

ASSOCIATION OF FARM & FORESTRY CONTRACTORS IN IRELAND

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Climate & Air Roadmap Consultation, Department of Agriculture, Food and the Marine,
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10th January 2020

Email: agclimatise@agriculture.gov.ie

Ref: Climate change and Farm & Forestry Contractors in Ireland

Dear Sir/Madam,

The Association of Farm Contractors in Ireland (FCI), the national association representing Agricultural/Farm & Forestry Contractors in Ireland, understands that Ireland faces significant challenges to meeting its climate change and air quality targets (as well as biodiversity and water quality targets). The importance of the Farm & Forestry Contractor sector is seen by the growth in annual turnover to close to €700 million, (Source: Teagasc Farm Management Survey - Average Spend on Contractor Services per Farm €4,585 over 137,000 farms).

Farm & Forestry Contractors in Ireland have a key role to play in providing cost-effective and efficient mechanisation services to allow Ireland to remain a world leader in the production, management and marketing of low carbon, high-quality sustainable and traceable food. Through our judicious investments in modern low-emission and high output farm machinery, Farm & Forestry Contractors are playing their part in supporting in maximising farm production efficiency whilst minimising the effects on the climate and reducing the environmental footprint of agriculture.

Our FCI members are early adopters of scientific research and the best practices at farm level. Contractors have also a track record of working in partnership with their farmer clients and farm advisors, as we strive to achieve national climate goals. We believe that Farm & Forestry Contractors can play a very significant part in a national collaborative effort to ensure a just lower carbon transition for all Irish farmers.

As the providers of a dominant amount of the mechanisation services on Irish farms we can work together in new technical and management partnerships with farmer clients and their advisors, to ensure long-term sustainability, from an economic, social and environmental perspective. All such partnership discussions must now include the knowledge and expertise of Farm & Forestry Contractors to adequately inform farm advisory programmes.



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Support for Farm & Forestry Contractors to invest at a more rapid pace, in newer more fuel efficient machinery systems that guarantee a reduction in the average carbon footprint, needs to be examined if we are demonstrate to customers and markets of Irish food the seriousness with which we as a nation takes the climate and air challenge and our willingness to be proactive in pursuing a transition to an even more sustainable system of food production.

At FCI we believe that the Department of Agriculture, Food and the Marine should use the reform of the CAP for the period 2021-2027 to help the agri-food sector achieve the maximum possible progress in climate change mitigation and adaptation, and reduction of greenhouse gas emissions, consistent with commitments at EU level. Farm & Forestry Contractors can play a significant role in achieving this vital progress.

Ammonia Reduction

The recent Department of Agriculture, Food and the Marine (DAFM) report outlined that the latest EPA figures indicate that total annual national emissions are 60.51 Mt CO₂eq and the agriculture sector contributes 20.6 Mt CO₂eq of this, in effect 34% of national emissions. EPA projections indicate that the total national emissions out to 2030 will increase by 6% unless we take steps to change the way we do things.

Farm & Forestry Contractors in Ireland support the action of enhancing soil fertility and nutrient efficiency by reducing nutrient loss to the environment during slurry spreading. As contractors are the dominant providers of slurry spreading machinery systems and apply the bulk of the 40 million tonnes (Mt) of animal manures produced annually on Irish farms, we believe that working in partnership with farmers, the Department of Agriculture, Food and the Marine and advisory services that the target of 60% of all slurry spread by low emissions slurry spreading by 2022; 75% by 2025; and a longer-term ambition of 90% can only be achieved through active policy partnership programmes with Farm & Forestry Contractors.

We believe that it is important to support the role of the Farm & Forestry Contractor to invest in new slurry spreading Low Emission Slurry Spreading (LESS) technology in the same way that farmers are supported. Contractors will do most of the work, provide economies of scale on farms and use more modern, low emission tractors to power this machinery. We believe that in the absence of equality and fairness in support programmes for investment in LESS machinery, that all grant aid for the systems should be suspended immediately.

Currently, the Department of Agriculture, Food and the Marine (DAFM) oversee and administer the Targeted Agricultural Modernisation Schemes (TAMS) which supports capital investment in a number of target areas. FCI believes that current TAMS grants for the purchase of low emission slurry spreading equipment should be withdrawn and replaced with more targeted grants for increased farm nutrient storage. Irish Farm & Forestry Contractors have not invested in higher technology slurry management machinery to the same extent as their European counterparts due to the presence of the farmer-focused machinery grant aid system which is making investment in more accurate and more efficient spreading systems that incorporate Precision Farming systems with high levels of transparency, uncompetitive.



