Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

India's Non-Traditional Security Policy: Nexus Between Energy and Climate Change

JC Zomuanthanga[1], Lalramliani Sailo[2]

Abstract

The energy sector is the largest emitter of GHGs contributing to climate change. Energy and climate change are two dominant concerns for a developing country like India. There lies a dilemma between the need for increased energy use for development and limiting or mitigating emissions from fossil fuels, which brought the importance of energy security while dealing with climate change. India's response to climate change is guided by its national plans, programs, and priorities and not much by the influence of international actors. Due to its hasty formation and the lengthy approval process, the National Action Plan on Climate Change (NAPCC) proved inadequate and requires continuous efforts to promote strategic policies. The country's strategy to face the changing climate must be mission-focused and target-oriented with a strong political will to achieve sustainable development. In turn, energy security will bring national security.

Keywords: *Energy, Climate Change, Non-Traditional Security, Energy Security, NAPCC, Sustainable Development.*

Introduction

The focus of this paper will be on India's non-traditional security policy in the areas of energy and climate change. It also explores the linkages between energy and climate change in contemporary international relations. The increased need for energy in the growing economy has its boons and banes. With sustainability coming into context since the Brundtland Commission, governments of the world are racing towards enhancing technological and economic requirements with their attempts to create clean forms of energy which are more sustainable. The Indian government is also giving its best effort to bring sustainability and development into action. This paper also points out that global warming has been there but climate change is one thing in which preventive measures and mitigations could be taken.

Understanding Non-Traditional Security

The idea of 'security' in international relations gained relevance only after WWI and the idea of 'Non-Traditional Security challenges' gained relevance from the post-Cold War era. According to Agarwal (2018), 'Security' is one of the most debated and abused terms as its conceptualization is complex and intermingled with multidimensional factors. Therefore, there was a realization that a nation's security was not only about military forces; rather it also encompasses non-military aspects of security as well. Subsequently, under various dimensions and perspectives, security is divided into Traditional security and Non-traditional security. Hard approaches such as disarmament, arms control, alliances etc. fall under the realm of traditional security whereas non-traditional security is related to the security of the state and communities and is a soft approach towards maintaining security. The risks are associated with health security, economic security, food and water security, environment security and energy security.

Dimensions of Non-Traditional Security

The two parameters of non-traditional security policy that will be analyzed in this article are energy and climate change. The impact of climate change brings about a non-traditional security threat that impacts the nation's security and the well-being of the people. A dilemma is that there is anincreased need for energy

[1] Assistant Professor, Dept. of Political Science, School of Social Sciences, Mizoram University, Tanhril, Aizawl, Mizoram, Pin: 796004. Home Address: D-104, Tuikual North, Aizawl, Mizoram. Pin: 796001. Phone: 9612918807/9436146447, Email: jc_mamuana@yahoo.co.in, (Corresponding Author)

[2] PhD Candidate, Dept. of Political Science, Mizoram University, Tanhril, Aizawl, Mizoram. Pin: 796004. Phone: 9900653726, Email: sailo.lalramliani12@gmail.com

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

use for development as well as the need forlimiting or mitigating emissions from fossil fuels, which brought the importance of energy security while dealing with climate change.

Significance and Role of Energy in National Security

A report by McKinsey Global Institute states that India is the most vulnerable country to extreme weather events and warned about the possible increase in temperature by 2°C by 2050. It also estimates that by 2030, unchecked climate change could reduce the nation's GDP by 2.5-4.5% (Bajaj, 2020).

India's negotiating position on climate change has been based on the principles incorporated in the UNFCCC. It holds the view that developing countries bear the brunt of the emissions from the developed countries. As such in 2019, the estimated 3.13 billion tons of carbon dioxide produced by India is less than half of the US and equals one-fourth of China's emissions. Despite ongoing efforts, global warming will persist, so developing countries like India cannot be compelled to restrict emissions from developed countries since it is a matter of survival and economic independence.

In India, the energy sector plays a crucial part in the socio-economic development of the country and its international relations. With the growing population, energy consumption has doubled since the 2000s during the period of rapid economic growth (IEA, 2021). As demand for energy needs increases, the government continues to take responsibility for the development of conventional as well as non-conventional forms of energy. Since the use of energy for economic development is crucial, the country is often targeted for its growing energy consumption level and GHG emission levels (IBEF, 2023).

