

**India's Energy Interest in the Caspian Sea Region: A Case Study
of India-Turkmenistan Relations**

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Introduction:

India is the most populated nation in the world which consumes a huge quantum of energy per day. As my research work is entirely endowed on the study of energy security strategy, my main focus will be on securing energy security for India. In the present context, India's domestic consumption of energy is increasing vastly. This obviously creates a huge energy demand. According to experts of several studies, for its huge energy demand, India needs to focus on the import of energies from abroad. In my research work, I would like to focus on Turkmenistan for its huge natural gas reserves. Turkmenistan is located in the southern Caspian Sea basin. India's connectivity towards the Caspian Sea basin is most important for importing energy from this region. At present, India's main focus to Turkmenistan vis-à-vis the Caspian Sea basin; because energy import from this region is most easy for India. Import cost is low compared to other energy potential regions, like the Middle East and Southeast Asia, and many more. India's 'Connect Central Asia' policy has taken for import of energy is concerned. However, India and Turkmenistan do not share a common land boundary, but they are located on the same continent in the world. Thus, several direct road links or pipeline connectivity can be made to connect those countries. At the present study, Turkmenistan and the adjacent states of the Caspian Sea basin (Azerbaijan, Iran, Kazakhstan, and Russia) is crucial for India's huge energy demand. Several international policies and trade barriers challenge India's foreign policy towards this region, but India is trying to improve greatly for its own needs.

Statement of Problem:

The current geopolitical situation in the Caspian Sea basin and the great game played by the big powers like the USA, Russia and China, in the region gave rise to a number of critical issues and challenges that shape the dynamics of relationships among countries in the Caspian basin. The resources, their location and the jurisdiction of various countries and claims of ownership over them marked a special issue of geopolitical and strategic understanding of the region. The market factors, the way of transport and connectivity concerns as well as the political issues shaping the regions emerging identities are the particular challenges in the world politics. As a smart business strategic power, India perceive their partners and they come up with policies that are the result of mutual interest. The preponderance of the China and evil nexus of Pakistan and China lays a negative impact in India's 'Connect Central Asia policy' agenda. The vital area of

connectivity with this Caspian region is the International North-South Transport Corridor, the TAPI gas pipeline system along with swap deal system for India. The bone of contention here is the political rivalry, big power politics, the clash of interest of the multilateral Memorandum of Understanding, huge quantum of foreign capital investment, diplomatic challenges and direct survey related issues regarding the exploration, and shareholding of the energy. The uniqueness of this research at hand is that it is an original academic endeavor backed by a number of scientific and experimental-applied research methodologies that is qualitative-quantitative methods are comparing and competing with each other to arrive at a conclusion amiable for the greater academic world at large.

Literature Review:

Energy Security in International Relations (India's Energy Security) by Munir Alsaad:

In this path breaking study, the author Munir Alsaad highlighted the emerging problems in the 21st Century in regard to determining the nature and shape of International Relations. The author has rightly pointed out that since civilization, energy has become an important and vital need of human being and its demand is increasing day by day. Hence, every state in the world is very much concerned regarding energy and how to cope up with the threat to the global energy crisis and how to ensure that the energy is affordable for the people and economies. This is an analytical-descriptive study on the security of energy in the international perspective. The author thinks that the concern about energy has become the focal point of international affairs, because energy has made huge transformations in the nature of international relations strategic alliances and cooperation agreements between nations. In addition, energy has also become a source of tension due to the international competition and conflicts over energy resources between nations. The challenge of energy security emerges from the oil crisis of 1973 and it radically transformed the concept of energy security. In fact, the situation became aggravated when Organisation of Arab Petroleum Exporting Countries (OPEC) proclaimed and oil embargo, resulting in high oil prices. Under this perspective, the author made his plan of his study on the importance of energy security. This is a PhD thesis, divided into seven chapters. In the first chapter, the author has given a general description of energy security in international relations. He has rightly said that energy security has become a key factor in international relations because it has become a

determinant of the nature of contemporary international relations. It also includes the research problem, hypothesis, methodology as well as a review of previous research and studies.

