The Oil and Gas Terms in Encyclopedic Dictionaries

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Abstract

Purpose: This study examines how encyclopedic dictionaries interpret oil and gas terminology and how they differ from explanatory dictionaries in terms of conceptual structure and scientific depth.

Research Methodology: This study used a qualitative comparative approach to analyze selected oil and gas terms in Uzbek and foreign encyclopedic dictionaries, both printed and digital versions. Definitions were examined descriptively to assess their structure, depth, and conceptual orientation through document analysis and theoretical review without using statistical software or surveys.

Results: The findings indicate that encyclopedic dictionaries provide more detailed, systematic, and scientifically grounded interpretations of oil and gas terminology than explanatory dictionaries. Definitions in encyclopedic sources include interdisciplinary perspectives, technical descriptions, and contextual information related to geology, engineering, chemistry, and industrial processes. This demonstrates that encyclopedic dictionaries emphasize conceptual systems rather than simplified lexical definitions.

Conclusions: This study concludes that encyclopedic dictionaries play a crucial role in the scientific and practical interpretation of oil and gas terminology. Unlike explanatory dictionaries, they present terms within broader conceptual and interdisciplinary frameworks, making them more suitable for academic and professional use than explanatory dictionaries.

Limitations: This study is limited to selected encyclopedic dictionaries in Uzbek and foreign sources and does not include a large-scale corpus-based analysis or a user-centered evaluation.

Contributions: This study contributes to lexicography and terminology studies by clarifying the differences between encyclopedic and explanatory dictionaries in technical fields. It benefits lexicographers, translators, educators, and oil and gas professionals who require systematic and concept-based interpretations of specialized terms.

Keywords: *Conceptual Approach, Encyclopedic Dictionary, Interdisciplinary Interpretation, Oil and Gas Terminology, Terminology Studies*

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1. Introduction

In the development of modern science and technology, the formation of accurate and scientifically grounded terminological systems plays a decisive role in ensuring effective professional communication and knowledge transmission in the field (Bako, 2024). Terminology is not merely a collection of specialized words but a structured conceptual system that reflects the development of scientific disciplines and technological processes. In high-technology industries, such as oil and gas, terminology represents complex geological formations, chemical compositions, drilling technologies,

reservoir engineering processes, and energy production systems. Consequently, explaining such terms through purely lexical definitions is often inadequate. A more comprehensive approach that reveals scientific principles, interdisciplinary connections, and practical applications is required. Contemporary terminology theory emphasizes that terms should be analyzed within structured conceptual systems rather than treated as isolated lexical units (Syafrinaldi, Suriaatmadja, & Firman, 2025) .

The oil and gas sector provides a particularly illustrative example of the need for a concept-oriented description. Terms such as *oil*, *natural gas*, *drilling*, *oil field*, and *reservoir* encapsulate highly technical processes that involve geology, geophysics, chemistry, engineering, environmental science, and energy economics disciplines. Each term belongs to a broader conceptual network that reflects the stages of exploration, extraction, production, refining, and distribution. Research in terminology studies underscores that technical domains require systematic knowledge representation, as professional communication depends on the stability and clarity of conceptual relationships (Faber & Cabezas-García, 2019). Without such a structured representation, definitions risk oversimplification and conceptual ambiguity. Within lexicographic practice, explanatory and encyclopedic dictionaries differ fundamentally in their treatment of specialized terminology (Syafrinaldi et al., 2025). Explanatory dictionaries focus primarily on lexical meaning and linguistic usage, providing concise definitions for general users. Their goal is to clarify how a word functions in the language system rather than exploring its scientific complexity. In contrast, encyclopedic dictionaries aim to disclose the scientific essence, theoretical background, and practical applications of concepts. According to Svensén (2009), encyclopedic entries often include contextual information, historical development, interdisciplinary references, and technical explanations that exceed the scope of purely lexical descriptions (Harahap & Yosepha, 2025; Kumar et al., 2024).

