Box 4.2 Norwegian Oil and Swedish Methanol: Two cases compared

This is a brief comparative study of two cases, focused on a single aspect: how innovation and entrepreneurship in the energy sector are approached in two countries, Sweden and Norway. Being neighbours in Northern Europe, they have several commonalities but also differences. Their economic structures are very different. Particularly relevant for the case is the fact that half of Sweden's exports are manufactured products, while gas and oil account for over 60% of Norway's exports. Sweden has to import all oil and its stock of oil lasts only 2 months.

In the 1970s Norway began exploiting the North Sea for oil, a totally new industry for the nation. Today, 40 years later, Norway is one of the richest countries in the world per capita and has one of the lowest dispersion rates between high and low incomes. The building of the oil industry has been controlled by the government but has gradually opened up to private capital within a mixed economy format.

Now that fossil energy (oil, gas, coal) has to be reduced for environmental and health reasons, everyone is looking for replacements. Two alternatives have been aggressively promoted: ethanol based on agricultural products (such as sugar cane, corn and potato) and windmill power which requires constant wind. More recently, solar cells have popped up as the solution. None of these options fulfil the sustainability and economic goals. Despite this, they have been favoured by EU governments, mainly out of ignorance paired with heavy lobbyism and corruption. Sweden and Norway were early in introducing electricity by exploring hydroelectric power. Nuclear power is also promoted with the claim that we now can build safe plants and take of the waste. For Sweden, methanol, made from wood, stands out as the ideal option both from an environmental and an economic perspective. As the sale of wood goes down continuously, due to less consumption of paper, major suppliers, among them Sweden, must search for alternative uses.

During the past 8 years, a Swedish company, VärmlandsMetanol AB, in cooperation with the German ThyssenKrupp Industrial Solutions GmbH, has developed a concept for manufacturing methanol from wood biomass. The entrepreneur is Dr Björn Gillberg, a scientist and, since the 1960s, an investigator into environmental problems and sustainable solutions. The development has resulted in the design of a complete methanol factory. It is automatic and has no negative impact on nature. The only by-products are heat which can be used for heating houses, and wood ash which contains all the minerals found in wood and can be returned to the woods. The first factory design is complete and licenses and delivery agreements have been secured as well as environmental certification.

Today, finance and taxes pose obstacles. So far the development of the Swedish methanol company has been based on smaller emissions of stock, a small staff and low cost. No political party in Sweden has taken an interest in the project, and

national media have ignored it while local and regional media report it. Politicians, all the way from the extreme left to the extreme right, and the national media keep praising windmill power, having fallen for lobbyism and special interest groups instead of rational arguments. News media and politicians in Sweden have little interest in knowledge and fall back on populist opinions. The other issue is that energy is a tax object that gives a high income to governments, who are afraid to lose this income. This again is just a convention and lack of innovative thinking. If we change the fuel for cars, for example, tax rates can be re-calculated, be based on the new situation and open up for new solutions. It will be necessary anyway as goals to substantially lower pollution are set by the UN and the EU. Successful Swedish industry was built on long-term investment but this tradition has got lost.

Methanol can be produced at reasonable cost and there is unlimited raw material in Sweden and there will be so forever. It would take 20 years and 50 factories (replicas of the first factory) spread in forest areas from the south to the north of Sweden. In this way the raw material would always be close to a factory and the methanol would be distributed in the region of the factory; no big transport would be needed. It takes 2-3 years to build a factory, requiring a workforce of 700 people. As during the first 20 years the building of 2-3 factories annually would be in progress, 1,500 to 2,000 full time jobs would be created. Operations and maintenance of the 50 factories would provide 10,000 permanent jobs. This would take place in sparsely populated areas, meaning that small towns and countryside get an injection of work prospects and young people are not forced to move to metropolitan areas. In addition, it would attract other firms and public services: shops, restaurants, local transportation, doctors, dentists, etc.

So why does it not happen? Politicians keep chanting the innovation, entrepreneurship and scientific research mantras. Sweden's government as well as the EU gave huge support to methanol research although everything was already known.

When governments these days offer money for research, they have certain priorities or rather hang-ups: 'life science' (mainly medication), IT- based products, and leisure such as computes games, events and tourism. They believe we live in a postindustrial era dominated by the service sector. Official statistics are supplier-oriented while consumption-oriented statistics would give a totally different picture. A former prime minister even proclaimed that Sweden does not need manufacturing in the future and a new prime minister claims we do but only says so in general terms. The production of methanol is the first major manufacturing proposal in half a century in Sweden.

The financial sector does not support long- term sustainable investment, but wants high payback in 3-5 years. An industrial project is long term and requires high investment which only a nation can handle, like the government in Norway. The EU tries to put up obstacles when governments support industries, suspecting that it will interfere with free EU competition.

Sweden has unique conditions for methanol production. In 20 years from now, Sweden would not have to import any oil and could later export fossil-free energy and fulfil the sustainability and environmental goals which the same politicians in their public rhetoric have at the top of their priority list but totally disregard in practice. It only ends up in bureaucracy and legal technicalities. For example, a tax was recently introduced on all biofuel when more than 5% is mixed into petrol and diesel. In this way, the biofuel is taxed for carbon dioxide in the same way as it is for fossil fuels - but it does not produce carbon dioxide emissions. Pragmatic wisdom is absent.

In business there are usually risks when a new company is established and there are uncertainties about the future. With VärmlandsMetanol there are none. The building of the first factory could start immediately and the market is there. The obstacles come from peripheral institutions which fail to fulfil their function of infra-structural support: government, financial institutions and the EU.

This comparative case raises several basic and crucial questions: Is the demand for innovation and entrepreneurship mere rhetoric? What can we do to encourage innovation and entrepreneurship in practice? Are we afraid of change, although we talk about change coming faster and faster? How can we stop lobbyists and others taking over important national interests just for the benefit of special interest groups? How much is merely controlled by persona factors? And what are the roles of the EU, the national government, financial institutions and universities?