

**Report to the Storting No. 29  
(1998-99)**

**on Norwegian energy policy**

*Recommendation from the Ministry of Petroleum and Energy 19 March 1999,  
approved in the Council of State the same day*

**Chapter 1 On Norway's energy policy**

**1.1 Background and scope of the report**

During the 1990s, there have been a number of changes in the basic framework for Norway's energy policy.

The level of energy use reflects our standard of living and industrial production. The consumption of electricity is markedly higher in Norway than in other countries. Per capita electricity consumption rose by 8.4 per cent from 1990 to 1998.

The power supply system was reorganized at the beginning of the 1990s. The system whereby the energy utilities were required to produce sufficient electricity to meet increases in consumption has been replaced by a market-based system in which prices create a balance between supply and demand. A Nordic market for power trading has developed. Licences have been granted for three new cables that there are plans to construct between Norway and the continent.

During the 1990s, there has been increasing concern about the issue of climate change. Norway is a party to the Convention on Climate Change and has also signed the Kyoto Protocol, which sets out binding commitments for emission reductions in industrial countries. The Protocol, which has not yet entered into force, is expected to have an impact on the use of fossil fuels. Further negotiations will be required to finalize details of the Kyoto mechanisms.

Although further hydropower developments can still provide substantial electricity supplies, the main development era is over. The Government has decided against development of the upper reaches of the Otta river in order to protect valuable areas of natural environment against further disturbance. From 1970 to 1990, per capita hydropower production capacity rose from 17.3 MWh to 25.4 MWh. Since 1990, there has only been a modest rise, and in 1998 per capita production capacity was 25.7 MWh. In 1996, which was a very dry year, Norway directly experienced the vulnerability of the system to a drop in precipitation.

Advances have been made in the technology for making use of new, renewable energy sources, but these still play a very modest role. Technology is being developed to minimize CO<sub>2</sub> emissions from gas-based power production.

Production of hydropower is based on one of Norway's most important natural resources, and major investments have been made in power supply installations and the transmission grid. There has been growing interest in the valued added produced by the industry, and the power supply sector has become more and more international.

A number of industrial enterprises and local communities need clear signals about the terms on which they will be able to purchase power supplies when their contracts with Statkraft SF expire between 2004 and 2011.

This report does not deal with all issues that are relevant to the energy sector. It focuses on the following:

- the objectives and strategies of Norway's energy policy
- the basic framework for our domestic energy policy
- Norway's policy for a shift in energy production and use
- the terms for new contracts between Statkraft SF and individual enterprises.

On 16 April 1997, the Labour Government appointed a committee to evaluate the energy and power balance up to the year 2020. The committee submitted its report on 3 July 1998 (NOU 1998:11 - The energy and power balance up to the year 2020). The report was circulated for comment, and 82 instances submitted comments. This Report to the Storting is based on the committee's report and the statements that were received. The Ministry has not considered it necessary to discuss the factual background in great detail here, since this has already been presented in the committee's report.

The Ministry has reviewed experience of the application of the 1990 Energy Act with the organizations on which it has most impact. A number of views were put forward on transmission charges, the way energy efficiency activities are organized, and the need for a review of the various licensing arrangements set out in the Energy Act. There were also a number of comments on related legislation, but no serious objections to the market-based power trading system.

Energy use for transport purposes and in the oil and gas sector off mainland Norway is not discussed in this report, since there are few links between policy objectives and instruments relating to energy for transport purposes and those relating to stationary energy use. The coherence of Norway's energy policy is mainly ensured by means of its environmental policy. Energy use in the oil and gas sector off mainland Norway is not physically linked to the domestic electricity grid. The question of establishing such a link is discussed in Report to the Storting No. 46 (1997-98) on the oil and gas sector. This report does not discuss issues related to the oil and gas sector, since these will be submitted to the Storting separately in accordance with the usual procedure.