Recent developments in lexicography further highlight the distinction between word- and concept-oriented approaches. Fuertes-Olivera and Bergenholtz (2011) notes that modern lexicographic theory increasingly recognizes the need for hybrid models that integrate terminological databases into dictionary platforms. However, a core difference remains: explanatory dictionaries prioritize semantic accessibility, whereas encyclopedic dictionaries emphasize systematic knowledge representation. This difference is particularly significant in technical fields such as oil and gas, where the scientific depth of terms cannot be adequately conveyed through brief lexical paraphrases. The concept-oriented perspective is reinforced by advances in Frame-Based Terminology (FBT). (Faber & Cabezas-García, 2019)argues that technical concepts are embedded within cognitive frames that represent processes, participants, instruments and outcomes. In the oil and gas industry, for example, *drilling* is linked to equipment types, geological strata, drilling fluids, pressure control systems, and safety protocols. An encyclopedic dictionary entry can describe these relationships and situate the term within a larger operational framework. In contrast, an explanatory dictionary may define *drilling* simply as "the process of making a hole in the ground," omitting technical parameters such as rotary drilling systems or hydraulic fracturing.

The interdisciplinary nature of oil and gas terminology further necessitates an encyclopedic interpretation. Geological research has shown that hydrocarbon formation involves sedimentary basin evolution, thermal maturation of organic matter, and structural traps (Gluyas & Swarbrick, 2021). The chemical engineering literature emphasizes refining techniques such as distillation and catalytic cracking, which transform crude oil into usable fuels and petrochemicals (Kaiser, de Klerk, Gary, & Handwerk, 2019). Environmental studies have analyzed the ecological impacts of extraction and transportation activities (Shafie, Mahlia, Masjuki, & Andriyana, 2011). Encyclopedic dictionaries can integrate such interdisciplinary insights into structured entries, thereby presenting oil and gas terms as scientific concepts rather than mere lexical items.

Moreover, terminology management research underscores the importance of systematic documentation in global communication. The oil and gas industry operates within the international frameworks of safety standards, environmental regulations, and technological innovations. Standardized terminology ensures consistency across multilingual contexts and prevents misinterpretation in cross-border cooperation (Roche, Calberg-Challot, Damas, & Rouard, 2009). Encyclopedic dictionaries contribute

to this harmonization by providing detailed conceptual clarifications and linking terms to broader scientific discourse.

Another significant aspect is the historical and theoretical dimensions of encyclopedic entries. Encyclopedic dictionaries often trace the etymology and scientific evolution of terms, illustrating how concepts have developed alongside technological progress. For example, the term *reservoir* has evolved from a general notion of storage to a highly specialized geological concept describing porous rock formations capable of containing hydrocarbons. Research in applied ontology highlights the importance of mapping conceptual evolution within structured knowledge systems (Keet, 2018).

The growing integration of digital resources further enhances the relevance of encyclopedic approaches. Digital encyclopedic platforms allow cross-referencing, hyperlinking to related entries, and the incorporation of visual diagrams and data models. Bibliometric analyses indicate that digital lexicography increasingly integrates domain-specific knowledge representation and semantic technologies (Zhang, Zhang, Xu, & Hu, 2026). In the oil and gas field, such digital encyclopedic systems enable users to navigate complex conceptual networks, thereby strengthening both academic research and professional practice. In contrast, explanatory dictionaries are primarily concerned with linguistic normalization. While they play an essential role in codifying spelling, grammar, and general meaning, they do not aim to present a comprehensive scientific analysis. Lew (2015) emphasized that dictionary type determines content depth and user orientation. Therefore, evaluating encyclopedic dictionaries in relation to oil and gas terminology requires recognizing their distinct function: they serve not only as language tools but also as knowledge repositories.

