Nordic co-operation

Nordic co-operation is one of the world’s most extensive forms of regional collaboration, involving Denmark, Finland, Iceland, Norway, Sweden, and the Faroe Islands, Greenland, and Åland.

Nordic co-operation has firm traditions in politics, the economy, and culture. It plays an important role in European and international collaboration, and aims at creating a strong Nordic community in a strong Europe.

Nordic co-operation seeks to safeguard Nordic and regional interests and principles in the global community. Common Nordic values help the region solidify its position as one of the world’s most innovative and competitive.

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Foreword

The Action Programme for Nordic Co-operation on Energy Policy 2014–2017 identifies important areas for co-operation: the Nordic electricity market, energy efficiency, renewable energy, and energy research. These issues have long been the core of the Nordic co-operation on energy, and correspond well with energy and climate policy objectives at both national and international level. In the new action programme, we are also adding a number of issues that extend over several areas, such as energy-related transport issues. For the Nordic countries, transports are the greatest challenge in terms of reducing the environmental and climatic impact of the energy sector.

Different issues have different characteristics. For us in the Nordic region, far-reaching co-operation on our joint electricity market is natural. Another area where we can achieve better results by joining forces is research into such fields as smart grids and storage of energy. In other issues, we have much to gain from simply learning from one another.

The aim of the action programme on energy policy is that, through our co-operation, we can help to generate improvements for all Nordic countries. The close Nordic co-operation puts us in a stronger position to meet common global and European challenges, by learning from one another and by working together. Europe and the world need strong Nordic co-operation on energy that contributes to greater competitiveness, greater consumer power, and a climate-neutral society.

On behalf of the Nordic Ministers for Energy,

Anna-Karin Hatt
Minister for Information Technology and Energy, Sweden
Co-operation between the Nordic countries on energy is unique and longstanding. Clear examples are the close collaboration on developing the Nordic electricity market and sustainable energy systems. Within the framework of the co-operation on energy policy, a joint action programme has been drawn up. This document presents the action programme for the Nordic co-operation on energy policy for the period 2014–2017.

The objective of the Nordic co-operation on energy is unchanged. The co-operation is to contribute to stable and secure energy supplies, sustainable growth, and welfare for the citizens of the Nordic countries, and to meet climate and environmental challenges. The co-operation will also serve as a tool for promoting Nordic positions of strength in the energy sector in the global arena. The Nordic position of strength is to develop and create energy solutions that are positive for the environment and climate and that ensure that we, both in the Nordic region and globally, move towards societies that are climate-neutral or have very low levels of emissions.

The Nordic region is being increasingly affected by initiatives taken at EU level. This applies to all the Nordic countries, regardless of whether they are members of the Union or not, either directly or indirectly when conditions change in a neighbouring Nordic country. Norway and Iceland do not participate in negotiations about the EU energy policy, but are affected through the EEA agreement. The current framework for EU climate and energy policies is based on three overarching goals that are to be attained by 2020: reduce emissions of greenhouse gases by 20 percent, increase the proportion of renewable energy to at least 20 percent, and reduce the consumption of primary energy by 20 percent. Work is also in progress in the EU to formulate the frameworks for climate and energy policies for 2030.

In terms of concrete energy policy measures, the Nordic co-operation on energy should be aimed at areas where the co-operation brings particular benefit or adds value. Examples include continuing the development of the Nordic electricity market, and developing a common view on issues that may affect this.

There is also a value in the Nordic countries keeping each other updated on, and comparing, possible solutions to the most important energy policy challenges at national, regional, European (EU) and global level. One main challenge in the Nordic
energy co-operation and in the energy policy of the Nordic countries is to, as efficiently and as early as possible, define the Nordic interest in various alternative energy policy developments, not least at EU level. Nordic views can then contribute to European and global policy development.

The ways in which the Nordic countries can fulfil their national climate objectives and attain a carbon dioxide-neutral energy system by 2050 are analysed in the report, Nordic Energy Technology Perspectives (NETP). This was produced by the International Energy Agency (IEA) in collaboration with Nordic Energy Research (NER) and leading Nordic research institutes. A climate-neutral Nordic region can be attained by 2050, but it involves a great challenge. Nordic co-operation, particularly in terms of infrastructure, research, development and demonstration, is vital if the objective is to be attained at the lowest possible cost.

