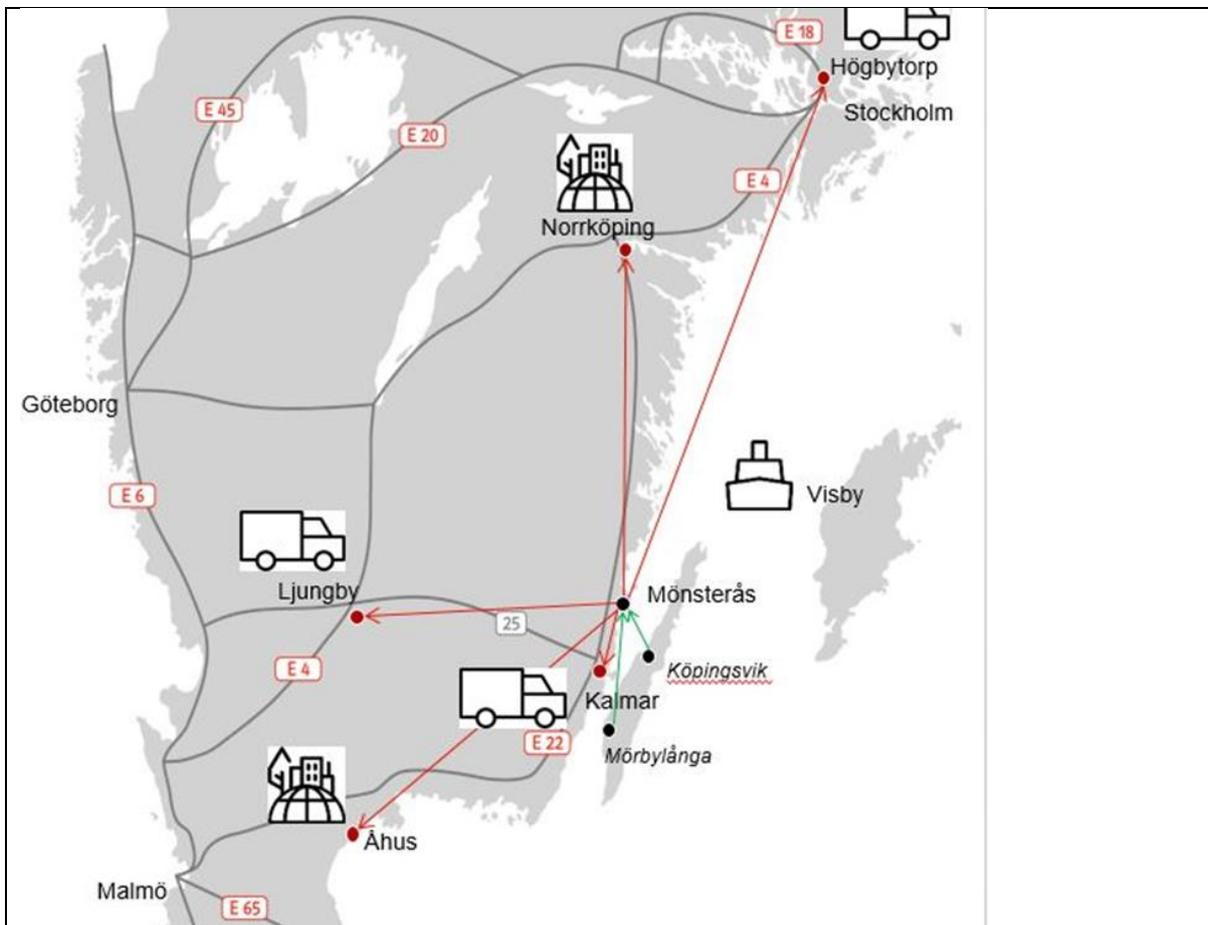


## Introduction of liquefied biomethane in Southeast Sweden



### Background and description of the good practice

Introduction / description

Kalmar County represents 2.4 % of the Swedish population but stands for 95 % of the bean production, 25 % of the chicken production, 12 % of the milk production and 10 % of the beef and egg production. Consequently, agriculture is an important sector for the county which also means that there is a lot of manure and a big need to solve the problems with the over-fertilization. On the other hand, the county has ambitious production targets and a lot of substrate for biogas/ biomethane production.

## Short term production potential in Kalmar County

Plant	Present production GWh/år	Potential production increase by 2020 GWh/yr	Total GWh/yr	Investment support received MSEK
Kalmar Biogas	8-10	-	8-10	
More Biogas	20	20	40	
Västervik Biogas	3	-	3	
Mönsterås Biogas Production	-	120	120	108
Öland	-	60	60	
Hagelsrum Biogas	(4)	7	7	13
	31-33	207	238 -240	



We have found that there is a growing interest for biomethane especially in heavy transport. Both Volvo and Scania have introduced new heavy vehicles that run on LNG/LBG on the Swedish market. Also, we are in the middle of the sulphur control area and there are many ships that run on LNG in production for delivery in the Baltic Sea, North Sea and the English Channel i.e. the SECA Control Area, which makes even LBG interesting for maritime transport. Destination Gotland has already bought an LNG ship and two of our municipalities are looking for a possibility to use a gas electric hybrid vessel in coastal transport between the main land and the isle of Öland.