In the second chapter, the author analyses the energy crisis in the backdrop of increasing dependence on energy resources and growing global energy demand. In the third chapter, he examines how the issue of energy security has an impact on international relations theories. This chapter reviews the definition of the concept of energy security and presents the viewpoints of different authors in this regard. The fourth chapter deals with factors affecting international energy security. It focuses on strategic energy regions, such as the Persian Gulf region, Caspian Sea region and the African region. Here, the author mentions the role of major players like OPEC, International Oil and Gas Companies, Marine Straits and Channels, and the current nature of the energy security system as well as the factors influencing the international energy market. The fifth chapter comprises a spectrum of competition over energy resources among the countries. It also highlighted the inevitable outcome of the energy crisis and increasing global energy demand. The sixth chapter focuses on the issue of India's energy security. Energy determines the country's economic and foreign policy. In this chapter, the author tries to reveal India's energy security framework and its pattern and nature of ever-increasing energy demand, rising prices, and competition from other powers particularly the threat posed by the Chinese presence in the Indian Ocean. In the seventh chapter, the author has given his findings in addition to the suggestion and general recommendations for the construction of an international energy security system and how to make it more efficient that will invariably contribute to the reduction of disputes and conflicts over energy resources. The author has presented various tables and maps for the interpretation of data. In fact, in the domain of research on energy security, the author's book will no doubt be an important and vital source of information to the research scholar in the area.

Pranab Kr. Das., Central Asia: A New Avenue to India's Future Energy Needs & Geo-Strategic Challenges

The article under the review is on Central Asia about the future energy needs of India and its geostrategic challenges. India has been targeted to become a developed nation within the year 2020. But the problem to achieve this target is a deficit in energy production inconsistent with energy consumption, particularly India has no sufficient petro reservoir. Hence, India is

compelled to import huge energy from energy-rich countries. But India faces an enormous problem in this regard. In fact, Russia, China, USA, and European Union have established their strategic presence in Central Asia. But India, a late comer in this area, its status is vulnerable. The author, while discussing geopolitical situation in Central Asia, portrays India's strategic disadvantages to Central Asia. It also emphasised the strategic challenges India faced in the sphere of energy import from this region.

India's Energy Security Strategy towards The Caspian Sea Region By Elahes Koolae and Masoud Imani Kalesar

India falls into the category of powerful states. It is the world's second largest population states and its geographical size is the seventh largest in the world. But India's basic problem centres on insecure energy security and its foreign policy is not oriented towards a secured energy security system particularly in the Caspian Sea region. The author's article highlights on this aspect. In the introduction, the author has given the India's energy profile particularly oil and gas production and quantum of imports of these two energies from South East Asia, Middle East and Caspian Sea region. The author's vividly described oil and natural gas production in the Caspian region like Kazakhstan, Azerbaijan, and Turkmenistan etc. They also described the oil and gas companies engaged in these areas. India for its geopolitical interest in CSR requires strengthening of its relation with the countries of this area. But the problem is: threats of terrorism and balance of power considerations with Pakistan and China. This part of the problem has been vividly described in this article. In fact, the US influence in the CSR is undoubtedly "energy stakes" in the CSR. India is facing this problem. The authors analyse this problem and have given a spectrum of India's energy deals with the CSR. They also highlighted India's limitations in regard to energy import from CSR and described the fate of the operation of TAPI and IPI pipelines.

Mahaligam Sudha: "India's Energy Security Challenges" in Ganguly Sreemati, Strategising Energy: an Asian Perspective (New Delhi: K.W Publishers, 2014)

Energy has become an important thing which is the driver of development of modern economics. Hence, all states in the world have given very much importance to supply energy for their domestic needs. The domestic needs of energy are increasing day by day. For India, the people

aspiring for a better living standard are in need of energy. Hence, energy intensive growth paradigm poses considerable challenges. In this paper, the author examines India's energy security problems and critically evaluates not only its external initiatives to procure overseas oil assets, but also the domestic supply of energy. For this, the author highlighted the measures adopted by the Indian state to deal with its energy crisis. While explaining various aspects of India's energy security conundrum, the author describes the initiatives taken by Government of India to boost up the production of oil, gas and how to store them. In this context, the author has highlighted India's connectivity with other countries like Turkmenistan, Pakistan, Bangladesh and Myanmar where there have been substantial gas deposits. He has mentioned Iran, Pakistan and India gas pipeline (IPI) and the Turkmenistan-Afghanistan-Pakistan-India (TAPI) pipeline and the circumstances India is bound to keep away from IPI project. He gives various aspects of TAPI gas pipeline. The author has rightly said that coal security is essential and the Indian companies who are procuring coal from different countries like Indonesia, Australia, etc. have been trying to speed up coal production units in India. Hence, India's approach to energy security, the author argues that it displays a modicum of imbalance where excessive emphasis placed on managing the external dimensions-which may or may not enhance energy security-rather than correct domestic distortions. It is the result of India's half-hearted and ineffective domestic policies which led to India's poor energy management.

