

REVIEW

of the Official Reviewer for dissertation work (thesis)
on the theme «Foreign Relations of Kazakhstan in the context of Renewable Energy» presented by HOR KA WAI CHRISTOPHER
for the degree of Doctor of Philosophy (PhD) in the specialty «8D03105 – International Relations»

№	Criteria	Eligibility (one of the options must be checked)	Official Reviewer's position justification
1.	The thesis topic (as of the date of its approval) corresponds to the directions of development of science and/or state programs	Compliance with the priority areas of science development or government programs:	Hor Ka Wai Christopher's dissertation aligns with the long-term priorities in energy transition and economic diversification outlined in the "Kazakhstan - 2050" Strategy, the principles of "economisation" of foreign policy in accordance with the "Foreign Policy Concept of the Republic of Kazakhstan for 2020 -2030", and the "Strategy Aims on Achieving Carbon Neutrality until 2060", approved by the Decree of the President of the Republic of Kazakhstan # 121, dated on February 2, 2023.
2.	Importance for science	<p>1) The thesis was completed within the framework of a project or target program funded from the state budget (indicate the project or program name and code number):</p> <p>2) The thesis was completed within the framework of another state program (indicate the program name):</p> <p>3) <u>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):</u></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 (thesis) <u>makes/does not make</u> a significant contribution to science, and its importance is well disclosed/not	This dissertation is among one of the first doctoral research work written and

		disclosed.	studied in Kazakhstan which analyzes foreign relations from the perspective of renewable energy development thoroughly. The dissertation's scientific results and data contribute to the development within the direction of modern international relations of Kazakhstan research-oriented science. This dissertation attempts to form a novel updated understanding the Central Asian vector and the "second-tier" countries in Kazakhstan's multi-vector foreign policy, advocating an optimistic prospect that seeks to consolidate, rather than disperse the great powers' respective energy interests and other partner countries in accordance with the emerging patterns of interdependence that foster energy security and carbon neutrality. Being aware of how renewable energy transition is much more than a mere substitution of energy technologies, this dissertation is among one of the first doctoral research work written and studied in Kazakhstan to incorporate concepts such as energy democracy, technocracy and social justice into the elaborate discussion of international energy relations.
3.	The principle of independence	Self-reliance level: 1) High; 2) Medium; 3) Low; 4) No independence.	The principle of independence of writing skill is high. The author deeply analyzed a wide range of official documents, topic-related industry reports, statistical data, maps, along with a high number of

			research articles produced by scholars from the West, Brazil, China, Russia, Central Asia and Kazakhstan. There is every reason to believe that this dissertation is an independent research-oriented work that demonstrates the author's enthusiasm to elaborate on his selected research topic.
4.	The principle of inner unity	<p>4.1 The thesis's relevance justification: <u>1) Justified;</u> 2) Partially justified; 3) Not justified.</p> <p>4.2 The thesis content reflects the thesis topic: <u>1) Reflects;</u> 2) Partially reflects; 3) Does not reflect.</p>	<p>The dissertation's relevance is justified and accurately assesses today's international energy trends. The dissertation was designed to explore whether Kazakhstan's efforts to embrace renewable energy can serve as a strategic pivot to enhance its diplomatic influence and secure its relevance in an evolving energy landscape.</p> <p>The dissertation consists of three chapters and a number of sub-chapters that well reflects and discloses the dissertation topic. The author demonstrated his understanding of the unique features found in renewable energy technologies and how these features could affect the interactions between countries within the energy supply and value chains. Through deduction, these technological features and inter-state relations were turned into diplomatic activities according to Kazakhstan's multi-vector foreign policy. The dissertation's final chapter focused on Foreign Energy Policy of the Republic of Kazakhstan in the Post-</p>

			Petroleum World spells out the changing role of fossil fuels in the coming decades and the urgency for Kazakhstan to formulate foreign policy actions in accordance with the challenges in research object.
	4.3. The thesis purpose and objectives correspond to the topic: <u>1) correspond;</u> 2) partially correspond; 3) do not correspond.	The dissertation purpose and objectives correspond to its topic. The dissertation fulfilled the purpose and objectives set at the start of the research process, which is reflected in the research's findings and conclusions.	
	4.4 The thesis's all sections and provisions are logically interconnected: <u>1) completely interconnected;</u> 2) the interconnection is partial; 3) there is no interconnection.	The dissertation's all sections and structure are logically interconnected. The dissertation consists of glossary, abbreviations, introduction, main part, conclusion, bibliography and appendices. Although the material is extensive, the dissertation successfully upholds the interconnection among its numerous components.	
	4.5 The new solutions (principles, methods) proposed by the author are reasoned and evaluated in comparison with the known solutions: <u>1) there is a critical analysis;</u> 2) partial analysis; 3) the analysis does not represent one's own opinions, but quotes from other authors.	The author analyzed the literature and sources from the West, Brazil, China, Russia, Central Asia and Kazakhstan and evaluated feasible new solutions through a comparative analysis with existing ones. The author tried to critically analyze and objectively examine the relevant publications on the topic in peer-reviewed journals, international conferences, monographs and analytical reports. Besides, the author employed a Mixed methods research (MMR) methodology	

