

nuclear waste watch

Comment on the Green Paper A Strategy for Sustainable, Competitive and Secure Energy Authors: Antonia Wenisch, Patricia Lorenz – Austrian Institute of Applied Ecology Vienna, September 2006

SUMMARY

The Green Paper debate is a good opportunity to exchange opinions on the question what type of energy supply the Europeans wish to have in the future. The NGO coalition *nuclear waste watch* has a clear vision of a sustainable energy future without nuclear power. To realise this Europe must set clear priorities in its energy strategy and define ambitious climate change prevention targets:

1. energy conservation and efficiency
2. using renewables (wind, solar, biomass, small hydro-power, geothermal energy etc.)
3. efficient power plants (co-generation of electricity and heat)
4. natural gas co-generation plants (these can be switched gradually to bio-gas)
5. clean coal (if it can be proven, that CO-2 storage is safe at the site)
6. no nuclear power plants (not for generation of electricity nor for hydrogen production)

The EU should further develop and use its technological know-how to save resources and support other countries in doing so. Europe must be able to develop a high efficient industry which can support all Europeans with the goods and energy they need without exploiting resources from other continents. EU should develop a regional economy which uses mainly renewable resources with a minimum of transports.

The most efficient production of goods, the most efficient buildings, appliances, vehicles and technology, not the cheapest must be the goal. Ambitious legally binding saving targets are necessary!!

"This Green Paper identifies six key areas where action is necessary to address the challenges the European Union faces. The most fundamental question is whether there is agreement on the need to develop a new, common European strategy for energy, and whether sustainability, competitiveness and security should be the core principles to underpin the strategy". [KOM (2006) 105]

In general a common energy strategy can be a step forward to a sustainable economy and prevention of climate change. Sustainability, competitiveness and security are at least partly conflicting goals. From the point of view of an environmental NGO these core principles like e.g. "competitiveness" are controversial issues, because globalisation and market liberalisation are not necessarily helpful in saving nature and resources.

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Based on these three principles (*sustainability, competitiveness and security*) the Green Paper defines six main topics and poses related questions:

A. Competitiveness and the internal energy market

"Is there agreement on the fundamental importance of a genuine single market to support a common European strategy for energy? How can barriers to implementing existing measures be removed? What new measures should be taken to achieve this goal?" [KOM (2006) 105]

The liberalisation of energy markets does not guarantee energy supply security: competition requires low prices and that prevents investment in the grid and the power plants as well. Therefore energy supply security has deteriorated in Europe in the last years [Zingerle 2006]. Furthermore low energy prices prevent efficient use of energy and investment in energy conservation.

On the other side energy prices depend on global energy markets: the oil price is very high at the moment not because of too little competition, but because of political development in the Middle East and the oil demand in India and China.

"How can the EU stimulate the substantial investments necessary in the energy sector?" [KOM (2006) 105]

Where the market fails Commission and national governments have to provide an appropriate legal framework in order to accomplish enough fuel storages and reserve capacities in power plants and grids. With the tool of energy taxes and environmental taxes should be insured, that a decentralised energy supply is made possible.

"How to ensure that all Europeans enjoy access to energy at reasonable prices, and that the internal energy market contributes to maintaining employment levels?" [KOM (2006) 105]

What is a reasonable price for energy: from our point of view a reasonable price must include all external costs for damage to environment and health (not only in Europe, but also in the region from where the fuel is coming), all transport and production costs as well as the total cost for dismantling of nuclear power plants and safe waste management. A reasonable price for energy must not rely on subsidies.

Note: if energy prices are high they pose an incentive for energy conservation and efficient use. If energy prices are too high for poor people municipalities or the state have to support these people.

Cheap energy does not necessarily create employment. Quite the contrary: market liberalisation kills jobs, because the process of concentration of enterprises often causes redundancies.

Conservation of energy and the implementation of renewable energies (e.g. solar energy or use of biomass for energy generation) create new employment opportunities, as it is proven for many countries (Germany, Austria).

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B. Diversification of the energy mix

"What should the EU do to ensure that Europe, taken as a whole, promotes the climate-friendly diversification of energy supplies?" [KOM (2006) 105]

Not all types of energy should be included in the mix. While coal and gas should be used as little as possible, nuclear must not be used at all. Nuclear energy is no sustainable option for energy supply, because of the devastation of land due to uranium-mining, the accident hazard, the terror and proliferation risk posed by nuclear facilities and therefore nuclear cannot receive the same support as renewables as it is suggested by the wording *"low carbon technologies"*.

