

FUELLING FAILURE



How oil, gas and coal are driving climate change and sabotaging the United Nations' Sustainable Development Goals

EXECUTIVE SUMMARY

Freddie Daley & Charlie Lawrie, University of Sussex



FOSSIL FUEL NON-PROLIFERATION TREATY

Acknowledgements: The authors would like to thank the following for their invaluable comments and suggestions on earlier drafts of this report: Teresa Anderson (ActionAid), David Hillman (Stamp Out Poverty), Josh Karliner, Shweta Narayan and Dr Peter Orris (Health Care Without Harm), Dunja Krause (UN Research Institute on Social Development), Nakul Sharma (CAN-I), Shaye Wolf and Jean Su (Centre for Biological Diversity), and Mariel Vilella (GAIA). Any remaining errors remain the sole responsibility of the authors. Graphic design by Made Visual and Spade & Arrow.



INTRODUCTION

The Sustainable Development Goals (SDGs) were unanimously endorsed and adopted by United Nations member states in 2015. While progress has been made towards achieving some of the goals, the exploration, extraction, refining, transportation and combustion of oil, gas and coal is making it impossible for the global community to meet the SDGs, threatening lives and livelihoods, and the ability of the planet to sustain human well being.

Fuelling Failure is the first report to highlight the dangers fossil fuels pose to the entire sustainable development agenda. It draws on more than 400 academic articles, civil society reports and case studies from affected communities to examine how the exploration, extraction, transportation and combustion of fossil fuels, and the conduct of the fossil fuel industry, are sabotaging efforts to achieve the SDGs. The report sets out a way forward that aligns ambitious climate action with efforts to revitalise the sustainable development agenda. This includes an international framework to coordinate a fast and fair phase out of oil, gas and coal while accelerating the adoption of clean energy and other low-carbon technologies with wealthy nations leading the way.

Access the full report



THE SDGs, CLIMATE CHANGE AND FOSSIL FUELS

The 17 SDGs, whose 169 targets aim to “end poverty, protect the planet and ensure prosperity for all by 2030,” touch on a diverse range of issues and challenges such as biodiversity, work, health, inequality and food. The goals apply to all countries, rich and poor, with the aim of ensuring that “no one will be left behind.” While the SDGs have been criticised in terms of whether they represent the most appropriate measure of wellbeing and prosperity, they are widely accepted by governments, institutions and development organisations and are a core concern of the June 2022 UN Stockholm+50 conference.

As the primary driver of climate change, responsible for 86 percent of global CO₂ emissions over the past decade,¹ continued fossil fuel dependence is preventing humanity from achieving the SDGs by amplifying the impacts of climate change and placing the health and stability of both natural and human systems at risk.

The latest report from the Intergovernmental Panel on Climate Change (IPCC) notes that a staggering 3.5 billion people, roughly 40 percent of humanity, are “highly vulnerable” to the impacts of climate change.² Amongst this

large section of the global population are approximately one billion children – nearly half of all children on Earth.³ Accelerating climate change driven by the burning of fossil fuels will harm human health,⁴ disrupt economies,⁵ increase inequality⁶ and hunger,⁷ drive mass migrations,⁸ push entire ecosystems to a point of no return⁹ and make some parts of the world uninhabitable for humans.¹⁰ Countries in the Global South, where the basic needs of billions of people are currently not being met, are expected to suffer the greatest loss of life, property and economic activity due to climate change despite being least responsible for the problem.¹¹

In each year between 2012 and 2018, an estimated 8.7 million people died prematurely due to fossil fuel air pollution.¹² However, just focusing on particulate matter may underestimate the true health impacts of fossil fuel pollution, with one study concluding that fossil-fuel-related emissions account for around 65 percent of the excess mortality rate attributable to air pollution.¹³ In 2018, fossil fuel pollution was responsible for 1.8 billion days of work missed due to illness, 4 million new cases of asthma amongst children and 2 million preterm births.¹⁴

Countries in the Global South, where the basic needs of billions of people are currently not being met, are expected to suffer the greatest loss of life, property and economic activity due to climate change despite being least responsible for the problem.



The negative impacts on natural systems are profound and well-documented. Extracting and transporting fossil fuels causes substantial habitat fragmentation and destruction, threatening wildlife populations. Air pollution from fossil fuels causes acid rain that damages trees, soils and water bodies with severe effects for food chains and wildlife. The frequent failure of fossil fuel infrastructures such as pipeline ruptures and oil spills causes unparalleled disruption to ecosystems with some species never recovering.

Despite consistent warnings from climate scientists and civil society that emissions must fall dramatically to limit temperatures to 1.5°C above pre-industrial levels, there is currently enough coal, oil and gas under production to take global heating well beyond this figure.¹⁵ The most recent estimates are that, for a 50 percent probability of staying below 1.5°C, approximately 40 percent of developed reserves must remain in the ground.¹⁶ Rather than addressing this challenge, the UN Production Gap report found that governments around the world are expected to produce more than twice the amount of fossil fuels by 2030 than is consistent with the 1.5°C limit.¹⁷ Many of these governments are based in wealthy, industrialised nations that are disproportionately responsible for climate change due to the fossil fuel intensity of their economic development and the emissions associated with it¹⁸ with the richest ten percent of humanity accounting for over half (52%) of emissions between 1990 and 2015.¹⁹ These same nations have a duty to drive international progress towards the SDGs and have the capacity to ramp up the finance, policy and ambition to achieve them.



