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Federal Ministry  
for the Environment,  
Nature Conservation  
and Reactor Safety

## **Part I**

### **Report from the Federal Republic of Germany on reaching the target for the consumption of electricity from renewable energy sources in 2010**

Report from the Federal Republic of Germany in accordance with Article 3(3) of Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

## **Part II**

### **Report on administrative procedures for the admission of plants for the production of electricity from renewable sources of energy**

Report from the Federal Republic of Germany in accordance with Article 6(2) of Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

Berlin, October 2003

## **Part I**

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## 1. INTRODUCTION

Achieving a sustainable energy supply is a central policy objective of the Federal Government. The aim is to secure energy supply for future generations while taking account of ecological objectives and ensuring economic growth at the same time. A key element in this strategy is to increase the share of renewable forms of energy in overall energy supply in order to safeguard finite energy sources and protect the environment and the climate. It is the aim of the Federal Government to double the share of renewable forms of energy in electricity production from 2000 to 2010 to 12.5%. After 2010 this share should be clearly raised further. By the middle of the century, renewable energy sources should cover about half of energy consumption. Accordingly, there are target values between 2010 and 2050.<sup>1</sup> It is the aim of the Federal Government to make renewable energy competitive on the internal energy market in the medium to long term. For only if renewable energy can maintain its position on the market without financial support it can play a fundamental role on the energy market. Taking due account of the various external costs (in particular long-term damage to the environment and the climate) of conventional and renewable energy while at the same time considering macroeconomic compatibility also remain important objectives.

The Renewable Energy Sources Act (EEG) is one of the essential components of the range of measures of the Federal Government's environment and energy policies. The Act was adopted by the Federal Parliament on 29 March 2000 and entered into force on 1 April 2000. The EEG improved the power input and compensation scheme for regenerative electricity, introduced in Germany in 1991 through the Power Input Act (StrEG), in favour of regenerative electricity while adapting it to the conditions of the liberalised electricity market. In developing the EEG, the authorities benefited from ten years of experience with the StrEG.

In recent years the EEG has brought about a distinct increase in the use of renewable sources of energy for power generation, in particular wind energy. However, the EEG has also improved conditions for other forms of renewable energy: biomass, solar energy, hydropower and geothermal energy.

From the angle of environment and climate policy, particular mention should be made of the reduction in immission made possible through power generation from renewable energy. In 2002, in addition to reducing air pollutants which have been responsible for ozone formation near the ground (8 400 tonnes) and acidification of the soil (40 000 tonnes), the EEG alone made it possible to prevent the emission of 20 million tonnes of carbon dioxide. Upon attaining the doubling target, the figure for prevented carbon dioxide in electricity generation alone will be about 45 million tonnes by 2010. Accordingly, the EEG is a particularly successful instrument in Germany for achieving the climate protection objectives. It contributes substantially to reducing greenhouse gas immissions in Germany by 21% up to the first mandatory period under the Kyoto Protocol as part of the EU's burden sharing in accordance with the Kyoto Protocol to the United Nations Framework Convention on Climate Change.

In 2002, the use of renewable energy prevented about 50 million tonnes of CO<sub>2</sub>, made possible by power generation (EEG and non-EEG power) and also heat generation from renewable energy sources.

Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market

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<sup>1</sup> So decided by the Federal cabinet in 2002 as part of the Federal Government's strategy for sustainable energy.

strives to increase the share of renewable sources of energy in electricity supply within the European Community to 22% by 2010. Under Article 3(3) of the Directive, the Member States must compile a report on the achievement of the targets and on the national measures taken to protect the climate. The report enclosed is transmitted in compliance with this requirement.

### **Mandatory report**

Article 3(3) of Directive 2001/77/EC on which this report is based reads as follows:

“Member States shall publish, for the first time not later than 27 October 2003 and thereafter every two years, a report which includes an analysis of success in meeting the national indicative targets taking account, in particular, of climatic factors likely to affect the achievement of those targets and which indicates to what extent the measures taken are consistent with the national climate change commitment.”

## 2. NATIONAL INDICATIVE TARGET FOR GERMANY

The national targets laid down in the EU Directive on the promotion of electricity produced from renewable energy sources in the internal electricity market are guided by the objective of doubling the share of renewable sources of energy in the Community by 2010. Germany contributes to this goal by seeking to attain, for power generated from renewable energy, a share of at least 12.5% of the national electricity market by 2010. This is tantamount to a virtual doubling of the share of electricity from renewable energy compared with 2000. Table 1 shows the share of renewable energy in gross electricity consumption up to 2002. It is expected that in 2003 there will continue to be a distinct increase of electricity generation from renewable sources, although exact figures are not yet available. With the continuation of the measures to expand renewable forms of energy, the objective of doubling the share by 2010 can be attained. In this context, the continuation and extension of the EEG Act is an important instrument. Accordingly, the EEG is currently under review.

	1997	1998	1999	2000*	2001*	2002*		2010
Gross electricity consumption(TWh)	549.9	556.7	557.3	576.4	580.5	581.7		-
Share of renewable energy in gross electricity consumption	4.0%	4.6%	5.3%	6.3%	6.7%	8.0%		12.5%

**Table 1.** Share of renewable energy sources in gross electricity consumption  
(\*provisional figures)

### 3. DEVELOPMENT OF ELECTRICITY PRODUCTION FROM RENEWABLE ENERGY SOURCES

The share of renewable energy in gross electricity consumption increased from about 4.6% in 1998 to 6.3% in 2000 and about 8% in 2002. The main sources of renewable energy for electricity production were hydropower with about 53% and wind energy with about 38% (in 2002). In the course of 2003, power generation from wind energy will overtake that from hydropower. The development over time of energy supplied from renewable sources up to 2002 is shown in Table 2.

	Hydropower		Wind energy		Biomass		Photovoltaics		Solar heat		Geothermal energy
	[GWh]	[MW]	[GWh]	[MW]	[GWh]	[MW]	[GWh]	[MW <sub>p</sub> ]	[GWh]	[1000m <sup>2</sup> ]	
1990	15 908	4 403	40	56	222	190	1	2	113	338	
1991	14 652	4 403	140	98	250		2	3	145	466	
1992	17 317	4 374	230	167	295	227	3	6	189	582	
1993	17 676	4 520	670	310	370	276	6	9	240	749	
1994	19 495	4 529	940	605	57670		9	12	305	940	
1995	20 865	4 521	1 800	1 094	803	358	12	18	380	1 156	
1996	18 380	4 563	2 200	1 547	879	400	18	27	476	1 453	
1997	19 274	4 578	3 000	2 082	1 050	409	27	40	599	1 817	
1998	19 215	4 601	4 489	2 875	1 170	448	37	52	855	2 191	820
1999	21 798	4 547	5 528	4 444	1 625	585	48	67	1 036	2 638	870
2000	25 141	4 572	9 500	6 112	3 785	825	71	111	1 278	3 283	970
2001	23 570	4 600	10 456	8 754	4 200	900	116	179	1 627	4 207	1 000
2002	24 000	4 620	17 200	12 001			176	262	1 955	4 754	1 050

**Table 2.** Development over time of energy supply from renewable sources 1990-2002

For the moment, no electricity is generated in Germany from geothermal sources. However, there are plans to start operating the first power-generating geothermal energy plant at the end of 2003, which will be followed by additional plants in the years to come.

#### 4. TREND IN PREVENTED IMMISSION THROUGH THE USE OF RENEWABLE ENERGY IN CONNECTION WITH NATIONAL CLIMATE PROTECTION COMMITMENTS

The increased use of renewable energy prevents the release of climate-relevant gases emitted when fossil sources of energy are used and is thus a crucial component of German climate protection strategy. In this way, a positive effect has been achieved through the increased use of renewable energy as promoted by the Renewable Energy Sources Act (EEG), the EEG-based Biomass Regulation, the Federal Government's market incentives programme and other measures.

Altogether, about 50 million tonnes of CO<sub>2</sub> immission were prevented in 2002 through electricity and heat generation from renewable energy sources (see Table 3 and Figure 1).