Even if the climatic and environmental challenge can be seen as the greatest threat in modern times, it also affords an opportunity to create new jobs and new businesses, increase export revenues, and help to improve the environment, both in the Nordic and surrounding regions. Around the world, major investments are being made in areas such as renewable energy and energy efficiency. This opens the door for Nordic solutions and Nordic businesses to match needs and demand for sustainable growth, development and the creation of jobs, in the Nordic region and globally.

In the Nordic co-operation, it is also important to consider equality aspects where relevant to the problems and solutions. Work will therefore take place to include equality considerations in the activities described in this action programme.

In the programme period 2014–2017, the Nordic co-operation on energy will focus on the following areas:

- electricity market
- energy efficiency
- renewable energy
- energy research
- horizontal issues
  - energy-related transport issues
  - international issues
  - sustainable energy systems for sparsely-populated areas
The electricity markets in Norway, Sweden, Finland and Denmark together form the Nordic electricity market.
The electricity markets in Norway, Sweden, Finland and Denmark together form the Nordic electricity market. As early as 1996, Norway and Sweden joined forces and created the common electricity market, Nord Pool Spot, and Finland and Denmark joined shortly after. The electricity market combines the wholesale markets in the Nordic countries, and electricity is produced where the price is lowest. The EU wants to create a common European electricity market, and there has been a move towards this in recent years through, for example, new market links between various sub-markets. The geographical area that can be regarded as a common electricity market is growing, and the Nordic electricity market is becoming increasingly integrated with countries and other electricity markets in our vicinity.

The Nordic wholesale market for electricity has long been a role model for the development of electricity markets over national boundaries. The co-operation on the Nordic electricity market is continually developing in terms of supply reliability, competition, and efficiency, which will ultimately promote greater growth and consumer benefit. The Nordic energy ministers have decided to also create a common Nordic end-customer market for electricity.

There are areas in the Nordic region that require a partly different approach because they are not part of the Nordic electricity market. In these areas, it can instead be important to, for example, find solutions regarding energy storage.

### Prioritised issues

#### Grid investments and grid planning

A stronger Nordic energy balance, increased trade with balance regulating power, and greater requirements for security of supply necessitates the construction of more connections to the continent. This increases transmissions in the main grids and increases the need for internal grid reinforcements. The Nordic electricity market vouches for efficient utilisation of the production resources, so bottlenecks in the Nordic electricity grid that create long-term and large variations in the price of electricity should be removed.

In 2010, the Nordic energy ministers decided on implementation of grid investments that are socio-economically profitable in a Nordic perspective. If benefits and costs are unevenly distributed between the countries, the system managers are to negotiate on sharing. At a suitable level, the Nordic region needs to agree on methods for assessing the socio-economic benefit of cross-border transmission capacity. It is important that the main Nordic grid operators continue to collaborate more on grid planning and prepare Nordic grid development plans.
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is vital for attaining success in these issues. The rapid expansion of renewable electricity changes the conditions for other types of electricity production. In order to ensure access to electricity production resources at times of high consumption, several countries in Europe have decided to introduce capacity markets. This entails a risk that trade between countries will be reduced, that competition will become distorted, that old fossil-based production will become more deeply rooted, and that the cost to the customers will increase. Nordic co-operation on influencing a common coordination of the national capacity initiatives at European level is therefore important, with the aim of minimising negative market effects.

The electricity grids need to be adapted and reinforced to integrate the growing proportion of renewable energy. The need for grid reinforcements in each Nordic country also depends on what is being built in the other countries. An increasing proportion of fluctuating electricity (wind power, solar power) changes requirements on, for example, balancing, and increases the need for control and monitoring of the electricity grids. This stimulates the development of smart electricity grids and efficient systems for electricity transmission. Greater

The Nordic electricity market from the perspective of the EU and the neighbouring areas

