Gas Definitions for the European Union

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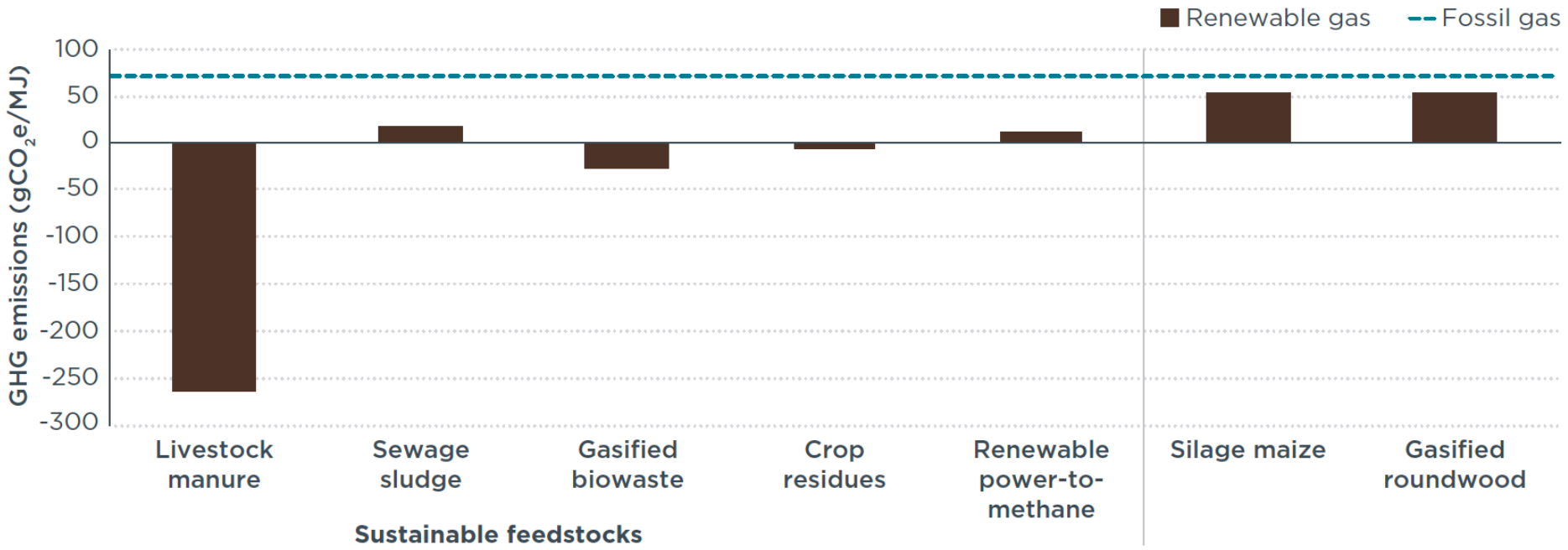
“Renewable” gas does not always mean low-carbon

- Greenhouse gas (GHG) impacts are determined by a variety of factors across a life-cycle.
- Methane leakage can have a large impact on GHG intensity.



Fossil gas definitions

	High-GHG	Low-GHG	GHG-neutral
Fossil gas	Natural gas (conventional and unconventional) Gasification of fossil fuels, e.g. coal Hydrogen or synthetic methane produced from fossil-derived electricity	**Most GHGs captured in CCS*:** Hydrogen produced from natural gas Hydrogen or synthetic methane produced from fossil-derived electricity	**All GHGs captured in CCS*:** Hydrogen produced from natural gas Hydrogen or synthetic methane produced from fossil-derived electricity

***CCS= carbon capture and storage**

CCU (carbon capture and utilization) possible but no double counting!

Renewable gas definitions

	High-GHG	Low-GHG	GHG-neutral
Renewable gas	Biomethane from crops with high land-use change emissions	Hydrogen or synthetic methane produced from **additional, low-GHG electricity** Biomethane produced from wastes or crops on low-carbon stock land	Hydrogen or synthetic methane produced from **additional or excess renewables electricity with zero net GHG emissions** Biomethane produced from wastes

Summary

- Renewable does not always mean low-carbon
- Full, lifecycle GHG accounting is necessary for robust definitions
- Fossil gas only GHG-neutral with complete CCS
- Carbon capture and utlization (CCU) is possible, but no double counting
- Source of electricity for production is very important for lifecycle accounting

Paper:

https://www.theicct.org/publications/gas-definitions-european-union

Thanks!

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