This study examines the theoretical and practical features of encyclopedic dictionaries in interpreting oil and gas terminology. This study explores how encyclopedic dictionaries differ from explanatory dictionaries in terms of conceptual structure, interdisciplinary integration, and scientific depth. By analyzing selected oil and gas terms in Uzbek and foreign encyclopedic sources, this study demonstrates that encyclopedic dictionaries provide systematic, scientifically grounded interpretations that reflect both theoretical foundations and practical relevance. Understanding these differences is crucial for lexicographers, terminologists, translators, engineers and educators. In technical domains characterized by rapid innovation and global collaboration, accurate conceptual interpretation ensures clarity, safety and efficiency. Thus, encyclopedic dictionaries play a pivotal role in bridging linguistic description and scientific knowledge representation, offering a comprehensive approach to documenting oil and gas terminology in the context of modern technological development (Jumaah, 2025).

2. Literature Review

Recent developments in lexicography and terminology studies have emphasized the importance of distinguishing between lexical and conceptual approaches in dictionary compilation. In modern terminology theory, terms are not viewed merely as linguistic units but as representations of structured knowledge systems embedded in specific scientific domains. Standard (2008) states that terminology work must be concept-oriented rather than word-oriented, meaning that each term should be understood as part of a broader conceptual network rather than as an isolated lexical entry. This principle is particularly relevant in highly technical domains, such as oil and gas, where terms represent interconnected geological, chemical, and engineering processes. The distinction between explanatory and encyclopedic dictionaries has gained renewed attention in the past decade. (Gouws & Tarp, 2017)argues that explanatory dictionaries primarily focus on linguistic usage and semantic clarification for general audiences, whereas encyclopedic dictionaries aim to provide structured knowledge that integrates scientific explanations, historical backgrounds, and interdisciplinary contexts. This difference reflects two fundamentally distinct lexicographic paradigms: lexical-semantic and knowledge-representational paradigms.

In terminology research, the concept-oriented approach has been reinforced through Frame-Based Terminology (FBT). Faber and Cabezas-García (2019) explains that technical terms must be interpreted within cognitive frames that include processes, agents, instruments and outcomes. For instance, the term *drilling* in the oil and gas industry is not merely a lexical item meaning "making a hole," but part of a

technical frame that includes geological assessment, drilling equipment, fluid circulation systems, and safety mechanisms. Unlike explanatory dictionaries, encyclopedic dictionaries can represent such conceptual structures in extended definitions. Interdisciplinarity has become a key dimension of modern terminological research. According to (Temmerman, 2000), contemporary terminology studies recognize that scientific concepts evolve dynamically and often overlap across disciplines. Oil and gas terminology illustrates this interdisciplinarity clearly: geological formations determine hydrocarbon accumulation, chemical composition defines refining processes, and energy policy shapes industrial applications. Encyclopedic dictionaries reflect this complexity by incorporating references to geology, chemistry, engineering, and environmental science in a single entry.

Recent studies in digital lexicography further support the argument that encyclopedic approaches are essential in technical domains. Fuertes-Olivera and Bergenholtz (2011) demonstrated that modern digital dictionaries increasingly integrate terminological databases, enabling layered information structures. In such systems, a term can be linked to diagrams, scientific explanations, and related entries, thereby creating a networked representation of knowledge. This model aligns closely with encyclopedic dictionary traditions rather than traditional explanatory formats. Knowledge representation research also strengthens the theoretical foundations of encyclopedic interpretation. Roche et al. (2009) introduced the concept of ontoterminology, emphasizing that terminological descriptions must be grounded in formal ontologies to ensure conceptual clarity and logical consistency. In the oil and gas domain, terms such as *reservoir* or *oil field* cannot be adequately explained without situating them within geological classification systems and extraction technology. By integrating such ontological perspectives, encyclopedic dictionaries function as structured repositories of domain knowledge.

The role of historical context in encyclopedic dictionaries has also been discussed in recent lexicographic literature. Schierholz (2015) highlights that encyclopedic entries often include information about the historical development and scientific evolution of terms. In oil and gas terminology, many concepts emerged during the Industrial Revolution and were refined through technological innovation. Recording this historical trajectory enhances conceptual understanding and distinguishes encyclopedic dictionaries from explanatory ones, which rarely address diachronic development of terms. The energy studies literature further underscores the necessity of comprehensive conceptual interpretation. Shafie et al. (2011) notes that oil and gas terminology is closely linked to global energy transition debates, environmental sustainability, and economic policy. Encyclopedic dictionaries may incorporate references to environmental impact, renewable energy integration, and regulatory frameworks when defining terms such as *natural gas* or *the petroleum industry*. This socioeconomic dimension reinforces the idea that encyclopedic dictionaries operate at the intersection of scientific knowledge and public policy.

