

The Green New Deal: The Answer to Schnaiberg's Treadmill?

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The New Deal reshaped the United States. Government programmes and sweeping reforms pulled people out of poverty and dragged American society from depression to unprecedented levels of prosperity. In 2019, as societies everywhere face climate crisis and growing inequality, the Green New Deal is rekindling that mission for the 21st century. But the New Deal path had its own problems. In this long read, Ana Rusan traces some of the social and environmental consequences of New Deal America through the sociology of Allan Schnaiberg. Drawing from the lessons of the 20th century, her analysis combines history and theory to ask whether expanding renewable energy production alone is a solution that can last.

On February 7 2019, US Representative Alexandria Ocasio-Cortez and Senator Ed Markey tabled a resolution for a Green New Deal, an ambitious programme to tackle the environmental and social crises by investing in green infrastructure. It aims to kick start the economy, but this time in a sustainable way. Since then the support for a Green New Deal has spread around the world to become the key structuring narrative for progressive solutions to the climate crisis. As global temperatures continue to rise, is the Green New Deal what we've all been waiting for?

Going back to New Deal America gives us a lens to examine what the Green New Deal offers today. American sociologist Allan Schnaiberg's 'treadmill of production' theory was a reaction to both the achievements and limits of the 20th-century American growth model. Today, it is a tool to understand the interconnection of the current environmental and social crises and reminds us why Green New Deal proposals need to sit alongside degrowth perspectives in order to find a truly sustainable solution to the climate crisis.

Ecological breakdown in late 20th-century America

Schnaiberg's *The Environment: From Surplus to Scarcity*, a sociological analysis of industrial society, was published in 1980. The past two decades had seen the environmental movement emerge, Rachel Carson publish *Silent Spring*, the United Nations hold its 1972 Stockholm Conference on the Human Environment, and recycling become increasingly common.

Schnaiberg's work, alongside the general upsurge in environmental consciousness, investigated the social consequences of the ecological excesses of the preceding decades. The Nevada Test Site, a sparsely populated 3500-square-kilometre landscape of mountains and deserts around 105 kilometres from Las Vegas, is an illustrative case of this damage. From 1951 to 1992, the US government ran 1021 nuclear tests on the site, making it the "most bombed place on Earth." The government chose the site because not many people lived in the surrounding areas, but nevertheless failed to adequately warn those who did. Many of these 'Downwinders' were subsistence farmers, who lived off locally farmed meat, vegetables, and water, all of which was exposed to nuclear fallout from the tests. In 1955, the Atomic Energy Commission issued a brochure reassuring the residents that, despite higher than

normal radiation levels, there was no need for worry. Later studies showed that, in the first 10 years of testing, the amount of radiation was 20 times that of the Chernobyl catastrophe. Downwinders, on-site operators, and soldiers soon began to report health issues.

The Downwinders of the Nevada Test Site and the Love Canal Tragedy are just two examples of the social costs of environmental degradation in the 20th century.

1978 was the first time a US president ordered the use of federal funds for an anthropogenic environmental disaster. That year's Love Canal Tragedy in upstate New York saw homes flooded by toxic water and mud from a nearby industrial landfill. Designed in 1890, the Love Canal had been a romantic project to combine Nikola Tesla's idea of hydro-energy with community housing but was never completed due to financial issues. In 1942, the Hooker Chemical and Plastic Company obtained permission to use the excavation and proceeded to dump 22 000 tons of industrial waste containing over 200 different compounds, some carcinogenic, over 11 years. After covering the landfill with loose soil, the Hooker Company sold the property to the city. In 1954 the building of houses and school began. Residents complained about fumes and liquids detected during construction and after big storms, but only after the 1978 incident were people evacuated.

The Downwinders of the Nevada Test Site and the Love Canal Tragedy are just two examples of the social costs of environmental degradation in the 20th century. For Schnaiberg, events like this inspired and proved his treadmill of production theory.

