



EXECUTIVE SUMMARY OF REPORT FROM
THE NORWEGIAN GOVERNMENT'S EXPERT
COMMITTEE FOR GREEN COMPETITIVENESS

GREEN COMPETITIVENESS



How can Norway create green competitiveness?

As we said already at the press conference in June 2015, when the Government gave us this task, this question is easier to ask than it is to answer.

Nonetheless, we happily accepted the assignment. We consider it a privilege to get to provide recommendations on how an entire country can adapt to become a low emission society while also creating value and new jobs. But it is also a nearly insurmountable task for a small committee.

"It is about building the country, but building it green."

Erna Solberg. April 21, 2016

We have tried to solve this task to the best of our ability. Luckily, we have been assisted by large parts of the Norwegian society. A significant part of our work has consisted of having an extensive dialog with important industries, businesses, organizations and academia. Here, we have received several useful contributions to our work. Eleven sectors have taken on our challenge to formulate roadmaps for green competitiveness: What actions are needed from politicians and authorities, and what can industries and business do themselves, to make Norway a competitive low emission society by 2050? This is a substantial result of the committee's work, and a framework from which to build on in the future.

There is no simple recipe for how to achieve green competitiveness. Our ambition has not been to present all imaginable steps on the road towards 2030. Or to 2050. Nor have we calculated the consequences of each and every one of our recommendations. That is simply impossible in just over a year by a two person, part time committee with a small secretariat. Such a task would be too big and too complex. But we have tried to outline a space of possibilities and point out a direction, to accelerate the effort to realize the green shift and achieve green competitiveness.



Taking the climate challenge seriously is not free of cost. However, failing to act in time will be even more costly. Those countries that are best at converting the challenge of becoming a low emission society to opportunities will be the most competitive ones in the coming decades.

Norway has a good starting point. Many of our proposals are about doing things that are already done in Norway, but in smarter ways. More integrated. More effective. Removing barriers. Changing the mentality to inspire courage to take on necessary risks.

We propose 10 principles to form the basis for policy-making. By agreeing on such a set of basic principles, the political Norway would provide a broad political base for the green shift. This would give all stakeholders the necessary trust in that the direction has been set. That is crucial for taking on the task with full force.

Furthermore, we have a range of recommendations the cover all sectors, followed by recommendations addressing specific critical sectors. Some proposals concern the behaviors and personal responsibilities of individuals themselves. Such a major change cannot, and in our opinion should not, come merely through politics – top-down. The active cooperation from and the responsibilities of individuals, both in private and at work, are essential in a democratic society.

Norway was happy with the Paris Agreement. Finally, the world agreed to take action. Now, words must become practice; attitude must become action. By following the recommendations and direction of this report in the coming years, Norway will be well on its way towards green competitiveness.

The Norwegian Government's Expert Committee for Green Competitiveness.
Oslo, October 28, 2016



Connie Hedegaard



Idar Kreutzer

GREEN COMPETITIVENESS

CHANGE IS NECESSARY

- **Climate change is accelerating and the Paris Agreement demands bold action.** Norway is committed to a target of a minimum of 40 % reduction in greenhouse gas emissions by 2030 (compared to 1990) and to becoming a low emission society by 2050. Norway's emissions are currently higher than they were in 1990, and rapid change is required.
- **Global trends impact Norway's future opportunities.** The world's population is growing rapidly, becoming older, richer, and more urban. The pressure on global resources is on the rise and resource efficiency is important for future competitiveness. New technologies and new business models provide new opportunities. The prices for low emission technologies are falling, leading to a rapid growth in renewable energy. An increasing number of countries are now focused on green initiatives to compete in a carbon constrained world.
- **The petroleum sector will no longer be the same growth engine for Norway's economy.** Production has almost certainly passed peaked levels. A de-carbonization of the global economy will eventually reduce the demand for oil and gas. Signs of a future without oil and gas are now visible; renewable energy and electric vehicles are becoming price competitive.
- **Norway needs to compensate for the expected decline in petroleum related industries with new green jobs.** Green competitiveness means creating value and full employment while simultaneously reducing greenhouse gas emissions. Both new and existing occupations must transform themselves to compete in this low carbon, resource-efficient future.

