GreenGasCert
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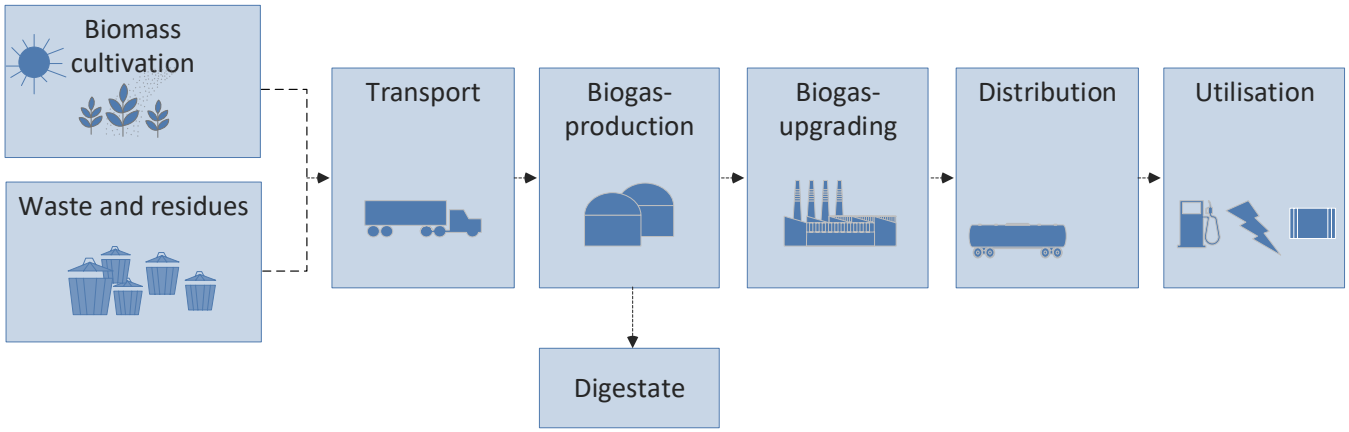
Carbon footprinting in the Green Gas for Ireland – Our methodology in a nutshell



- Covers the complete life cycle of green gases
- The GGCS carbon footprinting approach allows differentiating between different methodological set-ups such as the EU RED methodology, LCA, etc.
- Results will be presented for intermediate products (Feedstocks, Biogas, Biomethane) as well as for the application of green gas in different applications (transport, electricity, heat)
- Can be used by Farmers and producers of Biogas, Biomethane and Green Gases
- Will be implemented and supported by a calculation tool

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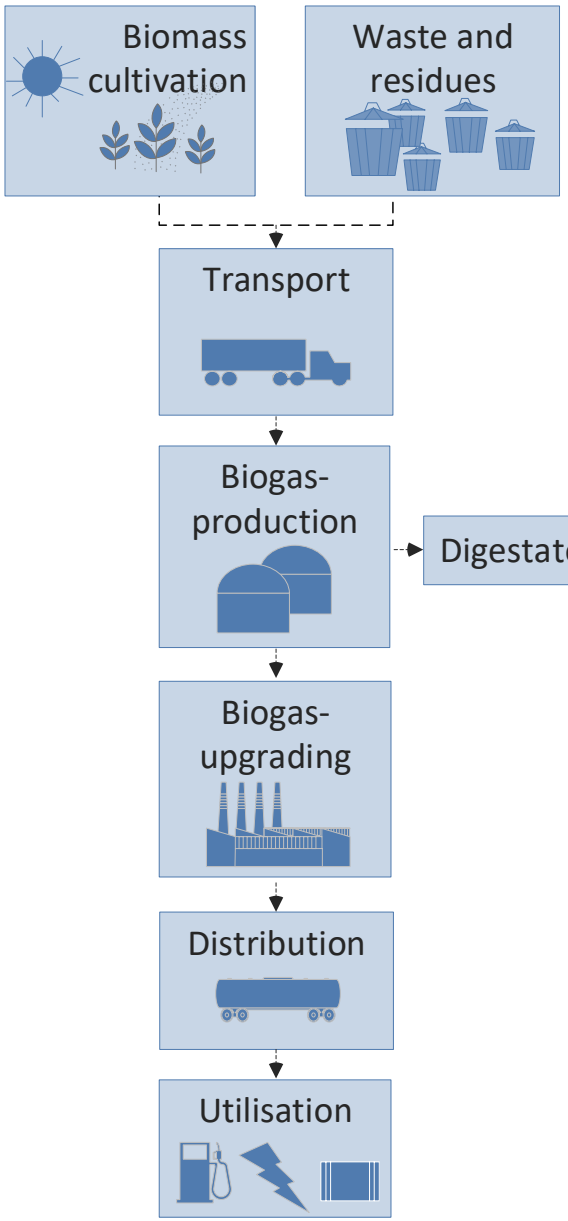


