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INTERNATIONAL ENERGY DISCOURSES AND FUTURES: A CASE STUDY OF TWO EMERGING ECONOMIES (INDIA AND CHINA)

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Abstract

"Scholarly notions on the global energy futures along with the historical discourses of coal, oil and gas which further attempt to gaze through the key question of both relational and productive power of big states Post-covid-19 pandemic. This paper central focus is to aware us about the perpetual exploitation of coal as a dominant form of energy resource broadly in context of China and India and its relevance despite many global policy agendas on low carbon emissions and paradoxes of coal. Meanwhile, the other forms of energy resources at once come to halt and jolted due to prolonged lockdowns under the covid-19 pandemic. However, the phenomenal resurgence of coal in China and India over the past two decades centred on rising economies of China and India and more recently a great shift in geopolitical paradigm amidst Russia-Ukraine war. How will the energy relationship of both with the rest of the world affect the development and shape the global context? There is a need for transition from (oil and coal) neoliberalism towards sustainable, clean and low carbon economies not only in global meeting and international climate conferences besides making it a ground reality in order to plan for a recovery due to pandemic so that we can achieve maximum economic impacts, shaping a secure and sustainable development for all and forge new employments around the world".

Keywords: Fuel-societies, low-carbon transition, coal, energy, India and China.

Introduction

Solar Energy is renewable resource limited only by the inflows rate from the sun to the earth. Fossils fuels, on the other hand, are stock-type resource that can be exploited at a nearly limitless rate. However, on human timescale, fossils fuels are non-renewable. They represent the planetary energy deposits which we can draw from at any rate we wish, but which will eventually be exhausted without renewal. Prior to industrial revolution, virtually, 100 per cent of both endosomatic and exosomatic Energy was solar driven. However, in present scenario approximately 200 to 300 GJ of exosmotic energy is consumed by per person per year especially, in major economies. The question arises whether the 8500 million people on earth

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at the estimated ‘population peak' towards 2050, will have enough available energy to supply the levels of energy required per person per year. This will be entirely dependent on how the patterns of socio-economic systems of the major economies and other developing countries consume energy especially, the king coal.

Energy is central to a social system's very metabolic survival. The energy requirements are integral to socio-spatial relations since the evolution of Human civilization. In simple terms the relation between energy and society is co-productive i.e. one side energy accessibility and on other is consumption. The natural energy flows and social energy demands are co-productive of socio-spatial relations. However, the significance of the social energy has increased tremendously since 18th century ‘Industrial Revolution' after the invention of steam engine by James Watt. The 20th century has indeed proved to be the age of electricity which transformed the entire energy landscape of the earth at a scale never have been imagined before. Human's ability to fly like a bird only became a possibility with the light and powerful oil engine. The steam-engine along with fossils fuels was the prime mover behind the profound social and technological upheaval known as the Industrial Revolution. In contemporary times, it has become essential as well as crucial to meet up the energy requirements of ever increasing population growth, economic development and technological progress which are directly or indirectly embedded on the contemporary energy consumption.

The broad pluralism that characterizes energy geographies and the uncertainties which surrounds energy futures around the globe has become visible Post-Covid-19 pandemic and energy supplies uncertainties amidst Russia-Ukraine war. The concept of 'livelihood’ is profoundly imperative as energy is after all the basic necessity of any livelihood strategy and, as geographers have shown, ‘the production and reproduction of livelihoods are interlinked with processes producing and reproducing space’. In simple words, it is subsumed in human's everyday practices which varies based on place-based dynamics and needs place based solutions. On the contrary, energy is inherently becoming a political resource. As Bulkeleyet al. (2014) conceptualizes energy infrastructure as sites of contestation and as spatial expression or material articulations of dominant political-economic ideologies and geographic imaginaries. In the same context, coal has become a major material to the hi-tech knowledge economies despite its much contradictions, as it’s structural importance to the contemporary patterns of overwhelming economic growth which are much visible in rapid and perpetual rise

of economic growth in both China and India from last few decades. Consequently, the above mentioned phenomena is much visible and cannot be ignored in post(December2019) circumstances when the entire world were locked due to covid-19 pandemic and it's shock not only jolted major economies, but its intensity also felt across the world and badly damaged the socio-economic systems. On the other side, China was busy in claiming her hegemony over Asia based on coal fired economic resurgence and India is over dependent on the coal fired thermal plants. Instead, the central role of political-economies across the world at such junctures should be transitioning to low-carbon societies as coal will remain a dominant resource even in future so there is urgent need to opt for new discourse of clean coal, focused on Carbon Capture and Sequestration (CCS).