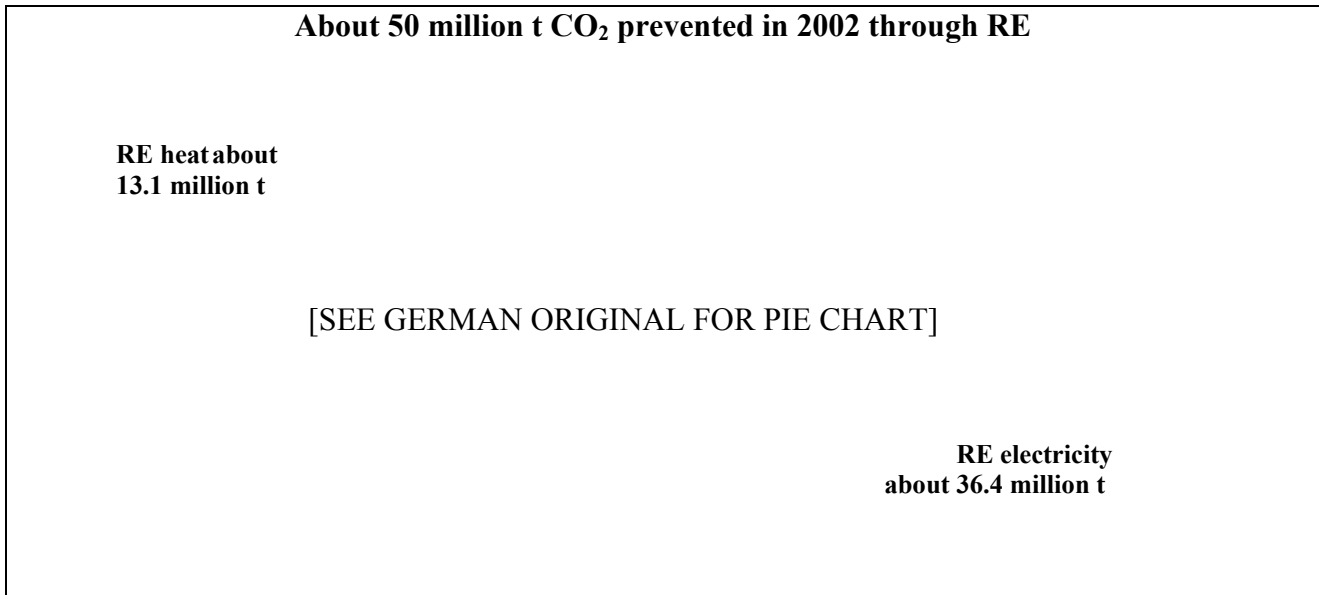
	Greenhouse gas/Air pollutant	Prevented immission [1 000 t]		
		Electricity <sup>1</sup>	Heat <sup>2</sup>	Total
Greenhouse effect	CO <sub>2</sub>	36 447	13 099	49 546
	CH <sub>4</sub>	0.7	0.7	1.4
	N <sub>2</sub> O	1.3	0.1	1.4
	<b>CO<sub>2</sub> equivalent</b>	<b>36 857</b>	<b>13 210</b>	<b>50 067</b>
Acidification	SO <sub>2</sub>	20.9	9.3	30.2
	NO <sub>x</sub>	25.9	5.2	31.1
	HCl	0.9	0.2	1.1
	HF	0.1	0.01	0.1
	<b>SO<sub>2</sub> equivalent</b>	<b>39.9</b>	<b>13.1</b>	<b>53.0</b>
Ozone	Co	7.3	28.4	35.7
	NMVOC	1.1	0.9	2.0
	Fly ash	1.8	0.6	2.4
	Other dust	0.3	0.2	0.5

<sup>1</sup> Assumed power plant mix replaced by renewable energy  
Immission factor: 0.809 kg prevented CO<sub>2</sub> immission per kWh RE electricity

<sup>2</sup> Relative greenhouse potential CH<sub>4</sub>: 21, N<sub>2</sub>O: 310  
Immission factor: 0.238 kg prevented CO<sub>2</sub>-immission per kWh RE heat

**Table 3.** Immission reduction through electricity and heat generation from RE in 2002

About 36.4 million tonnes of CO<sub>2</sub> immission prevented in 2002 through the use of renewable energy relates to electricity and about 13.1 million tonnes to heat generation, making a total of about 50 million tonnes.



**Figure 1.** Prevented CO<sub>2</sub>-immission through use of RE in 2002

Only 2% still separate the Federal Republic of Germany from the climate protection target of reducing greenhouse gas immissions by 21% compared with the base year 1990. The EEG Act in particular, as the main instrument for promoting renewable energy, has made a major contribution to this achievement.

## **5. TREND IN ELECTRICITY GENERATION FROM RENEWABLE ENERGY, BROKEN DOWN ACCORDING TO ENERGY SOURCE**

### **Wind power**

Of all regenerative energy sources for electricity generation, wind power currently has the highest potential for expansion. Thanks to the impetus given by the Federal Government's environment and energy policies, wind energy has taken the lead in the expansion of sustainable energy.

Installed capacity (MW)	From April 2000 Renewable Energy Sources Act (EEG)	SEE GERMAN ORIGINAL FOR GRAPH AND FIGURES	Annual increase [MW]
	January 1991-March 2000 Power Input Act (StrEG)		
	Annual increase [MW]	Accumulated output [MW]	

**Figure 2.** Trend in wind energy use in Germany (situation on 30 June 2003).

Germany produces over one-third of electricity from wind power worldwide and about half that in the EU. In 2002, wind power contributed about 16.5 TWh (i.e. 3%) to electricity production in Germany. In 2002, about 3250 MW were installed and in 2001 about 2650 MW.

In the first half of 2003, 536 new wind energy installations were set up in Germany, with a total output of 835 MW. Thus, 14 283 wind energy installations with a total output of 12 828 MW are now operating throughout Germany. This corresponds to an approximate 7% increase over 2002. Overall, there is a shift from the coast to areas further inland. During the first half of 2003, most wind energy installations were set up in Brandenburg, North Rhine-Westphalia, Sachsen-Anhalt and Sachsen. The EEG Act has made a decisive contribution to this success. The amendment of the Building Code (BauGB) in 1998 was an additional important factor for expanding wind energy, under which wind energy installations in undesignated outlying areas are now given priority.

With favourable general conditions continuing, installed land-based wind energy output can be further expanded in Germany. In the near future, old, small wind installations will be renewed or replaced by more modern and more powerful ones (repowering). While ten years ago state-of-the-art wind energy installations were in the 100 KW class, nowadays standalone installations of 1.5 MW upwards are at the same location capable of producing 20 times as much electricity a year. In this way, repowering can unleash a huge additional wind energy potential.

As the use of land-based wind energy is limited, the Federal Government proposed in January 2002 a strategy for offshore wind energy production in the framework of its strategy for sustainable energy. To this end, potentially suitable areas and areas eligible for wind farms have been identified in the German economic exclusion zone (EEZ) in the North Sea and the Baltic. The legal framework for the formal designation of special suitable areas and of protected areas within the EEZ was established with the adoption of the new Federal Nature Protection Act of 25 March 2002.

In the framework of the offshore wind energy strategy, it will under current conditions be possible in the areas currently deemed available to attain a total output of at least 500 MW in the start-up phase and up to 2006, and in the medium term - up to 2010 - about 2 000 to 3 000 MW output. In

the long term - i.e. up to 2025 or 2030 – once the system has proved cost effective, it will be possible to achieve an installed output of about 20 000 to 25 000 MW. For this purpose, it is necessary that investors in offshore wind farms and the electricity sector create the conditions for the transport of power generated offshore in this order of magnitude. This level of use of offshore wind energy would account for 15% of electricity consumption in Germany, in relation to the reference year 1998. Overall it will make it possible for land-based and offshore wind energy to contribute 25% to total energy production in a period of about 25 years.

## **Biomass**

The general conditions for the use of biomass as a renewable source of energy have been clearly improved through the EEG Act, the Biomass Regulation, the market incentives programme promoting renewable energy, and the loan programme of the credit institutions (KfW, DtA) and have led to a notable expansion of bio-energy. The promotion of research and development has made a significant contribution to developing new, innovative technologies.

Biomass – i.e. wood, bio-waste, manure and other substances of vegetable and animal origin – can potentially make a significant contribution to energy supply.

Heat is produced from biomass in incineration plants and electricity is generated from biomass through steam and gas turbines, combustion and Stirling engines and fuel cells. On 27 June 2001 the Federal Government's Biomass Regulation entered into force, laying the foundations for generating electricity not harmful to the climate from sustainable raw materials and biogenic residues and waste.

The use of biomass in Germany has considerable potential for growth. At the end of 2002, biomass contributed about 3.4% to heat generation and about 0.8% to gross electricity production. The long-term potential corresponds to an approximate 10% share in power supply and about 20% in heat supply. Whether and to what extent this potential can be realised will largely depend on how soon the various techniques for biomass utilisation become competitive. At the end of 2002, there were about 100 operational biomass heating plants in Germany with an electricity output of about 400 MW. At the end of 2002, there were about 1 900 biogas installations in the country with an electricity output of about 250 MW, i.e. more than 3 times as many biogas installations as at the end of 1999.

## **Solar energy**

In recent years there has been a rapid development of electricity generation from solar energy in Germany. However, in 2002 its contribution to overall electricity production was relatively minor at around 180 million kWh, i.e. 0.03%.

Installation of about 62 MW<sub>p</sub> has become possible through the loan committed in the first half of 2003 by the *Kreditanstalt für Wiederaufbau* [credit institution for reconstruction] under the programme for solar energy for 100 000 rooftops. While in 2002 facilities with a total output of about 80 MW<sub>p</sub> were installed, it is expected that in 2003 a level of about 120 MW<sub>p</sub> installed output can be attained. The *Bundesverband Solarindustrie e.V.* is forecasting 50% market growth in 2003. Overall, about 350 MW<sub>p</sub> are expected to be installed by the end of 2003 (50 MW were already installed before the start of the 100 000 rooftops solar energy programme).

