

Ethanol28thApril08

With Ethanol in the Tank – is Sweden taking the Right Road?

By Susanna Kumlien

King Carl XIV Gustaf does it. Swedish Prime Minister Fredrik Reinfeldt too. As well as Maud Olofsson, the lady with the longest title in Swedish Government (Minister for Enterprise and Energy, Deputy Prime Minister, Ministry of Enterprise and Energy and Communications). Along with the head of the Royal Dramatic Theatre in Stockholm and almost 900,000 other Swedes, they all drive cars on ethanol.

And no wonder. Swedish tax-subsidies makes it a good deal for the individual car-owner to switch to ethanol - or E85 as the label goes at gas-stations, the fuel in question consisting to 85 percent of ethanol.

In April, Swedish Government announced that yet another 240 MSEK (about 40 million dollars) were to be earmarked as a subsidy given to individual buyers of ethanol-driven cars. Which means - summed up with previous decisions and undertakings - that during 2008 alone about 60 million dollars of Swedish taxpayer's money are earmarked as a bonus given to individual consumers buying a new car with a flexi-fuel tank.

Maud Olofsson, Minister of Energy for short, says she's happy driving her Ford Focus on ethanol even since it's been revealed that workers in the ethanol-industry suffer bad conditions. To Swedish tabloid Aftonbladet, she proudly reveals that she was amongst the first people in Sweden to get an ethanol-driven car and claims that strong forces amongst the oil-industry don't want ethanol to happen.

The brave lady, thus fighting the world's evil-doers in the shape of oil-companies, was born and brought up in Högbyn, a small village ten kilometers east of Örnsköldsvik, a town in the province of Västerbotten in the Northern part of Sweden. As it happens, Örnsköldsvik is also where Sweden's Mr Ethanol, Per Carstedt, originates from. Olofsson's minor by a year, Carstedt went to the same school and high school (gymnasium) in Örnsköldsvik as Olofsson. In Örnsköldsvik, Carstedt's father was a car-trader with a Ford-agency – a business the son took over when his father died. It seems Olofsson's choice of car-brand was no accident.

Today, Per Carstedt is one of Olofsson's top advisors. He is also President of SEKAB, importer of ethanol. SEKAB also carries a prototype plant for domestic production of ethanol, the Ethanol-Pilot in Örnsköldsvik. Apart from these tasks, Carstedt is also CEO of BAFF – the BioAlcoholFuelFoundation, founded in 1983 with the aim to develop technology for the production and usage of ethanol as car-fuel.

There is a central concept in the Swedish debate on the subject of ethanol, namely miljöbil. The word has no counterpart in the English language, and possibly not in any other spoken language either. It means – roughly translated – environmental car, the word implying the car itself would be especially friendly towards the environment and lighter on natural resources than other cars, since it has a flexi-fuel tank. “Sweden is leading in Europe when it comes to environmental cars” announces fiercely Minister of the Environment Andreas Carlgren and Minister of Agriculture Eskil Erlandsson on the Government's homepage.

But the fact is that very small moderations has to be done to a traditional gas-engine in order to adapt it to ethanol. As the definition of “miljöbil” otherwise doesn’t differ from a normal car, it doesn’t require much innovation to make one. Which is, in turn, probably one of the reasons why ethanol is launched by the car-industry as a green fuel for enviromental-friendly cars, a phenomena that coincides with oil-prizes up beyond a hundred dollars a barrell.

Also, most of the ethanol used in Sweden as car fuel doesn’t go into the tanks of tax-subsidized “enviromental” cars, but is mixed into ordinary gas by five percent.

Hans-Erik Ångström is Professor and Research Leader in Internal Combustion Engines, Machine Design at the Royal Insitute of Technology in Stockholm. He concludes that any engine can be adapted to pass current regulations, regardless of fuel – and that there is no specific exhaust emission control for ethanol-driven cars. Cars that run on bio-fuel are submitted to the same regulations as gas-engines. Which means in turn, that the extremely high exhaustions of cancerogene carbon-hydrogenes emitted in the starting-phase of an engine on ethanol is not officially measured nor regulated. The same high levels of emission of carbon-hydrogenes goes for running an engine on ethanol at low temperatures, as is often the case in Northern Sweden in winter.