Bibliometric research on lexicography confirms the increasing emphasis on interdisciplinary and concept-oriented approaches. Zhang et al. (2026) demonstrated that recent lexicographic studies frequently combine terminology theory, corpus linguistics, and knowledge engineering. This trend reflects a broader movement toward the systematic representation of specialized domains. In the context of oil and gas terminology, encyclopedic dictionaries exemplify this systematic approach by presenting extended and scientifically grounded definitions that integrate multiple disciplinary perspectives. In summary, contemporary literature supports the argument that encyclopedic dictionaries play a crucial role in interpreting technical terminology. Unlike explanatory dictionaries, which prioritize lexical meaning and linguistic normalization, encyclopedic dictionaries provide conceptual depth, interdisciplinary integration, historical context, and practical relevance to the user. In highly technical domains such as oil and gas, this encyclopedic approach ensures that terminology is presented not only as language but also as structured scientific knowledge.

3. Methodology

This study employed a qualitative research design based on comparative, descriptive, and conceptual analyses. This study aimed to examine how encyclopedic dictionaries interpret oil and gas terminology and identify the theoretical principles underlying their approach. A qualitative framework is appropriate for lexicographic and terminological research because it allows for an in-depth analysis of textual

definitions, conceptual structures, and knowledge representation systems rather than focusing on statistical measurements (Creswell & Poth, 2016). The primary data sources consisted of selected foreign (English and Russian) and Uzbek encyclopedic dictionaries, including both printed and digital editions. These sources were chosen because of their recognized academic authority and systematic treatment of the scientific concepts. Key oil and gas terms, such as *oil*, *natural gas*, *drilling*, *oil field*, and *reservoir*, were identified as representative units of the domain. These terms were selected because of their central role in geological exploration, hydrocarbon production, and energy sciences. The selection strategy aligns with terminology research principles that emphasize the analysis of core domain concepts to understand broader conceptual systems.

A comparative-analytical method was applied to examine the differences in definitional structures across languages and sources. Each term entry was analyzed in terms of length, structural components, presence of interdisciplinary references, inclusion of historical background, and degree of technical detail. By comparing English, Russian, and Uzbek encyclopedic definitions, this study identified common patterns in conceptual presentation as well as variations influenced by linguistic and cultural traditions. Comparative lexicography emphasizes that such cross-linguistic analysis is essential for understanding how knowledge is structured in different intellectual traditions (Fuertes-Olivera, 2017). A descriptive analysis was used to categorize the definitional elements found in encyclopedic entries. These elements typically include (1) conceptual classification, (2) scientific explanation, (3) compositional or structural description, (4) formation processes, and (5) practical applications. For example, the term *oil* in encyclopedic dictionaries is not merely defined as a flammable liquid; rather, it is described as a naturally occurring mixture of hydrocarbons formed through geological processes over several million years. This definition may further explain sedimentary basin formation, organic matter transformation, chemical composition, and industrial uses. Such an extended definitional structure corresponds to the concept-oriented model of terminology, where a term represents a position within a structured conceptual network rather than a simple lexical meaning (Roche et al., 2009).

