JANUARY 1994 ECN-C--93-035

The Netherlands - Poland

TASK FORCE ON INTEGRATED ENERGY AND ENVIRONMENTAL PLANNING

Volume I:
Institutional Organization of the Energy Administration in the EC countries and in Poland

W. BOJARSKI
W.F. FILIPCZAK
A.D. KANT
H.M. VERHAGEN

JANUARY 1994

ECN-C--93-035

The Netherlands - Poland

TASK FORCE ON INTEGRATED ENERGY AND ENVIRONMENTAL PLANNING

Volume I:
Institutional Organization of the Energy Administration in the EC countries and in Poland

W. BOJARSKI
W.F. FILIPCZAK
A.D. KANT
H.M. VERHAGEN

Organizational framework of the study

This study is part of the project 'Task Force on Integrated Energy and Environmental Planning' which was made possible through financial support from the Dutch Government in the framework of the PSO programme. Task Force leader was Mr. N.H. van der Linden (Netherlands Energy Research Foundation, Unit ECN Policy Studies). The study team consisted of Mr. W. Bojarski (Polish Institute of Fundamental Technological Research, Department of Energy Problems) and Mr. W.F. Filipczak (Polish Ministry of Industry and Trade, Department of Energy) and the project leader, Mr. A.D. Kant (Netherlands Energy Research Foundation, Unit ECN Policy Studies). Mrs. H.M. Verhagen (Dutch Ministry of Economic Affairs) prepared major contributions for Working Paper II.

Abstract

Energy specialists inside and outside Poland feel increasingly more uncomfortable about the coming insufficient energy supply threatening the economic recovery process in Poland. They expect that continuing economic growth may soon be severely curtailed by an insufficient energy supply infrastructure. Energy supply infrastructure not only encompasses activities and structures of the energy subsectors, but also government energy institutions, legislation, industry, political and pressure groups, and energy research institutes.

With a focus on government institutions the main frame of institutional orders in EU countries is organized mainly according to two principles: to energy carrier and to the economic process (exploitation, demand, supply, marketing etc.). It is recommended to organise Polish national energy management according to energy carriers. Coincidence of economy, energy and environment issues in central and southern Poland lead to the recommendation to institutionalise energy in the Ministry of Economic Affairs (MOIT). In the Ministry a regionalisation focus is thought to be most adequate for an integral approach of the intertwined economy, energy and environment issue.

Energy conservation though should be integrated outside the energy department in the Ministry for Environment. This solution prevents mixing up of contrary tasks and responsibilities (being economic growth and safeguarding environment). This solution brings economic and environmental priority setting right into the hands of government and Parliament. This optimises preconditions for social acceptability of policy outcomes: i.e. information dissemination, public participation in discussion process, tentative impression of societal support for choices which in nature have differential distributions of consequences. Investments in energy infrastructure, social system maintenance, environmental damage all need the same scarce financial resources which can be spent only once.

Government's priority setting seems to reveal a disinterest in energy planning issues of national interest. The result is a laisser-faire approach of energy planning which superfluously seems to be current practice in EU countries too. However, energy remains a strategic product in every economy and the more so in developing economies. In virtually all EU countries extensive

government involvement with the energy sector can be observed. Notwithstanding the fact that the European Union is strongly inclined to promote deregulation and liberalisation, it is recommended to Polish government, just as is the case in the EU countries, to maintain a firm grip on the energy sector being vital for economic recovery.

Keywords

INSTITUTIONAL SET-UP
INSTITUTIONAL ARRANGEMENTS
ENERGY ADMINISTRATION
NATIONAL ENERGY POLICY
NATIONAL ENERGY PLANNING
PUBLIC ENERGY INSTITUTIONS

PREFACE

The political and economic reforms in Central and Eastern Europe brought about a change towards more market oriented energy policies. This change can be characterized by:

- A shift in emphasis from centralised, supply oriented energy planning and policy making to indicative, integrated supply- and demand-oriented planning and policy making.
- A shift from plan fulfilment objectives towards profitability-oriented objectives.
- A growing concern about environmental protection.
- A change of priorities, roles and responsibilities of the various governmental institutions and entrepreneurs involved in the energy sector.

The new political situation in Central and Eastern Europe has created the possibility to intensify and extend co-operation in different fields between the former socialist countries and Western countries. Appropriate projects carried out jointly by research institutes in Western and Eastern Europe can provide the opportunity to exchange knowledge and experience, and stimulate the political and economic adjustment into the direction of desired integration with European market economies. These joint research projects constitute an interesting modality of 'joint implementation', referred to the Framework Convention for Climate Change.

Having to address radical structural changes of the national economy, Polish government wishes to establish a co-operation between research institutes in Poland and the Netherlands in order to be able to analyze consequences thereof for their energy policy. Moreover Polish government intends to accelerate the process of integration of the Polish energy sector into the European market economies.

In August 1991, a co-operation between research institutes in Poland and the Netherlands Energy Research Foundation was launched. This co-operation was formalized by establishing a 'Task Force on Integrated Energy and Environmental Planning'. The Task Force has been charged to conduct studies on issues which are important for the formulation of energy policy in Poland. These studies have been identified in close co-operation between the Ministry of Industry and Trade, Department of Energy, the Ministry responsible for energy policy in Poland and the collaborating institutes.

The Task Force consists of the following institutes:

- The Ministry of Industry and Trade, Department of Energy, Warsaw (MOIT);
- The Institute of Fundamental Technological Research, Department of Energy Problems, Warsaw (IPPT/PAN);
- The Polish Gas and Oil Company;
- The Polish Foundation for Energy Efficiency, Warsaw; and
- The Netherlands Energy Research Foundation, Unit ECN Policy Studies, Petten (ECN).

The primary tasks of the Task Force are:

1. To perform studies on issues which are important for the current energy policy in Poland.
2. To organize workshops in order to present and discuss the results of the studies to experts including experts not directly involved in the project.
3. To establish a co-operation between Polish Energy Research Institutes and the Netherlands Energy Research Foundation.

The first four studies identified as being very important for the formulation of energy policy in Poland are:

I. Organizational and Institutional Aspects of Energy Planning Studies.
II. Energy Demand, including:
   - development of a General Equilibrium Model for Poland
   - energy conservation
III. Comparison and evaluation of the results of three sets of energy models.
IV. Verification and extension of the Polish energy and environmental data base.

The collaborative programme encompassing these four studies started in April, 1992. The programme was funded by the Dutch PSO Programme (Programme on Co-operation with Central and Eastern Europe). The PSO Programme was established in 1990 by the Dutch Government to support reforms in Central and Eastern Europe and provides funding for projects in different research areas including projects focusing on energy related issues.

The methodology and results of the studies performed by the Task Force are described in a series of publications entitled 'Task Force on Integrated Energy and Environmental Planning'. The series contains the following volumes:

- Volume I, Institutional Organisation of the Energy Administration in the EU countries and Poland. Three working papers are related to this Volume:
  - Working Paper I:
    Description of Former and Current Energy Administration of Poland.
  - Working Paper II:
    Government Institutions of the Energy Sector in the EU countries.
  - Working Paper III: Description of Institutional aspects of the Energy Sector in the Netherlands and in Germany.
- Volume II, Integrated Energy-Economy-Environment Policy in Poland; A Computable General Equilibrium Modelling Approach.
- Volume III, A comparison of the energy models DORSEK, ENPEP and EFOM.
- Volume IV, Verification and Extension of the Polish Energy and Environmental Data Base.

CONTENTS

LIST OF TABLES AND FIGURES 9

1. INTRODUCTION 11
   1.1 Background 11
   1.2 Basic questions 12

2. ACCEPTANCE AND ROLE OF ENERGY PLANNING 15
   2.1 Introduction 15
   2.2 Acceptance of energy planning 15
   2.3 Four approaches to public communication 17
   2.4 Energy planning in the Netherlands and Germany 19

3. ENERGY SECTOR MANAGEMENT IN POLAND AND EUROPEAN UNION COUNTRIES 23
   3.1 Introduction 23
   3.2 Energy sector management in Poland 24
      3.2.1 Former regime 24
      3.2.2 Current energy administration at central government level in Poland 25
      3.2.3 Current situation at energy subsector level in Poland 27
      3.2.4 Institutional issues and options for future reform in Poland 28
   3.3 Energy sector management in European Union Countries 31
      3.3.1 Introduction 31
      3.3.2 The European Union 31
      3.3.3 Two main organizational principles 32
      3.3.4 Case studies: the Netherlands and Germany 37
   3.4 Conclusions 39

4. RECOMMENDATIONS 43

REFERENCES 47

ANNEX A. Overview of current tasks of the Polish Department of Energy 49

LIST OF TABLES

Table 2.1 Policy phases and purposes of information 16

LIST OF FIGURES

Figure 3.1 Organigramme of the Polish Department of Energy 26
Figure 3.2 German Ministry of Economic Affairs, Department of Energy Policy and Minerals 33
Figure 3.3 Organizational structure of the Danish Ministry of Energy 34
Figure 4.1 Proposed Energy Department structure within the Polish Ministry of Industry and Trade 45

1. INTRODUCTION

1.1 Background

Energy specialists inside and outside Poland feel increasingly more uncomfortable about the coming insufficient energy supply threatening the economic recovery process in Poland. They expect that continuing economic growth - the main policy goal for all governments having been in office since the 1989 turnover - may soon be severely curtailed by an insufficient energy supply infrastructure. A properly functioning national energy sector is an important precondition to undisturbed economic growth.

Transition from a centrally planned economy to a market economy warrants a new institutional arrangement of society in order to serve the new orientation more adequately. Former institutions were not capable any longer to meet demands deriving from market oriented economic activities. Demonopolization, liberalization of trade and capital flows, the shift to private ownership and the development of financial markets have all been initiated. Virtually all sectors in society are already affected by this process. However, painstaking changes and manifold obstacles have to be dealt with before government policies, the legal framework and policy implementation provide an adequate business environment for free enterprises to flourish, while, at the same time safeguarding society against undesired side effects. A logical step in the process of restructuring is the orientation on European OECD countries that have already realised the provision of invigorating market conditions on the one hand and have materialized high living standards on the other.

The choice for a liberal development path calls for an administrative system functioning at some distance of the economic processes. The creation of stimulating and supportive conditions for economic initiatives also involves the supply of abundantly available energy sources at low costs. Energy use has proven to be strongly interrelated with economic growth. Thus an economic policy oriented towards economic growth has to be accompanied by a well-designed energy policy. Analysis will show that, without exception, EU countries have a consistent set of energy policy goals, usually implemented by energy departments in one of the key ministries, clearly showing the political weight attached to energy policy issues (Even the most liberal case, the UK is among these countries).

Moreover, in Poland, as in many countries, energy is a very important sector on its own account. In Poland the energy sector generated 10% of GDP in 1990. Energy sector investments amounted to 12% of total investment and even 30% of total industrial investment. Notwithstanding these figures, all energy sector segments suffered from underinvestment in the previous decade (1975-1985). Energy supply meets today's demand because of the sharp economic recession only. In absence of evidence, *energy planning* does not meet appropriate attention in Poland. This can easily turn into the situation that energy supply becomes a barrier to the sustainability of the economic recovery process currently well under way.

Political and social problems facing politicians are much more salient than the hidden problems of the energy supply structure. Moreover, planning is out of fashion after the demise of socialism. Just a pledge for energy planning will meet suspicion. However, long lead times for investments in the electricity and gas sectors do warrant judicious anticipatory planning. Unfortunately, energy planning implies reallocation of large amounts of the state budget for a policy area which is much less visible than social or price policy issues.

How difficult strategic measures in the energy sector may be, it has become increasingly urgent yet to introduce effective and efficient energy institutions that can be depended upon to provide energy supply security at relatively low costs. In most countries of the European Union indicative energy planning has proven to be a valuable tool the importance of which can hardly be overestimated.

