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**A STUDY ON SDG WITH A REFERENCE OF AFFORDABLE AND CLEAN ENERGY**

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**Abstract**

*This study discusses the reactions raised in the UN's Sustainable Development Goals text (SDGs). These have been criticised for creating a dichotomy between the climate and human beings by failing to address the two's numerous links. This article focuses on SDG7-"affordable and clean energy"-and claims that there is a three-sided link between climate change, human beings, and innovation, which are all crucial to the SDGs. We believe that this qualification fails to adequately address the multiple links among the SDGs, hampered their implementation. We argue that the SDG7 plan creates a muddled sense of viability, a problem that is currently being resolved at the level of the 500 targets and markers, which treats energy breakthroughs as relics. Surprisingly, most research on the moral aspects of energy systems agrees that energy is a paradigmatic example of a sociotechnical system. We argue that by ignoring its sociotechnical aspect, the SDGs risk inadvertently protecting a particular type of inventive idealism and determinism. We believe this is harmful to the environment, human prosperity, and innovative progress. We argue that these (and other) shortcomings can be rectified by properly linking the SDGs to human flourishing, in line with ongoing basic assessments of the SDGs.*

**Keywords:** Sustainable Development Goals, Affordable

**Introduction**

SDG7, which calls for affordable and clean energy, is genuinely lagging behind, according to a 2017 report on the progress of the United Nations' Sustainable Development Goals (SDGs): "Progress in each space of manageable energy misses the mark concerning what is expected to achieve energy access for all and to meet focuses for environmentally friendly power and energy effectiveness." This not only concerns the inability to meet one specific SDG, but also makes it difficult to recognise a variety of other goals. The SDGs, which have seventeen supportable development objectives, 169 targets, and 230 indicators, are meant to be unbreakable, so failure in one leads to failure in others. Energy is in a critical condition here because it is commonly associated with many important aspects of human life [1].

"Energy is vital for achieving almost each of the Sustainable Development Goals, from its role in the annihilation of poverty through advancements in health, education, water supply, and industrialization, to combatting environmental change," according to the SDG7 progress report. This is true for each of the three aspects of the energy sector: electricity, heat, and transportation. A plentiful and clean energy supply might even eliminate drinking water shortages, as abundant seawater can be converted to drinking water via an energy-intensive desalination process. Despite the fact that progress on SDG7 has fallen short, there has been a shift in areas of the energy system toward more notable maintainability. For example, traditional oil power is gradually being displaced by the use of power in decentralised applications such as cars. Furthermore, several European countries are currently transitioning to more sustainable energy sources and jobs. These numerous advancements in the energy field also carry with them enormous challenges that are being addressed primarily on a mechanical level. However,

because the energy system is a classic example of a sociotechnical system [2,3], each change in stock and appropriation is accompanied by massive changes in interest or use, and it may also be possible to more easily address energy-related issues using no-tech or low-tech arrangements. Similarly, the extensive repercussions that these changes have on various aspects of human life are rarely thoroughly discussed. More (or less) decentralised energy breakthroughs, asset exchange (within a broad public or globally), and other institutional and cultural changes, for example, could all contribute to the adoption of more sustainable power sources. The specificity of the SDGs, as well as the comparison of targets and markers, unquestionably demonstrates a magnificent achievement of the global local area that, unlike the UN's previous Millennium Development Goals (MDGs), was warmly welcomed by state-run administrations and NGOs alike (see [4] for an outline of the development that prompted the SDGs).

The SDGs also encouraged research and change in the direction of a more practical future. It is acknowledged that the SDGs are interconnected, and the goals should be regarded as unbreakable. For example, energy is not only necessary for SDG7, but it is also explicitly addressed in terms of targets or indications of two other aims. (As part of goal 12, which aims to ensure practical utilisation and production designs, target 12.C focuses on wasteful petroleum derivative endowments that fuel unproductive usage by removing market twists.) The number of schools with power admission is devised as (a component of) one pointer for target 4, which is concerned with complete and equitable quality training. In any case, as we will argue in the following, the existing SDGs plan fails to recognise the multiple links between human flourishing and other aspects of the energy systems.