From coal, jet fuel and heating oil to fertilizers and plastics, the extractive industrial spaces produces many products, essential to modern life across nearly all demographic groups. In contemporary times, the entire mobile world is embedded in 'Fossils-Fuel Landscape' or say 'Inter-Connected Fossils-Fuel Societies' controlled by both (International oil and gas companies or 'Big gas-oils') and (Giant State-owned 'Gas-coal-oil firms') across the nations which have been jolted since the outbreak of Covid-2019 pandemic. Nearly, the first half of 2020 and 2021 year marked by the State-enforced lockdowns issued by regional and national governments around the world. These transformations are historically and geographically unprecedented in scale, according to current estimates, with about more than 60% of the global population is impacted by these new measures. However, China was effective in handling with covid-19 virus when compare to other major countries despite the virus has evolved from Wuhan a city in Hubei province in China. While it still remains unclear whether the Sars-cov-2 was developed in laboratory or emerged naturally. However, this has resulted in huge paradigm shift in energy geopolitics which in turn a new economic order.

As a result, different systems of mobility which are subsumed in Fossils-Fuel-Societies across the world for work and production, for leisure and travel and business etcetera, especially, the physical mobility of humans through aero-machines from one place to another is reduced drastically as demographic groups around the world started staying indoors. Pragmatically, these systems are considered to be the engines of all the economies. Of course, this unprecedented pandemic has wiped out the energy demands, particularly in terms of 'Oil' across the world of a scale that is certainly unbelievable. These jolts have been encountered by billions

from rich to poor and many of its repercussions are inevitable in highly interconnected world in terms of economic, social and political dimensions.

Global Discourses on Coal, Oil and Gas

In the beginning of 19th century, with the invention of steam engine, coal became a valuable commodity, it had replaced traditional non-fossils energy sources and supplied for primary energy needs of industrialized countries. By 20th century, in global energy supply chains, coal remains a dominant energy source which supplied close to two-third of global energy needs by the end of World War I. However, post World War II there was a peak demand in the market of Oil, partly due to Oil's attractiveness for the transportation sector, where demand has risen steadily along with changing geo-politics and geo-economics, although coal remain a dominant source of energy in both China and India even after many paradoxes.

The oil crisis of 1970s brought about two specific events occurring in the Middle-east, the Yom-Kippur War of 1973 and Iranian Revolution of 1979. Both events resulted in disruption of oil supplies from the region which created difficulties for the nations that relied on energy exports from the region. Post-1970s, oil industry have become one of the substantial global extents along with high level of geographical integration. There was a geographical spreading of extractives activities and diversification of supply outside OPEC countries, started mainly after 1970s. Simultaneously, geopolitical tensions linked to oil continued in following decades, as shown by Iraqi invasion of Kuwait in 1990, which led in few months doubling of oil prices and triggered U.S.A. economic recession and geopolitical tensions in other countries. The oil energy systems are concentrated in 'difficult' places and are highly vulnerable and risky. Under current scenario across the world, oil systems for major economies are gradually becoming uncertain and highly vulnerable. On the contrary, the coal energy systems are becoming significant (i.e. dominant) political regime of growing capitalism over the last two decades, namely neo-liberalism. In current scenario, the coal energy systems are ever becoming strong and significant. Neo-Liberalism here is denoted to a power regime. In simple terms, ‘how’ of power regarding coal production, distribution and consumption under present scenario have become hegemonic especially, in context of China and India. In its abundance in the newly empowered nation-state and it’s uniquely intense energetic content, coal in both of these states will remain a dominant form of energy in 21st century. The famous liberal commentator, de Tocqueville, noted on visiting Manchester, ‘here humanity attains its most complete

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development and it's brutish'. Thus, it becomes imperative for the global leadership to meaningfully guide China. At the same time, also examine a geopolitical shift in power regime towards more Sinocentric world and their self-interest, where energy and power regimes are transitioning in parallel.