The Ministry of Petroleum and Energy will submit an environmental action plan for the energy and water sector in autumn 1999. The main elements of the plan will be presented in the state budget for 2000 and in the report to the Storting on the Government's environmental profile and the state of the environment.

Questions related to the security of energy supplies at the turn of the millennium will be dealt with through the reporting system that the Government has set up.

## 1.2 Objectives and strategies

The Government intends to pursue an energy policy that will support its ambitious environmental policy. In implementing this policy, it is important to find effective ways of carrying out the tasks involved. It will be necessary to focus more closely on the security of electricity supplies as production installations and transmission capacity are more fully utilized. Hydropower plays an important role in wealth creation in Norway, and this must be used for the benefit of the whole population. Norway's energy policy must be combined with continued efforts to ensure the viability of local communities that are highly dependent on energy-intensive manufacturing.

The basis for the Government's energy policy is that environmental objectives will determine the limits of energy production, and that active steps must be taken to limit energy use. Growth in production must to a greater extent be based on new, renewable energy sources. The necessary shift in energy production and use must both be efficient and take place in a way that has an acceptable impact on public welfare.

The Government's energy strategy is based on the existence of a power market and trade in power between countries. If the power trade is to be facilitated, it is a prerequisite that production and consumption meet the requirements of Norway's environmental policy. It is particularly important to ensure that energy prices reflect the environmental costs as closely as possible. Power trade and the environmental challenges we are facing require extensive international cooperation. It would not serve a useful purpose to set limits on how much electricity should be transmitted across national borders.

The Government will meet its obligations under the Convention on Climate Change and the Kyoto Protocol. After an overall evaluation, the Government has decided to rule against the construction of gas-fired power plants that are not based on technology for CO<sub>2</sub> removal to minimize emissions. In this connection, both the need to provide incentives for the development of new technology and the need to bring about a shift in energy production and use are considered to be important.

There is substantial potential for further hydropower development in Norway, and one objective of the proposed new Water Resources Act is to maintain production opportunities. Future hydropower developments will be based on the Master Plan for Water Resources and the Protection Plans for Water Resources. However, a project that has been placed in category I (to be given highest priority in the event of development) in the Master Plan will not automatically be licensed for development. Certain developments may be restricted or projects turned down in order to preserve valuable environments in and around watercourses. The Government has for example decided against development of the upper reaches of the Otta river.

There is great potential in Norway for energy production from new, renewable resources, and we should take advantage of the opportunity to be at the forefront of developments. In the next few years, the Government will encourage the development of renewable energy sources through a comprehensive development programme. The objectives are to construct wind generators with a production capacity of 3 TWh/year, and to increase annual use of central heating systems based on new renewable energy sources, heat pumps and waste heat by 4 TWh/year, both by the year 2010.

Constraints on production mean that the Government must pursue an active policy designed to limit energy use and reduce dependence on electrical heating. These changes must be brought about gradually. Energy use must be limited considerably more than would be the case if developments were allowed to continue unchecked.

The fact that prices create a balance between supply and demand must be utilized in bringing about the shift in energy production and use. Transmission charges are primarily intended to encourage effective use of the transmission grid, but can also help to ensure that production and use take place at appropriate sites and contribute to environmentally sound and flexible use of a variety of energy carriers. The Government expects the energy utilities to be interested in cooperation with consumers to find efficient energy solutions that can help to reduce energy use, and will take steps to encourage these developments.

The shift in energy production and use will require a package of energy measures, including a gradual increase of the electricity tax combined with grants for investments within a framework of up to NOK 5 billion over a ten-year period. If technological advances substantially improve the profitability of new renewable energy sources, the amount allocated for grants can be re-evaluated. If the increase in the electricity tax has any unwanted distributional effects, compensation is to be provided by means of the standard allowance and personal allowance in the taxation system and a rise in the basic pension and housing benefit. The tax on fuel oils will be raised correspondingly.

The markets for green energy and green electricity can become interesting energy policy instruments.