Within the EU, new legislation will be introduced within the framework of the third inner market package for energy, for example in the form of grid codes. The aim of the grid codes is to harmonise the regulatory framework for cross-border electricity trade, and to ensure operational reliability of the European electricity transmission grids. Development of the Nordic electricity market is well advanced compared with the rest of the EU, so the Nordic region has much to contribute in the development of a common European electricity market. However, it is also important to jointly monitor that the new regulatory frameworks do not counteract the already well-functioning Nordic electricity market. Another key aspect is to promote the right balance between harmonisation of regulations and the need to allow national and Nordic actions. The Nordic co-operation

Integration of renewable electricity production in the electricity grids, and system management, user flexibility and smart grids

The electricity grids need to be adapted and reinforced to integrate the growing proportion of renewable energy. The need for grid reinforcements in each Nordic country also depends on what is being built in the other countries. An increasing proportion of fluctuating electricity (wind power, solar power) changes requirements on, for example, balancing, and increases the need for control and monitoring of the electricity grids. This stimulates the development of smart electricity grids and efficient systems for electricity transmission. Greater
opportunity and incentive for the customers to react to price signals mean that electricity consumption can become more flexible. With smart functions in the electricity grid, it will become easier to shift demand according to time, thereby lowering the peaks when electricity needs are greatest. It is important to monitor the development in these areas, and continue the work taking place at Nordic level on assessing the potential for user flexibility in the common electricity market and possible strategies for utilising this potential.

Common end-customer market

A more harmonised end-customer market, giving the customer greater choice and increasing competition between electricity supply companies, increases the efficiency of the electricity market. As early as 2009, the Nordic energy ministers decided to create a Nordic end-customer market for electricity. The co-operation body of Nordic supervisory authorities for the electricity market (NordReg) has since prepared a detailed roadmap showing the measures that are required. The focus lies on minimising barriers by harmonising legislation and regulations to help electricity supply companies operate in all the Nordic countries. It is important that necessary measures are taken in each country to begin national implementation, as far as possible in line with the NordReg recommendations. However, development in the Nordic countries is not always at the same rate and is not always identical; instead it takes place in stages in each of the countries.

Energy storage

The move towards greater use of renewable energy sources, such as wind and solar power, creates challenges, because production is uneven as a result of variations in wind strength and sunlight. Consequently, electricity from periods of high production must be stored, to be used later during conditions of lower production or when demand is high. This has brought a need for new, alternative technology for energy storage, particularly in areas that are isolated or situated far from the central transmission grids.

The electricity grids need to be adapted and reinforced to integrate the growing proportion of renewable energy.
Energy efficiency is one of the cornerstones of a sustainable and secure energy system, promoting greater environmental sustainability, competitiveness and supply reliability. Energy efficiency is one of the Nordic region’s positions of strength, and all Nordic countries are working on energy efficiency at national level. Efficient use of energy is relevant in all parts of society, such as in the construction and housing sector, industry, transport, in the use of products, and in the production and transfer of energy.

The Nordic co-operation on energy efficiency is aimed at increasing knowledge and understanding about the various countries’ national policies in this area. The co-operation will also increase knowledge about the possible consequences for common Nordic interests of the EU policy on energy efficiency. In appropriate areas, joint Nordic initiatives should be set up that increase cost-effectiveness in the implementation of a policy on energy efficiency.

There are several acts at EU level that influence energy policy in the Nordic countries to varying degrees. All the Nordic countries are governed by EU/EEA acts on energy labelling and ecodesign.

The ambition of the EU energy efficiency policy is to reduce total consumption of energy. According to an EU decision, primary energy must be reduced by 20 percent by 2020. In 2012, a directive on energy efficiency was adopted, which was aimed at creating a regulatory framework for energy efficiency up to 2020 and thereafter. The Energy Efficiency Directive will increase the rate of efficiency improvements through measures applying in industry, the public sector, households and energy companies, and also contribute to the attainment of the EU energy efficiency goals by 2020.

Regulatory frameworks on minimum requirements for ecodesign (including energy use) and energy labelling of energy-related products, and minimum requirements regarding the energy performance of buildings, have been in place for some time. The requirements and regulations in the EU directive on energy efficiency are important complements to the energy taxes that affect price signals created on the energy markets.
Prioritised issues

Exchange of experiences on the implementation of the EU directive on energy efficiency

It is important to exchange experiences on the implementation and joint Nordic analysis of consequences of the various EU directives, ordinances and action plans relating to energy efficiency. An example of such an analysis, which has already begun, is one examining the consequences of the EU energy efficiency directive for a Nordic end-customer market. In 2014, the EU Commission will present a new analysis of the route towards attaining the 2020 goal for energy efficiency, so various EU directives may be revised. The Ecodesign Directive will also be reviewed. In the areas where there is scope, common standpoints may be developed before the EU decision.