Devendra Pratibha, Economic Security Dimensions in Central Asia: Role of India (New Delhi: KW Publisher, 2012)

Central Asia is an area that can be described as the 'Cross roads of the World'. This area is composed of five newly created states- Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan. It is surrounded by powerful states like China in the east, Russia in the north, Iran and Afghanistan in the south and Turkey and European countries in the west. At the outset, the author analyses the perspective under which the external and internal security issues arose in Central Asia. The author has highlighted the new challenges those facing by the Central Asian states. The potent issue is the problem of Islamic terrorism in Central Asia. There are regional problems like drugs and weapons trafficking, human rights abuses, ethnic conflicts, environmental problem, energy security, interstate dispute, border dispute, etc. The author has vividly described all this regional problems which plagued the Central Asian states.

There are many constants on the way of development in the Central Asian region and there are many obstacles to regional trade. The author has vividly described the problems facing trade in this region. All this are analysed with the help of graphs, tables and maps. Particular emphasis is given on the oil savings in Central Asia and central pipeline system. Turkmenistan is predominantly a desert state with large oil and natural gas reserves. Here, the energy import is very much important like other states of Central Asia. Turkmenistan is potential and it plays a central role in north-south transport and a specially trade link with Turkey, the Middle East and South East Asia. Turkmenistan seems to be a brilliant player in the currently emerging trade relations with Eurasia. Lastly, the author has given data and information on the future consumption of energy in India and its prospect of supply of energy from Central Asian republic through regional arrangements.

Nirmala Joshi, “Central Asia: The Great Game Replayed: an Indian Perspective” (Delhi: New Century Publication, 2003)

The book under review comprises a combination of papers which provides an in depth analysis of the Indian perspective on the Great Game-as it unfolds the geopolitical ramifications for this country. In fact, American hegemony in Central Asia is so much that the great British geographer Halford Mackinder observed in the 19th Century that the Central Asia is the ‘Heart Land of history’. He argued that whoever controls ‘Central Asia controls the world’. In fact, the Central Asia became a prominent place particularly for rich energy reserves and for this reasons it became a game of great power rivalry. In this book, the author has tried to portray the US interest in Central Asia, the main trends of US activities in Central Asia. Here, the role of China has also been taken for elaborate study of the Central Asian politics, rise of religious extremism, ethnic issues, and the role of Russia in Central Asia. All this led the Central Asia region in a flux and peace and stability in this region face a great challenge, particularly at the face of the growth of Islamic extremism. The author has highlighted the historical and cultural bonds of India with the Central Asian region date back to the Bronze Age of 5 million BC. India began to connect with Central Asia during the post-cold war period when the bipolar world collapsed and a radical transformation came when the Soviet Union disintegrated and foundations of the framework of Indian foreign policy changed. While analysing the regional security and strategic order of

Central Asia, the author has said that the newly emerged Central Asia provides immense strategic and economic opportunities for India.

Politics of energy resources is a central theme in the CAS. Central Asian energy resources potentialities are used which paved the way for political rivalry among the different energy deficit states. A major source of conflicts among the Caspian Sea States is their inability to arrive at a consensus about the legal status of CASPIA. In the region, there existed differences about the ownership of oil deposits, politics of pipelines which led to unrest in the region. Moreover, the US interests in the CSR particularly after post 9/11 scenario aggravated the problem. The particular interest is the paper written by Gulshan Sachdeva on understanding Central Asian economic models. It highlights economic and social indicators of development in Central Asia and how Central Asia established macro-economic stability in 2000-2001, and their level of reform undertaken in 2000. India's relation with Central Asia has various dimensions, most of which are very much important. Indo-Central Asian spiritual connection can be cited as an important one. In fact, Central Asian historiography possessed all the features of Perso-Arab traditions.

B, Behera., Central Asia-China Relations Since-1991 (Delhi: Vista International Publishing House)

The book under review is a study on Central Asia, the history of its creation, the political situation facing these countries etc. are highlighted. In fact, particular emphasis was given on the origin of Central Asian states like Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan and Tajikistan. While elaborately discussing the history of the disintegration of the Soviet Union and creation of these five Central Asian states, the author has rightly pointed out that both China and Russia have a common policy towards Central Asian states. That is to say, to promote and maintain the region's political and economic stability. The prime theme of this thought provoking and brilliant study have been on geostrategic and geopolitical importance of Central Asia, the peripheral states, China-Russia, Afghanistan, Iran and India, America. The author has given a special emphasis upon the economic base of the Caspian region. In fact, the Caspian region's states particularly Central Asia are oil rich countries. Now the great powers are at loggerheads to procure oil from this Caspian Sea region, particularly from Central Asian states.

The author has vividly shown how Russia has become a factor in Central Asia- China relationship.