This disappointment stems from a lack of substance. In this study, we argue that the SDGs fail to address the linkages between the many aims and targets, as well as the complex ways in which energy in all of its structures can affect human lives, due to a failure to grasp the sociotechnical concept of the energy system. According to researchers, the SDGs are based on a conceptual distinction between climate and human animals, and as a result, major cooperation energies between climate and human flourishing are not perceived. We extend on this argument and propose that there is a three-sided separation between climate, human prosperity, and innovation, which leads to a soft mechanical determinism that overlooks considerable cooperative energies among the three. We believe that this is one of the reasons why the transition to a more practical energy system is failing to meet its goals. Furthermore, we will argue that the skewed view of the energy system, which misses the target in terms of identifying its sociotechnical nature, neglects to mention the fundamental concept of economical energy. This is how the paper is organised. In Section 2, we argue that the SDGs are founded on a roundabout definition of reasonable energy, and that the identification of targets along these lines is still somewhat discretionary. The inability to comprehend the sociotechnical concept of the energy system leads to a soft inventive determinism that fails to fully recognise collaborations between human and ecological well-being and mechanical innovations, as we will argue in Section 3. If the sociotechnical concept of energy is to be taken seriously, a governing norm is required that clearly defines what manageable energy systems entails.

### Objective

1. To evaluate economic societal and environmental impacts of clean and low Price energy
2. To SDG approach and in smart city vision for emerging countries.

### **Energy in the SDGs**

The importance of inexpensive and clean energy as a focus element of the SDGs is undeniable, given the massive impact that energy supply and appropriation, as well as energy use, has on the climate and human life. However, unlike with clean water, it is difficult to determine what "clean" genuinely means when it comes to energy, because all methods of energy transformation have drawbacks. When we look at SDG7's strategy, however, there is a lack of clarity: "Ensure access to affordable, reliable, manageable, and modern energy for all." We find an obviously circular detail here, rather than determining what practical energy is. While this may appear to be innocent at first glance, we believe that this circle is harmful because it obscures a few real challenges in transitioning to more sustainable energy systems, particularly how to balance the benefits and drawbacks of various energy transformation, use, and infrastructure methods. These issues appear to require the establishment of a broad, methodical structure, which is currently lacking for the SDGs [6]. Allow us to begin with an altruistic examination of SDG7 and an attempt to sort out the definition of this goal. What does it mean when a Sustainable Development Goal is defined using the term "supportable"? One possibility is that the target and indicator dispute is resolved fairly and squarely. This structure will be discussed in Section 2 below. 2. Another way to read SDG7 is to consider the phrase 'economical' in the "Reasonable Development Goals" as having a standardised significance, even though it is used as a distinct term in the SDG7 plan, admitting that the relevance of 'practical energy' from a clear perspective is evident. This is unquestionably a classic dodge, and as a result, the conclusion appears to be roundabout due to a blameless argument over the term "maintainable," first as a regulatory concept and then as an enlightening concept in SDG7. This generous reading, which is prone to the accusation of circularity in any event, fails to do justice to the concept of 'maintainability.' Manageability is a morally thick phrase, as has been argued elsewhere [7]. Despite the fact that supportability may appear to be an appealing concept at first glance, it is frequently utilised to make regularising claims. Supportability has become known as a thick idea, or one that has both evaluative and engaging elements [8,9]. Although the distinction between thin and thick regularising thoughts may not be a precise distinction, it may be useful in dialogues [10]. When referring to an innovation as maintainable, the speaker not only expresses her opinion, i.e., that she believes this is a 'decent' innovation in specific ways, but also offers a clarifying guarantee, such as that this energy transformation innovation is CO<sub>2</sub>-neutral. The clarifying guarantee may or may not be appropriate. This is distinct from meagre moral concepts like 'excellent,' which just expresses the opinion of the person who uses the phrase, as well as simply illuminating terms like yellow, hard, or delicate. It should be noted that, despite the phrase "maintenance," many of the terms we employ to "portray" developments are indeed thick terms with very clear and standardised articulations. This holds true for phrases like 'hazardous' or 'safe' [11], as well as other terms used to determine SDG7, such as 'solid' or 'current.' The way these phrases are used here clearly shows that, for example, dependability is something to be glad for (from an ethical standpoint) and worth pursuing, but it is also a representation of a specific type of energy system.

