The Oil and Gas Industry in the Second Republic of Poland. An Attempt at a New Interpretation of Sources

Summary

The article reviews the most important statistical publications on the oil and gas industry in the Second Republic of Poland. The recommended sources allow an in-depth study of the development of this industry, the volume of oil and gas production and the scale of production of oil and gas derivatives. The article also discusses the personnel working in the energy industry, consumption and prices of oil and gas, investment works, etc. This warrants further and expanded research on the impact of the oil and gas sector on the overall socio-economic relations in the Second Republic of Poland. Furthermore, the essay offers an in-depth analysis of the diplomatic and economic relations of interwar Poland with other countries who were its trade partners. If we wish to refer to this heritage in a thoughtful way and draw on it for knowledge and experience, we need to understand it better.
Keywords

Second Republic of Poland, Galicia, society, economy, society, oil, gas, industry, imports, exports, prosperity, research, science, statistics

Introduction

For a long time, the trend in historiography was to consider matters of industry mainly from the vantage point of economic factors and technological issues. In recent years, we have begun to pay more attention to the culture-forming role of industry. We are placing more emphasis on social, cultural, moral, political and diplomatic issues related to the economy. We are also looking more closely at the people behind it all: not just executives anymore, but everyone else, from inventors and scientists to entry-level employees. Today we know better that every workplace is a system of interconnected vessels and its success depends on the attitude of more than just a narrow circle of management. We have also started to appreciate the role of women in the economy and modernization in general (including social modernization) (see Matuszek, 2011, pp. 43–72). Given this context, we can attempt a new interpretation of the sources, both those known and those that have not yet been examined.

A closer look at the birth of Poland’s oil and gas industry reveals an important synergy between the economy, society, politics and science (see Figure 1). It is generally accepted that the turning point in the history of the two industries is the achievements of Ignacy Łukasiewicz, who was the founder of the world’s first oil mine in Bóbrka near Krosno and invented the kerosene lamp (Boniak, 1985). He is also notable for inventing other uses for oil and petroleum products (including the production of lubricants and asphalt). Łukasiewicz is also a noble example of the social responsibility of an entrepreneur and the culture-forming role of industry. Thanks to his initiatives, infrastructural investments benefiting all residents, such as health centers and treatment facilities, appeared in towns where oil and gas were extracted. Such activities improved the quality of life for residents of a number of towns and cities, from Gorlice in
the west to Boryslav in the east. Truskavets, a resort that sprang up as a recreational, health-promoting and entertainment facility for Boryslav, is an unusual example. Alongside these, Drohobych (more widely known as the town of Bruno Schulz), which in turn served as a major administrative and school base, also prospered. An excellent researcher on the subject, Stanisław Nicieja (2009) even coined the phrase Borderland Tri City: Truskavets, Drohobych, and Boryslav.

Łukasiewicz, though holding a permanent and unique place in history, does not, after all, close the list of Poles who are esteemed in the world of industrialists, inventors and, equally, social activists. Of course, it is impossible to list them all here, but I will mention two more figures whose achievements fit into the scope of this article.

Witold Zglenicki (1850–1904) rose to fame as an inventor, geologist and philanthropist. He studied at the University of Warsaw and in St. Petersburg, where he was a student of Dmitri Mendeleev. He is considered the “father of Baku kerosene” and a pioneer in the extraction of oil from the seabed. He bequeathed his estate to philanthropic and scientific causes, thus making a name for himself as the “Polish Nobel” (Chodubski, 1984; 2011).

Figure 1. The cycle of dependencies occurring in the development of the oil and gas industry.

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1 W. Zglenicki, born January 6, 1850 in Stara Wargawa near Kutno, died July 6, 1904 in Baku.
Konstanty Tołwiński (1877–1961) made a name for himself, as Jerzy B. Miecznik accurately put it, (2018, pp. 209–218) as “an outstanding Carpathian geologist, organizer of exploration and research of oil and gas deposits.” In 1904, he enrolled in the study of geology at the University of Zurich where he received his doctorate in 1910. He later worked as a petroleum geologist in Sumatra. Later he returned to Europe, worked and traveled extensively. In 1916, he got a post in Boryslav. In 1919, he became head of the local Geological Station. Under his leadership, the small institution transformed into the renowned Carpathian Geological and Petroleum Institute. From 1920 to 1939, Tołwiński served as director of this institution. Moreover, between 1930 and 1939, he worked as head of the Petroleum and Salt Department of the State Geological Institute in Warsaw. After World War II, he held advisory positions for oil companies. Between 1958 and 1960, he was chairman of the Scientific Council of the Petroleum Institute in Krakow. He mainly studied oil and gas deposits in the Carpathian region and the geological formation of the area. The fruits of his work, besides his books, also include geological maps, which we will return to later in this article.