R, Bhaltia, and Meruyert Abusseitova, Laura Yerekesheva, Athar Zafar (ed.s), India and Central Asia Exploring New Horizons for Cooperation (Delhi: Shapru Publications, 2014)

This is a pioneering work edited by Rajiv Kumar Bhatia and Meruyert Abusseitova, Laura Yerekesheva, Athar Zafar which explores new horizons for cooperation between India and Central Asia. In the foreword, the editor has said that India which has established a diplomatic relations with each of the Central Asian republics considers Central Asia as a hub for resources and its economic diversification. The book is divided into four parts. Part-I contains ‘India-Central Asia and the Regional and International Developments’ which comprises of papers of renowned academicians and scholars on the above subject. Part-II focuses on ‘India- Central Asia Enhancing Cooperation’. Part-III portrays “India-Central Asia Bilateral Relations’ while Part-IV comprises ‘Papers on Central Asia in Russian Languages’. The book begins with an inaugural address by Mr. E Ahamed, Minister of State for External Affairs, Govt. of India. Both India and Central Asia are multicultural and pluralistic. This is the point that the minister highlighted in the conference held at Almati, situated in Kazakhstan where the minister focused on various aspects of India-Central Asia relationship, which was initiated on the 20th Anniversary of India’s diplomatic relations with Central Asian countries in 2012. Among the issues, the prime theme- India-Central Asia connectivity issues were given priority. Here, the editor highlighted interregional connectivity pertaining to rail-road-pipeline routes to link Central Asia and India-with broader links between Europe and Asia are being explored. These routes are: International North-South Transport Corridor (INSTC), Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline, Iran-Pakistan-India (IPI) gas pipeline. The editor has broadly analysed various aspects of these connectivity. Again, in the area of connectivity, the author has given particular attention given to Turkmenistan-Uzbekistan-Kazakhstan-China gas pipeline routes. The editor has rightly said that to explore oil and natural gas, Central Asia is in great need of Foreign Direct Investment (FDI) and technological inputs. India’s own FDI needs may prevent it from becoming a significant investor in the region. Hence, the proximity of the relationship between India and Central Asia are a problem. But the adjacent position of the Central Asian

states makes the prospect of connectivity bright for technological and infrastructural needs of Central Asia and India's rising energy demands.

Overland, Indra, H. KJaernet and Kendall Andrew-Taylor., *Caspian Energy Politics (Azerbaijan, Kazakhstan and Turkmenistan)*, (USA & Canada: Routledge, 2010)

Caspian Energy Politics is a part of the book wherein the following themes are included for analyzes particularly the role of oil and gas in the development of the three main petroleum exporters in the Caspian region: Azerbaijan, Kazakhstan and Turkmenistan. The highlights are on how energy resources influence interaction with Russia and China. Particular emphasis was given upon Turkmenistan-Caspian resources. Here the authors traced the historical background of Turkmenistan, its attainment of independence, the 'open door policy': 1992-98, isolation and repression, pipeline projects, trans-Caspian pipelines, trans-Afghan pipelines, trans-Asian pipelines, and geopolitical orientation of the Caspian region. The authors focused on Turkmen-Russian relations where they have given a brief description on Turkmenistan-Iran relations.

R, Pandey., "How Can India Achieve Energy Security?" *Economic and Political Weekly*, Vol. 41 No. 4, Jan. 28, 3rd February 2006

The high time now for India is to set priorities in the energy sector. The author has felt that India needs a robust policy in the sphere of energy sector in order to enhance development and supply capabilities in energy production technologies. India should ensure reliable supply of usable energy carriers to all its citizens attain affordable cost and increasingly reduce both local air pollution and green house gas emissions. All these aspects of the energy security have been highlighted by Rahul Pandey in this thought provoking paper.

The author thinks that energy is an essential commodity for Indians. It is useful at the same time harmful. In fact, since independence coal is the primary fuel and it has been used mostly for electricity generation. The author thinks that an energy policy that enhances energy security of a nation in the real sense has to be centred on a set of renewable energy options. The author has vividly explained this option in this paper. The author thinks that India must drastically change its energy strategy. He adds that the highest priority of Government should be given on a wide set of renewable energy options. He opines that the focus will require radical changes in our energy sector's institutionally structure. A robust policy that enhances our domestic

development, manufacture and supply capabilities in the technologies should be given a priority. It ensures dispersed and reliable supply of useful energy carriers to the poor and non-poor citizens. It will drastically reduce both local air pollution and greenhouse gas emissions.