THE NATIONAL STRATEGY PROCESS HAS BEGUN

- **In line with our mandate, we have challenged "all of Norway" to think strategically about the transition to a low carbon society.** Our basic premise is that the world takes the challenge of climate change seriously and is moving towards a low emission society. In our dialogue with representatives from Norway's main industries, businesses, organizations, and academia, we challenged them to envision their sectors in a truly low emission society. This challenge gained increasing relevance following the Paris Agreement, declining costs for renewable energy and low oil prices.
- **Major segments of the business community accepted our strategic challenge.** Leading companies from eleven different sectors have made "roadmaps to 2050". For most sectors, the vision is maintaining global competitiveness while achieving zero emissions by 2050. There has been cooperation across and within industries to reach consensus on a strategic plan. A national bottom-up strategy process is already underway – across the country and in many industries.
- **The roadmaps create a new foundation from which to build on in the future.** Some examples include:
 - *The processing industry aims to double production and achieve negative emissions by 2050.* This ambitious industry roadmap has moved the national discussion. Rather than focus on how the industry compares with its peers in other countries, the industry is now focused on how it can gain competitiveness by reducing its own carbon emissions. These reductions will be driven by developing new processing technologies and investing significantly in R&D.

- *A range of commercial transport operators have a collective ambition to reduce greenhouse gas emissions by 40 to 60 percent by 2030.* They are also aiming for zero emissions by 2050. Given that transportation is central to most Norwegian businesses, establishing an effective, low emission transportation sector will generate competitive benefits for many Norwegian industries.
- *The maritime sector is now targeting zero emissions by 2050.* Norway has a leading maritime sector with major companies along the entire value chain. De-carbonizing the Norwegian maritime sector creates an opportunity to develop innovative solutions and technologies that can be adopted globally.
- *The construction and real estate sector aims to be wholly integrated in the resource-efficient, circular economy by 2050.* Several major real estate companies have already decided to take immediate measures, irrespective of government action. These companies believe low carbon solutions provide both a competitive advantage when seeking tenants and potential cost savings in the future.
- **The input we have received shows that it is possible to reduce Norwegian non-ETS emissions (approximately 50% of Norway's emissions are not included in the European Emissions Trading System) by 40 percent by 2030, and that Norway can become a truly competitive low emission society by 2050.** In order to achieve this, technology development and implementation of new technologies must be accelerated in a market that currently is unwilling to pay more for green solutions. This will require a new, more effective dynamic between government and industry.
- **The private sector must secure the value creation, by transforming itself to compete in a world with much tighter climate policy.**

A SELECTION OF OUR MOST IMPORTANT RECOMMENDATIONS:

Principles for policy development

- **We recommend 10 principles for policy development.** Political agreement and willingness to implement these principles will trigger innovation and investment.
 - *The polluter should pay.*
 - *Emissions and other externalities should be priced.*
 - *Higher taxes on what we want less of. Lower taxes on what we want more of.*
 - *Informed decision-making by consumers should be facilitated.*
 - *Public procurements should require green solutions.*
 - *Public planning and investments should be based on the objective of becoming a low emission society by 2050.*
 - *A life cycle perspective should be the basis for public investments and procurement.*
 - *New legislative proposals should include an evaluation of CO₂ effects where relevant.*
 - *Green competitiveness should be built on well-functioning markets.*
 - *There should be consistent reporting on what we want to achieve and what we want to avoid.*

Norway as a knowledge-based nation must become better and greener

- **Research should prioritize the problems that must be solved, and be transitioned from fossil to green.**
- **The long term plan for research and higher education must be rigorously followed up.** Measures must be implemented to secure increased investments in research and development. Interdisciplinary approaches must be stimulated.
- **Public financial support must be shifted towards green innovation.**
- **Marine industries have great growth potential, but need to be developed in a biologically sustainable way to realize their potential.** An escalated and targeted research effort throughout the value chain is necessary.