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FCI believes that there must be more investment in education for farmers on slurry management rather than on the purchase of slurry spreading machinery. FCI believes that there is a need for farmers to understand that not all animal slurry is the same. There are significant operational differences in slurry agitation and spreading for current low emission slurry spreading systems, based on real-world Irish conditions where baled silage is being fed to animals in slatted sheds.

FCI believes that currently in the region of 40% of slurry on Irish farms is not suitable for use with the dribble bar/trailing shoe system. This confirms that there needs to be some changes to the management of the slurry, not to the machines. Many trailing shoe systems are not considered to be farmer friendly, due to maceration blockage issues. These machines can function to their optimum design specification in the hands of skilled Farm Contractor operators.

FCI believes that the current GLAS grant aid scheme should be extended to all farmers to use Farm Contractor based Low Emission Slurry Spreading (LESS) systems. FCI proposes a voucher grant support system for the use of Farm Contractor LESS systems. If all LESS slurry spreading was grant aided based on Farm Contractor invoices, not just to the GLAS farmers, the cost to the Government would be significantly less. The cost to the state of the current GLAS limited voucher system at €1.20/ cubic metre for 50% of the slurry to be spread by LESS systems would be €15 million per annum and it would be guarantee that the low emission systems were being used and would be fully traceable.

The scale of Irish farming (farm size) does not justify the investment in Precision Farming technology, which will be essential for all farms in achieving compliance. This approach would support Farm Contractors to invest in the use of the technology, such as the John Deere HarvestLab system, and costing in the region of €20,000, it would help to provide assured traceability of the quantities and quality of animal manure products spread on farmland.

This grant/voucher proposal would also allow the creation a national register of Farm Contractors under the scheme who could then avail of technology updates through Knowledge Transfer systems (from which they are currently excluded) to ensure continuous improvement in the standards of manure application strategies.

FCI is suggesting some flexibility to use the splash plate spreading system for part of the work of slurry spreading, but only early in the spring. There are often practical difficulties in spreading the first loads from slatted shed slurry pits, due to under capacity issues which in turn lead to agitation difficulties. These sheds do not have the capacity to allow for the dilution of high dry matter slurries during agitation prior to spreading and these high dry matter slurries cannot be effectively land spread using the current LESS machine systems.

Precision Farming (PA) Technology

There should be support to stimulate the wider use of PA technologies will be necessary to eliminate the negative impacts of the small farm scale. If no such supportive action to improve the uptake of PA technologies for farms below 100ha (average farm size in Ireland 32.4ha) were to be taken, it could become increasingly difficult for these farms to compete with farms in the



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USA, Canada and New-Zealand or even with larger Irish farms, all of which invest in PA technologies. Not only could smaller Irish farms thus lose their competitiveness. They might struggle to comply with greening targets and EU environmental policy goals.

PA technologies are one of the most efficient tools to improve sustainability and productivity in farming. PA technologies offer solutions to produce more with less and enhance food security and safety. Practically, PA technologies provide farmers with extra sensors which give them more information on how to manage natural variations like weather conditions, pests, insect and fungal infestation.

Some of the most prominent environmental benefits of PA technologies are:

- Preventing ground water pollution by optimizing manure and chemical spraying
- Reducing fresh water withdrawals with precision irrigation
- Limiting crop damages by responding rapidly and effectively to pest, fungal infestation
- Allowing new types of poly culture (critical to stimulate biodiversity, noticeably for pollinators)

Some PA diagnostic technologies are already highly affordable and thus available to smaller farms thanks to smart phones or tablets and their applications. Such applications can directly signal a problem on the field or connect to an online service for further probing.

Other fundamental PA technologies are less available to smaller farms and should therefore be promoted by the CAP. These technologies can be divided in three categories:

1. Guidance Systems
2. Variable Rate Applications (VRT) & Nutrient Sensing
3. Precision Livestock Farming (PLF) Technologies

Each of these technologies offers distinct advantages in terms of sustainability and profitability for farmers.

Fuel use & CO2 Reduction in Farm & Forestry Contracting in Ireland

Farm & Forestry Contractor services provide a unique value-added component to the chain of Irish agricultural production ensuring the competitiveness of Irish agricultural production through the use of efficient and modern lower carbon machinery systems. We estimate that the proposal to increase Carbon Tax to €80 per tonne will add a minimum of an extra €100 million to the cost of our services at the final stage of this tax with incremental increases from the level proposed this year of €6/tonne, which in itself will mean increases in the costs of our services to Irish farming as we can no longer absorb the increasing fuel costs.

