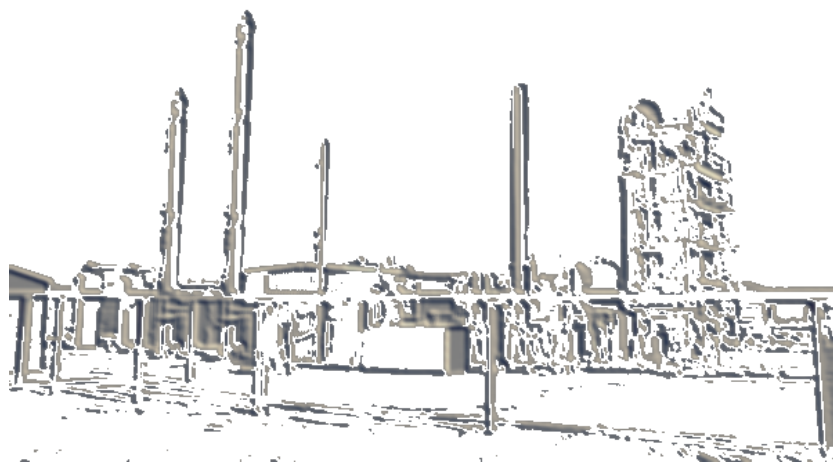


AGRO INDUSTRIES A/S

Business Plan

Farmers Gasoline

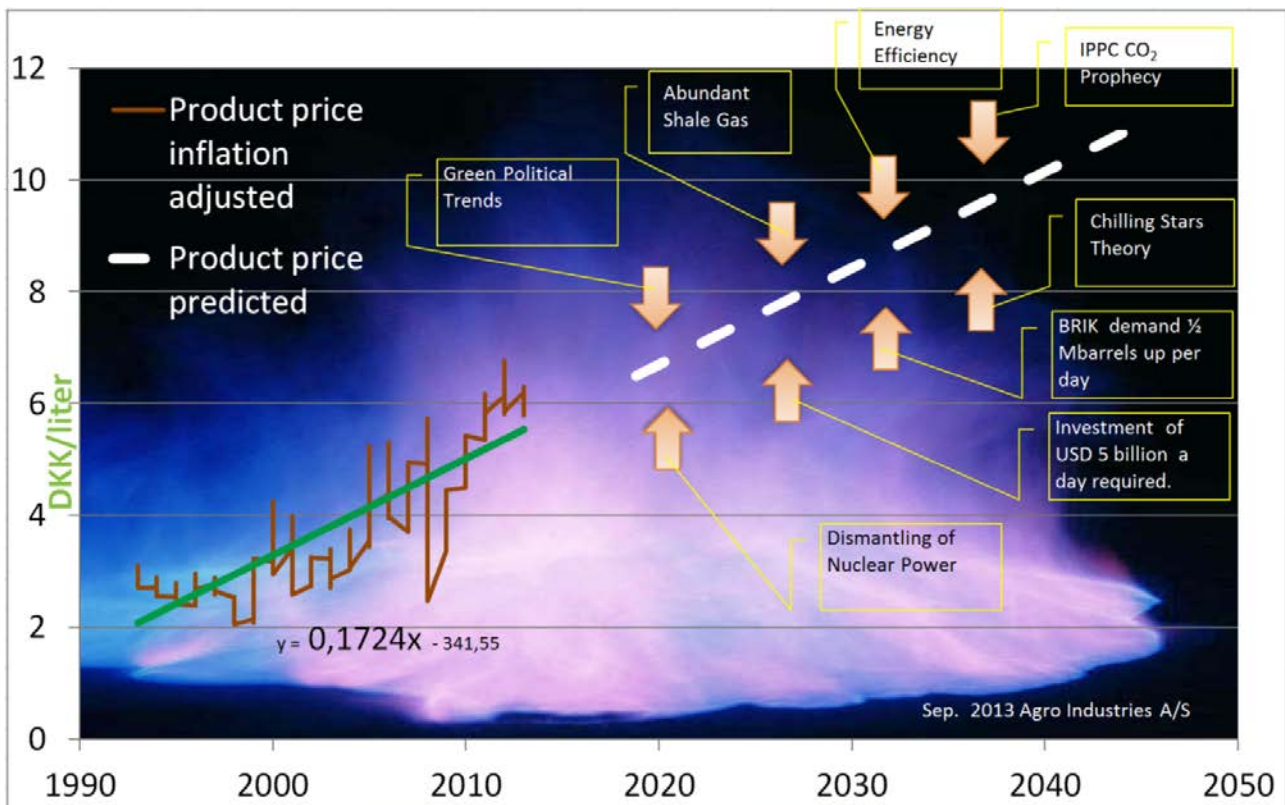
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Methanol Economy



The European Union has an ambitious target of becoming fossil free over the next forty years. The target for the transport sector is at least 10% biofuels 2020 and preferably with second-generation biofuels made from waste.



Very few items are getting more expensive in real terms. Gasoline is one of the few. Over twenty years, the price got up by 0.17 DKK per liter on average and corrected for inflation. The same will happen to biofuels replacing gasoline.



Business Plan for a Start-Up Company - *Farmers Gasoline*¹.

A Danish Project for Ten Million Liters/y of 2-Generation Biomethanol

CONTENT.

- I EXECUTIVE SUMMARY
- II COMPANY PURPOSE
- III CORPORATE STRUCTURE
- IV MARKET
- V RAW MATERIALS AND LOGISTICS
- VI PROJECT ENGINEERING
- VII LOCATION AND SITE
- VIII ORGANISATION FOR PERSONNEL AND TRAINING.
- IX THE IMPACT ON THE ENVIRONMENT
- X TIME SCHEDULE
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- 2. Danish Biomethanol as an Investment Object
- 3. Biogas Upgrading, HMN Proposals
- 4. Feed Design
- 5. Feed Heating
- 6. ICI Methanol Process
- 7. Straw briquetting
- 8. Flowchart Gas works
- 9. Feedstock approved
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¹ Danish Biomethanol ApS with the secondary name Farmers Gasoline ApS and CVR-no: 35234276.



I EXECUTIVE SUMMARY

Danish Biomethanol ApS (Farmers Gasoline ApS) CVR-no: 35234276 is a private limited company founded with the purpose of producing and selling biomethanol. It will cost approximately DKK 260 million to erect the technical facilities and in order to meet this investment the company needs a substantial capital injection in the range DKK of 50 - 100 million in equity and the rest as loans.

In the EU, the use of non-fossil fuel for transport is mandatory and the requirement rises to 10 % calculated as energy in 2020. It has created a huge market for renewable alcohol. At the same time, the EU has decided that the increase should be achieved by the use of so-called second-generation fuel.

By using animal manure and straw for the manufacture of biogas, green certificates are obtained documenting feedstock origin. These certificates guarantees that the natural gas used for methanol synthesis corresponds to the equivalent amount of biogas made from waste and nothing else but waste.

By building neighboring biogas and methanol works at ESØ 90 I/S, DK 6880 Tarm an industrial symbiosis and an optimal energy household is achieved. Taking advantage of the neighborship an internal rate of return on total investment will be in the range of 12-15% pa.

Both the operation of the technical facilities and sale of biomethanol is outsourced on an Operation and Maintenance (O&M) contract and a Sales and Marketing Outsourcing Agreement. Early start of sales of purchased methanol already during the pre-production phase is attractive.

The planned biorefinery is based on proven technology. It remains to form an investor team - preferably with a lead investor. This task will be resolved by the shareholders of the Company supported by Deloitte Financial Advisory Services.



II COMPANY PURPOSE

The company's aim is to produce and sell bio-methanol. *[Re.: Annex 1 Idea]*

The company was founded as a development company preparing its transition to a production company, and providing the capital needed to build and operate that production company.

III CORPORATE STRUCTURE

Danish Biomethanol ApS (Farmers Gasoline ApS) CVR-no: 35234276 is a private limited company with a capital of DKK 80.000. A capital increase to DKK 500.000 is planned early 2014 in order to make more room for minority shareholders. Eventually capital is raised to 50-100 million DKK in order to fulfill the company purpose – building a demonstration plant at ESØ, Tarm. *[Re.: Annex 2. Danish Biomethanol A/S as an investment object.]*

The company is registered with CVR-no: 35234276, VAT No: DK35234276 and located in Aarhus on the following address:

c/o Agro Industries A/S, Agro Food Park 13, DK-8200 Aarhus N, Denmark.

Telephone +45 8793 0000; agro@danskbiomethanol.dk; www.danskbiomethanol.dk

Shareholders:

Agro Industries A/S celebrates its 25th anniversary in 2014. Its main activity has been the delivery of turnkey factories for processing agricultural crops - mainly into starch and sweeteners - either directly or through its subsidiary International Starch Institute A/S. Contact: Agro Food Park 13, DK-8200 Aarhus N. agro@starch.dk. Phone: +45 8793 0000. Cvr-no: 13250472. www.starch.dk/agro; CEO Lars Thomsen.

Hesselbaek Consult is an independent management consulting company focusing on personal coaching of managers, business developing, efficiency and financing of companies in the clean-tech and maritime industries. HC is currently involved in projects about LED lightning, equipment for wind turbines, wave energy, biogas and maritime schools. Contact: Nejstvej 137, 9870 Sindal, Denmark, mobile +45 40445123; phesselbaek@mail.dk. Cvr-nr: 26325684. Owner: Per Hesselbæk, marine engineer, navy officer experienced



as chief engineer on container and navy vessels, production manager on a new building shipyard, CEO of Saturn Aps, a temporary agency with approximately 100 employees and CEO of Danish Yachts A/S in Skagen, building exclusive custom made super yachts, navy vessels and supply boats for the offshore wind turbine industry.