## Hydropower

Currently hydropower in Germany accounts for just over half of electricity production from renewable sources of energy. In 2002, it contributed about 24 TWh or about 4% to electricity supply.

Initial, provisional figures suggest that installed output has remained more or less the same. According to information provided by the *Arbeitsgemeinschaft Energiebilanzen* [Energy Balance Association], electricity production from hydropower in the first half of 2003 is about 13% below that of the previous year due to regional and seasonal fluctuations in water flow in the first half of 2003. While in recent years the number of major installations remained virtually constant, the StrEG Act introduced in 1991 and the EEG Act which entered into force in 2000 have given an impetus to smaller hydropower plants.

Electricity production (GWh)	Electricity production [GWh] Installed output [MWh]	Installed output (MW)
	SEE GERMAN ORIGINAL FOR GRAPH AND FIGURES	
	without pumping power generation * estimate	

**Figure 3.** Trend in hydropower use

## Geothermal energy

Geothermal energy makes use of heat that is present in deep strata inside the earth. In Germany, there are currently 34 major heat extraction plants with a thermal output of about 88 MW. Each year they supply about 1 050 GWh of heat. There are plans for constructing additional plants in the next few years. In the field of geothermal electricity generation, there is still a need for research, development, demonstration and marketing. Consequently, geothermal energy is promoted in the R&D framework and through demonstration measures as well as through the market introduction programme for renewable energy and under the EEG Act. Moreover, through its *Zukunfts-Investitions-Programms (ZIP)* [Future Investment Programme], the Federal Government supports research, development and demonstration of future-oriented forms of energy. For a three-year period (2001-2003), an overall additional amount of €150 million is earmarked under this programme. The emphasis is on geothermal energy generation, solar thermal power plants and ecological supportive research in other sectors of renewable energy, in particular wind energy and biomass.

Geothermal energy is available around the clock and can be regulated according to actual need at any time. Accordingly, geothermal power plants can make a significant contribution to basis heat and electricity supply.

## Annexes

- Renewable Energy Sources Act (EEG) of April 2000

- First Act amending the EEG of July 2003
- Biomass Regulation pursuant to the EEG of June 2001
- Sustainability strategy of the Federal Government of April 2002
- RE in figures, March 2003, Brochure of the BMU [German Federal Ministry for the Environment]

## **Part II**

### **Report on the administrative procedures for the admission of plants for the production of electricity from renewable sources of energy**

Report from the Federal Republic of Germany in accordance with Article 6(2) of Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable sources of energy in the internal electricity market

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## **1. Introduction**

Under Directive 2001/77/EC on the promotion of electricity produced from renewable sources of energy in the internal electricity market<sup>2</sup>, the Member States of the European Union have committed themselves to substantially raising the share of renewable sources of energy in electricity production and consumption in order to make a significant contribution to reducing carbon dioxide immissions and protecting the climate. Under the Directive, Member States must set themselves specific targets and create appropriate instruments in order to attain them. Member States are free to choose the type of instruments to be used for this purpose.

In order to be able to evaluate the success of the national approach adopted and to make the policy pursued transparent, the Directive imposes particular evaluation and reporting obligations upon the Member States. It requires regular analysis of the measures taken to achieve the national targets and public documents to be made available for this purpose (cf. Article 3). It also provides for verification of the administrative procedures for the admission of power plants for the production of electricity from renewable sources of energy and obliges the Member States to publish the findings in a report (cf. Article 6). With this report, the Federal Government complies with the latter obligation.

The report is composed of the following parts. A brief exposition of the significance of the administrative procedures for the admission of installations (Chapter 2) is followed by a description of the preliminary regional and construction planning procedures preceding actual approval for setting up installations (Chapter 3). This is followed by a differentiated explanation of the various procedures for the admission of individual installations (Chapter 4) and, finally, a summary evaluation (Chapter 5).

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<sup>2</sup> OJ EC L 283, p. 33.

### **Mandatory report**

Article 6(1) and (2) of Directive 2001/77/EC on which this report is based read as follows:

“(1) Member States or the competent bodies appointed by the Member States shall evaluate the existing legislative and regulatory framework with regard to authorisation procedures or the other procedures laid down in Article 4 of Directive 96/92/EC, which are applicable to production plants for electricity produced from renewable energy sources, with a view to:

- Reducing the regulatory and non-regulatory barriers to the increase in electricity production from renewable energy sources,
- Streamlining and expediting procedures at the appropriate administrative level, and
- Ensuring that the rules are objective, transparent and non-discriminatory, and take fully into account the particularities of the various renewable energy source technologies.

(2) Member States shall publish not later than 27 October 2003, a report on the evaluation referred to in paragraph 1, indicating, where appropriate, the actions taken. The purpose of this report is to provide, where this is appropriate in the context of national legislation, an indication of the stage reached specifically in:

- Coordination between the different administrative bodies as regards deadlines, reception and treatment of applications for authorisations,
- Drawing up possible guidelines for the activities referred to in paragraph 1, and the feasibility of a fast-track planning procedure for producers of electricity from renewable energy sources, and
- The designation of authorities to act as mediators in disputes between authorities responsible for issuing authorisations and applicants for authorisations.

(3) The Commission shall, in the report referred to in Article 8 and on the basis of the Member States’ reports referred to in paragraph 2 of this Article, assess best practices with a view to achieving the objectives referred to in paragraph 1.”

## **2. The role of administrative procedures for admission of plants for electricity production from renewable energy in the context of the general conditions applicable in Germany**

The target pursued by Germany is to double the share of renewable energy in overall electricity production to 12.5% between 2000 and 2010. After 2010, there should be a distinct further expansion. By the middle of the century, renewable energy should cover about half of energy consumption.<sup>3</sup> In order to achieve this target, the Federal Republic has already adopted a number of

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<sup>3</sup> See the Federal Government’s publications *Umweltbericht 2002* [Report on the environment 2002], *Nachhaltigkeitsstrategie der Bundesregierung (2002)* [The Federal Government’s strategy on sustainability (2002)] and the report *Richtziel der Bundesrepublik Deutschland für den Verbrauch von Strom aus erneuerbaren Energiequellen in Jahr 2010 und Massnahmen zur Verwirklichung des Richtziels (March 2003)* [Targets of the

drastic measures in which a central position is occupied by the Renewable Energy Sources Act (EEG) which establishes a system of obligatory purchase of and payment of compensation for electricity from renewable energy sources. In addition to the EEG, the Government has adopted a number of investment support programmes (including the market incentives programme for renewable energy and the 100 000 rooftops solar energy programme) and other specific measures to stimulate the production and use of regenerative sources of electricity.<sup>4</sup>

However, the special instruments for the expansion of power generation from renewable energy can fully achieve the desired effect only if there are no unnecessary obstacles or sources of friction either in the rules and regulations on the admission of plants or in the supervision of their operation or the enforcement of these rules and regulations. Legal and administrative impediments should be averted or removed as much as possible. Procedures should be kept as straightforward as possible and be followed smoothly. Responsibilities should be clearly regulated and should as much as possible be concentrated in one authority, or at least – to the extent necessary – be coordinated efficiently.

The procedure for the initial approval of plants is, of course, of particular significance. However, this report should not only consider approval procedures for individual plants but also decisions on land and area use preceding formal approval. Forward-looking spatial planning can clearly diminish the potential for conflict and problems and the time required to deal with these in the subsequent approval procedure.

In order to avert any misunderstanding, it should be noted at the outset that the concept of “biomass” is in this report construed in a broader sense than is customary in Germany. The system of obligatory purchase and payment under the German EEG Act applies only to forms of power generation involving the exclusive use of renewable sources of energy (exclusivity principle). The Biomass Regulation based on the EEG lays down binding definitions of the substances which for this purpose are to be regarded as biomass. However, Directive 2001/77/EC uses a broader biomass concept which in the case of mixed substances also includes the “biodegradable fraction of waste and residues” from agriculture and forestry as well as from industrial and municipal waste (cf. Article 2(b)) of the Directive). In this report, account is taken of this broader definition.

Finally, attention is drawn at the outset to references to the Federal administrative structure in Germany. The Federal Government has legislative authority for most of the legal issues discussed here. However, under the rules on the division of competences enshrined in the Basic Constitutional Law, responsibility for enforcement of the laws in principle rests with the *Länder* which have to make provision for the requisite administrative procedures and responsibilities (cf. Article 83 ff. of the Basic Law). The Federal authorities only have limited control in this respect. Consequently, competencies within the scope of the legislation of the *Länder* and (outside Federal legislation) aspects relating to implementation of procedures are in most cases primarily a matter for the *Länder* and their authorities.

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Federal Republic of Germany for the use of electricity from renewable energy sources in 2010 and measures to attain the targets)].

<sup>4</sup> See Part I of this report and the brochure of the Federal Ministry of the Environment entitled *Erneuerbare Energien und nachhaltige Entwicklung – Förderüberblick – Ansprechpartner und Adressen* (situation in April 2002) [Renewable energy sources and sustainable development – Overview of promotional measures - Contacts and addresses].