Various policy instruments, including the technical regulations pursuant to the Planning and Building Act, can be used to achieve the Government's objectives for the energy sector. A committee will be appointed to consider stricter requirements for energy use in buildings. Requirements to use central heating systems and requirements applying to existing buildings are possibilities that will be reviewed. Stricter regulations may be combined with grant schemes.

The Government will expand the role that the municipalities and county municipalities play in energy policy. Land use planning and collective planning of residential heating are energy policy tasks where the municipalities should play a more important role than they do today. They must cooperate with energy utilities that have local area licences. The municipalities also play an important role in the utilization of local energy resources. The Norwegian Water Resources and Energy Directorate can require energy utilities to submit energy plans. The Government will try to find other ways of encouraging the municipalities to play a more active role in energy planning by means of economic incentives. Climate and energy strategies drawn up as part of Local Agenda 21 activities will provide support for these developments.

The Government will seek to limit oil consumption for heating purposes, but realizes that oil will have to continue to play a role in heating to maintain varied energy supplies. In the long term, the use of oil must as far as possible be restricted to meeting peak demand and ensuring flexibility in energy supplies for heating.

Reduced investments in energy installations have resulted in a higher degree of utilization of the capacity of the electricity system. This means that more attention must be devoted to the security of energy supplies. Statnett SF is responsible for short- and long-term system security in the Norwegian power system, and Statnett cooperates with the other Nordic grid companies. The Government will take steps to maintain the system security of power supplies, both in order to meet peak demand and to ensure that there is no problem in supplying sufficient power in years when low precipitation results in a significant shortfall in hydropower production. An appropriately dimensioned transmission grid and well-functioning power market are essential for maintaining the security of electricity supplies. The grid companies must also consider introducing measures where consumers are the target group. In addition, it may be appropriate to make use of installations such as gas turbines as reserve aggregates. The security of power supplies can also be improved by making it easier for consumers to switch between different energy carriers.

## **Chapter 2    Summary**

### *Chapter 3.    The basic framework for Norway's energy policy*

Chapter 3 reviews the basic framework for Norway's energy policy, the energy supply system in Norway, various technologies for energy production, the Nordic power market and energy policy challenges. The chapter also summarizes projections of energy use up to 2020 based on calculations made by the government energy committee.

One important element of the energy framework is that Norway is above all an electricity producer and consumer. Energy use is closely related to economic growth. Norway has a large energy-intensive manufacturing sector. Electricity consumption has grown rapidly in recent years. The energy supply infrastructure consists almost entirely of the electricity transmission grid. Hydropower accounts for practically all electricity production, which means that Norwegian electricity production does not result in emissions to air. Hydropower is an important part of the national wealth. However, the strong emphasis on hydropower means that Norwegian energy production is vulnerable to variations in precipitation. Although there is still substantial potential for further hydropower development, the main development era is over. In future, several types of energy and electricity production may be significantly improved in both technological and environmental terms, but costs still remain high for many of the new technologies.

All the projections made by the government energy committee in NOU 1998:11 show a continued rise in energy use until 2020 unless measures are taken to counteract this. In the reference scenario, electricity consumption rises by 1.6 per cent per year until 2005, and by 1 per cent per year in the period 2005-2020. The projected overall rise in electricity consumption up to 2020 is 32 TWh. In three of the four scenarios described in NOU 1998:11, it is concluded that private households will account for the largest rise in electricity consumption up to 2020. This will increase the need for energy for heating purposes.

The price of electricity is lower in Norway than in other countries. The government energy committee stated that higher taxes on electricity and fuel oil may be an appropriate instrument for stabilizing or substantially reducing energy use if this is a political goal. However, the committee's calculations show that it will be difficult to stabilize energy use by this means alone, and that taxing consumption more heavily may have unwanted distributional effects. A

majority of the committee therefore recommended further review of the possibility of introducing differentiated electricity tax rates for the various user groups.

