# Environmental Injustice in Renewables

## *What is to be done?*

*Dexter Whitfield*

*Based on original research, Dexter Whitfield's new book exposes corporate domination in the development, ownership and operation of renewable energy projects and how to challenge it. He is Director of the European Services Strategy Unit. Available from bookshops or directly from Spokesman, £18.*

### Crisis and opportunities

The objective of this book is to demonstrate how corporate interests dominate the renewable energy sector. They range from private investment funds, venture capital funds, private equity funds and subsidiaries of fossil fuel companies which are developers and owner-operators of wind farms, solar parks, storage, hydro and other projects.

These projects are bought and sold in the secondary market with development rights and 'construction-ready status', either as individual projects or as part of a portfolio of operational projects, often located in several countries. The analysis is based on the European Services Strategy Unit Global Renewable Energy Database which contains 1,622 transactions between 1 January 2019 and 31st December 2021.

Several publicly-owned companies in Norway, Sweden, Denmark, France, Germany, China, Romania and the Republic of Ireland are developers and owners of renewable energy assets, but the public sector is in a minority compared to the private sector in a global context.

The long-term impact is likely to be the replacement of multinational fossil fuel companies by multinational renewable energy companies in a system where market forces are dominant. The IMF and vested interests believe the public sector's role should be limited to catalysing private sector finance by taking on risk, funding research and development.

But electricity is a public good, hence it is imperative that not-for-profit publicly-owned companies have a vital role in developing, owning and operating

renewable energy projects and distributing energy.

Later chapters of the book chart a way forward in which the public sector can and must have a significant and sustainable role in the provision and ownership of renewable energy projects. This includes the different forms of decarbonisation ranging from retrofitting homes, public buildings and business premises and national planning for environmental adaptations and building resilience, and requires the full application of public values and a core public values framework.

Governments also have a key role in ensuring compliance with equality and equity legislation and economic development initiatives to provide manufacturing and servicing facilities for renewable projects. They must align with the provision of training to maximise the employment opportunities afforded by the renewable energy sector. The decommodification of nature and biodiversity must equally be centre stage.

The corporatisation of renewable energy must systematically be removed and replaced by a new era of not-for-profit publicly owned organisations geared to radically transform the ownership and operation of renewable energy in a way which is participative, with rigorous scrutiny, oversight and democratic accountability.

## Climate crisis context

The scientific evidence of a climate crisis overwhelmingly supports the need for decarbonisation to totally replace fossil fuels with renewable energy by 2050 (Intergovernmental Panel on Climate Change, 2021). Forecasts predict the continuing melting of glaciers, rising sea levels, flooding and coastal erosion, the rising threat of extraordinary landscape fires leading to deaths or injuries, power cuts, damage to homes, transport and agriculture.

A follow-up IPCC report examined the vulnerability, adaptation and resilience of human and natural systems and defined three principles of climate justice:

> *"...distributive justice which refers to the allocation of burdens and benefits among individuals, nations and generations; procedural justice which refers to who decides and participates in decision-making; and recognition which entails basic respect and robust engagement with and fair consideration of diverse cultures and perspectives"* (IPCC, 2022).

Nine additional studies by agencies and research teams have upgraded the

threat of rising sea levels; the risk of wildfires; the melting of glaciers; the deadly impact of pollution on the health of millions in communities; the likelihood of missing the 1.5 C target; failure to strand fossil fuel assets in the ground; and the needs of 940m people with no access to electricity and 2.6bn who need space cooling.

> *"By 2050, the expected relative sea level (RSL) will cause tide and storm surge heights to increase and will lead to a shift in U.S. coastal flood regimes, with major and moderate high tide flood events occurring as frequently as moderate and minor high tide flood events occur today. Without additional risk-reduction measures, U.S. coastal infrastructure, communities, and ecosystems will face significant consequences"* (Global and Regional Sea Level Rise: Scenarios for the United States, National Oceanic and Atmospheric Administration, 2022).

> *"A wildfire results from a complex interaction of biological, meteorological, physical, and social factors that influence the likelihood of a wildfire breaking out, its propagation and intensity, duration and extent, and its potential to cause damage to economies, the environment, and society. Around the world many of these factors – climate, land use and land management practices, and demographics – are changing"* (Spreading Like Wildfire: The Rising Threat of Extraordinary Landscape Fires, UNEP, 2022).