### 3. Upstream regional planning and construction planning

#### 3.1 Introduction

For several years, the Federal Republic of Germany has been pursuing a consistent policy of obviating legal and administrative problems and removing impediments to the establishment of facilities for the use of renewable energy. It strives to find overall solutions conducive to the use of renewable sources of energy without detracting from other rightful interests of the community, in particular orderly regional and local development and protection of the environment.

In this context, the main instruments are the provisions of regional and construction planning legislation which in Germany is responsible for creating the conditions for proper planning and control of residential areas. Through balanced regional planning, conflicts in a particular area can in many cases be prevented or reduced before individual applications are considered for approval. From the point of view of investors, this ensures a high level of investment security. The subsequent approval procedures can thus be disencumbered indirectly but very effectively.

Under German law, decisions on admissible land use are not taken in approval procedures for particular plots of land but are determined in advance in specific area-related plans. This is fundamentally a task of the local authorities. The relevant provisions are laid down in accordance with the Federal Building Code (BauGB), normally through urban land-use plans, with specifications per plot laid down in local development plans which in turn must be based on overarching municipal land utilisation plans of the local authorities. The local authorities have a certain amount of discretionary planning power within the framework of the urban land-use plan. However, in the subsequent granting of approval for individual applications, the competent authorities have no more discretionary scope. They are bound by the requirements of the overarching plan, which means that the sole question to be considered in verifying whether individual applications for building permission should be approved is whether the project meets the plan's mandatory criteria.

Moreover, in all approval procedures account has to be taken of pre-determined provisions of nature protection legislation. In addition to the traditional categories of protection areas under German nature protection law, mention should be made in particular of the two types of protected areas based on European Community law, namely bird protection areas (under EC Directive 79/409/EEC<sup>5</sup>) and Natura 2000 areas (under Habitat Directive 92/43/EEC<sup>6</sup>).

For installations with a major spatial impact, account must also be taken of town and country planning or regional plans drawn up by the authorities of the *Länder*. In respect of installations for generating renewable energy, the latter applies in practice e.g. to wind farms, hydropower plants and biogas installations linked to large livestock farms.

The requirements of regional planning and building planning legislation do not apply to any area outside German territory. In the case of wind energy installations, such areas are subject to the provisions, laid down for special situations in offshore sea areas, of the Maritime Installations Regulation (SeeAnIV) and the Federal Nature Protection Act (BNatSchG – see its Article 38), which are discussed in section 4.6 below.

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<sup>5</sup> OJ EC L 206, p. 42.

<sup>6</sup> OJ EC L 226, p. 7, as last amended by Directive 97/62/EC, OJ EC L 305, p. 42.

### 3.2. Legal framework for urban land-use planning

According to the terminology of German building planning law, electricity generation plants come under the heading of *commercial* installations. Depending on their disruptive impact on the environment, they may, under the legal provisions applicable to built-up areas, be erected either in virtually all building areas (e.g. photovoltaic installations attached to buildings), only in commercial, mixed or village zones (e.g. mildly disruptive incineration plants, fermentation installations, large detached photovoltaic installations) or exclusively in industrial zones (e.g. major waste and old-wood incineration plants). Exemptions may be granted under particular conditions, to be decided within the framework of discretionary powers (cf. Article 31 of the Federal Building Code, BauGB).

Certain types of installations, however, should typically be set up on land outside built-up areas. This applies in particular to hydropower plants and wind farms but also to biogas plants, geothermal energy plants and in some cases to major installations for biomass incineration. The principal provision in building planning law on the admissibility of installations outside built-up areas is Article 35 BauGB which allows particular types of installation to be set up outside built-up areas whereas such land may normally not be built upon for other purposes.

While initially the admissibility, in principle, of erecting wind energy installations outside built-up areas remained controversial for many years – resulting in considerable planning uncertainty for the operators –, the legislature decided, when revising the BauGB in 1998, to allow such installations to be built in such areas. Since then, wind energy installations enjoy priority treatment in non-built-up areas (cf. Article 35(1)(6) BauGB) to the extent that no other suitable areas are designated for this purpose in a municipal land-use plan or an area development plan of the *Länder* (also at regional level) (cf. Article 35(3), third sentence, BauGB). This gives an incentive to the *Länder* and local authorities to designate sites suitable for wind farms within their territory and thus ensure planning criteria conducive to the development of wind energy.

Outside built-up areas, biogas installations are prioritised only if they predominantly use material from on-site agricultural production or if the energy they generate is predominantly used by the farmer himself on his own farm. Other biomass installations are in principle not given preferential treatment outside built-up areas. The same applies to geothermal energy installations. For hydropower installations, the same provisions apply as for wind energy.

Within the approval procedures for individual projects, the relevant provisions governing regional development and local land use must be complied with. This applies to all types of approval procedures (building permit, licences under immission protection law, approval under mining law), with the exception of planning approval and planning authorisation. From the viewpoint of administrative law, compliance with the requirements of planning law is additionally secured by the fact that a decision on admission of a project can be given only after the local authority has given planning approval (Article 36 BauGB).

### 3.3 Experience, evaluation and conclusions

In Germany, the system of controlling land use through regional development plans at the higher level and urban land-use plans (municipal land use and building plans) at local level has from the outset produced very positive results. In this system, due account is also taken of the various forms of renewable energy.

The fact that under approval procedures for individual projects the authorities normally no longer have any discretionary powers regarding the suitability of the relevant site greatly simplifies approval procedures and has a positive effect on the time taken up by the procedure.

The compilation of plans for specific areas still takes a considerable amount of time, in particular because it forms part of a transparent procedure with extensive participation by the population and the public bodies involved. However, the long preliminary period upstream eventually pays off in the form of better control of the development of built-up areas and also in a substantial gain in legal certainty for investors. Moreover, planning law makes adequate provision for approving specific projects while building planning procedures are still in progress (cf. Article 33 BauGB). Finally, there is no need to await the completion of the planning procedure in cases in which the project in question is located in a built-up area not covered by a building plan (Article 34 BauGB) or outside built-up areas (Article 35). In practice, the authorities have been able to use these instruments in a flexible and stable manner.

The growing interest in setting up installations to generate power from renewable sources of energy entails an increase in the demand for land on which to build such installations. In the current stage of development, there are discernible shortcomings in the legal instruments governing construction planning. It has become apparent that provisions prioritising biogas installations outside built-up areas are too restricted in scope. As priority treatment for power generation from biogas installations outside built-up areas has in practice been confined to installations predominantly using material from an individual farmer's own farm, joint installations intended for several farmers or large-scale installations of individual operators have been unable to benefit from such treatment. Accordingly, possibilities for extending the priority rules for biogas installations are currently being studied in the context of a procedure for amending the Federal Building Code (BauGB)<sup>7</sup>.

## **4. Approval procedures for proposed installations**

### **4.1 Introduction**

Under German law, most large installations for generating electricity from renewable energy are subject to authorisation to be granted under immission protection law in accordance with the Federal Immission Protection Act (BImSchG). In principle the Act applies to all types of installations whose erection and operation have not been explicitly provided for in other legislation. In the domain discussed here, the latter applies only to the following:

- Hydropower plants (see 4.4)
- Geothermal energy installations (see 4.5)
- Wind energy installations at sea outside territorial waters (see 4.6).

If an installation is not covered by special legislation, it must be verified under the provisions on protection against immissions whether the installation requires authorisation under immission protection law (see 4.2). This is usually the case for high-output incineration plants of all types, major wind farms and particular fermentation plants. If the installation is not subject to authorisation under immission protection law, it requires either a building permit or no formal approval at all (see 4.3). The category of installations which must be evaluated in a procedure under

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<sup>7</sup> This refers to the Federal Government's draft for an act adapting German legislation to EU law (EAG Bau).

building law includes lower-output incineration plants, particular types of fermentation plants, very small wind farms and photovoltaic installations.

It should be noted that the relevant procedures comprise only the guiding procedure or the main procedure required for installation approval. It may be that for the setting-up or operation of the installation additional specific approval documents may be required under other legislation (e.g. legislation on the protection of nature, animal diseases or water management), giving rise to the question – to be answered differently for each guiding procedure – whether, and if so how, the relationship between the various admission documents has been regulated. The various approval procedures are partly separate from one another and partly integrated in a single overall approval procedure (concentrated decision-making).

#### 4.2 Authorisation procedure under immission protection legislation (incineration and fermentation plants, wind farms)

##### a) *Basic situation with regard to procedures*

The assignment of various types of installations to particular approval procedures and procedural requirements follows the provisions of the BImSchG in accordance with the details laid down in the Annex to the Regulation on installations requiring authorisation under immission protection law (4. BImSchV) and – for assessment of environmental effects – Annex 1 to the Environmental Impact Assessment Act (EiAG).

