After a short bus trip and lunch we met Ola Burström, politician at municipality of Skellefteå. Ola told us about the struggles and success factors when building the biogas plant. Appeals during the permission process delayed the construction for several years. And even though media was hard on the idea in the beginning, it is now considered as a success.

Khalid Aljubori, process engineer, told us about the technical parts of the plant. The biogas is produced from household waste and sewage sludge. The biomethane corresponds to about one million of litre diesel and used for citybuses, waste trucks, vehicles within the municipality and by private cars and taxi. There were many good questions and discussions.

Anna Säfvestad Albinsson, project manager at BioFuel Region AB, talked about the general outlook for oil and how BioFuel Region as a co-operation model work towards transition to a renewable society. In northern Sweden we have a lot of possibilities such as a lot of forest and mines, but also some challenges that need to be handled. Sparsely populated areas, long distances and no access to the natural gas transmission grid are some specific issues that we need to address.

The idea behind the BioGaC project is to overcome these challenges and improve the infrastructure for CNG and biomethane. The project is market oriented and we are going to produce a handbook on how to build a CNG filling station the best way. To do this we also interview CNG-vehicle drivers to find out what problems they experience. The project budget is 4,2 M€ of which half comes from the EU Commission and the TEN-T (CEF) programme.
An adventures flight, in two small planes, took us over to Vaasa in Finland and we had a nice evening at the Indian restaurant Kuuvya Cuisine.

After a short bus trip in the morning we met Leif Åkers, CEO at Stormossen Oy, and Johan Saarela, process engineer. Leif told us about the biogas plant and how they today are working to upgrade the biogas to biomethane. To handle the “Chicken and the egg”-problem he has been working very close with the municipality. When starting the production of biomethane, the municipality will have their biogas buses ready to be filled up. The biogas is produced from household waste and sewage sludge. The produced biogas correspond to about 1.6 million litres of diesel. It is for the moment used for electricity and heat production, but this is very badly paid due to low electricity prices. We also took a walk around the biogas factory which is build inside the bedrock.
At the conference center we met Kurt Stenvall, CEO at Jeppo Biogas. They have a new biogas and biomethane production unit. Totally they produce 20-25 GWh of biogas/year out of manure, offal and energy crops. They have focused on long partnerships for both delivering of raw material and for selling the biogas. Only a small amount is upgraded to biomethane for the moment – but they expect the market to grow when Stormossen is building their filling station next year. The gas is sold to two nearby industries, Merkki and Snellmans. The company is owned by farmers, Snellmans and other regional companies.

After lunch Mauri Blomberg, CEO at Vaskiluodon Voima Oy, joined the group. He told us about the largest biomass gasifier in the world, built in Vaasa. The power plant is mainly using coal for electricity (1,2-2,5TWh/y) and district heat production (0,8 TWh/y) and building a biomass gasifier is a way of contributing to a more sustainable society and also prolong the lifelengh of the plant. Different methods for using renewables were investigated before they took the decision to go for gasification. There were some risks involved since there is new teqnique, but the plant has worked very well. The syngas (hydrogen and carbonmonoxide) is used directly and co-fired with coal. Since the plant is air-blowned, it is not possible to use the syngas in a methanation process. The total investment was 40M€ and the gasifier has a fuel input of 140 MW and can replace 25-40 percent of the coal.

The bus took us out to the gasifier and we could see the biomass dryer (called Titanic) as well as the gasifier it self.

Back to the conference center we discussed how to solve CNG market issues. We discussed the different countries different challenges in smaller groups and also whom having the initiative and power to start the transition.
Challenges:

- Too low political targets, no actions plans
- LPG is introduced in Latvia already. This is a fossil fuel but considered clean according to EU. Change to natural gas may be a problem.
- Different legislation in different countries
- Lack of stable, long-term, business environment. Too large investment risks. I.e. tax exemptions, production support. If support is to be changed it must be done slowly not to crash a whole market.
- In the Netherlands it is hard to motivate stand alone filling stations since there is well established natural gas grid.
- Cheap fossil fuels make it hard to compete with renewable, produced in the EU.
- Lack of raw material
- Communication – that the future will demand several alternatives to gasoline and diesel. No renewables can do this alone. Electrical vehicles are important as well as biomethane, ethanol and biodiesel.
- Lack of filling stations – and lack of CNG at remote locations. Local/regional production of biomethane is needed.
- Not enough awareness among the public.
- No knowledge that locally produced biofuels actually creates jobs.
- WTW is complicated to explain.

Who is in power, i.e. can start the transition process?

- Media
- The states – civil servants
- Politics (in the sense to create the initial market)
- Banks
- Big Energy companies (state owned?)
- Mafia
- Biomass traders
- Engine suppliers
- NGO:s – influencing policy
- Big companies like – Google, FB, Apple, E-bay, Celebrities like Bill Gates and football players
Project ideas
1. Tractors to CNG, fossil dependency among farmers, we need cheap CNG filling stations and cheap CNG vehicles.
2. Information and school projects – the most important target group is the kids. They understand more about sustainability than many grown-ups. They need to know about biogas and biomethane.
3. Biomethane for hotels and for companies like IKEA.
4. Algue – project.