The only really climate-friendly and sustainable energy form are renewables. They offer a diverse potential for domestic energy production, especially biomass and the use of solar energy contribute to an energy mix without any harm for the environment.

The EU target of 12 % share of renewables in total energy consumption by 2010 requires around 130 Million tonnes of oil equivalent (Mtoe) of biomass (in the pre 2004 EU 15). The potential of environmentally compatible primary biomass for energy production could increase to 300 Mtoe in 2030 in the EU 25. The use of this potential would be in line with safeguarding biodiversity, soil and water resources and with maintaining a priority to domestic food production. [EEA Briefing 2005/ 02]. The share of renewable on total energy demand increases automatically if the increase of energy use can be stopped. Even though 12 % are not an ambitious goal, EU will fail: According to the EurObserver 2005 report, in 2004, 5.6 % of Europe's energy needs were met by renewables (5.6 % in 2001, 5.5 % in 2003) and it is stated that Europe is unlikely to reach a target of 12 % by 2010, as growth has not been evident to date.

Best energy is the energy never produced: Energy saving is the biggest and cheapest contribution to improve both Europe`s energy mix and supply security.

C. Solidarity

"Which measures need to be taken at Community level to prevent energy supply crises developing, and to manage them if they do occur?" [KOM (2006) 105]

Energy saving is the biggest and cheapest contribution to improve both Europe`s energy mix and energy security, while nuclear is an unacceptable option.

Applying the least-cost-method, we come to the following conclusions:

According to a Rocky Mountain Institute study, the investment needed to construct a new nuclear power plant, could be used to produce

- 20 -70 % more electricity from wind-power
- to produce 6 times more electricity from a co-generation gas power plant
- to produce 9 times more electricity from a co-generation waste incineration plant
- to save 10 times more electricity by improving energy efficiency.

Saving energy in the building sector especially by the reconstruction of houses creates jobs in the EU, producing efficient equipment and appliances can be an asset in the global market as well as developing new technologies for using renewable energy. (e.g. exports of wood pellets heating from Austria to Germany are increasing since the price for oil and gas is increasing steadily).

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Sustainable energy systems have to be more flexible and must not rely on centralised power plants only, an increasing use of regional renewable resources requires grids in which decentralised feed is possible (electricity and biogas).

Nuclear cannot be considered an option, because in case of a nuclear accident all people living in regions affected by the radioactive release are forced to solidarity to bear the impacts. To avoid being solidly united in suffering, the best act of solidarity is saving energy: by using less and with higher efficiency.

D. Sustainable development

"How can a common European energy strategy best address climate change, balancing the objectives of environmental protection, competitiveness and security of supply? What further action is required at Community level to achieve existing targets? Are further targets appropriate? How should we provide a longer term secure and predictable investment framework for the further development of clean and renewable energy sources in the EU?" [KOM (2006) 105]

Best measures: energy conservation and renewables. Energy which is not consumed, does not need to be generated nor imported in the first place and is best for climate protection. At the same time it supports security of supply and makes the EU economy competitive.

One important option is the production of biomass for energy which is not only climate friendly but also a chance for development in rural regions and can be a new opportunity in combination with biological agriculture and tourism, if it is done in a sustainable way.

In our opinion the development of renewable energy and efficient use of energy requires a fair price. A level playing field for all types of energy production and energy saving measures is the best way to promote a sustainable energy system. The consequent phase out of all subsidies for old energy solutions (oil, coal and nuclear) is a precondition for equal opportunities! Incorporation of all external cost in the energy price is also a requirement.

"Renewable energy and nuclear power show the lowest damage per unit of electricity, but it should be noted that only parts of the externalities of nuclear are included" [EEA Report No. 8/2006].

A high risk technology like nuclear power can not be part of a sustainable energy strategy - even if it is a "low carbon technology". Because of the accident hazard, the terror and proliferation risk and the long-lived high active nuclear waste which will pose a risk for coming generations, phasing out of nuclear power is necessary, and will increase Europe's security and safety.

The prices for fossil fuels will increase steadily as the oil price does today, but gas, uranium and coal (only later) will follow, when the resources are used up. The price for fossil fuels will also become higher when the internalisation of externalities in the price is implemented. Many renewables have the advantage that they have no fuel costs, e.g. wind and sun will produce electricity for the same price (namely zero) as today also in the future and the technology will become cheaper.

