



### Legislative framework

<b>Country:</b>	Denmark
<b>Date start:</b>	December 2016
<b>Date finished:</b>	January 2017

### Substrate regulations

			Explain restrictions and/or exceptions	Source of information
<b>Animal byproducts (ABP)</b>	<i>Does the country apply ABP-legislation?</i>	YES/ <del>NO</del>		(EU) 142/2011 (EF) 1069/2009
<b>Waste water treatment plants</b>	<i>Is this material allowed in biogas production?</i>	YES/ <del>NO</del>		
	<i>If yes, are there any restrictions to spreading the digestate from that production?</i>	YES/ <del>NO</del>	BEK No. 1650 (Sludge order, 2006) regulates the agricultural use of the main types of biodegradable wastes (e.g. sewage sludge, compost, digestate) and provides limit values for content of heavy metals and organic contaminants. BEK No. 49 refers to soil quality criteria e.g. maximum level of heavy metals	Statutory Order nr 1650 (13/12/2006) Statutory Order nr 49 (20/01/2000)
<b>Agricultural materials (not included in ABP)</b>	<i>Are there any restrictions for this material?</i>	YES/ <del>NO</del>	To ensure the climate benefits of biogas production, a maximum amount of 25 % energy crops is allowed as substrate in AD plants 2015-2017. The percentage is reduced to 12 % 2018-2020. [14]	The Energy Agreement 2012
<b>Bio-waste / organic waste material (not included in ABP)</b>	<i>Are there any restrictions for this material?</i>	YES/ <del>NO</del>		The Sludge Order Directive 2008/98/EC on waste (Waste



				Framework Directive)
<b>Monitoring</b>	<i>Who takes care of the monitoring of these regulations?</i>	Information not found		

### Alternative handling

				Explain restrictions and/or exceptions			Source of information
<b>What alternative handling processes are allowed?</b>	x	<i>Composting</i>	x	<i>Combustion</i>		<i>Landfilling</i>	
	<i>Another?</i>						
<b>Regulations</b>	<i>Are there regulations to reduce the incentive of alternative handling? (ex. no organics allowed in landfills)</i>			YES/ <del>NO</del>	There is a ban on organic waste in landfills. There are also taxes on landfilling. [10]		

### Building regulations

			Explain restrictions and/or exceptions	Source of information
<b>Guidelines</b>	<i>Are there any documents of guidelines for construction of biogas plants?</i>		YES/ <del>NO</del>	[16]
	<i>If yes, Are they widely used?</i>		YES/NO	Information not found
	<i>Are there any documents of guidelines for the construction of systems for the produced gas? (Security, upgrading, gas pipelines etc.)</i>		YES/ <del>NO</del>	Danish Working Environment Authority [15]
<b>Permission process</b>	<i>Is the permission process for small and medium scale biogas plants easier/faster?</i>		YES/ <del>NO</del>	If the building of a biogas plant does not include changes to the County Design Plan, no additional Environmental Evaluation has to be concluded. Smaller plants are neither



			covered by the Environmental protection Law, which also makes the permission process easier. (See next question.) [13]	
	<i>Describe the process:</i>	<p><b><u>Project description and Environmental Impact Assessment (EIA)</u></b></p> <p>The biogas company sends a detailed description of the project. As an appendix a screening form included in the EIA decree can be attached. The county administration decides, based on this description and possibly the screening, if a proper EIA is required. [13]</p> <p><b><u>Environmental Evaluation &amp; County Design Plan Additions</u></b></p> <p>If changes has to be made to the County Design Plan, the county administration has to develop a County Design Plan Addition which includes an environmental evaluation. This evaluation is similar to the EIA and they may be concluded at the same time. A building plan does also have to be developed. [13]</p> <p><b><u>Environmental Protection Law</u></b></p> <p>Plants with a capacity of more than 30 tonnes biomass per day are covered by the Environmental Protection Law and has to gain an environmental approval from the County Administration. [13]</p> <p><b><u>Emergency Management Order</u></b></p> <p>Shared plants that store more than 10 tonnes of biogas are covered by the Emergency Management Order.[13]</p>	<p>Legislation authorities take into consideration: County Design Law</p> <p>Environmental Protection Law</p> <p>By-products regulation</p> <p>Tentering legislation Supply Directive</p> <p>Emergency Management Order</p>	

