

## **AN AMBITIOUS AND VISIONARY ENERGY POLICY FOR EUROPE**

In 2010, the European Commission will be presenting its ideas for a new European energy policy for the period from 2011-2020 together with a road map as part of the work on establishing the vision for Europe's transition to a low-carbon, resource-efficient and climate-friendly economy by 2050. With this input, the Danish government wishes to contribute with elements for consideration on how a new European energy policy should be drafted in the short, medium-long and long terms.

### **Challenges - EU under pressure from many sides**

The EU energy policy should help strengthen energy security, and reduce greenhouse gas emissions and other substances harmful to the environment. Furthermore, an ambitious energy policy could contribute to create growth, employment, and develop a greener and more productive economy, where the potential for innovation and production in the energy sector is expressed in a cost-effective manner. Several of the initiatives in the energy policy will result in higher costs. However, at the same time, there is a number of positive elements connected to timely transition, including promotion of green technologies and European strongholds, as these will have positive effects especially in the long-term when the price of fossil fuels is expected to rise.

To promote a common foundation for an ambitious energy policy in the EU, a long-term vision for a Europe independent of fossil fuels should be established.

### **Solutions - implementation of 2020 targets and a vision for a Europe independent of fossil fuels**

There is a need to establish a number of framework conditions in order for the EU to realise its targets and also to ensure a long-term sustainable transition away from the fossil based economy.

By adopting an ambitious and responsible energy policy, the EU must show leadership in the battle against global climate change, i.e. by means of energy efficiency and renewable energy. Energy policy efforts should contribute to fulfilling the EU climate commitments, see also the conclusions from the European Council on attainment of the two-degree target. The Climate and Energy Package sets specific targets for European energy policy up until 2020. Moreover, the EU has submitted to the Copenhagen Accord that it will reduce emissions by 20% compared with 1990, and that the EU is ready to commit to a reduction target of 30% by 2020 as part of a comprehensive global climate agreement, where other industrialised countries commit to comparable reductions, and where developing countries make a contribution commensurate with their responsibilities and respective capabilities. The accord should now be operationalized and included in the negotiations on a legally binding climate agreement up until 2020. The EU should continue as front-runner and show what it can and will deliver.

The EU's dependency on oil and natural gas imports is increasing, and in future, the EU risks becoming dependent on energy imported from just a few regions of the world. Europe requires a well-functioning single market for energy in order to improve the security of supply, and there is also a considerable need to ensure further investments in the European energy infrastructure - in particular, across borders. It is also necessary to make comprehensive investments in research and development of low carbon technology, which in the long run may enable Europe to exploit energy resources to a much greater extent.

The EU energy policy should be market and competition-based. Increased liberalisation of EU energy markets will be a decisive contribution in ensuring the security of supply. Contributions from higher energy efficiency, choice of energy sources and choice between technologies, should take place in an effective interaction, while taking into account free choice of energy sources by Member States. The sovereignty of Member States in the fundamental choice of energy-mix should be preserved; however in a wide range of areas, the EU may contribute in a positive way to a joint and coordinated effort.

In the long run, Europe must be independent of fossil fuels. Central elements in the shaping of a new energy policy for Europe, that may realise the long-term vision and stable green growth, should be more research, development and demonstration of low-carbon technologies, more renewable energy and significantly improved energy efficiency. Considerably more electrification of the energy system may also contribute significantly to this transition. This is partly due to lower costs by making electricity production independent of fossil fuels over time, seen in relation to the transition costs in other sectors, and partly because low-carbon electricity production in combination with combined heat and power and wind-based electricity production ensures more efficient energy recovery and this electrification will help improve the EU's security of supply. Finally, there should be increased integration with other policy areas so that synergy effects can be reached through cooperation and coordination across sectors.

### **Gains - better energy security and sustainable green growth**

A transition of European economies to independence of fossil fuels and green growth will have considerable implications for the European business community from production to service sectors, and for EU citizens. A transition of production and consumption patterns will result in significant costs, but also socio-economic and micro-economic gains could be achieved through timely transition to sustainable solutions.

Europe could benefit from higher energy security through increased independence of imported fossil energy, resilience towards rising prices of fossil fuels, reduced climate implications and environmental pollution, new business opportunities through the development of new markets and market advantages across borders, the opportunity of making Europe attractive for global research and businesses, and improving the EU's attractiveness to foreign companies and the global researcher elite, as well as gains in relation to the EU's external relations and more effective energy markets. It will be necessary to address the fact that the increased use of renewable energy also challenges the security of supply. For example, the integration of large quantities of renewable energy production, dependent on the weather, in the EU energy systems will require an expansion of the transmission grid, development of intelligent management of the grid and energy consumption, as well as opportunities for storage in order for the stability of supply to be maintained.

