Meeting the Climate Change Challenge in Agriculture

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The Climate Change Challenge

GHG Emissions
> 30% of GHG emissions from Agriculture
EU agricultural emissions are approx. 10%

GHG Targets
20% emissions reduction by 2020; 30% by 2030
Both GHG and ammonia emissions projected to increase by 2030

Renewable Energy Targets
16% of energy demand from renewable by 2020
32% EU target by 2030

Energy Efficiency Targets
20% Energy Efficiency by 2020
32.5% Energy Efficiency by 2030
Sustainability is key
Current CAP

- **Pillar I** – Direct payments to farmers on an annual basis

- **Pillar II** – Infrastructure, Environment and Development Support

CAP POST 2020

- Simplifying and modernising the policy
- More targeted, result and performance based support
- Fairer distribution of direct payments
- Enhancing environmental and climate ambition
- 40% of CAP’s budget is expected to contribute to climate action
Steps to reducing emissions from Agriculture

- On Farm Efficiencies/Abatement measures
- Carbon Sequestration
- Energy Efficiencies/Fossil fuel and energy intensive materials displacement and substitution
Climate Friendly Farming

RDP 2014-2020 (CAP Pillar II payments)

GLAS
BDGP
TAMS
Knowledge Transfer Programmes
Nitrates
European Innovation Partnerships
Role of Agriculture in Energy Production and Energy Use

ENERGY IN IRELAND
2018 Report

Note: Some statistical differences exist between inputs and outputs.
Energy & Agriculture

Sustainable Energy Agriculture Sector

Energy MACC

- On-Farm Energy Generation
- Energy Efficiency On-Farm
- Supplier of Bioenergy Feedstock's

- Abatement Cost: €/tCO₂e
  - Wood biomass: 759 ktCO₂-e
  - SRC Biomass (Electricity): 196 ktCO₂-e
  - Anaerobic Digestion: 221 ktCO₂-e
  - Biomethane: 150 ktCO₂-e
  - Bioethanol (Grain): 29.8 ktCO₂-e
  - Bioethanol (Beet): 29.8 ktCO₂-e

Potential ktCO₂e saving/year
Forestry

- > 300,000 ha planted since 1990 and €2.5 billion of state investment to date
- Contributes €2.3 billion to GDP, 12,000 employed
- Irish Round harvest was approximately 3.54 million cubic metres in 2017
- Nearly 4 million cubic metres of roundwood harvested each year. This will more than double to 8 million cubic metres by 2035
- Irish forests have sequestered about 3.8 million tonnes of CO₂ per year from the atmosphere (2007-2016)
- Demand for forest products is expected to increase by 20% by 2030 across Europe
Forestry: Challenges & New Incentives

- Low afforestation rates: ~ 4,000 ha in 2018

- Small plantations, average private grant aided 8.8 ha

- Road construction in private estate

- Bioeconomy and biomass supply shortfall

- Potential wood fibre available in RoI for energy, wood based panels and other uses to increase from ~1.9 million m$^3$ in 2018 to ~ 4.2 million m$^3$ in 2035
Energy Efficiency & Renewable Energy Supports

Targeted Agriculture Modernisation Scheme

Energy Efficiency Measures

Renewable Energy Technology Supports

Horticulture Programmes

Producer Organisation Scheme

Commercial Horticulture Scheme

LED Lighting

Heat Transfer Units

Energy Efficiency Upgrades

Solar PV

Biomass Boilers
Energy Efficiency & Renewable Energy Supports

**EIP Projects**
- Small Biogas Demonstration Programme
- Biorefinery Glas Project
- Irish Biochar Cooperative Society

**Total investment of €3 million**

**Animal-By Product Regulations**
- To encourage alternative safe domestic disposal outlets including the safe use of ABP as a feed stock in biogas plants
- Environmentally friendly, sustainable process
- 10 biogas plants under DAFM regulation operation with 2 additional plants shortly
Energy in Horticulture
Producer Organisation (PO) Scheme

Producers getting together:
- Concentration of supply: larger supply base
- Greater bargaining power

Operation Programme:
- Covers planning of production, quality, marketing, R&D, crisis prevention management and environmental actions
- Eligible for 50% support
- Progress is monitored against pre-set targets and performance indicators
Environmental actions

- At least 2 environmental actions or 10% of the programme expenditure

- National Environmental Framework
  - Climate change
  - Nature and Biodiversity
  - Natural resource and waste
Climate Change

- Must achieve at least 15% energy use reduction

- Reducing emissions by replacing burner/boiler

- Reducing Energy requirement by insulation or installation of combined heat and power (CHP)

- Using Renewable energy such as biomass burner/boiler, Solar Panels, PV panels, wind turbines, geothermal systems, LED, Pumps and fans with variable speed drives.
Nature & Biodiversity

- Use of natural pest control agent
- Use of inherent disease resistance
- Use of physical weed control
- Targeted application of pesticides
- Organic production
Natural Resources & Waste

- Re-use of organic waste production.
- Capture and re-use of water in growing systems
- Capture and treatment of rain water from rooftops
Grant aid scheme for commercial Horticulture

- Competitive scheme €6 M budget 2019
- 40% grant aid rate

Objectives of the scheme
- Promote diversification
- Improve quality
- Improve work conditions
- Facilitate environmental friendly practices
Grant aid scheme for commercial Horticulture

- Thermal Screen/insulation
- More efficient Boiler/burner
- LED
- Re-usable nets and fleece
- Capture, storage and use of rain water
- Precision Agriculture
Meeting our Climate Change Targets

- Need to establish a base line
- Survey on energy use
- Put in place targets