The pioneering work of Łukasiewicz, Zglenicki, Tołwiński and the industrial revolution that came later are issues that we can examine and study from different angles. Economic matters and investment activities come to the forefront, but the social and political circumstances are no less important (Figure 2). Since the 19th century, industry has been one of the main pillars of any highly developed world economy. The condition of industry always translates into the welfare of the state and the standard of living of its citizens. Industry performs a vital culture-forming function and the people who are associated with it are often explorers, champions of technological thought, philanthropists, individuals who influence society and politics (Ignacy Łukasiewicz, who sat in the Galician National Sejm from 1877–1881 was also a politician).

It was precisely the placing of the human being at the center of economic history that lay behind the demands for the “reform

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of social and economic history,” which the prominent historian Witold Kula (1983, p. 204) made in 1983:

1. breaking with institutionalism, taking an interest in life happening within the framework of one or another institution rather than in that framework itself;
2. becoming interested in the worker (laborer or peasant) and those problems that were most important to them; and
3. studying consumption in its broadest sense, that is, the standard of living, as the ultimate end and result of social economic activity and as a test of the efficiency with which the social economic apparatus fulfills the tasks that society has set for it.

Figure 2. Socioeconomic balance sheet

It is worth adding that the history of the oil and gas industry meets the criterion of transnational research (Pomorski, 2018, pp. 375–390). The birth of this key Polish industry took place in the former Galicia and encompassed an area stretching from Gorlice (located in Western Galicia) to Boryslav (located in Eastern Galicia). At present, the vast majority of Eastern Galicia is part of Ukraine. However, this is not a ground for contention. On the contrary. We have a very positive experience of collaboration with the Ukrainian community of historians in researching common successes on the economic front. We can appreciate the brilliant people who achieved world-class
accomplishments in this field. The fact that we have firmly remem-
bered some of these figures as Poles, while the Ukrainian side sees
them as members of their nation, does not in any way detract from
this. Alongside these major figures, we should also research lower-
level personnel. We recognize Poles, Ukrainians, Jews and others
among them. Their tribulations (let’s recall the strikes), careers and
successes were very often grounded in ordinary human fate, with
little or no connection to aspects of nationality. The Galician legacy
naturally frames this story in the broader context of the Habsburg
monarchy (or Austria-Hungary since 1867), and even more broadly,
of Central Europe. We should not be afraid to ask questions about
the difficult past, but it is equally legitimate to ask how much our
capabilities grow when we are able to work together in unison above
divisions. This question becomes more important than ever when it
comes to the energy challenges of today.

This, of course, in no way precludes the fact that this story is
an important reference point for understanding Poland’s social and
economic history. Spotlighting the international stature of the achieve-
ments of the industrialists, inventors and philanthropists cited above
(and many others omitted from this essay), after all, does not diminish,
but magnifies their importance for the history of the motherland. So
much so that the very nature of oil and gas fields, often located at the
intersection of national borders, places this history in a universal
context. The investment, extraction, production and sale of oil and gas,
and often the personnel working in this industry are all inherently
international. In order for such research to take place, the source
base would have to be appropriately augmented. Such potential will
only be hinted at in this article, since, by way of example, it concen-
trates on statistical works published in Poland. Such works offer
great potential for the study of the growth and social impact of the
oil and gas industry in Poland during the interwar period. Statistical
materials are often associated with “dry” reporting, rows and columns
of numbers. Meanwhile, behind these numbers are people. Tables
and graphs capture phenomena and processes that are not indif-
ferent to these people. In many instances, the value of this type of
data for a scholar can be significantly enhanced if they are properly
linked. Several such examples will be provided later in the essay.
Let us recall that a historian’s research toolset consists, among other things, of normative acts (including constitutions, laws, regulations, decrees, etc.). People’s problems are better expressed in chronicles, biographies, epistolographies, memoirs, journalism and others. To study recent history, a research technique known as “oral history,” which is based on interviews, is also often used.

**Society and economy “hidden” behind rows and columns of numbers**

For the purposes of this article, from the wide range of statistical sources, we have selected primarily journals and publications that are tightly linked to the oil and gas industry, which are reliable and relatively easy to access, and thus can be used for further multidirectional historical and interdisciplinary research. The data from these materials teach us about the dynamics observed, for example, in the extraction, processing, import and export of oil and gas and their derivatives. In order to show how the study can be made more effective, we will propose a comparison of this data with other statistical materials.