### **Energy as a Sociotechnical System**

Obviously, the lack of progress for SDG7 cannot be attributed solely to the objective's description, objectives, or pointers. While regularising thinking provides some inspiration to act in the (regulating) right way, they frequently fail to overcome every persuasive obstacle,

especially in cases like energy utilisation, transformation, and transmission, which appear to require significant changes in standards of conduct on an individual and cultural level. In any event, there are certain omissions in the existing definition of the Sustainable Development Goals that promote inaction, as I argue. The SDGs, like the previous Millennium Development Goals, "[...] fail to establish any division of work to ensure a favourable outcome." As a result, allocating liabilities and determining who needs to move is difficult [20].

Despite the inability to designate liabilities, we fight that, at least in the area of energy, another reason for inaction inherent in the definition of SDG7, its objectives, and its markers is the SDGs' focus on the systemic level, while the individual (whether she lives now or later) is only tended to by implication. The private sector is currently the largest producer of nursery gases in the Western world. Nonetheless, the poor progress made so far in implementing SDG7 may be found in the modern area. "Significant improvements will demand more elevated levels of money and bolder strategy responsibilities, as well as the desire of governments to accept new achievements on a much larger scale," according to a 2017 study on the SDGs' progress. This focus on fresh developments, while ignoring the negative repercussions of limitless advancements (see Section 2), is an outflow of innovative good faith. 'Mechanical idealism' refers to the belief that specialised arrangements are the best approach to cope with a specific problem, in this case, achieving a manageable energy supply. The underlying assumption underlying this optimism is that future sustainable energy developments will provide clean energy, meaning they will have no significant long- or short-term negative impact on humans or the environment. This isn't practical given the current state of examination. Innovations can help solve a variety of problems and are, in our opinion, an important part of the journey toward a more sustainable energy future. In any event, the concept of the SDGs, as well as its concealed hopefulness in terms of future energy improvements, begins on a shady path that leads to mechanical determinism. We argue that this is because the proportional relationship between inventive antiques and human beings is not fully considered in SDG7. The SDGs, despite having a more extensive cycle than previous efforts, fail to "embrace likely cooperation between the climate and human prosperity," according to writing on the subject [6].

According to the point of view of land use, a special issue has been devoted to this. The various commitments divide the normal subject, which is that the SDGs are based on a logical qualification between climate (in this case horticulture) and human creatures; they are presented as entirely opposed, and thus likely cooperative energies between ecological and human wellbeing are ignored. According to [6], the SDGs ignore existing research ashore that shows that an agricultural scene may also perform important functions within an ecosystem, for example, by involving thoughtful planning and management to improve biodiversity and contribute more broadly to preservation. Furthermore, we believe that the SDGs would benefit from a more intelligent approach to continual inquiry in ways of thinking and social investigations of innovation that burdens the sociotechnical concept of mechanical systems, particularly in the energy sector.

The essential distinction at the heart of the SDGs is thus not only a polarity between climate and human beings, but rather a three-sided qualification between climate, human beings, and innovation. Important cooperation energies among the three that could be exploited to understand an economic future are not sufficiently examined along these lines. The SDGs portray the energy system as primarily a mechanical system rather than a complex socio-



specialized one. Changes in customer behaviour or other systemic reactions will generally balance (a portion of) the beneficial effects of new innovation in the last choice. This is referred to as the "bounce back impact." Furthermore, sociotechnical systems provide low- and no-tech solutions to problems where the technocratic ideal only perceives the mechanical arrangement. Regardless, the "readiness of nations to absorb new inventions on a much larger scale" and the strategy duties (SDG12, objectives) demanded by the SDGs should be bolstered by a nation's kin's enthusiasm to change their behaviour if a sustainable energy future is to be recognised by and by. It is the individual who creates and shapes the energy system in multiple ways. She can be an ally or, more clearly, a foe of energy infrastructure and certain energy advancements. People also directly shape the energy system as consumers, either directly by consuming power or heat, or indirectly by consuming goods that need a lot of energy to manufacture or transport. With the growing digitization of the power and versatility sector, as well as the growing number of decentralised apps, the end-user as a so-called "prosumer" can also act as a provider. Various strands of writing on the SDGs or feasible energy seek to connect supportability considerations with ideas of prosperity that go beyond traditional monetary measures, such as the GDP. They argue that when estimating propels in reasonable energy, "boundaries other than financial development should be incorporated, such as pay disparity, [...] population and life expectancies." We emphasise that applying the sociotechnical concept of the energy system in practise necessitates focusing on the individual to the point that the solitary benefits of possible action become obvious. The individualistic concept of prosperity should be linked to the systemic level of supportability considerations.