Cris-Ni ApS, Vestre Skovvej 22 B, DK-8240 Risskov. Phone: +45 86173414. crisni@post.tele.dk, CVR-nr.: 78216417. www.cris-ni.dk; CEO Preben Buur Nielsen, certified public accountant, independent consultant in management, business development and finance targeted at small and medium-sized enterprises. Has as an advisor and co-owner contributed to the establishment of several companies in various industries and is currently a volunteer counselor affiliated Erhvervsstyrelsen's (Commercial agency) "Early Warning" project, which targets vulnerable companies.

Karnøe Holding ApS, Peter Holms Vej 25, 1, 3., 2450 Copenhagen SV, CVR: 35211810. CEO Morten Karnøe Søndergaard, professor at Aalborg University and Peace Innovation Lab at Stanford University, Director of The Interregional Centre for Knowledge and Educational Studies (INCEVIDA), Department of Learning and Philosophy and Faculty of Humanities. Contact: INCEVIDA, Sohngaardsholmsvej 2, 9000 Aalborg. Phone: +45 26147151, www.incevida.com, mks@learning.aau.dk

Future majority shareholders will likely be among:

- Biogas Producers
- Oil Companies
- Energy Companies
- Pension Companies
- Investors with a green profile
- or a new and separate *Biofuel Invest A/S*

For strong investors a new *Biofuel Holding A/S*, which can hold several plants including the first demonstration plant, will be a better option.

The operation of technical installations will be entrusted an operating company - with the working title *Biofuel Operator A/S* - under a Management and Operation and Maintenance (O&M) contract.



Sales of bio methanol will be entrusted a trading company (agency) - with the working title *Biofuel Trading A/S* - under a Sales and Marketing Outsourcing Agreement.

Operators of these contracts will preferably be chosen from among the company's present shareholders and associates.

IV MARKET

A sale of bio methanol is entrusted a trading company - with the working title *Biofuel Trading A/S* - under a Sales and Marketing Outsourcing Agreement. Early start of sales of purchased methanol already during the pre-production phase is attractive. [Re.: *Annex 12 Biofuel Trading A/S*]

The European Union has an ambitious target of becoming fossil free over the next forty years. The target for the transport sector is at least 10 % biofuels 2020 and preferably with second-generation biofuels made from waste.

Very few items are getting more expensive in real terms. Gasoline is one of the few. Over twenty years, the price got up by 0.17 DKK per liter on average and corrected for inflation. The same will happen to biofuels replacing gasoline.

According to current legislation, member states must ensure that renewable energy accounts for at least 10% of energy consumption in transport by 2020.

The European Commission proposed in 2012 that food/feed-crop fuel quotas be capped at only 5% of transport fuel by 2020, but 13. September 2013 the EU Parliament voted to loosen that cap to 6%. It set a separate 2.5% target to incentivize 'second-generation' biofuels, made from waste products such as manure and straw. And from 2020, politicians agreed, ILUC factors will be used in accounting for a fuel's carbon footprint.

No doubt. 2020 opens up a huge market for bio-fuel made from waste – and waste we have - from rural and urban areas. ESØ recycling station south of Tarm expects household waste to be more than 30,000 tons a year - and a lot is ideal for biogas. Animal farms supply cattle and pig manure and large amounts of straw is available in the area.



The National Danish Energy Agreement has revitalized the biogas industry. Natural gas users are now encouraged to switch to biogas with a remuneration of DKK 115 per GJ. The agreement does not cover the period after 2020, but the political system is fully aware, that the industry also will require support in the future.

Biomethanol is more robust than other applications due to the high product value more likely to follow price development of gasoline, which for the last twenty years has grown steadily in real terms.

Methanol is an excellent motor fuel - preferred in motorsport and now available to the public. Compared to ethanol, as we know it, it has a few more advantages. Methanol attracts less energy tax – as much as 0.63 DKK less per liter. As a 2-generation biofuel it counts double in the national energy accounts. The Commission has even proposed quadruple counting.

EU Fuel Directive allows Low Blends with 3 % methanol in gasoline. Additions of 30 % methanol and more - so-called High Blends - are not limited by the fuel directive. High Blends will gain ground much the same way as is seen for E85. Neat methanol - M100 - is already marketed for use in fuel cell powered motor vehicles. The company, Malte Fuel Tech A/S and Fuelpoint AB opens a filling station for methanol High Blend in Aarhus.

The Danish CEESA group predicts methanol as the dominant liquid motor fuel of the future. [*Re.: Annex 11. CEESA – Energy towards 2050*].

US Open Fuel Standard Act H.R.2493 introduced to the congress 06/25/2013 requires 2017 all vehicles to operate on (1) natural gas, hydrogen, or biodiesel; (2) capable of operating on gasoline, E85, and M85; (3) a plug-in electric drive vehicle; or (4) a vehicle propelled solely by fuel cell or by something other than an internal combustion engine.



The Competitive Edge			
Process	Aerobic Fermentation	Anaerobic Fermentation	Notes
End product	Ethanol	Methanol	
Operator	Maabjerg Energy Concept (Maabjerg)	Farmers Gasoline (ESØ)	
Investment	High ²	Low	Maabjerg: DKK 2,7 billion ESØ: DKK 0,26 billion
Production Cost	High ³	Low	Maabjerg: Not feasible without subsidy. ESØ: Breakeven below 2 DKK/l methanol.
Raw materials	Straw	Straw Animal Manure Household waste Natural Gas	Maabjerg: 300.000 t/year of straw. ESØ: Natural gas, but depends on waste for green biogas certificates.
Utilities	Enzymes Caustic Water		
Byproducts	C5-Molasses Solid biofuel	Fertilizer (digestate)	Maabjerg depends on anaerobic fermentation for byproduct utilization.
Certified origin	No	Yes	ESØ uses feedstock with certified origin.
Robustness	Low ⁴	High	ESØ is less sensitive to market changes.
Risk Assessment	Bad	Good	Maabjerg: Highly sensitive to cost of straw. ESØ: Independent of a single feedstock.

Figure 1. Methanol has a competitive advantage over its main competitor - the second generation ethanol.

Ethanol fermentation relies on straw, water, caustics and enzymes as primary feedstocks making it vulnerable to high straw cost. Ethanol fermentation cannot stand alone and must be associated with anaerobic fermentation for by-product utilization. The production costs exceed the cost of 1G-ethanol.

Methanol may stand alone using natural gas as feedstock, but depends on a biogas source for green certificates. These certificates may be acquired anywhere. Methanol synthesis may be centralized and the biogas counterpart decentralized. This allows for future capacity extension and economy of scale will drive down the investment per liter essentially.

Methanol is so to speak produced indirectly from wasted biomass and any wasted biomass may serve as feedstock with origin certified by energinet.dk. This flexibility adds to project robustness. The digestate from co-fermentation of straw and liquid animal manure is the only by-product and it represents an improved fertilizer.

² Maabjerg Energy Concept, Press release 12. January 2014: The investment is DKK 2.2 billion + EU has been asked for DKK 330 million in construction funding from the EU Biobased Industries Public Partnership program, as well as DKK 170 million as Danish business development support for the demonstration plant.

³ Maabjerg Energy Concept, Press release 12. January 2014. EU NER300 program has been applied for DKK 290 million guarantee for the first five years, equivalent to one DKK per litre 2G bioethanol. Otherwise the project will not be feasible.

Ingeniøren, Sanne Wittrup 14. January 2014 “6,50 kroner kommer en liter bioethanol brygget på halm til at koste på Maabjerg Energy Concept (Production cost: 6,50 DKK/l bioethanol made from straw)”.

⁴ The final decision about the realization of the Maabjerg project depends on whether the EU adopts blending requirements for 2G biofuels.

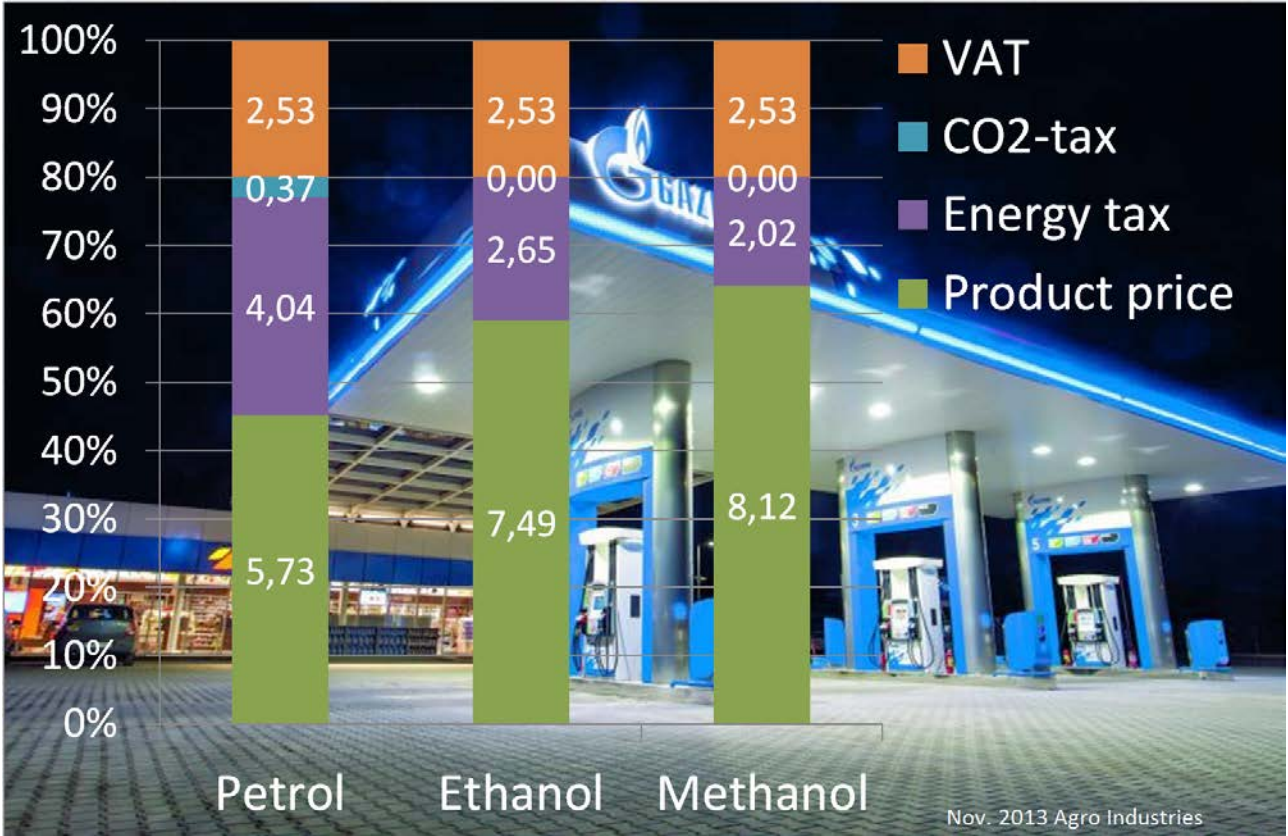


Figure 2. Use of alcohol is supported by low tax. Methanol attracts less energy tax – as much as 0.63 DKK less per liter.