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Amidst the wealth of statistical publications, the most important is the monthly magazine *Statystyka Naftowa* [Petroleum Statistics], which was published between 1926 and 1930. Later, the magazine changed its name to *Statystyka Naftowa Polski* [Petroleum Statistics of Poland] in 1931; *Geologia i Statystyka Naftowa Polski* [Geology and Petroleum Statistics of Poland] in 1932–1933 and *Kopalnictwo Naftowe w Polsce* [Oil Mining in Poland] in 1934–1939.

This was a trade magazine whose genesis was connected with the activities of the Geological Station in Boryslav, founded in 1912. The facility took charge of all matters related to geology and the oil and gas industry. A great deal of importance was placed on research, done especially in the fields of geology and cartography. The outbreak of World War I halted the development of the Station, which was then destroyed under the Russian invasion. It was restored in 1919 (Miecznik, 2018). The years that followed brought an ample harvest of activity of this institution, which became known as the Carpathian Geological and Petroleum Institute (Jahn, 1989/1990; Carpathian Geological Conference in Boryslav May 13–14, 1923, 1923). It contributed to the emergence of *Statystyka Naftowa* [Petroleum Statistics], which was published thanks to The Ministry of Industry and Trade, Department of Mining and Metallurgy, on the basis of official materials from the Mining Offices, which were supplemented with data from the District Mining Offices in Jaslo, Drohobych and Stanislawiv, and the Carpathian Geological and Petroleum Institute. The journal covered the most important information on geology, mining and the oil industry, as will be discussed below. Despite changes in titles and editorial teams, the periodical has always offered high-quality content and reliable data. Currently, it is one of the main sources of knowledge about the oil and gas industry in the Second Republic of Poland.

The periodical has published extensive and very detailed data (which has been covered briefly in other publications). For example, the status of exploratory drilling is discussed with the following details: location, company, name of the well, depth and other comments. The general statements show the volume of oil (along with other information, such as contamination) and gas production alongside the number of wells. The data we can find includes
a breakdown by mining district: Jaslo, Drohobych (Boryslav, Mraźnica, Tustanovice, Popiele) and Stanislaviv; while a more detailed version shows a breakdown by town, mine and company. Some of the larger companies include Galicia, Natural Gas, Kryg, Limanowa, Małopolska, Petronafta, Polmin – Pollon, Rziha Fr., J. Schmer and Ska, Urycka Ska, and Vacuum Oil. In addition, there are tables compiling, for example, the names of the wells, information on the depth of the wells, the condition of the wells, pipes, geological formations, and oil and gas production. Besides the parameters for the extraction and processing of raw materials, we are given a detailed inventory of companies working in this industry before 1939. This data interacts with each other and enable us not only to recreate the structure of this industry, but also its achievements (productivity and profitability of mines and companies, their technological standing, etc.). Issue 3 of *Kopalnictwo Naftowe w Polsce* [Oil Mining in Poland], released in 1939, published statistics on “Natural Gas and the Gasoline Industry” in March 1939. The report covered three mining districts: Jaslo, Drohobych, and Stanislaviv. There were 41 localities with gas production in the first district, 19 in the second, and 12 in the third. In the Jaslo district, there were 822 boreholes with oil and gas production, and 51 boreholes with gas production only; in Drohobych district there were 1364 and 173, respectively, and in Stanislaviv district there were 208 and 19. The production process was as follows: in Jaslo district, production of natural gas per month was 23829 (all numbers given in thousands of m³), own consumption at the mine – 2339, shipped (de-pressurized) gas – 20989, gas released into the air and lost in pipelines – 501. In Drohobych district, the performance, arranged in the same order, was 31131, 6632, 24433, and 66, while in Stanislaviv, it was 5984, 3781, 1626, and 577 (*Kopalnictwo Naftowe w Polsce*, 1939, p. 101).