A new study calculates that, between 2000 and 2019, glaciers collectively lost around 267bn tonnes of ice every year. Assuming that all the water from melting glaciers eventually reach the ocean, this means that meltwater from glaciers alone contributed 0.74mm of sea level rise every year (Hugonnet et al, 2021). Another study found that the Arctic has warmed nearly four times faster than the globe between 1979-2021 (Rantanen et al, 2022).

> *"Pollution and toxic substances kill more than 9 million people per year, damage the health of billions, and inflict costs measured in trillions of dollars. Everyone in the world is affected by the pervasive pollution that characterizes life in the 21st century, even newborn infants. However, the burden of contamination falls most heavily upon communities that already are vulnerable or marginalized because of race, poverty and other socio-economic factors. This phenomenon is known as environmental injustice"* (Boyd and Hadley-Burke, United Nations, 2022).

> *"There is a 50:50 chance of average global temperature reaching 1.5 degrees Celcius above pre-industrial levels in the next five years, and the likelihood is increasing with time……A single year of exceedance above 1.5 °C does not mean we have breached the iconic threshold of the Paris Agreement, but it does reveal that we are edging ever closer to a situation where 1.5 °C could be exceeded for an extended period"* (World Meteorological Organization, 2022).

> *"We find that developed reserves of oil, gas and coal significantly exceed what can be extracted and burned within the 1.5 °C budget, a conclusion that is robust to uncertainties in reserves and carbon budgets. Given a rapidly closing window to keep warming below 1.5 °C, these findings call for urgent policy attention on managing an orderly and equitable phase-out of fossil fuel extraction"* (Trout, K. et al, 2022).

> *Space cooling will become increasingly important to prevent heat-related deaths and reduced productivity with global demand expected to soar 395% from 800 gigawatts in 2016 to 3,350GW in 2050 as temperatures rise and urbanisation increases to 68% of the world population living in urban areas by 2050. 2.8bn people live in hottest parts of the world but only 8% possess air conditioners in contrast to 90% ownership in USA and Japan* (OECD/International Energy Agency, 2018, United Nations Environment Programme, 2022).

> *"...passive building and city design and innovative cooling technologies will be needed to ensure essential cooling for all that minimize environmental damage"* (Mastrucci et al, 2019).

"Extreme Danger" (Heat Index above 125 degrees F) will impact about 107m people in the USA in 2053, an increase of 13 times over 30 years thus requiring access to very significant cooling (First Street Foundation, 2022). Meanwhile,

> *"...global fossil fuel subsidies were $5.9 trillion or 6.8 percent of GDP in 2020 and are expected to increase to 7.4 percent of GDP in 2025 as the share of fuel consumption in emerging markets (where price gaps are generally larger) continues to climb"* (IMF, 2021).

Direct and indirect subsidies comprised under-pricing local air pollution costs (42%), global warming costs (29%), congestion and road accidents

(15%), explicit subsidies (8%) and foregone consumption tax revenue (6%). In addition,

> *"...in 2020 and 2021, the EIB provided almost €2 billion in loans to companies with a high share of coal in their power and heat generation portfolios"* (Counter Balance, 2022).

Even more important is the destruction of nation states, the mass killing of people of all ages and deliberate indiscriminate demolition of cities and towns and their public infrastructure of hospitals, schools, public transport, housing and local economies by despots. Others persecute minority groups on an industrial scale. There are current wars or conflicts in Ukraine, Yemen, Sudan, Ethiopia and earlier ones in Syria, Afghanistan, Myanmar, Iraq, Libya, plus civil wars and territorial disputes in several countries.

The Russian invasion of Ukraine in February 2022 led to global financial sanctions and withdrawal from corporate contracts and projects. Germany accelerated implementation of the Renewable Energy Sources Act (EEG) and plans for renewables to account for 80% of its electricity needs by 2030 and 100% by 2035. The Nord Stream 2 Russian gas pipeline which was designed to double gas supply to Germany was blocked and later blown up.