#### **1) Compliance with the 2020 target (short-term perspective)**

The energy policy must support the EU's 20-20-20 targets. Part of the legislation is in place, but further initiatives will help underpin the efforts.

The Danish government proposes that the EU's new energy policy attaches greater priority to the instruments mentioned below, in order to ensure fulfilment of the overall targets. Binding EU targets for renewable energy and greenhouse gas emissions have already been set, and infrastructure plans are being drawn up at EU level. However, in relation to for instance energy efficiency, a lot can still be done, and coordination within transport and (minimum) taxes as well as research and development could be improved. Mainstreaming of the energy agenda and enhanced cooperation and coordination across EU policy areas should be prioritised, including e.g. education and efforts directed towards consumer behaviour.

According to the Danish government, there is a need for particular efforts in the areas mentioned below. To a great extent, these efforts mutually support each other.

### ***I) Infrastructure and liberalisation (“a green single market”)***

The necessary and extensive reorganisation of the energy system will be extremely costly, but costs may be reduced through increased EU cooperation. The integration of large quantities of renewable energy in the electricity system may thus be considerably cheaper if the transmission capacity across the EU Member States is intensified and market conditions are harmonised. Therefore, it is important that the new energy policy embraces the development of a green single market and focuses on a productive market and removal of market barriers for green low-carbon products, services and technologies, which benefit innovation, economic growth, energy security and the climate.

Specifically, the Danish government proposes the following:

- Harmonisation of technical standards, including e.g. infrastructure for electric cars. In addition to common standards, labelling requirements in the energy area for products as well as services should be expanded at EU level. This will enable the single market to grow for the benefit of consumers.
- Formulation of a report on a European super grid and smart grid for the purpose of integrating large quantities of fluctuating renewable energy electricity production and increased competition in the electricity sector, also by focusing on interaction between consumption and capacity in the distribution grid. Smart grid development could e.g. be part of the revised TENE guidelines.
- Further development of the third electricity and gas liberalisation package, with special focus on areas that help ensure that markets support the overall targets for security of supply, cost efficiency, market competition and sustainability. This primarily involves implementation of full ownership unbundling in the overall transmission system.
- When implementation solidarity mechanisms, a balance between responsibility for own security of energy supply and joint efforts should be taken into account. All Member States should also make sure they are less vulnerable in the event of emergency situations, e.g. through market liberalisation and the resulting greater supply, as well as development of alternative energy sources or by focusing on energy efficiency.

### ***II) Energy consumption and energy efficiency***

There is still a considerable potential for cost-effective energy savings in the EU-27. The new energy policy should thus stipulate a long-term effort, primarily directed towards energy efficiency

in the acquisition/investment situation with regard to appliances, means of transport, production plants and new buildings. It is also important to ensure increased integration of cost-effective energy efficiency in connection with major renovations of existing processing plants, buildings and infrastructure. Up until 2020, the commitment of the Member States to taking appropriate steps to reduce energy consumption in existing buildings should be followed up.

Specifically the Danish government proposes:

- *Overall:* in cooperation with the Commission, EU Member States should work together towards achieving a 20% increase in energy efficiency by 2020 by means of instruments and policies at EU and national levels. It is essential that the target is implemented in a way that rewards countries which have already adopted significant efforts. In accordance with the conclusions of the European Council from March 2010 the target will not imply burden sharing. At EU level, the Commission should present the necessary supplementary proposals for reaching the target.
- Energy consumption of *appliances and energy-related products*: further development of standards for energy efficiency and energy labelling of products. In connection with establishing requirements for eco-design, energy efficiency must continue to be highly prioritised. The standards must be propagated to including more products, such as industrial equipment and new products entering the market. The standards must be dynamic and should therefore be regularly updated.
- *Existing buildings*: the Member States' action plans in regard to the recast of the Energy Performance of Buildings Directive must contribute - via peer pressure - to ensuring that all Member States are working towards making sure that existing buildings achieve low-energy consumption in the longer run.
- *Businesses*: energy-efficient planning of all major new investments in production equipment (i.e. incorporating energy efficiency already in the project phase), higher efforts for best available technology, long-term research and development efforts to streamline or replace particularly energy-intensive products (cement, steel, aluminium etc.) with other less energy-intensive products.

### **III) Renewable energy**

One of the leading elements of the reorganisation of the European energy system must be renewable energy. The EU has been speeding up generation of energy from renewable energy sources, but the potential is much greater. The starting point for the new energy policy is the binding target of 20% renewable energy by 2020, but expansion must be expected to continue also after 2020. In June 2010, the Member States will be submitting their renewable energy action plans in accordance with the renewable energy directive. It is likely that infrastructure, investments, biomass resources and production capacity in e.g. the wind-turbine industry will be challenged by this, and that this will prompt a need for new initiatives.