Schnaiberg wanted to understand how the relationship between production processes and the environment had changed in postwar America. His theory contrasted with arguments emphasising population growth or consumption patterns and with ecomodernist perspectives, seeing them as only partially answering the question or not offering suitable solutions. What emerges in the treadmill of production theory is a multicausal model describing the drivers of economic change in the late 20th-century United States and their implications for society and the environment.

What is this treadmill and why is it relevant today?

The theory is based on the metaphor of two intertwined treadmills: the ecological and the social. After World War II, the US economy boomed and the ecological treadmill, representing the relationship between production and the environment, accelerated with it. New chemical- and energy-intensive technology enabled production gains, the profits of which were reinvested into machinery to further increase productivity. This investment cycle depended on a constant expansion of production at the cost of pollution and natural resources. A booming market, readily available capital, and seemingly unlimited reserves of energy, raw minerals, and resources led to general blindness to environmental issues.

The effects of pollution and waste were masked by the geographical separation of social classes. The rising educated middle and upper classes lived "upstream and upwind". Habitat degradation and water, air, and soil pollution rapidly increased and hundreds of millions of gallons of inappropriately processed sewage poured into rivers and lakes. At one point, 1.5 billion gallons of untreated waste were being pumped into Lake Erie every day. Waters turned orange, dark brown, and green and animal and plant life was decimated.

The social treadmill is inseparable from the ecological

treadmill.

One of the best known incidents of river pollution was the Cuyahoga River fire. On June 22 1969, the Cuyahoga River, which passes through Cleveland, Ohio, caught national attention when floating oil and other pollutants in the water sparked a 20-minute blaze. At that time, the Cuyahoga was one of the most polluted rivers in the US. Nearby manufacturing plants, steel mills, and even a paint factory used the river as an open sewer and its banks served as a junkyard for old cars and broken electric appliances. No fish could be found in the river from Akron to Cleveland in the 1950s and 1960s. The fire of June 1969 was not even the largest fire on the Cuyahoga. Between 1868 and 1969, there had been at least 12 fires. Everybody knew about the pollution, but this environmental degradation was seen as crucial for factories to operate and employ people. The foam, smell, and discharge were signs of success, evidence of busy factories and prosperity for the community. Schnaiberg's ecological treadmill zeroes in on this mindset, tying the expansion of production and energy demand to accelerating ecological damage.

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The social treadmill is inseparable from the ecological treadmill. Economic goals – generally economic growth for the state or profit in the case of private actors – lie at the base of most decisions on production and consumption. They leave little to no room for environmental concerns. But the acceleration of production does not only harm the environment; a productive system run in the interests of profits of owners and investors excludes workers. At a certain point, owners realise that investing in technology is cheaper than hiring people and, as production processes are automated, there are two possible scenarios for workers. A smaller class of workers with knowledge of financial analysis, robotics, marketing, or customer service excels in the emerging economy. Another, larger, part of the workforce faces a deteriorating situation as labour costs are squeezed. People are left unemployed, wages are cut, unions are attacked through blackmail and union-busting, and production plants are moved to locations in the Global South where the workforce is cheaper and organising more dangerous. Greater international competition due to trade liberalisation only increased these trends, sharply accelerating the social treadmill. Today only 10 per cent of American workers are unionised and income inequality in the US has risen exponentially since the 1960s. Behind these facts are deindustrialisation through offshoring and technological change.

To return to the Cuyahoga river incident in 1969 and the reason why the pollution and fires finally deserved public attention and government action. Manufacturing along the river had provided residents with good income for a long time but, as in the other parts of the US, by 1969 deindustrialisation had taken its toll in Cleveland. More than 60 000 manufacturing jobs had been lost between 1952 and 1969. Confronted with unemployment and inspired by the civil rights movement, locals started to protest against the factories. The fire in the summer of 1969 was the final straw before President Nixon called for more environmental regulation.

In spite of the pressures on workers through the decades leading up to the 1980s, the trade union movement continued to support the expansion of production together with owners and the state. Their bet was to continue to chase some of the gains of economic growth despite the increasingly apparent negative social and environmental impacts. An accelerating treadmill of production would create larger profits for owners and this was expected to be reflected in wage increases and the protection of jobs. But this only further enhanced the position of owners and investors. Their plants generated more capital and increased their leverage over the state, reinforced by lobbying and campaign contributions.

