

## Environmental protection as an element of German economic policy

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Environmental protection has become a significant and well-established element of German policy, both at home and abroad. German political parties have reached a consensus regarding the main directions of foreign policy on environmental protection. Germany, which is one of the world's major CO<sub>2</sub> emitters, is interested in adopting an international agreement on reducing greenhouse gas emissions ('post-Kyoto') in a form beneficial to its economy. Berlin wants the traditional branches of German industry, which have to comply with strict requirements under the EU's environmental protection policy, to retain their competitiveness on a global scale. An international agreement which would give sufficient consideration to German interests could offer the country a chance to use its leading position on the 'green technology' market. Boosting exports of such technologies could become a successful way to overcome recession. However, German politicians have not been able to agree on a way to implement environmental protection policy at home. The CDU/CSU/SPD coalition government has initially decided methods of reducing carbon emissions which focus on the reduction of energy consumption in the building sector and support for renewable sources of energy. The most controversial issues, such as backing conventional nuclear and coal-based power engineering, might be solved by a coalition of parties whose programmes do not differ so much as those of the present coalition members, for example, if the new government after this autumn's parliamentary elections was formed by the CDU/CSU and the FDP.

In Germany, high priority is given to environmental protection policy, partly at the expense of energy corporations' interests. However, those corporations have been adapting themselves to meet environmental protection requirements, achieving this at a much faster rate than companies in Central and Eastern Europe, thanks to governmental support. They thus have better chances to increase their competitiveness.

### Germany, the promoter of the European environmental protection policy

Germany is one of the key global promoters of environmental protection policy and renewable energy sources (RES). The government has to take this stance because of German public opinion, which is highly sensitive to environmental issues. On the other hand, Berlin's strong support for environmental protection policy is helping it achieve its political and economic

goals. Germany is a global leader in the development and export of 'green technologies', including technologies for RES, lowering energy consumption in industry and the building sector, and reducing CO<sub>2</sub> emissions. Berlin's initiatives at the UN forum, such as a transfer of 'green technologies' to developing countries, and work on a global agreement on carbon emission reduction, present Germany as a country which cares not only for its own welfare but also for that of the whole planet. This has raised the country's prestige, and aided its efforts to join the UN Security Council. Germany initiated the development of the EU environmental protection policy, and during the German presidency of the EU, Chancellor Angela Merkel persuaded EU leaders to adopt (in March 2007) the 3×20% plan which envisaged a reduction of CO<sub>2</sub> emissions by 20%, increasing the share of RES in the energy balance to 20%, and lowering energy consumption by 20% until 2020. Berlin has also been using EU institutions in its efforts to adopt a legally binding global agreement on reducing greenhouse gas emissions ('post-Kyoto'). It argues that a post-Kyoto protocol will improve care for the natural environment and the usage of renewable energy sources, and will thus contribute to stronger international security by lowering the risk of conflicts caused by competition for oil, gas and water, as well as the risk of mass migrations to the richer countries in the northern hemisphere.

## **International lobbying for the environment, as well as the German economy**

The post-Kyoto agreement is also a way to maintain the competitiveness of German and EU firms on the global scale as it will impose the costs of environmental protection on entrepreneurs across the world. The agreement provides that the obligation of carbon emission reduction should be binding upon non-EU firms, which otherwise do not have to meet the European requirements of limiting emissions. Berlin has also been engaged in international

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lobbying for a more intense exploration of RES, which is intended to boost German exports of related products and technologies, and thus alleviate the consequences of recession. The establishment of the International Renewable Energy Agency (IRENA) on 26 January 2009 in Bonn is an element of this strategy, which has happened mainly thanks to German efforts. Of the 116 countries participating, over 50 of them will be full members.

IRENA will support both developing and developed countries in their attempts to intensify the usage of RES by offering them conceptual, technological, institutional and legal assistance. Its operation will be modelled on German government agencies which promote the exports of 'green technologies'. A similar function will be performed by Rudea, a planned Russian-German agency, whose goal will be to lower the energy consumption of the Russian economy. The agency is expected to facilitate the transfer of German technologies and know-how (including adopting legal regulations to support the reduction of energy consumption), and at the same time to provide German companies with access to the Russian market on preferential conditions.