1.2 Basic questions

Basic research questions were stated by Polish energy experts and adopted by the Task Force on Integrated Energy and Environmental Planning, made up of over a dozen Polish and Dutch experts. The accepted judgement that the insufficient energy supply infrastructure may soon throttle the fledgling process of economic growth, is a concern of major importance to this study. Moreover, establishment of an adequate energy supply infrastructure is a very expensive prerequisite to economic growth. Careful planning is widely thought to be an insurance against an unnecessary waste of financial resources, due to ad hoc and subsector planning. These judgments are reinforced by the following observations.

Previously, responsibility for energy issues was placed with the Ministry of Mining and Power. Nowadays, energy responsibilities are located in an energy department of the Ministry of Industry and Trade. Energy planning in the former regime involved about 20,000 specialists, working at all levels of the Administration, in research institutes and at advisory boards. Presently, a mere 40 officials are engaged in the entire energy field. Probably, this institutional downgrading and reduction of staff reflect the general feeling that market economies are doing well without energy planning and policy. A rather superfluous analysis of energy policy of EU countries (policy goals, instruments and effects) reveals this is a misperception [1].

In Poland, *energy planning* meets disinterest and even distrust because of the strong reminiscences to former planning practices. However, indicative energy planning studies, framed as a part of the energy planning process, are important instruments for policy makers and industrial investors in most EU countries. Adequate indicative energy planning allows for flexible adjustments to a rapidly changing economic environment and related energy demand patterns. These considerations go a long way to arouse interest in planning practices in the OECD-countries, in particular the countries of the EU. Basic research question is:

What is the institutional context of the commissioning of energy planning studies in the EU countries? How are the planning study results used?

In pre-transition Poland, energy planning studies were not initiated by the Ministry, but rather by a few energy research institutes. The reports brought out by these institutes were presented to the State Planning Commission of the Ministry Board and the executive bodies of the energy sector (Hard Coal Board, Power and Lignite Board and the Polish Oil and Gas Company). Academic support during the design of the planning was obtained from the Polish Academy of Sciences, and from research, scientific and project institutes of the branch ministries and universities. These institutes were formerly under control of the Ministry of Science and Technology. Once approved by Government and Parliament, plans and programmes were implemented and supervised by the Planning Commission. Energy planning did not attract much political attention. At that time discussions on energy planning goals and implementation were limited to highly specialised institutes and the core state bodies, including Parliament.

In post-socialist Poland however, financial constraints block proper development of an adequate energy supply infrastructure. Politically spoken there is the painful choice between allocating financial flows to the energy sector (which is thought to be a necessary condition for sustained economic growth) or prioritization of social and other policy goals equally important for the people's well-being. The first goal is medium/long term oriented and the latter short term. In EU countries it is usually accepted that broad acceptance for either one or the other policy goal needs societal approval. This approval is secured by the political system of indirect representation: politicians are representing the population as they are elected in democratic election procedures, which can differ substantially from one country to another. In Poland however, broad societal acceptance has never been a policy goal. Important question is:

How to get broad acceptance and support for a well-designed energy planning: How is this achieved in EU countries?

This question is all the more pressing as presently scarce financial resources are needed for other pressing policy areas. Energy policy in terms of changing energy price structures does attract a lot of social and media attention, but a concise view on national energy interests, typically product of a concrete energy planning, is generally lacking. In the medium and long run consumer energy prices are easier to be guaranteed than by ad hoc price policies.

In most EU countries energy planning is used as an indicative tool for guiding investment decisions for governments, lower administrative bodies, utilities and industry. It shows to be the most efficient way to realise the national energy policy goals at a certain moment. Any substantial change in the economic environment (the come into being of a running inflation, increasing prices at the oil spot market, sudden changes in energy demand and supply patterns etc.) causes changes in what was held to be most adequate or efficient till than. Indicative planning does not guarantee an economic environment favourable to one or another decision. In that respect energy planning is following economic reality. Though one tries to predict certain aspects of the future, necessary data on which to build the prediction are reflecting past trends. Energy planning is not more than a rational tool that helps economic planners and investors to plan and to invest. However, responsibility for decisions stays with the economic actors themselves.

A fundamental question is how close economic and energy policy should be with the economic process. This question has immediate consequences for the institutional set-up of a country. If a liberal policy line is elected a very lean institutional apparatus may be sufficient. If a more socialistic policy line is adopted one can usually observe more regulation and control activities, both calling for sufficient human resources to carry out these tasks. Both policy lines are extremes which are not existent in reality. In an IEA study the degree of state involvement in energy matters appeared to be quite extensive in the OECD countries [2]. This is interesting for Poland to know, because the current stage of institutional reforms allows the redesign of the institutional set-up and to reconsider the place of energy planning in the process of national build up. The interest in the types of institutional set-ups in the EU countries is quite obvious:

How is the energy administration organized in EU countries?

The anticipated Polish membership of OECD and the European Union are sufficient reasons for concentrating on a cross-section of member countries. This orientation of the Polish long term policy goals is probably explained by three main considerations. First, living standards of the west are a legitimate and long living desire of the Polish population. This has resulted in strong acceptance of any kind of economic policy which offers prospects of bringing prosperity within reach. Secondly, necessary investments in Polish economy can only be expected from the OECD countries, on a bilateral basis or along the conditioned lines of development banks and IMF. Thirdly, Polish industry needs to get access to the enormous European market for their products, though often with low quality standards produced at very competitive prices. In the EU countries the economic process is the strongest legitimation to design and redesign national institutional orders. It might be a good idea to emulate the core of institutional set-up in EU countries because this would imply the introduction of more or less similar procedures and arrangements.

The three basic questions underlying this study were addressed separately. In the first working paper [3] the former and current energy administration and industry in Poland is described. The second working paper addresses the energy administrations in EU countries at a general level [4]. The third working paper treats the entire energy area in Germany and the Netherlands. These countries were selected because of the fundamental importance of state organization: a federal versus a national state organization. In this harmonisation report information is drawn from the working papers and the research questions are explicitly addressed. Another reason for this selection is the realisation of very competitive energy industries and energy prices. Finally, the selection is most practical in terms of gathering information. In this harmonisation report results are summarised and final conclusions will be drawn in view of the above stated basic questions.

2. ACCEPTANCE AND ROLE OF ENERGY PLANNING

2.1 Introduction

In this section the following questions will be addressed:

How to get broad acceptance and support for a well-designed energy planning: What is the institutional context of the commissioning of energy planning studies in the EU countries? How are the planning study results used? How is this achieved in EU countries?

First the importance of broad acceptance of energy planning is pointed out. From the point of view of the policy maker it is a rational tool for resource allocation problems. From the point of view of consumers, industry and households, it is an anchoring point on which to rely for investment decisions and to secure the energy supply at the lowest possible marginal costs. Elementary condition for an adequately functioning energy infrastructure is that the application of energy planning meets broad political and societal support. The way this is achieved in EU countries and Germany and the Netherlands in particular is described at the close of this section.

2.2 Acceptance of energy planning

The acceptance of energy planning is of overriding importance for the realisation of an efficient and secure energy supply at the lowest marginal costs. The acceptance problem has to be addressed at three levels: industry and trade, political parties and administration, and society. In most countries industry, trade, political parties and the administration have several fora for formal consultation. Apart from the formal structures a great number of informal contacts exist at a regular (working groups) or irregular base (during conferences, symposia etc.). The most difficult level is the broader public, usually not deeply interested in energy policy problems. Only practical problems such as siting issues (nuclear plant, wind turbines) do arouse significant interest among the population.

In democratic societies all actors in the economic and political domains are interested in communication with society. In fact their very existence is dependent on their ability to communicate with the public. For example, how should an electricity producer survive if he is not able to make clear that new (nuclear) energy plants are a necessary condition for future prosperity? These questions and the way solutions are organized and presented are vital to society. Policy and decision making are possible as long as there is adequate societal support for them. Public communication has a crucial role in creating and maintaining public support. In democratic societies political consensus is highly valued as a base for reaching decisions. Public communication is perceived to be instrumental for achieving this goal. It can be concluded that during the last decennia an increasing number of communication efforts is

initiated by all kinds of actors in the political domain: national and local authorities, industry and private organisations [5]. The democratic functioning of a society is greatly depending on the quality of information exchange. Democracy is often defined as the political system's capacity to reach consensus. A lot of communication strategies can be evaluated in this respect.

What are the predominating motives for public communication? Most of the time public communication has something to do with decision making. The main objective of public communication seems to be 'broadening societal consensus for political decision making'. Given this meta goal one can observe objectives such as influencing energy conservation behaviour, or public relation goals on a local or national level. But most of the time some kind of decision has to be taken and general public information (strategic, tactical or operational information) must smoothen the way for a political decision.

Sometimes public communication is framed as a part of policy as brought out by the coherent philosophy of the former Dutch minister of environment, Mr. P. Winsemius [6]. He distinguishes four stages in the development of policy, applicable to any policy issue. In the next table each phase of policy development is connected with a purpose attached to information:

Table 2.1 *Policy phases and purposes of information*

Policy phase	Purpose of information
Signalling of a problem	-
Formulation of policy	Openness of policy formulation
Solution or policy implementation	Promotion of participation Provision of services Promotion of abidance with laws & rules
Control on policy implementation	Publicity of policy Provision of services

These goals of public communication define types of communication, target groups and content of the message. Point of departure in this view are 'needs and wishes' of the population or parts of the population. This leads to target groups defined according to their involvement in the issue, educational level, distance to the place where risks are anticipated and extent of vulnerability.

In fact the scheme of Winsemius shows that there are different types of public communication depending on the phase of policy development. Especially the promotion of participation presupposes other types of interaction between initiator and receiver. Participation presupposes dialogue as the mode of interaction. This makes clear why a shift can be noted from 'public information campaigns' to 'public communication': the public plays a more active role in the latter. Maybe even more important is that this shift opens a new perspective on public communication: i.e. the relationship between initiator and receiver of public communication, to a large extent defined by the initiator. This relationship can be characterized by four approaches that might be chosen by the institution that plans to initiate public communication and that shape the entire design of the communication: the technical, market,

justice and the participation approach [7]. These approaches are explained hereafter.

2.3 Four approaches to public communication

A communication approach is always a function of the changes one is willing to induce on the receiver. The receiver infers this purpose from the information and he judges the communicator's supposed objectives. Midden and Hisschemöller indicate that this question can be addressed with four ideal typic approaches that characterize the relationship with the receivers: the technical, market, justice and participation approach [7]. These four approaches are not strategies in the sense of intentional, systematic communication methods, but rather they can be qualified as reconstructions of the decision making process in the light of implicit assumptions of the actors involved.

The *technical approach* presupposes rational decision making of experts. The public does not play an important role in the process. Emotional reactions of the public are ignored or turned down as non-rational. The public has to be informed about the positive aspects of the decision, merely to reduce the experience of negative outcomes. Public information and decision making are independent. Only in the solution phase of the Winsemius model public information can be expected. The communication situation is seen as one in which one must try to convince the other party of the attractiveness of a solution. This leads to persuasive communication, which plays a role in the stage of openness of policy formulation.

The *market approach* concentrates on the implementation of policy or technology as a process of negotiation in a market situation. A conflict of interest is perceived between the offering and the receptive party. Accompanying risks and revenues are not equally distributed over the parties involved. This is seen and accepted, but in a bargaining process one obtains information on the conditions which make decisions acceptable. Every objection has its price. The market approach is often used with the siting of nuclear power plants, e.g. in Germany and Spain power plants were sited in remote areas with comparatively underdeveloped economic infrastructure and high unemployment rates.