In coming years, there will be increasing demand for biomass both for energy production and biofuels. The EU Member States should cooperate with the Commission on ensuring the necessary incentives for establishment of a sustainable market for deliverables of biomass from agriculture; enabling unexploited biomass to be exploited in the best way possible, and production and use of biomass for energy purposes to be done sustainably to ensure real greenhouse gas reductions that take into account the environment and biodiversity, and to be in line with food production. The role

of agriculture as supplier of green energy, including biogas, should also be attributed greater importance in relation to the future common agricultural policy.

To realise the overall target and potential, the Danish government specifically proposes:

- Renewable energy sources should be manifold. Development and demonstration of renewable energy sources, which are now not included in the Strategic Energy Technology Plan (SET plan), should therefore be prioritised, including e.g. geothermal energy and wave power technologies.
- The flexibility mechanisms of the renewable energy directive (statistical transfer of data for renewable energy production and joint projects) must be further developed with a view to ensuring the cheapest possible renewable energy expansion at EU level.
- Grid connection conditions should be harmonised with a view to ensuring uniform profitable terms for renewable energy (e.g. payment of grid connection expenses through the tariff).
- A cross-sectoral biomass policy should be drafted with criteria for sustainability that prevent a rise in production of biomass causing an increase in emissions from areas with high carbon content and a loss of biodiversity.
- There should be an investigation into how to avoid inappropriate competition regarding renewable-energy subsidies and investments in renewable energy technology, including by coordinating and cooperating on renewable energy expansion in the Member States.

#### ***IV) Low-carbon transport and new technology***

The development of alternative means of transport represents one of the most important focus areas to realise the overall targets. Already a growing trend has blossomed in Europe and around the world to motivate low-carbon transport, and this development should be underpinned by the new energy policy and other related policy areas, so that barriers are removed. Initiatives to promote electric cars and grid development must ensure e.g. that recharging of electric cars can be part of the management of electricity grids, and also that recharging is done in situations with high renewable energy electricity production. In future, it should be possible to drive from the North Cape to the South of Italy without having to change electric car along the way.

Specifically, the Danish government proposes extensive measures to promote low-carbon transport, including:

- Promoting electric cars together with the development of “intelligent” electricity and storage systems, super and smart grids, and combined heat and power etc., for example via the action plan for promotion of green vehicles and establishment of overall regulatory frameworks.
- Ensuring that electric cars can be driven and recharged throughout the EU, without any technical adjustments, e.g. through drafting international standardisation of plugs, data communication and batteries.
- Ensuring that no national special requirements can unnecessarily slow down new fuel technologies or make them more expensive.
- Ensuring that Member States support new low-carbon technologies appropriately.
- Further developing criteria to ensure sustainable biofuels that do not lead to indirect displacement effects.

- Establishing ambitious requirements on reduction of the energy consumption of lorries, busses and mini-busses.

***V) Research, development and demonstration (RD&D)***

The global demand for low-carbon and environmental goods and services is worth around EUR 3500 billion a year and employs around 3,5 million people across the EU. Forecasted to grow to well over EUR 4500 billion by 2015 it is one of the most dynamic sectors in the world. Intensive development of knowledge and exploitation of this is vital for Europe's competitiveness and technological innovation in climate-friendly technologies will benefit all of the EU, and could therefore quite naturally be pursued in common at an EU level to a much greater extent than previously. The new energy policy should therefore be organised so that the EU can strengthen its scientific and technological foundation and thus have a share in this booming market. RD&D is also a prerequisite for ensuring efficient energy supply in the future, e.g. through energy-storage technologies, large-scale renewable energy sources and energy efficiency. Research - particularly in energy and climate change - is among the most important areas and it should be afforded greater priority.

Specifically, the Danish government proposes the following:

- Establishing ambitious frameworks for research in energy and energy technologies, development and demonstration (e.g. by enhancing the RD&D frameworks for the Community significantly). In addition, there should be special efforts for early market structuring for new technologies.
- Doubling of funds for research, development and demonstration in the energy area, including a vast increase in the EU's future budget, particularly for renewable energy, smart grids and energy efficiency, up until 2020, compared with the current level.
- Supporting a "Silicon Valley for Energy" where "clusters", groups of companies and research and entrepreneurial environments can merge and attract larger enterprises.
- Establishing incentives for investments in large (sometimes uncertain) research and development projects, including large renewable energy projects.