Simultaneously, Mr Ethanol, Per Carstedt, is pursuing the idea of making the North of Sweden into a BioFuel Region. My first opportunity to hear him talk about this and other ethanol-related endeavours comes when IFM (Ingenjörer för miljön or Engineers for the Enviroment) is arranging a seminar at a central Stockholm Hotel.

The event is introduced by Per Ribbing, on the board of Svensk Vindkraft (Swedish Wind Energy) and former Information Officer at SIS (Swedish Institute for International Standardization). The pro-enviromental engineers seem somewhat exilharated after having had refreshments in the lobby. “To save the planet must be fun” as Ribbing puts it and he specifically points out that the hotel we are visiting have passed the marking of Svanen – a Swedish enviromental Standard.

Ribbing is upset by the current discussion on ethanol. He livfully describes a trip in Ecuador in 1993, where journalists were banned and where the travellers were surrounded by heavily armed soldiers visiting a small village. The village had formerly an Indian name but was now named Shell. “Those poor Indians who had the misfortune to be living on an oil-well were more or less executed” he says. In this perspective, Ribbing questions the sudden uproarious attention in the media on the conditions for workers at sugar-cane plantations and ethanol-plants in Brazil.

The following speaker, Gunilla Lundberg Ney, represents Kooperation Utan Gränser (Cooperation Without Borders), an organization who wants to “help the poor fight poverty”. She tells us about their ongoing co-operation with SEKAB in exploring sites in Africa for growing ethanol- crops. A map of Africa is shown, the area of Somalia is marked together with other countries (such as Mozambique, Sudan and Zambia) but isn’t spelled out.

Gunilla Lundberg Ney says the collaboration with African organizations such as SACAU (a regional farmer’s organization) and UNFFE (an umbrella farmer’s organization) guarantees that the project will be socially sustainable. “Growing ethanol benefits the farmers of Africa” she states, and when a question is raised from the auditorium about the ethical hesitance of

poor African farmers growing ethanol for Western car-owners instead of crops for food for themselves, she responds: "It gets very unbalanced as long as the oil-industry can go on behaving the way they always have" but admits when confronted that so far there has been no sign of any oil-financed campaign against the project.

Gunilla Lundberg Ney says she is happy that African farmers will finally get adequately paid for their crops, something that has hardly been the case over the last decades, as Europe has risen protectionist trade restrictions and given subsidies to their own domestic farmers. With growing crops for producing ethanol, African farmers will get paid for their land and there will be work-opportunities for the poor and uneducated.

Carstedt starts his talk with stating that there is no doubt that the world is running out of oil. We have used most of the easily accessed oil already, what remains is harder to get to. If all the world's oil resources were symbolized by bottles and Iraq's hundred billion barrels were equivalent to one bottle, we've used ten bottles since 1860 and four out of those since 1990. Optimistically there are eight bottles left plus there might be three more to find that we don't know about today. That's it. The party is over. Peak-oil is definitely happening, and Europe is depending on oil-import. So we have to find other sources of fuel, preferably from renewable resources such as bio-gas and ethanol, Carstedt concludes. For now, the most efficient way to deal with the issue of car-fuel is to import sugar-cane-produced ethanol from Brazil, but eventually we will move on to produce ethanol from domestic crops. The technology required for this second generation of bio-fuel is being developed in the Ethanol Pilote in Örnköldsvik, which currently produces about 3-400 litres of ethanol a day.

As long as we are dependent on import of ethanol, we can put requirements into the deal, such as decent conditions for workers. Why not let there be a certificate, which guarantees environmental and social sustainability on products, as we have seen is possible to do when it comes to other agricultural crops? Carstedt argues.

A few weeks later SEKAB announces that they will import Ghana-produced ethanol from Brazilian ethanol-producer Constran. The contract involves delivery of 150,000 cubic-meter ethanol annually, requiring the cultivation of 27,000 acres for crops. In their press-release, SEKAB carefully informs that they have been very concerned about social and ecological sustainability in negotiations with the contractor and that there has been an agreement to these criterias. A higher level of mechanization in cultivating will diminish the risk of harsh working-conditions, says SEKAB.