The authorities must utilize their roles and risk bearing capacities

- **Norwegian politicians should target a reduction in non-ETS emissions by up towards 40 percent by 2030.** Predictable goals facilitate innovation, willingness to invest and long term industry development.
- **The public sector's purchasing power must be utilized to accelerate de-carbonization and stimulate innovation and technology adoption.** As an example, requiring fossil-free construction machinery or zero emission ferries, secures both increased demand and development of new technology. The overall cost of a procurement must be calculated on basis of expected lifespan. In that way, the public authorities can strengthen the competitiveness for high quality products with sufficient lifespans. Ambitious functional requirements should be required for public procurements with potential for climate benefits. A national center for procurement competency should be established.
- **The State should lead as an influential owner.** As a major building owner and the largest procurer of goods and services, the State should set high environmental and energy requirements for their own buildings. This will stimulate innovation and create a greater market for energy efficient and climate friendly building materials. Similarly, offshore exploration and production permits should encourage emission free maritime activity.
- **Cooperation among municipalities must improve. Municipalities and counties should be merged.** The current lack of cooperation is a hindrance to national and regional priorities. Effective public planning is necessary to advance Norway's smartness and attractiveness. The National Transport Plan must be developed further with a more holistic perspective. The Plan must include the possibilities provided by digitalization and other new technologies.
- **A careful evaluation should be carried out of how best to utilize the state's risk-bearing capabilities.** The government should consider how a stricter climate regime changes the risks concerning petroleum activities. Because of the increasing uncertainty regarding future demand, the government should consider the need for changes in the current petroleum regime. This is to ensure that Norway avoids taking higher risks in a market with increasing uncertainty of demand. The authorities should require preparation of sensitivity analyses of demand and carbon pricing with regards to plans for development and operation of possible new fields.

In order to ensure sustained value creation and employment, Norwegian businesses must remain competitive

- **The state must establish adequate regulations and market conditions to reward the development of green, competitive industries.**
- **The access to venture capital in Norway must be strengthened.** Public capital should be utilized to encourage more private capital investment. Models for tax incentives to stimulate investments in seed and venture funds should be examined. The new investment company *Fornybar AS* must be designed so that the company can offer long term financing and stimulate the release of private investments.
- **A binding environmental agreement with the transportation industries should be negotiated on the basis of a CO₂ fund.** Low emission solutions for personal transport are well on their way, but measures must be implemented concerning commercial transport. This will support the transportation sector's transformation into a competitive and efficient sector in a low emission society.
- **Access to sustainable biomass must be secured to facilitate greenhouse gas reductions and future competitiveness.** The most efficient way to do this is by stimulating demand for biomass from Norwegian forests. Several roadmaps point to an increased need for bio-based raw materials and products: increased use of wood in construction, charcoal to replace coal in the processing industry, bioethanol for plastic production, biofuels for the transport sector, biorefining, and fish feed from forest biomass.
- **The state should initiate labeling systems and reporting that stimulate informed choices by consumers as well as businesses.**

THE WAY FORWARD

- **If our proposals are initiated before 2020, Norway will be well on its way towards reaching its climate goals and achieving green competitiveness.**
- **The economic consequences of the transition Norway must undertake will depend on the efficiency of the adjustments enacted and what happens in the rest of the world.**
- **The committee's proposals must be refined and expanded through further cooperation between the public and private sector.** Change demands better coordination between agencies, between municipalities and regions, between various administrative levels, and not least between the government ministries. Everyone must move in the same direction.
- **The responsibility for the transformation to green competitiveness must be clearly placed with the government.** The transformation of Norway into a low emission society touches upon most sectors in society and most ministries. The prime minister must take the responsibility for providing direction and force to realize the strategy.



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