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ALLIANCE 90/THE GREENS Parliamentary group:

The Renewable Energy Act in Germany
- Renewable energy: the central building block for sustainable
energy production -

Ladies and Gentlemen,

it is a great honour to speak to you today. I am very glad of this opportunity to inform you about our successful efforts with regard to renewable energy resources in Germany, and especially about the Renewable Energy Act.

Ladies and Gentlemen,

As you know, we have major problems in the world due to the use of fossil and nuclear energies.

The two main challenges we face are to ensure protection of the climate and safeguard peace.

The changes to the climate caused by humans are in my opinion the key problem for humankind, with global effects. Today, there is already more CO₂-gas in the atmosphere than at any time in the last 20,000 years. This high level of greenhouse gases is the cause of the heavy rainfalls, storms, desertification and other climate change problems. We already have an excessive level of greenhouse gases in the atmosphere. We must therefore stop the emissions as soon as possible, not just reduce emissions.

A scientific study commissioned by the Federal Environmental Agency, confirmed statistically for the first time that man

bears the main responsibility for the warming-up of the earth's atmosphere.

80% of greenhouse gas emissions are connected with energy consumption.

Renewable energy resources do not lead to an increase in levels of greenhouse gases. They therefore play a key role in the fight against climate changes .

The target for the world as a whole must be to satisfy energy consumption using renewable energies alone. Energy saving will help to accelerate the implementation of renewables.

The development of renewable energy resources not only helps to economize natural resources, but, at the same time, in the long run, to avoid international conflicts over the possession of fossil raw materials for energy supply and the possibility of nuclear materials from nuclear power stations being used to develop nuclear weapons.

According to a study by the Office of Technology Assessment of the German Bundestag, the world depletion midpoint of oil production will be reached in the next five to ten years.

Once this depletion midpoint has been reached, the world will not get the oil it needs. More and more wars will break out if we do not find a replacement. Natural gas, coal, or nuclear energy will not be able to serve as substitutes, because of nuclear waste problems, greenhouse gas emissions and limited resources.

The best strategy is therefore to develop renewable energies.

Germany has already begun to promote more and more political instruments to encourage the use of renewables. The most successful instrument is the Renewable Energy Act.

(Slide 1)

As a first step, we are hoping to double the proportion of renewable energy in Germany by 2010 through the implementation of our Renewable Energy Act.

(Slide 2)

How does our Renewable Energy Act work? To put it in a simplified way, there are four consecutive stages. I shall explain the functioning of the law using an example of a farmer who produces electric current from his biomass plant.

- 1. The Renewable Energy Act grants the farmer the right to connect his biomass plant to the closest power network and to feed current generated in his plant into this network.**
- 2. The power network operator must pay the farmer for the electricity supplied from the biomass plant at the rate set out in the Renewable Energy Act of approximately 10 cents per kWh.**
- 3. In view of the fact that, in Germany, electricity generation, power network operation and electricity supply are separate, the network operator is not compelled to keep or use the electricity himself. He instead passes the electricity to the power generators, who have to reimburse the network operator at the same rate of 10 cents.**
- 4. The electricity generators can now either "mix" the biomass electricity from our farmer into the total energy which they generate, or sell it separately as electricity from renewable energy sources. In the first case, the electricity generator gets the 10 cents paid back to him proportionally by all electricity consumers, as part of the current price he is charging. In the second case, the**

customer who has opted to use electricity exclusively from renewable energy sources covers the cost.

(Slide 3)

This law applies to windmills, photovoltaic plants, geothermal plants, small hydroelectric plants and the gas gained in waste dumps and sewage treatment plants, as well extracted from mines. The law also applies to biomass plants with a power of up to 20 megawatts.

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The payment rates for electricity supplied are differentiated. All rates are governed by the same principle: the price to be paid under the Renewable Energy Act is set at a level to allow viable operation of the plant in question. Naturally, the plant has to be a modern one, and sensibly operated. In other words: anybody who undertakes to invest money in a plant generating electric current from a renewable energy source, is able - if they take enough care in running the plant - to gain a modest return on the invested capital.

The most important aspect of the Renewable Energy Act is that the feed-in rates must be high enough to allow profitable investment.

Experience gained in Germany with wind power plants has shown that this perspective of achieving a profit is the critical factor for the development of renewable energy sources.

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The rate paid for electric current gained from plants run on gas from waste dumps, sewage treatment or mines and from hydroelectric plants is 7,7 cents for smaller plants generating up to 500 kilowatt of power. Larger plants get 6,6 cents. Power plants of more than 5 megawatts are not entitled to any such payment under the law.

(Slide 5)

Electricity generated from biomass gas current is paid for - depending on the size of the plant -at a rate of 8 to 10 cents. This rate is to decrease each year by 1 percent, in order to encourage cost cutting. This only applies to newly constructed plants, however. Plants already operating continue to receive the same rate which applied at the time the plant was commissioned. Otherwise, the operators of such plants would not have a sufficiently secure basis to plan for the future.