FCI figures (see below) show that the Irish national grass silage harvest, which begins in May each year, with pit silage and baled silage now accounts for consumption of upwards of 214 million litres of diesel annually. This amount accounts for close to 61% of the total annual fuel consumption by Farm & Forestry Contractors in Ireland.

CO2 emissions are highly correlated to fuel use. Almost all of the carbon in diesel fuel is emitted in the form of CO2 efficiency in converting fuel (diesel) into usable energy is one of the main demands of Farm & Forestry Contractors. Therefore, improving fuel economy has been and will



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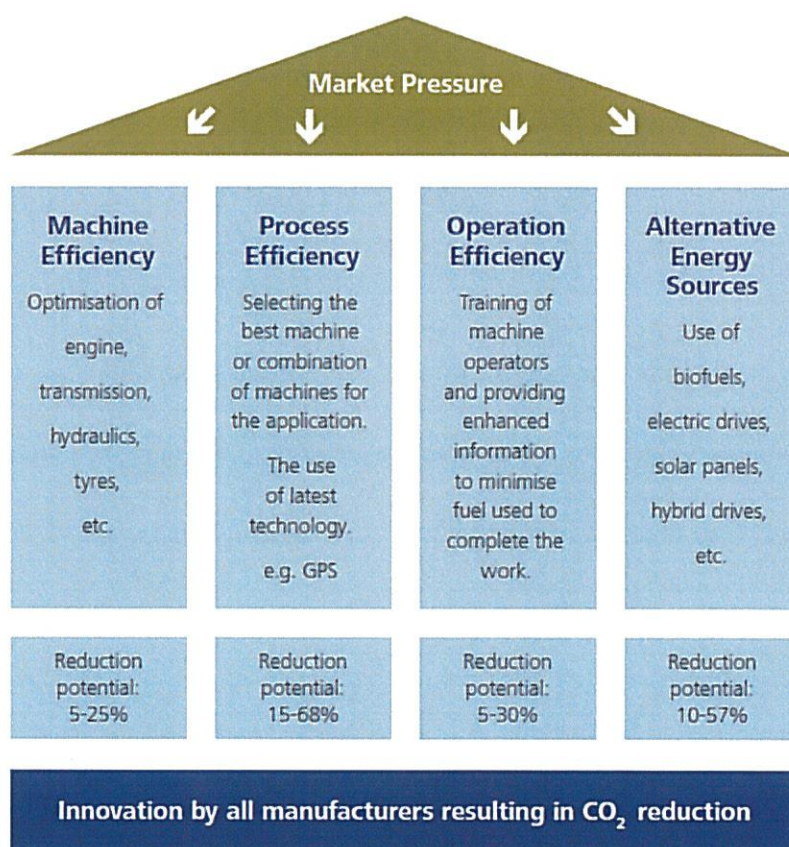
be one of the main drivers for innovation. As a result CO2 emissions in agricultural machinery applications have substantially decreased in the last decades.

Key Elements in CO2 Reduction

There are four main pillars or pathways to take into account for optimising the energy efficiency with their own related costs and energy-saving potential: machine efficiency, process efficiency, operator efficiency and alternative energy sources.

- Machine efficiency looks at the optimisation of all elements related to the machine itself (engine, transmission, hydraulics, tyres, etc.)
- Process Efficiency considers the setup of the process to fulfil the desired job (e.g selecting the combination of machines for the application, the best machine for each task etc.) and the use of latest technologies (e.g coordination of multiple machines' operations via GPS).
- Operation efficiency includes the training of machine operators or technologies to simplify machine use (e.g. providing enhanced process information to the operator, fully/partly automate machine operation)
- The use of alternative energy sources that deliver the same amount of energy but emitting less CO2 such as bio-fuels, electric drives, solar panels, hybrid drives, etc.

In addition, the right training and skills to use equipment efficiently, maintain it properly, or interpret machine data correctly, are crucial factors to increase energy efficiency in any process. The use of alternative fuels or other energy sources helps achieve multiple benefits - from less CO2 emissions to reducing exhaust emissions. Within machine efficiency the focus is on the drive-train and auxiliary powers. Much higher efficiency gains can be achieved during the production process, where the choice of the right machine(s) with the best technologies play a key role.

