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Project Pilot-SBG and motivation

The project aims to provide renewable methane for transport sectors that are difficult to electrify. It involves the construction of a pilot plant to process biogenic residues and green hydrogen. The biomethane produced will count as an advanced biofuel in the transport sector's greenhouse gas (GHG) reduction quota. The growing trade in emission certificates of different origin, which in the case of biogenic sources are mainly derived from the raw material base, raises the question of the extent to which CO₂ pricing can affect the value of raw materials.

GHG quota in german transport sector

In its current form as a GHG quota, the system is primarily designed to reduce GHG emissions. The GHG quota, which incentivises the use of biofuels with high GHG reductions, has led to an increase in avoided annual emissions. Companies' quota obligations are based on the amount of GHG emissions caused by the fuels they place on the market. They must also meet a minimum share of advanced biofuels. GHG quota trading is available to buy emission reductions. The quota will increase steadily from 9.25 % today to 25 % in 2030. This is an important intermediate step towards climate-neutral transport by 2045.

Certificate trading

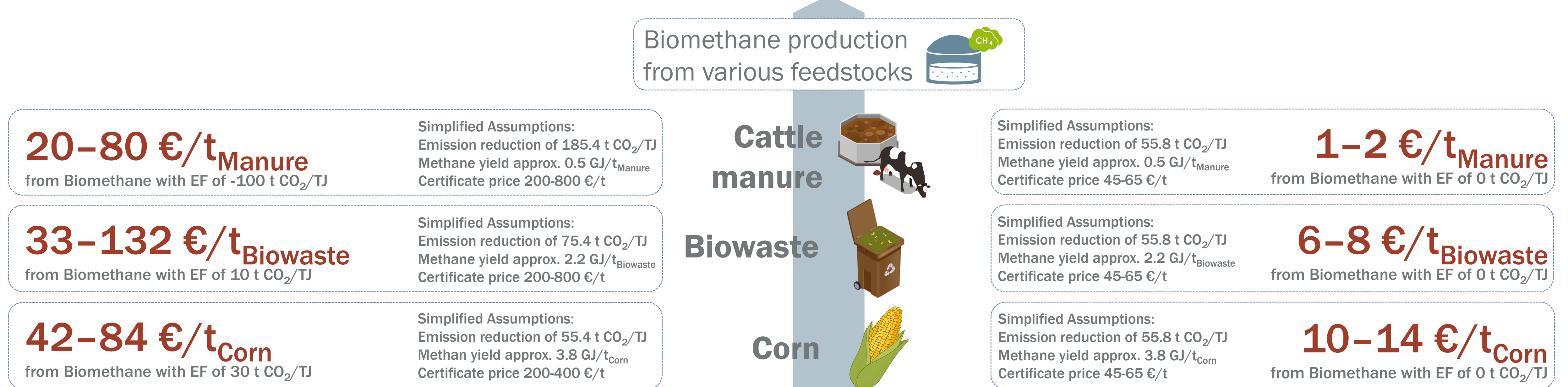
- Possibility of transferring the fulfilment of the quota obligation to another company results in quota trading
- Market with supply and demand
- Bilateral trade and marketplaces
- Complex pricing structure with up to six different prices/certificates
- Complex framework conditions with multiple counting and different upper and lower limits
- Various fulfilment options to reduce emissions



Theoretical emission reduction value of biomass

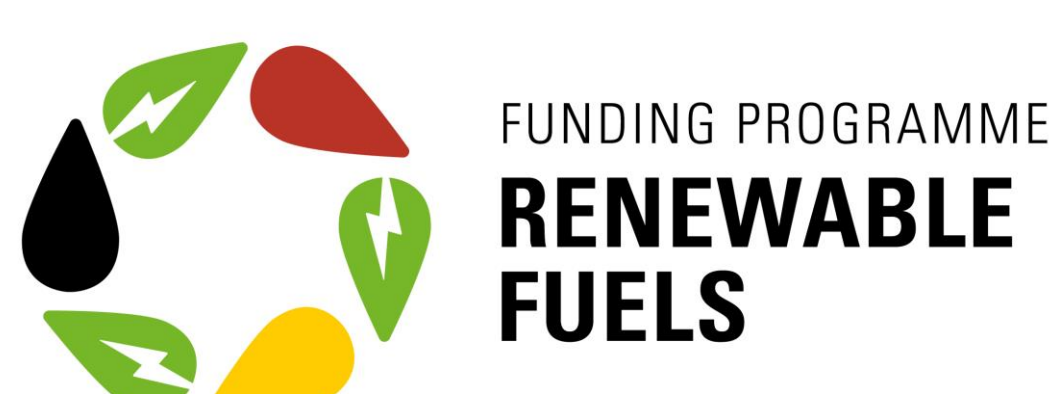
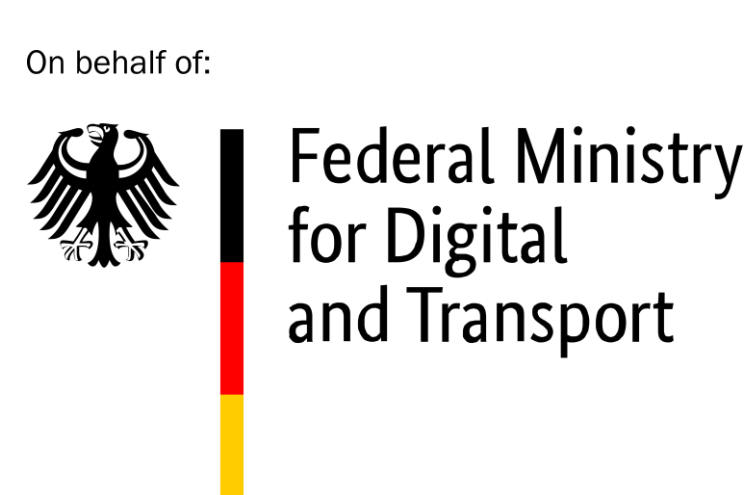
$$Emission\ Factor\ (EF)_{fossil\ Base} \times (1 - GHG-Quota) - EF_{Biomethane} = \text{Different methods of calculating the emission reduction} = EF_{Natural\ Gas} - EF_{Biomethane}$$

$$94.1 \times (1 - 9.25\%) - EF_{Biomethane} = 55.8 - EF_{Biomethane}$$



Conclusion

The calculation shown is highly simplified but illustrates the impact that a high price for CO₂ savings can have on a value chain. This calculation does not include the costs of production and distribution, nor does it include any revenue from the sale of the product. It can be assumed that the price of CO₂ will have a significant and increasing impact on the value of the biomass and can, therefore, determine its use.



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➡ To gain more in-depth insights into the technological aspects and background of the project and the pilot plant for renewable methane, please scan the adjacent QR code.