Conceptual analysis was the core methodological approach. Encyclopedic dictionaries interpret terms within conceptual systems, linking each entry to broader scientific theories and processes. This approach reflects the principles of Frame-Based Terminology, which emphasizes the integration of terms into knowledge frames involving processes, participants, and outcomes (Faber & Cabezas-García, 2019). In the oil and gas domain, terms such as *drilling* are not isolated lexical items but components of operational frameworks that include geological assessment, drilling technology, fluid mechanics, and safety regulations. Therefore, this study analyzed whether encyclopedic definitions explicitly present these conceptual relationships. In addition to dictionary analysis, scholarly works on terminology theory and lexicography published in the last decade were reviewed to establish the theoretical foundations of encyclopedic interpretation. Terminology scholars argue that encyclopedic resources adopt an interdisciplinary orientation, integrating knowledge from geology, chemistry, engineering, and energy economics when defining oil and gas terms (Temmerman, 2000). This theoretical framework guided the evaluation of dictionary entries, particularly in assessing whether the definitions incorporated scientific explanations and practical contexts.

Another methodological dimension was the scope and depth of definitions. Encyclopedic entries are typically longer and more detailed than explanatory ones. They may include references to chemical composition (e.g., hydrocarbon chains), geological processes (e.g., sedimentation and tectonic movement), technological methods (e.g., rotary drilling or hydraulic fracturing), and industrial applications (e.g., fuel production and petrochemical). The presence of these components was recorded and compared across sources. This procedure aligns with modern lexicographic research, emphasizing the structural analysis of dictionary micro- and macro-features (Svensén, 2009). The interdisciplinary orientation of encyclopedic dictionaries was further assessed by identifying references to related sciences within the definitions. For instance, entries on *natural gas* often include information about methane composition, thermodynamic properties, and energy efficiency. Similarly, *reservoir* definitions typically incorporate geological and engineering explanations concerning porosity, permeability, and hydrocarbon trapping mechanisms. Such cross-disciplinary integration reflects the

systematic presentation of scientific knowledge and supports the argument that encyclopedic dictionaries serve as structured knowledge repositories, rather than mere lexical guides.

Importantly, this study did not employ quantitative corpus analysis or statistical modeling. Instead, it relies on qualitative textual examination and theoretical interpretation. While corpus-based methods are valuable in terminological research, the objective of this study was to analyze the conceptual depth and structural characteristics of encyclopedic entries. The qualitative approach allowed a detailed examination of how the scientific essence, theoretical background, and practical significance are embedded within dictionary definitions. Overall, the methodology integrates a comparative analysis of multilingual encyclopedic dictionaries with contemporary terminology theory to evaluate how oil and gas terminology is systematically interpreted. By focusing on conceptual structure, interdisciplinary integration, and definitional depth, this study demonstrates that encyclopedic dictionaries function as essential scientific resources for understanding technical terminology in the oil and gas sector.

4. Results and Discussions

A comparative analysis of oil and gas terminology in foreign and Uzbek encyclopedic dictionaries reveals significant structural, conceptual, and socio-economic distinctions that reflect broader epistemological orientations and knowledge traditions. These differences are not merely stylistic; they demonstrate how encyclopedic dictionaries function as structured knowledge systems shaped by scientific paradigms, national priorities, and disciplinary developments. The findings are discussed in relation to contemporary lexicographic and terminological theory, particularly research from the last decade emphasizing knowledge representation, sociocognitive terminology, and interdisciplinary integration.

One of the most prominent findings is that foreign encyclopedic dictionaries consistently incorporate historical and scientific backgrounds into the structure of term definitions. Rather than presenting terms as static lexical entries, these dictionaries situate them within the historical trajectories of industrial development and scientific advancement. This approach aligns with sociocognitive terminology theory, which posits that specialized vocabulary evolves dynamically within social and scientific contexts (Temmerman, Enzweiler, & Araújo, 2004). In this framework, terms are conceptual units shaped by human experience, technological progress and disciplinary interaction. Oil and gas terminology provides a particularly illustrative case, as its development is inseparable from the Industrial Revolution, the expansion of global energy markets, and major breakthroughs in geology, petrochemistry, and engineering. For instance, in many foreign encyclopedic sources, the term *natural gas* is defined not only as a combustible hydrocarbon mixture composed primarily of methane (CH_4) but also as a product of complex geological processes occurring over millions of years. Definitions typically include information about sedimentary basin formation, reservoir types (conventional and unconventional), extraction technologies such as drilling and hydraulic fracturing, liquefaction processes for transportation, and environmental implications, including greenhouse gas emissions and sustainability debates. This multilayered definitional strategy reflects an interdisciplinary orientation that integrates chemistry, geology, environmental science, and energy economics into a coherent explanatory framework.