Alongside the figure-dominated statistics, expert studies are also of interest. Particularly noteworthy is an article by Konstanty Tołwiński (1938, p. 78), who described the origins and then current state of drilling work in Opary and the surrounding area, as well as the geological conditions of the site. The article reads:

Over an area of more than 70 kilometers in length, particularly in Kalush, Dashava and Opary, a similar geological makeup was found,
i.e., a boundary zone between the Stebnyk strata and the younger gas-bearing Dashava layers. The drilling done so far in these locations has also shown the presence of industrial gas deposits everywhere, distributed in one and the same series of Upper Miocene strata. All these findings and facts are sufficient proof of the continuity of the gas-bearing zone between Kalush and Opary, which naturally increases the value of the reserves of gas deposits many times over in comparison with the gas fields that have already been discovered by production drilling so far. The reserves of the gas fields that have been discovered alone in Dashava and the immediate vicinity – with today’s production of about 200 milli[m] per year – are expected to suffice, according to recent calculations, for a couple of decades. In Dashava, however, we are dealing with a section of the gas zone only about 1 mile in length. This makes the gas zone more than 70 km long, which has been geologically and experimentally confirmed at a whole series of points: in addition to Dashava, Kalush, Balichy, Uhersk, Letnia, Opary and Vroblovice are especially significant.

Tołwiński’s publication has to do with the discoveries made before World War I of vast deposits of natural gas in the northeastern Carpathian region, stretching around Drohobych, Stryi and Stanyslaviv. All the three cities are now located within the borders of Ukraine, with the latter bearing the name Ivano-Frankivsk. The findings and forecasts that Tołwiński described were borne out by the subsequent expansion of the gas industry in the area, which is still in operation there today. In the early 1920s, the industrial exploitation of the Dashava natural gas fields was launched. In the following years, gas pipelines leading from Dashava to Stryi (1922) and Drohobych (1927) were put in place; then the gas pipeline from Stryi was extended to Lviv (1929). The Kalush region also came to play an important role, where gas deposits were identified already in 1910, but its industrial extraction began in 1933 (Dashava, 2020).

The journal Kopalnictwo Naftowe w Polsce [Oil Mining in Poland] (1939, no. 3) featured an article by Wiktor Giedroyć on “The chemical nature of the natural gases and oil of the Polmin mine in Roztoki.” The article included tables, such as “Production of natural gases and behavior of head pressure at individual boreholes in Roztoki,” “Analysis of Roztoki
gases performed using Podbielniak’s method in 1938,” “Production and output of siphon oil from individual boreholes,” “Average results of Engler distillation of siphon oils” (Kopalnictwo Naftowe w Polsce, 1939, pp. 107–110). In the same issue, Z. A. Mitera and St. Wyrobek (Geotechnika, Lvov, “Poszukiwania górniczo-geologiczne metodami geofizycznymi”) published an article on “Organization and progress of exploration geophysical work in Germany” (Kopalnictwo Naftowe w Polsce, 1939, pp. 111–115). The work is classified as a comparative study, but it can also be used for a historical overview of the centers that once belonged to Germany and became part of Poland after World War II.

The last pages of the aforementioned periodicals published information on oil and gas industry publications, bulletins, maps, surveys, geology and other publications. Relevant bibliographic clues also included advertisements. An example of this is Czasopismo Naftowe [Oil Magazine], in which the Society of Polish Mining Publishers TEWUGE published its advertisements (Czasopismo Naftowe, 1920, p. 60). This information should not be ignored, even if information technology provides access to advanced archival and library databases. There are still discrepancies between the resources of various databases. A considerable portion of the papers were niche studies dealing with topics such as the waterlogging of oil – and gas-bearing areas, methods of increasing the yield of oil fields, or guidelines for marking deposits in drilling operations. With these reports appearing in print, our knowledge of the subject can be more complete and there is less likelihood that an important publication will escape our attention. This, however, applies to materials published after Poland regained its independence. Nevertheless, the publications resulting from the activities of the Geological Station in Boryslav while it was still under the Austrian partition also concern Poland. There are indications that some of this output has been dispersed and forgotten, and we would expect that it may be found today in archives and libraries in Poland, as well as in Austrian and Ukrainian libraries. The various forms of publications, produced by Polish and foreign experts, were the subject of interest of Prof. Zygmunt Sarjusz Bielski (1869–1944), author of the work Historja polskiego kopalnictwa naftowego [History of Polish Oil Mining], which came out in typescript in Krakow in 1942:
While it was still the “Geological Station,” this useful institution began a large-scale publishing campaign of so-called Bulletins, i.e., pamphlets appearing irregularly, in which various geologists, often foreigners, discussed the geology of individual mines or particularly intriguing geological problems. Various maps were also published, either geological or statistical, covering individual mines or larger areas (Sarjusz Bielski, 1942, p. 24).