### Handling of products

		Explain restrictions and/or exceptions	Source of information
<b>Digestate</b>	<i>Are there any regulations for the spreading of digestate from biomethane</i>	YES/NO Not specific for digestate, BEK No. 1650 (Sludge order, 2006) regulates the agricultural use	Statutory Order nr 1650 (13/12/2006)



	<i>production?</i>		of the main types of biodegradable wastes (e.g. sewage sludge, compost, digestate) and provides limit values for content of heavy metals and organic contaminants. BEK No. 49 refers to soil quality criteria e.g. maximum level of heavy metals	Statutory Order nr 49 (20/01/2000) [17]
	<i>Are there any regulations for transporting of digestate from biomethane production?</i>	YES/NO	Information not found	
	<i>Is there a system for certification of digestate from biomethane production?</i>	YES/NO	The biogas plant providing digestate must be registered at the Danish Agrifish Agency and the amounts delivered and received registered. The digestate has to be analysed by a certified laboratory.	VEJLEDNING OM GØDSKNINGS- OG HARMONIREGLER Planperioden 1. august 2016 til 31. juli 2017
<b>Electricity</b>	<i>Do you need permission to sell the electricity on the grid?</i>	YES/NO	Information not found	
<b>Heat</b>	<i>Are there regulations for selling heat?</i>	YES/NO	The County Administration is obliged to accept applications for projects concerning heat supply for house and water heating. The economically most favourable projects are chosen. The method of production, incoming substrate and substrate consumption are also taken into consideration. [14]	Heat Supply Act
<b>Biomethane</b>	<i>Is there a standard for using biomethane in vehicles?</i>	YES/NO	For a gas fuel to be recognized as renewable in the transport sector and hence be used as a biofuel according to the Act on Sustainable Biofuels (see question on “support for biomethane as a vehicle fuel”), the biogas must meet requirements stated in the Renewable Energy Act. This	the Act on Sustainable Biofuels  Renewable Energy Act



			involves requirements on traceability, sustainability, CO2 reduction etc. There are three voluntary certification schemes to guarantee this [6]: 1. ISCC 2. RED-Cert 3. NTA8080	
	<i>Is there a standard for injecting biomethane into the grid?</i>	YES/NO	Owners of upgrading facilities must follow both the Regulations concerning Injection of Biomethane into the Danish Gas Grid (Regulations for Biogas) and also the obligations stated by the grid owner. This involves requirements on quality, pressure, temperature etc. [7]	Regulations concerning Injection of Biomethane into the Danish Gas Grid (Regulations for Biogas)
	<i>Is there a permission process for selling standardized biomethane?</i>	YES/NO	To become a seller on the gas market you need to conclude a number of agreements [9]: <ul style="list-style-type: none"> <li>• A framework agreement with Energinet.dk and thus become registered as a biogas seller</li> <li>• An agreement on access to Energinet.dk online</li> <li>• A contract with a shipper for transmission on the gas grid</li> </ul>	

## Environmental goals

		Explain restrictions and/or exceptions	Source of information
<b>Climate</b>	<i>What are the overall goals for reducing greenhouse gas emissions?</i>	<p>The greenhouse gas emissions should be reduced by 40 % by 2020 compared to the levels of 1990. [11]</p> <p>The goal is to be independent of fossil fuels by 2050. [10]</p> <p>It is expected that 60 % of the organic waste from restaurants, food shops etc. will be collected and exploited for biogas in 2018.</p>	<p>Renewable Energy Act</p> <p>Energy Strategy 2050</p>



		[10]		
	<i>Are there goals for reducing the use of fossil fuels in the transport sector?</i>	The goal is to have renewables stand for 10 % of the energy consumption in the transport sector in 2020. [12]		Renewable Energy Act
<b>Eutrophication</b>	<i>Are there goals for reducing eutrophication due to leakage of nutrients from digestate spreading?</i>	YES/NO	Not specifically. There is a Agreement on the Action Plan for the Aquatic Environment III 2005-2015 t	[19]
	<i>If yes, how does this reflect in the legislation on spreading of digestate?</i>			

## Economic framework

		<b>Explain restrictions and/or exceptions</b>		<b>Source of information</b>
<b>Investment</b>	<i>Are there subsidies that cover a part of the investment costs?</i>	YES/NO	Improved financial support for the biogas sector was adopted and approved by the EC at the end of 2013. The support cannot be overlapped (e.g. cannot be received by the same plant for both investment costs and for operation costs).  It is also possible to apply for investment grants for plants digesting mainly manure.	[18]
	<i>If yes, how big is it and where do you apply for it?</i>			
	<i>If yes, is the support larger for small and medium scale plants?</i>	YES/NO	Information not available	
	<i>Are there other ways of financing the investment, special loans for this application?</i>	YES/NO	Kommunekredit, The credit institution for local and regional authorities in Denmark, can finance AD plants that will deliver heat to district heating.	



