

Original Paper

Energy Security, Decarbonization, and the Environmental Justice Movement

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Abstract

This article will analyse two key challenges of today: 1) energy security and decarbonization in the context of the United Nations' sustainable development goals, and 2) decarbonization and energy security from the perspective of environmental justice. Energy security and decarbonization are integral components of the United Nations' Sustainable Development Goals (SDGs). Specifically, they are addressed in SDG 7, which aims to ensure universal access to clean and affordable energy. Access to energy is crucial for the development of vital sectors such as agriculture, business, communications, education, healthcare, and transportation, and a lack of access to energy can impede human and economic development. In addition, the effects of climate change are disproportionately borne by those residing in the developing world. This inequity needs to be at the core of any climate change research – both at a practical and theoretical level. However, some scholars have argued that dominant modes of thinking about climate change and environmental hazards have often chosen to ignore this inequity or have not placed such inequity at the core of their analysis. This is where the Environmental Justice movement acts as a game-changer. We argue that it provides an alternative rationality to approach environmental hazards, with the social injustices and inequities at its center that are direct or indirect

effects of environmental degradation and climate change.

Keywords

energy security, decarbonization, sustainable development goals, access to energy, environmental justice movement

1. Introduction

In today's world, energy security is not only a matter of national and economic security but also global respect. As Thomas Friedman, the renowned American journalist, rightly pointed out, owning and dominating the green energy industry not only ensures energy security, but also brings many other benefits, including competitive companies and a healthy population. Therefore, it is essential to explore the importance of green energy in achieving energy security and the role it plays in shaping global perceptions and standing.

The rise in atmospheric Greenhouse Gases (GHG) concentration is a well-documented consequence of the phenomenon of global warming, thereby underscoring the paramount significance of decarbonization policies. Nonetheless, to ensure a stable supply of energy, our reliance on carbon-intensive resources remains inevitable. Consequently, while decarbonization and energy security are interrelated concepts, they remain inherently incompatible in practice.

Energy security and decarbonization are integral components of the United Nations' Sustainable Development Goals (SDGs). Specifically, they are addressed in SDG 7, which aims to ensure universal access to clean and affordable energy. Access to energy is crucial for the development of vital sectors such as agriculture, business, communications, education, healthcare, and transportation, and a lack of access to energy can impede human and economic development. (Note 1)

Research has clearly shown that the effects of climate change are disproportionately borne by those residing in the developing world. (Note 2) It is estimated that between the period between 1970 and 2008, 95% of natural disaster-related deaths occurred in developing countries. (Note 3) It is disproportionate also because developing countries contribute the least towards climate change. A recent global study found out that individuals residing in affluent nations cause two to three hundred times greater health harm to others compared to the health consequences they themselves experience due to their country's past emissions. (Note 4) This lopsided nature of the climate change paradigm is also true at an individual level within a country. The rich within a country are most likely to be the top GHG emitters, while it is the poor who are most likely to be the most affected as a result of such emissions. (Note 5)

The inequity mentioned in the above paragraph has to be at the core of any climate change research – both at a practical and theoretical level. However, some scholars have argued that dominant modes of thinking about climate change and environmental hazards have often chosen to ignore this inequity or have not placed such inequity at the core of their analysis. (Note 6) This is where the Environmental Justice movement acts as a game-changer. It provides an alternative rationality to approach

environmental hazards, with the social injustices and inequities at its center that are direct or indirect effects of environmental degradation and climate change. (Note 7)

After this short introduction, this article will analyse two key challenges of today: Section 2 deals with energy security and decarbonization in the context of the United Nations' sustainable development goals, whereas Section 3 analyses decarbonization and energy security from the perspective of environmental justice.

2. The Significance of Energy Security and Decarbonization in Achieving the Sustainable Development Goals

In this section, we will explore the multifaceted concept of energy security, examining its economic, geopolitical, and environmental implications as well as the challenges that must be overcome to achieve it. We will examine the complex idea of decarbonization, including its economic, geopolitical, and environmental consequences and the obstacles that need to be addressed to attain it. We will explore the intersection of energy security and decarbonization, examining the economic, geopolitical, and environmental implications of decarbonization efforts. We will also discuss the challenges that must be overcome to achieve a sustainable and secure energy future.

