



OPENING SESSION

Albin Zdanowski
Director of the Upper Silesian Branch of the Polish Geological Institute

Ladies and Gentlemen,

My name is Albin Zdanowski and I am the Director of the Upper Silesian Branch of the Polish Geological Institute. It is an honour and pleasure to welcome you in Ustroń, in southern Poland, in the name of the Organising Committee of the 4th European Coal Conference, organised by our branch of the Institute.

The Upper Silesian Branch of the Polish Geological Institute is the oldest research centre in Poland studying geology and hydrogeology of the coal-bearing Carboniferous formation. Our special interest has been directed towards the economic potential of the hard coal in Poland, its quantity, quality, and mining condition characteristics. Most of our exploration and research work have been concentrated on the Upper Silesian and Lublin Coal Basins.

In the latter Basin, we have confirmed the existence of the economic hard coal reserves and have them explored. At present, an underground coal mine, Bogdanka, is operational there. In the Upper Silesian Coal Basin, we were exploring, during the last several years, the reserves of the coal-bed methane, and the geological as well as hydrogeological conditions of its economic exploitation. The environmental impact of the coal mining was also our recent concern.

I do hope that you will be satisfied by the outcome of the Conference and will enjoy the time you spent here. The Organising Committee is fully at your disposal in all the current, logistic, and other matters. All the new information will be made available in our Secretariat.

Wishing you fruitful Conference, I have an honour to invite Dr. Marek Narkiewicz, the Director General of the Institute, to officially open the Conference and to preside the Plenary Session.

Ladies and Gentlemen, thank you for your attention.

Marek Narkiewicz
Acting Director of the Polish Geological Institute

Ladies and Gentlemen, Distinguished Guests, Dear Participants,

On behalf of the Polish Geological Institute I would like to express my warm welcome to all of you attending the 4th European Coal Conference in Ustroń. We are proud that Poland was proposed as the host of the Conference and the Polish Geological Institute became the main organizer. I am convinced that both these decisions were not simply a matter of chance. Poland has been for many years one of the main world producers of coal — both hard coal and lignite. Consequently, Poland has been also a country supporting active scientific and technological research related to coal prospection, documentation, exploitation and utilization.

As the acting director of the Polish Geological Institute, I should particularly stress the role of the Institute in coal studies in Poland. Coal Geology Department was one of the first departments organized after the Institute had been established in 1918 as the Polish Geological Survey. In 1922 the Upper Silesian Field Station of the PGI was established in Ruda Śląska — the predecessor of the present Upper Silesian Branch in Sosnowiec headed by Dr. Zdanowski, President of the Organizing Committee of this conference. Before the World War II, one of the priorities in the PGI was to provide basic map for the Polish part of the Upper Silesian Coal Basin and to assess its coal potential. Leading geologists during that time were Stanisław Doktorowicz-Hrebicki and Stefan Czarnocki.

After the World War II, the PGI considerably expanded its activities in the field of coal geology. The studies of the USCB included most of its area — now belonging to Poland. Their scope was mapping but also stratigraphic and structural studies, petrology and thermal studies. New important area of studies was the Lower Silesian Coal Basin in the Sudety Mountains. The PGI, and

in particular its Lower Silesian Branch in Wrocław, prepared several regional syntheses of this basin including sedimentological-facies studies and coal-rank/thermal maturity studies within the structural framework of the basin. Beginning from the mid- nineteen fifties, the Institute started drilling activities in south-eastern Poland which eventually culminated in the discovery of the Carboniferous Lublin Coal Basin. The names of such geologists as Józef Porzycki and Antoni Żelichowski should be mentioned in this context.