In the *participation approach* information and education play a central role in public communication. Lack of scientific and technological knowledge erode participation of the population in the decision process. This is seen as the main cause for declining participation in the democratic process. Apart from this general argument the point can be made that a well-informed population contributes to a better decision, than might be expected without participation. This approach has been applied in the Netherlands by means of a nationwide societal energy discussion in the period 1981 to 1983, with the deployment of nuclear power plants as lead issue. During this two years event tens of thousands of citizens were informed during hearings, local and national conferences comprising all relevant interest groups in society. Scientific gathering of opinions and summarizing conclusions of the public debates resulted in a two thousand pages report offered to Parliament [8].

In the *justice approach* decisions have to be reached within a framework of judicious weighing procedures for arguments and affected interests. Procedures are warranting a justifiable weighing of pros and cons of the interests of all actors. The distribution of risks must be socially acceptable. Because of the emphasis on procedural aspects there is no direct negotiating among the parties involved. Good procedures are reflected by smooth discussions contributing to the optimal solution of the policy problem. Very sensitive problems, as sometimes treated in national inquiries (often a basic democratic right of parliaments), are faced with this approach.

The aforementioned four approaches are ideal typic in the sense that there is probably no public communication effort which can be classified in one category only. It is even possible that a certain policy problem fits into all approaches depending on the place on the political agenda at a certain moment. This goes especially for emotional, national debates on nuclear weapons or nuclear energy.

Not every approach seems to be applicable at any time. It is imaginable that in the phase of policy formulation all approaches can be adopted. But if an intensive emotional debate on the location choice of nuclear waste ends up in a political stalemate, a technical approach has appeared not to contribute much to quick decision making. Instead one might expect more of a justice or market approach, mixed with a participation approach. Ethical and philosophical, historical or cultural arguments may enter the discussion, thus broadening the base for decision making and occasionally inducing changing alliances. It can be concluded that considerations of the phase of the policy preparation shape the definition of goals, the handling of target groups, contents and type of the public communication and the most appropriate design of an evaluation model.

It is concluded that the more or less neglected energy planning in Poland is to brought out there: the population should consider the importance of the issue and give it a priority ranking and should elect accordingly. The adoption of a participation approach for 'marketing the issue of energy planning' appears to be the best communication strategy for policy makers. Without broad societal support implementation of energy policy has showed to be impossible in many EU countries. True participation calls for abundant information dissemination. It must be made clear that scarce resources have to be applied for the build up of an efficient and adequate energy supply infrastructure, which itself is a necessary precondition for economic growth and prosperity. It can be pointed out that economic and societal costs will be higher in the medium and long run. It would be an erroneous stand to adopt a technical approach, as people are not likely to perceive reality as energy experts do. This is the lesson that can be drawn from Dutch and German experiences with important energy planning key decisions with high emotional impact. In next section more will be said on this issue.

2.4 Energy planning in the Netherlands and Germany

Energy planning is a common practice in EU countries. Indicative energy planning can be defined as energy planning based on economic planning, leaving as much room as possible to the market forces to satisfy society's energy needs. This is expected to supply the economy with secure and safe energy for a low price. Economic planning can be considered as an instrument to project macroeconomic developments on the basis of postulated economic scenarios. It provides a basis for economic and energy decisions to be taken by industry, utilities and the administration. In countries with indicative economic and energy planning investment decisions are reached freely by the private sector with all parties involved running financial risks.
In the Netherlands economic planning is designed by the National Planning Office (CPB) since 1945. In Germany no economic planning office is functioning. However, economic development is closely pursued in order to orient economic policy instruments.

The administration's role is usually geared to adjustment of the operations of free market forces so as to preserve the general public interest. Most energy planning in the EU can be regarded as a set of principles for policy making, providing industry with clear policy guidelines and thus allowing integration of public concerns in private industrial planning activities (for example, investment planning). Because planning is flexible in the sense that it continuously adapts to new economic data and developments, no certainty exists as to the outcomes of the operations of the market forces. Every industry is responsible for selecting opportunities and judging risks. Indicative planning not only gives directions to the market parties, but also gives time for the democratic processes in a country to work, thus allowing political parties to control the governmental and industrial decisions.

In smaller countries energy planning studies are the domain of one or two institutes which, in order to ensure an independent study, should preferably not be closely related to the responsible ministry, usually the Ministry of Economic Affairs or Industry and Trade. In the Netherlands planning studies are commissioned by the General Directorate for Energy, department of General Energy Policy. Most of these studies are conducted by the Netherlands Energy Research Foundation (ECN).

Typically about five senior researchers work on national energy planning activities in close consultation with the Ministry. The Ministry provides the economic baseline and the period to be anticipated. During the process of study realisation, taking about one and half a year, the political and economic situation varies, inducing the Ministry to correct baseline points of departure of the study. The study produces two or three scenarios for the energy future of the Netherlands, comprising a number of extremes. The outcomes are unquestioned and can be found underlying energy policy design. Usually the Ministry comes up with new wishes, to be integrated in the planning. In addition to conducting planning studies ECN maintains large energy databases for all economic sectors, elaborating sometimes down to industrial process level. Larger countries such as Germany can afford to have carried out energy planning studies in competition between institutes.

In the Netherlands national energy planning is supported by subsectoral energy planning. The power and natural gas subsectors are tied up by law to submit for approval investment plans for the short and medium term (up to 10 years) to the Minister of Economic Affairs. These latter plannings are designed by the subsectors and are usually slightly at variance with national plannings, in the sense that the subsectors tend to overestimate energy demand. The approval is a matter of political consensus with important implications for national industries (introduction of more efficient coal burning technologies) and as well as for the wider public (e.g. with the extension of nuclear energy). On the whole, however, these plans tend to be in line with each other.

In Germany, energy policy is not imposed on society in a top-down way. It is negotiated in a formal and, for a large part, in an informal way. In the Ministry of Economic Affairs energy policies are outlined in so-called internal papers. These papers are not really internal: they reach lobby and interest groups as well. The power generation and distribution companies, national industry organizations, organizations of energy users, etc. have engaged officials who evaluate the policy intentions. Evaluations may indicate that rules and laws are badly designed or superfluous. Other evaluations may support drafts with modifications on what is proposed. In this way the Ministry obtains comments on concepts of their policy intentions at a very early stage, when as yet nobody has committed himself.

In a second stage official negotiations take place between the interest groups and the Ministry. By that time Government officials have elaborated adapted plans and proposals reaching this stage. Interest groups hand over own research results which they obtained from consultants working for them, from in-house knowledge or from energy institutes which were commissioned with the assessment task. The government officials study the exterior points of views and will reconsider their policies according to a limited extent. But because societal groups already had the opportunity to interact with government officials on draft policy guidelines in the first stage, the second version will be amended less easily.

In the third stage policy guidelines develop into legislation, after which they will be promulgated. A formal treatment of the legislation includes formal hearings of experts, lobbyists and politicians on the issue. At this stage political and administrative positions are showed and only marginal changes can be expected. Finally, the Prime Minister has the power and right to veto the legislation.

These stadia of the setting of the political agenda show the functioning of German democracy. It is the first stage in which an optimal influence can be exerted on the political agenda. The later stages become more and more formal, with increasing levels of commitment, which make fundamental changes in plans after the first stage rather unusual [9].

In virtually all EU countries the administration makes use of information units in the energy department or energy directorate. These units usually have a information dissemination function. For one part the information has to be gathered in society and passed to the several units and subunits in the bureaucratic apparatus, but probably more important is the information that

is passed to the wider public. Press releases, press conferences, interviews, formal legislation in the gazette (official newspaper), articles, brochures, leaflets, handouts etc. are frequently used communication channels. Especially business, industry and commerce are target groups for their information. Actually, information important to the economic functioning of society reaches the relevant target groups in different ways. During the policy formulation stage relevant actors, i.e. umbrella organizations of an industrial subsector for instance, are informed about problems and possible solutions. Their view is usually strongly weighted in subsequent solutions. If some kind of legislation is involved measures and services become law at the moment the gazette publishes the exact contents of these laws. The relevant subsectors are approached by the information unit directly, or via the sector organisation. A rather new phenomenon is the existence of companies offering information and support services to industry, for example with obtaining subsidies from all kinds of actors in the policy environment: European Union, national ministries, provinces and local authorities. An information unit seems to be indispensable if participation of society in important energy policy decisions is aimed for.

3. ENERGY SECTOR MANAGEMENT IN POLAND AND EUROPEAN UNION COUNTRIES

3.1 Introduction

Although Poland has not been the first nation state that is rigorously reversing one ideological and economic system for another, problems accompanying such a process are always new and unique. It can hardly be overestimated that the essentials of ideological systems saturate human thinking and doing. What were the essentials of the former ideological and economic systems and how do they influence the ongoing process of change?

Probably most fundamental to the former social order was the notion that society can be cemented. This notion holds that at central level development of society can be designed by the central committee of the one-party government administration. Political objectives, economic means and methods can be put in a master plan in such a way that the ideal society is the ultimate product. This idea fundamentally requires people who have faith in this idea, who give almost unlimited power to the central planning committee, who execute what is derived from the plan and who do not take initiatives because these can potentially harm planning processes in unpredictable ways. Relinquishing individual initiatives was compensated by the absence of individual existential insecurity: the State provided all basic services and could be called upon to assume its responsibility to re-act in case of failures. Of course, not everybody believed in this technocratic ideology, but generally this was the dominant and unchallenged social reality.

The acceptance of economic liberalism evidently renders tensions in individual lives and in society as a whole. Generally spoken, submissive and compliant people will not easily turn into pro-active persons showing initiatives. The State's changed role brings back individual responsibility and consequently existential insecurity, which is felt to be very unfair after living a life of loyal servitude. The State is suddenly found not to provide jobs and services. As a result, the State easily becomes object of hate and distrust. In the present societal context, the establishment of a capable, credible and trustworthy State turns out to be a very difficult assignment for politicians.

Therefore, it does not come as a surprise that politicians are curtailed by a faction-ridden parliament and that a great deal of changes occur as the resultant of spontaneity and initiatives of people, at least as much as along the lines of careful planning [10]. A mountain of legislation has been delayed or failed to pass Parliament. Strategic alliances, formation of coalitions and personal marketing are time consuming activities, leaving less room for adequate and skilful government. One of the main consequences of the political instability is the slow and insufficient institutional reconstruction of the State's administrative bodies, i.c. the internal organization of the ministries.

The exchange of socialist and capitalist ideology seems to result in a commonly observed phenomenon. The shift towards a new ideology results in an almost unchallenged faith in it, making the novice an even stronger advocate than his socializers. Energy planning and government involvement in the energy sector do not fit into the new ideology, simply because the idea of planning is too strongly tied up into practices of the former regime. Secondly, it is hardly realised how deeply EU governments are involved in the energy sector and how important energy planning is in these countries. Case studies of Germany and the Netherlands show the unexpected outcome that energy is far from a freely tradable good. In fact, the conclusion of a reputed Dutch economist can be underlined that Polish economy already is liberalised to a greater extent than is the case with Dutch economy [11]. This issue will be addressed further below in this report. In this section the following questions will be addressed:

How is the energy administration organized in Poland and how in EU countries? Which institutional options are applicable to the Polish energy administration?

It is chosen to address former and current Polish energy administration first. This is done because of the paramount importance of Poland's experiences for the redesign of the current administration. It is virtually impossible to change structures and people functioning in structures as if there has never been an administration at all. Of course former experiences strongly influence people's perception of what were good elements of the administration, the sense and use of energy planning, the way things should be organised etc. It is felt that a good understanding of former structures and procedures is fundamental for adequate recommendations on a future organisational set-up. The former and current Polish administrations are described in sections 3.2 and 3.3.

A second elementary aspect of the Polish energy field are the developments in the energy subsectors and industry in general. The Polish energy subsectors appear to be in different stages of privatisation. The different stages are subject of section 3.4. Finally, in section 3.5 institutional issues and initial options for future reform are touched. In the next chapter the perspective of energy administration in EU countries is introduced, after which final recommendations for Polish energy sector management reforms are presented.