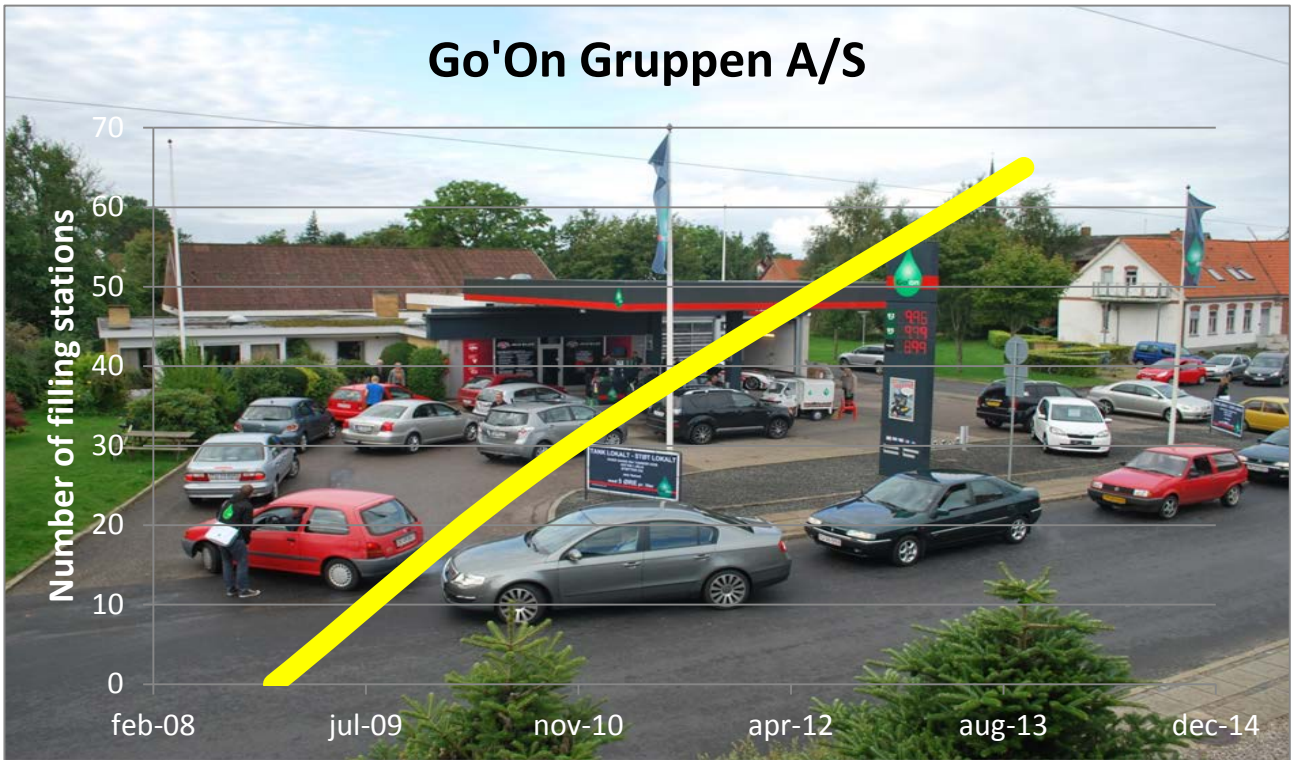


Figure 3. Jointly with Go'on Group A/S - a young enterprising oil company at full speed towards the future - methanol blends are distributed from our tank yard in Grenaa.



V RAW MATERIALS AND LOGISTICS

Raw materials are limited to waste listed in Annex IX of Proposal of 17.10.2012 for amendments to the Renewable Energy Directive. In practical terms such waste is animal manure and straw. [*Re.: Annex 9. Feedstock approved*].

Today's biogas manufacturers are, however, not that restricted in choice of feedstock. As the company must be in control of the carbon dioxide foot print it build its own biogas works and energinet.dk will register and document the feedstock's in the form of green certificates with feedstock origin listed. All it takes is to upgrade the biogas to natural gas specifications and inject it into the national grid. Each cubic meter injected generates one green certificate. [*Re.: Annex 4. Feed Design*].

Transport of waste and digestate will be outsourced to a trucking company. Marius Pedersen A/S is an experienced candidate for the job and has offered to organize the transport.

Straw will be delivered on a daily basis. Halmleverandørselskabet for Syd- og Sønderjylland a.m.b.a. has the capacity and has offered to organize supplies.

The Energy Agency estimates biomass dry matter available in Denmark for biogas 2020: Slurry 1.800.000 t, Deep litter 1.000.000 t and Straw min 2.500.000 t equivalent to 1.5 billion liter methanol. For comparison we used 1.8 billion liters of gasoline in 2012.

VI PROJECT ENGINEERING

Danish Biomethanol aps is consequently planning a biogas factory at ESØ based on anaerobic digestion of waste. As an authorized upgrader the company will annually produce 10 million m³ methane on waste as feedstock and upgrade it to national gas grid specification. Same place methanol works are planned for the manufacture of 10 million liters of biomethanol.

The technical equipment is supplied by a main contractor – with the working title *EPC Contractor A/S* - under an Engineering, Procurement and Construction (EPC) contract and with vendors and associates within the International Starch Group in cooperation with Rambøll Danmark A/S.



The biogas is produced from liquid animal manure and straw as demonstrated by Aarhus University in a large scale at Foulum. [Re.: Annex 8. Flowchart Gas works].

Known problems in straw handling are solved by briquetting with an extra gas yield as a bonus. The process⁵ is demonstrated full scale at Foulum as part of an EUDP-supported project J. No. 34 64010-0423. [Re.: Annex 7. Straw briquetting].

The methanol is produced from natural gas by the ICI low pressure methanol synthesis process practiced at most methanol works in the world. [Re.: Annex 6. ICI Methanol Process]. The company plans to carry out large-scale factory test during operation of a compact steam reformer build with microchannel technology.

The biogas carbon dioxide will be reclaimed, blended with natural gas drawn from the grid and subjected to steam reforming and methanol synthesis.

Crude methanol is distilled to high purity and on a daily basis moved to Grenaa for intermediate storage and distribution by help from our partners. Initially Oiltanking Copenhagen A/S will store the methanol at Prøvestenen, Copenhagen.

By building neighboring biogas and methanol works at ESØ 90 I/S, DK 6880 Tarm an industrial symbiosis and an optimal energy household is achieved. [Re.: Annex 5. Feed Heating].

Economy of Scale. At the selected location and with the chosen design, capacity can be increased by supplying biogas from home and abroad. This because Northern European agreements now allow biogas transport in the international gas grid using green certificates.

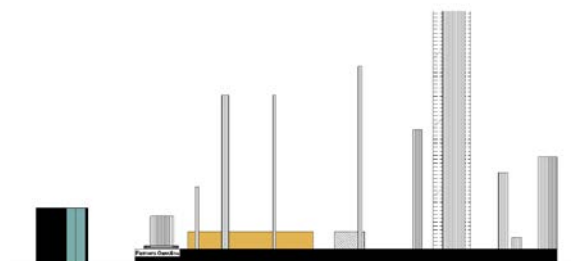


Figure 4 Methanol Works Skyline

⁵ Foulum video on YouTube: http://www.youtube.com/watch?v=PdPjMUn_x3A



VII LOCATION AND SITE



The facilities will be erected on leased land at ESØ 90 I/S, Vardevej 83A, 6880 Tarm, Denmark.

Two independent production sites are registered. They will share management, operation, control center and energy systems.

1. Gasværket (Gas Works), Pnr: 1019034832, c/o Dansk Biomethanol - ESØ 90 I/S, Vardevej 83 A, 6880 Tarm. Branche: 352100 Fremstilling af gas.
2. Methanolværket (Methanol Works), Pnr: 1018994697, c/o Dansk Biomethanol - ESØ 90 I/S, Vardevej 83 A, 6880 Tarm. Branche: 201400 Fremstilling af andre organiske basiskemikalier.