The historical path of international oil price fluctuation shows it is not only the supply and demand and other traditional market factors, but it also because of the competition between the economies. The diversity and complex structure of the influencing factors of international oil price increase the difficulty to predict the exact international oil trend.

Geopolitical Paradigm shift and China's role in contemporary world

The year of 2020 and 2021 are considered to be one of the toughest years of the modern times. The entire world remained in state of lockdown throughout the year. The transportation was stopped which induced the wastage of the products manufactured on one hand and deficiency of the same on the other.The energy systems have almost come to the halt affecting millions of people, many lost their jobs under the current covid-19 pandemic, as social distance is required to contain the spread of virus. This led to the major economic crash across the world. Simultaneously, when energy markets fail, an energy shortage develops. Dale Allen Pfeiffer a renowned geologists believed that energy depletion will have a major impact upon the socio-economic systems that will not be resolved by turning to renewable energy alone. Through mathematical modelling, he predicted that energy consumption has grown to the point that we will never sustain our current consumption levels without plentiful and cheap fossils fuels.

According to International Energy Agency (IEA) estimates the CCS could contribute over 15 per cent of global GHG emissions reductions required for mid century target of 450 ppm of CO2. However, not even a single full size coal fired power plant with CCS is operational in China and India, the world's biggest greenhouse gas emitter. However, both have promised to control new coal production using low carbon techniques as the part of it's commitment to reduce the greenhouse gases and global warming. This leads to an argument, that there are crucial inter-relations between the dominant power regimes and energy systems of particular socio-historical formations. And at the same, we can examine the nature and implications of coal's contemporary resurgence especially, in rising China and other developing countries. Meanwhile, the 'clean coal' must be stressed to provide a clean passage into political and socio-

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economic trends that will underpin low-carbon transitions in upcoming crucial future which is being subsumed under covid-19 pandemic, and, thus, it becomes imperative to practice and create 'low carbon' societies with new innovative transformations in this context.

The significant and crucial issue on the global future of energy can profoundly be gazed through the global rise of China especially, in last two decades. In December, 2019 when there was a outbreak of Covid-19 virus which later turned into unprecedented pandemic, world's largest coal consuming country China consumed nearly at 81.7 exajoules. These figures equate to approximately 51.7 percent of the total global coal consumption. In addition, China's 70 per cent of electricity is generated by coal. No other country in the world is as dependent on coal as China despite so many contradictions with coal. This largely suggests that a geopolitical shift in power regime towards a more Sinocentric world is rapidly increasing and both energy and power regimes are transitioning in parallel, while the erstwhile countries are in prolonged lockdowns under covid-19 pandemic and their economic growth has almost come to halt. Thus, China is central to the most dramatic example of the tensions related to unsustainable development and severely damaging the world’s environment.

Since 1978 when China launched its “Four Modernizations” reforms, growth has averaged 9.5% annually. As a result, China has climbed in world ranking to become the sixth largest economy in nominal Gross Domestic Product. In last few years, some parts of the academia, government, business, and civil society are engaged in China's economic growth than ever before. China's impact on global growth, resource allocation, trade and investment and geopolitical balance has direct consequences on every part of the earth. In 2019, it contributed $22.5 trillion or say 17.3 per cent of world’s $ 130 trillion in gross domestic product (GDP). It becomes imperative for global leadership to collectively examine the rapid economic growth in China which is embedded under the huge consumption of coal despite being so many paradoxes with its production. Human’s civilization and other (animal and plant) communities cannot survive on this mother earth in the absence of pure water and air which are quintessential to all the creatures.

China and India’s coal consumption is expected to continue rising in 2022 where as there is economic slow down in other countries due to covid-19 pandemic. However, China continues to exploit resources which can harm the entire world. China's promises and pledges to use clean energy resources is unjustified. China is the world’s largest consumer of coal. The overall

