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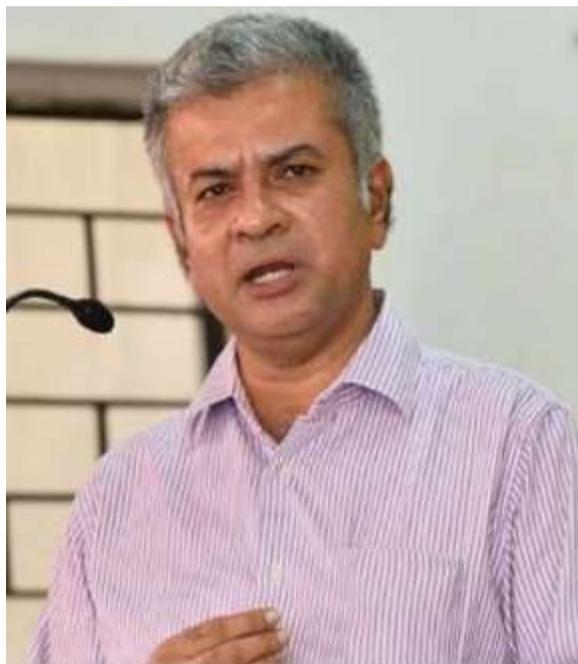
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Dr. Rinu Saraswat



Associate Professor at School of Law, Apex University, Jaipur,
M.A, LL.M, Ph.D,

Dr. Rinu have 5 yrs of teaching experience in renowned institutions like Jagannath University and Apex University. Participated in more than 20 national and international seminars and conferences and 5 workshops and training programmes.

Dr. Nitesh Saraswat

E.MBA, LL.M, Ph.D, PGDSAPM

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Subhrajit Chanda



BBA. LL.B. (Hons.) (Amity University, Rajasthan); LL. M. (UPES, Dehradun) (Nottingham Trent University, UK); Ph.D. Candidate (G.D. Goenka University)

Subhrajit did his LL.M. in Sports Law, from Nottingham Trent University of United Kingdoms, with international scholarship provided by university; he has also completed another LL.M. in Energy Law from University of Petroleum and Energy Studies, India. He did his B.B.A.LL.B. (Hons.) focussing on International Trade Law.

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WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal provided dedicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

ENERGY SECURITY AND **GLOBALIZATION: AN ASSESSMENT**

AUTHORED BY: ANURADHA

An Academician;

PhD. scholar at Lingaya's Vidyapeeth, Faridabad

ABSTRACT

Global energy security means reliability and affordability in accessing all fuels and other energy resources that are required for sustainability in economic development and growth connected thereto. It can be described as a multifaceted concept that encompasses uninterrupted supply, stable prices, and the integration of sustainable energy sources to mitigate the risks associated with fossil fuels. The recent global energy crisis has underscored the importance of diversifying energy sources and enhancing energy efficiency. As nations navigate the energy transition, securing energy supplies while fostering economic stability and environmental sustainability remains a critical global challenge.

In this era, the coexistence of countries categorised into developed, developing and underdeveloped can be observed. Despite their differences, all nations across these categories share a common challenge i.e. ensuring energy security, a burning issue arising when there is an imbalance between the availability of natural resources for consumption and national security. In order to fulfil their own security needs, the security needs of other nation-states have also to be taken into consideration. In spite of having a large number of policies that deal with globalisation and with sustainable use of existing resources, the problem of scarcity of resources, security complex, or, the non-availability of funds, and not implementing concerned policies, rising temperatures, etc is increasing.

Security complex is a situation in which the security concerns of states are deeply interconnected to the point that one state's security needs cannot be realistically considered without taking into consideration

the security needs of the other states.¹ For instance, China's dominance leaves the global availability of critical minerals vulnerable to supply disruptions resulting from trade restrictions, political instability, natural disasters, or other disturbances. This supply risk is only expected to grow in the coming decades as the demand for critical minerals increases with the widespread adoption of decarbonization technologies.²