2.1 The Importance of Energy Security

Throughout human history, energy has played an essential role and remains crucial in modern times. From early humans controlling fire to the present day, energy is necessary for various activities such as production, transportation, and even for basic human survival like heating. It is almost unimaginable for people to function without modern forms of energy, including electricity and gasoline. The absence of energy would result in the collapse of modern civilization within a few months, or even weeks. Hence, energy shortage poses a significant threat to human life and security. (Note 8)

The academic literature surrounding energy security offers a range of definitions, although the focus is often on proposing frameworks and policies to improve energy security, rather than attempting to measure it. The International Energy Agency (IEA) defines energy security as the “uninterrupted availability of energy sources at an affordable price”. (Note 9) Additionally, the Stockholm International Peace Research Institute has defined energy security as “reliable supplies at a reasonable price”.

Energy security consists of three essential components that align with the definition mentioned earlier: (1) physical (national) energy security, which pertains to the availability and accessibility of energy sources; (2) economic energy security, which is associated with the affordability of procuring resources and developing energy infrastructure; and (3) environmental sustainability, which involves the sustainable utilization and development of energy resources that satisfies current needs without jeopardizing the capacity of future generations to meet their own energy needs. (Note 10)

These three components of energy security deal with the following concepts:

- Availability – having an adequate supply of energy resources;

- Accessibility (Reliability) – accessible energy to everyone, often by maintaining reliable infrastructure and keeping energy prices low (interrelated with principle of affordability);
- Affordability – make resources available at reasonable prices;
- Acceptability (Sustainability) - addresses the negative impacts of energy and seeks to minimize environmental damage to make energy acceptable to consumers. (Note 11)

Energy security is a fundamental component of political, economic, and environmental security and presents unique challenges. If any of the three fundamental components of energy security are not met, the security domains within energy security may be compromised. States may opt to sacrifice one or more of the three critical components to achieve energy security.

The concept of energy security, which entails availability, affordability, efficiency and technology, and environmental and social stewardship, highlights several significant energy security challenges that occur at three distinct levels: macro (comprising global, transnational, and supranational threats), micro (encompassing local threats at the household level), and meso (encompassing mid-level threats to energy systems and specific technologies). (Note 12) Energy insecurity possesses a variety of negative consequences across social, economic, and environmental domains. Such impacts may result in job losses, poverty, social segregation, economic decline, and environmental degradation, among others.

The burning of fossil fuels for energy causes global warming, leading to extreme weather conditions that can create security problems at a global level. Despite a 6% decline in global CO₂ emissions due to the COVID-19 pandemic, fossil fuels still represent 80% of the total energy supply, with coal being the dominant source. The Energy Gap Report shows that national pledges made to combat climate change are not enough to limit global warming to well below 2 °C, and urgent system-wide transformation is required to reduce greenhouse gas emissions by 45% compared to projections based on current policies by 2030. The report provides an in-depth analysis of actions needed in various sectors, such as electricity, industry, transport, buildings, food, and financial systems. (Note 13)

The Southern Gas Corridor (SGC) is one of the ambitious international projects designed to pipe natural gas from Central Asia to Europe. It was one of six energy-related priority infrastructure proposals to come from the Second Strategic Energy Review of the European Commission (EC) in 2008. The EC envisioned a grand but simple goal: Ensuring secure and affordable supplies of energy to Europeans by diversifying supply routes that decrease the dependence of EU countries on a single supplier of natural gas and other energy resources. (Note 14)

Despite the push for cleaner energy and the Paris Agreement on Climate Change, Europe is still heavily dependent on fossil fuels for its energy needs. The depletion of North Sea gas fields and concerns over Russia's and Ukraine's erratic natural gas supply have only exacerbated Europe's energy security issues. Russia remains the largest supplier of natural gas to Europe, with up to 80% of Russia-Europe gas trade passing through Ukraine.