Another important challenge for the Institute were prospecting activities related to Tertiary lignites in the Polish Lowlands, in central Poland. PGI is responsible for the most important discoveries including huge deposits in the Wielkopolska region (near Konin and Turek) and near Łódź in Bełchatów. At present, the latter deposit became one of the largest open pits in Europe — it will be presented during the post-Conference field trip. PGI staff led by eminent geologists, including Prof. Edward Ciuk and Dr Marcin Piwocki (vice-president of our Organizing Committee), played a key role in prospecting. The important and often decisive factor in this highly successful effort was application of gravimetric methods which allowed to discover several Tertiary grabens filled with lignite-bearing deposits.

Looking from the present perspective, the coal studies in the PGI underwent a significant evolution: from basic mapping, regional studies, through assessment of reserves in particular areas and drilling projects aimed at documenting certain deposits (mostly lignite), to more specific projects dealing with particular aspects of coal geology such as sedimentology, petrology, thermal parameters etc. During the last decade there was a considerable change of scope: to environmental aspects of coal mining and utilization, including first of all hydrogeological problems, waste storage, and land reclamation of damp areas, land subsidence etc. Coalbed methane became one of the important subjects of study both in terms of its reserves and production as well as from the environmental point of view.

The outlined evolution of the PGI investigations seems to reflect general trends in coal research worldwide. This appears to be evident also when looking at the scientific programme of our Conference. Although “classical” geological studies of coal basins will certainly continue, geologists will at the same time widen their perspective by including issues particularly important for the society and local communities, i.e. mostly environmental issues. I hope that this conference will be a further step towards this “peaceful revolution” in coal geology. I wish all the participants successful presentations and discussions that will continue after the meeting in the framework of co-operative projects, preferably international in scope. I hope that it will be not only a fruitful meeting from the scientific point of view but also a pleasant time spent in this nice corner of Polish Carpathians located not far from the Upper Silesian Coal Basin.

Best greetings to all of you, thank you.

Address of the Vice-Minister of Environment Tadeusz Bachleda-Curuś — Principal Geologist of Poland

Participants of the Fourth European Coal Conference,

I would like to greet warmly the organizers and participants of the Fourth European Coal Conference in Ustroń. I would also like to express my satisfaction that after Britain, Czech Republic and Turkey, Poland is the host of this biannual Conference. This has become one of the most important European scientific meetings for coal specialists and also for the entire geological community.

Coal used to be regarded as a Polish national treasure and was until the nineteen eighties one of the most important export commodity. However, transition to the free market economy has revealed the inefficiency of the mining sector. We saw our “treasure” in a completely different light — as an important reason for the country’s financial deficit and a sink for budget expenses. Thus, we have introduced a new policy of reducing the finance for inefficient mines, which has led to the closure of individual mines and even the whole coal districts (for example, the Lower Silesian Coal Basin).

Is coal thus consigned to history? Certainly not. In spite of the profound economic changes of the last decade, coal still dominates energy production in Poland. The contribution of coal as a primary energy source decreased only from around 95 percent in 1990 to 89 percent recently. Poland has considerable resources of coal and lignite, and hydrocarbon resources are much smaller. We have no nuclear power plants and the country is too flat for developing hydro power plants. The Polish Government pays much attention to the issues of sustainable energy economy, and in particular to the efficient use of domestic fuels, including coals and lignite.

The resources of hard coal amount to 50 billion tons including recoverable reserves of 10 billion tons. The resources of lignite are also remarkable and amount to 14 billion ton with recoverable resources of 2 billion tons. The present annual production of coal in 51 active mines is 110 million tons and that of lignite 61 million tons in 4 mines. Assuming the above large resources, future coal production in Poland can be maintained at present level for several decades and has good prospects for further development.

Due to considerable efforts of the Minister of the Environment, coal as a source of energy is becoming progressively safer for the natural environment. Technical improvements applied within power plants have led to remarkable lowering in the emission of dust, sulphur dioxides, nitrogen oxide, and greenhouse gases. In most cases the plants have fulfilled the standards established by the Minister of the Environment according to international agreements. The adverse impact of, for example, mining brines is also being limited — you have been able to appreciate such efforts at the “Dębieńsko” mine. Much is being done to restrict the unfavourable effects of the opencast mining of lignite on the environment — this will be reinforced by your excursion to the huge “Bełchatów” mine.