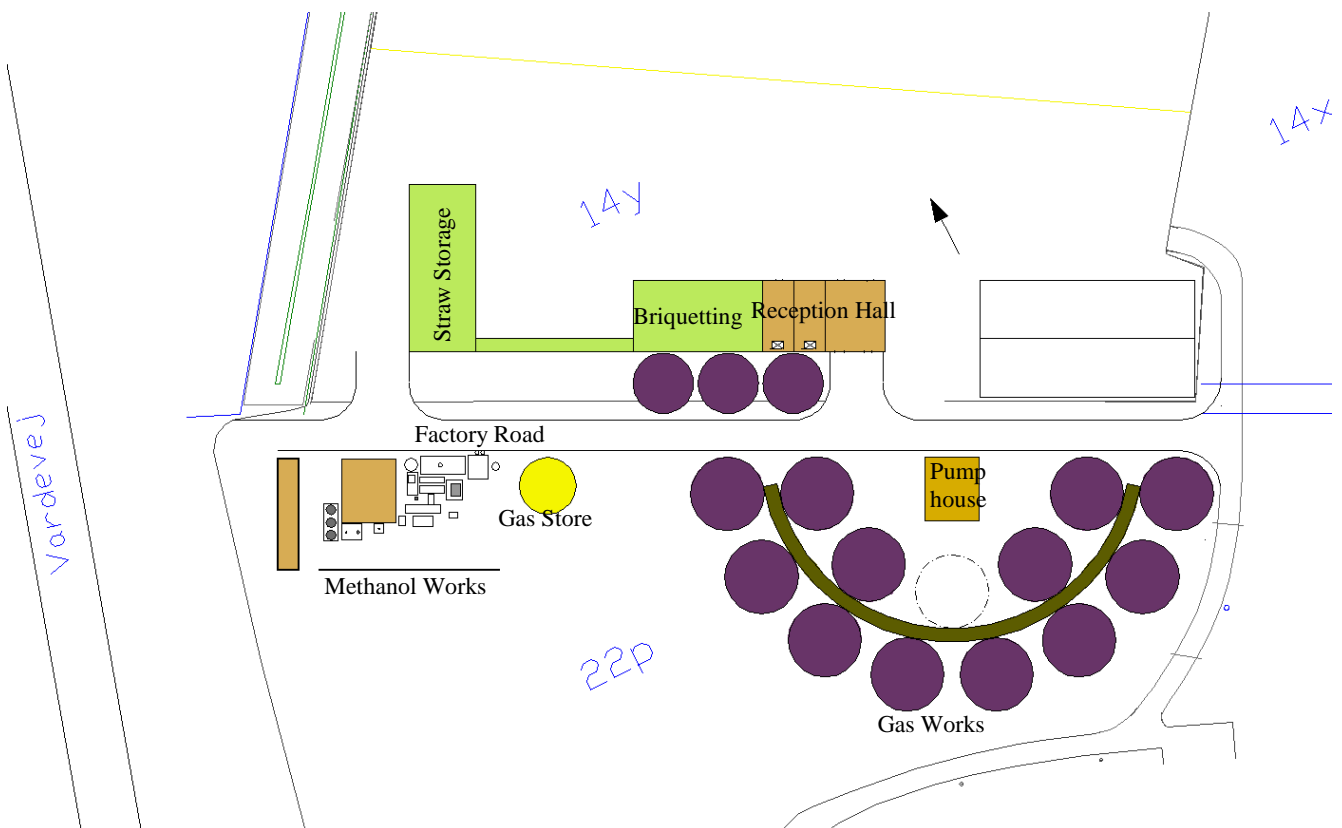


Figure 5. This digester (blue) arrangement allows an optimized internal flow and makes room for a central pump house. The large building (top colored) has right a drive through reception hall for liquids and next two bunkers for tip loads. Leftmost a hall for straw briquetting connected by a conveyor to 1000 m² day storage for straw bales. The yellow circle marks a gas buffer.



Figure 6. ESØ 90 I/S, Vardevej 83A, DK-6880 Tarm. A plan for the area has to be drawn up. Taking into account distances to neighbors, the preferred lease will be land no. 14 x - the green field right marked with an "A".

VIII ORGANISATION FOR PERSONNEL AND TRAINING.

The operation of technical installations is entrusted an operating company – with the working title *Biofuel Operator A/S* - under a Management and Operation and Maintenance (O&M) contract. Company: Operator will at an 80:20 ratio share pre-tax profits in excess of a return of 8 % pa. on the invested capital.

The suppliers are supposed to form the *Biofuel Operator A/S*. Foodjob Denmark ApS, an international recruitment company, will man the organization. The production requires a technical leader, skilled craftsmen on each of five shifts.

1 Director	DKK 984,000
1 Clerk	DKK 420,000
1 Technical Manager	DKK 624,000
<u>12 operators</u>	<u>DKK 420,000</u>
15 total	DKK 7.1 million

The straw briquetting plant is operating in two shifts only.



The labor force will participate in the erection of the facility and training is done as part of supervision during construction and during commissioning.

IX THE IMPACT ON THE ENVIRONMENT

Manufacturing both biogas and methanol affect the environment in various ways and it is also creating jobs and income in the community.

- Raw material for the gas works is received by road.
- Road traffic for manufactured methanol is limited to a few tankers daily.
- Condensate and other drains are reused for slurring feedstock.
- The methanol plant is flushed with nitrogen when shut down.
- Biogas carbon dioxide is used for methanol synthesis reducing its outlet to the atmosphere.
- Labor at the factory is supplemented by outside service supplies.

X TIME SCHEDULE

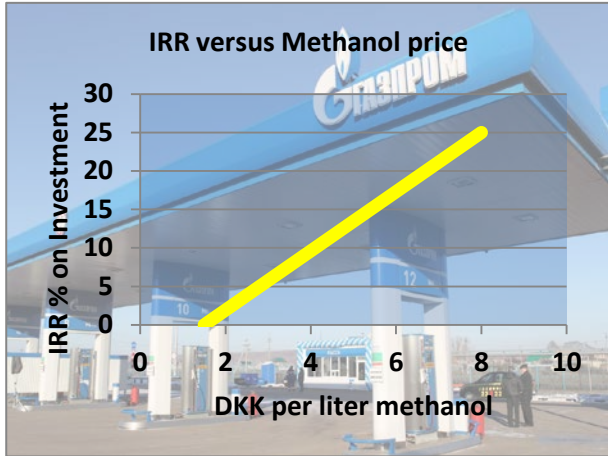
Applications for building permits and environmental approval have been submitted. The gas works may be supplied and erected within 12 months. The methanol works may take 6 months more. Time for environmental permits is to be added and it may take as much as 1½ year or even more from the time all information is made available to the authorities. Most likely the government (the environmental agency) will handle permits for the methanol works and Ringkøbing-Skjern Municipality permits for the gasworks.

[Re.: Annex 10. Time Schedule].



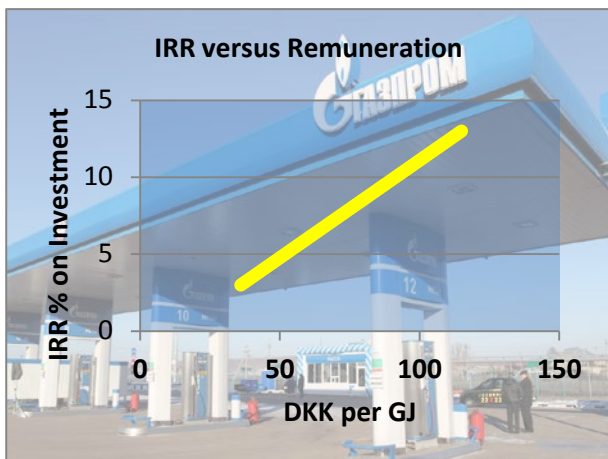
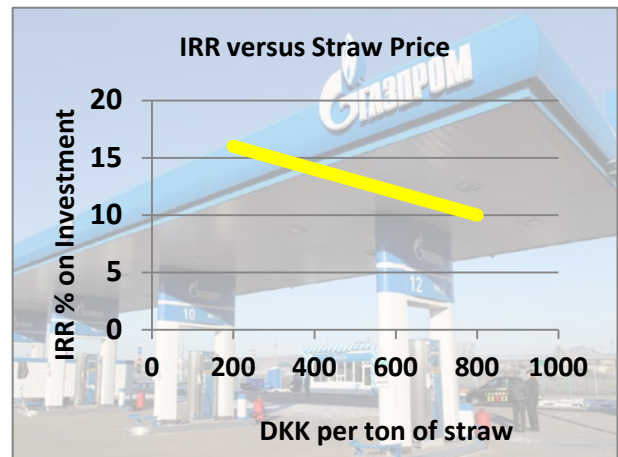
XI FINANCIAL AND ECONOMIC EVALUATION.

An anchor budget is based on free manure and transportation at DKK 25 per t plus straw at DKK 550 per t delivered. The biogas is upgraded to 10.000 cubic meter natural gas, all handed over to HMN Gashandel A/S.



1.000 m³ is sold to HMN (in their capacity as gas trader) at a price equal to Nord Pool Exchange closing price less one Danish øre per m³ methane (HMN profit). 9.000 m³ is by HMN (in their capacity as gas transporter) conveyed to the methanol works against a minor transportation fee. [Re.: Annex 3. Biogas Upgrading, Proposals by HMN Gashandel A/S].

All 10.000 m³ biomethane is registered by energinet.dk, who issues 10.000 green certificates with a detailed specification of raw material origin. 9.000 certificates are consumed and nullified by the methanol works. 1.000 certificates are offered for sale at an estimated price of one Euro cent each. Energinet.dk is issuing the green certificates and is administering the remuneration of DKK 115 per GJ for upgrading the gas.



Retail price of methanol in the anchor budget is set at DKK 4.75 per liter. The graph shows how sales price affect feasibility.



Anchor Budget, Manure-Straw Plant

	MDKK
Investment	
Technical facilities for biogas and methanol synthesis	216
Straw briquetting	15
Upgrading to national gas grid specifications	24
Common tank yard in Grenaa, part of shared investment	5
Total investment	<u>260</u>
Operation	
Staff incl. management	7,1
Administration	1,1
Feedstock (straw)	14,6
Feedstock transportation, DKK 25/t	6,6
Maintenance, 3% of investment	7,8
Electricity	5,7
Utilities, connection gas grid	1,0
Depreciation, linear over 20 year's	13.0
Operational cost	<u>56,9</u>
Turnover	
Biogas (briquetting gain), sales and remuneration	6,3
Biogas upgrading remuneration	36,6
Methanol sales	47,5
Turnover total	<u>90,4</u>
Gross profit	<u>33,5</u>
Internal Rate on Investment, IRR%	<u>13 %</u>

Straw as Feedstock.