			consisting of five phases that incorporated theories, qualitative and quantitative methods to triangulate the data. This enabled complementary analysis that yielded new perspectives on solutions. The author complemented this research method and relevant data to create a realistic and credible projecting model that was then used on Kazakhstan. This showed novelty while known solutions were not neglected.
5.	Scientific novelty principle	<p>5.1 Are the scientific results and provisions new? <u>1) completely new;</u> 2) partially new (25-75% are new); 3) not new (less than 25% are new).</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>I believe that the scientific results and principles are completely new, indicating that the uncertainties and issues present in both theoretical and practical contexts have been effectively managed. This was demonstrated that in terms of Kazakhstan's foreign policy trajectory, the theoretical composition is anticipated to shift towards neoliberalism and constructivism as interstate cooperation and identity re-invention were found to be crucial for successful renewable energy diplomacy</p> <p>The dissertation conclusions are completely new as the author made a bold attempt to discuss energy democracy, technocracy and social justice as a niche for policy resonance and action alignment between Kazakhstan and the international actors-based community when pursuing renewable energy deployment to achieve</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>energy sustainability. This is a new approach that contributes to the elaboration of scientific discussion in the field of international energy relations.</p> <p>Technical, technological, economic or management decisions are completely new when considering the wide implications of renewable energy technologies and enabling technologies on foreign policy-making and diplomatic activities.</p> <p>Fifty-five joint Kazakh-Chinese projects have been listed since 2015, including nine renewable energy projects, two projects that manufacture solar panels and electric cables, and a combined heat and power project that increases energy efficiency. In addition, there are projects that reduce air and water pollution, support plant-based agricultural business and develop the Belt and Road Market Segment in the Astana International Exchange (AIX) under the AIFC to support connectivity and infrastructure development</p>
6.	The validity of the main findings	<p>All main conclusions <u>are</u>/are not <u>based</u> 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 reasonably well-grounded. The author triangulated theories, empirical evidence and statistical data to project the theoretical and practical trajectories of Kazakhstan's multi-vector foreign policy in association with global energy security and carbon neutrality.</p>

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? <u>1) proven;</u> 2) rather proven; 3) rather not proven; 4) not proven.</p> <p>7.2 Is it trivial? 1) yes; <u>2) no.</u></p> <p>7.3 Is it new? <u>1) yes;</u> 2) no.</p> <p>7.4 Application level: 1) narrow; 2) medium; <u>3) wide.</u></p> <p>7.5 Is it proven in the article? <u>1) yes;</u> 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 prioritizes 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? 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 This provision is proven in the author's book chapter "Rethinking Renewable Energy Development in the Republic of Kazakhstan from the Perspectives of International Relations. In: Fathi, M., Zio, E., Pardalos, P.M. (eds) Handbook of Smart Energy Systems. Springer, Cham. (2023).</p> <p>2. The case study on Brazil provides</p>
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		<p>countries, Kazakhstan develops a diversified portfolio of energy partners, which not only allows for the ongoing development of its fossil fuel reserves but also promotes investments in renewable energy projects. This dual approach fosters the adoption of a hybrid diplomatic model that integrates both petroleum politics and renewable energy-oriented foreign affairs strategies.</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 proven in the author's article "Trends and Challenges of Energy Diplomacy: a case study on Kazakhstan" Bulletin of the L.N. Gumilyov Eurasian National University. Political Science. Regional Studies. Oriental Studies. Turkology Series., 142(1), (April 2023), 104–119.</p> <p>5. Renewable energy adoption transcends mere energy technology substitution. Kazakhstan's renewable energy transition signifies substantial changes to the political, societal and</p>
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8.	<p>The principle of reliability: Reliability of sources and information provided</p>	<p>8.1 Methodology choice - is justified or the methodology is described in sufficient detail 1) <u>yes</u>; 2) no.</p> <p>The Methodology choice is well justified. The author employed a combination of qualitative and quantitative research methods to yield complementary results. The second phase of the MMR was</p>