### **Influence on India's clean energy transition**

In recent years, India has launched new initiatives to accelerate its transition to clean energy and versatility, such as its broadly stated commitment to introduce 500 GW of environmentally friendly power capacity by 2028 and the Faster Adoption and Manufacturing of Electric Vehicles (FAME) II plan (Exhibit 2), which aims to facilitate the acceptance of 7,000 electric vehicles, 5 lakh electric three-wheelers, 55,000 electric traveller vehicles, and 10 lakh electric two-wheelers. Given this scenario, how could India maintain its pristine energy strategy in the aftermath of COVID-19, when the necessities of financial recovery and wellbeing will take precedence? Coronavirus has a difficult effect on spotless energy change, and it will continue to be so in the near future. On the one hand, a drop in petroleum derivative use due to a drop in interest in power, transportation, and modern areas has contributed to India's ozone-harming material outflows falling for the first time in four decades. 6 Natural awareness could also fill in the gaps in a post-COVID India, as contamination has decreased in many locations. 7 On the other hand, the monetary halt that is wreaking havoc on the environment is creating new challenges for India's clean energy progress, including liquidity and financing requirements, inventory network deficiencies, moving needs in the general public and private sectors, a shrinking labour force, and job losses.

### **Impacts of renewable energy resources**

#### **Social impacts**

These assets also provide social benefits such as improved health, advancements in technology, and job opportunities; however, a few basic considerations should be made to support humans, such as environmental conditions, level of training and way of life, and location, whether metropolitan or rural from a rural perspective. Social viewpoints are critical considerations for

any country's development. Environmentally friendly electricity systems can provide the following societal benefits: local business, improved health, open positions, and buyer choice. The review reasoned that after the installation of sustainable power plants in faraway places, the overall discharge drop is substantially increasing in various years. Table 1 shows the social consequences of each asset's greatness.

### Economics

Environmentally friendly power projects have been found to be financially beneficial because they employ local labour from provincial regions, local materials and businesses, local investors, and local bank administrations. Furthermore, the sustainable power projects have collaborated with the networks by establishing a trust store that will hold the funds raised by selling power in the local market. This makes it straightforward for a few networks to freely inject money into any independent company. Biofuel projects created a large number of jobs; however, solar power plants created very few jobs. As the proportion of people working in various organisations grows, more jobs will be created for others by involving a section of their economy for recreation, leisure, eating, and so on. Customers will receive electric power at a reduced cost when compared to traditional energy sources, and the overall economy will benefit because there will be multiple options for generating power using diverse sustainable power sources available nearby.

**Table 1. Social impacts assessment for different renewable energy sources**

Technology	Impact	Magnitude
Photovoltaic	Toxins	Minor-Major
	Visual	Minor
Wind	Bird strike	Minor
	Noise	Minor
	Visual	Minor
Hydro	Displacement	Minor-Major
	Agricultural	Minor-Major
	River damage	Minor-Major
Geothermal	Seismic activity	Minor
	Odor	Minor
	Pollution	Minor-Major
	Noise	Minor