Straw does not come cheap as liquid animal manure and it is more difficult to handle. Briquetting adds costs, but also makes straw easier to handle and increase its gas potential. The budget price is DKK 550 per t delivered. A publication "Halm til Biogas" by Henrik B. Møller, Department of Engineering, Aarhus University states a gas gain by briquetting and a shorter retention time improving the overall throughput. Straw adds to feedstock supply security and all together justifies a straw briquetting add-on.



XII RISK ASSESSMENT

Risk and contingency planning is the process of determining the risks a business faces and what we must do if those risks are realized. While it may not be possible to plan for every possible emergency, we can identify those most likely to face and those that will cost us the most if they come to pass. On this basis a number of risk factors are listed.

Feedstock supply - Lack of feedstock for the biogas plant.

A report prepared by AgroTech for the Energy Agency states, that only 5-8% of our manure is turned into biogas and that the biogas industry will hardly run out of manure and particular not in Varde and Ringkøbing-Skjern municipalities having the densest concentration of livestock.

The most gas comes from straw, which is our largest unused biomass resource.

Should these sources shrink, there is still more than 30,000 ton of unsorted household waste available in Varde and Ringkøbing-Skjern Municipalities.

Feedstock supply - Lack of natural gas for the methanol synthesis.

The plant is linked up to vast supplies of natural gas.

Feedstock supply - Lack of carbon dioxide for the methanol synthesis.

The methanol synthesis process may run without any additional carbon dioxide. Carbon dioxide, however, improves methanol yield and can at any time be extracted from own flue gas.

Feedstock supply - Lack of green certificates for second generation methanol.

By co-production of biogas the necessary certificates are ensured. Certificates limit the methanol to the equivalent quantity of certified biomethane available. Alternatively the methanol has to be sold at a reduced price as "black" methanol.



Subsidies - Reduced subsidies for biogas utilization.

Use of biogas for upgrading and injection into the natural gas grid is supported until 2020. It is unlikely, that Germany will accept dramatic changes, but reduced subsidies must be foreseen over time.

Distribution/Market - Lack of distribution channels.

The present market for biomethanol is close to one billion liters. A 1% share of this market can likely be achieved only with price as selling point.

In 2014, global methanol demand is expected to pass 65 million metric tons driven in large part by the resurgence of the global housing market and increased demand for cleaner energy. Methanol is used to produce acetic acid, formaldehyde, and a number of other chemical intermediaries that are utilized to make countless products throughout the global economy – and by volume, methanol is one of the top five chemical commodities shipped around the world each year.



Figure 7. Project Idea.

Project Idea.

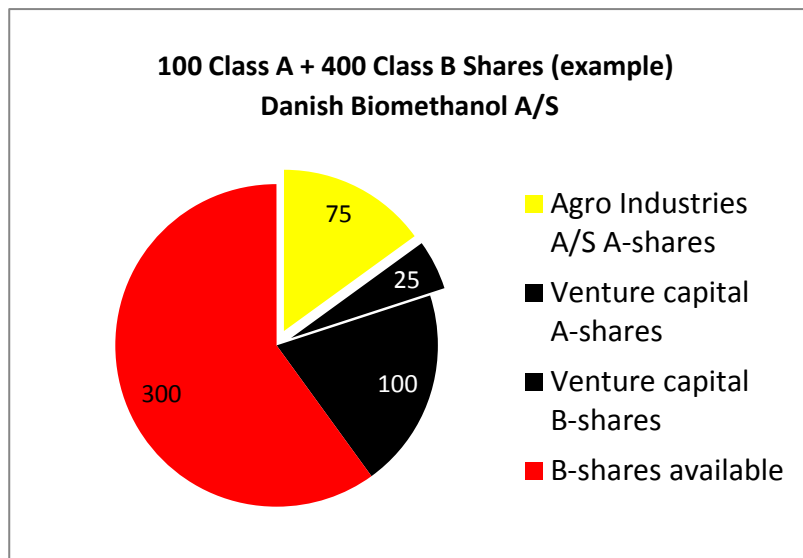
Farmers and Citizens - All bring their waste to their local gasoline works. It is broken down and converted into green motor fuel – Farmers Gasoline. They should control the entire value chain as has been practiced a century within the cooperative movement.



Danish Biomethanol A/S as an investment object.

The anchor budget estimates total investment MDKK 260 and a Gross Profit MDKK 33.5 from the planned operation at ESØ, Tarm. This is equivalent to an internal rate of return (IRR) of 13 % p.a. on investment and 20 % p.a. on equity provided 40 % equity and 60 % loan at 8 % p.a.

The investment is subject to all traditional risks – supply, market etc. - plus an extra political risk. A most needed product, however, replacing gasoline, which in real terms has increased by 0.17 DKK per liter of the last twenty years, provides also special options.



Proposed statutory changes increases present share capital to 500,000 DKK divided into 100 Class A shares with ten votes per share and 400 Class B shares with one vote per share; each share representing 1.000 DKK. Additional capital is contributed as subordinated loans until the final equity is obtained.

Such statutes would equate shareholders dividends under conservation of A-shares majority of votes - a prerequisite for successful realization of the project.

Such statutes - everything else being equal - provide shareholders

Possible allocation of shares if the draft statutes with two classes of shares are adopted. Class B shares are available to current shareholders. Any excess class B shares are held by the company until a prospective buyer is found. Additional capital is contributed as subordinated loans until the final equity is obtained.

with a greater proportion of the final capital injection. All shareholders have virtually unlimited opportunities to increase their own share at this point.

The planned operating company *Biofuel Operations A/S* - the operator of the ESØ plant - receives 20 % of the profits in excess of 8 % p.a. on investment. This gives an annual bonus of MDKK 2.5 to *Biofuel Operations A/S*, which presents investment opportunities for shareholders in *Danish Biomethanol A/S*.

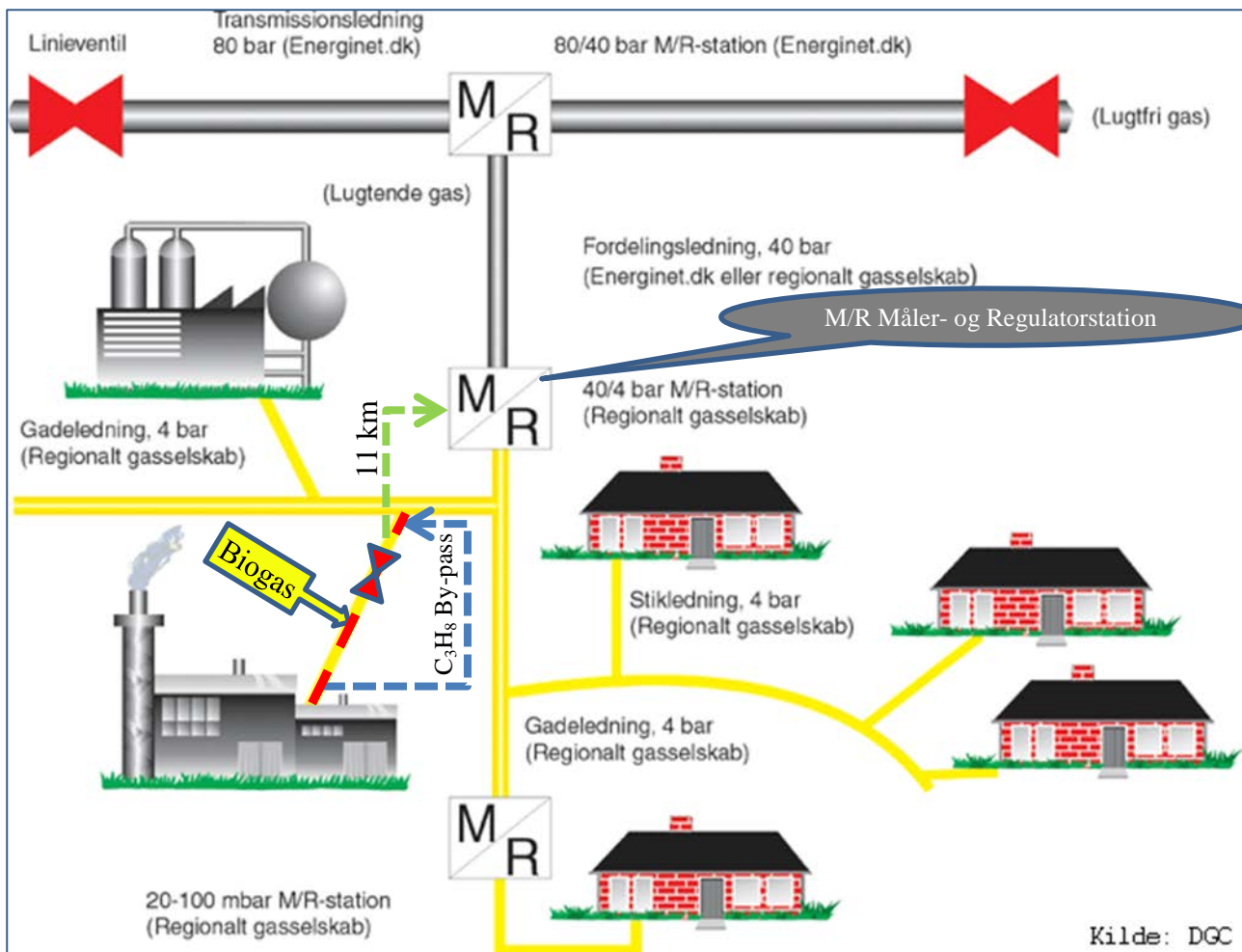
The planned marketing company (agency) *Biofuel Trading A/S* with an initial turnover of MDKK 90 presents investment opportunities for shareholders in *Danish Biomethanol A/S*. This turnover is not limited to the production at ESØ and is expected to be multiplied. Our mission statement provides for setting up filling stations jointly with an operator as *Go'on Gruppen A/S* to reach for the consumer market.