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Climate change is the biggest threat to the global future ... *"Europe is already at the forefront of developing environmentally friendly technologies and should keep this leading role.... To fully explore the potential of renewable energy and energy efficiency the EU should immediately act in the following fields to start with setting new long term targets for renewables up to 2020 ..."*

EREC, the European Renewable Council demands that the EU sets clear and ambitious targets: the renewable share of energy in 2020 must be at least 20 %, this overall target needs to be translated in obligatory sectoral targets: for electricity at least 35 % by 2020, for heating at least 25 % and for bio-fuels at least 12 % in 2020. [Schaefer 2006]

E. Innovation and Technology

"What action should be taken at both Community and national level to ensure that Europe remains a world leader in energy technologies? What instruments can best achieve this?" [KOM (2006) 105]

Priorities for research, dissemination and production:

- efficient appliances, equipment and transport systems (Eco-design)
- efficient use of biomass for diverse applications
- solar energy for heating, cooling and electricity production (cheap and efficient PV systems)
- innovative building sector, with very low energy use, with intelligent materials
- and high energy standards for housing.
- developing low energy mass transport vehicles and intelligent logistics, which avoid unnecessary transports
- innovative solutions for energy service delivery
- Fund research activities in the fields of eco-design and conservation of resources.
- Fund research activities in the field of using renewable resources without damaging environment and biodiversity.

Stop subsidies for large nuclear fission and fusion projects. Nuclear research has been funded for 50 years and has not developed safe, sustainable and efficient power plants, but has created a lot of environmental problems: the accumulation of thousands of tonnes of radioactive waste (spent fuel and nuclear facilities, if they are too old to stay further in use), the risk of proliferation of nuclear material.

Nuclear fusion may be interesting for basic research, however, there is no justification for investing more research funds into achieving proof that a self-sustaining fusion process can be maintained, than for the research of all other energy forms together.

The requirements of the Directive on Energy Performance of Buildings which Member States have to implement include the energy certification of buildings, the setting of minimum standards and the inspection and assessment of heating and cooling installations. The Commission estimated that a cost effective saving potential of 22 % in the building sector (households and tertiary sector) could be realised by 2010. The directive on Energy efficiency requires Member States to cut their energy consumption by 9 % between 2008 to 2016, a target which cannot be called ambitious.

The European Energy policy must provide a system of energy taxes, and limits for energy use CO-2 emission of industrial products, equipment and vehicles.

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An energy strategy has to define targets and propose measures, which can support their realisation:

- more regional production and less transports: toll charge for all transports on all streets, high enough to cover all external costs
- more transports by rail instead of trucks (modal split) (use street toll to improve rail infrastructure)
- more efficient equipment and appliances: set efficiency standards and energy labels for appliances which have to be regularly adapted to higher efficiency standards
- technically a lower consumption of fuel and less CO-2 emission of cars is possible (e.g. by using natural gas or hybrid systems). Set limits for the energy consumption of cars (PKW) < 4 litres/100 km and CO-2 emission < 100 g/km.
- more public transport and less private cars (not all sectors have forced to be privatised - public transport is a public good and should be allowed to be subsidised by the state and municipalities)
- less waste (buy long living products)
- stop construction of more and more highways - because highways produce more and more traffic.(set clear priorities in TEN)¹
- promote efficient heating and cooling systems for all buildings. The directive on Energy Performance of Buildings is not far reaching enough, besides labelling for buildings, standards are required e.g. passive house standard for new buildings (120 kWh/m² a)

In particular transport causes serious damage to the environment and health. The answer to this as well as the fact that oil as car fuel is a limited resource, is fuel based on biomass. A precondition to using biomass as main fuel would be that industry substantially reduces its transport needs. In this context it is important to see the whole production cycle, e.g. where do the plants for the fuel come from, are they produced in an environmentally sound way.

It is important to point out, that the much praised hydrogen as a substitute for oil is far away from being implemented for at least two reasons. For once it is not a primary energy source, but only an energy carrier: Hydrogen generation needs energy. Secondly, as a 2004 MIT study on the subject concluded, even with aggressive research, the hydrogen fuel-cell vehicle will not be better than the diesel hybrid (a vehicle powered by a conventional engine supplemented by an electric motor) in terms of total energy use and greenhouse gas emissions by 2020. The nuclear lobby promotes high temperature reactors as a source for hydrogen generation. This type of reactors is not well developed - and it will require a lot of funding for further research to make them operational at all. And even if this first step could be reached, it is obvious that the uranium reserves will not last much longer than the oil reserves.

The Energy policy has reached a cross-road where we have to decide between a safe and sustainable energy future and the continuation of exploitation and destruction of planet Earth.