Co-operation on concrete joint initiatives for energy efficiency

Pre-studies of possible areas where there can be scope for Nordic co-operation on energy efficiency initiatives are important. A concrete example of such co-operation is market supervision for energy design and energy labelling, where in October 2012 the energy ministers decided to support a proposal for a three-year (2013–2015) Nordic programme for market supervision, Nordsyn. Other areas where Nordic co-operation can be relevant are promotion of energy services and measures to increase energy efficiency in buildings.

Pre-studies of possible areas where there can be scope for Nordic co-operation on energy efficiency initiatives are important.
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The Nordic region has favourable natural conditions and a good supply of renewable energy sources, such as water power, wind power, geothermal energy and bioenergy. Together with ambitious policies over a long period and powerful instruments, this has made the region a pioneer in renewable energy.

Energy supply in the Nordic countries is characterised by a high proportion of renewable energy, but there are differences between the countries in terms of resources and how they are used. There are also variations in the policies and instruments that have been applied and are applied today.

The EU directive on renewable energy from 2009 is now key to the work in the Nordic countries. Denmark, Finland and Sweden, which are members of the EU, are governed by the directive, but Norway and Iceland have also adopted it. The directive sets up a common framework for promotion of energy from renewable sources. In addition to binding goals for 2020, the directive also contains a large number of articles that regulate many issues that affect the development of renewable energy and production of national action plans.

Long lead times and life spans, and the importance of a long-term approach and predictability of investments, mean that we must already start reflecting on the position the Nordic region should reach by 2030 and 2050.

The Nordic co-operation will contribute to the continued development of a sustainable energy system in the Nordic region and internationally, and renewable energy is an important component of such a system.

Prioritised issues

Exchange of experiences on the continued implementation of the EU directive on renewable energy

Even if most parts of the directive on renewable energy have already been implemented in national legislation, progress towards goal attainment must still be monitored to ensure that measures introduced are appropriate. An informal exchange of experiences on the implementation has been taking place, and will continue through the concerted action, in which all EU member countries and Norway and Iceland participate. In the period up to 2017, the directive on renewable energy may result in new initiatives from the EU Commission, including guidelines on support systems for renewable energy and co-operation mechanisms. At Nordic level, there is a value in exchanging views on implementation of the directive on renewable energy and analysing issues of common Nordic interest.
Framework conditions and support systems for renewable energy in the Nordic countries

Promotion of renewable energy can be motivated from the perspectives of climate, supply reliability and competitiveness. Each country chooses its support system in accordance with its own conditions and aims, but it still may be useful for the Nordic countries to exchange experiences. Differences in support levels can also influence where in the Nordic electricity market new investments will be made.

Framework for renewable energy after 2020

The EU Commission has presented a Green Paper as a first stage in formulating the climate and energy policy frames for 2030. The Commission has also drawn up a roadmap for a competitive, emission-efficient society 2050, an energy roadmap for 2050, and a White Paper on Transport. Views about and conditions for renewable energy are important issues in this context. Long-term work on renewable energy is a relevant co-operation issue for all Nordic countries, and therefore motivates a continual exchange of experiences and analyses regarding frameworks for renewable energy after 2020. This type of co-operation can provide scope for joint activities and projects, including proactive action in the EU process.

Bioenergy

The Nordic region has good experiences of sustainable use of bioenergy. The Nordic region will contribute its experiences in the ongoing discussions about sustainability. It is important to work to ensure that the international criteria on sustainability that have been formulated do not have a negative impact on the competitiveness of the Nordic bioenergy sector.