A holding company *Biofuel Holding A/S* provides investment opportunities in several production units such as *Danish Biomethanol (ESØ) A/S*, *Danish Biomethanol (Frederikshavn) A/S*, *Danish Biomethanol (NN) A/S* etc. A new *Biofuel Invest A/S* provides similar opportunities.

February 2. 2014



Biogas Upgrading



HMN Gashandel A/S (HMN) Proposals.

1. Scenario 1: Low pressure service line (yellow/red dotted line).
Capex MDKK 2.5. Opex MDKK 0.1
2. Scenario 2: By-pass (blue dotted line) to 4 bar line inclusive propane.
Capex MDKK 3.5. Opex MDKK 0.1 + DKK 0.42/m³ CH₄ upgraded with propane.
3. Scenario 3: Line extension (green dotted line) to 40 bars M/R-station with full compressor back up.
Capex MDKK 11.7. Opex MDKK 0.1 + DKK 0.14 CH₄ compressed.

28. October 2013.



Feed Design.

Biogas capacity	Input								Output
	Feedstock	As is t/year	% DM	DM t	%	VS/DM	VS %	t VS	GVS
Pig slurry, hogs	155.000	5%	7.750	20%	80%	4%	6.200	280	1.909.600
Cattle manure slurry	110.000	8%	8.800	22%	80%	6%	7.040	200	1.548.800
Straw briquettes	26.500	86%	22.790	58%	90%	77%	20.511	290	6.543.009
Total	291.500	13%	39.340	100%			33.751		10.001.409
Total biogas m ³								62%	16.131.305
Feed t/day:	810								
Retention days	75	50	25						
Fermentation		Primary	Secondary						
Temperature, °C		53	53						

Digester	Total		
Digester volume actual	60.000	40.000	20.000
Digester Size		5.000	5.000
Digester No.	12	8	4

Feedstock is limited to those listed in Annex IX, Part A to the proposed amendment of the Renewable Energy Directive; Brussels, 17.10.2012 , COM(2012) 595 final 2012/0288 (COD) - Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

Annex IX wastes available at ESØ:

- (b) Biomass fraction of mixed municipal waste
- (d) Straw.
- (e) Animal manure and sewage sludge.

Annex IX wastes available nationwide:

Faculty of Agricultural Sciences at Aarhus University assesses farm waste suitable for biogas to:

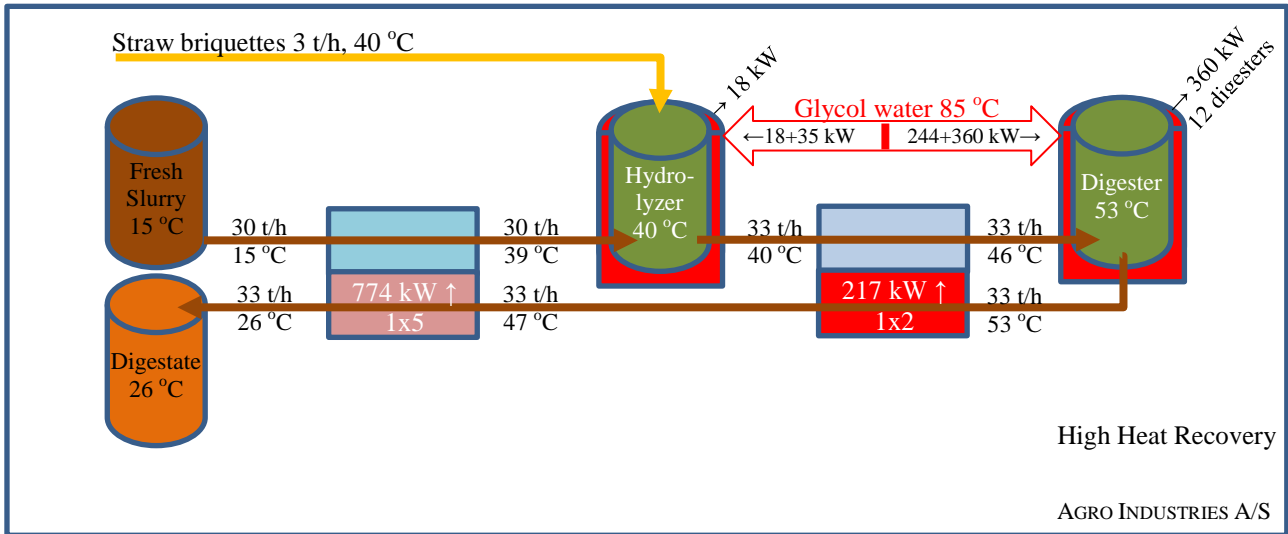
Liquid manure: 1,800,000 t, deep litter 1,000,000 t and straw 2,500,000 tones, equivalent to 1.5 billion liters of methanol. For comparison we used 1.8 billion liter of petrol in 2012.

February 1, 2014



Slurry Heating and Heat Recovery, Design Basis.

Total feed: 291.500 t/year.



Total waste heat available: 4.400 kW as steam and hot water. Self-heating is hardly an issue in lean cellulosic feeds and is disregarded in the design.

Tanks are organized as one hydrolyser at 40 °C, eight primary and four secondary digesters at 53 °C. For the hydrolyser and digesters heat loss to the atmosphere is 18 respective 30 kW per tank at 5 °C ambient temperature and max. heat transfer from digester coils are 250 kW resp. 280 kW.

Heating 30 t cold slurry of 15 °C to 40 °C by heat recovery takes 774 kW by heat exchanger + 35 kW from tank heating coils. Heat for straw is disregarded. Maintenance heat is delivered by tank heating coils.

Heating 33 t hydrolysate of 40 °C to 53 °C takes 217 kW by heat exchanger + 244 kW from tank heating coils.

Heating media	Process	High Heat Recovery 7 exchangers	Low Heat Recovery 3 exchangers
Glycol water, 85 °C	Slurry heating	35 kW	809 kW
	Hydrolysate heating	244 kW	461 kW
	Tank heat loss	378 kW	378 kW
Glycol water total		657 kW	1.648 kW
Hot digestate, 53 °C	Slurry heating	774 kW	
	Hydrolysate heating	217 kW	
Hot digestate, total		991 kW	
Total heat		1.648 kW	1.648 kW
Heat as glycol water per t feed		20 kW	50 kW

26. December 2013



The ICI Methanol Process

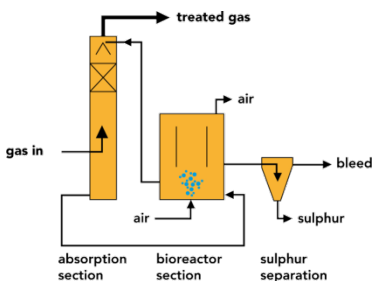


The Methanol plant at ICI in Billingham, September 1970.

Methanol is made by the ICI Low Pressure Methanol Synthesis Process⁶ in 4 steps.

STEP 1: FEED PURIFICATION

The two main feedstocks, natural gas and water, both require purification before use. Natural Gas contains low levels of sulfur compounds and undergo a desulfurization process to reduce, the sulfur to levels of less than one part per million.



Impurities in the water are reduced to undetectable or parts per billion levels before being converted to steam and added to the process.

⁶ Methanol Holdings (Trinidad) Ltd. commissioned its M5000 Mega Plant in November 2005. The plant produces 5,000 metric tons of methanol per day making M5000 the largest methanol plant in the world.

We use same process for 21 t per day making ours the smallest plant in the world.

STEP 2: REFORMING

Reforming transforms the methane (CH₄) and the steam (H₂O) into synthesis gas comprising hydrogen (H₂) and carbon monoxide (CO).



The reaction takes place by passing hot mixture of methane and steam (860 °C) over a nickel catalyst.

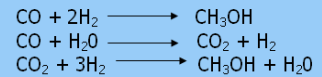
Carbon dioxide (CO₂) is also added to the feed gas stream at this stage to increase methanol yield. This process is carried out in a Reformer furnace which is heated by burning natural gas as fuel.



Trinidad steam reformer.

STEP 3: METHANOL SYNTHESIS

After removing excess heat from the synthesis gas it is compressed before being sent to the methanol synthesis reactor. Here the reactants are converted to methanol and separated out as crude product with a composition of methanol (68%) and water (31%). Traces of byproducts are also formed. Methanol conversion is at a rate of 5% per pass hence there is a continual recycling of the unreacted gases in the synthesis loop.



The reaction takes place by passing the synthesis gas through a packed column of a Cu-Zn catalyst at approx. 230 °C and 65 bar.

This continual recycling of the synthesis gas however results in a build-up of inert gases in the system and this is continuously purged and sent to the reformer where it is burnt as fuel. The crude methanol formed is condensed and sent to the methanol purification step which is the final step in the process.



Trinidad methanol reactor.

STEP 4: METHANOL PURIFICATION

The 68% methanol solution is purified in two distinct steps in tall distillation columns called the topping column and refining column to yield a refined product with a purity of 99.85 % methanol classified as Grade AA refined methanol.

The methanol process is tested at various stages and the finished product is stored in a large secured tankage area off the plant until such time that it is ready to be delivered to customers.



Laboratory test at International Starch Institute.

Manure-Straw Plant.

Manufacturing second generation biomethanol from biogas is limited to waste as raw materials – Annex IX wastes.

Therefore the traditional manure-maize plant cannot provide biogas for second generation methanol and therefore the installation at ESØ becomes the first Danish industrial manure-straw plant.

