

NAJU - position on energy supply and policy

Introduction

Energy supply has always been a key issue of human life. In ancient times, food and firewood were the most essential sources of energy. Since the industrial revolution the need for energy has been increasing enormously so that energy supply became dependent on fossil and nuclear energy. These resources, however, are limited and do not allow sustainable use. Besides the limited availability of resources, we are facing even more serious problems caused by the consumption of fossil and nuclear energy, namely greenhouse gas emissions and nuclear waste. Therefore, we demand the full switch to renewable energies in Germany as fast as any possible. To secure this transition we demand the development of a similar European and global strategy.

Saving our climate

Various human activities have changed the composition of our global atmosphere since the beginning of the industrial revolution. The Intergovernmental Panel on Climate Change (IPCC), representing scientists and governments from almost all countries of the world has published scientific knowledge about anthropogenic climate change. In its most recent investigations the IPCC has drawn the conclusion that global warming of the recent 50 years is mainly based on man-made emissions of CO₂ and other greenhouse gases. Without an effective climate protection policy, we will be confronted with growing extreme weather situations, destruction of ecosystems, rising sea levels, lack of rainwater and hunger, followed by massive waves of refugees. Contrary to the recent trend, global emissions have to be reduced by 50% by the year 2050. This target requires urgent and comprehensive action. Germany, as a rich industrial country, is carrying great responsibility with a per capita emission rate that is 2½ times higher than the average emission rate worldwide and 10 times higher than that of India. 85 to 90% of Germany's greenhouse gas emissions are caused by the use of fossil energy sources. Thus climate policy is mainly energy policy.

The target of a 25% reduction of Germany's CO₂-emissions by 2005 compared to 1990 was clearly missed. This urges all efforts to reach the target as soon as possible, but at least by 2010, which would provide the country a small, yet important, margin compared to the international target fixed in the Kyoto protocol, which can secure meeting international agreements even in case of unexpected national emission developments. In case Germany fails to comply with its Kyoto-target, negotiations about the follow-up process for a further international treaty to combat climate change after 2010 will be extremely difficult. Furthermore, the reduction target on greenhouse gas emissions of 40% by 2020 compared to the emissions in 1990 must be maintained.

Energy supply in Germany

The use of energy in Germany can be divided into four main sectors with different challenges:

- Electrical power supply
- Heating
- Industrial and chemical processes
- Transportation

The transformation to a sustainable energy supply requires adapted action in each sector. In the area of electrical power supply, considerable progress has been achieved by the increased use of wind power. These efforts, however, have not yet overcome the domination of non-sustainable coal and nuclear power plants. The electrical power supply still largely goes along with the production of nuclear waste implying incalculable risks for human life and with CO₂-emissions causing global warming with consequences that are already being felt today.

Saving Energy

We consider saving energy as the most important instrument to develop a sustainable energy supply. To reach a reduction in the use of energy, we need a combination of regulatory legislation targeting the most relevant specific issues (specific heating demand of buildings, fleet consumption of passenger cars, urban development policy, energy efficiency standards, standby consumption...) and fiscal incentives through energy taxes. Therefore we demand an effective and constant rise of taxes on all forms of fossil energy to create a calculable and noticeable incentive for saving energy in all areas of consumption. In some areas emission trading with strong caps on the number of certificates can be an efficient instrument as well.

Both systems should lead to a stronger economic incentive for saving energy, without focusing only on a single specific solution. This is also the most efficient way to reach a reduction of energy use in the area of industrial and chemical production processes.

To give all consumers the possibility to react on rising energy costs, these costs have to be made transparent for investment decisions. To make this possible, manufactures of all energy consuming devices (electrical devices, buildings, vehicles etc.) should be legally bound to publish not only energy consumption data but also the expected energy cost based on standardized conditions. As yearly meter reading does not visualize the correlation between their individual behavior and their energy bill for most consumers, short-term metering and billing for all forms of energy consumption must be strived for (at least monthly). For this reason automatic meter reading must be enabled for all households, which is de facto a prerequisite for short-term and frequent billing.

Electrical power supply

Renewable energies

The German success story of the Renewable Energy Act (EEG), which guarantees a fixed price for all power supply generated from renewable energies that is fed into the electric power supply system - even for private energy generation -, is gradually getting introduced in other European countries. In Germany, a constant advancement of the concept is necessary. Payments should be governed in a way to give incentive to install new technologies and to enable the cost-effective enlargement of plants. In the sectors of other renewable technologies like biomass, photovoltaic, geothermal and sea current/ wave power plants, the continuation of technical advancement and market introduction is necessary to take benefit of the existing potentials.

