



The

Environment

Magazine

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Message from Editor in Chief

My name is Henry Yao. I am Editor in Chief of the Environment Magazine.

The purpose of this magazine is to provide a platform for students of all backgrounds to express their views on current environmental issues to a broad audience. I believe that every student has the ability to make a positive difference in the world, and through this magazine, we aspire to unleash their potential. The project is open to everyone, and there are unlimited spots available for participation. We welcome all students who want to be a part of this effort.

To contribute articles to The Environment Magazine, please contact playfndn.environment@gmail.com. A sample article can be found [here](#). Volunteer hours will be recognized.

The Impacts of Urban Sprawl

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Urban sprawl, or suburbanization, is defined as the spreading of urban development on undeveloped land near a city. This term may not be familiar to the average person, but for environmentalists, this term is being used increasingly often and with more alarm. Urban sprawl has been recognized as a problem in many parts of the world. Urban sprawl started with the Industrial Revolution in the 19th century when economic and population growth controlled the migration of people from rural to urban areas. These areas required their inhabitants to get around in cars, and as the use of automobiles became more and more common, suburbanization spread.

Since the 1970s, the population in suburban areas has grown significantly, leading to widespread urban sprawl becoming a global concern. The United Nations Population Division reports that in 1950, only 29% of the world's population resided in urban areas. By the 2000s this percentage increased to around 49 percent. In developed countries, this number is much higher. For example, in the U.S., the population in urban areas rose from 64 percent in 1950 to 81 percent in 2007.

Urban sprawl has many negative impacts on the environment, social life, and the economy of cities. Urban expansion reduces habitats and agricultural land, harming local ecosystems. If habitats disappear, we could witness a trophic cascade, the collapse of an ecosystem, leading to wildlife disappearing from the area completely. Land for agriculture is also important,



both for the people living in the area and for the people in the city, because without food grown on farms, they cannot survive. Urban sprawl hurts the social life of residents. A lack of public spaces limits the opportunities for citizens to meet each other and interact. This can lead to social segregation, where the people living in these areas can become isolated from the rest of the community. Lastly,

the impact on the economy is negative as well. On the surface, extensive housing and commercial zones are economic gold mines for businesses. The construction of homes, stores, and office buildings creates more employment opportunities. However, this development drains

local environmental resources and shifts the economic burden of development to longtime residents, increases transportation and energy costs, and lowers the benefits of the community. The transformation of areas around cities, such as the development of high-rise buildings, commercial centers, and transportation networks, like the extensive metro systems in cities such as New York and Tokyo has significantly altered the landscape, contributing to challenges like congestion, environmental degradation, and housing affordability.

The spread of suburbs in cities like Los Angeles, where residential areas extend far into surrounding rural land, leads to longer commuting times and increased dependency on cars. To address these negative effects of urban sprawl, cities can implement several different solutions. Improving public transportation and creating walkable, bike-friendly cities reduce the need for transport. Limiting car use further lowers the strain on the environment and cuts pollution.



Building more public spaces, such as parks and community centers, creates a sense of community and belonging. Additionally, developing affordable housing close to the city and prioritizing community-focused planning over housing construction will help mitigate suburbanization and create more cohesive urban environments. Designing neighborhoods with pedestrian-friendly infrastructure, such as sidewalks and bike lanes, would encourage walking, cycling, and reduce reliance on motor vehicles. Upgrading and repurposing old buildings and infrastructure to meet modern needs reduces the need for new developments and preserving historical sites. In sum, addressing urban sprawl through sustainable planning and community-focused development is essential for preserving natural resources, fostering social cohesion, and supporting economic resilience in our growing cities.

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The Switch To Renewable Energy

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As the world struggles to address climate change, a sustainable solution is to switch to renewable energy. Renewable energy sources come from a source that replenishes itself over time and will not deplete. Solar, wind, and hydropower are examples of renewable energy sources that provide a healthier substitute for fossil fuels. Unlike fossil fuels, these renewable energy sources use natural processes that create little to no carbon emissions.

The main reason for substituting renewable energy for traditional methods is carbon emissions. Over recent decades, global warming has worsened due to non-renewable energy

sources such as coal, oil, fossil fuels, and nuclear energy. When burned, these sources release large amounts of carbon dioxide and other pollutants, but renewable sources can reduce that amount. For example, solar panels convert sunlight into energy with no carbon emissions after 3 years of operation, while coal releases carbon emissions permanently. From the chart above, we can also see that coal releases 20 times more carbon in its lifetime than solar panels.

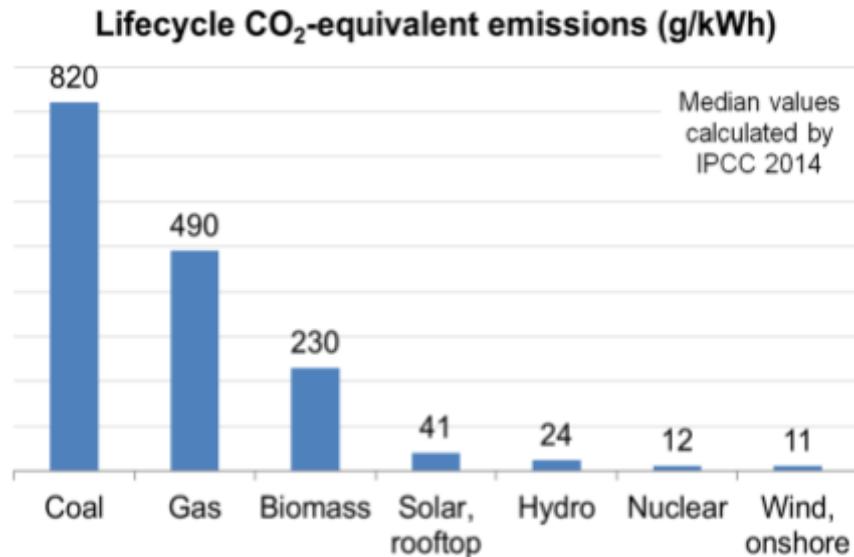


Figure 1. Comparison of Carbon Emissions (Source: <https://www.solar.com/learn/what-is-the-carbon-footprint-of-solar-panels/>)