For installations with a relatively high risk of environmental pollution, the relevant provisions in principle lead to approval procedures under immission protection law as provided for in Article 10 BImSchG with public participation and environmental impact assessment (EIA) - for installations in column 1 of the Annex to 4. BImSchV –, for installations with a medium environmental risk to simplified approval procedures under immission protection law in accordance with Article 19 BImSchG with preliminary verification of the EIA requirement – for installations in column 2 of the Annex to 4. BImSchV –, and for other installations to exemption from the procedures required under immission protection law, as a result of which the building approval procedure in principle becomes, for the latter category of installations, the main procedure for installation approval although in particular exceptional cases an environmental impact assessment may be required, or a preliminary investigation into the need for EIA.

If an environmental impact assessment is required, it must, according to Article 2 EiAG, form an integral part of the authorisation procedure under immission protection law. If there is an obligation to carry out general or location-related preliminary verification, an EIA has to be carried out if deemed necessary in the preliminary verification. A special requirement in this case is that instead of the prescribed simplified procedure, the normal authorisation procedure under immission protection law has to be carried out, with public participation (cf. Article 2(1)(1)(c) of 4. BImSchV).

The approval procedure under immission protection law is in the nature of a “binding decision”, meaning that the authority does not have any discretionary scope but must authorise the installation if it meets the applicable requirements under public law.

One of the essential features of the approval procedure under immission protection law is the concentrated decision-making process (Article 13 BImSchG) according to which no additional formal approval document need in principle be obtained for the installation. If under substantive law such documents are required (e.g. in particular a building permit, also documents such as that exempting the applicant from nature protection provisions or land clearing permission), approval is also granted for this purpose by the approval decision taken under immission protection law. The

authorities concerned are involved in the procedure but the final decision does not require their consent. There are no further administrative procedures. In any case, the building permission procedure normally required is obviated in all such cases.

Recently, the concentrated decision-making process has been of particular significance for biogas installations in which – as a typical ingredient – manure and other substances are fermented. Regulation (EC) No 1774/2002 laying down health rules concerning animal by-products not intended for human consumption<sup>8</sup>, which has been in force since spring 2003, requires for all biogas plants involving the use of animal by-products (including manure, catering waste, particular sterilised material from abattoirs) special formal approval in respect of animal diseases in accordance with the criteria laid down in the Regulation. While for existing installations there is some scope for derogating transitional arrangements<sup>9</sup>, this requirement applies in full to new installations. In the case of installations subject to authorisation under immission protection law, this new approval requirement is included in the procedure provided for by immission protection law by virtue of the concentrated decision-making principle. However, this does not apply to installations that only need a building permit which therefore require a separate administrative procedure in accordance with the rules on the prevention of animal disease.

*b) Specific rules on the choice of procedure under 4. BlmSchV and UPVG*

For the various types of installations using renewable sources of energy, the Annex to 4. BlmSchV and Annex 1 to EIAG contain a range of specific rules on procedural requirements. For each of the renewable energy sectors, the rules assigning installations to particular procedures are summed up below.

**Wind farms** with three or more separate installations require authorisation under Article 4 BlmSchG; if they have six or more installations, they require a procedure with public participation (Article 10 BlmSchG) and if there are three to five they require a simplified authorisation procedure without public participation (Article 19 BlmSchG). Below this order of magnitude, no authorisation is required under immission protection law. However, the procedure under immission protection legislation includes the need for environmental impact assessment (EIA) for wind farms comprising twenty or more installations. For wind farms with six to nineteen installations, there is a general preliminary enquiry into the need for an EIA and if there are three to five installations a site-related preliminary investigation of the need for an EIA

For **biomass installations**, a distinction should be made between biogas installations and other incineration plants:

- To decide on the procedure to be followed for authorisation of **biogas installations**, the criteria to be considered may be the output of the firing installation or the nature and quantity of the substances to be fermented. Typical biogas installations with *combustion engines* should be examined for approval under immission protection law in the simplified procedure if
  - either the threshold of *1 MW firing heat output* (if technologies other than combustion engines are used: from 10 MW) is reached for the incineration installation;

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<sup>8</sup> OJ EC L 273, p. 1.

<sup>9</sup> Cf. Regulation (EC) No 810/2003, OJ EC 2003, L 117, p. 12.

- or the associated fermentation installation is an installation for biological processing of waste, with a *minimum daily throughput of 10 tonnes*.<sup>10</sup>

If one of these criteria is met, a site-related preliminary enquiry into the need for an EIA should also be carried out, and from 50 tonnes daily fermentation throughput a general preliminary enquiry into the EIA requirement. An authorisation procedure with public participation and EIA obligation under immission protection law is necessary only for large installations with at least 50 MW firing heat output.

- For **other biomass installations**, there are differentiated provisions:

- Authorisation of waste incineration plants (e.g. for old wood containing harmful substances and for mixed municipal waste<sup>11</sup> and landfill gas) is as a rule subject to the normal procedure involving public participation and EIA.
- Incineration plants for zoo-mass (in EC terminology referred to as “animal by-products”) should likewise be approved in the normal authorisation procedure with public participation, but a general preliminary enquiry into the need for EIA is required only from a ten tonnes daily processing capacity.
- Authorisation of firing installations using other substances of biogenic origin (e.g. natural residual wood or wood that has been handled only mechanically, vegetable oils, vegetable methyl esters, sewage gas) is from 50 MW firing heat output subject to the normal procedure with public participation and EIA, from 10 MW (for combustion engine installations from 1 MW) normally to the simplified procedure with general or site-related preliminary EIA enquiry. Below this threshold they may be authorised without EIA-related preliminary enquiry in the simplified procedure or need no authorisation at all. Installations for special fuels such as straw, wheat plants or wheat are already subject to the simplified authorisation procedure from 100 KW.

c) *Practical application*

For the application of procedural requirements under the immission protection legislation, the enforcement authorities of the *Länder* have in the meantime been able to gain extensive experience. The system was designed back in the 1970s and has since undergone various improvements, in particular with a view to ensuring the smooth and efficient functioning of the procedures. Special mention should be made of Article 10(6)(a) BImSchG, introduced by the 1996 amendment intended to speed up procedures, under which a decision must in principle be taken on the licence application under normal authorisation procedures under immission protection law within seven months and in the case of the simplified procedure within three months of the date on which the full application documents were submitted.

In practice, frequent use is made of the possibility of three-month extensions as provided for in the Article. However, the authority must in all cases have specific grounds for extending the deadline. Extensions must either be connected with the difficulty of checking circumstances in individual cases or with particular grounds relating to the applicant. In practice there have been no generally

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<sup>10</sup> Different threshold values apply if specific waste subjected to control is used.

<sup>11</sup> Mixed municipal waste, however, is not considered biomass within the meaning of the EEG Act; cf. Article 3(3) of the Biomass Regulation.

significant problems in dealing with these provisions. Specifically, there is no reason to assume that the provisions on deadlines have been circumvented through unjustified recourse to grounds for extension.

Experience has been highly positive with regard to the concentrated decision-making system mandatory for all authorisation procedures under immission protection law. The concentration principle has significantly shortened the total duration of all formal procedures required before building can start or before installations can be taken into service. This is because it ensures that there is no need to go through multiple parallel procedures. As a result, the burden is much lighter for the applicant. The authorities responsible for immission protection coordinate the activities of the various bodies involved within the scope of the relevant procedures, thus ensuring that disagreements arising between them do not lead to long delays.

Occasionally, applicants find the requirement of having to seek authorisation under immission protection law as burdensome. However, this is often due to a lack of insight into the situation and the theoretical alternatives. For smaller installations and for installations with lower output, the time taken up by the procedure is usually slightly longer than that of straightforward building permission procedures despite the involvement of a large number of authorities because neither public participation nor environmental impact assessment is required. Mention should further be made of the positive effects of concentrated decision-making, as referred to above, which are clearly discernible in many types of cases.

There is no denying that a lengthy period passes until authorisation is granted for installations which under the statutory provisions – where appropriate on the basis of an EIA obligation – require public participation. This applies in particular to large wind farms and high-capacity incineration plants. While it is true that in these cases the procedure as such is in principle limited to seven months, but this period starts to run only from the submission of the complete application dossier, which includes the documents the applicant has to provide on the environmental effects of the installation, which may take a relatively long time to draw up.

#### *d) Evaluation and conclusions*

The system for allocating the various types of installations to specific procedures and their division into size and output classes as laid down in the provisions of the 4. BImSchV and the UVPG seem appropriate in principle. The decisive criterion of expected environmental impact level is a meaningful one. Even installations that have a special value in reducing CO<sub>2</sub> emission and thus contributing to protecting the climate cannot be exempted from this requirement.

The authorisation procedures that require public participation take a relatively long time to complete. However, it should be borne in mind that the concentrated decision-making process is conducive to the smooth execution of the authorisation procedure and enhances legal certainty. As the authorities that are directly concerned because of their specific remit are involved in the procedure at an early stage while the immission protection authorities remain solely competent to take the final decision, it is easy to avoid from the outset any delay that may result from different views being held by different authorities. Moreover, the transparency of procedures ensures easier acceptance of installations at local level.