One of the more important historical sources on the development of natural gas production is the work of Czesław Załuski and Władysław Staniszewski entitled “Polish oil industry in 1928: Statistical report of the chamber of employers in the petroleum industry in Borysław” (published by the Chamber, Borysław 1929). The second section of this publication is entitled: Natural Gas. The beginning of the text reads: “In 1928, 459,487,701 m³ of gas was produced in the Polish oil and drilling industry, i.e. 5,348,916 m³ more than in the previous year” (Załuski, Staniszewski, 1929, p. 14). This general picture was fleshed out with detailed data on gas production in 1927 and 1928, broken down by the districts of Drohobych, Stanislaviv and Jaslo. In 1928, 76.9% of Poland’s gas was extracted in Drohobych district, 13.5% in Stanislaviv district and 9.6% in Jaslo district (Załuski, Staniszewski, 1929, p. 14). Of great value is the analysis of statistical data presented in this article, with assessments of the growth and decline of production in each district. The following tables also deserve the reader’s attention: “Natural gas extraction in individual localities in 1928,” “Natural gas extraction in large companies” (Małopolska, Limanowa, Standard Nobel, Galicia) (Załuski, Staniszewski, 1929, pp. 17–18). A considerable amount of space is devoted to boreholes, and employment and wages; these topics are summarized in detailed tables accompanied by brief, but informative comments. Reading this material, we learn that a significant portion of the gas extracted in Poland was processed into gasoline. In 1928, with gas production of 459,487,701 m³, 259,205,230 (56.4%) was used for processing into gasoline, while in 1927 these proportions were 454,138,785 m³ of gas and 248,394,835 m³ of gasoline (54.7%), while in 1926 480,962,115 m³ of gas and 190,022,504 m³ of gasoline (39.5%) (Załuski, Staniszewski, 1929, p. 34). In 1928, the vast majority (97.2%) of the gasoline produced was sent to the domestic market. It was
consumed entirely by refineries, which used it as an admixture to heavier gasoline. From 1926 to 1928, Czechoslovakia was the largest customer of Polish gasoline, followed in descending order by Austria, France, Hungary and Switzerland (the statistics include details of production volumes and prices) (Załuski, Staniszewski, 1929, p. 35). The following pages describe petroleum product exports in detail. Among the most interesting is a table comparing exports of petroleum products from Poland and Romania from 1927 to 1928 to (countries listed in order from the largest to the smallest recipient; Romanian exports were of different nature): Czechoslovakia, Austria, Germany, Switzerland, France, Hungary, Italy, Yugoslavia and Bulgaria. Based on the data of the Central Statistical Office, the authors estimated the value of exports of petroleum products from Poland (Załuski, Staniszewski, 1929, p. 37).

Another noteworthy publication is Statystyka naftowa za lata 1930–1939 i 1939–1944. naftowe rejony: Gorlice, Jasło, Krosno, Sanok [Oil statistics for the years 1930–1939 and 1939–1944 in the region of Gorlice, Jasło, Krosno, and Sanok] (Krakow 1945). The study was compiled by the Oil Institute in Krosno, established in January 1945 (as a subsidiary unit of the then State Oil Office). This was the first publication of the Institute. The Central Board of the Liquid Fuels Industry was the publisher. In the foreword, engineer Józef Wojnar, director of the Petroleum Institute and Dr. engineer Józef Winkler, chief director of the Liquid Fuels Industry briefly explained the practical purpose of the publication: “In the petroleum statistics published in print until July 1939 by the Carpathian Geological and Petroleum Institute, there was a 5-year gap [connected with the outbreak of World War II – my note]. The present study is intended to partially fill this gap” (Statystyka naftowa za lata..., 1945, p. 3). The circumstances of how the bulletin was created are no less interesting:

It took a lot of time for the Institute’s staff to collect the statistical dates; it required a lot of work and effort, because the Germans had taken away all the statistical material, during the hostilities the reports were destroyed and not all the output was recorded at many mines, especially in the Krosno and Sanok regions. For these reasons, some
data pertaining to the second half of 1944 are incomplete, and some are missing altogether. However, we have used all possible sources, both company and private, as we realize that only at present is it possible to capture the dates closest to reality (Statystyka naftowa za lata..., Sanok, 1945, p. 3).

With time scope adopted for this article, the problems of reconstructing data for the second half of 1944, as indicated in the quote, do not have to trouble us at this point. However, it is an important piece of information, which draws our attention to the deliberate destruction of historical sources (let’s also remember about the accidental destruction). This problem also applies to statistical sources.

