

Hafslund's history is also the history of Norway.

Since its establishment in 1898, the basic element of success has been production of renewable energy. But equally important has been technological development – the company's ability constantly to develop cost-effective and profit-making power generating processes.

Abundant and cheap hydro-electric power and technological inventions fuelled the transformation of Norway from one of Europe's poorest countries in the 19<sup>th</sup> century to a modern and prosperous nation by the late 1960-ies.

The discovery and production of petroleum on the continental shelf from the early 1970-ies have had a profound impact in this country. The petroleum sector now accounts for 25 % of the value creation. Norway is the world's 11<sup>th</sup> largest oil producer and the 6<sup>th</sup> largest producer of gas. Most of the production is exported to Europe and beyond.

Of the total Norwegian emissions, the petroleum sector is responsible for 24 %.

Today, the consequences of global warming can be observed everywhere. We see our glaciers are retreating. We see the the Artic is melting and we know that rising sea level is affecting the economies in the Caribbean. And the direct link between human activities and climate change has been scientifically established and recognised.

But the challenges of climate change, energy and the environment have been with us for a long time.

More than 20 years ago, The World Commission on Environment and Development had before it the findings of scientists from 30 countries, gathering in Villach, Austria, hosted by the World Meteorological Organization, UNEP and the International Council of Science.

Already then, these scientists had reached the conclusion that man-made climate change was plausible and probable.

The World Commission's report, warned about the mounting evidence on global warming, led the world to Rio where we adopted the Framework Convention on Climate Change. This led us to Kyoto. From there to Bali and on our way to Copenhagen. Today, climate change is the most pressing and disruptive challenge we are facing, with potentially dramatic repercussions for the global economy, our societies and the environment.

It triggers a perilous chain of uncertainties – along supply chains, in the financial markets, and for consumers.

We are facing a challenge that will affect all aspects of human activity for decades to come - our quality of life, our mobility, what we consume, and how we use our natural resources.

It will affect trade and investment decisions. It will reshape the competitive landscape.

There is no going back and there will be no business as usual. But I am convinced that the threat of climate change also means immense opportunities for business and industry.

Climate change exacerbates the serious challenges we have long been facing: poverty and natural disasters, armed conflict and global pandemics. There is no bigger threat to global prosperity and security.

With these enormous implications, all sectors of society and all countries are called upon to become part of the solution. We can all benefit, help overcome poverty, and save the climate.

Globally, almost two-thirds of the total emissions are energy-related; one-fifth is from land-use changes and forestation, and the rest, about one-seventh, are from agriculture and waste management.

To limit the temperature increase to about 2 degrees centigrade requires a reduction in global greenhouse emissions by at least 60%.

The climate problem cannot be solved without decarbonizing the energy sector. The question is how best to do it, effectively and equitably.

Energy efficiency must be at the top of the list for all countries. Although it has long been recognized as the cheapest and cleanest source of energy, and despite the large opportunities involved, it has not been pursued as aggressively as the increase of new supplies.

The technical and economic potential is enormous. We will have to increase the efficiency of buildings, appliances, automobiles and factories.

Unleashing the potential of renewable energy will increase both energy and climate security. Again it is a win-win proposal for all countries.

It is clear: We must make clean energy technologies more available, more efficient and more affordable.

Reducing global emissions by 60 % will require a technology revolution comparable to those in the space and telecommunication sectors. I am a technology optimist. This is what I hope and expect.

The crucial question is whether we will realize our potential. Business has time and again proven its ability to adapt to new circumstances and devise new solutions.

But I do believe that the threat of climate change is far too important and dangerous to be an arena for voluntary action and good will.

I believe in the power of political decisions. We must change the market forces to accelerate the investments for change.

Through regulation and taxation, through political intervention in the markets, we have solved many of the most severe environmental problems that industrialization has created.

But experience also tells us: When we change the rules, we always face fierce opposition from those who make their profits based on status quo.

Back in 1990, my government introduced a new CO<sub>2</sub>-tax on the petroleum industry. There was an outcry around the world in oil-producing countries: in Norway, in Europe and in the Middle East. How could a government do such a thing, directed against its own most important industry?

Ever since, of course, the petroleum industry has prospered. But not only that. It has reduced its environmental footprint dramatically. And in the end, it also helped reduce costs. New solutions and new technology were developed to reduce the tax burden.

Today, the climate effect of the production of one unit oil or gas in Norway is one third of the global average, and half of that of other North Sea states!

The CO<sub>2</sub>-tax also led to the first ever off-shore carbon capture and storage project. The gas of the Sleipner field contains more CO<sub>2</sub> than the market accepts. To prepare the gas for sale, the CO<sub>2</sub> has to be removed, and the tax on CO<sub>2</sub> emissions makes it profitable to catch it and store it rather than releasing it into the atmosphere.

For ten years, one million tons a year has been stored in a geological formation, on the Norwegian continental shelf.

The next challenge is to develop technologies enabling power plants to install full scale carbon capture and storage systems, not only for gas, but also for coal which is the dominant source of primary energy worldwide. The International Energy Agency predicts that the relative importance of coal will increase. Today, total emissions from coal are bigger than emissions from oil and are likely to increase more.

Our vision must be to develop technology which can clean both coal and gas fired plants at a cost that make them commercially attractive.

This will happen when we manage to reduce costs, to improve technologies so that the price of catching and storing carbon will be lower than the price of releasing the CO<sub>2</sub> unchecked into the atmosphere.

So a price on carbon, consonant with the polluter pays principle that we adopted in Rio, is essential for CO<sub>2</sub> emission reductions.

Real change will come when the chief financial officer demands from the engineering division that emissions must come down, for financial reasons.

And this will only happen when governments develop systems which set a price on carbon. We have one in Europe. Many American states are developing similar schemes.

Cap and trade is the future. Governments must set a total upper limit for emissions.

Governments do not need to decide where the reductions should take place, only what the total limit should be. That is for the market and human creativity to work out.

International emissions trading would also generate finance for developing countries, a must for a global deal, that needs to include new and additional resources for mitigation, adaptation and technology cooperation.

It is this challenge that we are seeking to address in this timely conference, bringing together people from different walks of life, but all convinced that we are in this together, and that in a globalized world, we need to create global solutions, based on global leadership and more shared responsibility.