Key facts on India's energy sector are:

- India is among the top three nations in the world leading in global renewable energy growth.
- India ranks third globally for the addition of total renewable power capacity.
- India serves as the third largest market globally in new solar PV capacity
- India is the third largest consumer of primary energy consumption such as coal, natural gas, biomass, and oil.
- India ranks fourth globally in renewable energy installed capacity building.
- The total energy consumption includes 42% of India's industrial segment.
- The MSME sector is expected to contribute approximately 20-25% of industrial energy consumption.
- The industrial sector has the highest (60%) energy saving potential by 2030 as per the Bureau of Energy Efficiency and the national strategy plan.
- The Ministry of New and Renewable Energy (MNRE) sets an ambition to expand the capacity of renewable energy to 500 GW by 2030 which is expected to promote growth and opportunities.

Besides the above, various developments in solar energy took place in the post-COVID era. A notable projection called 'The India Energy Security Scenarios 2047 developed by the Planning Commission of India' explores a range of future energy scenarios. With a time frame from 2022 to 2047, energy demand and energy supply are projected to increase from the base year whereas energy emissions to GDP are expected to decrease over the years (IESS, n.d.). This highlights the relevance and aims towards clean and sustainable energy backed by strong economic, social, and political motives of the government of India.

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

Energy Supply

The energy systems have a crucial part in contributing to climate change and the increase in atmospheric temperatures. The build-up of carbon emissions and other GHGs in the atmosphere is a result of the burning of fossil fuels contributed by man. The majority of energy production and consumption are also major sources of GHG emissions.

As the temperature increases, higher energy demand is required by households, industries, and workplaces which increases expenditure, and consumption and contributes to the warmth of the earth's temperature. Machines and vehicles used to ease daily life contribute to air pollution which in turn impacts the health of humans and living beings, destruction of infrastructure properties due to harmful acid rains, etc. Nevertheless, as much as the modern world requires energy, it could be a boon and a bane.

Not only that, disruptions to energy supply might occur when river water decreases or droughts occur due to changing climate, thus affecting the functioning of hydropower plants. Sometimes, extreme weather can cause wildfires and large-scale disruptions thus interrupting the transmission of power lines and electricity cuts.

Climate Change and its Impacts

According to the IPCC, climate change refers to, "A change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean or variability of its properties and that persists for an extended period" (Gupta & Dutta, 2009). In short, it refers to a change in climate over time, whether due to natural variability or human activity. This is the most widely accepted definition of climate change.

Human actions are commonly deemed responsible for climate change. Although climate is an important aspect for all living beings, the earth has witnessed several changes in climatic conditions over the last few decades. These changes result from direct and indirect human activities like urbanization and industrialization. With the increased need for development, resource scarcity, environmental degradation, conflict between parties, various negotiations for securing better outcomes, mitigation processes, and others have occurred due to the changing climate.

There are several impacts of climate change. It is now an accepted fact as it poses a non-traditional security threat due to its wide-ranging effects on national security, policy-making, geopolitics, international relations, and its socio-economic impacts like poverty and migration which further paves the way for cross-border terrorism, internal conflicts, drug smuggling, etc. Migrations might change demographic patterns, create resource scarcities, or disrupt economic functioning. Apart from this, there are various consequences including heat-related illnesses and skin problems and impacts on human health, and agriculture, threats to biodiversity and wildlife, wildfires and floods, droughts, groundwater depletion, degradation, changing landscapes, increased sea levels, and others. Some places like Maldives, Kiribati, Tuvalu, Marshall Island, and many small island nations are a risk of submergence. Climate change poses an existential threat to them (UNCCC, n.d.).

The Arctic is warming twice more than the global average temperature due to the increase in temperatures. Disruptive storms such as cyclones, typhoons, hurricanes, etc. are also increasing more than ever which causes loss of life and property. There is also an increasing drought and floods in certain prone areas. There is a scarcity of food and resources which often intensifies poverty (UN, n.d.). Climate-induced migrations or climate refugees are caused by people experiencing difficulties in climate-affected areas and who had to shift from one place to another. As the number of displaced persons increases, so do the economic and political consequences that come with it. Various complexities could arise for the host countries.

Apart from all these, fossil fuels such as oil, gas, and coal are the largest contributors to climate change accounting for 75% of global greenhouse gas emissions and nearly 90% of carbon dioxide emissions. As the need and use of these fossil fuels keeps going, global warming and climate change intensifies.

