

EUROPEAN PARLIAMENT

2004



2009

Committee on Agriculture and Rural Development

2007/2107(INI)

29.11.2007

DRAFT REPORT

on Sustainable Agriculture and Biogas: a need for review of EU-legislation
(2007/2107(INI))

Committee on Agriculture and Rural Development

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(*) Procedure with associated committees - Rule 47 of the Rules of Procedure

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MOTION FOR A EUROPEAN PARLIAMENT RESOLUTION

on Sustainable Agriculture and Biogas: a need for review of EU-legislation (2007/2107(INI))

The European Parliament,

- having regard to the Commission Communication of 7 December 2005 on the 'Biomass action plan' (COM(2005)0628),
- having regard to the Commission Communication of 10 January 2007 on 'Renewable Energy Road Map - Renewable energies in the 21st century: building a more sustainable future' (COM(2006)0848),
- having regard to the Commission Communication of 26 November 1997 on 'Energy for the future: renewable sources of energy - White Paper for a Community Strategy and Action Plan' (COM(1997)0599),
- having regard to Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market¹,
- having regard to the Commission Communication of 26 May 2004 on 'The share of renewable energy in the EU - Commission Report in accordance with Article 3 of Directive 2001/77/EC, evaluation of the effect of legislative instruments and other Community policies on the development of the contribution of renewable energy sources in the EU and proposals for concrete actions' (COM(2004)0366),
- having regard to the Commission's 'Intelligent Energy - Europe' Programme² and its Communication of 8 February 2006 on EU Strategy for Biofuels' (COM(2006)0034),
- having regard to Directive 2003/30/EC of the European Parliament and of the Council of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport³,
- having regard to Council Regulation (EC) No 1782/2003 of 29 September 2003 establishing common rules for direct support schemes under the common agricultural policy and establishing certain support schemes for farmers⁴ and Council Regulation (EC) No 1698/2005 of 20 September 2005 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD)⁵,

¹ OJ L 283, 27.10.2001, p. 33.

² Decision No 1230/2003/EC of the European Parliament and of the Council of 26 June 2003 adopting a multiannual programme for action in the field of energy: "Intelligent Energy — Europe" (2003 — 2006), OJ L 176, 15.07.2003, p. 29.

³ OJ L 123, 17.5.2003, p. 42.

⁴ OJ L 270, 21.10.2003, p. 1.

⁵ OJ L 277, 21.10.2005, p. 1

- having regard to Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol¹,
 - having regard to Council Directive 2003/96/EC of 27 October 2003 on restructuring the Community framework for the taxation of energy products and electricity²,
 - having regard to its resolution of 29 September 2005 on the share of renewable energy in the EU and proposals for concrete actions³,
 - having regard to its resolution of 23 March 2006 on promotion of crops for non-food purposes⁴,
 - having regard to Rule 45 of its Rules of Procedure,
 - having regard to the report of its Committee on Agriculture and Rural Development and the opinions of the Committee on Industry, Research and Energy and Committee on Environment (A6-0000/2007),
- A. whereas the White Paper for a Community Strategy and Action Plan on Energy for the future - renewable sources of energy (COM(1997)0599) sets the target of increasing renewable energy resources from 6% in 1995 to 12% by 2010,
- B. whereas the Commission stated in its 'Biomass Action Plan' that to achieve this goal, the contribution of energy from biomass would need to more than double,
- C. whereas agriculture and forestry in the EU have substantially contributed to mitigate the effects of climate change as greenhouse gas emissions from agriculture fell between 1990 and 2004 by 10 per cent in the EU-15 and by 14% in the EU-25, whereas it is expected that by 2010 emissions from European agriculture will be 16 per cent below their 1990 level,
- D. whereas there is a large potential for a significant rise in biogas-production, particularly looking at potential contributions from livestock-production (manure), sludge, waste, and plants unsuitable for food- and feed-production as preferred biogas-materials,
- E. whereas so far only 50 PJ of biogas are produced on the basis of manure, energy plants, sludge and organic waste, while the potential from manure alone is 827 PJ,
- F. whereas the production of biogas and biogas-installation are unevenly distributed in Europe, further demonstrating that the potential is not used to its full extent,

¹ OJ L 49, 19.2.2004, p. 1.