Prioritising profits and revenues minimises environmental concerns and causes massive environmental withdrawals.

Prioritising profits and revenues minimises environmental concerns and causes massive environmental withdrawals in the form of natural resource depletion and pollution. For labour, it means replacement by new technologies or production plants moving to where labour is cheaper.

Schnaiberg theorised society's orientation towards the goal of economic growth. His analogy of an expanding and accelerating treadmill speaks to the devastation that this form of society represents for environment and communities. Schnaiberg was also asking how sustainable this kind of society is; resources are not infinite. The 1973 oil crisis showed how fragile a society based on a productivist model of development can be. When 12 OPEC members stopped exports to the US, oil prices quadrupled in six months, triggering a recession with repercussions still felt to this day.

However pessimistic his theory sounds, Schnaiberg saw the state as the potential actor that could impact the speed and direction of the treadmill. To stop the ecological and social degradation, the state together with its enforcement agencies must make sovereign decisions concentrated on production. This environmental state should consider ecological impacts in its decisions with the same weight as any other factor. Moreover, since the initial contact between the environment and society is through production, the state should be more concerned with regulating production processes rather than consumption.

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Consumption was the last link in the treadmill for Schnaiberg. Consumer habits are mostly structured by production owners and their experts through advertising, influenced by society's norms, or simply limited by the choice on offer. Consumer movements can influence what is produced, but only if there is a significant number of consumers involved and if they are organised. Schnaiberg argued that government policy focused on changing consumption patterns would struggle to slow down the treadmill of production.

Schnaiberg published his book in 1980. In the years and decades to follow, offshoring, deindustrialisation in the Global North, and globalisation did not disappear but became ever more integral to the functioning of the world economy. Their environmental and social impact is reflected in the fast fashion industry, maquiladora assembly plants, sweatshops, plastic soup, the displacement of indigenous peoples, and the destruction of ecosystems. All these things make the treadmill of production theory relevant today.

The Green New Deal: stepping off Schnaiberg's treadmill?

Jump ahead to 2019 and a revolutionary resolution called the Green New Deal is presented in the US by Member of Congress Alexandria Ocasio-Cortez and Senator Edward J. Markey. The resolution is praised by most Democrats, liberals, and environmentalists. The Republicans, especially the current president Donald Trump, are scared.

The proposal is inspired by the New Deal, a series of government programmes introduced between 1933 and 1938 by then-President Franklin D. Roosevelt. During the 1930s, the US was struggling with the Great Depression. Unemployment was at 25 per cent, industrial output had dropped by 30 per cent, the banks were failing, and Dust

Bowl droughts were ruining agriculture. Roosevelt's New Deal programmes helped the US economy recover. The banks were reformed, three million jobs were created, and regulatory agencies were set up.

The goal of the New Deal was to get the economy back on its feet. The Green New Deal wants to take the same approach and tackle climate change at the same time.

The real value of the New Deal was its focus on enhancing the quality of life of regular US citizens. The “new deal for the American people” was felt in health and nutrition initiatives and infrastructure investment. The New Deal provided “relief, recovery and reform” for those hit hardest by the recession, especially industrial workers. Through empowering unions, bargaining became easier and working conditions safer. The New Deal introduced a 40-hour work week, unemployment insurance, pensions, and financial help for single-parent families and the disabled. New roads, motorways, bridges, and tunnels were built all over the United States and the electrification of rural areas helped to modernise the American South. The goal of the New Deal was to get the economy back on its feet. The Green New Deal wants to take the same approach and tackle climate change at the same time.

Today most associated with Alexandria Ocasio-Cortez, the term ‘Green New Deal’ first entered the mainstream debate in 2007. In a 2007 [column for the *New York Times*](#), Thomas L. Friedman reflected on the fact that 2006 was the hottest year in recent history in both the US and the UK and called for a fresh Green New Deal to stop climate change and revive the US economy. In a more recent article, Friedman calls himself a ‘green capitalist’, promising that a proper Green New Deal would make the US not only healthier but wealthier.