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

The poorer and small island nations are often the victims of the adverse effects of the changing climate as they are forced to comply with various adjustments that do not always go in line with their usual lifestyle. Accordingly, the lower income households and the regionally backward communities are often the victims of the effects of climate change and may even propel the rich-poor divide. So, climate change and its consequences are being increasingly viewed as the foremost non-traditional security of the 21st century.**Energy and Climate Change: A Nexus**

The complex relationship between energy and climate change is that energy production contributes majorly to climate change and the impacts of climate change also affect the energy systems. The energy sector is the largest emitter of GHGs in the atmosphere owing to climate change. The buildup of emissions and other GHGs results from the burning of fossil fuels. As a crucial driver of economic growth, access to energy sources serves as a strategic foreign policy concern for India. For India's economic development, the use of energy is more important than the attempts to limit or mitigate carbon emissions from the burning of fuels (Dadwal, 2009).

As much as energy production contributes majorly to climate change, the impacts of climate change in turn also affect the energy systems. For a developing country like India, there exists a dilemma between the need for increased use of energy for development and limiting or mitigating emissions from the use of fossil fuels. This raises the critical importance of having energy security and opting for sustainable development while dealing with the effects of climate change. The response to climate change has to be through both adaptation and mitigation for the country. Adaptation has immediate benefits and mitigation efforts have immediate benefits. Now, with the initiative of the government, the country seeks to meet the challenge of climate change by increasing the use of low-carbon and renewable technologies.

Energy and climate change are interlinked but have separate problems. The similarities are the presence of discourses and interests behind their motives whereas the problem is the elements of energy security clash with sustainability. So, it becomes a non-traditional security challenge for the country. The consequences of climate change now affect human security and the traditional notions of security related to the military have been redefined.

Energy and Climate Change: A Non-Traditional Security Challenge

Over time, environmental concerns became a part of national and international politics and policy. Climate change poses various security challenges but there are no hard solutions. The consequences of energy and climate change might continue to be a threat multiplier that increases political or geopolitical tensions. India faces several issues related to environmental problems due to climate change and the causality of this impacts state and national policies. Critical resources like energy, food, and water are the most stressed areas in times of crisis.

India's energy sector is pressured by some factors: the growing dependence on imported oil, dependency on fossil fuels, ambiguous pricing policies for natural gas, shortage of qualified labour, and low productivity of upstream infrastructure. A fully integrated and effective energy security is required for the country (Tergin, 2006). While energy security aims to supply quality energy at affordable prices, factors such as environmental sustainability and security, foreign policy, national policies concerning defence, political, social, and economic security, and technological advancements must be considered.

Non-traditional security threats like energy security and climate change undermine the stability of the nation. They are more intimidating than the traditional ones as they require an effective monitoring system guided by strong principles by the government. Not only do these issues impact a nation, but also its diplomatic efforts and relations with neighbouring countries, its multilateral and bilateral cooperation, and the global institutions.

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

Global Government Initiatives

Several global initiatives have been taken towards the protection of the environment and to tackle climate change. Initially, the environment was given the main focus when the United Nations Conference on the Human Environment was held in 1972 in Stockholm. 26 principles were a part of the Stockholm Declaration. The Action Plan contained three categories which included the Global Environmental Assessment Programme, Environmental Management Activities, and international measures to carry out the two at international and national levels. It also led to the establishment of UNEP (UN, n.d.). The UNEP of 1988 led to the birth of the IPCC to provide policymakers with regular scientific assessments. The first report was then given in 1990 which states that climate change was a challenge that requires international cooperation (IPCC, n.d.).

The United Nations Conference on Environment and Development in 1992, also known as the Earth Summit addressed climate change, desertification, biodiversity loss, and development came into context. It was a time when countries of the world started experiencing independence and India also met with economic independence around that time. For these countries, development became a goal. The Convention on Biological Diversity (CBD) and The United Nations Convention to Combat Desertification (UNCCD) which came to be known as the Rio Conventions were borne that prioritize sustainable development and show concern for environment and development-related issues (UN, n.d.). Later in 1994, the UNFCCC came into force aiming to prevent harmful human interactions with the climate system 9UN, n.d).