Possibly, a higher level of mechanization will also limit the number of working-opportunities for African farmers. In Brazil, where most of SEKAB's and Swedish ethanol comes from, sugar-cane plantages for ethanol production are more mechanized in the area around Sao Paolo, whereas in other parts – such as the poorer regions in the Northeast - most of the work is done by hand.

On April 13, investigative reporting programme Kalla Fakta, TV4, sends a documentary that reveals awful conditions for these workers, and child-labour. In Brazil, child-labour is banned according to law - you have to be 18 years of age to be allowed to work - but still reporter Kajsa Norell meet several youngsters on the plantage, some of them as young as 13. "There is a long tradition of slavery in Brazil" says Norell. "Also, Brazil is immensely huge and the federal state isn't very powerful. There are still Feodal structures within the Brazilian community."

The question is whether law-obedience and submission to ethical rules will be any greater in Africa. Norell hints that there are strong and powerful interests to say negative things about ethanol, such as the oil-lobby.

At a conference on “Green Fuel in the Tank”, held at central restaurant and hotel Berns in Stockholm, both SPI (Swedish Petroleum Institute) – a bransch-organization for oil-companies - and Statoil, a gas-company and a major player on the Swedish ethanol-market, are participating in a panel-talk. None of them seem to have anything against ethanol as such. On the contrary - like other players on the ethanol-market, Statoil seem to be primarily concerned about the ethical and environmental standards on ethanol-production. Statoil have sustainability requirements on contractors, Statoil’s representative says. The general conclusion of the panel-talk is that an international standard for social and ecological sustainability on ethanol production would be good.

Answering a question from the auditorium on why oil-companies don’t have to live up to the same requirements as is being discussed for ethanol, the SPI representative says: “Growing oil instead of food is not an issue. And workers at oil-refineries and oil-rigs are required to be skilled engineers, so we don’t have child-labour.” He argues that a mature line of industry has developed standards, and is therefore not compatible to the same demands as new ones.

At lunch, I get yet another hint about the oil-lobby from a woman working for SIDA, the Swedish Authority for Development Assistance. SIDA supports by seven million or so of Swedish taxpayer’s money projects for growing ethanol-crops in Africa, she tells me. All the fuzz about working conditions and monocultures is unnecessary, since “nothing is perfect”, she argues. By requiring contractors to follow ecological and ethic standards set by NGO Svanen, the problem will be solved. “Are you planning to write an article on this?” she asks. Upon confessing not only on planning but actually doing so, she responds “The main problem with ethanol is the media reporting. If ethanol didn’t get all this bad publicity, things would be better” and she claims the oil-lobby is behind it all.

Gunnar Lindstedt is a reporter at Veckans Affärer (a Swedish business mag) and author of “Olja” (“Oil”) where he investigates the oil-industry. He basically agrees with Carstedt on the issue of peak-oil, and says that the oil remaining will be extremely costly. However, the idea to substitute fossile fuel with ethanol is a dead end, argues Lindstedt. “We are actually facing drastic changes because our whole way of living is so intrically based on oil”. Changing fuels in cars doesn’t change the basic problem. “What we need to do is steer society in a small-scale direction and adjust our communities to biological structures” Lindstedt says.

When Brazilian president Lula paid a visit Sweden last September, it was to sign a collaboral agreement with Maud Olofsson on bio-fuel. Last year, the Swedish ethanol-import from Brazil amounted to 370,000 cubic-meter, out of a total import of 800,000. “As a gift to Lula, Prime Minister Reinfeldt presented a proposal to abolish duty on ethanol-import from countries outside the EU”, business daily Dagens Industri reported. The initiative was welcomed by the Brazilian President: “Since we are all for free trade, my view is there shouldn’t be any duty on ethanol, and I hope that other EU-countries will follow the Swedish example”.

But everyone in ethanol wasn’t equally happy. As a result of the Governments decision, two planned projects for domestically produced ethanol in Northern Sweden were put aside. One

in Härnösand on the East-coast, where SCA, a Swedish Forest and Forestry company was involved together with local energy-companies. Another in Vilhelmina in the far North, where production was planned to 60,000 cubic meter annually. "The Government's decision to lower duty on ethanol-import, makes it hard for Swedish producers to compete on the market" said Bengt-Ove Högström, initiator of the project.