Due to increasing post-Soviet enmity between the two nations, gas shipments transiting Ukraine were repeatedly curtailed or completely cut off, exposing Europe's supply vulnerability, and necessitating a

course correction. (Note 15) The SGC represents a crucial step towards diversifying Europe's energy supply and decreasing its dependence on a single supplier, but it also highlights the ongoing challenges of balancing energy security, geopolitics, and the push towards decarbonization. (Note 16)

To sum up, energy security is a critical component of political, economic, and environmental security. The availability, affordability, sustainability, and reliability of energy sources are essential for human life and security. The burning of fossil fuels for energy contributes to global warming and poses security problems at a global level. The Southern Gas Corridor is an ambitious project designed to pipe natural gas from Central Asia to Europe and represents a significant step towards diversifying Europe's energy supply and decreasing its dependence on a single supplier. However, it also highlights the ongoing challenges of balancing energy security, geopolitics, and the push towards decarbonization. A transition to cleaner and more sustainable energy sources is necessary to mitigate the negative impacts of energy insecurity on social, economic, and environmental domains.

2.2 The Importance of Decarbonization

Decarbonization can be defined as the intentional and deliberate act of ceasing or diminishing the release of carbon gases, with a particular emphasis on carbon dioxide, into the atmosphere that occurs because of a given process, such as the combustion of fossil fuels, from an environmental perspective. (Note 17) To achieve decarbonization, the primary aim is to substitute the unregulated usage of fossil fuels with sustainable energy sources, including but not limited to, hydropower, wind power, solar power, and geothermal energy.

The rise in the average temperature of the Earth's atmosphere has resulted in a phenomenon known as global warming, which causes alterations in the planet's weather and climate patterns. These rapid changes are occurring because of human activities that continue to emit heat-trapping greenhouse gases into the atmosphere. (Note 18) Carbon dioxide (CO₂), which is the most abundant of these emissions, is regarded as the primary anthropogenic greenhouse gas due to its durability and long-term presence in the atmosphere for several millennia. (Note 19)

In the upcoming decades, the energy usage throughout the world may be impacted by two key environmental concerns: global climate change and local or regional air pollution. The level, composition, and expansion of global energy usage are likely to be affected by future measures aimed at limiting carbon dioxide emissions, global endeavors to mitigate the impacts of climate change, as well as localized regulations and policies intended to restrict energy-linked emissions of airborne pollutants apart from carbon dioxide. (Note 20)

2.3 The Intersection of Energy Security and Decarbonization

Environmental sustainability is an essential component of decarbonization policy as it involves preserving natural resources and ensuring that future generations can meet their own needs. Decarbonization policies, which aim to reduce carbon emissions and achieve a carbon-neutral world, help to mitigate the negative impacts of climate change, preserve natural resources, and ensure energy security. By transitioning to renewable energy sources, countries can reduce their dependence on finite

and geopolitically unstable fossil fuels, thus increasing their energy security. Furthermore, decarbonization policies help to reduce carbon emissions, which can mitigate the negative impacts of climate change and protect international security. Therefore, incorporating environmental sustainability into decarbonization policies can have long-lasting positive impacts on both the environment and energy security. (Note 21)

Dealing with climate change is a major challenge for the present century, which involves the intricate balance between the requirement for inexpensive energy that forms the basis of contemporary societies worldwide, and the need to generate adequate energy to support industrialized nations and underdeveloped nations without creating negative effects on climate and society, thereby becoming a “wicked problem.” (Note 22)

The current level of carbon dioxide concentration in the Earth’s atmosphere is around 390 parts per million. Climatologists have suggested that surpassing 450 parts per million would pose a serious risk of dangerous human-caused interference with the climate system. It is projected that the global temperature will increase by 1.1 to 6.4 degrees Celsius by the end of the century, in addition to the 0.8-degree Celsius increase that has already taken place over the last century. (Note 23)

The annual growth rate of carbon dioxide in the atmosphere is 2.5 parts per million, and if not controlled, the concentration will reach 750 parts per million by the end of the century, which is considered a severe threat. Developed countries contribute the most to this growth, and their emissions from the past century still have a lasting impact on the atmosphere since carbon can last for up to a century. (Note 24)