Wind power

More wind power is needed if the Nordic countries are to attain their goals for renewable energy. It is important to co-operate on policy issues and analyses of joint Nordic interest on the expansion of wind power in the Nordic region.
The Nordic co-operation will promote strong and internationally leading research environments in sustainable energy.
Research and innovation involving new technology and new solutions in the energy field are important if we are to tackle the major challenges relating to climate and energy, and they will help us attain goals and visions. Research into and development of new energy technology and solutions is an integral part of a forward-looking energy policy, and involves the entire spectrum from research and development to testing, demonstration and market introduction.

The Nordic countries have been co-operating on energy research since 1985 and, since 1999, the co-operation has taken place through the Nordic institute, Nordic Energy Research (NER). The co-operation will supplement the national research programmes in the energy field.

Coordination and co-operation on research and innovation in the energy field is becoming increasingly important, to support the Nordic countries’ visions regarding energy, climate and environment.

The current main programme under NER, Sustainable Energy Systems 2050, is focusing on renewable energy, markets and grids, and transports with low emissions. The aim of the programme is to develop knowledge and solutions that can promote the development of a sustainable energy system by 2050.

The Nordic countries have ambitious targets for developing a sustainable energy system.

In order to boost the chances of attaining goals, research and innovation in the energy field should be seen as a comprehensive strategic effort that spans the entire energy-related innovation system and captures entire value chains. A holistic view of the energy system is very important for prioritisation and implementation.

An intelligent combination of research and innovation and of market incentives is vital for securing a sustainable energy supply, reducing environmental impact, and promoting economic growth. The Nordic co-operation on research and development in the energy field will be based on initiatives in the national programmes, and will promote co-operation with clear Nordic value.

The Nordic co-operation will promote strong and internationally leading research environments in sustainable energy.
action programme for nordic co-operation on energy policy 2014–2017
The subjects covered in earlier chapters – the electricity market, energy efficiency, renewable energy and energy research – comprise the core of the Nordic co-operation. There are a number of other issues that are important and that should be raised, but these are horizontal in nature in terms of the core areas. These concern energy-related transport issues, international issues, and sustainable energy systems for sparsely-populated areas.

Energy-related transport issues

Transport is a policy area that is very important in the work towards a sustainable society. This is the sector that has the highest proportion of fossil fuel use in the Nordic countries. At the same time, transport is a horizontal issue, because it is part of business activities in many sectors of society. Energy use is one of many important aspects on which to take a position when considering transport. Politically and administratively, energy-related transport issues concern a large number of players, and responsibility may lie with more or other ministers than the energy ministers.

An effective transport system does not stop at national boundaries. The transport area is one of the clearest examples of the need for cross-border, international co-operation. The transport sector accounts for more than a third of the energy-related carbon dioxide emissions in the Nordic countries. All Nordic countries have ambitious long-term goals to reduce CO2 emissions from transports, but the current policy and measures to back up the long-term goals are insufficient and need strengthening.

Much of the transport sector is facing extensive technological shifts in view of developments regarding electrification and renewable fuels. The transport sector will also help us attain other environmental quality goals and improve health. Electric vehicles already offer an opportunity for more energy-efficient and environmentally sound transports. In the future, the development will also affect the electricity market when the number of electric vehicles increases.

One of the major challenges for electrification of transports is to design a vehicle-charging infrastructure, so that vehicles can be charged in a smart and cost-effective way. In the Nordic region, we face a common challenge in that our climate is colder than many other regions. Another feature we have in common is that all Nordic countries are actively developing the electric vehicle market.

As with other sectors, the transport sector is affected by EU initiatives. For example, the EU directive on renewable energy prescribes that the proportion of renewable energy in the transport sector in every member state will be at least ten percent of the total energy use for transports in 2020.
Prioritised issues

Electric vehicles

Collaboration between relevant players should continue in a way that is appropriate and clearly adds value to the Nordic region. The aim should be to bridge the gap between long-term political objectives and current national policies with focus on the transport sector in the Nordic region. Issues of joint interest include standardisation, infrastructure, information, instruments, business models, and impact on the common Nordic electricity market.

Objectives for renewable energy in the transport sector

If biofuels are to be included in the national fulfilment of the ten-percent goal, they must be sustainable in accordance with the sustainability criteria in the renewable energy directive. The sustainability criteria are based on requirements for greenhouse gas reductions in relation to fossil fuel, and requirements for the type of land that the raw material for the fuel is grown on. Exchange of information, experiences and views between the Nordic countries is important in relation to the attainment of the ten-percent goal and any changes in the directive. Where there is scope, it may be possible to develop common standpoints before EU decisions.

