



“International Politics and Environment: The Issue of German Energy Policy”

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I. Production factors and Greenhouse Gases: The Case of Germany

In German Environmental-Economic Accounting (GEEA), production factors include the required input factors from the economy (use of labour and capital) and the factors from nature. The latter have two functions: first, they are a source of resources (area, energy, raw materials, and water) and, second, they are used as a sink for residuals and pollutants (pressure on nature through the emission of greenhouse gases and through the creation of waste and waste water).

If we put gross domestic product in relation to the production factors, we get productivities. They are used as indicators of the efficiency of factor use. They indicate how much of economic output is produced by using one unit of any factor.



Productivities tell us how efficient a national economy is in using labour, capital, and nature. Due to their different units, those factors cannot directly be compared with each other. However, monitoring their development over long periods may provide information on how the relationships between the factors have changed, for example, as a result of technological progress.

The productivities of the factors from the economy, and of the factors from nature in their function as a source of resources, are directly determined through the relation between economic output and the quantity of the input factor concerned. The productivities of nature as a sink for residuals and pollutants are indirectly measured as the relation between economic output and the quantity of residuals and pollutants discharged.

It should be noted that, for the calculation of productivities, the entire real amount of economic activity is referred only to the production factor examined, although the product is created through the combination of all production factors. Therefore, the calculated productivity can serve only for rough orientation.

To obtain the emissions of greenhouse gases, the air pollutants contributing most to the greenhouse effect are taken into account. They comprise carbon dioxide (CO₂), dinitrogen monoxide (N₂O), methane (CH₄), H-CFC (partly halogenated fluorocarbons), CF₄, C₂F₆, C₃F₈ (perfluorocarbons) and SF₆ (sulphur hexafluoride), all of them measured in CO₂ equivalents."

II. Environmental Protection Expenditure in Germany



Environmental protection expenditure includes above all expenditure made to remove, reduce or avoid environmental pressures. Consequently, environmental protection can pragmatically be limited to these areas: waste management, waste water management, noise abatement and protection of ambient air. As a result of this definition, some environmental protection measures have (so far) not been included, such as government measures for radiological safety and nature conservation, as well as the environmental administration.

Apart from this limitation of contents, an institutional limitation has been implemented, too. The representation covers only the enterprises of industry as well as central, regional, and local authorities. So, the collected data reflects just a part of the economy-wide environmental activities.

Total expenditure for environmental protection over a specific period comprises capital formation (fixed capital formation = purchases of durable reproducible means of production) and current expenditure for environmental protection purposes.

Current expenditure in the industry includes staff expenditure (incl. for maintenance and repair), expenditure on raw materials and consumables as well as spare parts. Staff expenditure includes gross wages and salaries and employers' social contributions. Not included is expenditure for third-party services (e.g. fees for collection of waste, interest on borrowings), fees and charges, as well as general administrative expenses in the area of environmental protection (planning, environmental protection officers, etc.).

Current government expenditure includes staff expenditure (gross wages and salaries and actual social contributions), expenditure on materials (operating materials, fuels, rents, etc.) to the extent that they are made in one of the four



environmental areas mentioned. Expenditure on materials regarding general measures or measures that cannot be subdivided is not included.

III. Germany's Energy Policy

Germany is one of the largest consumers of energy worldwide. Given the scarcity of raw materials and with consideration for the environment, since the 1970s the Federal Republic of Germany has been making massive efforts to save energy and put it to effective use.

This includes the use of renewable energy, which in the long term will source one fifth of all energy requirements.

With regard to the supply of energy and raw materials, Germany is heavily reliant on imports. Around two thirds of the necessary primary energy has to be imported, and it is heavily reliant on other countries for raw materials. Given this scenario, it has long sourced its energy and raw materials from a wide range of countries, thus ensuring a high degree of security with regard to supplies.

Domestic natural gas reserves cover up to a quarter of the country's requirements. Reserves of lignite, potash and rock salt are sufficient for decades. As a result of the unfavorable geological conditions in Germany, however, hard coal deposits cannot be mined competitively.

Energy-saving measures such as better insulation and energy-saving devices are promoted by the state. As a result, since the beginning of the 1970s specific energy consumption, i.e., the amount of energy required for the production of



one unit of GDP, has been falling continually in west German states, and in the 1990s fell almost 16 percent for the country as a whole.