A, Singh., “The Economies of Iran-Pakistan-India Natural Gas Pipeline”, *Economic and Political Weekly*, Vol. 43 No. 37, 13-19th September 2008

India is an energy deficit country. It depends on the availability of energy from energy rich countries like, Central Asia, Iran, Arab etc. In fact, the dependence on imported fuel- oil, natural gas, coal and nuclear fuel-is expected to increase in the future. This is the point that the author has highlighted in this paper. It examines the economics of the landed price of natural gas in India through the Iran-Pakistan-India pipeline. It reviews the natural gas demand and supply scenario in India. It assesses the efficacy of the pipeline in the context of energy security. It also analyses the economics of natural gas supply from IPI pipeline in terms of cost of power generation and cost of delivered power to consumers. It also highlights the process of negotiations for the IPI pipeline. The paper is full of tables highlighting sources of primary energy supply in India, projected demand for natural gas, demand for natural gas for power sector, projected natural gas based capacity and natural gas requirement, etc.

The author has concluded that the natural gas supply from IPI gas is not expected to be cheap. He thinks that the “real” economics benefits of the IPI pipeline are to be found beyond the offered price of gas. Although security concerns are real, the project structuring and supply contact must envision the potential for disruption of supplies. The pipeline may serve as ‘a peace pipeline’ and may strengthen the economic ties between India and Pakistan.

Objectives:

To determine due to strong connectivity in Turkmenistan, stable energy security has been evident in the Caspian Sea region affecting India. But as Pakistan and Afghanistan do not have direct pipeline transport, energy trade through to the Caspian basin has been facing a great challenge for India’s ‘Connect Central Asia’ policy. But it has been assumed that India has a strong bilateral relation with Turkmenistan, a proper transport of crude oil and natural gas will be easily available. Vis-à-vis India has a strong bilateral and multilateral relation with Iran, Azerbaijan, Kazakhstan and Federal Russia. There is direct connectivity like INSTC (International North-

South Transport Corridor) with Central Asia or else the Caspian Sea region. But a proper chance of increase co-operation will surely occur through this international strategic position of India. As the economic and political condition of Turkmenistan is stable in the contemporary era, India-Caspian Sea region (particularly South Caspian Sea basin which involves two states like Iran and Turkmenistan) policy also finds its route to be strengthened. This co-operational importing energy resource will further emphasize India's foreign trade in a high-level zone. It is a descriptive method of research analysis.

Hypothesis:

- Growing domestic energy consumption against the shortage in domestic supply compels India to look for outside markets.
- Unstable Afghanistan and problematic Pakistan put obstacles in India's energy aspiration in the region.
- Caspian Sea basin and particularly Turkmenistan provide huge opportunity for India in meeting its energy requirements for long term.

Methodology:

The study has employed the historical narration with a focus on interpretations of primary and secondary sources and the data collected through formal and informal interviews of officials and academicians it can be entered into exploratory, descriptive, and qualitative-quantitative research method. It further makes a case study of Turkmenistan. Primary materials in terms of reports and interview results data, the literature of official annual data, statistics, official website diagrams, etc. have been used. Newspaper reports constitute a critical part of primary sources. Secondary references have involved published texts and journal-articles in support of the arguments.

Chapters:

In my whole PhD thesis, there are a total of five chapters and also firstly introduction and finally conclusion included. The names of the chapters are:

1. India's Energy Needs and Domestic Supply
2. Energy Potentiality of the Caspian Sea Basin
3. India's Energy Security Strategy in the Caspian Sea Basin
4. Energy Issue in Turkmenistan's Foreign Policy

5. Energy and India-Turkmenistan Relations

Chapter I: India's Energy Needs and Domestic Supply:

The first chapter of my research work entitled 'India's Energy Needs and Domestic Supply' postulates the fact that there is a relentless need for energy security for its sustenance. Needless to say that energy security is the primary condition for a country's progress coupled with sustainable development and the establishment of a welfare society is deeply involved with the issues of energy security and its strategic use ushering in benefits of the general masses at large. This particular chapter mainly substantiates the ardent needs of India's energy issues for its social development and other related political and economic studies contributing primarily to the initial study of this research work. Keeping in view the above proposition, several case studies have been pursued following the line of research methodology to articulate different layouts to mitigate the energy needs of India. The chapter has been divided into five different sub-chapters to outline and examine the contemporary relevance of demand, exploration, connectivity, and supply of energy in India.

