, tree trimmings, leaves, brush, or other similar waste generated by agricultural practices. This exemption has been extended on several occasions.

In early 2023, the Department of the Environment, Climate and Communications announced that the practice of burning agricultural green waste will no longer be permitted after the 30th of November 2023. Farmers must consider alternative sustainable management practices for agricultural green waste after this date.

This applies to farmers who generate cut and other agricultural green waste through:



Management of hedgerows



Land clearance and maintenance activities



Wind fall material arising



Pest-infected and diseased material requiring management

These four items are referred to as the generation scenarios and are explained in detail later in this document.

This exemption does not apply to the controlled burning of growing vegetation as this is covered by Section 39 & 40 of the Wildlife Act 1976. In addition, if land is in a Special Area of Conservation (SAC) or a Special Protection Area (SPA), it is likely that an application will have to be made to the National Parks and Wildlife Service (NPWS) for permission to conduct any burning of vegetation. For the management of invasive species, please refer to the NPWS.

In November 2022, the Irish Bioenergy Association on behalf of the Department of Agriculture, Food and the Marine developed a feasibility study on the sustainable management of agriculture green waste in Ireland. This report outlines many sustainable alternatives to burning which farmers could deploy.

This document is intended to summarise:

- 1 how farmers can reduce the volume of green waste generated and requiring management
- 2 the ways or scenarios in which agricultural green waste is generated
- 3 the alternative sustainable uses and management of this material

In managing this agricultural green waste resource, a farmer must balance environmental, practical, and biodiversity considerations on their farm.



General considerations for farmers before generating agricultural green waste include:

- From an environmental and biodiversity perspective, leaving this agricultural green material in place and not removing it may be the best option. In the past, this may have been viewed as untidy or unsightly but attitudes and policy are changing regarding biodiversity and habitats.
- If green material must be generated, how can the volume generated be reduced? Chipping or flailing maybe an option.
- If it is land clearance and maintenance activity, is an Environmental Impact Assessment (EIA) required prior to the work being undertaken? Farmers should consult the DAFM EIA thresholds for screening applications.

Practical considerations for farmers before undertaking any sustainable management of agricultural green waste:

- What is the volume and type of the agricultural green waste that will be generated? This will determine the alternative management and uses which are set out in this document.
- Is a contractor(s) being used to conduct the work? The equipment available will determine the sustainable alternative uses for the material.
- What is the sustainable alternative use for this agricultural green waste considering that burning is no longer an option?
- How is this agricultural green waste going to be gathered to avoid contamination? If contaminated, the end use options and overall value of the green waste will be potentially reduced. Stones, soil and wire cause issues for chipping machinery.

Scenarios where cut and other agricultural green waste is generated:

Source of the green waste	Management Practice and Frequency	Equipment used	Description of the resulting material	Alternative sustainable management practices/uses
Hedgerow maintenance	Every 1 to 2 years	Flail hedge cutter	Coarsely chopped branch and leaf material	Flailed material left in situ so minimal volume of green waste generated requiring management
Hedgerow restoration	Maintenance or restoration after 3 years or more growth to restore hedges	Saw blade, flail hedge cutter, chainsaw, mechanical shears	Varying size and diameter material depending on frequency of maintenance	Firewood, nature/ biodiversity pile, composting, animal bedding, landscaping materials, biochar production
Land clearance and maintenance*	Land has not been maintained for many years. Green material has established over a wide area requiring management	Saw blade, mechanical shears, chainsaw	Varying size and diameter material depending on frequency of maintenance	All the above plus the option to remove the material off-farm to be used as fuel for energy generation
Windfall material	Material arising from wind/storm damage	Chainsaw	Large material mixed with lighter branches	Firewood, nature/ biodiversity pile, composting, animal bedding, landscaping materials, biochar production
Material resulting from pest and disease impact	Material arising from pest and disease impact	Chainsaw	Large material mixed with lighter branches	May be subject to controlled disposal, otherwise uses as outlined above

* Refer to Environmental impact assessment (EIA) guidelines to determine if environmental screening is required



Sustainable alternative management and uses for agricultural green waste

Regular Flailing

Regularly flailing is a management technique of maintaining hedgerows without generating green waste that must be otherwise disposed of or managed by the farmer. Flailed material is incorporated back into the hedgerow ecosystem. Farmers who use regular flailing as a management technique must balance environmental, practical, and biodiversity considerations on their farm.

Nature Pile and Biodiversity Habitats

Agricultural green waste material can be used to create a nature pile on the farm in designated locations. This allows the material to decompose in situ over an extended period. This green waste material pile will function as a biodiversity habitat and platform for a multitude of microfauna, macrofauna, and native flora.

Animal Bedding Material and Composting

Green waste material can be chipped and used as a winter bedding material for livestock or composted. Using this chipped material as an animal bedding would be a practical reuse method for this material. When composted, animal bedding provides for its final disposal back onto land with the animal manure.

Fuel for off-farm energy generation (woodchip)

If a large volume of agricultural green waste requires management this presents an opportunity for the material to be moved off-farm as a fuel for energy generation or for use in a local biomass boiler. Where significant volumes of material are available it has proven to be economically viable to collect the green waste material, chip it and use it to supply fuel.