On the other hand, there are many challenges since biomethane is more expensive than the conventional fuels including LNG and the competition in this field is tough.

### Aims and objectives of this action

The aim with all the different efforts to introduce liquefied biomethane on the market is to be able to realize the potential that we have especially in manure and thus to offer heavy vehicles and maritime transport a possibility to choose a fossil fuel free fuel so that we can reach our climate targets.

## Technical and/or Financial Implementation

Information about project design, i.e. the technical and financial project set up. Technical project set-up: Overview about technical project steps, incl. month/year of implementation

A part from the pre-study that was financed by the European Region Development fund and lasted for nine months 2016-2017, the Regional Council in Kalmar County, The Energy Agency for Southeast Sweden/Biogas Sydost together with the Swedish Gas Association were invited in December 2017 to a workshop at the Government offices to present why Kalmar County should be a national demonstration platform for liquefied biomethane and to initiate a work with a road map describing the process. The workshop was organized by the organisation Fossil Fuel Free Sweden working on the commission of the Swedish Government. The other four suggested platforms that were represented were: Electric Highway Gävleborg, On-line Electric City Gothenburg, Smart Logistic solutions, Stockholm and Ethanol area Norrköping. The ambition was to speed up the transition of the transport sector to become free from fossil fuels by identifying and illustrating platforms for fossil fuel free heavy transports. The steering committee consisted of Johan Rockström, Professor in Environmental Sciences at Stockholm University, Henrik Henriksson, CEO.Scania, both initiators of the platform initiative and Svante Axelsson, National Coordinator for Fossil Fuel Free Sweden.

Since then a lot of effort has been made by the three delivering organisations consisting of establishment of an expert group, delivery of papers to FFF Sweden, and preparation of a road map together with the expert group consisting of approx. twenty different companies and organisations with an interest in heavy vehicles. The road map was delivered to FFF Sweden in the beginning of February 2018 and presented to the Swedish Government in the beginning of March.

In May 2018 the Government made the decision to grant 200 MSEK to the Swedish Energy Agency so that they could make a call with the target to build an Innovation Cluster for liquefied biomethane (5 MSEK). 50 % co-financing from private sector was required or support from the EU that is not administrated by Swedish authorities. The call was made as an open call, which means that they have not decided where the cluster should be built. Thus, we will have to apply for this project among other interested organisations i.e. our sister organisations. Also, the other initiatives that received support were in form of open calls. The call was changed so that it included both the Innovation cluster and the investment support, in total 200 MSEK, in September. The new submission date was set to 24th October 2018.

## Results and contribution from BiogasAction

Project outcomes in terms of BiogasAction's performance indicators

The intensive work to identify a market for liquefied biomethane (LBG) during the Biogas Action project has resulted in a big interest in LBG from both regional and national key actors. Two initiatives have emerged in form of two producers wishing to start the production of liquefied biomethane. One of them, Mönsterås Biogas has already received investment support from the Swedish Environmental Agency. They have even got a new co-owner, Scandinavian Biogas Fuels AB. The building decision is expected in summer 2019 and the plant is to go in operation in 2020. The other potential producer is negotiating with a Finnish energy company with concrete targets for the Swedish market. The problem is that there are not yet buyers for the production, so the work is ongoing. If both plants will be built, the production liquefied biomethane will be 180 GWh/yr.

It is not possible to imagine the amount of work that comes along with these kinds of initiatives. Without the support from H2020/Biogas Action it would not have been possible for me to get involved. Not only are there a lot of documents that has to be written, meetings, virtual as well as physical, to discuss who wants to join the initiative, how to proceed and what to expect etc. When the work proceeds, the interest increases, and you are invited to numerous seminars and conferences to present the work and discuss the findings. If you cannot do it, you will be forgotten.

### The Partners and Stakeholders

Most of the companies working in heavy transport participated in the expert group, but also municipalities concerned. The partners of the expert group were: AGA Gas, Destination Gotland, Energigas Sverige, E.ON Gas Sverige, Fordonsgas Sverige, Gasum, Mönsterås Biogas, Mönsterås Biogasproduktion AB, Mörbylånga Municipality, Region Gotland, Regional Council in Kalmar County, Oskarshamn Municipality, Wärtsilä Puregas Solutions, Scania Sverige, Södra, Svensk Biogas, Sveriges Åkeriföretag, Tekniska Verken, Volvo Lastvagnar, Växjö Motor Company, Åbro.

### How this Action could be Replicated

This could of course be replicated in all countries that wish to introduce liquefied biomethane in heavy vehicles and maritime transport. But of course, it is an advantage if there are concrete national goals for the transport sector and a positive attitude towards biomethane.

### Lessons Learnt

It is difficult to say because this is work that is still going on. The biggest success was the big interest from the companies. Nobody actually said no when we asked if they wanted to join us. The biggest disappointment was that at first our region was pointed out as the chosen national platform and then, when the call came it was an open call so now we are obliged to find a new way to move forward. In addition, we must find private financing for an innovation cluster that is not easy especially when there already are several similar initiatives.

Find out more about this and other BiogasAction topics at: <http://biogasaction.eu/>

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#### Further Information:

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