The different sub-chapters are linked with electricity, coal, crude oil, natural gas, and renewable energy sources culminating into a full chapter of energy security its prospect and challenges which are dealt with empirically in the chapter followed by relevant research questions and hypothesis. Detailed scrutiny of the present status, year-wise report, mass consumption index, energy production report, and energy import data of various organizations' annual report, along with the prospect of renewable energy has been statistically forwarded, here in the form of different tables, figures, diagrams, and charts. These are used as an analytical tool collected from genuine sources followed by rigorous fieldwork throughout the country and abroad. The main attribute of this chapter is that the equation of production and consumption followed by the demand gap has been mathematically and statistically calculated and put forward to make the research more scientific and practically demanding for persons who are interested in this particular field of study. Besides this, several empiricisms based critical examination of the policies in a different point of time ferreted out by the government of India to quench the thrust of energy needs has been extensively elaborated in this research work. The main attraction of this chapter is that it shows how the quest for energy needs in India is gradually rising high, instead of different measures taken by the government to be self-sufficient in its energy needs. Due to

such a scenario in India's energy sector, its dependency on foreign countries is raising an unparalleled high leading to a compromising foreign economic policy hindering the process of India's economic growth. If such a situation goes on unchecked, India will be invariably falling into a crunch of energy supply and it will be depending on energy import to meet its energy demand. Thus, India's domestic production, consumption, reserves, and demand gap of the last twenty years has been studied vividly to visualize the current situation of India's energy sufficiency and its rising needs to meet the quest of a high potential market.

Chapter II: Energy Potentiality of the Caspian Sea Basin

Everyone is aware of the fact that one of the largest lakes in the world is the Caspian Sea region. As it is a larger lake, it has a large number of natural resources beneath it. The topographical location of this lake is encircled by the five big natural resourced countries like Iran, Turkmenistan, Kazakhstan, Russia, and Azerbaijan; and thus the main characteristic of the lake is that it is one of the landlocked lakes in the world. The entire international community's craving for energy resources is constantly keeping a vulgar eye on the socio-economic and political activity of the region because everyone wants to extract the resources especially crude oil and natural gas from the region. It is pertinent here to mention that the potentiality of crude oil and natural gas can be extracted both from the onshore and offshore regions. From the geographical aspect, the Caspian Sea region has been subdivided into four regional basins like the north Caspian basin, north Ustyurt basin, middle Caspian basin, and south Caspian basin. To meet the excessive quest of energy demand in the rising Indian market, naturally, India is eager to maintain a robust relationship with the countries of the Caspian Sea region and strive hard to ferret out policies congenial for its energy needs. Thus the preponderance of the Caspian Sea region holds most important in the strategic paradigm from the Indian aspect. Like most of the countries of the world, India is craving ardently to maintain a sustainable tie with the countries of the region for its energy needs which is overflowing with versatile energy resources. As the case study of my research work is based on India-Turkmenistan relations and Turkmenistan is topographically located in the South Caspian Sea basin, naturally, a huge amount of emphasis has been given on the South Caspian Sea basin to unfold a vivid discussion on the different macro-micro issues for the ontological and epistemological understanding of the strategic discourse at hand. For a better understanding of the total energy reserves of the region, mentions

are also made of countries like Azerbaijan, Russia, Kazakhstan, Iran, and Turkmenistan to contextualize the research methodology that is the statistical method adopted for this purpose. As the countries of the Caspian Sea basin are located in a geographically contagious region, naturally they have some political issues related to they are at loggerheads with each other. Thus the legal status of this particular region has been upheld for a legitimate purpose. Instances of territorial water boundary dispute of Azerbaijan, Turkmenistan, and Iran attracts our special attention. Following the above discussion, I find the relevance of the discussion of geographical and geopolitical aspects of the region to be discussed in this chapter as a legitimate discussion to carry forward.

Chapter III: India's Energy Security Strategy in the Caspian Sea Basin

In terms of the expansion of India's energy market, the Caspian Sea region is undoubtedly the most important. In this particular chapter, I endeavor to epitomize the countries of the Caspian Sea region in terms of their relations with India for the last two decades. Many tables, diagrams, and charts have been put forward in the chapter to examine the flow of the Central Asian import and export in India especially from the year 1992 to 2019. The thrust of this chapter is to contextualize the relations between India and Central Asia especially the issue of connectivity (road, rail, air, maritime connectivity, crude oil and natural gas pipeline) is concern. On the other hand, how the newly independent states of the CIS in this region are coping up with the big power rivalry in the region has been visualized minutely to examine the political scenario of the region. To analyze this chapter, interview and survey method had been taken by the qualitative-quantitative method has been followed to usher in at an indisputable conclusion. Out of this, a clear picture of India's energy security strategy can be perceived in this chapter. Above all why India is more interested in the Caspian Sea region rather than the other energy-rich regions can be strategically calculated from the discussion made in this chapter followed by different government and non-governmental sources which are authentic for exploratory research work.