² OJ L 283, 31.10.2003, p. 51.

³ OJ C 227E, 21.9.2006, p. 524.

⁴ GU C 292E, 1.12.2006, p. 140.

- G. whereas biogas can be exploited in many useful ways, including electricity production, heating cooling and, fuelling cars, etc.,
- H. whereas the use of biomass for electricity has one of the greatest greenhouse-benefits and its use in heating is considered one of the cheapest,
- I. whereas the development of biogas installations based on energy plants has considerably slowed down, due to fast rising grain prices, food supply and environmental concerns,
- J. whereas concerns in relation to the connection between bioenergy (primarily bioethanol and biodiesel) production and rising grain and food prices on the world market are not relevant to biogas production based on animal manure, sludge, organic waste and crop by-products unsuitable for food- and feed-production in addition to the fact that the safe processing of these materials is a necessary task anyway,
- K. whereas manure in the new Member States is mainly in the mixed form of 20% or more straw and prolonged times between manure production and manure removal, which is not fit for any fermentation form,

Biogas as a vital resource

- 1. Acknowledges biogas as a vital energy resource that contributes to sustainable economic, agricultural and rural development and environmental protection;
- 2. Encourages both the European Union and the Member States to exploit the huge potential in biogas by creating a favourable environment as well as maintaining and developing support schemes to inspire investment in and sustenance of biogas plants;

Environment, Energy-Efficiency, Sustainability

- 3. Emphasizes that biogas from manure does have numerous environmental advantages, such as the reduction of methane and CO₂-emissions, reduction of emissions of particulate matter and nitrous oxides, far less obnoxious odour, hygienisation of slurry and better fertilizing capacity of the nitrogen in the treated manure, meaning less nitrogen is needed to reach the same fertilizing effect;
- 4. Stresses that animal manure, municipal sewage and agro-industrial waste can contain substances (bacteria, viruses, parasites, heavy metals, harmful organic substances) that can potentially be a threat to public health or the environment; urges the Commission to ensure that adequate precautions are taken to avoid contamination and spreading of these substances and any diseases they induce;
- 5. States that the use of sludge and animal or organic waste will improve efficiency of biogas installations; states that hygienic problems in case of use of animal waste can in most cases be comparatively easily controlled;

6. Stresses, that technical and management developments are expected in the near future that will further increase environmental and health benefits of biogas plants using manure, slurry and organic waste;
7. Believes that these environmental benefits may also lead to greater acceptance of animal holdings, which encounter many problems due to an increased number of complaints from neighbours and the general public;
8. Points out that biogas installation on the basis of manure, sludge or organic waste may lead to higher rates of leaching of ammonia, but states that this side effect can be contained relatively easily and preventive measures ought to be integrated into national laws concerning biogas installations as well as into aid grants for biogas installations;

Economic viability and support schemes,

9. Reiterates that all financial support for biogas installations ought to be based on the efficiency, technical development and positive greenhouse-gas balance, added value in the rural regions and other economic and environmental advantages of installations;
10. Emphasizes that biogas production based on animal manure, sludge and animal and organic wastes should be prioritized as the sustainability and environmental benefits of these methods are unequivocal;
11. Notes that the optimal size of a biogas plant depends on various circumstances determining the economics of scale, that should be thoroughly studied;
12. Stresses that as a precondition to enable biogas production, support should be given to the expensive renewal of stables in order to prohibit straw entering in the manure line and daily removal where this is necessary;
13. Stresses that it would be best for biogas plant operators to combine and use all available organic matters both from an environmental and economic aspect;
14. States that funding for solely plant-based biogas installations needs to be continued under careful monitoring and re-focusing on the most advanced and efficient plants or systems to ensure Europe's economic and technical advantage in the field and explore options for the future;
15. Asks the Commission to report how criteria on economic and environmental efficiency and sustainability can be introduced for energy crops leading to this relatively new technique being more environmentally friendly, and ensuring the food production and supply concerns are properly addressed,
16. Reminds Member States and Commission that a further advancement of biogas is not possible without additional funding; recalls that funding needs to go to research and development, promotion of results from specific projects to installations and to the higher support of 'green-electricity' and 'green gas';