	You can use:	If no actual information is available, we can provide:	Expected results:
Biomass cultivation / Waste and residues	• Actual information from farmers (e.g. yields, fertiliser use, etc.) • Specific information regarding carbon sequestration, etc.	• Default values for single inputs or complete processes • Emission factors for input materials	• Specific emissions for Biomass on a per ha or per t basis
Transport	• Actual information on transport distances , energy consumption, modes of transport	• Default values, emission factors per ton kilometre	• Specific emissions for Biomass transported to Biogas plant on a per t basis
Biogas-production / Digestate	• Actual information on biogas yields, energy supply concepts, energy consumption, methane losses, digestate characteristics + use	• Default biogas yields + energy consumption values • Default digestate charact. • Emission factors for energy supply • Default values for methane losses	• Specific emissions per MJ or m^3 of Biogas (raw) • Consideration of by-products based on either allocation or substitution (credits)

Biogas-upgrading	• Actual information on the upgrading technology used:
	  • Energy consumption
	  • Methane leakage
	  • Resulting Biomethane yield
		• Default values for:
		  • Energy consumption
		  • Methane leakage
		  • Biomethane yield
			• Specific emissions per MJ or m^3 of Biomethane produced
			• GHG mitigation potential compared to a ref. fuel

Distribution	• Actual information on the energy consumption from the distribution process	• Default values for:
		  • Energy consumption
		  • Emissions from distribution per MJ + km
			• Specific emission per MJ or m^3 for Biomethane distributed

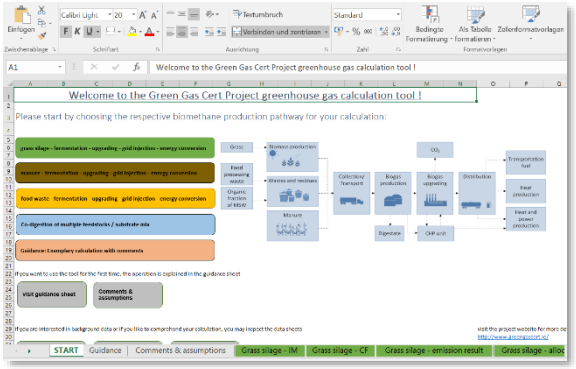
Utilisation	• Actual values on efficiencies for heat and power production
	• Methane slippage
	• Reference systems
		• Default values for:
		  • Efficiencies
		  • Reference systems
		  • Methane slippage
			• Specific emission per MJ of energy (carrier) produced for heat, electricity and fuel
			• GHG mitigation values compared to reference values

To support the implementation of the GGCS calculation approach, three elements have been developed in the project.

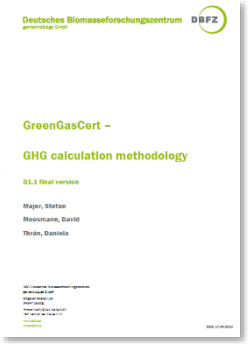
- The complete methodology is described in a comprehensive project report (D1.1)

- An exemplary calculation will be part of the documentation for the Green Gas Certification System.

- The GHG emissions as well as the GHG mitigation potential of the Green Gas to be certified can be calculated using a GHG calculation tool. The tool will be developed throughout the project.



The GreenGasCert calculation tool



The GreenGasCert calculation methodology