Gas-based power production based on combined-cycle gas turbine technology (CCGT) has accounted for a rapidly rising share of production capacity in northern Europe in recent years. Emissions of CO<sub>2</sub> from combined-cycle power plants total roughly 300 000 - 400 000 tonnes per TWh electricity produced. Several companies have plans to build gas-fired power plants in Norway.

On 5 June 1997, *Naturkraft AS* was granted construction and operating licences for gas-fired power plants at Kollsnes in Hordaland and Kårstø in Rogaland. The decision to grant these licences is final. On 21 January 1999, the Norwegian Pollution Control Authority granted *Naturkraft* discharge permits pursuant to the Pollution Control Act. This decision has been appealed both by several environmental organizations and by *Naturkraft*. The appeal will be treated according to the normal procedures pursuant to the Pollution Control Act. The Government will not intervene in this process.

On 4 March 1999, *Industrikraft Midt-Norge DA* applied for a construction and operating licence for a gas-fired power plant at Fiborgtangen in Nord-Trøndelag.

In June 1998, *Nordenfjeldske Energi A/S* sent notification of plans to construct a gas-fired power plant at Tjeldbergodden in Møre og Romsdal.

Several groups in Norway are trying to develop technology for gas-based power production that will result in minimal CO<sub>2</sub> emissions. *Norsk Hydro* has plans to build a large gas-fired power plant on Karmøy based on hydrogen gas. *Aker Maritime* has launched plans for a gas-fired power plant fuelled by a combination of natural gas and pure oxygen.

Until now, most research has been carried out on technological solutions for CO<sub>2</sub> removal involving the separation of CO<sub>2</sub> from exhaust gases. There are at present four recognized ways of doing this, all of which involve the removal of CO<sub>2</sub> after the combustion of natural gas.

Any future applications for licences will be dealt with according to the procedures set out in the Energy Act and the Pollution Control Act. After a thorough evaluation, the Government has decided to rule against the construction of gas-fired power plants that are not based on technology for CO<sub>2</sub> removal to minimize emissions.

New renewable energy sources are the energy sources of the future. The Government believes that technological advances will result in solutions that in the long term can make a substantial contribution to world energy supplies. Conditions in Norway are favourable for increased use of new, renewable energy sources such as wind power, bioenergy, heat pumps and solar energy.

The December 1997 Kyoto Protocol was a major step forward in international climate policy. The Protocol contains a commitment by the industrial countries to reduce their aggregate emissions of the six most important greenhouse gases by at least 5 per cent below 1990 levels between 2008 and 2012. For Norway, the Protocol means that greenhouse gas emissions may not be more than one per cent higher in the period 2008-2012 than in 1990. This commitment

may be met both by means of domestic measures and by making use of the Kyoto mechanisms - international emissions trading between countries that have commitments under the Protocol, joint implementation, in which industrial countries cooperate in carrying out projects to reduce emissions, and the green development mechanism, which allows industrial countries to take part in projects in developing countries and receive emission reduction credits. The Government has appointed a commission of experts to evaluate how Norwegian participation in these mechanisms can be organized in relation to the application of national policy instruments, and to draw up a proposal for a domestic emission trading system using quotas.

The projections of the energy and power balance made by the government energy committee included a scenario in which greenhouse gas emissions are reduced in a cost-effective way internationally. These calculations were based on the assumption that commitments under the Kyoto Protocol will be met by the industrial countries by 2010. In addition, it was assumed that developing countries will be taking steps to limit their emissions by 2010, and that in 2020, emissions will have been reduced by 20 per cent compared with the 1990 level. The calculations show that the profitability of hydropower and new renewable energy sources will rise considerably, and that in the long term, there will be a shift to more environmentally sound electricity production in the Nordic countries. In the two scenarios that include international climate agreements, consumers in the Nordic countries must adjust to electricity spot prices of the order of NOK 0.30 per kWh, which is about twice as high as at present. This will also alter trends in energy use.