3.2 Energy sector management in Poland

3.2.1 Former regime

Previously, the Ministry of Mining and Power was charged with national energy policy design and implementation, except for the oil industry (refineries) which was dealt with by the Ministry of Chemistry. Control over the energy sector was exercised by three powerful state organizations, i.e. the Hard Coal Board, the Power and Lignite Board and the Polish Oil and Gas Company. Energy conservation fell within the competence of the Ministry of Material Resources

and Energy Economy. In the latter Ministry the National Energy Inspectorate was responsible for policies concerning energy conservation.

About 20,000 staff were engaged in energy policy preparation. Over 2000 staff were working in the aforementioned Ministries and Boards on the policy side of the issue, while the remaining 18,000 were employed by large research institutes and project and design organizations. By contrast, today less than 40 staff members have a full time job in the field of energy policy preparation at governmental level and in research institutes.

3.2.2 Current energy administration at central government level in Poland

No longer an independent ministry is concerned with energy policy preparation and implementation. At present, energy policy issues are addressed at directorate level within the Ministry of Industry and Trade. However, many aspects of energy issues are also dealt with by other ministries: i.e. the Board of Ministers and its economic committee, the Ministry of Environmental Protection, the Mineral Resources and Forestry, the Ministry of Physical Planning and Construction, the Ministry of Finance, the Ministry of Privatization, the Ministry of Foreign Economic Relations, the Central Planning Office and the Anti-monopoly Office.

Nevertheless, the Ministry of Industry and Trade is in charge of the majority of energy policy issues. A general description of most recent tasks is listed below:

1. Establishment of the general energy policy for Poland and preparation of strategies for energy sector development.
2. Design of programmes for reorganization and restructuring of the entire energy sector and its sub-sectors.
3. Supervision of the execution of national energy policy and implementation of restructuring measures.
4. Introduction of energy laws and detailed executive regulations.
5. Development of an organizational structure for the National Energy Agency, which is expected to become a regulatory body.
6. Preparation of international contracts, for example, with the World Bank and the cooperation with international organizations.
7. Participation in the preparation of the government decisions related to:
   - budget financed energy investments.
   - distribution of subsidies.
   - issuing licenses for fuel export and import.
8. Approval of domestic clearing prices for electricity and district heating.
9. Acting as establishing institution of the state owned energy enterprises.
10. Acting as the founding institution of the energy sector subsidiary enterprises, and participation in the process of restructuring and privatisation of these enterprises.
11. Designation of directors and members of supervisory boards of 100% state owned companies, such as the State Agency of Hard Coal and the Polish Power Grid Company.
12. Participation in negotiations on group social agreements with workers and trade unions in energy sub-sectors.

The precise responsibilities tend to shift often, showing the institutional response on the shift of ideologies. Since November 1991, the Ministry of Industry and Trade was not headed by a Minister, but by the so-called 'Manager of the Ministry' nominated for the transitional *'interregnum'* period. This is a rather unusual situation for a key ministry. A new Minister was nominated in July 1992 by the Government of Prime Minister Suchocka.

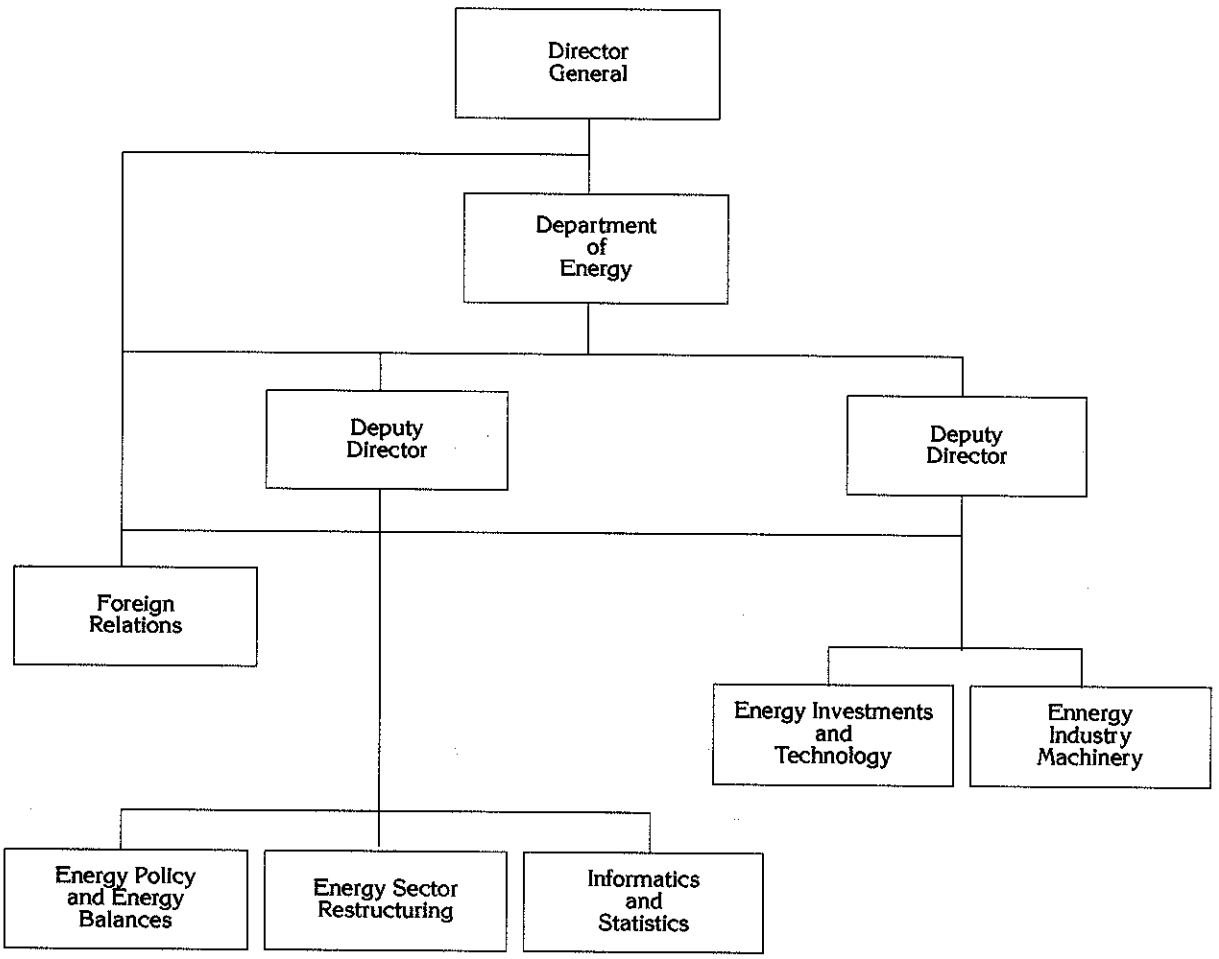

Figure 3.1 *Organigramme of the Polish Department of Energy*

The most recent institutional change is the division of the Energy Department into two parts, namely the Department of Oil and Gas and the Department of Energy and Solid Fuels.

The Department of Energy (DOE) in the Ministry of Industry and Trade (MOIT) is responsible for the majority of the above mentioned tasks. The DOE employs about 40 staff. Another 10 to 20 staff members deal with energy related issues in other MOIT departments.

The Department of Energy is responsible for the supervision of the Energy Sector in Poland and the prediction and assessment of its development, particularly for the oil, the gas and the power sub-sectors. The DOE is also responsible for promoting energy efficiency.

The organigramme above brings out the DOE comprising of six sections. These sections are responsible for tasks which are described in detail in annex

I. There are 27 tasks described to be covered by some 40 staff members of the DOE. It must be virtually impossible to execute all tasks efficiently, as most of these tasks require an impressive amount of paper work. At the same time, requests stemming from an awakening entrepreneurial society are rapidly increasing. According to the Economist there are 1.6 million non-agricultural businesses. A quarter of all manufacturing is in private hands: overall, about 55 to 60% of Poles now work in the private sector [10]. For a country of 35 million people, currently being in transition, it is not a good solution to leave the entire energy issue to the market as will be illustrated in the closing section of this chapter. To be able to do so, first the current situation at subsectoral level has to be summarized in section 3.4.

3.2.3 Current situation at energy subsector level in Poland

The institutional set-up should somehow reflect the relative importance of the various subsectors. The subsequent brief overview of the subsectors provides some relevant information.

As far as the energy supply of Polish economy is concerned the country can be characterized as a coal country. Nearly 70% of the energy demand is covered with hard coal and another 10% with lignite, leaving 13.6% for oil and 7% for gas. That gives an important position to the coal sector. The State Hard Coal Agency is a joint stock company narrowly cooperating with the Ministry of Industry and Trade. Its tasks concern the restructuring of the coal sector:
- Analysis of the profitability of mines and selects mines for closure.
- Assessment and budget estimation of reconstruction and modernization programmes for particular mines.
- Evaluation of reconstruction and modernization programmes for the hard coal mining industry.
- Preparation of programmes for the reorganization of the mining industry.
- Distribution of subsidies to the mining industry.
- Supervision of closure of unprofitable mines.

At present, given current world energy prices, it is expected that slightly over 50 of the independent 71 mines will survive as profitable enterprises[1]. To date, several mining corporations are hard coal exporters, having their own contracts with foreign parties. The former Office of Hard Coal Sale has also lost its monopolistic position in domestic coal wholesale trade. Several wholesale organizations are active in this field. Out of the more than one hundred previously existing mining subsidiary enterprises several have already been transformed:
- 10 have been transformed into joint stock companies fully owned by the Government;
- 10 are in the process of transformation as above;
- 5 have been transformed into companies owned by the workers;
- 7 have been privatized;
- 2 are under foreign management.

[1] By contrast, a World Bank report expects only a dozen mines to become profitable in the medium run. This contrast shows again the importance of having a well-informed coherent energy policy unit for securing the national interests [17].

In the lignite mining sector four independent companies exist, owned by the workers. In the gas sector the organizational structure has not been changed in recent years. Formally, it still is a monopolistic state enterprise known as the Polish Oil and Gas Company (PGNiG). The name itself is misleading, because oil plays only a marginal role in the company. Reorganization of the gas sector is already decided upon. The same goes for the oil sector. The district heating sector comprises about 60 independent enterprises, with varying organizational structures.

The electricity sector gets a lot of international attention because of its major contribution to air pollution. The sector is dominated by the Polish Power Grid Company. This is a government-owned joint stock company cooperating with the Ministry of Industry and Trade. The Power Grid Company invests in the extension of the high voltage grid but does not own the grid. The Power Grid Company is responsible for import and export of electricity. The company also performs some tasks charged by the Ministry, including development studies, standardisation etc.

The Power Grid Company is a commercial monopolistic power company. Electricity produced by the large national power plants is purchased and sold to the distribution companies. Its monopolistic position is in electricity trading in the high voltage grids as a distributive trader. The main task is maintenance of the stability of the national power system.

The Polish power sub-sector exists of:
- 28 national enterprises producing electricity: 15 large Thermal Power plants, 1 Hydro Power Plant and 12 groups of power and Combined Heat and Power (CHP) plants. The directors of these organizations form the Polish Society of Power Plants.
- 33 national, regional distribution companies, 24 of which own smaller power plants (11 CHP plants and 118 Hydro plants). The directors of these organizations form the Polish Society of Electricity Transmission and Distribution.

Conclusions on the current situation in the Polish energy subsectors are drawn in next section.

3.2.4 Institutional issues and options for future reform in Poland

It is evident that Poland is an important trading partner in international energy markets. In the first place, a considerable amount of energy resources (e.g. petroleum products and gas) has to be imported from abroad, mainly from the Commonwealth of Independent States, currently in transition itself. Secondly, Poland is an important exporter of hard coal. Thirdly, the development of the European Energy Charter, relating Russian development of its energy resources to Western Europe's energy demand, has consequences for Poland. In the fourth place, an increasing number of Polish private enterprises is engaged in energy trade at various international markets. Finally, there are the various international institutions, among which OPEC, IEA and the IAEA, covering general energy issues quite relevant to Poland and vice versa. Polish

energy policy thus has important interactions with foreign actors in the energy policy area.

