

REVIEW
of the official reviewer for dissertation work
HOR KA WAI CHRISTOPHER on the theme «Foreign relations of Kazakhstan in the context of renewable energy» presented for the
degree of Doctor of Philosophy (PhD) in the specialty «8D03105 – International Relations».

№	Criteria	Eligibility (one of the options must be checked)	Justification of the position of the official reviewer
1.	The topic of the thesis (as of the date of its approval) corresponds to the directions of development of science and/or state programs	1.1 Compliance with priority areas of science development or government programs:	Hor KWC's dissertation aligns with the state goals for fostering a green economy as specified in the "Concept for the Transition of the Republic of Kazakhstan to a 'Green Economy' until 2050". It is also consistent with the principles of the "Concept of the Development of the Fuel-Energy Complex of the Republic of Kazakhstan by 2030", as well as the "National Development Project 'Green Kazakhstan'.
2.	Importance for science	<p>1) The thesis was completed within the framework of a project or target program financed from the state budget (indicate the name and number of the project or program)</p> <p>2) The thesis was completed within the framework of another state program (indicate the name of the program)</p> <p>3) The dissertation corresponds to the priority direction of the development of science, approved by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan (indicate the direction)</p>	The dissertation corresponds to the priority direction of science development "Research in the field of social sciences and humanities", approved by the Higher Scientific and Technical Commission under the Government of the Republic of Kazakhstan on April 29, 2020.
		The work <u>makes/does</u> not make a significant contribution to science, and <u>its importance</u> is well disclosed/not disclosed	The dissertation provides an important contribution to the existing literature, offering a comprehensive analysis of Kazakhstan's renewable

		<p>energy development and its impact on the design of its foreign policy strategy. It offers a fresh perspective on Kazakhstan's prospects for renewable energy in the context of the global energy landscape.</p> <p>Using a comparative case study approach, the dissertation examines Kazakhstan's potential to enhance its capacity in both the global and domestic renewable energy sectors. The analysis of diverse energy interests within the international community advocates for an optimistic approach that prioritises the consolidation of interests, rather than their fragmentation, with a focus on strengthening the global energy supply chain to promote mutually beneficial outcomes in energy security and progress towards carbon neutrality. While using the concepts of energy democracy, technocracy, and social justice in the discourse on international energy relations, it sheds light on key debates that have been evolving between the Global North and Global South.</p>
3.	The principle of independence	<p>Self-reliance level: 1) High;</p> <p>The principle of independence is high. The author conducted a</p>

		<p>2) Medium; 3) Low; 4) No independence</p>	<p>thorough examination of a diverse array of official documents, industry reports, statistical data, maps, in addition to an extensive collection of research articles from scholars from the so-called West, Brazil, China, Russia, Central Asia and Kazakhstan. It is reasonable to assert that this dissertation represents an independent effort that reflects the author's commitment to exploring his chosen research topic.</p>
4.	The principle of inner unity	<p>4.1 Justification of the relevance of the thesis: 1) Justified; 2) Partially justified; 3) Not justified.</p> <p>4.2 The content of the thesis reflects the topic of the thesis: 1) Reflects; 2) Partially reflects; 3) Does not reflect</p>	<p>The relevance of this dissertation is clearly established and effectively evaluates ongoing international trends. The aim of dissertation is to investigate whether Kazakhstan's pursuit of renewable energy development can serve as a strategic tool to enhance its diplomatic standing and ensure its importance in the dynamic energy sector.</p> <p>The content of the dissertation reflects the research topic and question. The author conveyed his insight into the specific attributes associated with renewable energy and how these attributes may have affected the dynamics between countries in their pursuit of renewable energy transition and carbon neutrality.</p> <p>The purpose and objectives</p>
		4.3. The purpose and objectives correspond to the topic of the	The purpose and objectives

	<p>thesis:</p> <p>1) <u>correspond</u>;</p> <p>2) <u>partially correspond</u>;</p> <p>3) <u>do not correspond</u></p>	<p>correspond to topic of the dissertation sufficiently. The dissertation achieves the purpose and objectives that were specified in the introduction and are evident throughout the entirety of the research process, which were also written down across all the pages.</p>
	<p>4.4 All sections and provisions of the thesis are logically interconnected:</p> <p>1) <u>completely interconnected</u>;</p> <p>2) the interconnection is partial;</p> <p>3) there is no interconnection</p>	<p>All sections and structure of the dissertation are logically interconnected. The dissertation consists of glossary, abbreviations, introduction, main part, conclusion, bibliography and appendices. While the material is comprehensive, the dissertation adeptly preserves the connections and continuity among its multiple elements.</p>
	<p>4.5 The new solutions (principles, methods) proposed by the author are reasoned and evaluated in comparison with the known solutions:</p> <p>1) <u>there is a critical analysis</u>;</p> <p>2) <u>partial analysis</u>;</p> <p>3) the analysis does not represent one's own opinions, but quotes from other authors</p>	<p>There is a critical analysis when considering the author's examination of a wide range of literature and relevant materials produced by internationally well-known academics. The author formulated his conclusions and offered interpretations concerning Kazakhstan's foreign affairs strategies in the context of renewable energy.</p>
5.	<p>Scientific novelty principle</p>	<p>5.1 Are the scientific results and provisions new?</p> <p>1) <u>completely new</u>;</p> <p>2) <u>partially new (25-75% are new)</u>;</p> <p>3) <u>not new (less than 25% are new)</u></p>
		<p>The scientific results and provisions are completely new, highlighting the foreseeable and unforeseen opportunities as well as obstacles</p>