Attractive payment for the installation of new plants has to go along with the promotion of research enhancing renewable energy technologies to a standard that will grant a considerable proportion of the total energy supply for power produced from sustainable sources. Only by these means will it be possible to achieve cost reduction which is aimed at by decreasing EEG-payments. The production of biomass for energy supply has to follow ecological standards.

All named technologies currently show very different states of development:

- The use of biomass is less confronted with technological problems than with problems of infrastructure and logistics
- Photovoltaic needs more production efficiency to reduce the cost of devices
- Geothermal and ocean wave power plants are still in the experimental state in Germany

The extended use of renewable energies must be conform to the interests of nature conservation and must not endanger biological diversity. This is particularly relevant for hydroelectric power plants, (whose contribution to the total energy generation in Germany, however, is minimal) and for the production of biomass. We strictly object biomass production in large monocultures with a high need of pesticides as well as genetically modified energy plants and imported energy plants like palm oil, whose cultivation is directly or indirectly related to the destruction of ecosystems like the tropical rainforests.

Provided there is beneficial political framework, wind power - due to its advanced technology and its high cost-effectiveness - has the strongest potential among all sources of renewable energy to contribute a relevant proportion to the total energy supply during the next 10 years. From the national point of view, offshore technology (placing a wind power plant in the open sea) and a pan-European strategy to expand wind power generation need to be promoted in the first place, as the greatest part of the publicly accepted high-output spots onshore will get occupied with wind power plants in the near future. And Germany, as the largest energy consumer in Europe, holds only a small proportion of the total European potential in wind energy. Still, the extension of wind power use for climate protection reasons must not leave the interests of nature conservation behind. Therefore, we demand that wind power plants will not be built in national parks, core zones of biosphere reserves and comparable areas. The expansion of wind energy has to be done in a way that minimizes impact on the surrounding ecosystems.

Large-scale integration of renewable energy

Besides the extension of renewable electric power generation, a transformation of the energy supply system has to be achieved. Contrary to conventional power plants, the output of wind- and solar power plants depends on short-term weather conditions and is controllable only for security reasons. The solution of this problem is a key condition to fully replace fossil and nuclear energy production and could be a pre-requisite for further installation of wind power plants in the short-term. For the integration of the fluctuating power generation from wind- and solar plants, electricity control and storage power plants need to be installed. But also consumers of electrical power have to be integrated into grid control, which is performed solely by the production side today. During the transition phase gas- or gas-and-steam power plants are able to produce top loads of energy consumption, because of their ability to adapt power generation to demand requirements thus being a favorable combination to wind power plants.

To integrate the consumer side of energy supply into grid control, effective incentives have to be installed. This means that energy production according to the guaranteed feed-in tariffs (EEG) must be distributed to the energy market according to their real production profiles. This will lead to an incentive to use energy preferably at times of high renewable energy production at least for big customers. This is a pre-requisite for the development of new energy management technologies and procedures adapted to the new requirements set by an increasing share of renewable energy sources. Automatic meter reading of electricity consumption enables the opportunity of time-variant tariffs according to renewable energy production also for small customers such as private households and small businesses. Automatic meter reading at the same time allows for giving electricity customers short-term information on their energy consumption and thus raises awareness on these costs and on options for saving energy.

Furthermore feed-in tariffs for those renewable energies that are controllable such as biomass-fired power plants should include incentives to adapt production to demand.

Alternatives to coal and nuclear power

In order to substitute the power generated by nuclear power plants, which will be turned off by 2020 according to parliamentary decision in Germany, the operation or the construction of coal power plants must not be promoted. Instead, in the near future coal and nuclear power have to be replaced by renewable energies, plants using combined heat-and-power cycles and, transitionally, by gas and gas-and-steam power plants. Although gas power plants depend on fossil resources, their CO₂ emissions per kWh are only half those of coal power plants because of their high efficiency and the low carbon content of their fuel. For this reason, they are useful to secure power supply during the transition phase.

We demand the immediate stop of coal subventions and a taxation of primary energy carriers according to their CO₂- and risk potentials. As it is difficult to compare the risks emerging from coal (climate change) and nuclear power (nuclear contamination), taxation should be equal for both and related to the amounts of electrical power gained from them.

In addition to that, the insurance policies for nuclear power plants have to be adapted to the effective risks. The financial reserves of the plant owners have to be taxed, in order to reduce the factual subvention of nuclear power plants.