Environmental concerns such as climate change pose significant threats to energy security, but these threats can be addressed through mitigation efforts. Mitigation involves minimizing or preventing the negative consequences of energy use on the environment. The use of renewable energy sources and energy efficiency measures can reduce reliance on fossil fuels and limit their environmental impact. While these measures do not fully achieve the goal of minimal environmental impact, they offer a partial solution. The development of renewable energy technologies such as wind, solar, and geothermal can also provide alternative sources of energy to replace traditional generation. (Note 25)

While renewable energy and energy efficiency are important in mitigating the security risks posed by energy-related climate change, they are not without challenges. Factors like intermittency and high costs can hinder the development of renewable energy sources, while political, financial, and regulatory uncertainties can delay both energy efficiency and renewable energy deployment. Nonetheless, both renewable energy and energy efficiency are essential components in addressing the environmental security problems that arise from the increasing energy demands of both developed and developing nations. (Note 26)

3. Decarbonization and Energy Security from the Lens of Environmental Justice

In this section, we analyse the concepts of energy security and decarbonisation from the lens of the environmental-justice movement. First, we lay down certain core features of the environmental justice movement and the reasons that we believe make this interlinking of environmental justice, energy security, and decarbonisation worthwhile. Then we lay down what the concepts of decarbonisation and energy security could gain by valuing certain core features of the environmental-justice movement.

3.1 The Environmental Justice Movement: Rooted in Social Justice, Human Dignity, and Lived Reality

The environmental justice movement is multi-faceted, and hence it is difficult for a single definition to include within it all that the movement stands for. Hence, instead of trying to ‘define’ the movement, we will lay down three core features of the movement in this section.

Core Feature 1 - The movement combines ecological goals with social justice goals. (Note 27) The definition of the environment is expanded to encompass all aspects of life in our communities, such as air and water quality, equitable access to safe and well-paying employment, housing, education, healthcare, and fairness. (Note 28) The reasoning behind such an approach is that environmental hazards have rooted within them social injustices. Thus, any discussion about environmental degradation should not only talk about the ecological effects it produces but should also acknowledge its social effects. Further, solutions suggested should likewise tackle not only the ecological effects but also the social effects. (Note 29)

Core Feature 2 - Unlike dominant theories of environmental degradation, the environmental justice movement is not technocratic in nature. By this, we mean that movement is not overly obsessed with just providing scientific evidence and rather looks to develop its positions based on the lived reality of those on the fringes of society, i.e., the marginalised and the poor. (Note 30) It is in this sense a movement more dedicated to understanding the humane aspects arising out of being associated with environmental degradation and the multifarious ways it plays out in shaping human dignity. (Note 31) It is this focus on the lived reality that makes the movement less susceptible to be appropriated by corporate and government interests.

Core Feature 3 - This feature flows from core feature 2 and is linked to core feature 1. With its focus on social justice and human dignity, the movement inevitably places at the top of its agenda the inequalities currently in play in protection against environmental hazards. (Note 32) This centrality towards addressing inequality can probably be traced back to the history of the movement, which sprang out of addressing inequalities associated with environmental degradation. (Note 33) Thus, the movement frequently invokes egalitarian principles in its demands for a more equitable distribution of environmental advantages and burdens (Note 34).

In pointing out the core features of the movement, we in no way want to contend that the movement is perfect or free from criticism. The environmental justice movement has been criticised for its insistence on symbolism and its case-by-case approach. (Note 35) However, we do believe that, owing to these core features, viewing decarbonisation and energy security from the lens of environmental justice will help us form new perspective which will, in turn, help us in framing better policies. Further, even the

environmental justice movement would benefit from such an exercise as it would help in taking the movement more mainstream and provide it with the universal appeal it currently lacks. (Note 36)

3.2 Decarbonisation and the Environmental Justice Movement

The environmental justice movement provides useful perspectives on how the decarbonisation process should take place and what possible pitfalls one should be aware of whilst the process is in progress.