### Methodology

A few conventions for systematic auditing are presented in writing. The Handbook for differentiating proof and survey of logical writing (the Cochrane Collaboration Model, the Guide of SLR, and, illustrated) are among these norms. The Cochrane Collaboration Model is the cornerstone of the PRISMA (2009) convention. In general, these works follow similar guidelines, which were first proposed by The Cochrane Collaboration Model, which was examined for the wellbeing area and encourages the reading of as many works as possible in the

chosen subject. Following Cochrane's suggestion, Pagani, Kovaleski, and Resende (2017; 2018) proposed the MethodiOrdinatio convention. MethodiOrdinatio, unlike Cochrane, is designed for those who consider themselves autonomous analysts and cannot rely on a large number of commenters to carry out their research. The truth is that the majority of independent scientists can rely on themselves for exploration projects. As a result, a careful selection and rejection of unimportant efforts should be made so that his or her work can be completed. MethodiOrdinatio is made up of nine stages, as used by Campos, Pagani, Resende, and Pontes (2018); Stadler, Arantes, Halicki, and Safraiter (2017); Vaz, Macedo, Soares Junior, and Bittencourt (2018); Barros, Salvador, Piekarski, and De Francisco (2018); Salvador, Barros, Rosário, Piekarski, and Francisco (2019), Silva, Kovaleski, and The systematic reading is the last step to take once the scientist has determined which works are the most important for his or her investigation. MethodiOrdinatio was used to support this current paper. In any event, because the purpose is to identify the best in class on SCs, just the system's first steps were used. The methods used are depicted in the grouping.

**Step 1:** establishing the hunt's watchwords: the goal of this investigation was to identify the best in class on the issue of smart urban communities. We looked at the combination of these concepts because we also needed to focus on the relationship between great urban communities and sustainable development goals.

**Step 2:** Starter search: includes evaluating watchwords in information bibliographic information bases to provide a general assessment of the discoveries, time delimitation, and searching for terms and their combinations, as well as the best Boolean administrators to be used for refining the search. The refinement prevents work unrelated to the issue from proceeding.

**Step 3:** Meaning of catchphrase mixes, data bases, and time delimitation: "Shrewd Cities" OR "Savvy City" were characterised by a combination of watchwords and Boolean administrators. These two combinations allowed for a larger number of works to be considered, and the search was narrowed to only include works whose titles contained the terms combined. In the title search, the phrases "manageable development targets" OR "SDGs" combined with "Brilliant Cities" OR "Shrewd City" yielded no results. Web of Science Clarivate Analytics was used as the bibliographic database. The reason for selecting this data set is that it provides an insightful tool for breaking down the results, providing numbers for various aspects of the distribution, such as the number of articles per country/locale, regions of exploration, and so on. We didn't set a time limit for the investigation so that we could more accurately estimate the year in which the topic was first explored.

**Step 4:** We continued with the last pursuit on the knowledge base, applying the components identified in Step 3. We used the instruments to observe the numbers in relation to the sections of the distribution that are introduced in the outcomes while still on the data set site. We used the reference manager Mendeley to compile the data. This time around, there were 2,956 works with the catchphrases "Brilliant Cities" OR "Shrewd City" in their titles. Regardless, no results were obtained that matched the topics intelligent urban communities and acceptable development aims, as previously said.

**Step 5.** Filtering procedures: in the reference manager Mendeley, we checked for duplicates, and there were none.

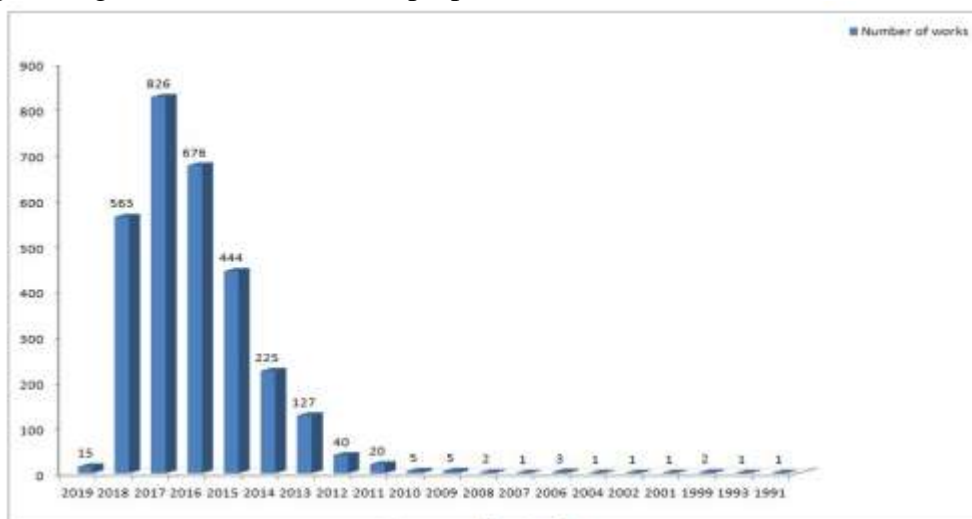
The MethodiOrdinatio steps used were until number 5, enough for us to continue the work as wanted.