The issues of Statystyka naftowa [Oil Statistics] for the years 1930–1939 and 1939–1944 contain data on oil and gas production, exploration and drilling work, gasoline production and the number of personnel employed. All data are illustrated with charts and tables. The publication presents data of fundamental importance for the study of the history of the oil and gas industry in Poland between 1930 and 1944. The high competence of the staff who compiled the material seems to be a sufficient voucher for its quality and reliability. After all, it is difficult to ignore the fact that the material appeared in print around the time when the communist authorities were becoming installed in Poland. A full analysis of the text, however, gives no indication that it was manipulated. The issues of oil and gas in the Second Republic of Poland also featured in the pages of statistical yearbooks printed at the time (we will return to this later), making it possible to corroborate the content of the work published in Krakow in 1945. Absence of a narrative-interpretive layer may have influenced the apolitical nature of the publication, as there was not much room for political interference. The problem is that readers did not receive any methodological or substantive support from the editors, so if they wished to interpret the data, they had to do it on their own, relying solely on their own competence. With this being a trade publication, it was by definition intended to reach professional readers, and no expansion of its readership was assumed.

The data reported in Statystyka Naftowa, coupled with general knowledge of the socio-economic history of the Second Republic
of Poland, allows us to broaden the spectrum of our discussion beyond the narrowly defined issue of oil and gas. We can see, for example, that in the period spanning from 1930 to 1944, drilling and exploration activity saw drastic declines twice. The first time such a decline was observed occurred in 1932, when the effects of the world economic crisis in Poland became most apparent. A clear and reasonably steady recovery followed in 1935, the very year many economic historians consider the end of the Polish recession (although some effects of the recovery became visible as early as 1933). Understandably, resource-intensive drilling and exploration were curtailed during the crisis. During this time, the focus was on exploiting deposits that were already identified and supplied with the necessary infrastructure. This practice ensured maximum profits for the treasury with costs kept to a minimum. Confirmation of this can be found, for example, in the steadily increasing production of (total) natural gas in Poland, although these were not particularly impressive rises (calculated in thousands of cubic meters, the figures were: 26,290 in 1930 compared to the previous year, similarly 11,290 in 1931, 1,150 in 1932, and 11,340 in 1933. The next dramatic drop in the number of wells and exploration occurred in 1939, the year marked by the outbreak of World War II (Statystyka Naftowa za lata..., 1945, p. 18). As for natural gas production, there was a sharp downturn only in September 1939: measured in thousands of cubic meters, production was only 5,896, while a year earlier by the same time it had reached 15,042, and 19,388 in 1940 (Statystyka Naftowa za lata..., 1945, p. 9). The same is true for the overall production of gasoline, whose output for the whole of 1939 fell only in September and stood at 181 tons (September 1938: 461 tons, September 1940: 465 tons) (Statystyka Naftowa za lata..., 1945, p. 12).

We should add that in the period when the rule over Polish territory and the mutual relations of our two occupying powers, Third Reich and Soviet Union stabilized, investment activity in the oil and gas market recorded a surge. The military-oriented economy of the occupying powers made urgent and ever-increasing demands for raw materials. The Third Reich’s attack on the Soviet Union, which took place on June 22, 1941, represents a cut-off date for our analysis. Poland’s largest oil and gas deposits were located in an area that
became the scene of some of the most fierce fighting to occur during World War II. Investment activity had to take a back seat at this time. It was briefly resumed by the Germans, when they advanced eastward with impetus. This onslaught was stopped, however it came with a massive price in human life. The turning point was the Germans’ defeat in the 1943 Battle of Stalingrad, a city that was important not only as a symbol, but also a key point on the road to the abundant oil and gas deposits in the Caucasus. Since then, there had been a marked and steady slide in what we can generally describe as investment activity, basically until the end of the war.

Looking at the data for the years 1930–1939, we must conclude that the volume of employment of laborers in the oil and gas sector essentially remained stable, which stands out favorably against other industries that were more volatile at the time. Beginning in 1932, employment grew steadily. We can see here a certain correlation with general economic trends and the gradual recovery from the Great Depression. Another thing is that it is difficult to regard these rises as particularly impressive, as they ranged from a minimum of 111 to a maximum of 448 people year-on-year (Statystyka naftowa za lata..., 1945, p. 25). Let us recall that the data cited here include (only) the following oil regions: Gorlice, Jaslo, Krosno, and Sanok. We can extend the scope of our analysis to the entire Second Republic of Poland. For this purpose, we can consult one of the specialized publications recommended above. More universal periodicals, such as Statystyka Pracy [Labor Statistics], devoted to labor and price issues, will also prove helpful. Naturally, one will not find detailed calculations of the oil and gas sector here, but these can be found in the context of the labor market. Although this data is quite limited, it has the advantage of allowing us to instantly compare it with the overall picture of the labor market in (then) Poland and other branches of the economy. Statystyka Pracy [Labor Statistics] summarizes the size of employment of laborers working in the sector defined as “oil”: 8628 in 1913, 11391 in 1928, 10987 in 1929, and 10283 in December 1930 (Statystyka Pracy, 1931, p. 144). This journal also published indexes of nominal and real wage rates from 1923 to 1930 in a breakdown that included the “oil industry” (Statystyka Pracy, 1931, pp. 112–117). We will gain additional context by juxtaposing
this information with other figures on the labor market printed continuously in the pages of *Statystyka Pracy*, mainly unemployment rates for different periods. We can compare the whole picture with similar news published in foreign publications. The use of statistical methods to analyze the labor market in Poland during the interwar period was described by Władysław Mierzecki (1980, pp. 239–270), but they are also present in monographs on this issue, such as those by Marian Marek Drozdowski (1968), Hanna Jędruszczak (1964), Zbigniew Landau and Jerzy Tomaszewski (1971).