Like most modern states, Germany relies principally on fossil fuels as sources of energy. About 40 percent of German energy consumption comes from petroleum, largely for trucks and automobiles. About 30 percent comes from domestic coal deposits, half from lignite, or brown coal, in the east and the other half from anthracite located in the west. Natural gas provides about 17 percent of energy consumed, and nuclear energy about 10 percent. Other sources of energy, such as hydroelectric, solar, or wind-powered electric power plants, are relatively insignificant. Most production is in private hands.

Electrical power comes almost equally from three sources: the largest (31 percent) is generated by lignite, the next largest (28 percent) from nuclear reactors, and the third largest (26 percent) from anthracite. Natural gas provides about 7 percent. Those proportions will undoubtedly shift over time because of the high pollution levels generated by the relatively inefficient lignite, especially in the new *Länder*, where it accounts for over 90 percent of electricity production (see table 17, Appendix). The public's aversion to nuclear power that developed in Germany in the 1980s will likewise cause this source of power to become less important. Natural gas will become more significant.

The necessary reduction of brown coal consumption is unfortunate for the nation's economy because it and anthracite are Germany's only significant natural resources. As of 1993, Germany was the world's largest producer of brown coal, mining nearly twice as much as the next greatest producer, Russia. Anthracite mining is also significant, and Germany was the world's ninth greatest producer of this substance in 1993.



Germany has over twenty nuclear reactors, most of them small and having production levels below 2,000 megawatts per reactor. It has virtually no domestic uranium deposits and must import enriched uranium for its reactors. Most of the reactors in operation in the early 1990s were built during the 1970s and early 1980s. Reliance on nuclear power has become controversial, however. Because of the controversy, no new nuclear reactor has entered service since 1988. A number of older reactors dating to the 1960s have ceased operations. A major international energy crisis would be needed to renew impetus in Germany's nuclear energy program because the country is densely populated, and most of its inhabitants do not want a reactor near their houses or offices.

Germany must import almost all the oil and gas that it uses. In 1993 the three largest suppliers of crude petroleum were Norway (18.4 percent of the total), the Commonwealth of Independent States (CIS--see Glossary) (17.4 percent), and Britain (12.4 percent) (see table 18, Appendix). Germany has its own modest oil deposits, estimated in 1990 at 50 million tons, in the North German Plain. It has a share of North Sea gas reserves and production, with reserves estimated in 1990 at 9.9 billion cubic meters. But these are not adequate long-term sources. Thus, Germany will increase its imports of oil and gas, most likely from Russia. East Germany relied heavily on Soviet gas before unification, and united Germany will want to purchase petrochemicals from Russia to enable Russia to pay for the German manufactures that Russia is purchasing.

Like all modern economies, Germany has become increasingly cost conscious and conservation conscious about energy consumption. Whereas GDP in West Germany rose by about 50 percent from 1973 to the early 1990s, energy consumption rose by only 7 percent.



IV. Germany and the Energy Geopolitical Game of Eastern Europe

Since the end of the Cold War period, Germany has adopted a pro-Russian policy due to the German dependence on Russian energy sources. Thus, in the frame of contemporary geopolitics, Germany is drastically involved in the power game played in Eastern Europe where the American influence competes with the traditional strategic presence of Russia.

Russia's political class is warily eyeing the government in Poland, where two center-right parties won the September 25 parliamentary elections. As relations between Moscow and Warsaw, never particularly warm, have sunk to new lows this year, the Kremlin is concerned with the possible impact of Poland's rightward shift on bilateral ties as well as on relations between Russia and the European Union.

Most Russian analysts agree that the domination of the conservative Law and Justice Party and the liberal Civic Platform in Poland's legislature does not bode well for the already uneasy Russian-Polish relationship. (The two parties are also fielding the most popular candidates in the country's presidential poll scheduled for October 9.) Moscow appears to be utterly displeased with the two parties' nationalist rhetoric and their declared intent to pursue a more muscular policy toward Warsaw's neighbors. As one Russian specialist on Eastern Europe noted in his commentary, the most prominent feature of the political forces that are about to form the new Polish government is their "pathological dislike of Russia."