			[14] Energy and supply companies can be co-investors or take responsibility for product development when building an AD plant. [14]	
<b>Electricity</b>	<i>Is there a feed-in tariff system for electricity produced of biomethane?</i>	YES/NO	A CHP plant can receive grants for the electricity generated from biogas. <ul style="list-style-type: none"> <li>Plants that use biogas with a methane percentage of 94 % and higher are entitled a feed-in tariff (fixed price).</li> <li>Plants that use biogas with a methane percentage of 93 % or lower are entitled a subsidy on top of the spot price received on the market. [2]</li> </ul>	Order of 25th November 2013 on Renewable Energy Act  The Energy Agreement 2012
	<i>If yes, how is the price determined?</i>		The size of the feed-in tariff and the subsidies are regulated on an annual basis. Sizes 2016: <ul style="list-style-type: none"> <li>The feed-in tariff was 81.4 DKKøre/kWh</li> <li>The subsidy for 93% or lower methane percentage plants was 44.2 DKKøre/kWh [2]</li> </ul>	
	<i>Is there any other support for producing electricity from biomethane?</i>	YES/NO	Two additional subsidies are granted CHP biogas plants for the produced electricity. <ol style="list-style-type: none"> <li>One is regulated according to the price on natural gas and was 33,6 DKKøre/kWh in 2016.</li> <li>The second is reduced with 2 DKKøre/kWh per year and was in 2016 8 DKKøre/kWh. [2]</li> </ol>	Order of 25th November 2013 on Renewable Energy Act  The Energy Agreement 2012
<b>Heat</b>	<i>Is there a feed-in tariff system for heat produced of biomethane?</i>	YES/NO	Not a feed-in tariff, but a subsidy. See question on “other support system” further down.	
	<i>If yes, how is the price determined?</i>			



	<i>Is there any other support for producing heat from biomethane?</i>	YES/NO	Biogas used for heat production is eligible for a subsidy which was 41 DKK/GJ lower heating value 2016. [3]  It is allowed to favour biogas as substrate when producing district heating if the price does not considerably differ from alternative substrates. [14]	The Renewable Energy Act 1 <sup>st</sup> July 2016
<b>Biomethane</b>	<i>Is there a feed-in- tariff system for injecting biomethane into the grid?</i>	YES/NO	Not a feed-in tariff, but a subsidy. See question on “other support system” further down.	
	<i>If yes, how is the price determined?</i>			
	<i>Is there any support for producing/selling/buying biomethane as a vehicle fuel?</i>	YES/NO	It is stated in the Act of Sustainable Biofuels that every producer or importer of petrol and diesel has to make sure that at least 5.74 % of their fuel come from renewable sources. The voluntary certification schemes guaranteeing sustainability are previously described. (The percentage is expected to be increased to 10 %.) [12]  The Renewable Energy Act subsidizes the sale of biogas directly used as a vehicle fuel. The subsidy is given to sellers of biogas to end users or retailers (filling stations). It is a requirement that the biogas is sold directly to transport, without an intermediary. The subsidy was 80 DKK/GJ lower heating value 2016. [3]	The Act of Sustainable Biofuels  The Renewable Energy Act 1 <sup>st</sup> July 2016
	<i>Are there taxes on fossil fuels?</i>	YES/NO	There are several laws regulating the taxes of fossil fuels. Energy tax and CO2 tax are two of them.	Law concerning tax on mineral oil products etc.  Law concerning