The electricity supply systems of the Nordic countries are closely integrated today: Norway has transmission connections to all the other Nordic countries, and a connection with limited capacity to Russia. Because the electricity transmission grid links the Nordic countries, the energy policy followed by one country has an impact on all the others, and a country's power balance is not determined only by national conditions. The integration of the power supply systems also makes it possible to achieve better environmental results in the Nordic region as a whole.

The Nordic governments have been seeking to contribute to sustainable development of the Nordic electricity market. The Norwegian Government will take steps to ensure that electricity prices reflect the environmental costs of electricity production. This can be done by means of trade in quotas, taxation or markets for green electricity (further details in Chapter 4). These questions are being discussed in the Nordic Council of Ministers and the Nordic Council. Harmonization of taxes in the Nordic electricity market will have to take into account progress within the EU in this field. Another important energy policy challenge is that the scope of cooperation has been expanded to include the energy sector in all countries around the Baltic Sea.

In a few years' time, transmission capacity to the rest of Europe will be increased by the planned cables between Sweden and Poland, Norway and Germany and Norway and the Netherlands. Developments in the rest of Europe will thus become more important for Nordic electricity prices. Implementation of the electricity directive will influence developments in the Nordic and European power supply systems. The EU's work on energy and environmental issues will also be important for Norwegian electricity supplies. Efforts in these sectors are focusing particularly on new renewable energy sources, energy efficiency and combined heat and power generation. EU decisions on energy taxes will also be important.

#### *Chapter 4. Shift in energy production and use*

Chapter 4 describes the Government's objectives for a shift in energy production and use, based on a policy for limiting energy use and measures to promote the use of central heating systems and new renewable energy sources.

The Government intends to pursue an energy policy that will support its ambitious environmental policy. This means that people must be prepared for a future in which energy, and electricity in particular, is in shorter supply and becomes a more valuable commodity. The necessary shift in energy production and use must take place in a way that has an acceptable impact on public welfare. The Government's objectives for limiting energy use and a shift in energy use and production are:

- to limit energy use considerably more than would be the case if developments were allowed to continue unchecked
- to increase annual use of central heating based on new renewable energy sources, heat pumps and waste heat by 4 TWh by the year 2010
- to construct wind generators with a production capacity of 3 TWh/year by the year 2010.

To achieve these objectives, a package of energy measures will be needed, including a gradual increase of the electricity tax combined with grants for investments within a framework of up to NOK 5 billion over a ten-year period. If technological advances substantially improve the profitability of new renewable energy sources, the amount allocated for grants can be re-evaluated. If the rise in the electricity tax has any unwanted distributional effects, compensation is to be provided by means of the standard allowance and personal allowance in the taxation system and a rise in the basic pension and housing benefit. The tax on fuel oils will be raised correspondingly. The impact on business and industry of increasing the electricity tax will be evaluated. The Government will review all current exemptions from value-added tax and the electricity tax.

The Government will take steps to develop the energy markets in a manner that facilitates efforts to reach the objectives described above. The income regulation system, grid charges and market development are areas that will be followed closely. By ensuring that the costs of the power supply system are made transparent, it is possible to work towards a common goal even though the final decisions are taken locally.

The Government will expand the role that the municipalities and county municipalities play in energy policy. Land use planning and collective planning of residential heating are energy policy tasks where the municipalities should play a more important role than they do today. They must cooperate with energy utilities that have local area licences. The municipalities also play an important role in the utilization of local energy resources. The Norwegian Water Resources and Energy Directorate can require energy utilities to submit energy plans. The Government will try to find other ways of encouraging the municipalities to play a more active role in energy planning by means of economic incentives. Climate and energy strategies drawn up as part of Local Agenda 21 activities will provide support for these developments.

Various policy instruments, including the technical regulations pursuant to the Planning and Building Act, can be used to achieve the Government's objectives for the energy sector. A

committee will be appointed to consider stricter requirements for the energy use in buildings. Requirements to use central heating systems and requirements applying to existing buildings are possibilities that will be reviewed. Stricter regulations may be combined with grant schemes.