17. Recalls that those Member States that are giving extra incentives to 'green energy' by sufficient price-subsidies or other measures do also have the largest success in promoting biogas;
18. Considers that 'green gas' production should be subsidized in the same way as 'green electricity';
19. Demands that the Commission and Member States ensure that funds from European and national programmes go to the most efficient and sustainable installations, especially towards installations that produce electricity and heat or to the installation of facilities and grids for upgrading and feeding biogas into the natural gas network;
20. Believes that simplification of the procedures for trade with CO₂ can significantly contribute to the economic viability and sustainability of biogas plants;
21. Stresses that biogas installations may assist farmers who do not yet have enough storage capacity for manure to solve this problem in an economic viable manner;
22. Asks the Commission and the Member States to ensure, that the setting up of biogas plants as well as the authorization of the use of organic waste and sludge is not impeded by unnecessarily lengthy bureaucratic procedures and regulations;
23. Encourages farmers to co-operate in setting up and operating biogas plants;

The need for review in EU-legislation

24. Demands that the Commission and Member States develop a coherent biogas-policy; asks the Commission to present a specific report on biogas and its promotion in Europe outlining the necessary changes in European and national laws to facilitate further expansion of the biogas sector, pointing out the most efficient ways of using European funds and programmes as well as giving best practice examples;
25. Promotes the adoption of an EU-directive on biogas production that should include the following elements:
 - a) Specific targets for the agricultural biogas share within the target for renewable energy production, for instance in the form of the share of the livestock manure that is digested, and considering the agricultural conditions and situation in the Member States,
 - b) Annual statistics and reports on agricultural biogas production in order to be able to follow up on the targets,
 - c) Measures for construction and promotion of biogas-installations based on a national or regional impact evaluation, promoting those installations that have nationally and/or regionally the largest benefits for the environment and are economic sustainable; measures for dissemination and promotion of results gained from prior experiences or demonstration projects need to be included in all plans; if regional and rural development regulation do not allow to fund those measures, the regulations need to be changed,

- d) EU Member States should adopt national and regional planning in order to restrict legal and administrative hindrances, for instance natural gas or other fossil fuels should not have preference in areas that are feasible for selling heat from biogas to district heating,
 - e) Recommendations for the minimum level and yearly adjustment mechanism of payments for 'green-electricity' and 'green gas', which should be set high enough in order to ensure the necessary incentive to invest into biogas plants. Part of the payment could be ensured via Green Certificates;
26. Urges the Commission to present as soon as possible a proposal for a biowaste directive, including quality standards; invites the Commission to explore the possibility for a joint biogas and biowaste directive;
 27. Asks the Commission to present proposals for legislation on the use of residues from biogas installations; asks the Commission to ensure that the organic material used in biogas installations does not prohibit the use of residues; asks the Commission to consider a ban of growth enhancers in animal feed containing heavy metals if this should prove to be a Europe-wide problem for later use of biogas residues on fields;
 28. Asks the Commission to ensure that the IPPC Directive, Nitrates Directives, Sewage Sludge Directive, Water Framework Directive, Birds directive, Habitats Directive and the Heavy Metals legislation are effectively enforced in all Member States and regions, thereby making biogas installation based on manure and sludge more attractive;
 29. Demands that the Commission present as soon as possible a strategy to include biogas installations into the Kyoto-mechanism, for example through green-certificates, special premiums or tax-credits for electricity and heat from biogas-installation or other measures; points out that this would advance cost-efficiency of biogas installations and at the same time make efforts of agriculture on climate change more transparent;
 30. Asks the Commission to foster the feeding of biogas into natural gas networks by way of recommendations or a directive;
 31. Asks the Commission to present as soon as possible its proposals for further enhancing the use of animal and agricultural crop by-products for biogas as announced in the 'Biomass action plan';
 32. Demands that Member States that have foreseen no measures or not enough measures in existing national development programmes ought to include biogas in their mid-term evaluation of existing rural and regional development programmes and propose actions for the future;
 33. Asks the Commission to present a coherent report on European biogas production to the European Parliament by 15 December 2008 at the latest taking into account the abovementioned proposals and the progress made;
 34. Instructs its President to forward this resolution to the Council and Commission, and to the national parliaments and governments of the Member States.