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Workshop - the main conclusions

Comments from the participants

“This has been two great days. I will now rethink project ideas that we had in 2008, and also look into waste truck driven by biomethane. I have new knowledge to do this now.”
Mārtiņš Niklass, project manager at the waste company ZAOO in Latvia

“It has been a really good experience for me to be here. We would like to do our biogas plant more efficient and inject the biogas into the grid. But to do this we need some political decisions first.”
Gatis Pizics, engineer at the biogas plant Agro Lestene in Latvia
“It has been interesting how we can improve our work and hear about the business modell for a biomethane filling station. That this actually can generate money. In Latvia we generate money from electricy, here it’s no money from that but from biomethane instead. It has been really interesting to see the differences!”

Vigars Kaktinieks, owner and co-manager for four biogas plants in Latvia

“I will bring home new contacts and new ideas. I can solve one of my problems about tractors on biomethane now, which is valuable for me. We can then reduce our costs for diesel when growing maize for biogas production.”

Gatis Vitols, board member for two biogas plants, and co-owner for two biogas plants in Latvia

“New plants in Italy - a lot of attentation of biomethane – this will be the future. The city of Rimini is really looking into this opportunity – and can specifically use the experiences from this project when building up filling stations at the countryside with no gas grid.

There are already 800,000 methane cars in Italy and the methane is very cheap. But in Italy people are afraid for biomethane – think it is going to explode. The waste management handling is also very impressive in Sweden and Finland. This is a big problem in Italy.”

Andrea Cristofanelli, Consultant at Biteco

“This visit is very interesting and that the factories for biomethane is up and running and are successful surprised me. I will bring the knowledge back to Ireland and try to initiate the biomethane industry. I can now tell them that this is really working, it is no science fiction. A biogas industry creates local jobs and make us less dependent on fossil fuels, and this is very important for Ireland.”

Laura Gil Carerra, Gas network Ireland. Post Doc.

“This was a really interesting group of people with many ideas. I am very happy that we got the possibility to show them the biogas plant at Stormossen. For us it is important to teach people to sort the household waste better – too much is still burned.”

Leif Åkers, CEO Stormossen
“I learnt a lot of things during this visit, because we have seen real cases. The discussions in the group has been valuable – mostly because we could compare the different countries. It is many simlar challanges – but weighed differently.”

Olga Oliveti Selmi Biogas project manager at GDZ Suez

“I got some new insight on what is going on and met new people within the field. The gasification plant was interesting!”

Teemu Aittamaa – business developer Envor

“I have a laboratory for bioenergy and 58 small biogas digestors. We do a lot of tests and I will show pictures from this trip for my students. This will be very interesting for them and give them deeper understanding why the tests are important.”

Vilis Dubrovskis – Latvia University of Agriculture

“It was very interesting to see how biogas business is constructed in Sweden, it is a completely different system. To balance the production when injecting in a low pressure grid is a problem in the Netherlands. In Sweden you use the flare to balance the system. Containers for transporting biomethane is interesting, although the gas price in the NL is too low to do this back home. We have subsidies for biogas injection into the grid, guaranted for 12 years. It is therefore hard to motivate a stand alone compression system. Bioenergy is a new market in the NL – upgrade to pure biomethane for cars – it is new.”

Bouke Van der Valden – N.V. Nederlandse Gasunie

“Renewables can not replace all fossil fuels so we need a lot of solutions. Biomethane is one of them. If you create a CNG market – you increase fuel security, create jobs and mitigate climate change. You actually tic all the boxes. Collaboration is very important to succeed– especially if you want to perform new projects. We definately have some nice new project ideas.”

Christian Jenne, UDE - University Duisburg-Essen
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Comments from the participants

“This trip has been very valuable to me. There has been enthusiastic lecturers telling us about their story. A network like this is good for me as well for the countries new in biomethane like Latvia and Italy.”

Rikard Jeppsson, Malmberg Water

“Jeppo Biogas has been delivering biogas and biomethane for one year and we hope the market for biomethane will grow for aswell private and heavy vehicles. In Österbotten the market has grown 300% the last month, from one to three cars, it is a good start :-)

Kurt Stenwall, CEO Jeppo Biogas

“For me the biggest impression so far is the fact that you are working on all steps of the circle - from production to fuel & the market, wich makes me really happy. In many places in Europe they concentrate on only one aspect of the large spectrum of steps that the circle of biogas really is.”

Leo Stille, TNO

The Big Steve movies

Big Steve: Draw my biofuel
Big Steve: Big bad smell
Big Steve as a dinner lady

I’m sorry it didn´t work to link the pictures, copy this link in your web browser to see the movies:
http://biofuelregion.se/videos-osv/
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Thank you all for two very good days!
Best regards from Anna, Erika, Carina and Bertil