Chapter IV: Energy Issue in Turkmenistan's Foreign Policy

The most energy enriched country in the Caspian Sea region is Turkmenistan which is located in the South Caspian basin. Turkmenistan is the fourth largest gas reserves countries in the world. That's why I have chosen Turkmenistan as a case study of my research work. It is a landlocked country surrounded by the Caspian Sea in the western part. In the eastern part, countries like

Uzbekistan, Afghanistan, and Pakistan are there. On the northern side, there is Kazakhstan and in the southern part, there is situated Iran. I am fortunate enough to explore some primary sources to substantiate the energy policy, energy production, legal regulation, and share-holder and investment policy from Turkmenistan's embassy in India, ONGC Videsh Limited and from the Indian Ambassador and Turkmenistan Ambassador, the First Secretary of Turkmenistan Embassy deployed in the country. Immediately after its independence the nature of Turkmenistan's secular democratic ideals and the role of the president especially their foreign policy agenda has been depicted realistically to explain the business relations and connectivity issues between India and Turkmenistan. The change of regime or the government and the ups and down the business and foreign relations between India and Turkmenistan has also been specifically spelled out for the benefit of the research work. The golden treasure in this research work is the input received from the internal energy producing companies of Turkmenistan, the different MoUs with the country and the MNCs and data of foreign investment along with foreign energy producing companies gave a new impetus to the research work which is unique in disguise. With the help of geographical maps, the energy resources reserved in the different provinces of the country are quite significant in this research work. Above all the features of connectivity within the country (road, rail, port, air, oil and gas pipelines) has been put forward with the help of satellite imaginary and topography of the country which is, of course, a rare primary source which I have received from a genuine source.

Chapter V: Energy and India-Turkmenistan Relations

Before I arrive at a conclusion of the research work in the fifth chapter, I especially took cognizance of India-Turkmenistan relations: its import and export since the last twenty years, prospects and the challenges of the relations are vividly discussed giving a special emphasis on the issues of strategic partnership and connectivity. The possibilities of innovations in the relation and the MoUs adopted between the two countries strengthening their relations to maintain a flow of energy resources in India, especially its huge gas supply reducing India's high energy demand is a special critical appreciation in the chapter mentioned to highlight the robust relation between India and Turkmenistan. The legal aspect as well as the private-public venture in different sectors of the economy made both the country a unique case study of smart business economic relations which is the demand of the time today. Despite the different challenges like

geostrategic and political- both the countries work together to grave their mutual benefit which has been analyzed in the chapter with the help of year-wise tables, diagrams, and charts congenial for scientific research work.

Further research on energy security:

The Indian policymakers regard nuclear power generation as a source of clean electricity generation, as well as a means of reducing fossil fuel dependency. The growing importance of nuclear energy in the energy planning of India warrants more attention to the risks of nuclear proliferation as well as reactor safety and waste transportation and storage risks. Technological research as such will be undertaken with support from the Research Council of Norway under the programs PETROMAKS and RENERGI. This research may benefit future cooperation with India on the promotion of energy efficiency and the further development of clean coal and natural gas, but only if Norwegian researchers consider the Indian realities. It is important to combine knowledge from the natural and social sciences in researching even a highly ‘technical’ issue such as energy efficiency for application in an Indian setting. This is why it would be suggest here that the Research Council aim to establish research projects focusing on India, with participation both by natural and social scientists. Finally, the geopolitics of energy security is set to become increasingly significant role in global market, international position and foreign policy formulation. Several, relevant research topics within this field include Indian responses to CAS policies in the Caspian Sea region. The application of these policies, sanctions and the transparency of business ethics in industries that are in conflict with national security interests. Economists have never been able to predict the future of the oil price, partly because so many political factors are involved. For this and several other reasons, economists and other social scientists must collaborate in developing research on energy economics and energy politics. This need is all too evident at a time when a new crisis in Central Asia threatens to evolve either into a system of the UN-imposed sanctions against Iran, the country with the world’s third-largest oil reserves, or to the US warfare against Iran. Such political events could have devastating consequences for global energy security, as well as for the world economy. For that reason, it can be directly affect the INSTC project as well as Indian connectivity towards the Caspian Sea region.

Conclusion:

India is a country whose land and sea connectivity is very developed. Not only that, India is a country that can communicate well with all the countries of the world. Because India has both developed sea and land route network. One of the topics of this scientific research analysis is the relationship and connectivity between India and Central Asia, particularly Turkmenistan. Therefore, in the present situation, millions of people live in this large country, where people need adequate energy for their daily life. In this book, an attempt has been made to present the aspect of energy demand and supply oriented discussion from the Indian perspective. To make this discussion fruitful, the book is divided into four sections or chapters by the author. The first chapter focuses on the internal demand and supply of India's energy resources. As shown, India's internal energy production, the status of domestic and foreign companies, industrial drilling method, internal connectivity network (road, rail, sea, and pipeline system, etc), direct or indirect connectivity problems, energy production-centric problems, public-private joint venture, energy demand, and supply gap and the possibilities of import and their various data, charts, diagrams are being highlighted. Not only that, the present status of energy security in India has been shown by presenting the interview data, newspaper report, governmental and industrial annual report, and the discussion on the security of India's energy resources has been analyzed by highlighting officials of different sectors. The first chapter discusses India's deficit in energy security. India has an energy deficit of more than 70% of its energy resources. As a result, India needs to import huge quantum and adequate energy resources. However, this import is never possible with a country far away from India. Therefore, there are two problems in the hand. Firstly, improving maritime security, and secondly, long sea route energy imports are very much costly for Indian money. This is why in India's foreign policy; the system of importing energy resources from neighboring countries has been adopted. As a result, the 'Connect Central Asia' policy has been adopted in the present era.

Central Asia, particularly the Caspian Sea region, is not far from India. Its land and sea connectivity with India are noticeable. Not only that now the Caspian Sea basin has served as one of the world's largest sources of energy. A structural explanation of the Caspian Sea basin is shown in this chapter. The potentiality, proven reserves, etc. of the country's energy resources located in this basin are shown in the second chapter. However, the second chapter has been

divided into two parts. The first volume highlights the energy potentiality of the five littoral states like Iran, Azerbaijan, Federal Russia, Kazakhstan, and Turkmenistan in the Caspian Sea basin which is shown data wise; and the second part has been highlighted, India's strategic interest towards this region. Not only that, but there is a detailed explanation of how much India is interested in importing energy from the Caspian Sea region, and what major steps have been taking now. The second part of the second chapter mainly focuses on the various strategies of connectivity towards the Caspian Sea basin with India, big powers rivalry, INSTC, and the foreign policy of littoral states located in the Caspian Sea Basin, etc. Not only that, a detailed explanation has been provided on how many foreign companies are involved in the energy production of this region, and pipeline connectivity is focused in this chapter. In this chapter, year-wise trade-related import-export data with India along with connectivity has been highlighted.

Since Turkmenistan is the forthcoming largest gas producing country in the Caspian Sea region vis-à-vis in the world, a case study of Turkmenistan with India has been highlighted. However, before highlighting the case study of Turkmenistan's foreign policy, the geology, geographical position of the country has been highlighted. Thus, this third chapter has been divided into two parts for the convenience of understanding. As shown in the first phase, the location of Turkmenistan in the world and its geographical views, and geology of stratigraphy, etc. has shown. The position of crude oil and natural gas reserves has been painted by showing geology and diagram. Not only that, the quantum of energy in a basin is discussed in detail in this third chapter. Through this, a context has been shown about the strategy adopted by different presidents of Turkmenistan. Not only that the various export policy, production policy, and experimental strategy, etc. which adopted by the Turkmen government have been focused based on primary data.

The last and fourth chapter shows the present context and position of India-Turkmenistan bilateral relations. Connection problems and various challenges face the two countries, high officials and their contacts - which intensifies the discussion of bilateral relations.

Through this analysis and emphasis, Turkmenistan's position on India's energy needs has been explained. This is because, in the present century, Indian scholars believe that the Caspian Sea region, particularly Turkmenistan, will play a significant role in fulfilling India's huge energy

vacuum. Therefore, the landlocked country like Turkmenistan shares the same continent with India. The distance from Turkmenistan to India is 3500 kilometers. Again, it is easy to connect with Turkmenistan through Iran via the Arabian Sea. In terms of energy imports, Turkmenistan is closer to India than any other energy-exporting country. For this reason, Turkmenistan is one of the key states for present energy research. The Indian higher officials of the government and private sectors of oil and gas are keenly interested in establishing direct contact with this country. For these two countries, one of the best efforts is the TAPI gas pipeline project and the INSTC project. However, these two countries are currently facing various challenges. That has been discussed in different chapters on different levels. If India can beat all these challenges and set up direct contact with the Caspian Sea basin, particularly with Turkmenistan, as well as with Kazakhstan, then it will be an achievement for India in its energy security context. Not only this, it is pertinent to mention that India is a medium that can ensure the connectivity of South Asia with Central Asia. If the TAPI pipeline project can be extended to New Delhi, India, it can be assumed that it will be able to link with Southeast Asia through Bangladesh in the future. These two direct effects can be noticed namely, the land link of Central Asia with Southeast Asia and secondly, the shutdown of the swap system. As a result, ship-centric high-cost energy imports from West Asia and Central Asia will be reduced excessively. Therefore, in this way, it is possible to think that India will be able to overcome its future energy deficit as much as possible.