Next was the Conference of Parties (COP), the United Nations Climate Change Conference which has been held annually since 1995. It is a multi-decision-making forum where countries come together to address crises such as limiting global temperature rise to 1.50°C, achieving net-zero emissions by 2050, and helping vulnerable communities to adapt to the effects of climate change (UN, n.d.). Under this, the Kyoto Protocol adopted on 11 December 1995, based on the principle of 'Common But Differentiated Responsibilities and Respective Capabilities' became the leading international treaty that only binds developed countries and places a heavier burden on them as they are recognized to be largely responsible for the high levels GHG emissions. The ratification process took time and came into force only on 15 February 2005. During the first commitment period from 2008 to 2012, the 37 industrialized countries as mentioned in Annex B of the Kyoto Protocol agreed to reduce emission levels to five percent against 1990 levels. Subsequently, the Doha Amendment to the Kyoto Protocol was adopted for a second commitment from 2013 to 2020 in which countries committed to reducing emissions by at least 18 percent below 1990 levels (UN, n.d.).

The COP 21 in the year 2015 was notable for the Paris Agreement which was also a turning point for India since the country was able to maintain its diplomatic upper hand over the Western countries by refusing to abide by the pressure to restrict emissions (Khare, 2021). The Agreement was a legally binding international UN treaty that brings all nations to combat the adverse effects of climate change and to adapt to the changes, except for the withdrawal of the United States due to their economic preferences and the fact that they did not accept their role as a perpetrator of global emissions at an early stage.

Notable assessment practice as a product of the Paris Agreement was the adoption of GST as mentioned in Article 14 of the Agreement (UN, n.d.). Accordingly, GST must be conducted every five years starting from 2023 onwards. Data collection was conducted by scientists for two years followed by a technical assessment. It is an exercise aimed to assess the actions made in the fight against climate crises in a comprehensive manner and to devise ways and means for adaptation, mitigation, and implementation of support for the countries.

Fast forward to COP28 held in Dubai, UAE between 30 November to 13 December 2023. The conference was notable as it marked the end of the first GST. It was found that the progress in the areas of climate action was too slow. It calls for the government to transition from fossil-based energy sources to renewable sources of energy like wind and solar power for the next climate commitments (UN, n.d.).

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

The key decisions from the COP28 include:

- It signals the beginning of the end of the fossil era. The GST calls for a tripling of renewable energy capacity by 2030, but these efforts are subject to the national circumstances of each country.
- Enhancing global efforts to strengthen resilience in the form of the GGA framework.
- The fund for loss and damage which was promised at COP27, 2022 was created to support the vulnerable countries to mitigate the impacts of climate change globally which were made worse by the emissions caused by the well-off nations.
- The world governments were called to link nature conservation along with climate actions as part of their NDCs.
- It provided a platform for governments, civil society, and businesses to collaborate on practical climate solutions such as health systems, finance, and sustainable agriculture.
- Climate finance was made to create investment opportunities for economic growth through the principles of the Global Climate Finance Framework. It was created to be more affordable, accessible, and available for all (COP28UAE, n.d.).

Renewable and Green Energy to mitigate Climate Change

The said complications gave light to renewable sources of energy. Harnessing the power of wind, solar and water offers a sustainable alternative to fossil fuels. Additionally, biomass could serve as an alternative. With the advancements in technology, green technology is on the rise. Electric vehicles and energy-efficient appliances are produced to aim for clean energy. Although they produce fewer emissions, not all items are cost-effective and do not reach the common households. Nonetheless, the increased use of renewable sources of energy and sustainable technologies offers hope for the future.

The energy crisis of the 1970s led countries to seek alternative sources of energy. Since then, renewable energy has been included in various initiatives and policies devised by the United Nations (IISDO, 2008). In 1991, the United Nations Conference on New and Renewable Sources of Energy adopted the Nairobi Programme of Action by stressing the importance of international cooperation (UN, 2008). The 1992 Rio Conference resulted in Agenda 21, a plan of action to promote sustainable development (a theme that was introduced by the Bruntland Commission Report of 1987) (UN, n.d.), and the Rio Declaration, which defines the rights and responsibilities of states for environment and development. This was further reinforced in the 2022 World Summit on Sustainable Development wherein several renewable energy partnerships, transfer of energy, biodiversity conservation, climate change, etc. were signed (UN, 2002). The ninth session of the United Nations Commission on Sustainable Development, 2001, mentions energy as a means of achieving the goals of sustainable development in which appropriate political will, contributions from stakeholders, and increased investments would be required in particular for developing countries; mobilization of financial resources; that choice of nuclear energies has to do with countries' own decision as it is associated with several concerns, the importance of regional cooperation and others were mentioned (UN, 2001).