In addition to reducing carbon emissions, renewable energy sources can also benefit the economy. Since using renewable energy is a new movement, it can create job opportunities. According to the International Renewable Energy Agency (IRENA), there are currently over 13.7 million people employed in this sector. Employment in renewable energy related jobs is expected to triple according to an article written by UPenn (Chart On Decline Of Solar Panel Costs) source LPS (College of Liberal and Professional Studies). Additionally, renewable energy is also seen as more cost-efficient than non-renewable energy because renewable energy does not require fuel to run while non-renewable energy does. In recent years, prices of solar panels have also dropped more than 80%, making them more affordable for residential and commercial uses.

According to the Department Of Energy, switching to renewable energy will also have a profound impact worldwide.

While it is being spread to developed countries such as the US, undeveloped and developing regions in Africa, Asia, and Latin America still lack these new technologies.

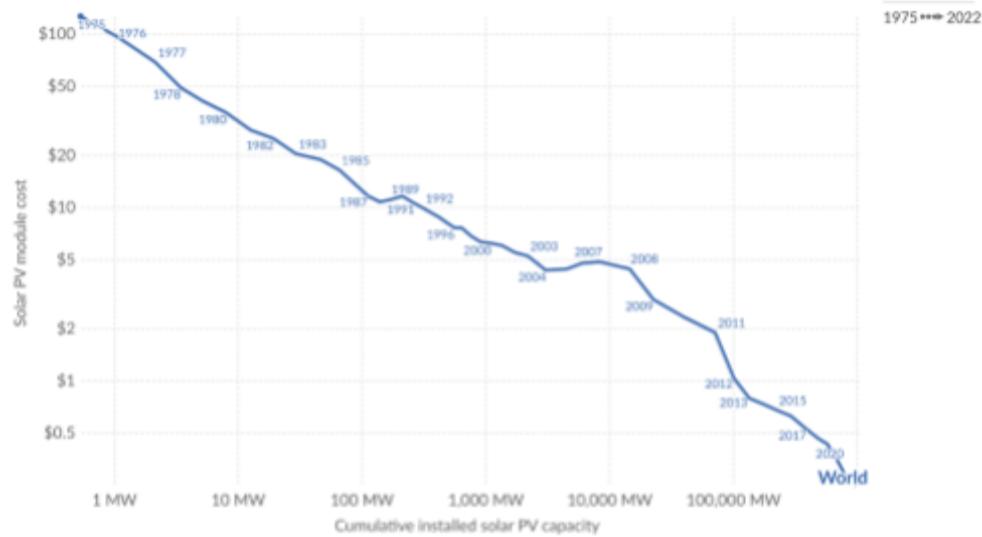
Instead, they use more traditional methods for cooking, heating, and basic

necessities. Helping spread energy to these rural areas would help fix and mitigate the significant health and environmental issues. This is because the burning of biomass in poorly ventilated spaces can create indoor air pollution, which is the leading cause of respiratory diseases. The development of wind turbines, solar panels, and hydropower would reduce the risks of these diseases and give more energy to those in the area.

Solar panel costs have fallen by around 20% for every doubling of global cumulative capacity

Costs are measured in US dollars per Watt, adjusted for inflation.

Our World
in Data



Data source: IRENA (2023); Nemet (2009); Farmer and Lafond (2016)

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Figure 1. Decline of Solar Panel Costs (Source: <https://ourworldindata.org/data-insights/solar-panel-prices-have-fallen-by-around-20-every-time-global-capacity-doubled>)

While this only explains some causes of global warming, there are also many other factors we don't notice. For example, AC units are one of the biggest contributors to global warming due to a vicious cycle. In hot places, everyone is forced to use AC indoors in order to cool off, but AC units emit heat during this process. So, if the earth continues to grow hotter, we would need to rely on our air conditioners more, which would also increase the outside temperature, thus creating a cycle that cannot be undone. One of the easiest ways to avoid this is to switch from non-renewable energy to renewable energy, which can at least help reduce global warming while providing new job opportunities and economic and health benefits.

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About

The Environment Magazine is published by the Environment Club. It collects introductory articles on environmental protection written by youth volunteers, with the goal of educating students and parents on how to protect the environment. It aims to provide a platform for all students to express their opinions and inspire change through activism. It also empowers students to become environmentalists and make a positive impact on the world.

The Environment Club is a group of passionate middle and high school students dedicated to environmental protection. We started by organizing youth volunteers to clean up the trails and streets in our local community, and now we're taking the next step by promoting awareness and change through our publication, The Environment Magazine. Our goal is to inspire others to take action and make a positive impact on the environment, both locally and globally. The Environment Club is a subdivision of the PLAY Foundation, a 501(c)(3) non-profit organization.