***VI) Cross-sectoral economic instruments***

As a supplement to the adopted and future legislative packages, a budget-related upgrading of the energy policy to support the EU targets will also be appropriate. More funds from the budget should be assigned to EU policies which create added value to the EU as a whole by fostering growth and increased preparedness to take advantage of the opportunities in an increasingly globalised world. As stressed by the Commission in the Europe 2020 strategy, the EU should shift the tax burden from taxation of labour and towards activities harmful to the environment. There are already minimum standards for taxation of fuels for heating and electricity, but rates are so low that they have only little effect.

Specifically, the Danish government proposes the following:

- Considering a common EU-approach to internalising the cost of polluting in non ETS sectors, for instance through minimum standards for taxation of emissions and higher minimum taxation of energy consumption. The energy taxation directive should be revised in accordance herewith.

- Initiating closer cooperation on energy and emissions taxation, the Commission should submit a concrete proposal on “greening the taxes” to obtain a uniform burden/taxation in and outside the ETS area as far as possible.
- Phasing-out of subsidy schemes in the EU harmful to the climate in order to reduce fossil fuels consumption and contribute to more uniform competitive terms.
- Focusing funds from the Structural Fund for convergence regions on initiatives that support the EU’s climate and energy policies.

### ***VII) External relations***

The Lisbon Treaty paved the way for strengthening the EU’s voice to the outside world and for coordinating external efforts. This opportunity should be exploited while taking close account to the principle of subsidiarity.

In the view of the Danish government, a clear and positive synergy effect can be achieved through enhanced energy policy efforts inside as well as outside the EU. Also in third countries, the European energy policy should help promote the EU’s climate, environmental, development and research policy objectives. A concerted energy policy with an external dimension may also contribute to enhancing the EU’s security of energy supply, including most importantly, through a coordinated approach to the EU’s supplier and transit countries, which can ensure reliable deliverables of energy at stable and competitive prices. The EU’s internal energy policy can also contribute to achieving foreign policy objectives by creating more room for manoeuvre for the EU globally, through greater independence of imported energy. Focusing internally on diversity of energy sources, including primarily renewable energy and increased energy efficiency, may contribute significantly to this development. At the same time, promoting renewable energy and energy efficiency will be central elements in the external dimension of the energy policy.

In relation to the external dimension of the energy policy, the Danish government specifically believes that:

- The EU should identify and strengthen cooperation with third countries in the area of climate, environment, development and research policy.
- The EU should emphasise pursuit of the objective set at the G20 Pittsburgh summit in September 2009 on phasing out harmful subsidies in third countries; subsidies that encourage wasteful consumption of fossil fuels while also being harmful to growth and employment in the countries receiving subsidies.
- The EU should prioritise strategic energy infrastructure development and also expand the relationship with central suppliers and transit countries.

### **2) Long-term vision for a Europe independent of fossil fuels (medium and long-term perspective)**

To provide a realistic idea of the direction in which Europe is moving, there is a need to maintain a long-term perspective for energy policy. This will be an advantage in relation to policy planning as well as industry’s prioritisation of new investments. In this connection, the Danish government is looking forward to the report with recommendations by the EU Reflection Group on the future of Europe.

Drafting and development of an overall vision with a clear objective is necessary in order to ensure that the proper strategic choices are made at the right time. This vision should be based on a thorough analysis of future challenges for the EU in the climate and energy area, including the probable supply situation and fossil fuels economics in the long run.

The new energy policy must e.g. support long-term objectives on reducing the EU's greenhouse gas emissions by 80-95% by 2050 as well as independence of fossil fuels. Denmark would like to contribute with experience from the Danish Climate Commission, the purpose of which is to find out how and when Denmark can become independent of fossil fuels.

Specifically, the Danish government proposes the following:

- Establishment of an overall and long-term EU vision, which could be “*Europe independent of fossil fuels*”, including time perspectives and for instance milestones, within a socio-economically sustainable framework.
- The Commission should compile analyses aiming at long-term activities, including on the supply and demand, as well as the real risks and costs of supply failure compared with storage capacity, supply diversity and costs hereof. The analyses should also include long-term strategic and energy policy developments in the EU, and not least analyses of how the EU can avoid supply failure while at the same time, moving towards independence of fossil fuels.
- The Commission should submit a proposal on the basis of these analyses for frameworks for a long-term strategy on supporting low-carbon energy supply and increased independence of fossil fuels in the transport sector.
- The new energy policy should analyse the opportunities and required framework conditions for how the EU can, in the longer run, continue to expand renewable energy and improve energy efficiency once the targets for renewable energy and energy efficiency have been reached in 2020, perhaps by setting milestones for the development.