On the other side of the Atlantic, the Green New Deal was also finding followers in 2007. In the UK, the Green New Deal Group put forward proposals for a major economic reconfiguration. They were motivated by the beginnings of the financial crisis, the increasing prevalence of natural disasters, and the need to move away from an economy based on oil. The group published their first report in 2008 titled [The Green New Deal](#) which called for the regulation of financial systems and reforms to corporate taxation.

A proper Green New Deal would make the US not only healthier but wealthier. But does it go far enough to get society off the treadmill of production?

12 years later, nearly all Democratic candidates endorse the Green New Deal in some form for the 2020 presidential election. Current politicians, including Ocasio-Cortez, were mostly introduced to the Green New Deal by protests led by the Sunrise Movement. In November 2018, Sunrise activists organised a sit-in outside senior Democrat and Speaker of the House Nancy Pelosi's office calling for faster and stronger action against climate change. Ocasio-Cortez was right there with them.

So what exactly is in the Green New Deal resolution? At this point, it is a resolution, not a bill, legislation, or policy proposal. Nevertheless, it has caught worldwide attention and been seized on by many as the long-awaited answer to the climate crisis. This 14-page document sets out some brave and ambitious goals, but do they go far enough to get society off the treadmill of production?

Economic security and prosperity for US citizens are foundational to the Green New Deal resolution, as are the rights to high-quality healthcare, affordable and safe housing, and access to clean water, air, healthy food, and

nature. The Green New Deal recognises the connection between the environmental and social crises and looks to tackle them both. It emphasises the belief that political solutions should be found in a transparent and democratic way and calls for an end to gender, race, and income-based oppression. It recognises the right to unionise and the need to improve working conditions and end offshoring. The Green New Deal emphasises that greenhouse gas emissions should be cut to net zero over 10 years to avoid the worst effects of climate change. The goal of meeting 100 per cent of energy demand in the US through clean, renewable energy sources would be met by expanding existing and creating new capacities.

What the Green New Deal overlooks

The goals and values behind the Green New Deal certainly match with Schnaiberg's treadmill of production. What, though, about the means it puts forward?

As mentioned, Schnaiberg saw the State as the only actor powerful enough to influence the speed of the treadmill, so there is reason to believe it is on the right track. The Green New Deal targets the energy system, matching Schnaiberg's focus on production. However, the Green New Deal, in stressing the large-scale roll-out of renewable energy, does not pay adequate attention to inputs. It underplays the energy, material, and storage requirements of new generation wind, solar, biomass, or geothermal energy.

Resources such as lithium, cobalt, silver, copper, nickel, or aluminium are not renewable. Currently, these metals are mined with fossil-fuel machinery and bring environmental and social problems of their own. The average lifespan of wind turbines and solar panels is about 20 to 30 years. What happens after that raises questions about waste treatment, storage, and recycling.

Innovation may solve that part of this puzzle, but what about the constant increase in global energy demand in the context of a growing world economy? Looking at a map of where the minerals needed to construct an enormous new renewable grid, as proposed by the Green New Deal, are extracted reveals that the United States will be heavily dependent on imported minerals. At the moment, China produces a significant amount of the world's rare metals, giving the dilemma a geopolitical dimension.

*The Green New Deal calls for economic growth with
renewable resources.*

The globalised supply chain of these much-needed minerals is already devastating the communities and environments it spans. The Democratic Republic of Congo mines 60 per cent of the world's cobalt, a vital input of electric batteries. Around 35 000 children work in cobalt mining in the Democratic Republic of the Congo, an extractive process that also causes serious environmental degradation.

Back in 1980, Schnaiberg was already critical of the implementation of green and clean technology without a serious questioning of production itself. Putting to one side the fact that modern technology is characteristically labour-saving, not energy-saving it is the growth in volume of commodity inputs that is arguably the most problematic aspect of 'clean' tech. Schnaiberg saw this kind of 'green revolution' as only a partial solution to the environmental and social crises. Without questioning economic growth, the treadmill of production will not be stopped. The Green New Deal presents an economy based on clean industries, promising that neither production nor consumption would have to be sacrificed – quite the opposite: it calls for economic growth with renewable resources.