The relatively long period required to complete ordinary authorisation procedures under emission protection law is also due to the need for public participation which with regard to EIA results from the obligation imposed by EU law.

Through the abovementioned differentiation of the EIA obligation and the pre-EIA enquiry according to the size and output of the proposed installation, the UVPG Act seeks to present an appropriate procedural formula for the area of tension between the need for a short authorisation procedure and the ecologically justified interest of ascertaining whether the proposed installation is environmentally acceptable. There appears to be no need for raising the threshold for an EIA or a preliminary enquiry in the need for mandatory EIA as laid down in the UVPG because the installations may, irrespective of the extent to which they contribute to protecting the climate, often have a relatively major impact on the local environment and because EIA must be regarded as a proven instrument for ensuring that the possible adverse effects which a proposed installation may have on the environment are kept to a minimum.

Inappropriate procedural delays in connection with locally disputed projects can be properly contained through consistent application of the statutory provisions (in particular the rules on deadlines laid down in Article 10(6)(a) of the BImSchG). These provisions have proved their worth in practice.

Outside the procedures with public participation, the classification of an installation as one requiring authorisation under immission protection law usually places applicants in a more favourable procedural position, as the concentrated decision-making system is applicable in such cases. The most recent and particularly significant example of the procedure-shortening effects of concentrated decision-making is the requirement, applicable under EU law since spring 2003, that particular biogas installations are subject to special approval under animal health legislation. In respect of installations requiring authorisation, this requirement is incorporated in the procedure under emission protection legislation, which is not possible with regard to other installations – with the result that outside the scope of emission protection law (at least) two parallel approval procedures have to be gone through. Given these circumstances, it makes sense in the case of installations generating electricity from renewable energy to consider extending rather than restricting the range of installations to be authorised in a simplified procedure.

Positive procedural effects also arise from the fact that in the authorisation procedure under immission protection law the authority has no discretionary scope. As a result, verification in the approval procedure is confined to specific criteria relevant for the decision to be taken.

4.3 Authorisation procedure under building legislation and approval without obligatory procedure (photovoltaic installations, small incineration and fermentation plants, small wind farms)

a) *Basic situation with regard to procedures*

If a particular type of installation is not subject to special rules and is not subject to an authorisation procedure under immission protection law in accordance with 4. BImSchV, building permission must be sought for the installation to be constructed. Whether a building permission procedure has to be followed and on what procedural conditions depends on the building regulations of the different *Länder*, whose provisions differ from one *Land* to another. However, with regard to installations for generating electricity from renewable sources of energy, as discussed here, the provisions largely have the same contents or at least very similar requirements.

Accordingly, the following may be assumed:

- All autonomous firing and fermentation installations in which **biomass** of various types is used and which are not subject to authorisation under emission protection law are in principle subject to building permission.

- The same applies to standalone **wind energy installations** and to wind farms with two individual installations.
- With regard to **photovoltaic installations**, the building regulations of the *Länder* in principle provide that installations to be attached to or erected on buildings or other structures do not require any approval procedure under building law. However, detached installations usually require building permission. Some *Länder* waive the need for building permission also for small detached installations.<sup>12</sup> The model building regulation 2002 developed by the sectoral authorities of the *Länder* proposes a general waiver of procedures on the one hand for solar installations attached to buildings and on the other hand for detached installations with a maximum height of 3 metres and a total length not exceeding 9 metres.<sup>13</sup>

No environmental impact assessment needs to be carried out for these installations, except in particular cases where wind power installations of several operators are concentrated in one location.

Under Article 36 BauGB, it is always necessary for projects subject to building permission to obtain the agreement of the local authority which has to ascertain that the requirements under planning legislation are complied with (cf. also section 3.2 above).

All building regulations of the *Länder* include procedure-specific instruments designed to prevent inappropriate delays. The provisions usually included in these instruments provide that:

- requisite approval from other institutions (specifically a statement confirming municipal consent in light of the requirements of planning law under Article 36 BauGB) is deemed to have been granted if not received by a specific deadline (approval fiction), and
- opinions from other authorities can be disregarded in the procedure if they have not been received within a particular period (disregard upon expiry of deadline).

The grant of building permission is, like authorisation under immission protection law, a binding decision which leaves no discretionary scope for the competent authority.

In addition to the building permission requirement, there may in specific situations be additional approval requirements in accordance with other legislation (e.g. land clearing, dispensation from prohibitions under nature protection law, protection against animal diseases, protection of monuments). As the concentration of decision-making required under the BImSchG is not applicable to the building permission procedure, several admission procedures have to be gone through, in each of which independent evaluations have to be made under substantive law. For a large part of the types of installations discussed in the present report, however, this tends to be the exception. However, the situation is different for biogas installations in which – usually - manure or other animal by-products are used. For such installations, the recently introduced special admission requirement, mentioned repeatedly, under Article 15 of Regulation (EC) No 1774/2002 must be

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<sup>12</sup> E.g. Bavaria (up to 9m<sup>2</sup> collector surface, Art. 63(1)(2)(c) of the Bavarian Building Regulation) and Saarland (up to 3m height and 30m length in built-up areas, Art. 65(1)(2)(j) of the Saarland Building Regulation). In Baden-Württemberg, solar installations are in all cases exempt from procedural requirements (see Annex to Article 50 of the Baden-Württemberg Building Regulation, No 21).

<sup>13</sup> *Musterbauordnung 2002* [Model Building Regulation 2002], Article 61(1)(2)(b).

complied with, which leads to a special additional formal admission procedure covering aspects of animal health.

*b) Practical application*

The application of approval procedures under building legislation has been trouble-free. This applies also to mandatory participation by the local authorities in building planning procedures and to the requisite coordination with other bodies. Accordingly, the provisions of the building regulations of the *Länder* have proved their worth with regard to the approval fiction and the disregard of opinions delivered after the deadline.

The situation is less favourable in cases in which additional administrative procedures have to be followed over and above the building permission procedure. In practice, however, the building authorities draw the attention of applicants to such requirements; in fact, they are obliged to supply such information. Moreover, the building authorities often the “endpoint principle” according to which the final decision to approve a project under building law is taken only after all other public approval decisions have been taken. While this formula tends to make the building permission procedure somewhat longer, the advantage for applicants is that once building permission has been granted they can be sure that their project can no longer be impeded by any other obstacles under public law.

The authorities of the *Länder* involved in compiling the present report have taken a favourable view of the normal practice in the *Länder* of exempting applicants from the obligation to apply for building permission for photovoltaic installations attached to buildings.

*c) Evaluation and conclusions*

Overall, the view is that the provisions on procedure laid down in the building regulations of the *Länder* take due account of the various interests involved and are properly workable in practice. The procedures are applied with efficiency. The fact that the competent authorities as a rule have no discretionary powers in this respect has greatly contributed to these positive results.

The building regulations of the *Länder* lay down effective provisions to avert undue delay. These include the legal fiction that permission is deemed to have been granted if the local authority’s approval is not received by the deadline (Article 36 BauGB) and the disregard of other opinions not received on time by the building authority. There appears to be no need for any fundamental changes.

With regard to solar energy installations, the common exoneration from the obligation to follow a building permission procedure has proved its worth in practice. It is not recommended to extent this waiver of procedures to detached photovoltaic installations as it certainly makes sense to make such installations, at any rate large ones, subject to prior official approval because of their impact on the surroundings and the landscape. However, it seems advisable to waive procedures for small detached installations as in most cases they are unlikely to involve any conflict of interests.

Closer consideration should be given to the question which procedural consequences should be drawn from the fact that EC Regulation No 1774/2002 provides for an approval procedure for biogas installations in which animal by-products are used. This new requirement means that small biogas installations of this type, which under German law have so far only been subject to building permission, would in future have to follow a second full-scale formal approval procedure although because of the process of concentrated decision-making this is not necessary for large installations which require authorisation under immission protection law.

#### 4.4 Planning and planning approval under water management legislation

##### a) *Basic situation with regard to procedures*

As hydropower projects involve an extension of water courses, the fundamental approval provisions for such installations are Article 31(2) and (3) of the Water Management Act (WHG). Under the first subparagraph of Article 31(2) WHG, any extension of water courses is subject to official planning approval. Official planning approval is a comprehensive act of authorisation by the State which involves the full application of the concentrated decision-making formula (cf. Article 75 of the Administrative Procedures Act – VwVfG).

The official planning approval procedure includes public participation. The authorities that are involved on account of their specific responsibilities are - as in the authorisation procedure under immission protection law - involved without enjoying any powers of co-determination. In cases in which environmental impact assessment (EIA) is required, it is integrated in the official planning approval procedure. In specific cases for which no EIA is required, the official planning approval procedure may be replaced by planning authorisation (Article 31(3) WHG) which is likewise subject to the comprehensive concentrated decision-making process but requires no public participation.

The legislation of each *Land* determines whether a hydropower project is subject to EIA (cf. UVPG, Annex 1, 13.14). The provisions differ from one *Land* to another and hydropower installations are not always subject to an EIA requirement. In most cases, either a general or a site-related preliminary investigation is required to determine the need for EIA, depending on the output of the proposed installation.