		<p>5.2 Are the dissertation findings new? <u>1) completely new;</u> 2) partially new (25-75% are new); 3) not new (less than 25% are new)</p>	<p>that Kazakhstan may encounter when pursuing its renewable energy-oriented foreign affairs strategies in both theoretical and practical terms.</p> <p>The dissertation findings are completely new as there has been rarely any discussion about energy democracy, technocracy and social justice in the field of international energy relations, and even less in the practice of energy diplomacy. Yet, these are essential components when considering building a sustainable future and achieving carbon neutrality on a global scale. Reading about them by the end of this dissertation helps comprehend a fresh approach that formulates a new type of international energy relations beyond the conventional understanding of energy security.</p>
		<p>5.3 Technical, technological, economic or management decisions are new and reasonable: <u>1) completely new;</u> 2) partially new (25-75% are new); 3) not new (less than 25% are new)</p>	<p>Technical, technological, economic or management decisions are completely new when considering the impact of renewable energy technologies and other relevant technologies on determining the patterns of inter-state cooperation and competition.</p>
6.	The validity of the main findings	<p>All main conclusions <u>are</u>/are not based on scientifically significant evidence or well-grounded (for qualitative research and areas of training in the arts and humanities)</p>	<p>All main conclusions are based on scientifically significant evidence and are well-grounded. The author applied a mixed method research</p>

		methodology to complement qualitative data with quantitative data to build a realistic and credible forecasting model, underscoring the emerging clusters, patterns and trends in international energy relations.
7.	The main provisions for the defense	<p>It is necessary to answer the following questions for each provision separately:</p> <p>7.1 Is the provision proven?</p> <p>1) proven; 2) rather proven; 3) rather not proven; 4) not proven</p> <p>7.2 Is it trivial?</p> <p>1) yes; 2) no</p> <p>7.3 Is it new?</p> <p>1) yes; 2) no</p> <p>7.4 Application level: 1) narrow; 2) medium; 3) wide</p> <p>7.5 Is it proven in the article?</p> <p>1) yes; 2) no</p>
		<p>1. While geo-related factors are influential to a country's foreign energy policy, diplomatic capacity and global presence in the post-petroleum world are linked less with neorealism's self-help and power struggles among states but rather with a framework of interdependence. This approach prioritises collaborative efforts between partner countries to attain both energy security and carbon neutrality, drawing upon principles of neoliberalism and constructivism. No single international relations theory dominates the landscape.</p> <p>7.1 Is the provision proven?</p> <p>1) proven</p> <p>7.2 Is it trivial?</p> <p>2) no</p> <p>7.3 Is it new?</p> <p>1) yes</p> <p>7.4 Application level: 3) wide</p> <p>7.5 Is it proven in the article?</p> <p>1) yes</p> <p>This provision is partially proven in the author's book chapter "Rethinking Renewable Energy Development in the Republic of Kazakhstan from the</p>

		<p>Perspectives of International Relations. In: Fathi, M., Zio, E., Pardalos, P.M. (eds) Handbook of Smart Energy Systems. Springer, Cham (2023), 27–45.</p> <p>2. The case study on Brazil provides empirical evidence that enriches the understanding of a country's transition towards integrating renewable energy as a strategic element of its foreign policy. The identification of a collection of indicators in Brazil underscores some of the most fundamental but general internal and external conditions that can propel renewable energy to a central position in foreign policy-making in Kazakhstan and other countries.</p> <p>7.1 Is the provision proven? 1) proven</p> <p>7.2 Is it trivial? 2) no</p> <p>7.3 Is it new? 1) yes</p> <p>7.4 Application level: 3) wide</p> <p>7.5 Is it proven in the article? 1) yes</p> <p>This provision is partially proven in the author's article "Future energy security for Kazakhstan: a case study of Brazil" International Journal of Engineering Research and Technology. Vol.13 No.11 (2020), 3718–3731.</p> <p>3. Quantitative research utilising global datasets provides evidence for the</p>
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		<p>formulation may complicate the Republic's efforts to enhance policy resonance and action alignment with the frontrunners in renewable energy transition.</p> <p>7.1 Is the provision proven? 1) proven 7.2 Is it trivial? 2) no 7.3 Is it new? 1) yes 7.4 Application level: 3) wide 7.5 Is it proven in the article? 1) yes</p> <p>This provision is partially proven in the author's article "“Green Kazakhstan”: its relevance to the domestic and international climate ambitions of the Republic of Kazakhstan” International Relations and International Law Journal, [S.l.], v. 97, n. 1, (March 2022), 4–13.</p>
8.	<p>The principle of reliability</p> <p>Reliability of sources and information provided</p>	<p>8.1 Choice of methodology - is justified or the methodology is described in sufficient detail 1) yes; 2) no</p> <p>8.2 The results of the thesis were obtained using modern methods of scientific research and methods of processing and interpreting data using computer technologies: 1) yes; 2) no</p> <p>The choice of methodology is well justified. The author employed a combination of qualitative and quantitative research methods to yield complementary results through data triangulation, which is a rather sophisticated research design.</p>
		<p>The findings of the dissertation were achieved through the application of robust scientific research methods and advanced data processing techniques. The author employed a qualitative data analysis software to</p>