A very important complement to the above statistics is the work of engineer Józef Konopka entitled *Gazownictwo polskie i jego rozwój w świetle liczb i wykresów* [The Polish gas industry and its development in numbers and charts], published by the Economic Union of Gasworks and Waterworks in the Polish State (Warsaw 1928). In compiling this work, the author used the unique knowledge from the statistical questionnaires sent out to gas companies by the Economic Union of Gasworks and Waterworks in mid-1926, in 1927 and at the beginning of 1928. In addition, he drew on industry and ministerial data.

The study opens with a historical outline of the gas industry in Poland (pp. 9–18). However, we will mostly find here numerous calculations regarding the work of city gasworks, the movement of furnaces, the type of gas produced between 1925 and 1927 (besides natural gas, this was coal, mixed, water, water-oil, two-gas, air-coal, oil, water-oil, and wood gas). There is also mention of a network of natural gas pipes, which the cities of Jaslo, Gorlice, Kalusz and Krosno had in 1928. A table on gas consumption per capita and the price of gas in municipal gas plants in Poland in 1926 compared to foreign countries provides ample room for interpretation. The comparison included, for instance, the cities of Warsaw (49.7), Poznań (96.2), Łódź (12.7), Krakow (34.3), Bydgoszcz (34.5), Bielsko (57.0), Leszno (56.4), Lublin (7.1), Prague (41.7), Bratislava (26.0), Vienna (129.5), Budapest (100.0), Dresden (110, 0), Munich (78.0), Nancy (150.0), Strasbourg (107.0), Rome (74.0), Brussels (167.0), Oslo (78.0), Copenhagen (102.8) and Stockholm (135.0), with gas consumption per capita in m³ given in parentheses (Konopka, 1928, p. 27). In a separate chapter, the author discussed the production and consumption of natural gas,
while taking into account the routes of pipelines leading from the largest companies in the industry (Konopka, 1928, pp. 43–47). The chapter entitled “Przemysł pomocniczy” [Auxiliary industry] stands out in terms of informative value, although it is only two pages long. It contains information on the production of gas grids and the construction and design of gas plants. As the author writes:

> Until recently, all gas appliances and apparatuses were imported exclusively from abroad, and it was only after the war that the gas sector contributed to the creation of a domestic industry, and thus stoves, heating stoves of all types, tiled gas stoves, bath stoves and water heating apparatuses, technical stoves of several systems, gas dryers and finally burners and lamps are made in Poland, and these are not inferior to foreign products (Konopka, 1928, p. 51).

A large part of the study consists of charts showing, in particular, the production of gasoline from natural gas between 1925 and 1927 (p. 76), the production of natural gas between 1920 and 1927 (p. 77), and the production of gasoline between 1920 and 1927 (p. 78), as well as noteworthy tables with general data on gasworks built in individual cities, including the number of inhabitants, the year in which the gasworks were built, and who designed, built or rebuilt them (pp. 80–88). A table titled “Furnace Movement” (status as of 1927) lists in alphabetical order the gas plants operating in the country, the number of furnaces in use in them, the system by which they operated and their technical parameters (pp. 90–100).