First and foremost, it is important to be aware of the “behind-the-scenes” effects of decarbonisation efforts. Decarbonisation and green solutions are often resource-intensive and can lead to a situation wherein greener energy being produced in the global north, however, the raw materials required are still mined and extracted from the global south. (Note 37) This creates a decarbonisation divide, wherein the benefits of the decarbonisation are flowing to the global north, whilst all the ill-effects associated with it such as environmental degradation, economic inequality and human rights violations flow to the global south.

A prime example of this can be observed in the case of Belgium and the Democratic Republic of Congo. Belgium has heavily extracted metals from Congo, and this has caused various negative ecological, economic, and social impacts to the citizenry of Congo. However, owing to the ‘transnational’ and international nature of such transfers, Belgian officials who perpetrate such climate injustices have not been held accountable to the citizens of Congo. Some scholars refer to this as the ‘democratic deficit’ of global climate change policies. (Note 38) Decarbonisation efforts in the environment justice movement will ensure that concerns with regards to the decarbonisation divide and the democratic deficit are both adequately addressed.

3.2.1 Addressing the Decarbonisation Divide

To address the decarbonisation divide, it is essential that decarbonisation efforts be traced thoroughly from start to end. Such thorough tracing would ensure that we are cognisant of any geographical and spatial divide that is being created between production of clean energy and the ill effects associated with it. Further, cognisance should take note of the historical inequalities that colonialism and capitalism have produced and whose effects can still be felt in the way the global economic order operates. (Note 39)

Another way decarbonisation efforts can avoid any divide would be by implementing ‘just transitory’ methods and by choosing to adopt a comprehensive decarbonisation framework which has social justice as one of its goals. The transition to a decarbonised economy would mean that a lot would change on how the world operates. Just transitory measures would ensure that in this period of transition measures are taken so that the benefits and costs of such transition are equally shared between all communities. (Note 40) For example, a shift to a decarbonised economy would entail that a lot of people who are currently employed in the lower rungs of the fossil-fuel sector would lose their jobs. (Note 41) Without transitory measures that prepare such workers to adapt and prosper in the new economy, such workers would be left behind. This is especially true for those who are currently poor, because the poor lack resources that allow for adaptation. To avoid such a situation wherein a new

economy decides “losers” because of their historical placement, just transitory measures are a must. In fact, just transitory measures are usually part of comprehensive decarbonisation frameworks such as the Green New Deal. (Note 42) There is a raging debate currently going on in the USA on whether or not decarbonisation efforts should incorporate broader goals such as social justice or whether they should take a much narrower focus and simply amend the economic impacts caused by decarbonisation efforts such as job losses or higher prices. (Note 43) As noted above, Environmental Justice has at its heart the goals of social justice and thus decarbonisation efforts under the movement would not take the narrow restrictive approach and would instead be broad-based and would incorporate meeting various other allied social goals. (Note 44) Thus, proponents of the environmental justice movement would be in favour of a comprehensive decarbonisation framework such as the Green New Deal.

3.2.2 Addressing the Democratic Deficit

It is difficult to address the democratic-deficit concern, especially in situations involving the international transfer of resources. This is because, in today’s world, accountability is tightly tied to national sovereignty, wherein leaders are responsible only to citizens of their nation, and not of other nations. (Note 45) However, there are many that would argue that accountability is even lacking within a national system – because people often lack any direct choice in the decisions relating to the energy framework that the state implements. The environmental justice movement would not like decarbonisation to take place under such unresponsive institutional setting. It has its ethos in collective responsibility and thus would be committed for people to have more say in how the decarbonisation process should take place.