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consumption of fossil fuel increase by 0.6 per cent in 2020 from a year earlier to around 4.04 billion tonnes, according to Reuters' calculation China is also central to future of coal as the most dramatic example of the tensions of environment and development. King coal is still central to the perpetual economic development of China and other major developing economies. To be against the usage of coal can be portrayed as to be pro-poverty. On the other hand, the China mobilization for war is the most obvious manifestation of such expanded power, the 'need for massive investment in infrastructures to extract, harness, process, transport and covert energies' (Smil, 2010: 125) – and for the low carbon innovation needed to decarbonize energy – is itself a major argument for such perpetual expanding state power. In this energy security plays a central role. Consequently, the recent Sino-Iranian agreement, China has agreed to inject 280 to 400 billion dollars by foreign direct investment into Iranian oil, gas and petrochemical industries. Iran relies upon its oil sales to China to secure its fiscal wellbeing. In addition, China's ambitious 'One Belt One Road' (OBOR) initiative is economic, strategic and energy security agenda by which the two ends of Eurasia, as well as Oceania, are being closely tied a long the two routes, one overland and one maritime. It also links to Oceania and African continent. Global leadership must unite and challenge these new emerging and invisible security threats, they should also be careful about the perpetual expansion of China which is portrayed as legitimate and authentic state power.

CONCLUSION

In wrapping up, oil energy systems are concentrated in 'difficult' places and are highly vulnerable and risky whereas coal-energy systems are reshaping the paradigms and geopolitics of Asia. In addition, both of these energy-systems emits high amount of carbon to the environment which can be threatening in future for the entire human civilization.

Given the close connections between China's coal foot prints and under current circumstances, there is an urgent need to look at the relationship between the spatial form of socio-ecological systems and energy availability, production, distribution, and use at various geographical scales. In other words, we have to gaze at the global, national and regional differences and how they are intertwined with inter and intra-regional distribution which largely works on the region's political-economy power.

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In current times, it becomes crucial to avoid repeating the mistakes of the past and we need to shift our paradigm in terms of production and consumption of global energies. There is a need for transition from (oil and coal based) neoliberalismtowards sustainable, clean and low carbon economiesnot only in global meeting and dream projectsbesidesmaking it a ground reality in order to plan for recovery due to pandemic so that we can achieves maximum economic impacts and forge new employmentaround the world.

The ways in which Energy production and consumption mediates, and is mediated by, spatial politics and human-environment relationships.The study of place-based solutions becomes necessary as there are number of gaps in knowledge and policy imperatives to which geographical concepts and techniques are well suited. Geography's methodological and traditions enable strong multidisciplinary research which can engage the complexities of energy realities. This will benefit the entire human civilization on the planet earth.

In contemporary societies, on the one hand, the way forward in improving global energy securities amidst covid-19 pandemic is improving oil utilization ratio through technological innovation and promotion of alternative (low carbon/clean energy source) and promote the regional diversification of energy. On the other hand, developing economies which are also one of the largest consumers of oil should fill up their strategic reserves, negotiate long term contracts at current prices, and intensify the cooperation with 'Big Oil' countries.

All countries should encourage more domestic companies to participate actively in world oil markets to restrict risk and developing their own oil quotation systems in their potential regions. Once the covid-19 pandemic reduces its intensity, and world returns back to its daily routine, it will become mandatory for global economies to re-structure the energy infrastructure for human welfare. At the end, the most significant of all is to reduce the energy gap or energy poverty between rich and poor and bring everyone on same platform.

References

Bridge, G. (2008). Global production network and extractive sector: governing resources-based development. *Journal of Econommic Geography* , 389-419.

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p-ISSN: 2348-795X
Vol. 9 Issue 04
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Calvert, K. (2015). From 'energy geography' to 'energy geographies': perspectives on the a fertile academic borderland. *Progress in Human Geography* , 1-21

IEA. (2011). *China leads in carbon capture.* China Daily.

J.Lin, A. W. (2010). The impacys of oil futures market mechanism on Chinese oil security. *Acta Geoscientica* , Vol.(5) 693.

Jewell, A. C. (2011). The three prespectives on energy security: intellectual history, disciplinary roots and the potential for integration. *Science Direct* , 1-11.

Tyfield, D. (2014). 'King coal is dead! long live the king!': The paradoxes of coal's resurgence in the emergence of global low carbon socities. *Theory, Cultue & Society* , 59-81.

Yan, L. (2012). Analysis of International oil price fluctuations and its influencing factors . *American Journal of Industrial and Business Management* , 39-46.

Yusoff, N. C. (2014). Combustion and Society: A fire-centred history of energy use. *Theory, Culture and Society* , 31(5).