The Fourth European Coal Conference is also considering the relationship of geology and use of coal, energy policy issues, new technologies and the environment impact of mining activities. All these matters are of continuing interest to the Polish Government and Ministry of the Environment in particular. These problems can and should be discussed in a framework of international co-operation and by personal contact of scientists, engineers and other professionals during the conference.

Therefore, I am very glad and pleased to welcome all the participants of the conference and wish you fruitful discussions and further co-operation.

Address of Wojciech Bradecki — President of the State Mining Authority

Ladies and Gentlemen,

The production of energy is still one of the most important factors of the countries development. It is very often forgotten that this production would not be possible without using the natural resources. But the usage of renewable resources in many countries is still not very big. The role of mining is often underestimated. We all know also that the mining would not develop without geological investigations.

The previous European Coal Conferences have shown that the exchange of the geological information and new methods of geological studies was very useful and important. Most of the problems presented on your conferences are also very important for the institution I represent.

This is a real pleasure that the 4th Conference takes place in Silesia, region with a rich mining history.

I hope that this conference will be very fruitful for all the participants and for the coal mining not only in Poland but in the whole European Community.

With my deep regards.

Address of Marek Kempski — Governor of the Silesia Voivodship

Mr. Chairman, Ladies and Gentlemen,

This is a great pleasure for me that 4th European Coal Conference takes place in the Silesia Region. I wish cordially welcome all the Conference participants — representatives of the scientific circles from several European countries and Australia.

This time, following Czech Republic, Great Britain and Turkey, the Conference is hosted by Polish Beskidy, a part of the Silesia Voivodship, the region where the coal mining was and still is the predominating industry.

I would like to pass my wishes to the Conference of the fruitful exchange of the information, views and the scientific ideas, into the hands of the Polish Geological Institute Directors who undertook the organization effort. I have in mind, first of all, the Institute's Upper Silesian Branch, and at the same time, the Chairman of the Organizing Committee, Dr. Albin Zdanowski.

I am personally interested, as I have already mentioned on many occasions, in geological and environmental problems, being a civil servant in the voivodship in which coal mining plays such a substantial role, and where its environment is exposed to such a concentrated pressures. I fully appreciate the effort of scientists dedicated to those research fields and I would like to assure them of my full support.

I am really sure that the exchange of the experience and mutual consultations of such excellent international team of scientists will bring a lot of very important scientific achievements.

With very deep regards.

Eran Nakoman

President of the Organizing and Executive Committee of the 3rd European Coal Conference

Dear Guests,

I wish the occasion, which brought us together here today, the 4th European Coal Conference, to be a fruitful, friendly and memorable gathering.

As you well know, the 1st of the European Coal Conferences was held in England in 1993. The next two were convened in the Czech Republic in 1995 and in Izmir, Turkey in 1997. Today, we have the privilege of launching the fourth one in these splendid surroundings, so much representative of this beautiful country.

Allow me to direct your attention to the importance of this event by reminding certain facts:

The world's proven coal reserve (such as hard coal, lignite and anthracite) is about 1039 billion tons. This reserve is expected to last for about 254 years, if the present exploitation level continues. Coal makes 30.6% of fossilized fuel at present. This is very important to be considered because oil and gas reserves of the world are expected to be exhausted within about half a century.

Therefore, there is still more to think about the coal as a source of energy for many decades to come. With these in mind and based on the spirit of intellectual inquiry and scientific cooperation, this conference will give you the opportunity to exchange all kinds of your scientific ideas and explore the possibilities of further cooperation with regard to this energy source for the considerable future.

I would like to give you brief information about the city of Izmir where the 3rd European Coal Conference, for which I had the honour of being the Chairman of the Organizing and Executive Committees, took place.