The plant at ESØ will process liquid pig and cattle slurry, deep litter and straw. The feedstock will be picked up by the factory and improved digestate returned to the farms.

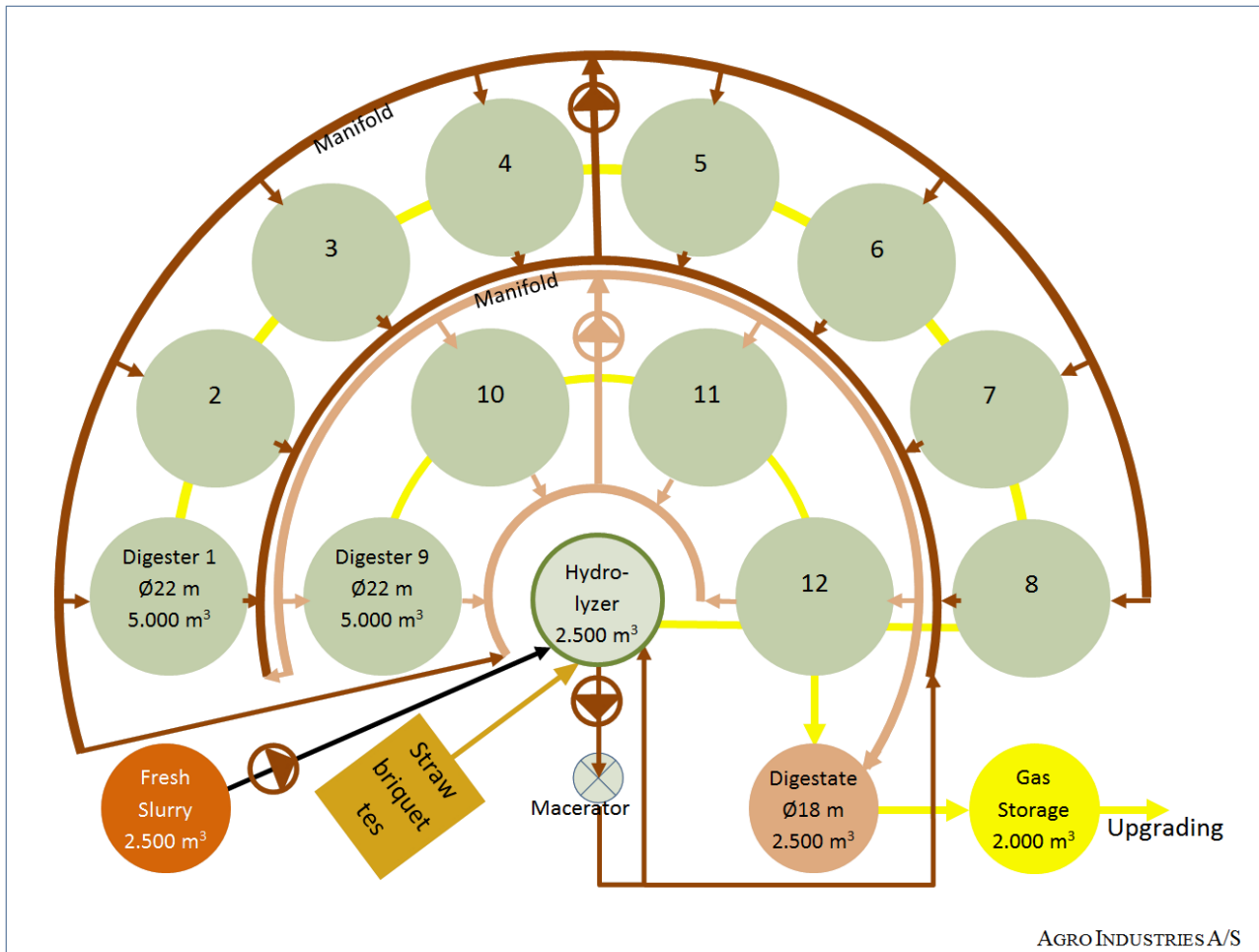
A new technology convincingly demonstrated at Foulum, University of Aarhus copes with difficulties in straw handling and slow release of its gas potential.

Straw bales are shredded and made into easily manageable briquettes under high pressure - 2.000 bar.

The high pressure and a temperature rise to 170 °C make the straw hygroscopic. In minutes the straw disperses. Even after a day with no stirring the suspension is still there and without troublesome floating layer on top of the substrate.

Same occurs with deep litter on pretreated straw.

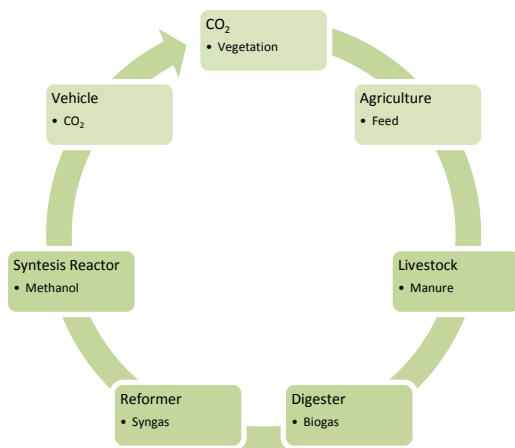
Straw pellets exhibit stability in suspension, which can be utilized in the flow design. The straw also exhibit such a large water-holding capacity, that pellets advantageously can be added dry and directly into the primary reactors.



AGRO INDUSTRIES A/S

Diagram Gasworks.

Input	Fresh Slurry	30 t/h
	Straw briquettes	3 t/h
Output	Biogas	1.700 Nm ³ /h
	Methane	1.050 Nm ³ /h
Capacity	Digesters, total	60.000 m ³
Retention	Digesters, total	75 days
	Hydrolyzer	3 days



Annex IX Wastes.

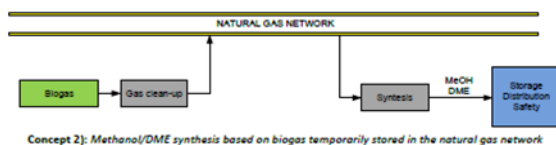
Brussels, 17.10.2012, COM (2012) 595 final
2012/0288 (COD)

Proposal for a
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF
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amending Directive 98/70/EC relating to the quality of
petrol and diesel fuels and amending Directive
2009/28/EC on the promotion of the use of energy
from renewable sources.

Annex IX Part A. Feedstock's whose contribution towards the target referred to in Article 3(4) shall be considered to be four times their energy content:

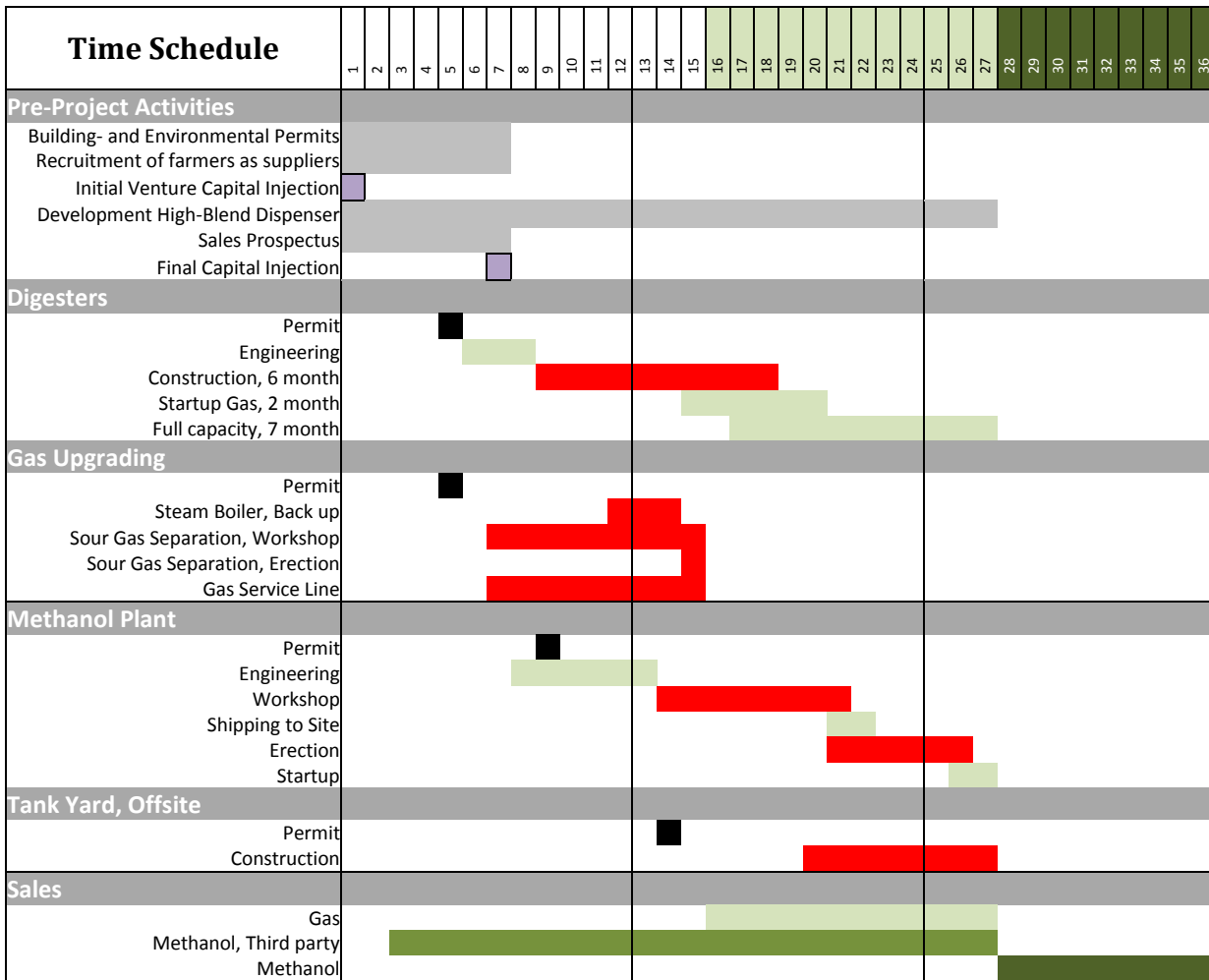
- a) Algae.
- b) Biomass fraction of mixed municipal waste, but not separated household waste subject to recycling targets under Article 11(2)(a) of Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.
- c) Biomass fraction of industrial waste.
- d) Straw.
- e) Animal manure and sewage sludge.
- f) Palm oil mill effluent and empty palm fruit bunches.
- g) Tall oil pitch.
- h) Crude glycerin.
- i) Bagasse.
- j) Grape marcs and wine lees.
- k) Nut shells.
- l) Husks.
- m) Cobs
- n) Bark, branches, leaves, saw dust and cutter shavings.