Farmers should engage with a specific biomass harvesting contractor actively involved in biomass recovery for energy generation prior to undertaking any land clearance and maintenance activity. The opportunity that off farm energy use provides is dependent on several factors, including:

- Accessibility of the site
- Soil and land type
- Weather conditions
- Proximity to the energy user
- Tonnage of material available
- Type and size of the material

Large volumes of green waste material free from soil, stones and wire which can be chipped has an economic value which can help offset the cost of the specialist biomass contractor. In some cases, this can provide a positive financial return to the farmer.

Firewood for on farm use

Recovering firewood from larger woody materials from hedgerows, land clearance and wind fall is an efficient, practical, economically viable and sustainable use for this material. Dry firewood is an excellent sustainable source of renewable energy on farm to heat the domestic farm home.

Biochar Production

This managed fire method is an alternative option for cut agricultural green waste material. Biochar is a stable form of carbon, created when biomass is thermally converted through the process of pyrolysis. The production and use of biochar on farms, as a slurry and soil amendment, is becoming increasingly popular and presents an opportunity to farmers who could produce their own biochar from agricultural green waste.



Biodiversity Habitat



Animal Bedding



Off-Site Energy Use

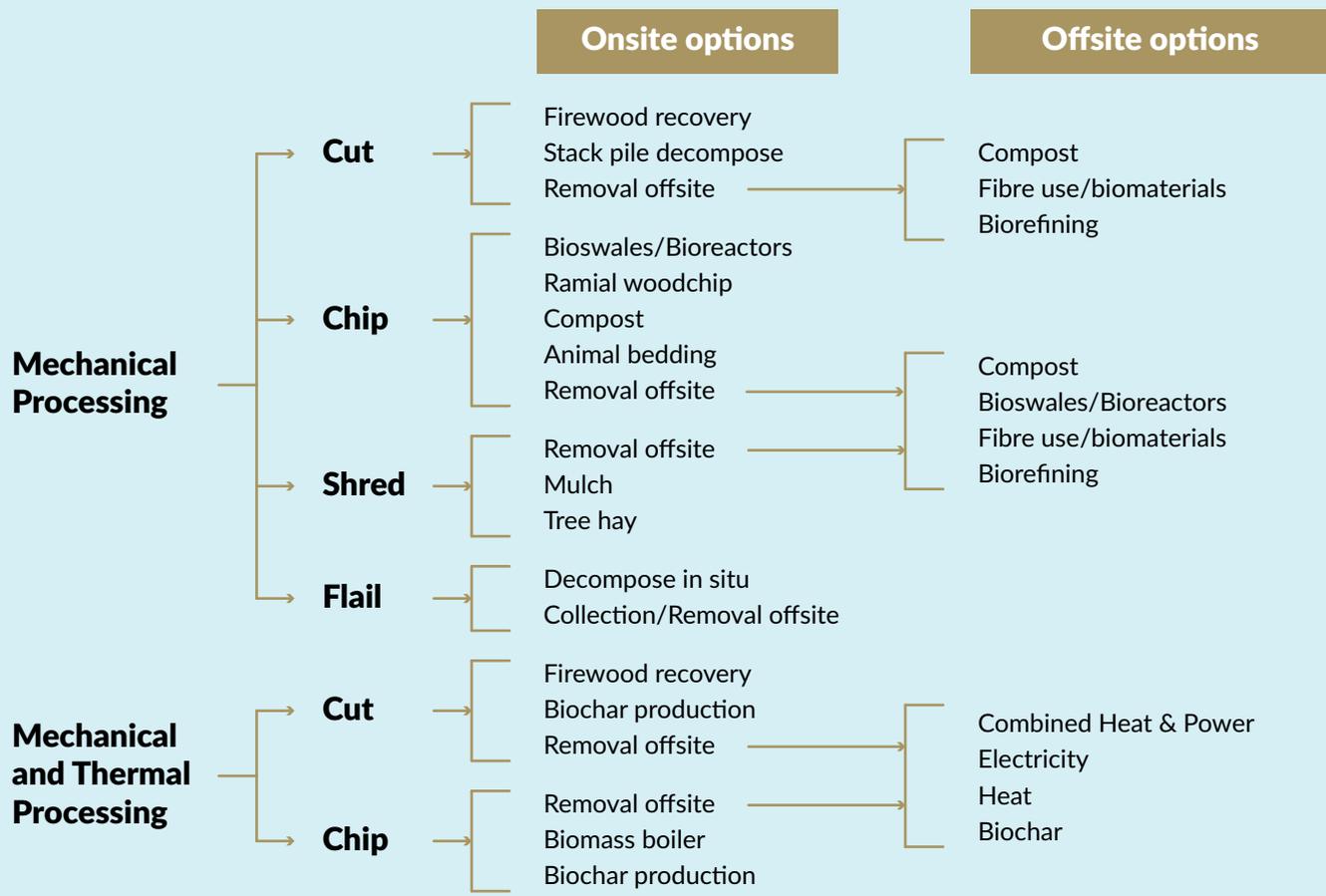


Firewood



Biochar

Summary of the alternative uses for agricultural green waste



Financial support available for woody and biomass chipping equipment

Financial support is available to farmers for biomass chipping equipment. The Department of Agriculture, Food and the Marine through the Targeted Agriculture Modernisation Schemes (TAMS 3) provides grants to farmers for a wood/biomass drying shed and for PTO-driven wood/biomass chipper equipment. This equipment can be used by farmers to process agriculture green waste on farms.



The **full feasibility study** to explore the sustainable management of agriculture green waste in Ireland is available to read by scanning this QR code or via tinyurl.com/IrBEA-SMAGWStudy