Such active support for the development of the 'green technology' sector is intended to enable Germany to retain its high position in international trade, which has been challenged by China and India. According to an analysis presented by the German Ministry for the Environment in 2006, the sales of 'green technologies' in 2020 are expected to reach the level of the car and machine industry added together; the latter two have so far been the branches of industry which have the greatest share in German total exports. Since the global crisis has affected

the motor industry in the first order, and as developing 'green technologies' is seen as a method to overcome recession in Western countries, the Environment Ministry's goals may be accomplished even sooner than might have been expected.

## The German dispute over compliance with EU requirements

Activity for environmental protection is considered in a wider context because its impact extends over energy security issues (resulting in either an increase or decrease of oil and gas imports) and the economic conditions. There is a dispute over how to implement the environmental protection policy (especially EU requirements) in Germany. The EU 'climate package', the final version of which was adopted in December 2008, obliged Germany to reduce CO<sub>2</sub> emissions by 14% and increase the share of RES to 18% within the time frame of 2005–2020. The most controversial issue is the usage of nuclear power engineering, which on the one hand emits small quantities of CO<sub>2</sub> ('pure energy production'), and on the other involves the risk of radioactive contamination.

The dispute also concerns the degree of financial and political support for conventional sources of energy (nuclear and 'dirty' coal-based power engineering). The Christian Democrats and the Liberals want to support conventional sources by subsidising new high-efficiency coal power plants and rescinding the programme which envisages closing nuclear reactors<sup>1</sup>. They are opposed by the Green Party and the Left, while the SPD (which is now

in government coalition with the CDU) wants to close the reactors but is ready to support modern coal power plants. If nuclear power plants were liquidated, this would raise the level of carbon emissions by nearly 150 million tons annually<sup>2</sup> (in 2008, the emissions reached 973 million tons, and are planned to be reduced to

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737 million tons in 2020). Although this would have significant impact on the achievement of the previously-set target for emissions reduction, the present CDU/CSU/SPD government is not ready to interfere with the programme of power plant closures due to the opposing views presented by the coalition members. The earliest chance to solve this problem will be offered by elections in September 2009, as a result of which a coalition of parties representing similar views on nuclear and coal-based power engineering may be created. A CDU/FDP government would certainly offer less support for RES, reject the reactor closure programme (although it would not agree to build new ones) and facilitate the building and financing of coal power plants. In turn, a coalition consisting of the SPD/Green Party and the FDP (or the Left) would continue the programme of closing the reactors by 2020 and impose additional taxes on the current they produce. Financial support would be mainly addressed to RES and technologies which reduce energy consumption.

Less controversial issues, such as modernising the building industry, preferences to CHP plants (co-generating heat and electric power), and emissions reduction in transport, were agreed upon by the present government in June 2008. An extensive plan was adopted at that time which placed much emphasis on supporting the modernisation of existing buildings (especially public facilities) and introducing energy consumption and RES usage standards for new buildings; millions of euros were allocated for this purpose.

However, the intensifying financial and economic crisis may reduce the number of investment and modernisation programmes in Germany and the subsidies allocated for them. This may be a significant impediment to the implementation of the government's plan, and thus to the achievement of the target set for Germany by the EU. Considering the volume of

<sup>1</sup> The liquidation of nuclear power engineering was pushed through by the SPD/Green Party coalition. Under the law adopted on 22 April 2002 by Gerhard Schröder's government, all nuclear power plants have to be closed by around 2020. More precisely, the time of their operation was limited to 32 years. However, since periods spent on repairs are not included in the operation time, some of the plants will only be closed after 2020.

<sup>2</sup> Data quoted from [http://www.kernenergie.de/r2/de/Unsere\\_Position/Position-spapiere/Position/Gute\\_Gruende/ke\\_hilft\\_dem\\_klima.php?navanchor=1210006](http://www.kernenergie.de/r2/de/Unsere_Position/Position-spapiere/Position/Gute_Gruende/ke_hilft_dem_klima.php?navanchor=1210006)

German emissions, the failure of the German plan would significantly affect the effectiveness of the European environmental protection policy. If the economic slowdown and the ensuing reduction of greenhouse gas emissions fail to compensate for the consequences of lesser investments, and thus put the achievement of the EU target at risk, Berlin may be expected to make efforts to soften the requirements of the EU environmental protection policy.