I. Energy Security on the Basis of Investment

Energy security can be divided into two major parts based on the duration of the investment. First is long-term and second, is short-term energy security. Long-term energy mainly deals with timely investments to supply energy in line with economic developments and environmental needs. In contrast, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance.³ As per the BP World Energy Outlook 2022, in the baseline “New Momentum” scenario Africa’s energy consumption will double over the next three decades and major Asian growth economies like India will witness similar trends.⁴ Not only this, it has been projected by the International Atomic Agency that in order to meet the Paris Agreement goals, demand for nickel and cobalt in 2040 will be six to twenty times greater than the demand in 2020.⁵

It is an understood fact that the pattern of investing in reviving, procuring and managing the generating capacity will change according to the evolving demands. We all are aware of the sky-high fuel prices, depletion of the oil and natural gas resources, lowering dependence on fossil fuels for generating electricity, etc. Due to these reasons, energy security has become a matter of concern and is back on the tables of policymakers in most countries. The dramatic increase in energy resource prices and, rapid use and depletion of remaining resources have led the countries to not

¹ Segun Osisanya, National security versus global security, UNITED NATIONS (Nov. 24, 2022, 09:11 PM) <https://www.un.org/en/chronicle/article/national-security-versus-global-security>

² Tom LaTourrette, Sea bed mining will help break China’s grip on critical minerals, REALCLEAR WORLD (Nov. 24, 2022, 09:44 PM) https://www.realclearworld.com/articles/2022/11/18/seabed_mining_will_help_break_chinas_grip_on_critical_minerals_865746.html

³ OPINION: Energy security in a fractured world will be a significant challenge, ET ENERGY WORLD (Jan. 12, 2023, 6:10 PM), <https://energy.economictimes.indiatimes.com/news/renewable/opinion-energy-security-in-a-fractured-world-will-be-a-significant-challenge/95311279>

⁴ Ibid 3

⁵ Ibid 2

only modify their internal policies but to work jointly to come up with alternatives.

Another threat posed to the world today is climate change. Kyoto Protocol which is an international agreement on the environment formed as a part of the United Nations Framework Convention on Climate Change (UNFCCC) was brought forth with the objective of stabilizing greenhouse gases in the atmosphere. Further, as a part of this aim, the level of greenhouse gases was to be concentrated so that a dangerous interference in the climate system could be prevented.

In such a time of dire need for energy resources, nuclear energy appears as the clear solution to all the problems. This energy will not produce any greenhouse gas and contribute to keeping the environment clean. As well, uranium occurrences are more widely spread globally than any other kind of fossil resources, nuclear fuel volumes are small (and can be stored for several refuelling cycles) and refuelling schedules extend for as long as eighteen to twenty-four months.⁶

II. Security of Demand

The development of economies at the domestic level is dependent upon the revenues generated in the international market. If the said revenue is unpredictable, investment in the energy security is affected especially affecting the markets of gas and natural resources.

Hence need for security of demand should be recognized by consumers as much as the need for security of supply. They are different sides of the same coin and therefore should be handled in a balanced manner, as the industry seeks to meet the world energy requirement in an efficient, effective and equitable manner.⁷

⁶ Energy Security - an overview, SCIENCE DIRECT (Jan. 11, 2023, 10:10 PM) <https://www.sciencedirect.com/topics/engineering/energy-security#:~:text=Researchers%20and%20energy%20policy%20makers,main%20definitions%20of%20energy%20security>

⁷ Dr. Alvaro Silva-Calderón, Short- and long-term energy security in the UNECE region: trends and prospects, OPEC (Jan. 13, 2023, 2:50 PM), https://www.opec.org/opec_web/en/909.htm

Following are certain numbers depicting the increase in demand based on the Sustainable Report of 2022.⁸

- Between 2010 and 2020, the proportion of people with access to clean cooking fuels and technologies increased from 57 per cent to 69 per cent.
- 4 billion people still relied on inefficient and polluting cooking systems in 2020.
- The share of renewables in total final energy consumption reached 17.7 per cent in 2019, 1.6 percentage points higher than in 2010.
- Global primary energy intensity (energy efficiency) improved from 5.6 megajoules per US dollar in 2010 to 4.7 in 2019, with an average annual improvement rate of 1.9 per cent.
- To meet the energy efficiency target, the annual rate of improvement until 2030 will need to average 3.2 per cent a year.
- International public financial flows to developing countries in support of clean energy amounted to \$10.9 billion in 2019, down by nearly 24 per cent from the previous year.