			<p>demonstrated through the use of Brazil as a case study to identify key conditions that guide the theoretical and practical trajectories of foreign policy in response to the emerging energy landscape, together with a quantitative correlation analysis of Global Energy Architecture Performance Index data to indicate the world uneven pace in renewable energy transition.</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:</p> <p><u>1) yes;</u></p> <p>2) no.</p>		<p>The Dissertation outcomes were obtained using modern methods of scientific research and methods of processing. The software MAXQDA was used to identify the indicators through codifying the qualitative data found in Brazil, while the quantitative data of over 115 countries was analyzed through Microsoft Excel. Tables and diagrams were also used to present patterns, clusters and trends.</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><u>1) yes;</u></p> <p>2) no.</p>		<p>The theoretical conclusions, models, relationships and patterns obtained as a result of the research were substantiated and confirmed through academic experimental research.</p> <p>As the development of renewable energy is accelerated in Kazakhstan, there have been an increasing interest among the public, practitioners and academics alike to engage in relevant expertise discussions. This dissertation facilitates these discussions by covering strategically essential aspects and raising</p>

		up crucial issues, promoting meaningful engagement from the renewable energy perspective debates.
	8.4 Important statements <u>are confirmed</u> /partially confirmed/not confirmed by references to current and reliable scientific literature	The main statements in the dissertation are based on reliable scientific sources and are thoroughly substantiated. The author substantiated the main aspects of the topic under study with official documents, statistical data, and other expertise reliable sources. Each conclusion and result in the dissertation are supported by reliable data from the scientific literature, which demonstrates the research's internal structure. Thus, the author demonstrated the ability to critically analyze various sources and draw analytical conclusions from the international relations perspective by and large.
	8.5 Used literature sources <u>are sufficient</u> /not sufficient for a literature review	The list of literature used in the dissertation is sufficient for a full-fledged study. The bibliography contains 368 references. The dissertation author has also paid special attention to the work of well-known western and Chinese experts in the field of international relations and energy diplomacy who have emerged in recent years. A critical approach to the sources used is clearly visible in the analysis of the methodology and in the assessment of their contribution to the topic. Thus, the dissertation's literature review demonstrates a high level of scientific

			evidence and the research thoroughness in accordance with the foreign relations of Kazakhstan in the context of renewable energy.
9	Practical value principle	<p>9.1 The thesis has theoretical value: <u>1) yes;</u> 2) no.</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>The dissertation has a theoretical value as it establishes a unique perspective on the evolution of Kazakhstan's multi-vector foreign policy in response to the emerging energy landscape. The author proposed that consolidation, rather than leverage-seeking, could better equip Kazakhstan to address the unaligned energy interests and uneven renewable energy transition across the globe. The author's notion of introducing a hybrid diplomatic model that integrates both petroleum politics and renewable energy-oriented foreign affairs strategies is deserving of theoretical consideration.</p> <p>I consider the dissertation to be of great practical significance, and the possibility of applying the results obtained in practice is high. It should be noted that this dissertation is a significant contribution to the study of Kazakhstan's foreign energy policy strategy. Its theoretical and methodological analyses, as well as the practical conclusions, are of interest to both the academic community and practitioners in the field of international relations. It is important to note that the study takes into account modern geopolitical challenges and emerging patterns in the global system.</p>

		<p>9.3 Are the practice suggestions new?</p> <p><u>1) completely new;</u></p> <p>2) partially new (25-75% are new);</p> <p>3) not new (less than 25% are new).</p>	<p>The dissertation results can be used in academic circles, as well as in consultations at the political level that influences on governmental decision-making process, focusing on analyzing the transformation of international relations in association with the increasing renewable energy deployment.</p>
10.	The writing and design quality	<p>Academic writing quality:</p> <p><u>1) high;</u></p> <p>2) average;</p> <p>3) below average;</p> <p>4) low.</p>	<p>The quality of academic writing is high. Academic English was properly used in the thesis describing the arguments, which are comparison prompt and precise. The western styled English was demonstrated in the thesis for better understanding by the internationally recognized energy experts.</p>
11.	Notes on a thesis		<p>Despite the author's skillful use of various research methods, the overall dissertation quality can be improved if the significant contrast between different forms of renewable energy sources, such as solar, wind, hydroelectric power,</p>

			biofuels and green hydrogen, are given due attention. Another point is the lack of high-quality literature on renewable energy adoption authored by energy experts of Kazakhstan from the perspective of international relations. As a result, the dissertation appears to miss out on crucial insights needed for the policy-makers of Kazakhstan in the transition to renewable energy.
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.	The official reviewer's decision (pursuant to paragraph 28 of the present Model Regulations)		Taking into account the above review evaluation, I strongly believe that the dissertation presented by Hor Ka Wai Christopher on "Foreign Relations of Kazakhstan in the context of Renewable Energy" is highly relevant and important. The provisions submitted for defense have a scientific value. Hor Ka Wai Christopher's insightful perspectives shed light on the strategic importance of renewable energy in Kazakhstan's foreign relations. To conclude, Hor Ka Wai Christopher truly deserves a Doctor of Philosophy (Ph.D)