The competent authority has certain discretionary powers in deciding on the official planning approval procedure and on planning authorisation. In contrast with the situation applying to authorisation under immission protection law, the authority is not obliged to grant approval under particular conditions.

##### b) *Practical application*

The action taken by the competent authorities of the *Länder* for the approval of hydropower plants differs according to the situation. Each authority has discretionary powers within the planning procedure, enabling it to individually assess the interests involved in each particular case (e.g. energy consumption versus protection of water courses).

So far, there have been no significant complaints about the length of the procedure in implementing the provisions.

It may be assumed that the approval procedure for hydropower plants will become more difficult in the future as ecological requirements regarding water courses have recently been tightened up, in particular under the Water Framework Directive 2000/60/EC. Consequently, authorisation for hydropower plants without the need for an EIA will in the future be quite exceptional. The construction of any new hydropower installations will be subject to stringent ecological conditions.

c) *Evaluation and conclusions*

In view of the major impact of hydropower plants on water ecology and the concomitant need for an extensive evaluation of environmental effects, a changeover to a simpler procedure is not advocated.

The time needed to process applications for formal planning procedures and authorisation may vary considerably. The only way to counter inappropriate delay is by strictly adhering to the deadlines imposed by the relevant provisions of legislation on administrative procedure (cf. Articles 73 and 74 VwVfG).

4.5 Procedures for approval under mining legislation (geothermal energy)

a) *Basic situation with regard to procedures*

Generation of geothermal energy is subject to the Federal Mining Act (BBergG) because it defines geothermal sources as a “natural resource” (cf. Article 3(3)(2)(b) BBergG). Under the terms of the BBergG, a distinction should be made between the authorisation procedures for the *exploration or prospection phase* and those for the *extraction phase* of natural resources. A two-tier procedure is required for both phases:

- *justification* for the pursuit of the relevant activity (exploration permit under Article 7 BBergG, extraction approval under Article 8 BBergG or mine ownership under Article 9 BBergG);
- *approval of the business plan* to set up and operate the exploration or extraction business, either in the form of authorisation (Articles 51, 52, 54-56 BBergG) or, instead, formal planning approval (Articles 51, 52(a), 57(a)-(c) BBergG).

It should be noted that approval for an individual business plan is in principle granted for only two years and that in each case separate decisions must be taken by the authorities on an overall business plan (main business plan) and specific business plans for particular activities.

Approval of business plans is granted in an authorisation procedure without the concentrated decision-making process, unless a formal approval procedure must be gone through in exceptional cases. This means that applicants still have to apply for additional approval from other authorities which may, at least partially, come within the remit of other authorities (in particular licences under water legislation for groundwater protection and building permits for superstructures).

There is a simplified administrative procedure (without public participation, without EIA, without concentrated decision-making) for exploration permits and for extraction justification, which involve applying for the right to use a particular geological area for the applicant's own commercial purposes. The same applies to the ordinary approval procedure for business plans (cf. Articles 54-56 BBergG). The situation is different only with regard to approval for business plans within the official planning approval procedure which includes public participation and integrated EIA. As in this case the concentrated decision-making procedure is all-encompassing, there is no need to apply for additional official approval from other authorities.

Whether a business plan requires the simple approval procedure or an official planning authorisation procedure depends on whether the activities covered by the application are subject to mandatory EIA under the Regulation on the environmental compatibility of mining projects (UVP-V-Bergbau) (cf. Articles 52a and 57c BBergG). In the case of geothermal installations, this is in principle the case *only* if the plan includes drilling down to a depth of at least 1 000 m (cf. Article 1(8) of the UVP-V-Bergbau which is applied in lieu of the UVPG; cf. also point 15 of Annex 1 to

the UVPG) within a nature protection area or an area protected under the EU Habitat Directive or the Bird Protection Directive of the EC (Directives 92/43/EEC and 79/409/EEC).

*b) Practical application*

The procedure relating to the exploration and extraction of geothermal heat is relatively complicated compared with the approval procedures for the use of other sources of renewable energy. Nevertheless, practical experience has shown that the competent authorities use the provisions quite flexibly and in a user-friendly manner. For instance, the justification procedure and the framework business plan procedure run parallel to each other. In the *Länder* responsible for enforcement, special rules in the competency provisions ensure in most cases that the authorities responsible for mining law are also competent to decide on other approval procedures required (e.g. for licences under water legislation), obviating the need to also apply to other authorities.

*c) Evaluation and conclusions*

Notwithstanding the clearly flexible working methods of the mining authorities and despite the fact that the complicated procedural rules have been somewhat attenuated by competency rules laid down by the *Länder*, the overall situation appears to be in need of improvement.

The Federal Government is currently examining:

- whether current provisions governing the use of geothermal energy can in all respects be regarded as effective; these involve a uniform application of the provisions of mining law which at the time were primarily designed for the exploitation of mineral natural resources (and not for the extraction of thermal energy) and
- whether there are any possibilities, and if so which ones, for simplifying the approval of installations for the use of thermal heat for energy purposes without disregarding the requirement of environmental protection and the specific features peculiar to geological material.

#### 4.6 Authorisation procedure under maritime installations legislation (offshore wind farms)

*a) Basic situation with regard to procedures*

Approval for the construction of wind energy installations outside German territorial waters was made possible by the Maritime Installations Regulation (SeeAnIV) which was based on the Maritime Activities Act (SeeAufgG). To this end, the Regulation makes use of the exclusive right of coastal states enshrined in the UN Convention on the Law of the Sea (UNCLOS), to lay down rules on installations and structures erected for economic purposes in the German "Economic Exclusion Zone" (EEZ). The EEZ covers a particular area which on the land side is delimited by the national coastline and extends up to 200 nautical miles into the sea.

As the EEZ does not form part of German national territory (on account of which the sea areas cannot automatically be recognised as being within the jurisdiction of adjacent *Länder*), it was necessary to create special instruments for the approval of installations within the EEZ. Because of its affinity with responsibilities for maritime shipping, the Federal Office for Maritime Shipping Hydrography (BSH) was entrusted with this task.

The main provisions on authorisation are laid down in the SeeAnIV. It should be noted that restrictions on maritime fishing are permissible only within the limits provided for in the Sea Fishing Act and in applicable EU legislation. Authorisation for maritime installations is also based

on a binding decision. Authorisation must be granted if there are no specific grounds for rejecting it (Articles 2 and 3 SeeAnIV).

An EIA (with public participation) forms an integral part of the authorisation procedure, except for very small wind farms. The relevant provision refers back to the rules laid down in the UVPG, which means that the same threshold values for mandatory EIA or preliminary evaluation of the need for an EIA are the same as for land-based installations. Since because of the high specific investment costs involved offshore wind farms tend to be relatively large-scale and these projects may have a substantial impact on the maritime environment, it is virtually excluded for a project to be approved without EIA.

Within the authorisation procedure, the competent authority obtains opinions from other bodies involved because of their particular remit (Article 5(3) SeeAnIV). An installation may be approved only if the locally competent water and shipping directorate has given its consent (Article 6 SeeAnIV). The directorate's powers of verification, however, are limited to maritime transport interests.

Authorisation of sea installations does not replace additional approval documents that may be required under other provisions (Article 2(3) SeeAnIV). Consequently, it is not covered by the concentrated decision-making principle. It should be noted, in particular, that projects can be carried out only if all requisite permits for laying electricity supply lines up to the onshore grid connection have been granted. This is not just a formality because the offshore areas involved are mostly sensitive areas and because there may be conflicts of interest with shipping. There are separate bodies responsible for the individual decisions. There is a great need for coordination.

Within the EEZ, account must also be taken of the requirements of the Bird Protection Directive 79/409/EEC and the Habitat Directive 92/43/EEC. The amendment of federal legislation on the protection of nature in early 2002 created clear legal bases for the designation of corresponding protected areas within the EEZ (cf. Article 38 of the Federal Nature Protection Act, BNatSchG). In order to make the resulting legal situation easier to enforce, the amendments made were combined with the introduction of new provisions in the SeeAnIV under which – to counterbalance maritime protection areas – suitable areas are to be designated in which it can usually be assumed that there are no grounds for rejecting projects (cf. Article 3a SeeAnIV).

As part of the Federal Government's strategy for ensuring sustainability, a strategy for the use of offshore wind energy has been worked out. The main objective is ensuring optimum legal and planning certainty.

#### *b) Practical application*

Experience gained in applying the provisions in practice is still relatively limited. By the middle of 2003, only two pilot wind farms had been licensed. In the meantime, however, a large number of additional application procedures are now pending at BSH [Federal Office for Maritime Shipping and Hydrography].

The licensing authority has developed a uniform strategy centred around a standard investigation procedure to verify a project's compatibility with the environment<sup>14</sup>. The signs are that in spite of

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<sup>14</sup> BSH, *Standarduntersuchungskonzept – Auswirkungen von Offshore-Windenergieanlagen auf die Meeresumwelt, 1. Fortschreibung* [Standard investigation procedure – Impact of offshore wind energy installations on the maritime environment, first update] Hamburg 2003.

the complexity of the subject matter the authority has thus ensured proper management of the procedural processing of applications within its purview. Also, there have been no major difficulties with regard to collaboration with other authorities.