**Results**

Results will be introduced into two subsections. The principal subsection presents the outcomes acquired from the bibliometry on SCs and SDGs, done on the Web of Knowledge information base.

**Bibliometry: mapping the scientific production on SCs related to SDGS**

The search yielded 2.956 results for the combination "Shrewd Cities" OR "Savvy City." There were no papers identified that combined "shrewd urban neighbourhoods" AND "SDG" OR "Manageable Development Goals." The number of articles distributed each year is the main focus. The subject first appeared in 1991, with a single distribution (Fig.1). Since 2011, the number of works delivered has steadily increased, reaching an all-time high of 826 in 2017. This figure dropped dramatically in 2018. There could be several reasons for this, like changing the topic or relocating for other more explicit themes related to SCs; nonetheless, the reasons should be investigated regardless, which isn't the purpose of this work.



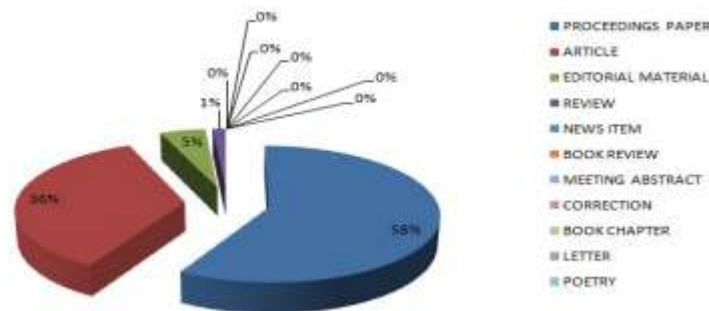
**Figure 1 Number of papers per year**

**Source: The Author.**

The majority of the works (58%) were presented at events such as symposia, congresses, and other similar gatherings (Fig. 2). The analysis revealed 25 instances in which more than seven works were introduced. Aside from the 25, there were further 925 names for events, each with one work introduced. Given the large number of people that attend such events, it is reasonable to assume that they attract a diverse audience. With 36 percent, articles in diaries are the next best option for distribution. Only 5% of the population is addressed in publication material.



**Figure 2 Type of document**



**Source: The Author.**

## Conclusion

The SDGs are defined in section five of the 2030 Agenda for Sustainable Development's prologue "broad objectives and targets that apply to the entire world, both developed and developing countries. They are inextricably linked and balance the three pillars of sustainable development ". While the primary goal of broad focuses on that hold for distinct regions of the world is both unsound and detrimental to understanding a viable future, the second goal of incorporated and inseparable goals isn't acknowledged in the SDGs. Let's start with the final choice. We have argued that new research in morals and social investigations of innovation, which contends that energy and other breakthroughs should be examined as a sociotechnical system rather than in isolation, is not included in the SDGs' plan. The perspective of cooperative energies among the three is blocked by their hidden scientific qualification between human prosperity, indigenous habitat, and innovation. We believe that the Capability Approach, as envisioned in the first discussion, can provide an all-encompassing methodology for supportability analysis that is truly capable of illuminating these relationships. This can be seen in the accompanying model. While the reduction in future opportunity due to atomic waste seems pessimistic, it is conceivable that the disadvantages of other energy transformation advances will outweigh the disadvantages of an atomic storehouse. The key contributions of this paper are to create an agenda for future research: identify direct and unambiguous links between SCs and SDGs; offer SCs strategies that are devoted to achieving the objectives; and assess the effectiveness of such strategies.

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