EXPLANATORY STATEMENT

The environmental and economic advantages of biogas

I. General characteristics of biogas production in the European Union

In this period of exploding oil prices, of increasing natural gas prices, and of considerable energy-import dependence more and more countries are setting up incentive legislations to valorise the energy potential of biogas, that resembles and can substitute natural gas (biogas contains between 55% and 65% methane).

Biogas produced in integrated agricultural plants plays an important role among the bioenergy resources and can be used as a universal energy source. After increasing methane-concentration purified biogas can be used to propel mechanical output, and through that electricity (lighting of buildings and animal husbandry sites); burning the biogas produces heat usable for heating and drying (plastic houses, greenhouses, corn, piggery heating, public facilities). Biogas can also be used for fuelling cooling machines (refrigerators), or for fuel-cells. Upgraded and pressurized biogas can be used as biofuel suitable for running road vehicles. Biogas gathered from one hectare of biomass is twice as effective as biodiesel.

Today there are some 4,242 farm-scale and around 26 centralized biogas plants in the EU, but with wide differences from one EU member state to another. Biogas production is most developed in Germany, Belgium, Austria and Denmark. In most countries farm scale biogas plants are predominant, but Denmark has the largest share of its production on centralized biogas plants. The annual biogas production from agricultural biogas plants in Europe by mid 2007 is estimated at 1.85×10^9 m³ of biogas (containing 65% methane). The potential for biogas production based on manure in the EU is 827 PJ (Petajoule) whereas today some about 50 PJ is produced from both animal manure, energy crops and organic waste. This means that there is a potential of a 14 times increase in the animal manure only.

II. Environmental aspects

Biogas from manure does have numerous environmental advantages, like reduction of methane and CO₂-emissions, reduction of emissions of particulate matter and nitrous oxides, far less obnoxious odour, hygienisation of slurry and far better fertilizing capacity of the nitrogen in the treated manure, meaning less nitrogen is needed to reach the same fertilizing effect.

Production of biogas (and thus methane) in a closed, controlled system like a biogas plant – and the subsequent utilization of the biogas as renewable energy source through combustion – has a very positive effect on the "green house emission account". Under normal circumstances there will be a considerable methane emission from storage and application of animal manure; by collecting the biogas through biogas installations, the total methane emission from agriculture will be reduced compared to a 'no biogas plants' scenario. By converting the methane into energy and carbon dioxide through combustion, there is a 'reverse' input to the green house effect account, because CO₂ is by far less harmful than methane, and because the

energy from the biogas combustion replaces fossil energy sources.

CO₂-emissions from renewable energy sources (like combustion of straw, wood and biogas) are considered neutral, because the same amounts of CO₂ which are emitted upon combustion have basically been assimilated by green plants in the first place to produce the biomass.

Hydrogen sulphide (H₂S) is probably the substance in biogas which is given most focus, when talking about potential hazards. Different methods can be used to reduce the concentration of H₂S in the biogas; either the biogas is cleaned itself, for instance in a scrubber, or a small amount (approximately four percent) of fresh air is added to the biogas in a tank - for instance a covered, gas-tight slurry storage tank - where bacteria at the surface of the slurry take up the H₂S. A further advantage of this is that the sulphur remains in the slurry for later plant nutrition.

Other substances may be present in small amounts in the biogas. Nitrogen (N₂) and oxygen (O₂) may be present in concentrations up to a couple of percent (this would typically be the case if fresh air is added to the biogas for desulphurization), but these gasses are obviously not an environmental hazard. Hydrogen (H₂) may also be present in small amounts, but will be eliminated during combustion. Two potentially hazardous gasses, carbon monoxide (CO) and ammonia (NH₃) may also be present in trace amounts, but given a safe and controlled combustion process, CO is completely eliminated. Amount of ammonia is negligible compared to the potential for reduction of nitrogen to the environment resulting from the improved utilization of the bio fertilizer compared to untreated slurry.