## Corporations adapt to environmental protection requirements

The major energy corporations on the German market, Germany's RWE, E.ON and EnBW, and Sweden's Vattenfall, have been critical of the demanding environmental protection policy. Since they own many coal power plants, their respective shares in the costs paid for carbon emission permits are one of the biggest in the EU<sup>3</sup>. For example, their largest competitor, the French EdF, is in a much better situation because its emissions are significantly smaller

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(most electric energy in France is generated by nuclear plants). However, the biggest corporations in Germany have made efforts to adjust themselves to the environmental protection requirements and reduce their CO<sub>2</sub> emissions. Their efforts have focused on developing and buying nuclear power plants<sup>4</sup>, developing RES and testing carbon capture and storage systems (CCS). RWE and E.ON are especially active in the nuclear sector. Owing to the construc-

tion of reactors in other countries, the companies are developing their know-how and trying to achieve low-emission power generating capacity, thus evading the German ban on building new reactors<sup>5</sup>. Although the existing recession has forced those companies to cut costs, they still want to invest in RES, mostly in the form of wind farms. They are also interested in investing in Central and Eastern Europe. It is worth noting that RWE is the leader of wind farm projects in Poland and receives state subsidies<sup>6</sup>. It was one of the first companies to embark on larger-scale investments in RES in Poland, and stands a good chance of taking over the most attractive locations and using currently available state funds.

German companies, considering the high levels of CO<sub>2</sub> emissions generated by their coal power plants, have in a way been forced to develop CCS technologies. They have the largest

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number of carbon-capture and -storage projects (CCS) in the EU (Vattenfall has 3, E.ON has 4 and RWE has 2), which are implemented in Germany, Holland, Sweden and the United Kingdom. Because this technology is expensive, the companies have made efforts to gain financial support from the EU. They have an effective lobbying system, which has additionally been

supported by German diplomacy. One proof of this is the way funds were distributed as part of the original Economic Recovery Plan adopted by the European Commission this February, under which nearly 570 million euros out of the total sum of 1.25 billion euros allocated for CCS went to projects by those three German companies. The impact of CCS on the success of the government's strategy to reduce CO<sub>2</sub> emissions has been appreciated by the German

<sup>3</sup> RWE and E.ON (along with Italy's Enel) are responsible for the biggest CO<sub>2</sub> emissions among energy corporation in the EU. In 2007, the level of carbon emissions reached 151 million tons in the case of RWE and 91 million tons in the case of E.ON. For example, in the third quarter of 2008, RWE had to pay 1.017 billion euros for emission permits.

<sup>4</sup> As a result of takeovers of the Dutch firms Essent and Nuon by RWE and Vattenfall respectively in the first quarter of this year, the latter two have gained access to the production capacities of Dutch reactors.

<sup>5</sup> RWE has decided to invest in reactors in Bulgaria (Belene) and Romania (Cernavoda). Three more projects are planned in other Central European countries. E.ON is a shareholder in the nuclear power plant project planned for construction in Finland, and is considering participating in investments in Italy. The two corporations have common plans to build up to five nuclear power plants in the United Kingdom.

<sup>6</sup> RWE is planning to build wind farms with a capacity of 280 MW by the year 2010. RWE's investments are co-funded by the Polish government agency, the National Fund for Environmental Protection and Water Management (NFOŚiGW), using money collected from Polish companies as penalties for the insufficient usage of energy generated by renewable sources, as required under Polish law.

government; hence the fast legislative process preparing legal regulations concerning those issues. When the climate package was accepted by EU leaders in December 2008, work on the German law started this January (the bill had been prepared by the companies). It is quite likely that the law will be accepted by the government in March and by parliament in the first half of 2009. Berlin has also allocated additional funds to pilot carbon-capture and -storage projects, some of which are already in operation<sup>7</sup>.