It is concluded that the energy sector is halfway in the transition and break-down of state monopolies to private companies. For most energy carriers a full-fledged market situation is pursued. The oil and gas sector slightly fall to the rear, although both sectors are not that important for the national energy supply. Reorganizations are already decided upon. In the lignite sector an oligopoly seems to exist with only four traders at the supply side of the market. The power sector is almost completely privatised with a great number of electricity producers and distributers in the market.

Compared to the situation in Germany and the Netherlands the number of producers is rather large, taking into account that the tendency in both countries is towards concentration of utilities. In Germany nine and in the Netherlands only four producers supply the country with electricity. In both countries the electricity sector itself is responsible for the national grid and related tasks currently assigned to the Polish Power Grid Company. The sector is explicitly controlled by the State and the Parliament. A monopolistic position in the energy market has consequences for the institutional set-up of the organization structure. This issue will be dealt with in the last chapter.

Analysis of the currently established institutional framework permits the following conclusions:

1. There is a strong incongruence between numbers of tasks (see Annex A) and staff. Assignment of tasks to the various sections is at variance with the practice commonly observed in EU countries.
2. The large number of economic actors in all energy subsectors makes a planning approach all the more pressing. it is quite clear that separate subsectoral planning or even at the utility level will not result in optimal marginal costs for energy supply. The large number of actors makes it urgent to create a central body, overseeing developments in the sub-sectors and that should be assigned with the responsibility for subsectoral plannings.
3. Another observation is the existence of a soft and a strong division in the DOE. Energy policy and balances, information and statistics are not expected to be of the same political weight as energy investments and technology and energy industry equipment. It is somewhat surprising to see the section of Energy Sector Restructuring in the Oil and Gas Section.
4. Possibly Poland's most important issue in the short and medium run is energy conservation. Poland can still realize an enormous potential in the form of 'no-regret' options, which would contribute to a more favourable national balance of payments. Responsibility for energy conservation though is scattered over at least four sections, i.e. Energy Policy and Balances, Energy Sector Restructuring, Energy Investment and Technology and Energy Industry Equipment.
5. Remarkable is that one task, described as 'Decision making on the substitution of technological processes, on the design of the energy related equipment, on the construction process and on the withdrawal of the permission for the production and sale of devices with a high energy consumption' is assigned to two sections. Usually, conflicting responsibilities do not contribute to efficiency of the bureaucratic apparatus.

6. To put foreign relations directly under the Director General and both Deputy Directors leads to a consistent and efficient approach of e.g. foreign investors. Nevertheless, investments in the energy sector are the shared responsibility of the Sections of Foreign Relations and Energy Sector Restructuring.
7. Energy R&D and the design of scenarios is the shared responsibility of Energy Policy and Balances, and Information and Statistics.
8. Normalisation of the energy use of electric appliances rests with Energy Investment and Technology, and Energy Industry Equipment.
9. Industrial energy efficiency improvement, one of the most crucial environmental and economic policy goals, is addressed by Section Energy Sector Restructuring, while Sections Energy Investment and Technology, and Energy Industry Equipment are involved in this aspect of energy policy as well.
10. The supervision over gas and electricity grids is done by Section Energy Policy and Balances, although this is not a typical executive section in the DOE.
11. Drawbacks of the internal organisation of the DOE are also felt by enterprises in need of large quantities of energy and willing to make investments to reduce dependence on the local energy market. These enterprises are confronted with at least three different Sections of the DOE, being Energy Sector Restructuring, Energy Investments and Technology, and Energy Industry Equipment. This will not be an example of smooth efficient procedures, but instead, the formation of a barrier for economic activities. This practice is also giving ground to the conclusion that much of the renovation of Polish society did not happen according to plan; muddle and spontaneity have shaped the progress of reform just as much as careful planning [10]!

The overall conclusion is that the current institutional set-up is in for substantial improvement. The DOE should be staffed properly, more in line with counterpart organisations in other European countries. The market should be provided with optimal conditions for individual entrepreneurship, giving a high extent of freedom to undertake all kinds of legal economic activities. At the same time a flexible control system should be designed and implemented to secure national interest and safeguard people from undesired side effects.

One aspect in relation to policy implementation that should be mentioned here is the degree of realism in making legislation. Because former policy approaches were strongly top-down oriented a certain preference for law and order might be expected. Poland, however, should not be trapped in massive legislation that is not controlled and sanctioned by mechanisms accompanying it. This situation is often encountered in developing countries where lack of resources cause a power vacuum. it should be acknowledged that a few controlled and sanctioned key rules are more important than a beautifully designed legislation that remains ineffective, thus contributing to a general doubt regarding to an effective administration.

Finally, the lack of a clear distinction between politically assigned and career managers, and frequent changes in the assignments of decision makers are important factors impairing the efficiency of the DOE. A strong decisive DOE is the most appropriate institution to negotiate with transnational corporations in the energy field and with multilateral and private development banks.

Because the latter often appear to be better informed than the central government in many countries, it is of urgent importance to establish a strong regulatory body dominating the energy domain. This does not prevent that a strong regulatory body does not heavily draw on what the actors in the energy field communicate towards the authorities. Again it is stressed that in EU countries information, public relations or marketing are of decisive importance for all aspects of policy making such as: broad societal acceptance, dissemination of operational knowledge (e.g. for starting businessmen), risk analysis and risk communication, development of markets, effectivity of policy measures, etc.

3.3 Energy sector management in European Union Countries

3.3.1 Introduction

Institutional orders are always subject to change because of changing economic and political situations. This renders a given institutional set-up in a country a temporary solution to problems which were at the political stage just before. There is no ultimate comprehensive set-up lasting for ever.

Taking the historical aspects of the prevailing order into account the conclusion is warranted that prevailing national institutions are the product of a certain moment in history and typical for the country concerned. Consequently, it is an open question as to whether from an institutional order in one country lessons can be drawn for another country. Although numerous significant differences can be found across countries, comparable solutions can be identified as well. Description of the similarities and explanation of crucial conditions may be helpful to Polish society to mould its institutional order to its needs.

3.3.2 The European Union

As the end of the twentieth century draws to a close, Europe is at the eve of fundamental changes. The most significant change is the growing political power handed over to the institutions of the European Union. The movement into the direction of integration, marked by milestones such as the design and signing of the Maastricht Treaty, proceeds slowly. National sovereignty becomes limited in favour of strengthening the political power of EU institutions. An opposite tendency can be identified in the growing regionalisation within countries (e.g. Spain, Italy and Belgium), result of the quest for autonomy and self-determination. Although prediction of the outcome of these conflicting tendencies is hard, national governments sometimes appear to be in custody of the ongoing processes. Defection from the EU, in some countries sometimes suggested in profound frustration, is not an economically viable way anymore.

In the European Union nearly all political themes are prone to discussion in sharp contrast with the situation only some years ago. At that time subjects

such as national security, monetary policy and foreign policy were not negotiable. This changed remarkably during the last decade. Energy is perceived as one of the areas in which Union policy goals can be achieved relatively quickly. There is a strong feeling that privatisation, the breakdown of natural monopolies and the stimulation of competition are important preconditions to low energy prices and enhanced quality of services. Because energy is not a sensitive political issue these days, it is relatively easy to achieve unamity in the EU. In times the energy issue fits in the issue of national interest, political progress on this point was beyond attainability. Third party access, separation of electricity supplier and exclusive supply region, marginal costs as the basis for price setting, are subject to discussion, which is a kind of revolution in the world of electricity production and distribution. Again this is an example of permanent change of the energy sector, having consequences for the national institutional set-ups.

Although privatisation of the energy sector causes a strong incentive for deregulation away from national decision making, there are strong counter movements as well. Especially environmental concerns, reshaping energy problems as environmental issues, warrant integration of the energy issue in environmental policy at national and at subnational level. Most EU countries have developed a comprehensive national environmental policy, although not always adequately footed by the financial resources necessary for implementation. At the institutional level these movements are reflected by a gradual relinquishing of power by the energy departments while, simultaneously, environmental departments and ministries are gathering more strength.

3.3.3 Two main organizational principles

Energy institution arrangements have varied over time as well as between countries. In all EU countries, however, there are units, services, departments and sometimes ministries, having the responsibility for energy policy formulation. In the majority of EU countries (namely, Belgium, France, Germany, Greece, Italy, the Netherlands, Portugal, Spain and Austria) these entities are located under a minister and in a department with wide responsibilities for economic and industrial policy. In some cases (e.g. Portugal and Spain) there is a junior minister or secretary of state responsible for energy within a larger department. In other countries the energy institution is headed by a director general.

Three countries have independent Departments of Energy (Denmark, Ireland and Luxembourg). These separate Departments were created in response either to the need for central control over the development of indigenous resources of oil and gas (e.g. Denmark) or in response to the energy crisis of the seventies (e.g. United Kingdom). The Energy Department of the United Kingdom was abolished during 1992, leaving many aspects in the field of energy to be determined by the market place.

Many other Departments are also concerned with aspects of energy policy, particularly those responsible for finance, foreign affairs, environment, and science and technology. All countries have now set-up departments or agencies responsible for environmental policy. These departments take a keen interest in energy policy and particularly energy efficiency. Coordination of

energy policy will increasingly pose problems in many cases as energy matters are more and more scattered over different ministries. At the same time the institutional arrangements reflect that the need for coordination is less strongly felt than before. An accompanying cause for deregulation is the growing need for liberalisation, strongly advocated by the European Commission. This would result in less state involvement in the energy sector.

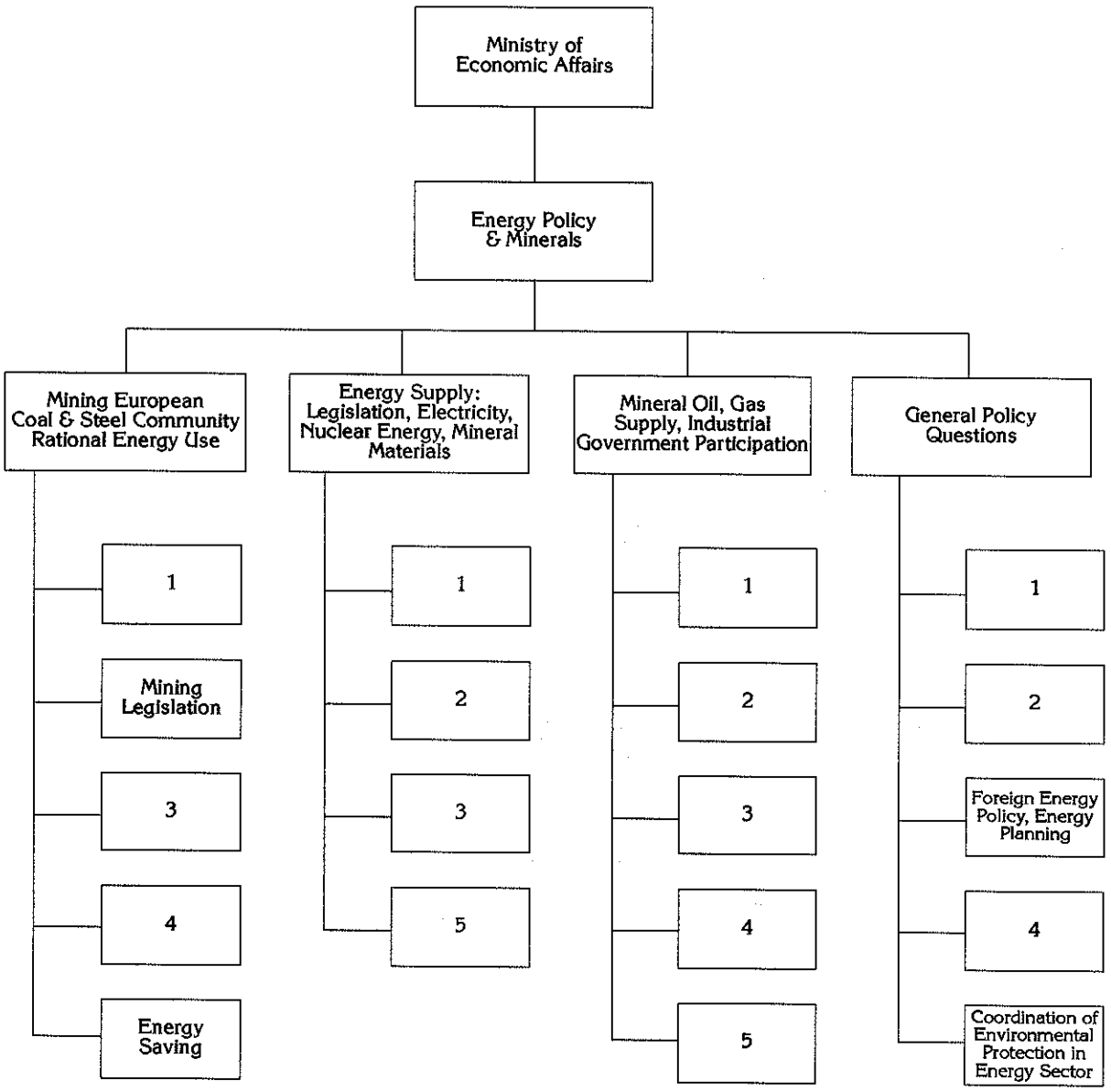

Figure 3.2 *German Ministry of Economic Affairs, Department of Energy Policy and Minerals*