Such a multidimensional representation aligns with recent lexicographic scholarship emphasizing that specialized dictionaries should capture conceptual networks rather than isolated meanings (L'Homme, 2020). From this perspective, definitions are nodes within broader knowledge structures, and encyclopedic entries serve as gateways to interconnected scientific domains. By embedding oil and gas terminology within historical evolution and technological transformation, foreign encyclopedic dictionaries demonstrate an advanced model of knowledge representation that mirrors the complexity of contemporary scientific discourses.
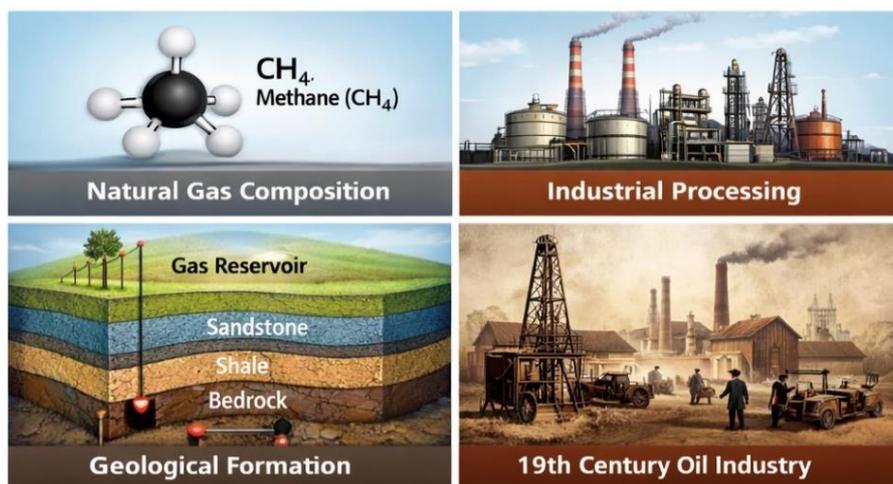
Figure 1. Scientific and historical foundations of oil and gas terminology

Figure 1 shows the interconnection between geological formation, chemical composition, industrial processing, and historical industrial development, illustrating how oil and gas terminology emerges from a complex network of scientific and technological knowledge. The visual representation underscores that terms such as *natural gas*, *petroleum*, *reservoir*, and *refining* are not isolated lexical units but conceptual nodes situated within the broader systems of geological science, chemical analysis, engineering innovation, and industrial history. The inclusion of these interconnected dimensions in encyclopedic entries demonstrates that foreign dictionaries conceptualize terminology as part of an integrated scientific knowledge system. In such dictionaries, definitions are not confined to brief semantic explanations; rather, they embed terms within diachronic development, disciplinary structures and technological progress. This reflects a knowledge representation approach aligned with contemporary terminology theory, where concepts are understood as dynamic constructs embedded in cognitive and social frameworks.

In foreign encyclopedic sources, oil and gas terminology is frequently traced back to the Industrial Revolution and the rapid expansion of the mechanized industry in the nineteenth century. The historical rise of drilling techniques, development of refinery technologies, and transformation of petroleum into a globally traded commodity are often referenced as essential background information. Geological formation processes, such as the accumulation of organic matter in sedimentary basins, thermal maturation under pressure, and migration into porous rock reservoirs, are described alongside chemical explanations of hydrocarbon composition. Methane (CH_4), ethane (C_2H_6), propane (C_3H_8), and other hydrocarbons are specified, sometimes accompanied by calorific values and energy density data. Such precision reflects an epistemological orientation grounded in scientific rigor and an interdisciplinary synthesis.