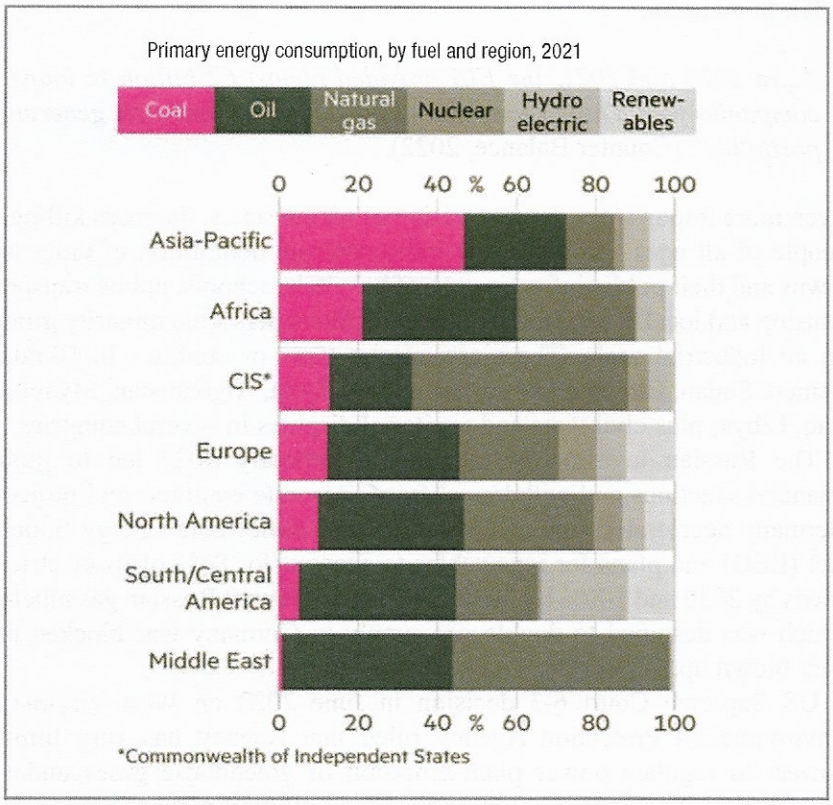
US Supreme Court 6-3 decision in June 2022 on West Virginia v. Environmental Protection Agency ruled that Agency has very limited powers to regulate power plant emission of greenhouse gases under a provision of the Clean Air Act or to force polluting plants to close. *The New York Times* described it as:

> *"...the product of a coordinated, multiyear strategy by Republican attorneys general, conservative legal activists and their funders to use the judicial system to rewrite environmental law, weakening the executive branch's ability to tackle global warming"* (Andreoni, 2022).

The decision will empower corporations to slow emission reduction and means the transition process to 2050 will be even more conflictual.

Figure 1 indicates two important realities. Firstly, the high level of regional dependency on coal, oil and natural gas. Secondly, the low level of energy consumption through renewables. Wind and solar power provided 10.2% of energy generation in 2021, exceeding 10% for the first time (British Petroleum, 2022).

**Figure 1:** The level of coal, oil and natural gas dependency




**Source:** BP Statistical Review of World Energy 2022 © FT

The chart exposes the scale of transformation required over the next three decades to meet the climate targets and environmental adaptation and protection. It indicates the limited progress to date and continued reliance on markets, market forces and the corporate sector. More of the same is almost certain to be a disaster with profound climate, environmental, economic and human impacts.

To achieve decarbonisation by 2050 will require 816GW of wind and 632GW of solar installed every year to 2050, plus 257GWh battery storage per annum according to a global forecast (BloombergNEF, 2021). The forecast assumes 49% of electricity will be used to produce large quantities of hydrogen with the remainder by end users in the economy. The forecast implies current investment will have to double – for example annual investment of US$1.7 trillion in 2020 will have to increase to between US$3.1 and US$5.8 trillion every year for three decades (ibid).

In this context it is critically important to identify the structural flaws in

the current provision of renewable energy and to map the transformative changes required to achieve the climate targets and an equitable transition.

## Structural flaws

The key characteristics of the renewable energy sector are summarised below and are supported by the evidence in the ESSU Global Renewable Energy Secondary Market Database 2019-2021.

- There were 1,622 transactions of renewable energy assets in the 3-year period between 1 January 2019 to 31 December 2021; the high level of secondary market sale of wind, solar, hydro, battery, storage, biomass and energy-from-waste projects together with corporate takeovers and partnerships in the development stage of projects. Market ideology and market interests dominate the sector and outsourcing is widespread.
- The twelve major publicly owned renewable energy companies plus three major companies that have a minority public shareholding collectively own 1,671 projects with 98.5GW operational capacity or 3.47% of the global total.
- Public sector organisations bought and sold assets in the secondary market in the same period via 79 acquisitions and 41 sales accounting for 24.6GW. Whilst the acquisitions increased the overall public sector owned GW by 37.9GW, this was countered by the sale of assets by the public sector reducing power generation by 24.6GW. This resulted in a mere 0.46% or 13.6GW increase in public sector renewable energy generating power to 3.93%.
- Private Equity Funds have carved out a pivotal role financing and owning renewable energy assets – they acquired 369 renewable energy assets and sold 178 projects between 2019-2021.
- 41 major renewable energy companies registered in tax havens were involved in 264 transactions to acquire assets whilst a further 47 transactions involved the sale of renewable energy assets. The use of tax havens to avoid or reduce corporate taxation increases corporate profits but reduces tax revenue for governments.
- A sample of 20 private renewable energy companies paid their shareholders US$10.7bn in dividends in 2021 alone. In addition, eight fossil fuel multinational corporations had total profits of US$67.71bn in the second quarter of 2022.
- Pension funds have increased ownership of renewable energy assets – 17 pension funds were involved in 39 transactions that acquired renewable energy projects with 43,476MW and 8 transactions that sold projects with 7,213MW.