Before dissecting whether the Green New Deal can resolve the problem of the social treadmill, it is important to

emphasise that Schnaiberg was not opposed to technology in and of itself. Technology and machines clearly help people and relieve human labour from hard or dangerous tasks. However, technology that harms the environment and negatively affects ecosystems and vulnerable communities can be a problem. The same goes for technology that is introduced in a way that makes people redundant, creating poverty and destroying communities. The Green New Deal offers progressive solutions based on the idea of a just transition: re-localising manufacturing, re-training, and providing resources for workers left out of work.

A just transition

Three times as many people are already estimated to work in renewables compared to fossil fuels in the US. Clean energy employment grew by 3.6 per cent in 2018 and is expected to increase by 6 per cent in 2019. Compared to the US workforce as a whole, renewable energy workers earn hourly wages 8-19 per cent above the national average. Around 45 per cent of all workers in the sector only have a high school diploma and they earn more than workers from different sectors with the same level of education. The sector does suffer from a lack of inclusivity, the current workforce being made up of older white male workers. But the provision of relevant training to young and more diverse people is hopefully something the Green New Deal can address.

Many institutions and researchers have recognised the dangers of closing industries without a just transition process, and much work is being done on guidelines of what it should look like. A common recommendation is that governments make holistic adaptive support policies to compensate workers for lost wages and pensions and assist them with re-training or economic diversification programmes, using local industries to maintain social relationships and communities.

Coal miners are among the most endangered types of worker. With automation and competition from other fuels, as well as climate policies, the coal industry is suffering and around 50 American coal producers have filed for bankruptcy since 2012. Coal mining is usually situated in remote regions where it is the main economic engine for entire areas. For these communities, a just transition is imperative.

Current climate policies fundamentally undermine the power of the political coalition needed to address the climate crisis.

Schnaiberg always recognised organised labour as one of the forces supporting the treadmill of production. What is the current attitude of American labour unions to the Green New Deal?

“Climate strategies that leave coal miners’ pension funds bankrupt, power plant workers unemployed, construction workers making less than they do now... plans that devastate communities today, while offering vague promises about the future... they are more than unjust... they fundamentally undermine the power of the political coalition needed to address the climate crisis.”

That is an excerpt from a speech by Richard Trumka, the president of the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO), representing 55 unions and 12.5 million workers, at the Global Climate Action Summit in California in September 2018. Right-wing media and politicians like to exaggerate labour’s opposition to the Green New Deal but the real picture is a nuanced one. Trumka expressed his reservations about the Green New Deal mostly because he cannot support a document that AFL-CIO was not part of writing in which he wants to see the voice of labour fully represented.

If the Green New Deal does not question the logic of the current economic and political system, it will only postpone the environmental and social crises.

More and more unions appreciate the need to abandon dirty sectors but would like to see it done fairly. To stop the social treadmill, labour unions have to be on board with the state's attempts to do so.

The bold ideas behind the Green New Deal make the resolution a good starting point. But, connected to the social treadmill, the environmental treadmill will not be stopped until the pursuit of economic growth comes to an end. No matter how clean or green it is, the constant expansion of production cannot be sustainable, or even possible, on a planet of limited resources. If the Green New Deal does not question the logic of the current economic and political system, it will only postpone the environmental and social crises.

Degrowth : the inspiration to improve the Green New Deal?

Thomas L. Friedman, along with many other politicians and even environmentalists that call themselves 'green capitalists', makes a fundamental error in maintaining that continued economic growth and the mitigation of climate change are both possible. Green growth, green economy, and sustainable economic growth have been dominant syntaxes for years. They offer the prospect of saving ourselves from the climate catastrophe and ecological degradation with the help of technological innovation and substitution. This logic can also be found in the Green New Deal. But economic growth inevitably increases carbon emissions. Renewable resources can bring energy and efficiency improvements, but there is no sign of absolute decoupling in the near future. To be more precise, the world economy is on a path of re-materialisation, not de-materialisation. Successful climate change policies are impossible without recognising this and, as decarbonisation and mitigation of climate change are the current priority, economic growth in the Global North, especially in the US, needs to end.