The IEA also provides a forum for discussing energy issues among OECD countries and provides annual reports of energy forms including renewable energy. In these ways, various initiatives and policies were and are being exercised to focus on renewable sources of energy to adjust to climate change.

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

India's Non-Traditional Security Policy

India's Energy and Climate Change Policy

India participates in the international sphere towards energy security and tackling climate change. It also solemnly gives importance to its national policies by adhering to the multidisciplinary requirements of the state. The following initiatives and policies highlight the efforts of the Indian government over the years to achieve economic growth and political benefits and enhance its international relations thereby abiding by the principles of its foreign policies. They are briefly mentioned below:

- The IPCC was formed in 1988 by the United Nations. As a member, India focuses on research and development and the concerns against global warming.

- It was a signatory to the UNFCCC in 1993 which focuses on biological diversity and combating desertification. The MoEFCC is the nodal agency for the UNFCCC in India.

- The 'India Hydrocarbon Vision 2025' was developed by a group of Ministers consisting of Ministers of Petroleum, Finance, and External Affairs and the Deputy Chairman, of the Planning Commission. In March 2000, the Report was presented to the Prime Minister and was placed on the Table of both Houses of Parliament. The long-term policy enunciated therein covers exploration, refining, marketing infrastructure, gas, and all other related matters in the hydrocarbon sector (Ministry of Petroleum and Natural Gas, 2003).

- The Kyoto Protocol was ratified in 2002 to reduce GHG emissions.

- The introduction of the NAPCC in 2008 in which international collaborations were included (PIB, 2021). States and Union Territories have prepared SAPCC consistent with the objectives of the NAPCC and in turn, the government supports this through the NAFCC. Measures have been taken in various fields such as water, forests, agriculture, sustainable housing, waste management, energy and enterprise, etc.

- The Paris Agreement of 2015 which India signed and ratified in 2016 in which the parties agreed to reduce emissions and strengthen their commitments. It was a pathway for developed nations to assist the developing nations towards climate mitigation and adaptation efforts. It was remarkable as it marked the beginning of a shift aiming for net-zero emissions. Countries are expected to submit NDC every five years.

- The vision document published by NITI Aayog in July 2017 states four key objectives for energy security including easy access to energy at affordable prices, improved security and independence, greater sustainability, and economic growth (NITI Aayog, 2017). Later, the NCEF and BS Emission Norms were also formulated for use in the country.

- India Panchamrit Targets, also known as the Panchamrit Statement was popularly declared by PM Modi at the COP26, held in Glasgow in 2021 (PIB, 2022). These five statements are:

Increase the non-fossil fuel-based energy capacity to 500 GW by 2030.

50% of the nation's energy requirements will be met using renewable energy by 2030.

Reduce the total projected carbon emission by 1 billion tons from now through 2030.

Reduce the carbon intensity of the economy to less than 45% by 2030 to 2005 levels.

By 2070, India will become carbon-neutral and will achieve net zero emissions.

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

To focus on the important policies, the NAPCC was established in 2008 to support adaptation activities of the states and Union Territories of India that are vulnerable to the adverse effects of climate change and those that are financially backward but face the impacts of climate change (PMO, 2008). The NAPCC covers 8 sub-missions, which are:

- National Water Mission
- National Mission for Sustaining Himalayan Ecosystem
- National Mission for Strategic Knowledge on Climate Change
- National Solar Mission
- National Mission for Enhanced Energy Efficiency
- National Mission on Sustainable Habitat
- National Mission for Sustainable Agriculture
- Green India Mission

As stated before, the NAPCC Following the Paris Agreement, India launched the International Solar Alliance with France in the same year and announced its domestic renewable energy program. ISA is headquartered in Gurugram, Haryana. Later in 2019 at the Climate Action Summit, the PM spoke on India's initiatives in addressing climate change issues and his expectations from the international community. The UN member states were also invited to join India's Initiative on CDRI. Then, the 50 KW 'Gandhi Solar Park' on the roof of the UN headquarters was inaugurated by the PM. On top of that, India gifted the $1 million solar park with one solar panel each for the UN member states.