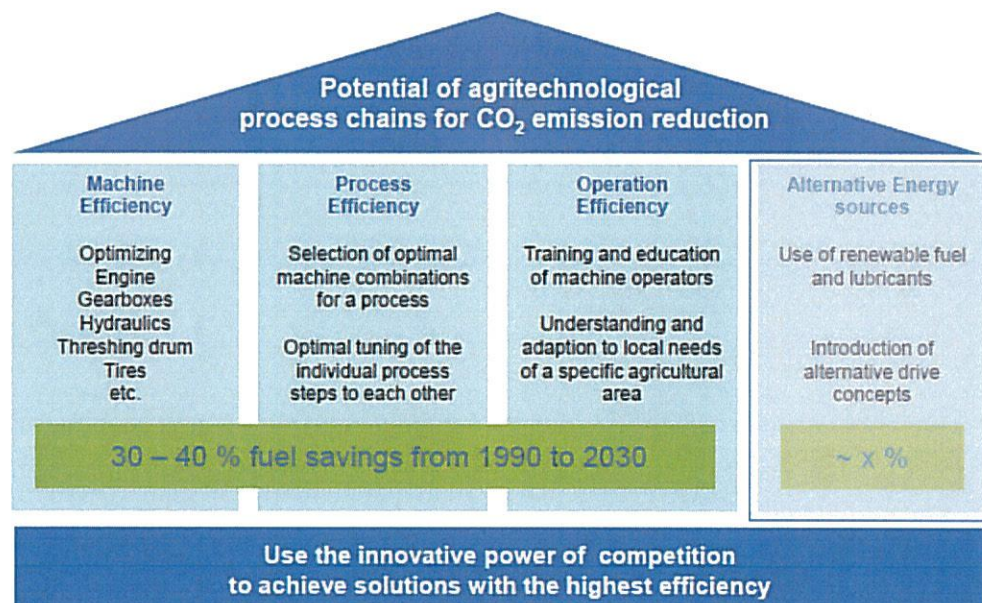


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Irish Farm & Forestry Contractors do not have the option of using alternative fuels. Hybrid or LPG as alternative fuel options are not currently available to power modern high performance agricultural machines in Farm Contractor fleets in Ireland or across the world. We have the option of investing in improved fuel efficiency through selection of more modern machinery systems that guarantee higher output through greater fuel and field efficiency as outlined above.

Some actual fuel saving examples

- Forage wagons fitted with automatic blade sharpening systems have been shown to have a 15% lower power requirement and consume 5.0 l/hr less fuel than comparable machines without the system.
- In tractors with CVT transmissions, fuel reductions up to 10% can be observed depending on the working application.
- Transferring the weight of semi-mounted machines from the implement to the rear axle of the tractor significantly reduces wheel slip. Working speed can be increased, tractor performance remains more constant, and up to 20% energy can be saved.
- Combining field processes can result in a potential fuel consumption savings up to 50%. Replacing four tractors pulling 3m implements with two larger ones pulling 6m machines cut overall tractor travel by 25% to complete the same job, reducing fuel consumption also by 25%.



Summary of Achievable CO₂ Reductions



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Farm & Forestry Contractors remain excluded from the Carbon Tax Rebate System, (Finance (No.2) Act 2013 Edition - Part 23) which is open solely to farmers. This is despite the fact that our members carry out 90% of the farm mechanisation work on Irish farms consuming close to 350 million litres of green diesel annually valued at €262 million. This alone is 62% of the total energy bill for the entire Irish agricultural sector based on the total expenditure on energy and lubricants increased by €33.8 million (+8.7%), increasing from €390.2 million in 2017 to €424.1 million in 2018. (Source: Dept. of Agriculture Annual Review & Outlook 2019).

Irish Farm & Forestry Contractors believe that Carbon Tax should be abolished on all primary agricultural activities in Ireland and that contractors be given tangible support to invest in new more carbon-friendly systems, incorporating the use of Precision Farming systems for greater efficiency can deliver fuel savings in the fields, resulting in lower Carbon emissions of up to 10% per contracting firm. The role of Farm & Forestry Contractors as the primary source for the provision of mechanisation services on 90% of Irish farms needs to be recognised in any partnership plans to set new targets for lowering fuel consumption and Carbon emissions as part of the national Climate Action Plan for agriculture.

Farm & Forestry Contractor Agricultural Knowledge and Innovation Systems

Agricultural Knowledge and innovation Systems (AKIS) have a key role to play in meeting challenges faced by agriculture and rural areas. Farm & Forestry Contractors are often excluded from this process so that new technology systems are not being address to the key operators so that new technology opportunities are insufficiently applied in practice especially among smaller farmers. There is need involve Farm & Forestry Contractors in new knowledge and innovative solutions to achieve quicker innovation and better uptake of existing knowledge to achieve climate and productivity objectives. Farm & Forestry Contractors can play an important role in supporting the digital transition in agriculture through the use of scale-efficient farm machinery resources.