Heating

In the area of energy consumption for heating, the redevelopment of old buildings is the most important task. Over 80% of the existing buildings still do not fulfill the German ordinance for heat loss prevention from 1983.

New buildings must fulfill passive house standards with a maximum consumption of 15 kWh per year and square meter for heating. An alternative level would be 30-40 kWh per year and square meter including warm water production. Many projects have given sufficient evidence that this standard can be met for all types of buildings and that it does allow freedom for individual design. No exceptions for electric power heating and warm water production should be allowed. Basically, however, it has to be considered that from the viewpoint of a sustainable energy supply, new buildings on new grounds will cause more problems because of rising traffic volumes than because of heating.

For this reason, we demand that new buildings are only to be approved if a satisfying connection to public transport is given.

The redevelopment program of the German government should be extended to achieve the legal insulation standard passed in 1983 for all buildings within the coming 20 years. Moreover, incentive for redevelopment needs to be given to all participants. Along with this, the work of energy contracting agencies, who carry out the complete redevelopment and financial planning, and who later provide suitable heating for acceptable energy prices, should be simplified. This model minimizes work for the owner and the lodger of the building as they hardly get engaged in the operational and financial planning of the procedure.

Transportation

Concerning transportation, a change towards a sustainable system has not yet taken place. The volume of traffic is still growing. Therefore, we demand strategies for traffic prevention, especially in the area of road traffic, as a main aim for the Federal Transport Network Plan. In addition to that, the federal states and the town councils need to implement corresponding regulations in their urban and land use planning.

The limitation and reduction of airplane traffic, which is most hazardous for the climate, is a prior task for politicians, industry and logistic experts. We demand the introduction of a kerosene tax and the transition of cargo transport from the airway to the railroad and to the existing waterways. We are pleased with the introduction of the road toll, still, it needs to be raised significantly and extended to all roads. Kerosene and diesel fuel taxation must be related to the CO₂ potential of the respective fuel. In order to reduce the daily numbers of long-distance commuters, the government should promote living near the places of work instead of supporting new apartment construction outside of the city. Subventions for privately owned homes and lump-sums for commuters should be abolished. Resulting financial resources should be used to finance the redevelopment of old buildings to provide better living conditions and to contribute to climate protection. In order to achieve a realistic and sustainable strategy in the area of transportation, the promotion of research on renewable energies and fuel technologies is necessary.

Wider perspective

The German government needs to take initiative for the development of the national programs promoting the transition to a sustainable energy supply as well as for a pan-European strategy granting the expansion of renewable energy generation and a sustainable energy supply in the other European countries.

Global climate protection will only be feasible if a profitable use of renewable energies is possible for the developing countries and the emerging markets, who have not yet introduced satisfying energy supply systems. Developmental aid and economic cooperation must aim at giving developing countries the opportunity to adapt systems of renewable energy supply in order to help them avoid the mistakes we made in our non-sustainable energy supply system.

Overview of our demands:

- (1) Fastest possible change to 100% renewable sources in German energy supply
- (2) 25% reduction of CO₂-emissions in energy generation in Germany by 2010 and 40% reduction by 2020 with reference to the year 1990
- (3) All areas of consumption must be given incentive to save energy. We demand the development and extension of the ecological taxation system which makes energy more expensive, but reduces taxation in other areas
- (4) Continuation of the renewable energy law (EEG) payment regulations which support the profitable generation of power from wind, photovoltaic, biomass and geothermal energy
- (5) Stronger promotion of research, development and market introduction of photovoltaic, biomass, geothermal energy and sea wave power technologies
- (6) Pan-European strategy for the extension of wind power use
- (7) Creation of conditions that allow a profitable integration of renewable energy into the power supply system including a differentiated power production and consumption regulation system
- (8) Turning away from coal and nuclear power as prior task besides the extension of renewable energy use
- (9) Introduction of a redevelopment program to achieve the legal insulation standard passed in 1983 for all buildings within the next 20 years and a bigger proportion of renewable energy sources in heating
- (10) Stricter and more cause-related taxation of energy consumption in traffic. The taxation of Kerosene is a particularly urgent target.
- (11) Support of short ways between work and living places to reduce traffic
- (12) Stronger promotion of research, development and market introduction of renewable energy use in traffic
- (13) Developmental aid and economic cooperation must aim at giving developing countries the opportunity to adapt systems of renewable energy supply in order to help them avoid the mistakes we made in our non-sustainable energy supply system.

Latest version: J.M.D:-2007.06.12

More information about the NAJU in english: www.eurotope.net