III. Impact of Globalisation on Energy Security

i. Meaning and benefits of globalisation

Globalisation can be defined as a merger of markets worldwide leading to the growth of involved nations in this process. Because of globalisation, the aspects of an improved economy include free trade, an increase in employment, interdependence, liberalization, etc.

Free trade means outflow and inflow of trade with the least/ minimal interference by the authorities. Because of free trade, GDP has improved. Agreements have been signed to further enhance free trade like FTAs among various nations.

With the advent of liberalization and globalization, interdependence among nation-states has increased. Businesses can now easily import raw materials from the cheaper markets and export finished goods to the desired market.

⁸ Sustainable Development Goals Report 2022 - UNITED NATIONS SUSTAINABLE DEVELOPMENT, (Dec. 23, 2022, 4:15 PM), <https://www.un.org/sustainabledevelopment/progress-report/#:~:text=The%20Sustainable%20Development%20Goals%20Report,latest%20available%20data%20and%20estimates>

Globalization has also resulted in cultural exchange which includes the exchange of cultural practices, ideas, customs, and language. This world has become a global village as a result of globalisation. For example, chains of world-known eateries like McDonald's, and clothing brands like Gucci have penetrated the markets of almost every nation.

Globalisation has also resulted in an increase in employment as most Multi-National Corporations have now established their offices for conducting their operations in various countries. These companies have offered lucrative jobs and given opportunities to a number of unemployed people. This has also contributed to improving per capita income and standard of living. Now, people have more money in their pockets to spend and more options to choose from. Also, such an exchange has resulted in an exchange of technologies as well.

Outsourcing has increased thereby improving the efficacy of the managerial tasks of companies, in reducing internal costs. Also, companies reach out to countries where the labour and material is cheap thereby lowering the costs and increasing the profit margins.

Not only this, globalisation has resulted in urbanization, and increased and improved connectivity between nations. But as it is said that too much of anything is bad. It can be well noticed that excess of globalisation has resulted in the threat over energy security.

ii. The negative impact of globalisation

Goods and raw materials are being transported and used by the nations and no check is being placed over as to how a country can use its own natural and energy resources and how much it can export in order to save these resources for future generations. All that matters is the price. If a sufficient price is being offered, no matter what, there is an exchange of resources.

If globalisation is increasing, it means rapid urbanisation and industrialisation are taking place. It would lead to an increase in fuel demand which is an important component of the manufacturing process. Ultimately, the emissions harming the environment would rise. We need more protocols and agreements to regulate the use of these resources so as to ascertain sustainable development. Like, Kyoto Protocol and Paris Agreement are a result of inter-governmental initiatives. These

protocols came into being because of increasing awareness about climate change and the impact of globalisation.

iii. Challenges faced by India in energy security

There are delays in environmental clearances and other regulatory measures in coal mining. Also, the purpose of formulating NELP was not achieved. No international energy organisations found it to be attractive enough to invest in India.

India still lacks skilled manpower. It lacks infrastructure for making energy resources accessible. In fact, China's OBOR initiative makes its stand advantageous as it can easily disturb India's accession to energy.

India's deal with the United States did not prove to be helpful in setting up foreign-built reactors. However, it did help to fuel domestic power plants. Also, importing oil from the middle east is helping in achieving India's energy security. Earlier, India had to reduce its oil import from Iran because of the dispute ongoing between USA and Iran.

Like India, every nation is working to make itself an energy-efficient nation in order to achieve energy security. Initiatives taken by India include providing electricity to every household, distribution of efficient biomass chullahs, use of the solar pump in irrigation, the introduction of BS VI vehicles nationwide in 2020, launching of IESS 2047 as a web-based tool open for all, etc.

iv. Challenges in the field of global security

Global security is the protection of the world against threats of war, and other related disasters like poverty, food insecurity, exploitation and depletion of energy and natural resources, etc. The challenge that nation-states face is that in order to fulfil their own security needs, the security needs of other nation-states have also to be taken into consideration.

