

Ladies and gentlemen!

– welcome to this workshop on European market study concerning combined heat and power plants.

I am here today representing Hydrogen Innovation & Research Centre as the Chairman of the Board but also as a Regional Politician of The Conservative People's Party. But mostly I am here today, because I am deeply interested in environmental policy and hydrogen technology in particular.

The climate challenge

The climate changes affect us all, and we need to act now. The Western world has to cut its CO₂-emissions. Otherwise we can't get countries like China and India to limit their emissions. Today, a European emits around 20 tons of CO₂ pr. year. According to the climate panel of the United Nations we should all emit less than two tons, if we don't want to lose control of the development.

The climate panel of the United Nations has gathered a lot of climate data and the conclusion is crystal clear. The concentration of greenhouse gasses in the atmosphere has increased enormously throughout the last 50 years, and the increase is due to human behavior. In the same period we have experienced global heating and the question remains how fast it will increase further? The conclusion is that the more CO₂ there is in the atmosphere, the faster the temperatures will rise. The situation is already developing fast and has huge consequences. If the development gets out of control we will experience:

- That the safety of food supply will be reduced due to drought and disturbed precipitation, which might lead to 600 mio. people suffering from malnutrition by the year of 2080.
- That the rise of the water level due to the melting of glaciers will lead to millions of people being homeless.
- That the tropical storms will lead to homeless people as well as catastrophic losses of lives.
- That the increased temperatures will lead to the spreading of contagious diseases – malaria in particular.

These are just some of the catastrophic consequences we are facing, if we don't act now! But there is also good news – we have the technology and the knowledge to handle the challenge.

Renewable energy

The question we are facing is how to create growth for the population of the world without creating unwanted environmental problems. To answer this question Denmark can be used as a good example. Throughout the last 25 years the economy of Denmark has grown with 75 %, while the energy consumption has remained the same. But we want to do more than that - status quo is not good enough!

First of all we need more renewable energy. The share of renewable energy should be doubled to a minimum of 30 percent before 2025. The Danish Government recently sealed an energy agreement, which secures better terms for wind turbines and other forms of renewable energy such as biomass and biogas. By 2011 the goal is to use renewable energy for 20 % of the Danish energy consumption.

The Government has also increased the subsidies for wind turbines, biogas and biomass. The Danish society has never before expanded so much in the area of renewable energy. In the years to come we especially want to expand in the area of wind energy – at sea in particular.

But the focus is also on hydrogen. In the energy agreement hydrogen vehicles are released from any taxes – as are electrical vehicles until 2012. This might further the development of the technologies implied, and further the way to commercialization. Furthermore, the Government wants to strengthen research, development and demonstration activities in the areas of new energy technologies. This requires a lot of money, which is why 750 mio. kroner (100 mio. euros) have been allocated to this area in 2009, and 1 billion kroner (130 mio. euros) by 2010.

This means that the demonstration activities in Denmark, that are mentioned in your study, have fine chances of Governmental support. And demonstration activities are the key to the success of the implementation of new energy technologies.

H2PIA

I would like to highlight one project which I have a keen interest in, and that is H2PIA. This particular project is also mentioned in your study and is one of the most ambitious renewable energy visions in Denmark.

H2PIA is a vision for the hydrogen society of the future, where citizens will produce the energy they need for themselves. H2PIA shows how we can develop from a society that produces energy by burning oil, coal and gas, to a hydrogen-based, independent, and pollution-free community.

The principle behind the vision is rather simple: The renewable energy comes from solar or wind power and is used to split H₂O – ordinary water – into hydrogen and oxygen. The oxygen is vented into the atmosphere, which already contains about 20 percent oxygen. The hydrogen is used in fuel cells that can produce energy, for instance in the form of electricity and heat. In the fuel cell, the energy is created by silent electrochemical processes with no pollution. The only product left over when the hydrogen is used up, is pure water. During periods with low energy demand, the hydrogen is stored. Then, when the wind is not blowing and the sun is not shining, the stored hydrogen is used.

The H2PIA-project is still in a planning/funding phase. If sufficient funding is attained the project consisting of 200 households will most likely materialize in 2010-12. The houses are planned to be passive houses; which means that the houses are designed to have a maximum annual heat consumption of 15 kWh/m².

I sincerely hope that this project materializes, because it makes a fine suggestion at a miniature level how to solve all the CO₂-problems of the World. I will do my bit as the Chairman of the Board of Hydrogen Innovation & Research Centre to make that happen.

With these words I wish you all a nice and enlightening workshop on renewable energy and fuel cells. Let us all hope for a fast commercialisation process of fuel cells using renewable energy, so that we all in our lifetime will experience a pollution free everyday life...

Thank you.