Summary

The Association of Farm Contractors in Ireland (FCI), research has shown that Farm & Forestry Contractors in Ireland employ close to 10,000 people operating machines on farms. Farm & Forestry Contractors use more than 350 million litres of diesel annually (61% of total agricultural energy consumption) in carrying out this farm work and operate more than 20,000 modern and fuel efficient tractors. Contractor machines harvest 90% of the Irish silage crops each year along with managing the sustainable spreading more than 20 billion litres of slurry, as well as establishing and harvesting many different crops.

Farm & Forestry Contractors can play a significant role in partnership with farmers, the Department of Agriculture, Food and the Marine and advisory services as we work together to provide workable solutions to the significant challenges that Ireland faces in attempting to its climate change and air quality targets

Yours sincerely,

[Redacted Signature]

Richard White, National Chairman FCI



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FCI Analysis Fuel Usage in Irish Agricultural Contracting

(Diesel Fuel Consumption figures for Farm Contractors in Ireland 2019)

(FCI Research 2019)

Pit Silage Systems

700 SPFH x 1000 litres/day	700,000l/day
700 Loaders & Mowers 800l/day	560,000l/day
3500 tractors & trailers at 250l/day	875,000l/day
Total silage fuel consumption/day in Ireland	2.135million l/day
70 days of silage harvest	149 million litres/season

Baled silage systems

1,000 tractors & balers	300,000 litres
Mowers, tedders, wrappers & transport	600,000 litres
Total baled silage consumption/day in Ireland	900,000 litres
70 days of baled silage harvest	65 million litres/season

Slurry spreading systems

Slurry agitation 250l/day over 60 days (2,000 units)	30 million litres
Slurry Spreading 250l/day over 60 days (3,000 units)	45 million litres
Total slurry fuel consumption in Ireland	75 million litres

Misc. other farm contracting activities, Hedgecutting,
Silage Wagons, Fertilizer & Lime Spreading, Sowing,
Spraying, Combine Harvesting, etc

50 million litres

Total Fuel Consumption in Irish Agricultural Contracting Sector 2019

340 million litres

Out of a total agricultural diesel consumption figure

550 million litres

(Source: Dept. of Agriculture Annual Review & Outlook 2019)

Annual Irish Agricultural Contracting Diesel

Consumption as a % of total Agricultural Consumption 62%

Value of Diesel Consumption currently at €0.75/litre

€255 million

Value of Farm Contractor Services to Irish Farming 2019

€700 million

(Source: Teagasc Farm Management Survey - Average Spend on Contractor Services per Farm €4,585 over 137,000 farms)



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Department of Agriculture, Food and the Marine

Consultation on A Draft National Climate and Air Roadmap for the Agriculture Sector to 2030 and Beyond

Consultation Response from



January 2020

Headline message

Bord na Móna welcomes the opportunity to respond to this important consultation paper.

Our comment below is brief and in summary form.

Bord na Móna has long been an advocate of Energy Crops in this country, in particular Willow, as it is indigenous and it can be used to increase the biomass levels in Edenderry Power alongside the existing indigenous and sustainable residual biomass supplies.

At Edenderry Power we are transitioning, since 2008, to ever increasing levels of sustainable biomass, with indigenous supplies now accounting for 80% of our supplies.

Our focus is on securing increasing indigenous biomass, beyond 80%, and this stems from the opportunity of doubling supplies over the next 10 years, from private forestry as well as from energy crops.

Locally grown Willow is the ideal renewable fuel for our powerplant as we transition to ever increasing biomass levels at Edenderry Power - the largest dispatchable, or 'on demand', renewable generator on the Island. 'Dispatchable' renewable power enables more intermittent renewable supplies on the grid – renewables helping renewables.

Edenderry Power uses residual forest material which cannot be used for other commercial purposes - all the time improving the indigenous biomass supply infrastructure for other industry and renewable heat, importantly, with associated jobs.

When the previous establishment grant was in place Bord na Móna worked closely with several growers to assist them along the way of getting the crop planted in the ground and also, most importantly, acting as an outlet for the finished crop; we played a very active role.

We see opportunity for the Midlands and beyond in re-activating the Energy Crop Scheme and urge that this be given careful reconsideration.

We hope that you find these comments of use and submit them for your consideration. We would be pleased of course to discuss any aspect of our responses should you so wish.