There are two predominant categorizations that organize the main structures within the energy departments and ministries: according to energy point of view (energy carriers) or the economic point of view.

The most common criterion for the energy sector organisational set-up in a Ministry is according to the *type of energy carrier*. This practice allows differential approaches to energy carriers strongly differing in nature: storable, tradable and transportable oil and coal, versus direct use of the grid dependent sources of electricity, gas and heat. Resident oil and gas reserves and hydro

potential, being natural resources usually perceived as national property, need other control measures than other sources. Nuclear energy is an energy source which needs quite different approaches from policy makers. Strongly depending on the local political situation nuclear energy remains unquestioned in France, while in Germany a line ministry has been established for the safety question associated with nuclear energy (Ministry for Environment, Nature Protection and Reactor Safety). In France, nuclear energy is the responsibility of the Directorate of Gas, Electricity and Coal. It is incorporated in electricity together with hydro power plants. Apart from this arrangement there exists a nuclear service unit directly supporting the general secretariat. This reflects the situation that nuclear energy is a non-issue in France, having about 70% of its electricity demand covered by nuclear power plants.

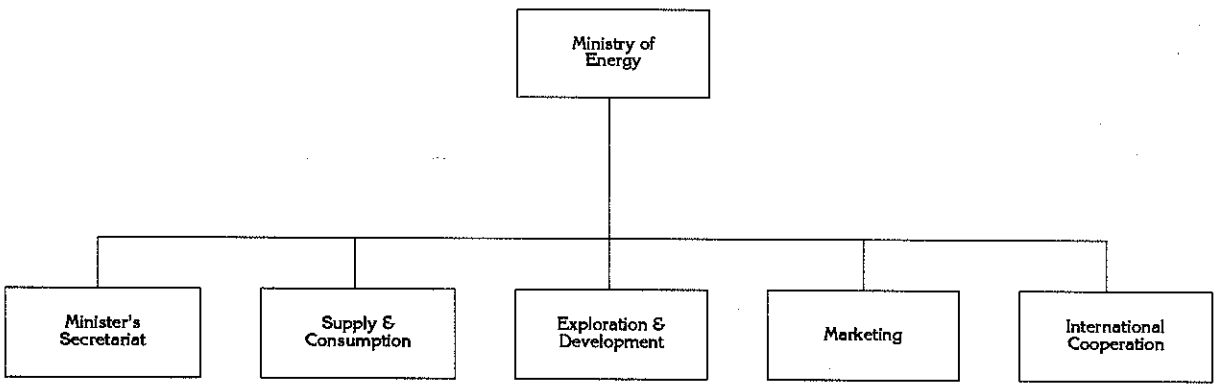

Figure 3.3 *Organizational structure of the Danish Ministry of Energy*

A second criterion for the organisation of the energy administration is the *economic point of view*. In Denmark this division results in units responsible for energy supply and consumption, exploration and development, marketing of energy services and international energy cooperation. This is a more modern market-conform organizational principle. This organisation type is in accordance with recent developments in energy network management (horizontal integration of gas, water and electricity in one single company). From the organisational point of view there is very little difference between managing a national mail system and managing a grid-based energy supply infrastructure. In larger countries, especially those with a special interest in one or more energy carriers (such as in hardcoal in Germany) some extent of separation between the energy carriers is needed. In Greece the economic division within the energy department of the Ministry of Industry, Energy and Technology results in an organisation shaped after the state energy enterprises of oil and gas, traditionally being powerful nationalised monopolies.

In several countries both criteria are mixed, such as in Germany. The main division exists of coal, energy supply and general energy policy. This division is a clear example of the historical and relatively strong position of the German coal sector. Interesting detail is that energy R&D is taken from the energy department and assigned to the Ministry of Science, again showing a national peculiarity in terms of the interest in technological progress as the motor of industrial development. In Portugal the economic division is mixed with a territorial one, defining some industrial target zones, thus reflecting the importance to be able to develop regionally coherent policies.

There is a large variety in EU countries as far as financial resources for the energy institutions are concerned. In Portugal and Greece, as well as in the poorer countries (e.g. Ireland) limited financing resources are available. In contrast, the richer countries use large amounts of money for policy preparation (indicative planning and research), implementation (subsidization, taxes) and control.

Another interesting phenomenon which can be observed in OECD countries is the gradual integration of renewable energy units in the existing structure. Often they are put together with energy efficiency or conservation. In fact this is an example of relatively recent societal concerns about environment and sustainability. These concerns are translated in structural changes within the institutional order which do not yet necessarily urge for fundamental changes of the order itself. The existing institutional set-up is able to integrate the new policy area. In fact, positioning renewable energy in the energy departments shows that although environmental policy may win political weight (it is reasonable to see renewable energy sources and energy conservation as solutions for environmental problems), environmental departments are still not outweighing the power of energy departments. Generally spoken these new institutional entities are much weaker than the existing main structures sharing the energy policy responsibility. Older and strong core ministries are much more effective in managing policy issues than the younger environmental Ministry, among others, since the latter having younger and less-experienced officials.

In most countries the units and services organized according to energy carriers are complemented with a strong unit made responsible for general energy policy (see figure 3.2). In this unit energy planning studies are usually commissioned (sub-unit Energy Planning), being an important part for the short and medium term energy policy design. Sometimes a planning unit is established outside the main structure as a service unit directly functioning to support the Secretary General for Energy. In the latter case energy policy plans seem to function as a kind of base case allowing to judge general developments in the energy field. Energy planning being structured in a general energy policy unit has a much higher weight, as the reference basis for energy planning key decisions, large investments and strategic decisions on national and regional infrastructure.

A significant development in EU countries is the gradual replacement of coal from the centre of the energy stage. Coal was and is widely perceived as the motor of post-war economies, with strong regional and national political ties. This painful process started in the late sixties in the Netherlands. Countries like Belgium, Germany and the United Kingdom have great difficulties with closing down their national coal industries. Costs have increased such that none of the economies can afford any longer to subsidize these industries. In spite of extensive rationalisation and mechanization, costs cannot be reduced further while low world oil prices increasingly widen the gap between the costs of oil and coal. Nevertheless, closing these industries is a hot item for politicians fearing massive social unrest as was shown in the United Kingdom in 1992. Environmental concerns, further decrease of the mining labour force and the price mechanism are believed to legitimate the abolishment of coal. In Germany cross-subsidization will be phased out gradually and in the first

decade of the next century the majority of coal mines (hard coal and lignite) will be closed.

Another tendency is the downgrading of the former energy ministries into energy departments. Under the influence of the European common market further privatization can be expected to result in smaller administrative bodies that have to delegate energy policy tasks to private companies. In countries like Denmark and the UK the process of privatization is well under way, although experiences differ substantially. In Denmark extensive local responsibilities safeguard energy supply at affordable costs, while in the UK the introduction of a free electricity distribution market resulted in devastating price increases up to 35% for industry and as high as 30% for households. The establishment of one large national electricity market did not have the expected effect of decreasing energy prices and improved energy services.

As compared to Denmark and Norway, the UK established one national market. However, in the lion's share of EU countries local authorities fight to maintain some control over local utilities distributing electricity. As can be noted in Germany, the former East German States insisted on a special position concerning electricity supply. This position can be characterised as a clear choice for regionality versus national solutions with respect to electricity supply. Although the main argument appeared to be energy price control, the issue of guaranteed influence on the local electricity supply was equally important. It should be studied what factors make that a national electricity market is superior over regionally organised markets. In Denmark and Norway the privatised, locally organised electricity sectors perform remarkably well [12].

In all EU countries energy departments are responsible for the design of energy emergency legislation, mainly as a result of the oil crisis of the seventies. Usually this legislation defines a national strategic stock of oil and oil products, expressed as a quantity sufficient for a six to nine months delivery interruption. In the Netherlands the density of gasoline stations along the motorways is also part of this legislation. Sometimes a rationing system is designed for emergency situations.

In virtually all countries specific energy legislation dictates fundamental rights. Electricity laws define rules for natural monopolies of the production and distribution sector, consumers' right to be connected to the grid even in non-profitable situations, responsibility for the extension and maintenance of the national grid, etc. Laws on natural energy resources define rules about prospecting, licensing, drilling and landing of gas and oil. Price formation is usually under the control of government, although in the UK this is left to the market. Also society's share of national resources is secured in different sets of rules.

In all countries the energy infrastructure is under the political control of Parliament. Governments, either central or federal, have varying responsibilities and policy instruments to implement energy policies, but finally parliaments have to ratify important key decisions on siting issues, investments in the sector and license questions. This practice is based upon the considerations that energy policy is strongly interrelated with general economic policy, that energy production has a long lead time, that the energy

issue has a national strategic component and energy is often a major source of national income contributing significantly to GDP. From this point of view it does not come as a surprise that energy issues sometimes reach the top of the political agenda, reflecting society's interest in the issues.

3.3.4 Case studies: the Netherlands and Germany

In both countries the Ministry of Economic Affairs has a department responsible for energy issues. This responsibility seems to be unquestioned as description of detailed tasks is hardly conflicting with other departments in other ministries. This is somewhat odd because in both countries environmental concerns already gave rise to the issuing of national environmental plans, containing national emissions or a plethora of environmental goals. In fact environmental aspects permeate all domains of national policy making. In this respect it is a peculiar observation that the ministry responsible for economic growth is also responsible for limiting environmental damage related to energy use. Both these responsibilities are in conflict, as it is widely perceived that economic growth needs abundant energy supply as a necessary prerequisite. Apparently environmental concerns are secondary considerations in the core activity of the Ministry, at least in the Netherlands [13].

Energy policy goals of both countries are quite similar. General policy goals such as the provision of a safe, secure energy supply at low costs are identical. Understandable differences exist as a result of the different resource endowments. Germany, always heavily relying on technological progress, invested substantially in nuclear power. Coal industry, nationwide perceived as the motor behind the German 'Wirtschaftswunder', is strongly supported. In the Netherlands the availability of natural gas shaped the energy mix of economy. In the near future the energy mix of both countries is expected to converge as gas exports to Germany will increase at the expense of a phase out of nuclear energy and hardcoal. In the Netherlands convergence of the energy mix with surrounding countries is explicitly used in the political debate on nuclear energy. The argument goes that identical national energy mixes do not result in comparative advantages for economic production for one country or another. Evidently however, tax legislation can be applied a policy instrument to achieve differential effects, especially in case when regional policies are to be developed.