A number of other works are also worthy of mention. Due to the space limitations of this article, I will confine myself to only one of them: a brochure by engineer Jan Krzyżkiewicz entitled Zadania i potrzeby gazownictwa krajowych [Tasks and needs of the domestic gas industry], which was published in print in Warsaw in 1937, by the weekly Polska Gospodarcza [Economic Poland] (print from issue 40/1937). The author addressed such issues as the value of production of coal and natural gas derivatives (between 1928 and 1936), the value of exports of these products, and the technical and economic efficiency of municipal gas plants. In conclusion, he made the following remark:
In order to sort out the overall issue of energy, it is necessary to establish an interaction between gas and electricity. Highly industrialized Germany could not and would not afford a fruitless competitive struggle, and we are all the more poor to embark on such a struggle. The agreement between the industries should be carried out on the territory of state and municipal authorities and the industrial associations concerned (Krzyżkiewicz, 1937, pp. 12–13).

It is difficult to disagree with Krzyżkiewicz, who was one of the first experts to so strongly insist that the state needs to introduce synergy between the activities and development of the various sectors of the energy industry and industry in general, while maintaining both their autonomy and unique and mutually complementary characteristics. He even stressed the need for the separate expansion of the sector and of the Gas Association, while pointing to other highly developed countries as models:

An analogous trend can be observed in countries with a high degree of gas supply infrastructure, especially in Germany and England, where, alongside business associations, there are very powerful professional associations: in Germany, there is the Wirtschaftliche Verein von deutschen Gaswerken and the Deutsches Verein von Gas und Wasserfachmännern; while in England, there is the British Commercial Gas Association (uniting all gasworks and gas apparatus manufacturers) and The Institution of Gas Engineers. In the United States of America, the situation is more uniform: the promoter of the gas industry, and not just in the area of gas production, but also in the use of gas apparatuses is the huge association of gas engineers called The American Gas Association (Krzyżkiewicz, 1937, pp. 13–14).

It is difficult to assess today to what extent Jan Krzyżkiewicz’s expert voice influenced the policy of the state and industry associations. Various measures were taken in this regard, but the time frame is also too short to assess their effectiveness. World War II soon broke out, which led to a nationwide tragedy and brought immense damage to the economy. By the decision of the superpowers, a large part of the oil and gas-bearing areas found themselves outside Poland. This
branch of industry had to be not only lifted from the ruins, but also rebuilt anew.

**Final conclusions**

An in-depth study of the history of the oil and gas industry in the Second Republic of Poland paves the way for a better understanding of the overall socio-economic relations in the country. Successful development of this industry preconditioned the growth of all other industries. Statistical materials provide us with important and accurately expressed knowledge of the volume of oil and gas production and, subsequently, the production of oil and gas-derived goods. This is an indispensable source of knowledge for research on technological progress, the prosperity of individual companies and mines and the industry as a whole. All this can be presented in comparative terms against an international background or in juxtaposition with another country. Data on the size of employment and salaries set against the statistical yearbooks published by the Central Statistical Office provide insights into the stability of employment and salary levels in the industry. Statistical materials also have their limitations. For the purposes of this article, I have selected mainly the most reliable studies published in print and affiliated with recognized institutions. These publications, however, do not tell us about the internal policies of individual companies (leading them to better or worse performance). We also lack information on their culture-forming role. It is clear that this matter is surrounded by ambiguities. The flourishing of all industrial centers associated with oil and gas is undeniable. Boryslav is a classic example of a city and region whose career was built essentially from scratch on these two resources back in the 19th century. However, Stanisław Sławomir Nicieja (2009, p. 174) is right to ask about “The price of the advancement of the city and people”:

Wealthy nouveaux riches did not build their mansions in Boryslav, but in Drohobych, Truskavets, Lviv and even Vienna. A case in point is Robert Doms (1815–1893), one of the most prominent industrialists in Galicia, president of the Lviv Chamber of Commerce and Industry, owner of oil wells and a refinery in Boryslav, and also a great philanthropist,
creator of foundations and hospices for writers, sculptors, scholars as well as bankrupt merchants and industrialists (Nicieja, 2009, p. 175).

Professor Nicieja does not question the merits of Doms and many other industrialists. However, he draws our attention to the social inequalities and poor working and living conditions that surrounded Boryslav’s climb on the ladder of industrial and capitalist development. These remarks can also be applied to other industrial hubs founded on oil and gas. In this article, however, I focus my inquiries on the Second Republic of Poland. This means that some of the statistical data on the Second Republic of Poland should be extended to the partition period. This would make it possible to trace events, improvements in working and pay conditions, career paths, the effects of multidirectional investment activities far beyond the sphere of the economy but also encompassing education, culture, social welfare, environmental protection and more. This seems to be possible only by including archival and library searches of materials produced by individuals associated with the oil and gas industry and created during the activities of individual companies and mines, as well as industry associations. What emerges from this is a plan for new research that can provide answers to many important questions about social and economic relations in the Second Republic of Poland.

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