This comprehensive approach corresponds to socioterminological perspectives that emphasize the contextual embedding of terminology within social and scientific practices (Barité, 2025). From this standpoint, terminology does not merely label objects or processes; it encapsulates historically situated knowledge shaped by expert communities, technological innovation, and economic systems. Therefore, oil and gas terms are products of both scientific discovery and industrial application. Foreign encyclopedic dictionaries tend to reflect this multidimensionality by incorporating geological, chemical, engineering, and environmental information into a single definitional framework.

In contrast, Uzbek encyclopedic dictionaries also acknowledge the scientific basis of oil and gas terminology but frame it more explicitly within the context of national historical development. References often highlight the discovery of domestic oil fields, expansion of national energy infrastructure, and strategic reforms implemented after independence. Terms such as *oil industry* or *fuel-energy complex* are frequently described in relation to their contributions to national sovereignty, economic modernization, and industrial diversification. Thus, the historical narrative is localized and

tied to state-building processes. This reflects the socioterminological insight that terms are embedded in specific socio-economic environments and that encyclopedic representation inevitably mirrors national priorities (Barité, 2025).

The findings further indicate that foreign encyclopedic dictionaries have a dominant interdisciplinary orientation. The definitions of terms such as *hydraulic fracturing* or *liquefied natural gas (LNG)* integrate geological mechanisms, chemical transformations, mechanical engineering processes, economic structures, and environmental debates. For instance, an encyclopedic entry on LNG may describe the thermodynamic process of cooling natural gas to approximately −162°C to achieve liquefaction, explain storage in cryogenic tanks, discuss maritime transportation via specialized LNG carriers, outline regasification procedures at import terminals, and evaluate environmental impacts, such as methane leakage and lifecycle emissions. This holistic definitional style corresponds with research suggesting that specialized lexicography increasingly mirrors interdisciplinary scientific practices (Manerko, 2019).

The breadth of such definitions reflects the contemporary global energy discourse, where terminology cannot be separated from sustainability concerns, geopolitical negotiations, and technological transitions. In the global context, energy terminology is intertwined with debates on climate change mitigation, carbon neutrality, renewable integration, and energy security. Foreign encyclopedic dictionaries, therefore, tend to situate oil and gas terms within a global socio-technical system, acknowledging both technological advancement and environmental implications. Uzbek encyclopedic dictionaries, while incorporating interdisciplinary elements, place a greater emphasis on economic policy and state planning. The term *oil industry* is frequently presented as a strategic branch of the national fuel-energy complex, highlighting its contributions to GDP formation, employment, export capacity, and infrastructure development. The definition may include references to refinery modernization, pipeline expansion, and state-led industrial strategies in the oil sector. This orientation aligns with research emphasizing the socio-economic dimension of terminology in developing and transitioning economies (Koval et al., 2023). In such contexts, terminology functions not only as a scientific descriptor but also as a tool for economic planning and policy communication.

A central result of this study is the pronounced socio-economic framing evident in Uzbek encyclopedic sources. Oil and gas terms are not merely treated as scientific categories but as symbols of national development and strategic capability. By emphasizing domestic production, infrastructure investment, and export potential, these dictionaries present terminology as part of a broader narrative of economic progress and modernization in the country. This suggests that encyclopedic dictionaries serve as repositories of cultural and strategic knowledge, reflecting national priorities and institutional frameworks.

Figure 2. Socio-economic dimensions of oil and gas terminology

Figure 2 illustrates the socio-economic dimensions of oil and gas terminology, depicting the connections between energy infrastructure, national policy frameworks, export networks, and macroeconomic growth indicators. Visual synthesis emphasizes how terms such as *pipeline*, *refinery*, *energy security*, and *export capacity* are embedded within broader economic systems. Contemporary energy studies confirm that resource-based terminology often reflects geopolitical positioning and economic narratives (Bridge & Gailing, 2020). Energy infrastructure is not merely a technical construct; it is also a symbol of state power and economic resilience. Foreign encyclopedic dictionaries also address economic aspects; however, they typically situate these within the context of global markets, international trade regimes, and sustainability transitions. For example, definitions may refer to OPEC dynamics, global supply demand fluctuations, carbon pricing mechanisms and international regulatory frameworks. This broader analytical scale aligns with the scholarship viewing energy terminology as embedded in global socio-technical systems shaped by political, technological, and economic interactions (Cherp, Vinichenko, Jewell, Brutschin, & Sovacool, 2018). From this perspective, oil and gas terms reflect transnational networks rather than purely national frameworks.