Both countries are equally involved in EU policy making and implementation. The strong call for more liberalisation, deregulation and privatisation of the EU urges revolutions in the energy sector institutions, that were not thought possible only a few years ago. Especially in case of the gridbased energy carriers a quick reorganisation results in huge concentrations in production and distribution subsectors. These reorganisations are accompanied by legal changes. In recent years production and distribution of electricity have been separated in the Netherlands. At the local level an integration of public services, being electricity, gas and water, can be witnessed.

Environmental goals often are in conflict with goals in other policy domains. Consumers and producers, but also policy makers and administration officials in both Germany and the Netherlands have different sets of priorities.

Although policy is almost completely redirected towards environmental goals, coherent implementation of this policy is rather underdeveloped. Three main types of policy instruments can be distinguished: communication-, legal- and economic instruments. Before the reorientation of general policy in the Netherlands environmental policy consisted mainly of prohibitions, commands and licences. Legal instruments became quite unpopular: they do not fit in a democratic society of self reliant and responsible citizens. Problems with enforcement were a major factor for this lack of popularity at that time. Lack of resources (people and financial means) basically was the underlying reason. With the technical developments, allowing a high extent of technical control, and abundantly available resources and experiences, legal instruments need some reconsideration. Since a few years behaviourial change is in the focus of attention, without much success. Communication has not proven to be a strong instrument so far. Covenants or agreements are rather nonobligatory instruments and in most of the agreements with industry a clause is taken up which allows industry to underinvest if economic growth is less than expected. In general, communicative instruments fail when personal short term losses are opposite to long term societal profits, a phenomenon called social dilemma.

The sectoral evaluations of energy conservation policy of the Dutch Ministry of Economic Affairs are not convincing society. The Dutch environmental institute (RIVM) evaluated the Ministry's environmental policy goal implementation [14,15]. The ever growing energy end use is identified by RIVM as the main reason for not reaching the objectives. The policy instrument used by the Ministry is a kind of agreement, called covenant. In a covenant the Ministry agrees with entire economic subsectors or major companies on emission ceilings. The agreements lack sanctions, but contain instead escape clauses in case the economic situation does not develop positively. Responsibility for the quantified emission reduction remains with the branch organisation, giving individual companies full freedom to choose their implementation strategies (being energy saving, introduction of new process technology, management control etc.). Progress in realising environmental goals is restricted to larger companies. Smaller businesses and companies are much more difficult to address and do not tend to make much effort to reach the environmental policy goals. Some critics point to the possibility that the Ministry exaggerates the successes in the sectoral evaluations in order to have a better position in the trade off process with other ministries when discussions are started on the second national environment plan to be issued at the end of 1993 [16]. This plan will contain the distribution of efforts expressed as percentages to be realised per economic subsector.

The chosen policy instrument to reduce emissions reveals the ambivalent position of the Ministry of Economic Affairs. The primary interest of the Ministry is in creating the conditions for economic growth, and secondly in realising environmentally benign production. The clauses in the covenants clearly show this orientation.

In Germany environmental policies are less strict than in the Netherlands. The political tradition of consensus between trade and industry and the government largely defines the process of political reorientation: i.e. the general focus on the former East German region and the environmental concern. In the policy documents it is made clear that government expects the economic

partners to take their responsibilities without enforcement of proportional emission reduction shares for every sector, although this may result if national reduction stays out of reach next few years.

An important difference between both countries is the existence of a R&D Ministry in Germany, where in the Netherlands R&D programming and control is located in the energy agency NOVEM, established by law as an autonomous legal entity and funded by the State. In Germany energy planning and policy preparation is coordinated by the Ministry for R&D and commissioned to licensed research institutes having a special status. The organisational structure in the Netherlands and Germany is at variance, but final implementation is comparable. In the Netherlands too, specialised institutes are nominated to carry out R&D programming. However, an R&D Ministry is much stronger evidence of the fundamental interest society is putting in industrial innovation. A Ministry implies direct access to high level decision making and financial resource allocation. Germany invests a much higher percentage of national income in R&D than any other country in Europe.

3.4 Conclusions

The question addressed in this chapter was:

How is the energy administration organized in Poland and how in EU countries? Which institutional options are applicable to the Polish energy administration?

With a general view on what was the situation in Poland before the 1989 turnover and what is it nowadays, reflections were stated on the institutional organisation in EU countries, Germany and the Netherlands in particular. General conclusions are drawn here on the policy environment and important choices to be made when the design of an institutional order is at stake.

Reviewing the energy institutions in the EU countries, the increasing influence exerted by EU institutions on energy matters has to be taken into account. As discussed already, pressure to introduce and expand deregulation and privatization has at least two important consequences. On the one hand government involvement is decreasing, and energy departments are shrinking. Both tendencies are reinforcing each other. The market is allowed to take more and more responsibilities, leaving merely some control tasks for the departments. On the other hand existing energy institutions, notably the electricity subsector, is responding by ever growing institutional conglomerations, though still at a national level. The competition between 'Electricité de France' and 'Rheinisch Westfalische Elektrizitätswerke' to intrude in each others national market are signals of the imminent internationalization. In the Netherlands only four, and in Germany only nine electricity generating companies supply the entire country with electricity.

In the great majority of European countries a subsiding public attention for the importance of energy issues can be noted, though some issues still reach the front pages: nuclear energy (the Netherlands and Germany) and coal industry support (Germany, United Kingdom, Belgium and Spain). The abolishment of energy ministries, being substituted by energy departments, mostly fitting in

ministries of economic affairs or trade and industry is part of the diminished importance of energy issues. By contrast, in a country such as Denmark one can observe that the rather recent findings of substantial fossil fuel resources and the political decision to give society its share in the profits, resulted in the establishment of an energy ministry.

In all EU countries exists a strong government involvement in energy policy matters. State influence on energy subsectors varies widely. The influence is relatively limited in the oil subsector. Nevertheless, also for this sector legislation exists for emergency regulations, concentration of fuel stations along the motorways, tax, duty and pricing regulations, environmental laws, physical planning acts among others. Gas, electricity and district heating are characterised by stronger government involvement, while the nuclear subsector is completely regulated in most countries, with France being an exception.

Establishment of a Department of Energy in the Polish Ministry of Industry and Trade is supposed to be the best solution for Poland. Not withstanding the general feeling that energy will be among the first policy areas to be absorbed by EU institutions, quick integration of national energy policies into one European energy policy is not expected soon. Apart from the fact that Poland is still far from the point of joining the EU, it is a safe strategy to establish a powerful energy department as a means of managing the energy sector. A management that can improve conditions for privatisation by regulating issues such as third party access, grid maintenance, separation of electricity supplier and exclusive supply region, and introduction of prices based on estimated long term marginal costs, is an effective strategy to smoothen conditions for later integration of Poland in the EU. In the mean time, scarce resources can be applied at those places were effect is largest.

An important conclusion to be drawn is the increasing practice in European countries to strengthen environmental policy. Almost every country has issued national environment plans. The departments and ministries of environment tend to grow and energy issues become increasingly defined as emission problems. Both tendencies, downgrading of energy departments and growing environmental departments, result in contradictory actions in terms of government involvement and (de)regulation. Evidently, environmental issues have to be taken into account as societal concern warrants clear political action. In Germany the decay of the national standing stock of forest trees provoked quick policy responses by German politicians. This was possibly stimulated by the growing influence of the new Green Party. Also in Poland strong societal concern for the deplorable state of the Silezian woods, as a result of acidification, can develop into a political movement. In the Netherlands all sectors in society: industry, transport, households, agriculture are affected by national environmental plans, that have been introduced recently.

Endowments of energy resources are an important factor underlying the institutional set-up of the national energy sector of resource-rich countries. This is irrespective of the factor whether the energy resource endowments pertain to hard coal (United Kingdom, Germany, Belgium, Spain), lignite (Germany, Ireland, Greece), gas (the Netherlands, United Kingdom), nuclear energy (Germany, France, Spain, Belgium) or hydro energy (Norway). The corresponding departments or units are relatively strong when influence in

energy policy is concerned. Special treatments from the side of the administration, and subsector specific legislation and cooperation result in a special status for the energy carriers concerned.

In general, one can conclude that the establishment of the DOE in the Ministry of Industry and Trade in Poland is a practice often applied in the rest of Europe. The distribution of tasks and responsibilities in Poland's DOE, however, is at variance with current practice in most EU countries. In the field of energy much more is already left to market forces by a receding public sector in Poland as compared to other European countries. It is doubtful whether this situation is the most beneficial one for Polish society as a whole. The low state involvement in the management of the energy sector results in an energy supply system which easily becomes an obstacle to economic growth. Long lead times for the realisation of energy supply infrastructure urge early action. Investments that may well turn out to be too risky to be timely carried out by the private sector, can endanger economic recovery for a longer period. In next chapter suggestions will be presented that might be helpful to address this problem.

4. RECOMMENDATIONS

The basic issues addressed by the present comparative study are:
- Rationalization of the institutional framework of the energy administration to present-day needs of Polish society;
- Institutional and procedural arrangement for the commissioning of energy planning studies, to be conducted so as to render optimum contributions to the formulation of national energy policy;
- Improvement of the level of acceptance of the policy guidelines based upon the energy planning studies.

It should be kept in mind, however, that national institutional orders are not readily replicable because these are the upshot of national, social and cultural histories, each having many unique features. A comparative analysis can be legitimated by the desire to have an overview of major possibilities to furnish an institutional order, giving maximum flexibility when an institutional order has to be designed.

Mainly one of two criteria is used for the organisational breakdown of institutional orders in EU countries. The two criteria are: main energy carriers applied in the economy and stages of the economic process. The criterion applied most frequently is 'main energy carriers'. Although the EU is pushing the market approach with emphasis on privatisation and deregulation, which favours the economic process principle, it is recommended to choose in favour of the main energy carriers principle. As long as coal is an important economic sector, significantly contributing to the balance of payments and GDP, an energy carrier orientation allows for optimal management of the natural resources. Secondly, from the subsector management point of view it reflects fundamental differences between the energy carriers, as for exploration, extraction, transportation, marketing, use and emission patterns. An important consideration is that a strong energy department prevents by no means a market-based orientation.

The electricity sector is almost completely privatised in Poland as is the case in the United Kingdom. As long as the legislative framework needs improvement, lessons can be drawn from the Danish and especially the Norwegian experiences with a highly privatised electricity sector, paired with an important contribution to total generating capacity of private captive plants. The choice between one national or several local markets needs more study at this stage.

Another possibility for the design of an organigramme of a national energy planning and policy unit is mixing energy carrier and geography criteria. Justification of this proposition can be based on a number of considerations. Energy use in Poland is associated with devastating environmental problems. The use of hard coal and lignite supplying about 80% of the energy demand, causes a severe acid precipitation problem, while, at the same time, contributing to the greenhouse effect. Acid precipitation is most serious in the southern and central region of the country, which coincides with the occurrence of the main industrial centres. Positioning energy in a department in the Ministry of Industry and Trade thus allows integration of energy policy and industrial policy, thus realising the conditions for an integrated approach

of economic growth at low energy costs, taking into account the environmental consequences of economic activity.

With respect to environmental concerns one can witness a revival of the energy conservation issue in most countries. However, energy conservation is not limited to a particular energy source. Strongly influenced by the general attention for environmental decay, energy conservation returned on the political agenda as a solution to environmental problems. It is rather artificial to treat it like an energy problem and consequently leave the responsibility in an energy department. In most reviewed countries the energy conservation unit is a rather weak subunit amidst the other energy subunits. A lesson that can be drawn from the Dutch experience is that energy conservation does not fit in an institutional structure designed to push economic growth by realising favourable conditions for economic activities. Energy conservation legislation usually raises barriers to these activities by causing longer lead times (procedures) and higher investment costs. On the other hand energy conservation legislation also creates favourable conditions for technical innovation and new products. It is nevertheless doubtful as to whether environmental innovations will fully compensate barriers to growth in traditional sectors put up by energy conservation legislation.