				<p>tax on natural gas and town gas</p> <p>Law concerning tax on coal, lignite and coke etc.</p>
	<p><i>Are there demands or support for making biomethane available at filling stations?</i></p>	<p>YES/NO</p>	<p>Information not found</p>	
	<p><i>Are there any other support systems for biomethane as a vehicle fuel, or biofuels in general?</i></p>	<p>YES/NO</p>	<p><b><u>Subsidies for upgraded biogas</u></b>            You can get subsidies for upgraded biogas in two ways.</p> <ul style="list-style-type: none"> <li>• If you own an upgrading plant which delivers biogas to the natural gas grid.</li> <li>• If you own a biogas cleaning plant (that inter alia removes water vapour and sulphur) which delivers biogas to the town gas grid.</li> </ul> <p>In 2016 the subsidy was in total 0.441 DKK/kWh. [1]</p> <p><b><u>Biomethane certificates</u></b>            For every MWh of biomethane a biogas producer produces that is injected into the gas grid, the biogas producer is awarded one Biomethane Certificate (Bionaturgascertifikatet). These certificates can be traded on an open market to end users of gas and makes it possible see where the biomethane is used. [8]</p> <p><b><u>Subsidy for biogas in industrial processes</u></b>            Biogas used for process purposes is eligible for a subsidy wich was 80 DKK/GJ lower heating value in 2016.</p>	<p>Act no. 1331 of 25 November 2013</p> <p>Natural Gas Supply Act § 35 d paragraph. 9th</p> <p>The Energy Agreement 2012</p> <p>Order of 1 July 2016</p> <p>The tax laws</p> <p>The Renewable Energy Act 1<sup>st</sup> July 2016</p>



			[3] <b><u>Exemption from energy tax and CO<sub>2</sub> tax</u></b> Energy and CO <sub>2</sub> tax do not have to be payed on biogas. An exception is biomethane that has been injected into the gas grid which is considered statutory natural gas. [5]	
<b>SME's</b>	<i>Is there support for small and medium enterprises?</i>	YES/NO	Information not available	

### Other

The Energy Agreement that was concluded March 22nd 2012, includes a goal of an ambitious expansion of biogas. The Energy Agreement includes plans on improvement of economical conditions for biogas production and on support to the use of biogas outside the cogeneration sector. [1]

## General comments

*The economical incentives for biogas in Denmark are dividen into three categories [3]:*

- *To upgraders or cleaners of biogas*
  - *Subsidy for upgraded biogas injected to the natural gas grid*
  - *Subsidy for cleaned biogas injected to town gas grid*
  - *Biomethane Certificates*
- *To producers of electricity from biogas*
  - *Feed-in tariff for electricity from biogas with 94 % or more methane*
  - *Subsidy for electricity from biogas with 93 % or less methane*
- *To users of biogas*
  - *Subsidy for use as a vehicle fuel*
  - *Subsidy for use in industrial processes*
  - *Subsidy for use in heating*
  - *Energy tax exemption*

*There are 10 gas filling stations in Denmark and additional are on the way.  
[http://www.dgc.dk/sites/default/files/filer/publikationer/gas\\_transport.pdf](http://www.dgc.dk/sites/default/files/filer/publikationer/gas_transport.pdf)*

## References

[1] Regler for Støtte til Opgraderet Biogas og Renset Biogas - Version 1.0 (2013). Energinet.dk. Available at:



<http://energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Gas/Regler%20for%20St%C3%B8tte%20til%20Opgraderet%20Biogas%20og%20Renset%20Biogas%20-%2006122013%20-%20endelig.pdf> (2016-12-16)

[2] Energinet.dk (2016). <http://energinet.dk/DA/El/Biogas/Sider/Biogas.aspx> (2016-12-16)

[3] Energinet.dk (2016). <http://energinet.dk/DA/GAS/biogas/Stoette-til-biogas/Sider/Tilskud-til-biogas.aspx> (2016-12-16)

[4] SKAT (2015). <https://www.skat.dk/skat.aspx?old=2153716&vld=0> (2016-12-16)

[5] Energistyrelsen (2012). <https://ens.dk/ansvarsomraader/bioenergi/stoette-til-biogas> (2016-12-16)

[6] Modelpapir for regler for bionaturgascertifikater I Danmark – Version 1.1 (2016). Energinet.dk. Available at:

<http://energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Gas/Bilag%20%20Modelpapir%20-%20BNGcertifikater%20v1.pdf> (2016-12-16)

[7] Regler for tilførsel af opgraderet Biogas (Bionaturgas) til Det Danske Gassystem (Regler for Bionaturgas) – Version 1.1 (2014). Energinet.dk. Available at:

<http://energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Gas/Regler%20for%20Bionaturgas%2c%20version%201.1.pdf> (2016-12-16)

[8] Modelpapir for regler for bionaturgascertifikater I Danmark (2016). Energinet.dk. Available at:

<http://energinet.dk/SiteCollectionDocuments/Danske%20dokumenter/Gas/Bilag%20%20Modelpapir%20-%20BNGcertifikater%20v1.pdf> (2016-12-16)

*\*A summary of reference 8 is written at:*

<http://energinet.dk/DA/GAS/biogas/Gascertifikater/Sider/default.aspx>

[9] Energinet.dk (2016). <http://energinet.dk/DA/GAS/biogas/Biogas-i-gassystemet/biogas-paa-gasmarkedet/Sider/Biogas-paa-gasmarkedet.aspx> (2016-12-16)

[10] Denmark without waste – Recycle more incinerate less (2013). The Danish Government. Available at: [http://mfvm.dk/fileadmin/user\\_upload/MFVM/Miljoe/Ressourcestrategi\\_UK\\_web.pdf](http://mfvm.dk/fileadmin/user_upload/MFVM/Miljoe/Ressourcestrategi_UK_web.pdf) (2016-12-19)

[11] THE DANISH ENERGY MODEL - Innovative, Efficient and Sustainable (2013). Danish Energy Agency. Available at: <https://stateofgreen.com/files/download/1401> (2016-12-19)

[12] BÆREDYGTIGHEDSCERTIFICERING AF BIOGAS TIL TRANSPORT I DANMARK (2015). Energistyrelsen. Available at: [https://ens.dk/sites/ens.dk/files/Bioenergi/certificering\\_af\\_biogas\\_final\\_3.pdf](https://ens.dk/sites/ens.dk/files/Bioenergi/certificering_af_biogas_final_3.pdf) (2016-12-20)

[13] Kommuneplanlægning for Biogasanlæg (2011). Miljøministeriet. Available at: [http://naturstyrelsen.dk/media/nst/66856/Apropos\\_om\\_Biogas.pdf](http://naturstyrelsen.dk/media/nst/66856/Apropos_om_Biogas.pdf) (2016-12-20)

[14] Biogas i Danmark – status, barrierer og perspektiver (2014). Energistyrelsen. Available at: [https://ens.dk/sites/ens.dk/files/Bioenergi/biogas\\_i\\_danmark\\_-\\_analyse\\_2014-final.pdf](https://ens.dk/sites/ens.dk/files/Bioenergi/biogas_i_danmark_-_analyse_2014-final.pdf) (2016-12-20)



[15] Projektering og drift af biogasanlæg (2002). At-VEJLEDNING. Arbejdstilsynet . Available at: <http://arbejdstilsynet.dk/da/regler/at-vejledninger/p/d-2-7-projektering-og-drift-af-biogasanlaeg#h2capter3>

[16] Tybirk, K. (red.) 2014. Kogebog for etablering af biogas 2014. Agro Business Park/Innovationsnetværket for Biomasse/Implement.

[17] VEJLEDNING OM GØDSKNINGS- OG HARMONIREGLER. Planperioden 1. august 2016 til 31. juli 2017. Miljø- og Fødevareministeriet. Available at: [http://naturerhverv.dk/fileadmin/user\\_upload/NaturErhverv/Filer/Landbrug/Goedningsregnskab/Vejledning\\_om\\_goedsknings-og\\_harmoniregler\\_nyeste.pdf](http://naturerhverv.dk/fileadmin/user_upload/NaturErhverv/Filer/Landbrug/Goedningsregnskab/Vejledning_om_goedsknings-og_harmoniregler_nyeste.pdf)

(18) Task 37 Biogas Country Report Summaries. 2015. Available at <http://task37.ieabioenergy.com/country-reports.html>

[19] Vandmiljøplan III. 2004. Udgivet af Miljøministeriet og Ministeriet for Fødevarer, Landbrug og Fiskeri. In Danish <http://www2.sns.dk/udgivelser/pdf/vandmiljoeoplan.pdf>. English translation available here: [http://www.vmp3.dk/Files/Filer/English%20version/engelsk\\_oversaettelse.pdf](http://www.vmp3.dk/Files/Filer/English%20version/engelsk_oversaettelse.pdf)