Life Cycle Assessment (LCA) of Biogas to Methanol.



Rune Duban Grandal, Department of Chemical Engineering, Biotechnology and Environmental Technology, University of Southern Denmark does carry out Life Cycle Assessment (LCA) of biogas to methanol for the route above. LCA is a method to assess the environmental impacts of a resource that is associated with a product throughout its life cycle.

26. November 2013



Digesters. Fermenters are built and commissioned to create early revenue.

Gas Upgrading. Gas upgrading is build and commissioned early on to facilitate gas sales during construction period.

Methanol Plant. There is no need to complete the methanol works before the biogas supply is in place.

Tank Yard Offsite. There is ample time for planning and regulatory review of the tank yard, using Oiltanking Copenhagen's tanks at Prøvestenen until storage tanks are available in Grenaa.

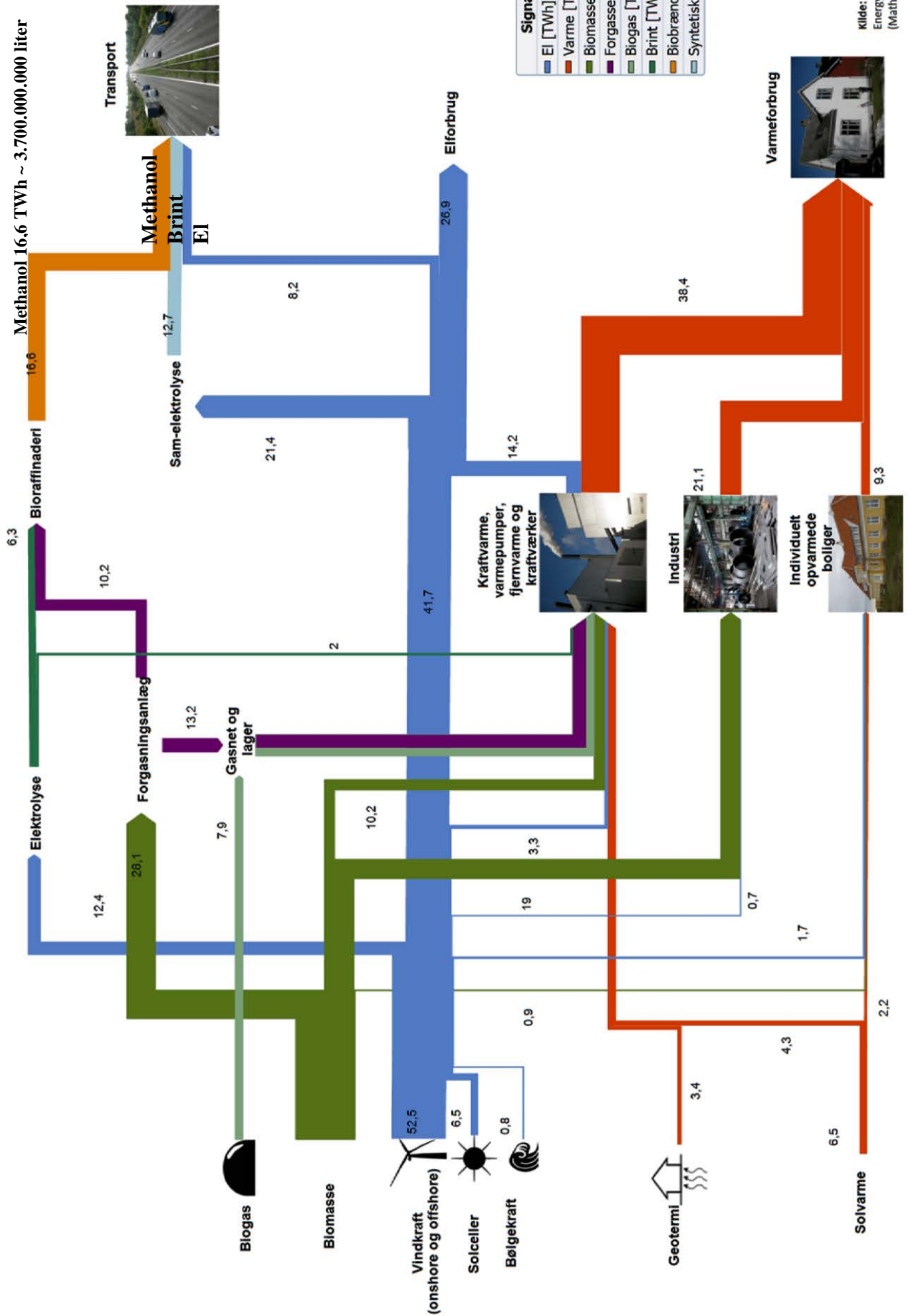
Delay Ringkøbing-Skjern and the Environmental Protection Agency will jointly issue building and environmental permits.

The time required for permits is yet to be determined and may cause a considerable delay.

November 22, 2013

Annex 11

Sankey diagram of the CEESA 2050 100 % renewable energy scenario



Signaturforklaring	
[Blue]	El [TWh]
[Orange]	Varme [TWh]
[Green]	Biomasse [TWh]
[Purple]	Forgasset biomasse [TWh]
[Light Green]	Biogas [TWh]
[Dark Green]	Brint [TWh]
[Yellow-Orange]	Biobrændsler [TWh]
[Light Blue]	Syntetiske brændsler [TWh]

Kilde: CEESA 100% Renewable Energy Scenarios towards 2050 (Mathiesen et al. 2011)



I BIOFUEL TRADING A/S.

Sales of bio-methanol produced by Danish Biomethanol A/S will be entrusted a trading company (agency) - with the working title Biofuel Trading A/S - under a Sales and Marketing Outsourcing Agreement.

II TIME SCHEDULE PRODUCTION

Production of Bio-methanol is expected to begin 2018 with present delay. The waiting time can be exploited for start of sales.

III PROCUREMENT OF METHANOL FOR SALE.

One source is Statoil. Tjeldbergodden's methanol plant is Europa's biggest. The plant is built to produce Methanol based on gas from the Heidrun field off the West Coast of Norway. The plant production capacity is 2,400 metric tons of Methanol per day.

Another source is Methanex.



Methanex operates production sites in Canada, Chile, USA, Egypt, New Zealand and Trinidad and Tobago. Two idle Chilean plants are being moved to Geismar, Louisiana due to the impact of shale gas development in North America.

Methanex Regional Posted Contract Prices

Region	Price
Europe (Valid July 1 - Sep. 30, 2014) Methanex European Posted Contract Price Posted June 27, 2014	Euro 322/MT ~ (DKK 1.90/l)
North America (Valid July 1 - 31, 2014) Methanex Non-Discounted Reference Price. Posted June 26, 2014 * Converted to USD/MT using a conversion rate of 332.6 Gal per MT.	USD 1.45/Gal * USD 482/MT
Asia Pacific (Valid July 1 - 31, 2014) Asian Posted Contract Price Posted June 29, 2014	USD 410/MT

Other sources are BP Gelsenkirchen GmbH and MIDER-Helm Methanol Vertriebs GmbH, Hamburg.

The methanol industry spans the entire globe with over 90 methanol plants – and by volume, methanol is one of the top five chemical commodities shipped around the world. Each day more than 225 million liters of methanol are used as a transportation fuel. Methanol is a truly global commodity. In 2013, global demand reached 65 million metric tons driven in large part by increased demand for cleaner energy.

The fastest growing markets for methanol are in the energy sector, representing about one third of methanol demand. In China methanol has replaced 8 % of other fuels for transportation.

IV ANCHOR BUDGET

10 million liter per year	MDKK
Operational Cost	56,9
- Biogas remuneration	36,6
- Biogas sales	6,3
Methanol cost per year	14,0

Methanol sales	47,5
Gross profit	33,5
Internal rate of return on investment, IRR %	13%

Figures from Business Plan "Farmers Gasoline BP 01-1e". Remuneration drops operation costs to 1.40 DKK/l.

V PREPRODUCTION SALES BUDGET

10 million liter per year	MDKK
Black methanol	19,0
9 million bio-methane certificates (~ 9 MNm ³)	1,8
Operation	5,0
Methanol cost per year	25,8

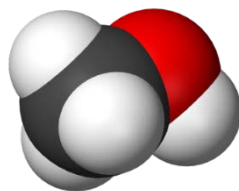
Methanol sales	47,5
Gross profit	21,7

A pre-production sales campaign requires virtually no investment. HMN Naturgas currently charges DKK 0.20 per certificate. The operation includes sales and administration.

By starting marketing now, we will over a three-year pre-production stage get valuable information about the market for bio-methanol, certificates etc. A significant, but modest investment may be securing wages / income to the sales organization during the period.

It seems sensible to begin Biofuel Trading A/S operations right away and try out the idea of painting black methanol green with certificates and improve market knowledge while awaiting our own production.

July 29, 2014



... member of the International Starch Group.

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