Electric current from geothermal sources is paid for - depending on the size of the plant - at a rate of 7 or 8.5 cents.

(Slide 6)

The rates for power from wind power plants are slightly more complex. They depend on the wind strength, i.e. on the windiness of the location of the plant - whether it is located in a very windy place such as a coastal area, or inland. Very well-located plants get 9.1 cents for five years and then 6.2 cents. Plants situated in less windy places and offshore plants get 9.1 cents for longer periods, which can last up to 20 years depending on the location. As in the case of biomass plants, new wind power plants will have their rates reduced by 1.5% .

(Slide 7)

Electric current produced from solar energy must be paid at a rate of 48 cents under the Renewable Energy Act. That rate will be reduced by 5 % yearly. This is a provisional regulation, which will apply until a total of 1000 megawatts of photovoltaic power has been installed in Germany. The law obliges the government to introduce a suitable follow-up regulation, however.

All payments for each individual plant will continue for 20 years. The amortization periods are generally of the same length.

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The Renewable Energy Act also regulates various problems of power network usage. The cost of connecting plants to the network has to be paid by the plant operator. However, if it is necessary to increase the network capacity in order to absorb current from the plant, then the cost of such an expansion must be borne by the network operator. A clearing body settles any possible disputes in this regard.

The Renewable Energy Act also includes a procedure providing relative equality in the share of current from renewable energy sources allotted to all current suppliers in Germany. In this way, we avoid a placing a heavier burden of wind power energy on coastal regions than on inland regions which have fewer wind power plants.

The Renewable Energy Act came into force on the first of April 2000. The law was drafted by Parliament, not by the Government. Cooperation between Parliament and the Environment Ministry was good, but often we had to work against the Ministry of Economics and Technology.

The successes are already visible.

(Slide 9) Here, you see the proportion of electricity consumed which comes from renewables. In the last two years, the level of renewables increased from about 5 % to more than 8 % in 2002. If this rate of increase continues, we will reach a level of 18% of renewable energy generation across Germany as a whole by 2010.

(Slide: PV) that annual sales in the sector of photovoltaic energy generation will increase to ten times the 1999 level, reaching about 100 megawatts. Let us compare: in 1999, the total sale of photovoltaic energy across the whole world was only around 200 megawatts.

(Slide: Wind) The growth in the wind power sector is also constant. We can see how this sector has developed since 1990. In 1990, a new law on wind power was created in Germany . It was similar to the Renewable Energy Act, but only applied to wind. But you can see that the highest rate of increase for wind power is in 2001 and 2002. This is a result of the Renewable Energy Act.

Generation of electricity from biomass has also increased dramatically. In 1999, overall generating capacity was 50 MW of biogas. In 2001, it was already 135 MW. Newly installed generating capacity for biogas was 12 MW in 1999, in 2001 it was 70 MW.

The increase in the cost of electricity caused by the Renewable Energy Act is very low. The bill for a normal household is about 7 € per year higher than without the Renewable Energy Act.

Through this law, combined with other regulations for renewable energies, we could create a new industrial sector in Germany. Investments in renewables increased from 3.3 billion € in 1999 to 6 billion € in 2001.

A lot of new jobs have been created. We have doubled the number of jobs in this sector from 60,000 in 1999 to 120, 000 in 2001.

The success in Germany will also more than fulfill the requirements of the European Union directive on promoting electricity production from renewable energy sources. Thus Germany presents an example of how renewables will be introduced onto the market.

Only in those countries with a feed-in system - Spain, Germany and until 2000 also Denmark - has there been any real success in introducing renewables. Other countries like Great Britain, Ireland or France do not generate as much wind power as Germany or Spain or Denmark, even though they actually have a greater potential for harnessing wind energy. They tried quota systems, or other systems, but they were not successful.

Germany will increase the use of all renewables, even in the transport and heating sector, over the next few years.

Last summer, the Parliament voted for a tax exemption for all fuel produced from biomass. By the way, bioethanol, biomethanol, vegetable oil and biogas are synthetic fuels produced from plants. We hope we will bring about a similar development in biofuels in the next years to that which we have already achieved in the electricity field.

We also want to create new laws and subsidies for developing renewables in the area of heating and cooling.

The new government is also planning a new programme for energy research. This programme will focus on renewables and energy saving. Nuclear power and nuclear fusion will no longer be the subject of energy research.

All these political instruments will help to develop renewable energies in Germany.

This will help us to move on from the nuclear and fossil century. Our aim is to usher in a solar century. I believe that, in a few decades, which could reach a point where 100% of energy consumed comes from renewables. The most important way to achieve this is to create more and more political instruments like the Renewable Energy Act, tax exemptions for renewables, higher taxes on conventional energy (ecological tax) and subsidies for renewables.

This is the only real way to protect ourselves from climate change and from wars over energy resources.

Thank you very much for your attention Ladies and Gentlemen.