The Green New Deal risks presenting renewables as a technological fix that allows consumption habits to continue unchanged. While it has much to say about fossil fuels, the Green New Deal does little to address the 35 per cent of emissions that come from activities such as cement production, industrial meat farming, agriculture, and landfills. Assuming 3 per cent economic growth, the world could eliminate fossil fuel consumption and still find itself in the same situation reasonably soon. Another problem connected to renewable energy is the Jevons paradox, which explains how resource efficiency gains lead to greater consumption, not less, due to price changes. What's more, the irregularity of solar and wind energy means huge storage requirements. If the Green New Deal wants a zero-emission economy by 2030 in the US, the construction of new plants needs to start right now. To satisfy current energy consumption trends in the US, at least 20-50 per cent of US soil would need to be devoted to solar panels, wind turbines, and biofuels. All this to say that approaching climate change as an energy question fails to get to the heart of the problem.

Economic growth, renewable energy production, and environmental justice are at the meeting point of Schnaiberg's treadmill of production and the concept of degrowth.

Moreover, the Green New Deal does not address the rare earth mineral needs of renewable energy infrastructure. Renewable energy cannot be viewed as an issue to be tackled within one set of borders. 70 per cent of the world's

rare earth minerals are extracted and refined in the Bayan Obo mine in China, at great environmental costs. Satellite pictures have shown how surrounding vegetation and water have turned red and green and how sulphur dioxide and sulphuric acid have filled the air. The Bayan Obo mine and the cobalt mines worked by children speak to the environmental injustices renewable energy carries. This part of the equation is not mentioned in the Green New Deal; the Green New Deal focuses on environmental justice for the US but does not mention how it affects other parts of the world.

Economic growth, renewable energy production, and environmental justice are at the meeting point of Schnaiberg's treadmill of production and the concept of degrowth. Schnaiberg never clearly mentioned the term, but he was evoking it when he stated that it is not only what we consume but also how and how much. It will not be enough just to make industry cleaner; nations of the Global North need to start re-thinking their economies and urgently realise that constant economic growth is not possible inside of our planetary boundaries.

What the Green New Deal needs to include to achieve its goals is sustainable degrowth.

Richard Easterlin famously observed that rises in income and consumption do not produce better life quality or satisfaction once someone has moved a little beyond their fundamental needs. Across the Global North, rising inequality has captured much of the GDP increases of recent decades and it is abundantly clear that much of what is produced and consumed is unnecessary luxury.

What the Green New Deal needs to include to achieve its goals is sustainable degrowth. Degrowth sets out a vision for a social and political transformation in which the consumption of commodities and energy decreases but quality of life improves. Degrowth is a call for qualitative development, not quantitative development as measured by GDP. It accepts technological innovation, but together with legislative limits to production and consumption. Free public transport, denser modes of living in affordable housing close to work, walkable cities, passive heating and cooling, local food, resource caps, working time reduction, curbs on excessive incomes, basic income, and new wellbeing indicators are some of the demands of the degrowth movement.

For those living below ecologically and socially just limits – most of the Global South – the same restrictions to production and consumption do not apply. However, economic growth need not be the path to social development in the Global South either. Movements for environmental justice from these parts of the world are the main supporters of degrowth.

It is not fair to say the Green New Deal should be completely neglected, especially while it is still in its development phase. In the age of Trump, a resolution defending affordable health care and housing, economic security, clean water and air, and healthy food is crucial. However, if the Green New Deal wants to tackle environmental, social, and ecological crises it has to end the expansion of the treadmill of production. Growing production and consumption and the environmental and social impacts of renewable energy need to be reckoned with. Degrowth and the vision it inspires have much to offer the Green New Deal. Together, the two proposals give hope that people, in the United States as around the world, can both mitigate climate change and improve their quality of life.



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