The analysis also demonstrates that foreign encyclopedic dictionaries provide more detailed chemical and geological specifications than their Persian counterparts. Definitions frequently include methane concentration percentages, distinctions between sweet and sour gas, calorific value ranges, classifications of reservoirs (conventional versus unconventional), and explanations of extraction technologies, such as horizontal drilling or offshore platforms. Such precision corresponds to recent lexicographic calls for terminological standardization and scientific rigor (Bowker & Pearson, 2002). Standardization ensures consistency across disciplines and facilitates international communication between experts. In contrast, Uzbek encyclopedic entries, while scientifically accurate, often simplify technical details in favor of broader socio-economic explanations. This does not necessarily indicate a lack of scientific depth but may reflect a deliberate communication strategy aimed at accessibility for policymakers, students, and general readers. User-oriented adaptation is recognized in lexicographic research as a crucial element of effective dictionary design (Fuertes-Olivera, 2017). By foregrounding economic relevance and the national policy context, Uzbek dictionaries address a readership concerned with development planning and strategic governance.

The comparative results demonstrate that encyclopedic dictionaries operate at the intersection of science, history, and socio-economic policy. Foreign sources prioritize interdisciplinary scientific integration, global historical development and technical precision. Uzbek sources emphasize national economic relevance, state planning, and strategic modernization. These orientations reflect different epistemological priorities shaped by cultural, economic, and institutional contexts. Importantly, these differences should not be interpreted as hierarchical or oppositional in nature. Rather, they are complementary perspectives that highlight the multifaceted nature of terminology. As socioterminological research suggests, terminology is both cognitively and socially constructed (Faber & Montero-Martínez, 2019). Concepts emerge within scientific communities but are also influenced by societal values, economic structures and political institutions. Encyclopedic dictionaries capture this dual nature by presenting terms as both technical constructs and socioeconomic symbols.

Ultimately, the extended analysis in Figures 1 and 2 reveals that oil and gas terminology functions as a bridge between the natural sciences, engineering disciplines, economic policy, and historical development. Foreign encyclopedic dictionaries emphasize scientific interconnectedness and the global context, whereas Uzbek dictionaries foreground national development and strategic planning. Together, these approaches demonstrate that encyclopedic lexicography is not merely descriptive but interpretive, shaping how specialized knowledge is conceptualized, organized, and communicated across disciplinary and societal boundaries.

5. Conclusions
5.1. Conclusion
In conclusion, encyclopedic dictionaries adopt an approach to explaining oil and gas terminology that fundamentally differs from that of explanatory ones. They comprehensively present the scientific essence, historical development, interdisciplinary connections, and practical significance of the terms.

Uzbek encyclopedic dictionaries, in particular, demonstrate a distinct approach by considering the national context. These features confirm that encyclopedic dictionaries are an important source for the systematic study of oil and gas terminology.

5.2. Research Limitations
This study is limited to selected encyclopedic dictionaries in Uzbek and foreign sources and does not incorporate a large-scale corpus-based analysis or a user-centered evaluation of dictionary use and interpretation. The analysis remains primarily descriptive and comparative, focusing on a limited range of reference materials that may not fully reflect broader contextual variations, semantic developments, or practical applications in different academic and professional domains.

5.3. Suggestions and Directions for Future Research
Future research is recommended to employ corpus-based methods to examine usage patterns and semantic shifts across wider textual datasets, as well as to conduct user-oriented studies such as surveys or usability assessments to better understand how diverse user groups interpret and utilize encyclopedic definitions, including those found in digital and multilingual dictionary platforms.

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