Also Agroetanol, producing ethanol from Swedish wheat at a plant in Norrköping - main city of province Östergötland - were concerned about their billion-crown investment. "When preconditions suddenly change, it gets very hard to pursue long-term industrial activity" President of Agroetanol Kenneth Werling told the local TV-station Östnytt. Agroetanol, owned by the Swedish farmer's organisations LRF and Svenska Lantmännen, had a year previously been optimistic and offered new job-possibilities to the region, but now faces a more uncertain future.

There seems to be a conflict of interest here. As Energy Minister Olofsson has frequently stated that the next generation of domestically produced bio-fuel is long-term crucial and need support to develop, and as mr Ethanol Carstedt himself claims that importing ethanol is only for now, before Sweden gets self-sufficient, it becomes a hard puzzle to get the talk on the one hand and the actual policies and realities on the other to fit.

One thing is certain. The Swedish demand for ethanol is increasing as market expands, and is likely to continue to do so. Meanwhile, growing ethanol-crops for Swedish cars is said to cause world-hunger and being ecologically distasteful. Sometimes agitated and emotional, the public debate on ethanol rapidly grows inflamed during spring. Carstedt changes his talk to be more about conditions for workers and the call for ethical and environmental standards, and adds new pictures to his Power Point presentation.

Research Leader Torbjörn Rydberg at the Department of Urban and Rural Development at Swedish University of Agricultural Sciences has studied Ecological Systems for decades. He says that ethanol and ethanol-driven cars in themselves isn't the main problem. The main problem is that we are living way above our means ecologically speaking - and therefore have to diminish our level of consumption. "Studies have been made that show a connection between cultivating large monocultures on the one hand and storms and hurricanes being created in the weather system on the other. For instance, it's been established that there was a connection between the huge wheat-cultivations in Australia and the hurricane Mitch, that hit the Caribbean".

Crop for ethanol isn't cultivated on a small scale, but neither are other crops. "These huge cultivations of a single crop, these monocultures, drain the groundwater and emits large amounts of nitrogen. Additionally, pesticides are often used as biocides and weed-killers. The final product goes to us, the lowered level of water and the negative effects on the environmental surroundings goes to the people living in the area".

When it comes to the cultivation of ethanol crops specifically, more and more areas in poor countries are being cleared of trees and other plants in order to prepare for exploitation, meeting a raising demand. "Then we say: that's OK, they get money for it. They get jobs. But what's missing in our perspective is the actual cost, which cannot be measured in monetary terms. In fact, the worth of a dollar varies extremely between different countries. If you put together the work-effort and the load on natural resources that poor countries are investing in the products they sell to us, they get a lousy dollar".

Rydberg traces a certain degree of naivety in the Swedish debate. "It is as if we think that just because we've said in negotiations with contractors that we have certain demands on their production, it won't have any bad effects. When in fact, exploring a site in for instance Africa means that people who lived there previously - possibly without money but maybe with a few goats - cannot do that anymore since the capacity of the natural surroundings are lost. They cannot continue their way of living as a result. The effects on culture and society are not taken in when we calculate, apart from the ecological unbalance created".

But growing domestic ethanol crops is not an alternative to meet our current demand on car-fuel either. Rydberg explains that not even if we grew ethanol crops on Sweden's entire area, would it be sufficient. "There simply isn't enough of energy-content in our crops".

The unwelcome message comes down to that we simply have to change our way of living. Oil isn't the only natural resource that is diminishing, says Rydberg. Other resources are getting drained too, because of economic and political structures that are heavily unbalanced in relation to the finite resources at our disposal. "But no politician is likely to stand up and say for instance that we have to stop economic growth or give up private cars", Rydberg argues. He is likely to be right about that. Instead, the message of "business as usual but drive your car on ethanol instead of gas. Sweden is taking responsibility for global warming and giving third world countries a chance to develop" is more in tune with how we Swedes like to think about ourselves, namely as a leading example for Europe and the world.