

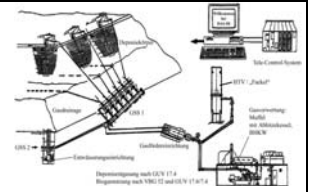
DAS – IB GmbH
DeponieAnlagenbauStachowitz

Biogas-, Klärgas- und Deponiegastechnologie:

Biogas - and Landfillgas - technology

- Beratung, Planung, Projektierung
- Schulung von Betriebspersonal
- Sachverständigentätigkeit (u.a. § 29a nach BImSchG und „öffentlich bestellter und vereidigter Sachverständiger“ bei der IHK zu Kiel)

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How to come to a CO₂ – Certificate with e.g. landfill gas

In order to be able to roughly estimate the CO₂ savings that may be taken into account for certificates, the process chains (current situation < -- > future situation) must be documented:

- 1) What is the current situation? What happens to the landfill gas/waste at present? We need the input quantity, landfill gas quantities, composition of the gas, landfill size (waste quantities and type -> gas prognosis), applied energies (process heat and electricity; how is the latter produced at present?) and the current CO₂ emissions.
- 2) What is the situation like subsequent to treatment (e.g. co-generation sets, gas engines, low methane oxidation systems)? Besides the input quantity (landfill gas) that should be identical, information is required for the new process.
- 3) When gas is converted into electricity, what does the electricity replace? Electricity from the supply network or an individual plant. In the first case, the energy from the supply network or ‘grid’ consists of a mixture of water power, electricity generated in nuclear power plants, and coal-based electricity generation. Therefore the amount of CO₂ produced per kWh for each of the different technologies is required. In the case of an individual plant, the description of the system is required (e.g. combined oil heat and power station). Where is the heat supposed to go, is it used? (-> further CO₂ certificates)
- 4) How is the plant financed? Are there any subsidies granted? Does any particular compensation exist for the electricity (similar, for example, to the renewable energy act (EEG) in Germany or the NFFO in the UK)? Is it a private investor; is it an “inland” investor? Is the measure undertaken cost-effective? Do acts or guidelines stipulate this measure at present or will they do so in the future?

Costs of the indispensable study (customer, e.g. operator of a landfill):

a) First assessment

For the creation of a first assessment (assessment of the CO₂ savings documented on one or two pages), a cost of approx. 1,000 Euro is estimated (exclusive of taxes and travel expenses). The customer (e.g. the operator of a landfill) will be refunded for these costs when commissioning the complete study (a to c). On this basis, the customer must decide whether or not the project shall be continued.

b) Project Idea Note (PIN)

In case the project should be continued, the next step would be the implementation of the so-called Project Idea Note (PIN). The PIN is supposed to document the project technically, economically and legally. All influences that the system may have globally must also be taken into consideration and, vice versa, the global influences on the system. This finally indicates whether or not there are any objections to the project and to what extent CO₂ quantities will be credited to the customer. This document also enables the customer to make provisional contracts with potential buyers. The costs are very high: they amount to approx. 10,000 Euro plus VAT, travel expenses (Europe) res. to 15,000 Euro plus VAT and travel expenses (Asia).

c) Project Design Document (PDD)

For certification purposes, a so-called Project Design Document (PDD) is required, consisting mainly of the PIN, monitoring and validation plan. Depending on the complexity, the costs will be between 15000 and 20,000 Euro plus taxes and travel expenses (Europe) res. between 25000 and 30000 Euro plus taxes and travel expenses (Asia). The costs for the establishment of the PIN will be charged proportionally.

These prices may only be specified in more detail after a rough copy has been initially carried out. In addition, costs for certification and fees must be taken into consideration. Estimated range: 15,000 to 60,000 Euro.

In contrast, proceeds of approx. 2 to 6 Euro per ton CO₂ are noted at present. This price may rise up to 20 Euro per ton CO₂ adequate.

Rough estimate: 2000m³/h landfill gas * 1.2 kg / m³/H * 8,760 h pa * 21 GWP (CH₄ / CO₂) * 5 Euro / t CO₂ – adequate * 0.5 (50 Vol % CH₄) - > approx. **1,104,000 Euro pa Income**

Subsequent to the establishment of the first assessment, every operator / customer knows the respective range of saved CO₂ emissions. He will thus be able to recognize at a relatively early stage whether or not the project will be profitable.

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