• Democratic accountability is weak with limited community participation and a lack of scrutiny/oversight and rigorous and comprehensive economic, social and environmental evaluation and impact assessment.
• Environment, Social and Governance (ESG) is widely promoted but is totally inadequate in terms of equalities, employment, social, economic and environmental justice, democratic accountability and transparency.
• Despite the wide criticism and failure of many Public Private Partnership projects, the World Bank and regional development banks continue to promote the PPP model for renewable energy projects in the global south.
• The cost of transactions was disclosed for 504 transactions (31.07%) and totalled US$206,723m, on the basis that these transactions were a representative sample of all 1,622 transactions the total cost was US$671.8bn. Legal and technical transaction costs were estimated to be US$15.0bn, giving the overall cost of the secondary market in renewable energy in the 2019-2021 period to be US$686.8bn.
• The sector is increasingly globalised as many renewable energy companies, developers, financial institutions, constructors and operators traverse nation state boundaries.
• Significant technological advances have been achieved in solar panels, floating offshore wind farms, turbines, battery storage and tidal technology. The rate of innovation and technological development are likely to accelerate leading to new models of renewable energy such as tidal power, more powerful battery storage and efficiency/effectiveness improvements in solar and wind turbines and blades.
• The hedge fund Elliott Management, known for buying the debt of developing economies at knock-down prices and then suing governments for full payment of the debt, targeted three energy companies in 2019-2021 – EDP (Portugal), Duke Energy Corporation (USA) and SSE (UK and Ireland). Elliott acquired company shares and sought to persuade the respective board of directors to sell off subsidiaries or to 'maximise shareholder value' which would benefit Elliott. It failed.

**Key objectives**

To focus attention on renewable energy generation and the related trends and developments including the trade in assets, mergers and acquisitions, joint ventures and partnerships in the secondary market.

To investigate the global scale of the sale of operational renewable energy assets such as wind, solar, hydro, biomass, energy-from-waste and battery storage projects in the secondary market to reveal the scale of tax avoidance in their planning, finance, construction and operation.

To identify the extensive role of the private sector, particularly private

equity funds, in the renewable energy sector and their wide use of tax havens. This has far-reaching implications because the current corporate ownership and control of the fossil fuel industry could be replicated in the renewable energy sector by 2050 or earlier.

To de-commodify and reverse the marketisation, corporatisation and privatisation of the renewable energy sector and to rapidly increase public sector capabilities to plan, develop, own, operate and manage renewable energy projects.

To integrate the continued expansion of renewable energy with an industrial strategy involving local/regional manufacture and production, the manufacture of retrofitting plant and materials together with the equipment and material required for environmental adaptation and protection.

To develop a comprehensive action plan for public ownership, provision and democratic accountability including Net Zero Economic Zones to city scale, industrial hub or local areas, city centres or neighbourhoods, large scale retrofitting, alternative uses for sites and factories to promote local/regional economic development and employment. This will include developing job and skills training for all of these tasks and to plan, coordinate and deliver retrofitting and undertake future repair, maintenance and upgrades.

To expose the limitations of ESG and set out an alternative framework of public values inclusive of the dimensions of equality, social, economic, labour and environmental justice.

To expose the methods that are being adopted to financialise, commercialise and privatise nature and biodiversity and to emphasize the need to focus on sustaining their role and their contribution in sustaining and enhancing their role.

To identify the scope for corporate disruption combined with building alliances of workers and trade unions, community organisations, political parties and NGOs to draw up proposals for renewable energy and retrofitting projects that meet their needs for power under local planning, control and accountability.

To emphasize the need for the integration of nature and biodiversity, sustainable objectives, good quality jobs, regeneration and economic change aligned with equality and public values across the renewable energy and decarbonisation agendas.

To stress the importance for governments, international organisations, political parties and trade unions to use the extensive evidence of the poor performance and impact of PPP projects to make the case for publicly-owned and operated projects in developing economies.