International issues

The co-operation between the Nordic countries on energy policy is taking place in an increasingly interwoven world, with a multitude of bilateral and multilateral initiatives in the energy field. Some of these international collaboration projects have a natural and close link with energy issues in the Nordic region.

The Nordic electricity market is legally part of the European (EU/EEA) inner market for electricity and gas. The technical and economic integration between the Nordic electricity market and the electricity market in the Baltic States is already well-developed and will be strengthened further – for example, Estonia, Latvia and Lithuania are now part-owners of Nord Pool Spot. As it is becoming increasingly natural to refer to a Nordic-Baltic electricity market, this is something that already affects and will continue to affect the co-operation on electricity market issues in the Nordic countries. Another important aspect to consider in this context is the EU initiative, the Baltic Energy Market Interconnection Plan (BEMIP).

Regardless of the differences between the Nordic countries in their relationship to the EU, initiatives taken in the energy field within the union are always an important factor to consider in Nordic co-operation on energy. A mutual exchange of information and exchange of experiences benefits all
the countries and, where a common Nordic interest can be identified, it is also natural to formulate common Nordic standpoints in order to exert more influence.

Another natural and valuable form of Nordic-Baltic co-operation that should be retained is the custom of holding joint Nordic-Baltic meetings ahead of the energy ministers’ meetings in the EU. There may also be a Nordic added value in concrete co-operation projects between the Nordic countries and Estonia, Latvia, and Lithuania.

Several of the Nordic countries engage in bilateral co-operation with Russia, and there are also regional co-operation projects on energy policy in which Nordic countries participate. Examples are BASREC (Baltic Sea Region Energy Co-operation) and the Barents Co-operation, and the Nordic Council of Ministers and Russia co-operate in other areas. In the energy policy area, it is natural to prioritise co-operation with north-west Russia, and mainly channel the co-operation via existing forums.

The Nordic countries also participate in global energy policy co-operation initiatives, such as the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA). Here too, there can be occasions when the common conditions of the Nordic region are relevant. A good example is the IEA regional study, Nordic Energy Technology Perspectives, which was a collaboration between the IEA, Nordic Energy Research (NER) and Nordic research groups. In future Nordic co-operation, the international aspects will be naturally integrated in all parts of the energy policy where relevant. The Nordic co-operation’s links to the surrounding area will not be a separate area, but a natural component of all activities where there is clear justification for co-operation with countries outside the Nordic region. The co-operation method involving joint pre-meetings that has been successfully applied before the energy ministers’ meetings in the EU could also be used ahead of meetings in IEA, IRENA and other international contexts, if and when it is deemed relevant.
Sustainable energy systems for sparsely-populated areas

In the programme period 2010–2013, one of the tasks of the Nordic Council of Ministers was to support the work of the Nordic countries to secure access to sustainable and renewable energy for the Nordic areas that are either isolated from or lie in peripheral parts of the central Nordic transmission grids. The work was carried out in the form of projects and exchange of experiences and information via networks in the Nordic countries.

As in the rest of the Nordic region, energy supply in isolated or sparsely-populated areas will be secure, profitable and environmentally sound, and will be based on renewable energy sources as far as possible. However, conditions and issues for these geographical areas vary slightly, and the energy systems and solutions must be adapted to these different conditions.

In future Nordic co-operation, the sparsely-populated area issues will be integrated in every area within the energy policy where relevant. The work in the Nordic co-operation on the isolated or peripheral geographical areas will not be separate; it will be a natural component in all activities where there is clear justification for Nordic co-operation.
ORGANIZATION CHART

AGEE  Working Group for Energy Efficiency
AGFE  Working Group for Renewable Energy
EK-E  Nordic Committee of Senior Officials for Energy Policy
EMG  The Electricity Market Group
MR-NER  Nordic Council of Ministers for Business, Trade & Regional Policy
NEF  Nordic Energy Research
NMRS  The Secretariat to the Nordic Council of Ministers