The current Modi government is taking tremendous steps towards green energy. Green energy is defined as energy derived from renewable sources which are also known as clean and sustainable. Some of the initiatives taken by the government are- Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), which aims to provide electricity to every household; Green Energy Corridor (GEC), in which electricity generated from wind and sun will be transported to different parts of the country; FAME- production of electric and hybrid vehicles; the International Solar Alliance (ISA), National Green Hydrogen Mission, National Biofuels Policy & SATAT Scheme and Small Hydro Power (SHP).Other domestic schemes include The PAT Scheme introduced by the Bureau of Energy Efficiency (BEE), the UJALA Scheme, to convert waste to wealth, and the National Green Hydrogen Mission to contribute towards Aatmanirbhar to develop hydrogen as a clean fuel and become a global inspiration in green mission.

State of India

Climate change emphasized the need for strengthening India's energy sector. Similarly, energy security is the need of the hour to promote economic growth. 5.6% of the country's GDP is spent on adaptation to climate change (Express & Sinha, 2023). Steps towards a sustainable future are seen in the Union Budget 2024-2025 in which financial allocation for solar power projects rose to 110% and a five-fold increase in National Hydrogen Mission. Financial support would also be provided for micro and small industries to shift towards cleaner energy. Coal liquefaction capacity is also expected to be 100 million by 2030 (Gupta & Sheth, 2024).

The rise of Urbanization and industrialization will continue to be a challenge for India's energy sector as well as policy-makers. The per capita energy use is significantly less than half of the global average. Significant variations in energy consumption and service quality are seen among states and rural and urban areas of the country. The current concerns are the affordability and reliability of energy supply. It was

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

estimated that due to the COVID-19 pandemic, energy demand has reduced to 5% in 2020, with coal and oil being the most stricken. Investment in the energy sector also reduced by 15% in the same year. Coal, oil, and solid biomass account for 80% of India's energy needs. Despite the wide coverage of LPG in rural India, around 600 million Indians have not fully switched to modern, clean, or new technologies.

Conclusion

Climate change and concern for energy are collective problems of the world today. A contrast exists between the developed and the developing countries where the latter have to bear the brunt of the emissions produced by the former and the influence that they have internationally. A fundamental difficulty is who will pay for the climate actions on a global stage since the developed are not willing to pay and the developing countries cannot afford to pay the burden. Secondly, there exist nationally based conceptions of energy versus climate change objectives on a large scale. These highlight the importance of policy pathways to bridge these gaps. Accordingly, the Bonn Conference deliberated about the financial and review concerns and how developing countries are not assisted in technology transfers by the developed countries. Countries must support each other to achieve the targets of Sustainable Goals. Each country has its way of dealing with the climate-energy conundrum, but the pragmatic efforts depend on the national and foreign policies each government conforms to.

Some challenges include climate finance, technology transfer, especially for the developing countries, a strong political will, and a focus on energy efficiency fossil fuels such as coal and petroleum which India in particular, is heavily dependent on and needs to be improved. The 'Loss and Damage Fund' adopted in the COP28 could be utilized to assist developing countries in mitigating the losses incurred in climate-related problems. Maintaining the targeted temperature alone would not suffice, but applying low-carbon technologies would add to mitigation.

According to projections, India's demand and supply of energy are expected to increase over the years. Emissions and pollution are expected to increase, given the massive population of rural and urban poor. There lies an interconnectedness between the environment, economy, society and politics. As Indira Gandhi said in her Stockholm speech, "…. The environment cannot be improved in conditions of poverty", poverty alleviation needs to go hand in hand with development. Steps towards mitigation and adaptation would prove beneficial for the country. Accordingly, awareness, pragmatism of schemes, and the availability and adoption of affordable green energy are needed. Apart from corruption and foul playing of politics, the reason our policies and schemes often fail is a result of lack of basic facilities, lack of awareness, regional backwardness and instabilities. Example is the hasty formulation of the NAPCC that failed to instruct objectives to successful implementation or the time taken by FAME 3 scheme for adoption (ANI, 2024). Overall, a mindful, strong and inclusive government is required.

