Biogas production in agriculture and manure policy

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Biogas production in agriculture: goals/motives

For the farmer:
• produce sustainable energy (gas, electricity, heat) and, by doing so, generate income;
• part of the strategy for improving manure management.

For government/society:
• diversify the (national) sources of (sustainable) energy
  → Dutch ambition: produce 1500 million m³ biogas in 2020 (in about 400 co-digestion installations)
• reduce the emissions of greenhouse gasses
  → meet EU- and international goals
• part of the solution for the manure problem by creating manure with better ‘market potential’ (e.g. better usable, soil improver)
Biogas production in agriculture in practice

• Main technique used: co-digestion of animal manure with other biomass products
• Biomass added: (part of) crops, residues from feed- and food industry
Biogas production in agriculture in practice

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• Possible advantages of co-digestion: increase the amount of biogas produced

• Possible problems with co-digestion:
  • risk of contamination of digestate with unwanted substances → risk contamination of soil and water
  • sustainability of co-digesting scarce resource (food-feed-fuel) ?
  • adding biomass → adding extra phosphorus and nitrogen in a situation (like in NL) with already surplus
goals fertilizer/manure policy and biogas production

Policy goals:

• General goal for fertilizer/manure policy:
  satisfactory water quality for nitrates and phosphates

• Specific goal for digestate used as fertiliser:
  prevent pollution of agricultural soils (and water) with harmful substances

Problems:

• General: large surplus of animal manure in NL → disposal of manure increases costs for farmers

• Specific for co-digestion: temptation of using co-digestion as waste disposal opportunity → risk of pollution of agricultural soils
Limiting conditions for co-digestion

Policy:

⇒ If digestate contains >50% manure and added biomass is on ‘positive list’ → digestate is considered fertilizer (manure) and can be used as such.

⇒ All other options → digestate is considered waste → higher costs of disposal for the farmer!

Government authorisation of co materials (‘positive list’),
criteria (among others):

• possible negative effects in the environment (e.g. maximum levels for heavy metals and organic micro pollutions);
• Energetic value
• Agronomic value
Discussion on present policy on co-digestion

Complaints:

• list of authorised co materials (‘positive list’) too limited;

• procedure of getting co materials on ‘positive list’ is too elaborate:
  ➢ costs of testing procedure for specific (kind of) co-material paid by first applicant; benefits are for all users of the specific product → slows down the availability of new products on ‘positive list’
  ➢ authorisation criteria too strict

• no European level playing field: procedures and outcomes differ in Europe.
Possible solutions
(work in progress, as communicated with parliament):

• Short term:
  ➢ Extend the number of co-materials on positive list

• Longer term: change in authorisation system?
  ➢ Evaluation of alternative systems (incl. experiences in surrounding countries):
    ➢ alternative approaches: authorisation based on control on ‘input’, ‘throughput’, ‘output’ or a combination of these;
    ➢ more important role for business in control?
  ➢ Most important aspect in evaluation remains: environmental risks
Challenges for the future

• Systems of self-regulation by business: guarantee minimum quality (learn from food and feed industry)
  → develop and implement quality management systems
  → civil liability arrangements

• Improve techniques and management: optimise production, quality and use of all products of co-digestion (gas, warmth and digestate)

• Further development of (mini) mono-digestion installations: possible advantages: only manure, and only from own farm; smaller investment

• Cooperation between developers, producers and users of techniques and products
Conclusions

• Dutch government pursues several goals in relation to biogas production in agriculture:
  - increase production of sustainable energy;
  - clean soil, clean water, clean air.

• (Co)digestion in agriculture can be a very sustainable way of producing energy, profitable for farmers and the environment

• Dutch government re-thinks its system of authorising co-materials for digestion with animal manure

• An active role of business in further developing biogas production in agriculture essential for reaching all goals at once
Thank you for your attention!