There are various reasons why procedural justice in the form of direct participation is important. First, it is based on the all-affected principle which lays down that not properly including individuals who may be impacted constitutes discrimination against their interests. (Note 46) Second, it is considered not acceptable to subject individuals to risks without giving them the option to decline. (Note 47) Thus, participation is furthermore important when dealing with instances where a certain decarbonisation effort would have negative impact on a group of people. In fact, some scholars have argued that, in cases such as that of climate change, where achieving distributional equity is impossible owing to various technical reasons, procedural justice in the form of consent and participation can act as a substitute. (Note 47) Further, participation in decision-making allows for more accountability, as people would be interested in observing whether or not their choices have been supported via implementation. However, there is a certain group of scholars who is uncomfortable with the ideal of people’s participation in shaping the course of decarbonisation. They argue that the way human conscious works is not ideal to deal with the problem of decarbonisation. They argue that decarbonisation is a global phenomenon with global targets. However, people usually are not able to keep such long-term goals and visions in mind while choosing policies and thus would choose to decarbonise in a way that is most beneficial for their local setting with no concern for the global targets or the global vision. (Note 48) Further, decarbonisation has been ultimately seen as a technocratic problem in which citizen input

would not be very helpful.

In her paper titled *“Decarbonization in Democracy”*, Shelly Welton refutes these arguments in a very comprehensive manner. (Note 49) While conceding that there are certain technical issues in the decarbonisation process in which citizen input would be of no help, she points to a plethora of other areas on the issue which could be benefitted by citizenry input. She argues that the ‘ends’ of decarbonisation are susceptible to be disturbed by human cognitive biases and hence should be outside the purview of citizenry input.

However, the same cannot be said to be true for the means of carbonization. Questions involving the means of carbonisation *“are questions about how we want to live our lives and the tradeoffs we are willing to make between cost and other values”* (Note 50) and thus are questions which the public has to have a say in. She argues that more public involvement can help in making further inroads into decarbonization. She specifically lays down two modes for more citizen engagements.

The first method involves corporates to report on citizen preferences. In this process of engagement, she hopes that the corporates would make information accessible in an easy format and the public would reciprocate to this by taking giving their opinion in an honest and serious manner. (Note 51) The second method involves enhancing community control over energy. (Note 53) Both these solutions align with the core features of the environmental justice movement and bring in an element of public participation with regards to the decarbonisation process.

3.3 Energy Security and the Environmental Justice Movement

Energy security is an integral part of the environmental justice movement. As mentioned above, the movement has at its core the lived reality of people. And the lived reality of around 4 billion poor people around the Earth is that they are “energy poor”, i.e., they do not have enough energy to fulfil even their basic needs. (Note 54) Such energy inequality usually exacerbates other forms of inequalities: social, economic, and political. Individuals who do not have access to energy services or have limited access will usually experience fewer opportunities for education, less access to fertile land and other natural resources, poorer health, minimal political representation, limited economic prospects, and insufficient access to healthcare. (Note 55)

Providing affordable and uninterrupted energy service thus becomes one of the central aims of the environmental justice moment, which has its roots in notions of social justice and environmental equality. Environmental Justice movement proponents should ideally fight for a positive right for energy services. The argument in favour of a such a move would be as follows: distributive justice theory proposes that, since physical security is a basic right, all those other aspects that enable such physical security should be considered as basic rights. Since the need for energy in enabling the fulfilment of other rights is very clearly established, provision of minimum energy services is also a basic right. (Note 56)

However, there are certain overlaps of goals that the environment justice movement needs to reconcile with. It is clear from our discussion above that both decarbonisation and energy security are legitimate

goals of the environmental justice movement. However, at times, these goals can conflict with each other. If more fossil fuels are used to provide energy security, then the goal of decarbonisation is being compromised. Similarly, if we overly focus on decarbonisation, there is a possibility that we may produce clean energy, but the cost of such energy is so high that it increases the proportion of money that the poor spend on fulfilling their energy needs. This phenomenon is termed as the decarbonisation paradox and is currently being observed in countries such as Germany, where an increase in production of clean energy has led to a concomitant increase in the price of energy. (Note 57)

To avoid such conflict, it is necessary that the movement maintain a fine balance between all of its goals and not choosing to side with any one of the extremes. Such internal contradictions are not new to the environmental justice movement. Since it has always had a broad-based approach in dealing with environmental concerns, the movement always consisted of ideas and members whose goals often conflicted with each other. (Note 58) While some would see this as a demerit, we view such a characteristic as a strength. This is because we are not dealing with a black-and-white situation. Both decarbonisation and energy security are equally important, and we cannot choose to prioritise one over the other. It is here where the movement helps in maintaining a balance and helps streamline energies towards the fulfilment of both goals.