For India, the government and policymakers are left with the daunting task of the heavily populated country dependent on fossil fuels, the sectors of the economy that rely on energy, the country's geographical location, that is, its proximity to the Bay of Bengal which makes it prone to heavy rainfall and winds, and the sharing of borders with countries that opens the way for illegal migration and illegal activities, etc. Correspondingly, the contribution towards climate change cannot be denied as the country faces air pollution issues frequently; it also has an agriculture-dependent population that practices stubble burning and jhum cultivation. Besides, the government is determined to achieve economic development in all spheres. The security of the population and the development of the nation will continue to be at the forefront of national policy.

The country's strategy to face the changing climate must be mission-focused and target-oriented with a strong political will to achieve sustainable development. The concerned authorities must be willing to continue the policies the previous government left behind if they prove beneficial for the coming years. Adhering to the 'Nation first' policy will help in steps towards mitigation. The Union Budget 2024-25 is expected to bring positive changes to provide energy security and environmental concerns and sustainability

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

to promote the principle of Vasudhaiva Kutumbakam – One Earth, One Family, One Future. Therefore, India's non-traditional security challenges cannot be disregarded.

Abbreviations

BEE - Bureau of Energy Efficiency

BS - Bharat Stage

CBD - Convention on Biological Diversity

CDRI - Coalition for Disaster Resilient Infrastructure

COP - Conference of Parties

FAME - Faster Adoption and Manufacturing of (Hybrid and) Electric vehicles

GEC - Green Energy Corridor

GGA - Global Goal on Adaptation

GHG - Greenhouse Gas

GIM - Green India Mission

GOBARdhan - Galvanizing Organic Bio-Agro Resources Dhan

GST - Global Stocktake

IEA - International Energy Agency

IPCC - Intergovernmental Panel on Climate Change

ISA - International Solar Alliance

MoEFCC - Ministry of Environment, Forests and Climate Change

MNRE - Ministry of New and Renewable Energy

MSME - Micro, Small, and Medium Enterprises

NAFCC - National Adaptation Fund for Climate Change

NAPCC - National Action Plan on Climate Change

NCEF - National Clean Energy Fund

NDC - Nationally Determined Contributions

PAT - Perform, Achieve, and Trade

PV- Photovoltaic

SAPCC - State Action Plan on Climate Change

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

NMEEE - National Mission for Enhanced Energy Efficiency

NMSH - National Mission on Sustainable Habitat

NMSA - National Mission for Sustainable Agriculture

NMSHE - National Mission for Sustaining Himalayan Ecosystem

NMSKCC - National Mission for Strategic Knowledge on Climate Change

NSM - National Solar Mission

NWM - National Water Mission

SATAT - Sustainable Alternative Towards Affordable Transportation

SAUBHAGYA - Pradhan Mantri Sahaj Bijli Har Ghar Yojana

SHP - Small Hydro Power

UJALA - Unnat Jyoti by Affordable LEDs for All

UNCCD - The United Nations Convention to Combat Desertification

UNEP - United Nations Environment Programme

UNFCCC - United Nations Framework Convention on Climate Change

References

Agarwal, P. (2018). Redefining National Security: From Traditional to Non-Traditional. In Non- traditional security of India: Challenges and Options. India: NEEL KAMAL PRAKSHAN.

ANI. (2024, August 5). FAME 3 scheme nears completion, timeline yet to be announced: Union Minister. The Economic Times: https://economictimes.indiatimes.com/industry/renewables/fame-iii-scheme-nears-completion-timeline-yet-to-be-announced-union-minister/articleshow/112277129.cms?from=mdr

Bajaj, P. (2020). Indian economy will be hit hard by rising heat: Global report. DownToEarth.

COP28UAE. (n.d.). Global Climate Finance Framework. https://www.cop28.com/en/global-climate-finance-framework-principles#:~:text=COP28%20UAE%20%7C%20Global%20Climate%20Finance%20Framework%20

Dadwal, S. R. (2009). Energy and Climate Change. In I. W. Group, Security Implications of Climate Change for India. New Delhi: Academic Foundation.

Gupta, A., & Dutta, S. (2009). Climate Change and Security: Exploring the Link. In I. W. Group, Security Implications of Climate Change for India. New Delhi: Academic Foundation.

Gupta, D., & Sheth, A. (2024). Economic costs of climate change in India and policy responses. The Economic Times Business Verticals. Retrieved from https://energy.economictimes.indiatimes.com/news/renewable/economic-costs-of-climate-change-in-india-and-policy-responses/111802551

IBEF. (2023). Impact of the energy sector on India's growth. https://www.ibef.org/download/energy-sector.pdf

IEA. (2021). India Energy Outlook 2021.