Most of the States face lack of the basic capacity to resolve issues like unemployment, climate change, food shortages, etc. Health care is another growing challenge. As much as globalization has claimed to bring economic prosperity, crisscrossing of people between geographical boundaries from

different parts of the world has also resulted in the rise of challenges, particularly in regard to the spread of communicable diseases, crime and terrorism. Disarmament and non-proliferation of weapons of mass destruction are other areas that make global collaboration and cooperation necessary. The acquisition of nuclear weapons and similar armaments, which started as a national security option, has become today a major threat to national and global security. The seemingly hard-line posture of many state actors towards disarmament requires the development of a moral consciousness that can only be reinforced by cooperation and collaboration at the international level.⁹

v. Initiatives are taken by India to cope with the threat of global security

Rule of law, democracy and good governance policies define the modern principles of global security as well as domestic security. Democratic governments can help in formulating the targets and achieving them to ensure such security at the national level thereby assuring global security at the international level. For example, India has worked and is continuously striving to achieve certain goals that would secure its energy resources. Like, **one sun, one world, one grid project along with the United Kingdom** (OSOWOG) which is based on the vision of building and scaling inter-regional energy grids to share solar energy across the globe. It can be the solution to most of our global problems in the energy sector. **Another initiative at the national level is of COP26 Glasgow summit wherein** Indian Prime Minister Narendra Modi on behalf of India committed;

- A. To take India's non-fossil fuel energy capacity to 500 GW by 2030.
- B. To bring down the carbon intensity of India by more than 45% by 2030.
- C. India will achieve the target of net zero carbon emissions by 2070.¹⁰

A recent report by the International Institute for Strategic Studies concurs: "Climate change will increase the risks of resource shortages, mass migration, and civil conflict. These could lead to failed states, which threaten global stability and security." It stresses the need for "sustained investment in infrastructure and new technologies" of which "a shift to renewable energy sources

⁹ National Security versus Global Security, UNITED NATIONS (Dec. 23, 2022, 7:50 PM) <https://www.un.org/en/chronicle/article/national-security-versus-global-security>

¹⁰ How does India taken a leadership role in tackling climate change?, GOVERNMENT OF INDIA (Jan. 1, 2023, <https://blog.mygov.in/editorial/how-does-india-taken-a-leadership-role-in-tackling-climate-change-3/#:~:text=India%20has%20taken%20the%20oath,in%20the%20range%20of%20PM2>

will be the most visible effect of efforts to mitigate emissions."¹¹

IV. International Principles in the field of Energy Security, Globalisation and Global Security

i. International Energy Charter

It resolved to promote long-term energy cooperation at regional and global levels within the framework of a market economy and based on mutual assistance and the principle of non-discrimination. This Charter is acknowledged to attain energy security objectives and efficient use and management of resources. It promoted sustainable development while targeting to achieve globalisation and energy security.

IEC also promoted its signatories to develop cooperation with regional and international organisations for sharing experience and specific examples from national practice in the area of sustainable development, access to modern energy services, energy poverty reduction, green economy, clean energy, energy efficiency, as well as development, introduction and broader use of new clean technologies.¹²

ii. Energy security and the Millennium Development Goals

In September 2000, the General Assembly adopted the Millennium Declaration, a document that identified to some degree the need for energy, as did the goals that subsequently emanated from it. Goal 7 on environmental sustainability, for example, has indicators on energy use and solid fuels—along with targets to integrate the principles of sustainable development into country policies and programmes and to reverse the loss of environmental resources.

While it may be thought that the MDGs underplay energy issues, numerous subsequent forums have recognized that efforts to achieve the MDGs should include strategies on energy. For example, in the Plan of Implementation of the World Summit on Sustainable Development, also

¹¹ Climate change threatens global security, warn medical and military leaders, SCIENCE DAILY (Dec. 23, 2022, 8:50 PM) <https://www.sciencedaily.com/releases/2011/04/110405194110.html>

¹²Concluding document of the ministerial (“THE HAGUE II”) Conference on the International Energy Charter, INTERNATIONAL ENERGY CHARTER (Dec. 29, 2022, 2:35 PM) https://www.energycharter.org/fileadmin/DocumentsMedia/Legal/IEC_EN.pdf

known as the Johannesburg Plan of Implementation, the Summit agreed on actions to improve access to reliable and affordable energy services.¹³

iii. United Nations- Sustainable Development

Goal 7 of Sustainable Development is about ensuring access to clean and affordable energy, which is key to the development of agriculture, business, communications, education, healthcare and transportation. The lack of access to energy hinders economic and human development. The latest data suggest that the world continues to advance towards sustainable energy targets. Nevertheless, the current pace of progress is insufficient to achieve Goal 7 by 2030. Huge disparities in access to modern sustainable energy persist.