		degree in 8D03105 – “International Relations”.
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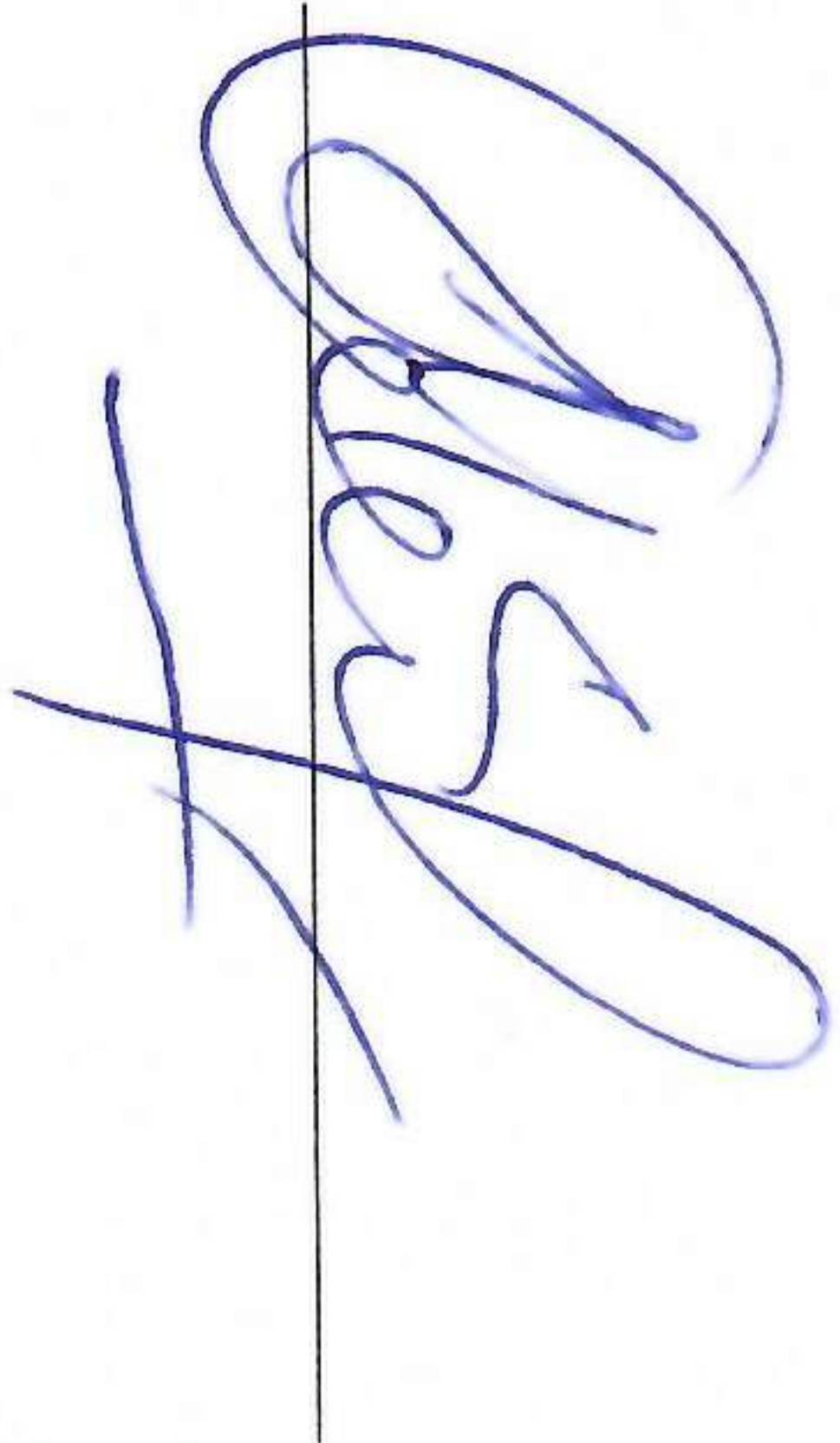
In reviews, official reviewers indicate one of the following solutions:

- 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.

The Copies of the Reviews of the Official Reviewers are handed over to the doctoral student no later than 5 (five) working days before the thesis defense.

Official Reviewer:

**Professor, Doctor of Philosophy (Ph.D) in International Relations
International Information Technology University**



Mukan Saken