		<p>8.3 Theoretical conclusions, models, identified relationships and patterns have been proven and confirmed by experimental research (for areas of training in pedagogical sciences, the results have been proven on the basis of a pedagogical experiment):</p> <p>1) <u>yes</u>;</p> <p>2) no</p>	<p>identify the indicators that streamline analysis on Kazakhstan. The author also used the Pearson r formula to determine the degree of correlation between renewable energy adoption and diplomatic capacity based on relevant global data.</p>
		<p>8.4 Important statements are <u>confirmed</u> / partially confirmed / not confirmed by references to current and reliable scientific literature</p>	<p>The main statements in the dissertation are based on reliable scientific sources and are thoroughly substantiated. The author used the literature of well-known academics around the world, while taking reference of maps and statistical data produced by authoritative agencies.</p>
		<p>8.5 Used literature sources are <u>sufficient</u>/not sufficient for a literature review</p>	<p>Used literature used in the dissertation is sufficient. Literature sources contain 368 references.</p>
9	Practical value principle	<p>9.1 The thesis has theoretical value:</p> <p>1) <u>yes</u>;</p> <p>2) no</p>	<p>The dissertation has a theoretical value as the author raised a number of theoretical issues associated with energy and Kazakhstan's multi-vector foreign policy in the context of renewable energy. He proposed that a theoretical shift towards neoliberalism and constructivism in Kazakhstan's foreign policy can</p>

		<p>9.2 The thesis is of practical importance and there is a high probability of applying the results obtained in practice: <u>1) yes;</u> 2) no</p>	<p>better accommodate the emerging energy order.</p> <p>The dissertation is of great practical significance, and there is a high possibility of applying the results obtained in practice. In Chapter 3, the author translated his research findings into viable practical diplomatic actions in the format of energy regionalism, the central hub of green agenda and diplomacy centred on uranium, critical raw materials and rare earth elements. These assertions are not fictional but well-founded in accordance with the changes in the global energy supply chains and expectations of the concerned parties.</p>
		<p>9.3 Are the practice suggestions new? <u>1) completely new;</u> 2) partially new (25-75% are new); 3) not new (less than 25% are new)</p>	<p>The practice suggestions in the dissertation are considered completely new when considering, after many years of successful engagement in petroleum politics and fossil fuel extraction, renewable energy development is still at a formative stage in Kazakhstan.</p>
10.	The quality of writing and design	<p>Academic writing quality: <u>1) high;</u> 2) average; 3) below average; 4) low.</p>	<p>The dissertation was written in academic style and the author demonstrated high writing quality.</p>
11.	Notes on a thesis		<p>While the dissertation provides a comprehensive analysis of the state</p>

			<p>of the art and future prospects for renewable energy development in Kazakhstan, it falls short of fully addressing the rationale behind selecting Brazil as a country of comparison, especially considering the significant socio-economic and political differences between the two nations.</p> <p>The study could also be enhanced by a deeper exploration of Kazakhstan's energy policies across various renewable sectors, such as solar and wind energy.</p> <p>The forecasting component would also benefit from the use of more metric data in conjunction with computational modelling or machine learning.</p>
12.	Scientific level of the doctoral student's articles on the topic of research (in case of defense of the dissertation in the form of a series of articles, the official reviewers comment on the scientific level of each article of the doctoral student on the topic of research)		-
13.	Decision of the official reviewer (pursuant to paragraph 28 of the present Model		It is my strong conviction that the dissertation of Hor Ka Wai Christopher, entitled "Foreign

Regulations)	relations of Kazakhstan in the context of renewable energy”, is of considerable relevance and significance. The provisions submitted for defense demonstrate notable scientific value. Hor KWC’s observation and analysis highlight the strategic role of renewable energy in Kazakhstan’s foreign relations in the context of diplomatic capacity and relevance to global energy security. It is evident that Hor KWC merits the award of a PhD degree in 8D03105 – “International Relations”.
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In reviews, official reviewers indicate one of the following solutions:

- 1) to award the degree of Doctor of Philosophy (PhD) or Doctor of Specialization;
- 2) send the thesis for revision (except for cases of thesis defense in the form of a series of articles);
- 3) refuse to award the degree of Doctor of Philosophy (PhD) or Doctor of Specialization.

Copies of the reviews of the official reviewers are handed over to the doctoral student no later than 5 (five) working days before the defense of the thesis.

Official Reviewer:

Senior Research Fellow, Doctor of Philosophy (PhD)
Eurasian Research Institute,
Khoja Akhmet Yassawi International Kazakh-Turkish University

Muratbekova Albina Mirzakhonovna