So in general, if leak of biogas from the installations is prevented effectively, and if the combustion of the biogas is carried out under optimal conditions the overall effects on emissions from converting organic biomass to biogas through anaerobic digestion are absolutely positive. Not only by reducing CO₂-emissions from using fossil fuel, but also by a net reduction in other emissions (methane etc.) from animal manure etc. compared to a situation without a biogas plant

III. Energy aspects and the need for EU and national support

Biogas output from animal fertilizers is rather low (40-90 m³/t (cubic meters per tons), much higher from cereals (170-220 m³/t), and even higher from food-industrial materials (primarily slaughterhouse by-products and waste (250-480 m³/t). Combining different biogas raw materials a minimum output of 120 m³/t is desirable. Animal manure processing and biogas technologies contain joint elements, therefore it is advisable to link the support for setting up biogas plants to animal manure processing, but also using other raw materials like organic waste or non-food energy crops. The co-digestion units are capable of treating different types of waste at the same time, principally liquid and solid manures mixed with diverse organic waste.

Biogas production's profitability is negative both in the case of farm-scale biogas plants centralised plants. Revenues include value of the biogas itself in the form of heat and electricity and value of increased field effect of nitrogen in livestock manure. Larger biogas plants that receive external biomass have the possibility for additional income from fertiliser value of N, P and K, value of "gate fees", and value of CO₂e reduction. In some EU member states biogas plants have the possibility to generate income from sale of Green Certificates. On the cost side the investment and operational costs are both considerable.

Profitability and competitiveness of a biogas plant is mainly determined by the selling price of the produced electricity (usually set by the state). In Hungary for example the green-electricity price is set at 0,09 EUR per kWh (kilowatt per hour) for all renewable energy sources, whereas in Germany - with the possible bonuses - it amounts to around 0,2 EUR per kWh - twice as much as in Hungary, while the electricity wholesale prices are almost the same. The selling price set by the state is therefore in many cases insufficient for the sustainability of the biogas production.

The analyses show that the value of the CO₂e could almost bring the economy of farm-scale plants in balance, and cover around half of the economic loss for the centralised plants. Removal of the transition costs for trade with CO₂e would not only benefit the profitability of the biogas production, but also the national accounts for the CO₂e production.

Nevertheless, negative profitability clearly shows that biogas production is not viable without considerable support from both European and national financial resources. Investments should be encouraged by various measures, including regional and rural development EU-funds. The key factor is, however the 'green-electricity' price set by the state, which should be sufficient to ensure sustainability and act as a real incentive. However, these European and national resources should be spent wisely. All financial support for biogas installations ought to be based on the efficiency, technical development and positive greenhouse-gas balance and other environmental advantages of installations.

IV. A need for a new biogas directive and review of legislation

EU as well as national legislation has to be revised in order to facilitate the setting-up and operation of biogas plants across the EU:

- First and foremost, an EU-directive on biogas production is needed, with specific targets for the agricultural biogas share within the target for renewable energy production, statistical elements, measures for construction and promotion of biogas-installations based on a national or regional impact evaluation, measures for dissemination and promotion of results gained from prior experiences, call for national and regional planning in order to restrict legal and administrative hindrances, and recommendations for the minimum level and yearly adjustment mechanism of payment for 'green-electricity' and 'green gas'.
- The legislation on the use of residues from biogas installations should be revised.
- A ban should be considered on using growth enhancers in animal feed containing heavy metals if this should be a European wide problem for later use of biogas residues on fields.
- The effective enforcement of the IPPC and Nitrates Directives are crucial, along with the Sewage Sludge Directive, Water Framework Directive, Birds directive, Habitats Directive and the Heavy Metals legislation.
- A strategy is needed to include biogas installations into the Kyoto-mechanism.
- EU-wide legislation is needed to ensure that biogas - upgraded to natural gas quality - can be fed into the natural gas network.
- Proposals are needed for further enhancing the use of animal by-products for biogas as announced in the 'Biomass action plan',
- Member States should include biogas in their mid-term evaluation of existing rural and regional development programmes and propose actions for the future. Rural Development

strategies, including LEADER projects should contain development scenarios for biomass and biogas utilities;

- The Commission should present a coherent report on European biogas production to the European Parliament until 15 December 2008 taking into account the above mentioned proposals and the progress made;
- Efforts should be made to fund research, development and demonstration.

The draft was also discussed with independent experts and Member States administrations who have helped immensely to clarify up certain aspects of a future biogas-policy.