A shift in energy production and use will provide opportunities for new types of economic activity and economic growth in areas with an one-sided industrial sector.

The government energy committee pointed out that responsibility for energy efficiency activities is fragmented. In their view, these activities should be more purposefully organized, and they recommended an evaluation of the way energy efficiency activities are organized. The committee recommended the establishment of a central energy efficiency agency that would be responsible for purposeful implementation of energy efficiency policy. The Ministry will consider the establishment of such a body, for example organized as a directorate.

### *Chapter 5. Hydropower*

Chapter 5 describes the hydropower sector in Norway, its development potential, wealth creation in the electricity sector and the Government's policy with respect to public ownership of hydropower resources.

Developments during the past 10 years have strengthened the position of electricity in the Norwegian energy supply system. Electricity consumption has risen by 16 TWh, or 1.2 per cent per year. This sharp growth in electricity consumption reflects the increase in the level of activity in the Norwegian economy.

Investments in new hydropower installations have dropped substantially during the 1990s. The replacement of the previous system, whereby the energy utilities were required to produce sufficient electricity to meet increases in consumption, by a market system reduced the incentives to carry out development projects and increased the economic risk for producers. During the past eight years, production capacity has increased by 0.45 TWh/year. Both environmental considerations and the natural resource base set constraints on hydropower development. There is still substantial potential for further hydropower development, both through new projects and through expansion of existing installations, but the main hydropower development era is over, given the restrictions that now apply to further development.

In the Government's view, it is now necessary to update the Master Plan for Water Courses again. It is six years since the most recent deliberations of the Storting on updating the plan. The purpose of the Master Plan, as defined in Report No. 63 to the Storting (1984-85), will be maintained, i.e. it is intended to give an overview of available resources and function as an administrative instrument for hydropower development in Norway.

There is great interest in projects involving micro and mini hydropower plants. The Government will consider whether amendments to the legislation can simplify administrative procedures for such projects.

In NOU 1994:12 on a new Act relating to watercourses and ground water (the Water Resources Act), a new general provision on the minimum permitted rate of flow in watercourses was proposed. In the Proposition to the Storting on the new Act, the Ministry

recommends that the minimum permitted rate of flow should be determined on the basis of an evaluation of each individual project. The Ministry also recommends that limited authority should be provided to require applications for licensing pursuant to the new Act for older hydropower developments that have not previously been subject to a licensing process. In the Ministry's view, the new proposals will make it possible to ensure more optimal use of resources and provide a better basis for integrated water resource management than the current legislation. Any losses in production resulting from the new rules should also be much smaller than would have been the case if the majority proposal in NOU 1994:12 had been accepted.

The Government's position is that earnings in the power supply sector must be sufficiently high to enable it to take advantage of opportunities to generate value added in the energy sector. The owners, which largely belong to the public sector, should contribute to the long-term development of the companies, for instance by giving priority to maximizing returns on capital and through their dividend policy. This will also put the energy utilities in a better position to take part in the shift in energy production and use.

The main basis for public ownership of the power supply sector is to be found in the water resources legislation. The most important instruments for ensuring that public ownership continues are the provisions relating to the right of pre-emption, mandatory licensing procedures, and the right of reversion. The policy for ensuring public ownership of the power supply sector has been maintained and even strengthened over time. In December 1998, the Ministry submitted a new bill that will introduce stricter rules on public ownership and prevent evasion of the licensing requirements. The Government considers the maintenance of a high degree of public ownership in the energy supply sector to be of crucial importance. Public ownership and the other policy instruments available to the authorities provide great freedom of action in the management of our hydropower resources. Public ownership also ensures greater freedom of action in management of the sector than that provided by the licensing requirements alone. The Government will evaluate further instruments to ensure continued public ownership of the sector.