¹ Trans-European Networks (Networks for Transports, Energy and Telecommunication)

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F. External policy

"Should there be a common external policy on energy, to enable the EU to speak with a common voice? How can the Community and Member States promote diversity of supply, especially for gas? Should the EU develop new partnerships with its neighbours, including Russia, and with the other main producer and consumer nations of the world?" [KOM (2006) 105]

We believe that the goal of the EU external energy policy should be to abolish itself: The European Union should become independent of imported fossil fuels like coal, gas and uranium.

The EU should

- ban the export of old technology like nuclear reactors, coal and gas plants, but rather help other countries to introduce modern energy policies based on efficiency and renewables.
- develop an international strategy of exchanging efficient and innovative solutions for energy service delivery with the goal to distribute most efficient systems of energy use - using renewable energy sources
- use financing mechanism like contracting in order to achieve the highest possible level of efficiency in energy use.
- avoid to lose the gain of efficiency by using more and more equipment, and transport.

External policy should

- not support the accelerated waste of energy resources in the industrialised world (USA, Europe, Japan) by securing the exploitation and the transport of these resources from Middle East, Africa and Asia (military activities in regions with large deposits of resources included).
- stop the proliferation of nuclear technology and nuclear material - both makes the life on our planet less secure.

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European energy policy

The European energy policy must be switched to a sustainable energy system, which contributes to a safer life of people in Europe. A truly sustainable energy system is based on the phase out of nuclear power plants, it mitigates the hazards of climate change and supports local and regional economies and creates jobs for the people living in the EU.

Only 4 EU Member States are on the right track to meet their Kyoto target, one of them is Sweden.

"A number of policy instruments in the Swedish climate strategy are contributing to this positive trend. These are mainly economic instruments in the energy sector in the form of energy and carbon dioxide taxes, electricity certificates ("green certificates") promoting electricity production based on renewables and the European Union Greenhouse Gas Emission Trading Scheme (EU ETS). In the transport sector, energy and carbon dioxide taxes are helping to mitigate the increase in total emissions and tax reductions, together with other policy instruments, are also stimulating the introduction of transport biofuels. Grants to the municipalities for climate investments complement the general economic instruments and have led to reduced emissions in several sectors. Legislation and economic instruments in the waste field are also important. Assessments of the overall effect of the policy instruments in the Swedish strategy indicate that emissions in 2010 would be in the range of 20 % higher if the instruments had not been applied." [Swedish Report 2005]

Increasing emissions were the results in most other EU Member States, thus Sweden can be a model for the European energy strategy. A strategy which is a compromise between conflicting interests and where all types of potential energy resources are equally accepted can not reverse the existing trend of increasing energy use and increasing greenhouse gas emissions.

An EU energy strategy cannot rely on abstract principles, but must set clear priorities and propose ambitious targets for different sectors and fuels. It also needs targets for research and development in the field of efficient technologies and new processes for the use of biomass in energy production. Then energy efficiency and use of renewables will mitigate the CO-2 emissions, create jobs in Europe and contribute to the independence of the EU from oil and gas and uranium imports from other parts of the world.

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Annex

Facts on Swedish climate policy (examples):

Energy and carbon dioxide taxes. *The first carbon dioxide tax was introduced in 1991 and has subsequently been increased several times at the same time as reduction regulations have been introduced for sectors exposed to competition. In 2000, a strategy for a "green tax switch" was adopted, under which there was a switch between increased carbon dioxide taxes and reduced taxes on labour.*

Support for electricity production based on renewable sources of energy: *Since the start of the 1990s, several systems have been in place to support electricity production based on renewables.*

Support for the more efficient use of energy, 1998-2002. *1997's energy policy decision also included the allocation of funds for information, technical procurement, municipal energy advisers and the labelling of high-consumption equipment. In addition, the decision covered grants designed to reduce the use of electricity – for example for the expansion of district heating, the conversion of electrically-heated buildings and investments in solar energy.*

Grants to local investment programmes. *Under this scheme, municipalities can get support for local measures designed to improve the environment and create jobs.*

Tax relief for green cars and transport biofuels: *Since 2004, carbon dioxide-neutral transport biofuels are exempt from tax in Sweden.*

*Support for **Climate Investment Programmes**, Klimp, which gives municipalities, companies and others the opportunity to apply for grants for measures that reduce greenhouse gas emissions was also introduced in the Swedish climate strategy of 2002.*

The electricity certificate system *was included in the energy policy decision taken in 2002 and the system came into operation in 2003. The system replaced the previous investment grants for electricity production based on renewable sources of energy.*

A programme for increasing energy efficiency *in industry was introduced in 2004 to increase the efficiency of electricity utilisation in the energy-intensive industrial sector." [Swedish Report 2005]*