Rising commodity, energy and shipping prices have increased the cost of producing and transporting solar photovoltaic modules, wind turbines and biofuels worldwide, adding uncertainty to a development trajectory that is already far below Goal 7 ambitions. Achieving energy and climate goals will require continued policy support and a massive mobilization of public and private capital for clean and renewable energy, especially in developing countries.¹⁴

iv. International Energy Agency

Ensuring energy security has been central to the mission of the International Energy Agency (IEA) since its inception. Founded in response to the oil crisis of 1973, the IEA initially focused on oil supply security. While the security of oil supplies remains an important concern, contemporary energy security policies must address a broader range of risks. Threats to energy security come from a variety of natural, economic and political factors, and affect all energy sources and infrastructure.¹⁵

¹³From corporate social responsibility to corporate sustainability: Moving the agenda forward in Asia and the Pacific, UNESCAP (Jan. 18, 2023, 1:48 PM) https://www.unescap.org/sites/default/files/0%20-%20Full%20Report_3.pdf

¹⁴ Ensure access to affordable, reliable, sustainable and modern energy, UNITED NATIONS (Jan. 17, 2023, 1:50 PM) <https://www.un.org/sustainabledevelopment/energy/>

¹⁵ Measuring Short-Term Energy Security, INTERNATIONAL ENERGY AGENCY (Jan. 13, 2023, 5:20 PM) <https://iea.blob.core.windows.net/assets/f7964d06-5409-4897-9f8e-135666cb6eb8/Moses.pdf>

Conclusion & Suggestions

The energy systems in today's world are being developed and there is a need to develop such systems in a manner that they can withstand the shocks that may occur due to innumerable reasons like geopolitical conflicts, natural existing and emerging threats of terrorism, hunger, war, unemployment, natural disasters and pandemics, digitalisation of energy systems, etc. energy security is a significant element which has gained importance because of the emergence of cyber and hybrid threats posing upon the existing infrastructure. Other factors include war like situations, more specifically Russia's attack on Ukraine.

There is a need to transit economic activities to be dependent upon resources that are renewable. The dependence upon non-renewable resources will prove to be fatal for generations to come. Multinational companies as well as domestic companies must be prohibited from using non-renewable energy resources for the purpose of their manufacturing and production activities.

There shall be checks on rural-urban migration. Instead of making rural people move to urban areas, investment should be made to develop remote areas as well in a controlled way. This will not only improve their standard of living but also contribute to overall economic growth and in achieving sustainable targets.

When it comes to globalisation and global security, majority of the countries are over exploiting the land, energy and water resources because of uncontrolled international trade. There are studies on the comparison of countries in terms of their usages of concerned resources, but what needs to be studied now is the extent and source of these risks. The role of trade can be described as a massive source of risk when it comes to resource insecurity.

Unfortunately, the major threat is the non-implementation of agreements and treaties that entered into by international parties/ States. Like, the International Energy Charter exists to guide useful principles to save energy and other resources, but it is not legally binding. However, United Nations is striving hard to achieve the sustainable goals and Millenium Development Goals. In fact, nation members have also begun to realise at their own level that extra efforts are required besides making policies.

In practical terms, energy security, globalisation and global security are all interlinked and interdependent on each other. Hence, existing laws should be modified and the current needs are required to be broken into phases to be achieved one at a time. Cooperation is needed and working together for the development of one and the development of all is necessary. There must be contributions made especially by the developed nations to further provide technology and resources to underdeveloped nations. This will help in reducing the ill effects of traditional methods of using energy that is harmful to the environment today.

For example, the step taken to raise funds at the G20 Summit, and condemnation of Russia's invasion of Ukraine, expressed in the Leaders' Declaration, dominated the summit. The current scenario is of geopolitical tension, economic slowdown and rising food and energy prices. The final communiqué also contains a series of economic measures and political commitments relating to the global health architecture, the sustainable energy transition, and the digital transformation – the three priorities of the Indonesian G20 presidency.

These Summits have proved to be more helpful than the Charters and laws made. Such Summits and realization of the existence of all the nations on this planet earth as a family is what is the need of the hour, a principle already followed by India- *vasudhaiv kutumbakam* since ancient times.

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