#### *Chapter 6. Electricity transmission*

Chapter 6 discusses revenues from grid services, the price of grid services, measures to equalize transmission charges, and investments in the grid.

The Government gives emphasis to regional considerations with respect to grid services.

Over time, grid owners shall be able to cover the costs of grid services and depreciation and achieve a reasonable rate of return on invested capital by efficient management. The current method of regulation facilitates efficient grid operation and management and investments in the grid. The Norwegian Water Resources and Energy Directorate evaluates how the need for investments can be taken into consideration.

Transmission charges should as far as possible reflect the load on the grid. There must be no discrimination against any users of the grid. The point tariff system ensures that all customers have access to the grid on equal terms and provides a basis for efficient power trading. The overall charge is determined by the level at which the customer is connected to the grid. Changes in the charges for the central grid from 1 January 1998 make it possible to utilize the central grid more efficiently. In many cases, losses are reduced by tapping electricity directly

from the central grid in areas near production sites, and customers who do this must be recompensed.

As of 1 January 1999, the average transmission charge for a household customer with an annual consumption of 20 000 kWh was NOK 0.232 per kWh including VAT. The lowest charge was NOK 0.163 per kWh, and the highest was NOK 0.375 per kWh. Differences in transmission charges as a result of variations in natural conditions in different parts of the country should be reduced. A system that will give direct reductions of transmission charges for end users connected to the distribution grid in areas of the country where transmission charges are high is being evaluated. This is intended to replace the system of grants for investments in the grid.

It is important that the users of the grid receive the correct economic signals as regards electricity trade and the costs of using and being connected to the grid. Issues relating to more correct long-term signals to producers and consumers should be evaluated to a greater extent. It may be appropriate to introduce geographical variations in the fixed charges. As a first step, it will be natural to discuss and analyse this question when central grid charges are fixed.

The Ministry considers that further developments in transmission charges and income regulation should be based on the principles of efficient use of the grid, efficient investment in the grid and the provision of an acceptable quality of supply in all parts of the country. This will facilitate the shift in energy production and use.

#### *Chapter 7. Security of energy supplies*

Chapter 7 reviews possible measures to improve the security of energy supplies.

The Government will take steps to maintain the security of power supplies, both in order to meet peak demand and to ensure that there is no problem in supplying sufficient power in years when low precipitation results in a significant shortfall in hydropower production. Statnett SF is responsible for short- and long-term system security in the Norwegian power system. An appropriately dimensioned transmission grid and a well-functioning power market are essential for maintaining the security of electricity supplies.

As a basis for regulation of the power supply system, it is important to maintain a flexible system for supplying energy to consumers.

#### *Chapter 8. Power contracts with manufacturing industries*

A proposition to the Storting dealing with contracts between Statkraft and industry and leases of rights to waterfalls will be submitted in the near future. Chapter 8 describes the main elements of the proposals.

The current contracts between Statkraft and parts of the energy-intensive manufacturing industries and the pulp and paper industry expire in the period 2004-2011. These contracts are on terms laid down by the Storting. In the proposition to the Storting, the Government proposes new contracts and leases of rights for certain industrial enterprises on terms laid down by the authorities from 1 January 2001. New agreements on power supplies on terms laid down by the authorities must be adjusted to the provisions of the EEA Agreement and an integrated energy policy. The framework of the power market and the way it functions have

changed considerably during the 1990s. According to the provisions of the EEA Agreement relating to state aid, power supplies on terms laid down by the authorities must be based on market values. Norway's resource and environmental situation has changed, and an active policy to limit energy use is needed. At the same time, it is important to make use of the values that have been accumulated by the industrial sector in order to maintain and further develop this sector in outlying districts.