Jaroslaw Kaczynski, leader of the Law and Justice Party, was quick to confirm this unflattering characterization when he recently compared, in an interview



with the Polish daily *Gazeta Wyborcza*, Russian President Vladimir Putin's Russia with Hitler's Germany when referring to the methods used to incite the recent assaults on Polish diplomats in Moscow. Kaczynski, who will likely become Poland's new prime minister, sounded equally defiant when he forcefully stressed Warsaw's resolve to stand up to its giant eastern neighbor. "Russia needs to accept that Poland is an independent player in this part of Europe and no doubt this will be a long and difficult process," he said.

The Kremlin has been traditionally annoyed by Poland's exceptionally warm ties with the United States and Warsaw's vociferous criticism of Russia's ruthless prosecution of the war in Chechnya. (One recent Russian commentary points out that Lech Kaczynski, Jaroslaw's twin brother, mayor of Warsaw, and a presidential hopeful, made several symbolic gestures in support of Chechen separatist fighters. He renamed one of the Polish capital's streets after Jokar Dudaev, Chechnya's first president, and publicly denounced the killing of Aslan Maskhadov, the Chechen leader elected president in 1997, as "Moscow's bloody crime.") Poland's energetic support for Ukraine's Orange Revolution and the practically undisguised backing of the democratic Belarusian opposition seeking to topple that country's autocratic ruler, Alexander Lukashenka, strained Russian-Polish ties even further. And on top of all that, Warsaw is exhibiting a grand ambition to influence EU foreign policy, in particular, its "eastern" dimension.

As Russia prepares to deal with the pugnacious newly elected leadership of its former vassal state, the Kremlin pundits debate possible strategies. Russian nationalist-minded experts argue that the best way to deal with the Russophobic Polish nationalists is to continue interacting with Russia's traditional partners in the "old" West over the Poles' heads. One of the most successful examples of



such policy, they say, is the recent Russian-German decision to build a gas pipeline from Russia to Germany via the Baltic, thus bypassing Poland. This approach is exactly what irks the Poles, who have long complained that Moscow refuses to consider them as an equal partner, traditionally seeing Poland as an object of Russia's policies rather than a full-blown international actor. It is no wonder that the Polish political class was incensed by the Northern Europe gas pipeline project, and Lech Kaczynski has already announced that the new government would do what it can to block its realization.

In fact, Russian strategists hope that the new Polish leadership's "extremist attitudes" will eventually undermine Warsaw's claims to play a key role in shaping the joint EU policy toward the bloc's eastern neighbors.

Thus it is unlikely, some analysts suggest, that the bellicose and ultra-nationalist noises coming out of Warsaw these days will be positively received by Western Europe's big powers inclined to seek accommodation with Moscow rather than unnecessarily tease the Russian bear. Remarkably, not a small number of Polish foreign-policy specialists are aware of this, although they are, naturally, somewhat annoyed by the reluctance of their EU partners to understand the Polish perspective. "It's very difficult for us to accept that the policy to appease Russia is the best way of getting democratization," the foreign editor of *Przekroj* magazine told the *Times*, clearly implying that Western Europeans would rather snuggle up to the Russians.

The Kremlin also counts on the unwillingness of many EU diplomats in Brussels to support Poland's bold revolutionary designs aimed at regime change in Belarus. Symptomatically, several Russian observers positively commented on the recent pronouncements by Lech Walesa, the former Polish president, who



suggested that that the pro-democracy movements in former Soviet republics should move cautiously. He also spoke against provoking Russia by an over-ambitious desire to establish democratic governments on its borderlands, be it in Belarus, Moldova, or Central Asia.

Interestingly, Russian media have missed the fact that Walesa received support from Zbigniew Brzezinski, who usually tends to be demonized by Moscow commentators as the principal mastermind of the "color revolutions." Yet Brzezinski argues that revolutions have to be sparked from within, not transplanted from the West. "Building democracy as an imposition from abroad is a form of imperialism," he contends.

Finally, Russian analysts note that among the supporters of the Law and Justice Party likely, the senior partner in the coalition government, there are many Euroskeptics. The argument is that the Polish conservatives' further disillusionment with European integration may push them toward closer economic cooperation with Russia, which will eventually help Warsaw build a more realistic "eastern" policy.