It is thought to be a much better solution to fit energy conservation in a ministry of environment. Because burning fossil fuels results in the emission of environmentally benign gases the problem has two equally important aspects: energy is a problem as such and energy defined as an environmental problem. With integration of energy conservation in the Ministry of Environment it is expected that a centralised approach of the entire environment problem leads to a balanced prioritization of environmental goals, allocating scarce capital resources in the most efficient way. Moreover, a firm grip on the energy conservation issue would generate the strongest impact on various environmental problems because energy use is among the most important causes of these problems. Relying on experiences in the EU, energy conservation can be institutionalised in the Ministry of Environment. However, putting energy conservation in another ministry implies procedural ties with a general energy policy unit and the energy planning unit.

The next scheme depicts the proposed outline for an institutional order for energy policy making in Poland.

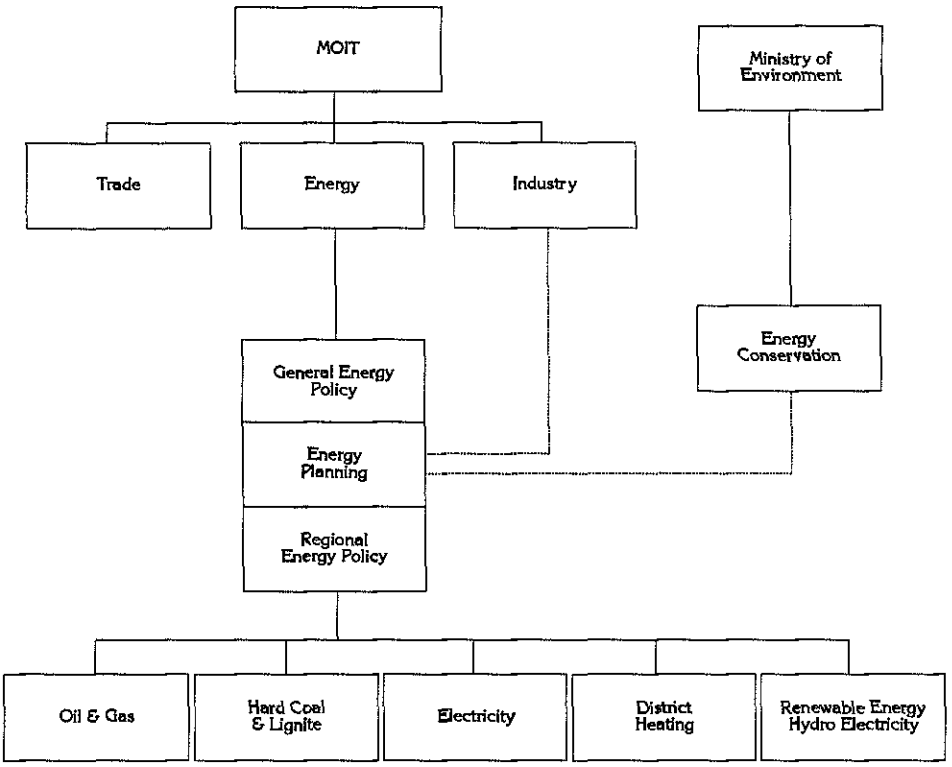

Figure 4.1 *Proposed Energy Department structure within the Polish Ministry of Industry and Trade*

The establishment of a General Energy Policy unit is a practice that is encountered in virtually all EU countries. This unit should be made responsible for:

- treatment and coordination of outlines of energy policy;
- coordination of energy policy in an international framework, for example, in relation to IEA and EU;
- treatment of budget and parliamentary affairs;
- support of the policy preparation within the Directorate General with support of statistical information, energy models and scenarios;
- co-ordination within the Directorate General for Energy of the treatment of all affairs in the energy policy field on interfaces of physical planning and environment.

It is recommended to fit energy planning in this unit, as energy planning outcomes should decisively permeate general policy design.

It is strongly recommended that the predominant practice of piecemeal and ad hoc subsector energy planning activities is phased out. Cost effectiveness of energy investments may be enhanced substantially as the national optimum tends to be at variance with the energy subsector optimums. Instead, integrated national energy planning is to be conducted having economic and environmental conditions as a point of departure. Provision of information on planning, the rationale beyond planning and the way it is used in EU countries, should have absolute priority, as planning practices in the former political system have discredited planning as a rational instrument for government and entrepreneurs to guide optimal investment strategies.

Energy policy often implies painful decisions for society. It is difficult to push back growing demands for energy resources. New electricity plants bring uneven local pressures and risks, while pay-offs are not distributed correspondingly.

This issue calls for a coherent media approach and a clear political communication strategy to the public. It is recommended to choose a media approach very carefully, showing target groups among the general public that are adversely effected by energy sector policy decisions (e.g. in siting problems) that their fears and concerns are taken seriously.

Even in democratic societies public participation in physical planning key decisions is a rather underdeveloped practice. Maybe even worse is the Dutch example of the DOE, generally believed to take a positive stand on nuclear energy which cannot be enforced in the face of massive public opposition and almost negligible support from industry. This is the prevailing political situation irrespective whether or not nuclear energy is a good alternative for the Netherlands. The example shows the importance of an unbiased energy policy approach with a clear political communication strategy.

Organisations preparing energy conservation policy at arms length of the MOIT, weigh economic policy vis-à-vis environmental policy in a less biased way, not because they are never biased, but because two conflicting responsibilities ask for an institutional setting in which the weighing is carried out on a higher institutional level. Such an organisational structure is task oriented, and it is a political choice to be made by political parties and Parliament whether and when one issue needs to be favoured over the other. Furthermore, such an organisational structure prerequisites high political capabilities of government leaders and political foremen to reconcile orientations on economic growth with the ones on the environment in a coherent way. It is in Parliament where the final judgment of policies, measures and legislation is to be made.

It seems reasonable to establish an appropriate energy institution such as the DOE with the resources necessary to accomplish its tasks, as soon as energy policy matters return at the top of the political agenda in Poland. Possibly with exception of the United Kingdom, no EU country exists with such a lean energy department as is currently functioning in Poland . More staff, highly educated in the energy field, divided over clearly distinguished subunits, is a necessary precondition to achieve and maintain economic growth without adverse impacts of energy sector bottlenecks.

REFERENCES

[1] A.D. Kant: *Government institutions of the energy sector in Germany and the Netherlands.* Working Paper III, Netherlands Energy Research Foundation, Petten, December 1993.

[2] *The Role of IEA Governments in Energy: A survey* (Draft). International Energy Agency, Standing group of long term cooperation, IEA/SLT/CRD(92)25, 1992.

[3] W. Bojarski, W.F. Filipczak: *Description of the former and current energy administration in Poland.* Working Paper I, Netherlands Energy Research Foundation, Petten, July 1993.

[4] A.D. Kant, H.M. Verhagen: *Government institutions of the energy sector in the EU countries.* Working Paper II, Netherlands Energy Research Foundation, Petten, July 1993.

[5] J.M. Gutteling: *Outlines of Risk Communication.* (Theses) University of Twente, Enschede, 1991.

[6] P. Winsemius: *Gast in eigen huis; Beschouwingen over milieumanagement.* Samsom H.D. Tjeenk Willink, Alphen aan de Rijn, 1989.

[7] H.M. de Loor, C.J.H. Midden, M. Hisschemöller: *Publieksoordelen over nieuwe technologie.* Werkgroep Energie- en Milieuonderzoek, Rijksuniversiteit Leiden, E&M/R-91/22, 1991.

[8] Stuurgroep Maatschappelijke Discussie Energiebeleid: Het Eindrapport van de Brede Maatschappelijke Discussie, Stenfert Kroese, 1983, Leiden

[9] Dr. K. Willers, December 1992, Personal communication.

[10] The Economist (Article), Poland's Economic Reforms, January 23rd 1993 (pp. 21-25).

[11] S. van Wijnbergen: *Poland is nearer to a free market than the Netherlands.* Article in NRC Handelsblad, 24-7-93.

[12] J. Moen, in: Proceedings of Energy Conference of Latin America and the Caribbean, Competition and Regulation of the Norwegian Electric Supply Industry (ESI): Experiences and Results So Far, OLADE, 1993

[13] B. van Geleuken, F. Rossel: *Zachte heelmeesters.* In Intermediair, 23-7-93, Vol 29, no 29.

[14] Ministerie van Economische Zaken, Directoraat-Generaal voor Energie: *NMP2: Evaluatie Raffinaderijen.* 1993, Den Haag.

[15] Ministerie van Economische Zaken, Directoraat-Generaal voor Energie: *NMP2: Evaluatie Energie*. 1993, Den Haag.

[16] National Environmental Policy Plan Two (NMP2).

[17] *Restructuring proposals for the Polish energy sector.* UNDP/World Bank, Energy Sector Management Programme (ESMAP), 1991.

ANNEX A. OVERVIEW OF CURRENT TASKS OF THE POLISH DEPARTMENT OF ENERGY

1. *Section for Foreign Relations*
   - Conducting discussions with energy related international organizations, coordination of and participation in international events.
   - Preparation of information for foreign organizations interested in energy investments in Poland.

   The Section reports to both Deputy Directors and the Director General of the DOE.

2. *Section for Energy Policy and Balances*
   - Preparation of projections of development and trends in the energy sector and design of energy policy guidelines.
   - Creation of conditions for energy conservation measures to be taken in industry and the wider society; dissemination of information on the principles of energy saving.
   - Initiation and performance of scientific research related to the assessment of the energy sector and its improvement.
   - Supervision of the power and gas systems.
   - Preparation of studies on energy pricing policy and participation in energy pricing and tariff evaluation activities.
   - Preparation of studies on short term and long term prognoses on energy supply and consumption.
   - Management of national energy supply in case of an emergency situation.

3. *Section for Energy Sector Restructuring*
   - Participation in the preparation of economic restructuring related to the reduction of energy intensity.
   - Preparation of the energy sector restructuring programme.
   - Evaluation of the benefit of foreign capital investment in the energy sector.

4. *Section for Information and Statistics*
   - Coordination of activities related to the implementation and operation of computerised information and data processing systems relevant to the energy industry.
   - Coordination of work related to energy accounting and statistics and the supervision of the release of energy information.
   - Organization of research activities related to energy forecasts and supervision of research commissioned by the Department of Energy.

5. *Section for Energy Investments and Technology*
   - Checking enterprises accomplishments of regulations related to energy production and consumption.
   - Decision making on the substitution of technological processes, on the design of the energy related equipment, on the construction process and on the withdrawal of the permission for the production and sale of devices with a high energy consumption.
   - Participation in the planning of State financed energy investments and supervision and periodic assessment of their implementation.

- Preparation of drafts of the regulations related to energy supply, technical standards for related equipment and devices connected to the national grid and exploitation of these devices.
- Judgment of technical proposals for projects related to energy investments and modernization.
- Assistance in implementation of environmental protection measures related to energy industry.
- Supervision of technical activities of Regional Offices of the State Inspectorate on Energy Conservation.
- Licencing operators of energy equipment and staff training courses for energy conservation.
- Decision making on disputes related to the financial amendments of energy regulations.

6. *Section for Energy Industry Equipment*
   - Evaluation of energy production and consumption improvements in industry.
   - Decision making on the substitution of technological processes, on the design of the energy related equipment, on the construction process and on the withdrawal of the permission for the production and sale of devices with a high energy consumption.
   - Judgment of technical specifications of energy consumption and efficiency of devices manufactured or imported.
   - Promotion of unification and standardisation related to the energy industry.