4. Conclusion

It is important to recognize the connections between environmental sustainability, decarbonization, and energy security. Policymakers and stakeholders must give top priority to solutions that strike a compromise between the need for energy security and the necessity to cut carbon emissions and minimize environmental harm as the world struggles to transition to a low-carbon economy. The growth of renewable energy sources and energy efficiency present attractive pathways for reaching these objectives, but they are not without difficulties. Unlocking the full potential of these solutions will depend on overcoming political, monetary, and regulatory barriers. To address the socio-technical issues brought on by climate change and environmental degradation, governments, the corporate sector, and civil society must work together concertedly.

We have tried to interlink the concepts of energy security and decarbonisation with the environmental justice movement. Such an analysis has given rise to novel ideas on how the processes of decarbonisation and energy security should be carried forward. The decarbonisation process has to be pursued, while ensuring that there is no decarbonisation divide. To ensure the same, just transitory measures and a comprehensive decarbonisation framework embedded with values of social justice ought to be pursued. Further, by infusing elements of citizenship participation and engagement, more accountability and procedural justice can be brought into the decarbonisation process. Energy security ought to be considered as a seminal goal of the environmental justice movement. However, there is a possibility that goals of energy security and decarbonisation may conflict with each other. In such a situation, a fine balance in pursuance of both goals ought to be achieved.

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Note 29. Geoff Evans & Liam Phelan, Transition to a post-carbon society: Linking environmental justice and just transition discourses, *ENERGY POLICY* (2016) 1, 3.

Note 30. DAVID HARVEY, *JUSTICE, NATURE & THE GEOGRAPHY OF DIFFERENCE* (Blackwell Publications, 1996), at 386.

Note 31. Ibid at 387.

Note 32. Ibid at 385-386.

Note 33. Environmental Justice History, OFFICE OF LEGACY MANAGEMENT, <<https://www.energy.gov/lm/environmental-justice-history>> (Last accessed - 25th February 2023)

Note 34. DAVID HARVEY, *JUSTICE, NATURE & THE GEOGRAPHY OF DIFFERENCE* (Blackwell Publications, 1996), at 391.

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Note 36. Ibid at 400-401.

Note 37. Iva Pesa, Decarbonisation, Democracy and Climate Justice: The Connections between African mining and European Politics, *JOURNAL OF MODERN EUROPEAN HISTORY* (2022) 299, 299-300.

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Note 40. Geoff Evans & Liam Phelan, Transition to a post-carbon society: Linking environmental justice and just transition discourses, *ENERGY POLICY* (2016) at 5.

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Note 42. For an analysis of the Green New Deal, see generally R. Leal-Arcas, Teemu Alex Hast, Lucas Sperka, Aarushi Mittal, et al. “Green Bills for Green Earth: How the international trade and climate regimes work together to save the planet,” *European Energy and Environmental Law Review*, Vol. 31, Issue 1, pp. 19-40, 2022.

Note 43. Jonas J Monsat, The ends and means of Decarbonisation, *ENVIRONMENTAL LAW* (2020) 21, 39.

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Note 45. BENJAMIN K ET AL., *ENERGY SECURITY, EQUALITY AND JUSTICE* (Routledge Publications,2014), Chapter 2 Titled: “Deciphering energy justice and injustice”.

Note 46. SARAH KENEHAN & COREY KATS (eds.), *PRINCIPLES OF JUSTICE AND REAL WORLD CLIMATE POLITICS* (Rowman & Littlefield Publishing group, 2021)—Chapter 8 titled: “Feasibility and Justice in Decarbonising Transitions.”

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Note 48. Id.

Note 49. Shelly Welton, Decarbonisation in Democracy, *UCLA Law Review* (2020) 56, 64-78.

Note 50. Id.

Note 51. Id at 89.

Note 52. Id at 101-105.

Note 53. Id at 107-115

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Note 57. Chukwuka G. Monyei et al., Justice, poverty, and electricity decarbonization, *THE ELECTRICITY JOURNAL* (2019) 47, 48-51.

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