## Conclusions

1. Germany is one of the world's main promoters of environmental protection and renewable energy sources. The German government is achieving its political and economic goals by supporting the environmental protection policy. Berlin's initiatives at the UN forum, such as a transfer of 'green technologies' to developing countries, and work on a global agreement on carbon emissions reduction, present Germany as a country which cares not only for its own welfare but that of the entire planet. This builds the country's prestige and has helped in its efforts to join the UN Security Council. On the other hand, active support for the development of the 'green technology' sector is expected to enable Germany to maintain its high position in international trade.
2. The German government's activities aimed at developing the 'green technology' sector, considering the weakening condition of its national car and machine industries, will have a significant impact on Central and Eastern European countries, whose economic growth depends heavily on the market situation in Germany. Those countries, especially Hungary and the Czech Republic, and to a lesser degree Poland<sup>8</sup> and Slovakia, manufacture semi-finished products which are exported for further processing to Germany. If they want to maintain their status as 'semi-finished product suppliers' and benefit from German economic conditions, they must attract investments from German manufacturers operating in the high-tech and 'green technology' sectors.
3. The Rudea agency's activity in support of developing German-Russian co-operation on 'green technologies' will enable a significant enhancement of the energy partnership of Berlin and Moscow, which so far has been based on the gas sector alone.
4. The key players on the German market have been trying to adapt to the EU's environmental protection policy requirements and reduce their carbon emissions. Their efforts have been focused on developing nuclear power plants, exploring RES and testing carbon-capture and -storage systems (CCS). Engagement by E.ON, RWE and Vattenfall in developing CCS technologies and gaining funds for this purpose has had a direct effect on the condition of Polish companies from the electrical energy sector. On one hand, German companies are competing with Polish enterprises for EU funds on CCS projects (Belchatow and Kedzierzyn)<sup>9</sup>. On the other, RWE and Vattenfall are planning to build several coal power plants in Poland; the competitiveness of the current they produce will depend on the efficiency of the CCS installations, among other factors.

<sup>7</sup> 45 million euros from the federal budget and 50 million euros from company budgets will be spent on CO<sub>2</sub> storage projects (in Ketzin/ Brandenburg, Altmark/Saxony-Anhalt and Schleswig-Holstein) in the next three years. The system in Ketzin is already operational (launched in 2007). 100 million euros have been allocated from the federal budget on CO<sub>2</sub> capture projects. The first small system by Vattenfall was launched in 2008 (Schwarze Pumpe). The second one, owned by RWE, will be put into operation in summer 2009.

<sup>8</sup> Nearly a third of Polish exports are sent to Germany, approximately 40% of which are products for the electromechanical and car industries. In turn, Germany accounts for an average of about a quarter of Polish imports.

<sup>9</sup> Potential sources of EU funds are the Economic Recovery Plan and loans from European financial institutions (EBRD and EIB). The companies also compete for money from the special fund of 12 CCS projects, which will be selected at the turn of 2010.



## APPENDIX

### Guidelines of the governmental environmental protection programme (June 2008) and the level of public funding:

#### Goals:

- to modernise existing buildings and impose requirements for energy consumption reduction in the case of new buildings;
- more intense usage of RES in heat and power engineering (from a 13% share of power production to 25–30% in 2020);
- to construct new CHP plants, where 25% of the power is expected to be generated by 2020; the federal budget will allocate 750 million euros annually in subsidies until 2016;
- to introduce ‘intelligent’ energy consumption meters to motivate lower consumption;
- regulations on integrating bio-gas into the natural gas transmission networks;
- to promote energy-saving household appliances;
- to reduce transport emissions (by introducing changes in excise duty and motorway fees promoting low-emission cars, and more widespread usage of biofuels).

The implementation of the comprehensive programme is supported with subsidies from the federal budget and funds allocated by federal states and communes. In the federal budget for 2008, 2.6 billion euros were allocated to the implementation of the comprehensive programme, which was 1.8 billion euros more than in 2005.

Programmes linked to the building industry are a significant part of the governmental plan. To reduce energy consumption in private buildings, 700 million euros was allocated to annual subsidies in 2008 and 2009 (funded by the federal budget) and additionally 200 million euros each annually from federal state and commune budgets. Modernisation of the social infrastructure (40,000 schools, 48,000 kindergartens and 50,000 other facilities) has since 2008 been backed with the following funds: 200 million euros annually from the federal budget, 400 million euros annually from federal state and commune budgets, and additionally 200 million euros annually in loan subsidies. 120 million euros have been allocated for the period between 2006 and 2009 to modernise offices administered by federal authorities. A requirement has been introduced to have a 15% share of renewable energy in the heating of new buildings (in force since 1 January 2009) and a 10% share in the case of modernised ones. This is intended to help in increasing the share of RES in heating systems from 6% in 2006 to 14% in 2020. In 2008, the central budget allocated 286 million euros to subsidies, which enabled the implementation of 150,000 investment projects, worth in total approximately 1.6 billion euros. For the same purpose, 602.7 million euros has been allocated for 2009.

As part of the government’s plan, attempts are being made to support those firms which do not need significant subsidies, and which can be used as model solutions in other EU member states. One example of this is the concept of uniting small firms into groups, which will attempt to decrease their energy consumption. Acting together, they have more capital for investments and can ask for discounts. Moreover, they can share their experiences more easily this way.



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