The city of Izmir is the third largest city in Turkey, after Istanbul and Ankara. Behind the promenades and avenues, which follow the shoreline, the city of Izmir, gently ascends the slopes of the surrounding mountains. Izmir's port is second only to Istanbul's.

Though a cosmopolitan and lively city all year round, especially during the International Arts Festival (June/July) and the International Fair (August/September), Izmir bursts with an added vibrancy. The original city was established in the third millennium B.C., and at that time shared, with Troy, the most advanced culture in Western Anatolia. By 1500 B.C. it had fallen under the influence of Central Anatolia's Hittite Empire. In the first millennium B.C. Izmir ranked as one of the important cities of the Ionian Federation; during this period it is believed that Homer resided here. The Lydian conquest of the city, around 600 B.C., brought this period to end; Izmir remained little more than a village throughout the Lydian and the subsequent 6th century B.C. of Persian rule. In the fourth century B.C., a new city was built at the instigation of Alexander the Great on the slopes of Mt Pagos. Izmir's Roman period, the first century B.C., gave birth to the second great era. Byzantine rule followed in fourth century and lasted until the Selcuk conquest in the 11th century. In 1415 Izmir became part of the Ottoman Empire.

The 3rd European Coal Conference was held in such a location between the 5th and the 8th of May in the three small and one grand meeting halls of the Sabanci Cultural Centre. The attendance included Ministers and the Governor representatives from the state, Mayor and Governor of the city, rectors of the three universities of the city, deans of the various faculties, faculty members and delegates.

The Organizing Committee, which I chaired, consisted of 26 representatives from the universities and leading government and industrial organizations. In addition to the Executive Committee with its 14 members, there was a Scientific Committee, which included such distinguished person from the field as Prof. Dr. Vladimir Bouska, Dr. Rod Gayer, Dr. Jesus A. Pajeras, Prof. Dr. Michael, and K.G. Whateley. The number in attendance was over 200 from Australia, Azerbaijan, Belgium, Canada, The Czech Republic, Estonia, Germany, Indonesia, Israel, Japan, Pakistan, Poland, Romania, Russia, Sweden, the United Kingdom, Ukraine, the USA, and Yugoslavia. During the conference, 64 oral and 27 poster presentations, selected by the scientific Committee, were presented.

The papers presented could be grouped in terms of coal geology, geophysics, geochemical exploration, mining operations, technology and environmental problems. About 60 of these papers were published in a 612-page book containing 198 tables and 291 figures. Those who have not obtained this recent book will find it in the stand set up in the lobby. I would like to state that the time elapsed between the time of the conference and the publication of this proceedings book was gainfully spent for the extensive editing process required.

Prior to the conference, a field trip was organized to the Soma Coal Field which supports a 1034 MW power plant with an annual production of 14 million tons of Miocene coals, with a reserve of 623 million tons. This trip enjoyed a big interest from the delegates.

Two scientific field trips were planned after the conference. The first was to the Southeast Anatolia Lignite Field with a reserve of 664 million tons. This field feeds the Yatagan Power Plant with 630 MW capacities.

The second trip was made to the Zonguldak Bituminous Coal Fields. These fields with a reserve of 1.300 million tons are exploited by underground mining and constitute the only source for bituminous coal production. They are located in the vicinity of the Black Sea in the northern Turkey and are part of the Northwest Anatolia Carboniferous Basin. Both trips drew a large participation.

There were some social activities taking place through the course of the conference. Among these the Anatolian Culture and Folklore night, which was performed by a group of 150 dancers, enjoyed an immense interest.

I sincerely think that those who attended the 3rd European Coal Conference enjoyed not only the scientific quality of the event, but also the activities taking place in an exquisite and authentic atmosphere where memorable and long-flashing friendships were waiting to be established. Many delegates had the chance of observing first hand the way of Turkish life, folklore and cuisine and left behind true friends who would remember them for the future to come.

I have a feeling that we may be seconded by the people of Poland, though I do not think I will be holding any grudges if we did.

I send my best regards and wish you happy stay.