IESS 2047. (n.d.). Energy Demand. Retrieved from India Energy Security Scenarios 2047: https://iess2047.gov.in/#?inputs=1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1

IISDO. (4–6 March 2008). WIREC: Summary report. https://enb.iisd.org/events/washington-international-renewable-energy-conference-wirec-2008/summary-report-4-6-march

Intergovernmental Panel on Climate Change. (n.d.). History. https://www.ipcc.ch/about/history/

Khare, V. (2021). Politics of Climate Change and Global Peace and Security. New Delhi: Pentagon Press LLP.

Ministry of Petroleum and Natural Gas. (2003). Annual Report 2002-2003. Ministry of Petroleum and Natural Gas: https://mopng.gov.in/files/TableManagements/AR02-03.pdf

NITI Aayog. (2017). Draft National Energy Policy. Retrieved from NITI Aayog: https://www.niti.gov.in/sites/default/files/2022-12/NEP-ID_27.06.2017.pdf.pdf

PIB. (2022). India's stand at COP-26. Ministry of Environment, Forest and Climate Change. PIB. Retrieved from https://pib.gov.in/PressReleasePage.aspx?PRID=1795071

Journal of Ecohumanism
2025
Volume: 4, No: 1, pp. 3870 – 3881
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i1.6251

PIB. (2021). National Action Plan on Climate Change (NAPCC). https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/dec/doc202112101.pdf

PMO. (2008). National Action Plan on Climate Change. Archives. https://archivepmo.nic.in/drmanmohansingh/climate_change_english.pdf

Tergin, D. (2006). Ensuring Energy Security. Foreign Affairs. doi:https://doi.org/10.2307/20031912

The Print. (2023, December 24). Aren't poverty and need the greatest polluters? Indira Gandhi. https://theprint.in/opinion/great-speeches/poverty-greatest-polluter-indira-gandhi-un-speech/1898870/

T. I., & Sinha, A. (2023). Spending on adaptation to climate change 5.6% of GDP: India puts on record. Indian Express. https://indianexpress.com/article/world/climate-change/spending-on-adaptation-to-climate-change-india-gdp-india-9061626/

United Nations. (n.d.). About COP 28. Retrieved from United Nations Climate Change: https://unfccc.int/process-and-meetings/conferences/un-climate-change-conference-united-arab-emirates-nov/dec-2023/about-cop-28

United Nations. (n.d.). Climate change science - the status of climate change science today. United Nations Framework Convention on Climate Change. https://unfccc.int/files/press/backgrounders/application/pdf/press_factsh_science.pdf

United Nations. (n.d.). COP 28: What Was Achieved and What Happens Next? United Nations Climate Change. https://unfccc.int/cop28/5-key-takeaways

United Nations. (n.d.). Paris Agreement. United Nations Climate Change. https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

United Nations. (n.d.). United Nations Climate Action. https://www.un.org/en/climatechange/science/causes-effects-climate-change

United Nations. (n.d.). United Nations Conferences | Environment and Sustainable Development. Retrieved from United Nations: https://www.un.org/en/conferences/environment/stockholm1972

United Nations. (n.d.). The Rio Conventions. United Nations Climate Change https://unfccc.int/process-and-meetings/the-rio-conventions

United Nations. (1980). United Nations Conference on New and Renewable Sources of Energy. United Nations Digital Library. https://digitallibrary.un.org/record/18939?ln=en&v=pdf#files

United Nations. (n.d.). What is the Kyoto Protocol? United Nations Climate Change: https://unfccc.int/kyoto_protocol

United Nations. (n.d.). What is the United Nations Framework Convention on Climate Change? United Nations Climate Change: https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change

United Nations. (n.d.). UN Documentation: Environment. United Nations Dag Hammarskjöld Library: https://research.un.org/en/docs/environment/conferences

United Nations. (2002). Meetings, Coverage, and Press Releases. United Nations: https://press.un.org/en/2002/envdev682.doc.htm

United Nations. (2001). Commission on Sustainable Development: Report on the Ninth session. Economic and Social Council: https://www.un.org/esa/sustdev/csd/ecn172001-19e.htm