One problem that has emerged is the lack of efficient planning of cabling work. In the second half of 2002, the various authorities of the *Länder* responsible for the different licences required reached agreement on coordination. In the competent *Länder*, the first steps were made towards basic planning decisions regarding appropriate cabling routes.

c) *Evaluation and conclusions*

Within a relatively short period, the ministries responsible have with considerable dedication applied themselves to the task of preparing the designation of protection areas and suitable areas; this is bound to make it considerably easier to go through the various procedures.

Essential aspects of substantive and procedural law have been clarified through the amendment of the Federal Nature Protection Act and the revision of the Maritime Installations Regulation in 2002. This provides investors with a sound basis for planning. Nevertheless, work on optimising the instruments for approving wind energy installations within the EEZ cannot be considered as completed. The Federal Government is currently carrying out a comprehensive examination of the existing rules to see how they can be improved further. The objective is to choose sites after proper weighing of all relevant environmental and user interests, determining suitable cabling routes for grid connection and ensuring smooth administrative enforcement of the provisions on approval of projects.

## **5. Overall evaluation**

Overall, the current situation with regard to procedures can be regarded as sound. In a number of sectors of renewable energy use (e.g. land-based and offshore wind energy and also photovoltaics), initiatives at Federal and *Länder* level have in recent years been successful in simplifying procedures. There is still a need for some improvement in a small number of sectors.

In particular, attention is drawn to the following aspects:

1. For none of the relevant renewable energy sources are there any procedural obstacles in German law impeding the generation of electricity from renewable energy. There are clear procedural requirements in respect of all forms of renewable energy use. The substantial increase in new installations in Germany in recent years demonstrates that German legislation offers conditions conducive to attaining the objectives of extending the use of renewable energy in an orderly manner.
2. The current conditions are relatively positive for installations for generating electricity from renewable energy mainly thanks to the provisions laid down at Federal level in legislation on regional and building planning. These provisions enable properly planned and pertinent control of residential structures and land use. It should be stressed that the establishment of wind energy installations outside contiguous built-up areas has since 1998 in principle been admissible if no special priority sites or suitable sites had been designated in other areas. This has given the planning authorities an instrument for incentives to ensure efficient land use for wind energy purposes. It has made it possible to have a clear expansion of wind energy installations concentrated in particularly favourable areas. This approach greatly improves acceptance of the installations concerned.

3. The current rules of building planning law do not appear to be optimal with regard to the approval of biogas installations outside built-up areas. In these areas, agricultural biogas installations for electricity generation enjoy a secure legal position only if they mainly use materials from the same agricultural undertaking. The intention is to substantially extend these rules in the framework of an ongoing procedure for amending the BauGB.
4. The process of largely shifting the decision on the building purposes for which particular areas or sites can be used to the level of overall urban land use planning – at which level the decision-making bodies have a wider scope to determine planning requirements – has obviated the need to give discretionary powers to the authorities responsible for decisions authorising individual projects. Accordingly, most individual applications for building approval become subject to binding decisions, which has the important procedural consequence that verification within the approval procedure framework is restricted to particular criteria that are of relevance for the decision to be taken. It means that there is no need, and no provision, for additional complex assessments of the pros and cons of individual projects.
5. The allocation of applications for different types of installations to specific approval procedures is in most cases based on the list of categories laid down in immission protection legislation (in the Annex to the 4. BImSchV) and in the Act on Environmental Impact Assessment (UVPG, Annex 1). This applies to all types of installations with the exception of hydropower, photovoltaic and geothermal installations.

The relevant provisions under immission protection law have the following consequences:

- installations with a relatively high environmental pollution risk are subject to approval procedures under immission protection law which include public participation and EIA;
- installations with an average pollution risk are subject to simplified approval procedures under immission protection law, with a preliminary examination to determine the need for EIA;
- installations with a low pollution risk are exempt from procedural requirements under the BImSchG and are consequently subject only to the building permission procedure as the main procedure for approval of the installations.

This approach and the classifications based upon it have proved appropriate in practice. Installations for special fuels such as straw and wheat are, from an output threshold of 100 KW, subject to an intensive approval procedure under immission protection law.

6. In cases where an authorisation procedure is imposed under immission protection legislation that includes public participation – e.g. under mandatory EIA – , the procedures are proportionally longer. The law assumes a normal length of up to seven months, to which must be added additional time for completing the application documents beforehand, including statements on the impact which the installation will have on the environment. The relevant procedural requirements are mostly based on conditions laid down in EU law and the German legislature therefore has no control over them. Moreover, account should also be taken of the fact that the relatively heavy administrative burden is counterbalanced by two significant advantages. On the one hand, it enhances legal certainty because once the project has been approved there can in principle be no more legal impediments. On the other hand, approval is granted in the framework of a concentrated decision-making process, which means that in principle there is no need to seek any additional approval from other authorities. Overall, there appear to be no grounds for amending procedural law for the benefit of the installations in

question as the individual installations, regardless of the contribution they make to protecting the climate, often have relatively major effects on the local environment and because the requirements of public participation and EIA must be regarded as instruments that have proved their worth in minimising possible adverse effects on the environment and at the same time facilitating acceptance of the installations.

7. For authorisation without mandatory public participation and EIA for a particular installation – which is the case for most installations for electricity generation from renewable sources of energy – the current procedural situation is on the whole very favourable because of the concentrated decision-making formula and the tight deadline, normally not more than three months, imposed on the authority concerned.
8. For the participation rights, coordination among authorities and deadlines within authorisation procedures, the BImSchG lays down relatively strict provisions, ensuring that the procedures can be carried out smoothly. In practice, the immission protection authorities apply the relevant provisions in a flexible and effective manner.
9. If the procedure for building permission is the main procedure for installation approval, there is no concentrated decision-making. Depending on each particular case, this may mean that additional formal decisions have to be obtained. The overall administrative workload may increase as a result. However, this is exceptional for most types of installations. The procedural situation is relatively unfavourable for biogas installations which, in connection with protection against animal diseases, have since spring 2003 required special approval under EU legislation.
10. Within the building permission procedure, there is from time to time a relatively heavy coordination burden, in particular because the local authority's agreement has to be obtained for approval under building planning. However, the building regulations include appropriate instruments to overcome these problems, including the legal fiction according to which the local authorities are deemed to have given their approval if they have not served notice to the contrary by the deadline and the disregard of other opinions not submitted in time to the building authority.
11. With regard to photovoltaics, largely outside the scope of Federal legislation because such installations do not require a licence under immission protection law, the *Länder* have in recent years introduced far-reaching procedural simplifications. For instance, installations to be attached to or on outer walls or rooftops are in all *Länder* exempted from the building permission procedure. In some *Länder*, this also applies to small-scale detached installations.
12. The mandatory formal planning procedure applicable to hydropower plants under the terms of the Water Management Act (WHG) entails a relatively heavy burden with regard to the approval procedure but, given the major impact of such installations on watercourse ecology, this requirement should be maintained.
13. The current procedural situation regarding the extraction of geothermal energy is relatively complicated. In this sector, the provisions of mining legislation must be applied which consistently distinguish between providing justifications for exploration and extraction as such and the granting of approval for exploration and extraction. A thorough investigation is in progress into the suitability of the procedure under mining law in respect of geothermal energy installations and ways of simplifying the procedure.
14. For the construction of wind power plants outside territorial waters, a number of workable schemes have in recent years been introduced to ensure that the basic procedural situation

provides legal certainty and at the same time to simplify the procedure. In this framework, the procedural provisions laid down in the Maritime Installations Regulation (SeeAnlV) have been extended and the new legal concept of "suitable areas" has been adopted to provide an incentive for concentrating planning in areas with a low risk of environmental pollution. The details about how to improve the system and make it more effective are still being studied. Intensive work is in progress to examine special design solutions for onshore grid connection. A basis has been created for ensuring adequate coordination among the various bodies involved.

15. It can be regarded as certain that the existing provisions ensure objective, transparent and non-discriminatory application and accordingly enable efficient enforcement in practice.
16. Guidelines for the smooth implementation of planning and approval procedures for projects subject to authorisation procedure under immission protection law can be derived from the provisions of the Licensing Procedure Regulation (9. BlmSchV) which do include specific instructions for installations for electricity generation from renewable energy which in principle do not seem necessary. At the level of the *Länder*, there are already numerous indications, guidelines and administrative rules on dealing with specific problems regarding approval of projects for installations for the generation of electricity from renewable sources of energy.
17. Designation of authorities with a mediating function, referred to in the requirements for this report, is not customary under German law. The fact that approval procedures mostly involve binding decisions which leave no discretionary scope for the authority responsible for approving projects obviates the need for such a concept. The bodies involved are free to appoint mediators or moderators in cases where conflicts arise but according to the principles of German administrative law, the authorities themselves cannot assume the role of mediator.