Energy-intensive manufacturing and pulp and paper processing include a number of different branches and enterprises. A large proportion of these can, by ensuring that their operations are profitable and making use of their expertise, achieve competitive terms within the ordinary framework of the market. Norsk Hydro, Norske Skog and large parts of Elkem already have commercial contracts that cover their future needs. The Government proposes that the rest of the pulp and paper industry, Hustadmarmor, Borealis and a number of smaller enterprises in Mo Industripark should not be offered new contracts on terms laid down by the authorities. This recommendation is based on an evaluation of the companies' current electricity costs and of how important electricity costs are to these enterprises.

Companies whose operations are based on long-term electricity contracts at prices substantially lower than the current market price face particular challenges when the contracts expire. This applies largely in one-industry towns in outlying districts. An offer of new contracts on terms laid down by the authorities will give such companies the opportunity to adapt gradually to the ordinary market framework. The company and the community will have time to develop the necessary expertise, review the need for adjustment and implement an appropriate process of adjustment if necessary.

The Government proposes that new contracts on terms laid down by the authorities should primarily be offered to companies in outlying districts, where the problems associated with adjustment to market conditions are greatest. It is proposed that the following companies should receive up to 70 per cent of their electricity requirements on such terms: Finnfjord smelteverk, Elkem Rana, Fesil Rana Metall, Fundia Bygg/Profil, Eka Chemicals Rana, Rana Gruber and Fesil Holla smelteverk. It is also proposed that certain companies in more central areas should be offered such contracts for up to 50 per cent of their electricity requirements. This proposal applies to Orkla Exolon, Sør-Norge Aluminium, Tinfos Øye smelteverk and Fesil Lilleby smelteverk, PEA, Globe Hafslund Metall, Norton Arendal, Norton Lillesand and Falconbridge Nikkelverk. Several of these companies do not have contracts of this type at present, but are included on the basis of the relative importance of their electricity costs.

The Government proposes that the new contracts should run for 20 years from 1 January 2001. Existing contracts on terms laid down by the Storting will be terminated from the same date. The volume of new contracts should be reduced gradually from 2011, so that it is reduced to 40 per cent in 2020.

The Government proposes that the arrangements for allocating electricity to new projects should be phased out.

The Government proposes that Elkem should be offered a lease on the rights to the waterfalls and the power plant in the Sauda watercourse and Svelgen I and II in Bremanger, and that AS Tyssefaldene should be offered a lease on Tyssø II and the rights to the waterfall for a period of 30 years from 1 January 2001.

The contracts and leases should include requirements designed to improve security of supply in the power supply system, and requirements may also be laid down to improve the efficiency of energy use.

The Government has considered it important to find arrangements that are in compliance with the EEA Agreement. The terms for prices in the new contracts and leases are based on a price level that is believed to be currently attainable in the market in negotiations for long-term contracts, adjusted for the value of the industries' service obligations. The termination of existing contracts also makes it possible to lay down lower prices in new contracts, and facilitates a gradual changeover to ordinary market conditions. The effects of the termination of contracts will be greatest for companies that have contracts with Statkraft at the lowest prices.

The Government considers it important that the electricity sold under the terms of such contracts is used for industrial purposes at specified locations. The Government proposes that the energy need requirement<sup>1</sup> should be continued, but that it should be adjusted in the same way as the Storting has decided in the case of Norsk Hydro, cf Proposition No. 38 (1997-98) to the Storting. Among other things, this means that this requirement does not apply to power supplies the companies procure after 1 January 1999, and that the requirement will be gradually phased out as existing contracts expire.

The Government proposes that any companies that are offered power supplies in accordance with the Proposition to the Storting must enter into an agreement by 1 July 2000 on the terms set out in the Proposition. If they do not, existing contracts and leases on the terms laid down by the Storting will continue until their normal expiry dates.

#### *Chapter 9. Economic and administrative consequences*

Chapter 9 reviews the economic and administrative consequences of the measures proposed in this Report to the Storting.

The proposals will be followed up in the annual budgets.

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<sup>1</sup> In current contracts with Statkraft, it is a condition that companies use the electricity supplied for the purpose specified in licences and other documents.