An aerial photograph of a rural village in a dry, arid region. The foreground shows a large, rectangular area covered with a grey tarp, which appears to be an oil spill site. The tarp is stained with brown oil. The surrounding landscape is flat and dusty, with scattered small houses and trees. In the distance, a plume of white smoke or steam rises from the horizon under a clear blue sky.

SDGS AND FOSSIL FUELS: SUMMARY OF IMPACTS

SDG	Fossil fuel impact	SDG	Fossil fuel impact
SDG 1. No Poverty 	Fossil fuels are the primary driver of climate change, which is set to push 122 million more people into extreme poverty by 2030. ²⁰ Globally, governments spend three times more money on fuel subsidies than the annual amount needed to eradicate poverty. ^{21,22}	SDG 9. Industry, Innovation and Infrastructure 	Fossil fuel companies are expected to spend \$527 billion on new fossil gas exploration and \$405 billion on oil exploration by 2030. ²³ This will lock economies into emissions for decades at a time when they need to decrease urgently.
SDG 2. Zero Hunger 	Increases in global temperatures, shifting rainfall patterns, extreme weather events, and elevated surface carbon dioxide concentrations from burning fossil fuels will reduce the yields of key crops and push millions into food insecurity. Fossil fuel production and offset schemes pull vast amounts of land away from agricultural uses.	SDG 10. Reduced Inequality 	Fossil fuel pollution disproportionately impacts poorer and more vulnerable communities, while fossil fuel subsidies benefit the richest members of society the most. The risk of stranded assets could further entrench global wealth inequalities.
SDG 3. Good Health and Wellbeing 	Roughly 8.7 million people died prematurely due to fossil fuel pollution every year between 2012 and 2018. ²⁴ The worsening climate crisis, driven by fossil fuels, is linked with increases in disease, infant mortality and displacement, with devastating impacts on health and wellbeing.	SDG 11. Sustainable Cities and Communities 	Fossil fuel pollution is making urban life a health hazard, with 98 percent of cities with populations over 100,000 in low- and middle-income countries exceeding WHO guidelines for particulate matter. ²⁵ As the climate crisis accelerates, many cities will suffer due to sea-level rise and extreme heat.
SDG 4. Quality Education 	Children born in 2020 are expected to experience between two and seven times as many extreme weather events as someone born in 1960, disrupting their education and future prospects. ²⁶ Fossil fuel exporting states are vulnerable to fluctuating prices and often underfund the provision of education. ²⁷	SDG 12. Responsible Consumption & Production 	Humanity is not shifting away from fossil fuels quickly enough, with the global “material footprint” increasing by 70 percent between 2000 and 2017. ²⁸ In 2020, global fossil fuel subsidies reached \$5.9 trillion—equivalent to \$11 million per minute. ²⁹
SDG 5. Gender Equality 	Climate change exacerbates existing gender inequalities, particularly during natural disasters and extreme weather events. Women disproportionately bear the health and social burdens of fossil fuel processes, such as gas flaring.	SDG 13. Climate Action 	Fossil fuel firms are actively undermining climate action through lobbying, donating to politicians and political parties and funding misinformation. Despite all their promises and pledges, fossil fuel firms are not driving the energy transition, they are subverting it.

SDG	Fossil fuel impact	SDG	Fossil fuel impact
SDG 6. Clean Water and Sanitation 	Fossil fuel production and the waste it generates are proven to contaminate water supplies, which can lead to increased outbreaks of disease and illness. Broader climate impacts, like rising temperatures and flash flooding, have been shown to increase water insecurity and disease outbreaks.	SDG 14. Life Below Water 	Fossil fuels are fundamentally altering the chemistry of the oceans, with acidification and extreme heat stress threatening marine life and ecosystems. Fossil fuel production processes are proven to disrupt key feeding and breeding areas, which can have huge implications for global populations of marine species.
SDG 7. Affordable and Clean Energy 	770 million people are estimated to remain without access to cheap, reliable electricity, of whom 570 million live in least developed countries (LDCs). ³⁰ While the cost of providing universal energy access would only cost \$41 billion annually, total fossil fuel subsidies came to \$5.9 trillion in 2021. ^{31,32}	SDG 15. Life on Land 	The extraction, transportation and combustion of fossil fuels drives the fragmentation of habitats, contaminates the water and feeding grounds wildlife populations rely on and, when these infrastructures fail, ecosystems can face total annihilation.
SDG 8. Decent Work and Economic Growth 	1.2 billion jobs directly rely on a healthy environment, which is being undermined by fossil fuelled-climate change. ³³ By 2030, heat stress alone could lead to the loss of over 2% of total working hours worldwide every year. ³⁴ It is estimated that a green economy transition will lead to a net gain of approximately 18 million jobs. ³⁵	SDG 16. Peace, Justice and Strong Institutions 	Oil and fossil gas are associated with higher levels of conflict and lower levels of democracy. Despite its invasion of Ukraine, Russia is expected to receive \$321 billion from energy sales by the end of 2022. ³⁶
		SDG 17. Partnerships for the Goals 	Fossil fuel firms do not play by the rules, avoiding tax, enjoying tax exemptions and suing governments pursuing ambitious climate action. In 2019-2020, 62 fossil fuel companies paid zero tax in Australia despite receiving revenues of \$81.4 billion. ³⁷

HOW FOSSIL FUELS UNDERMINE THE SDGs

Fossil fuels undermine all 17 SDGs. As the primary driver of climate change and air pollution, and a major contributor to biodiversity loss, fossil fuels have a detrimental impact on all the SDGs. The direct impacts of the exploration, extraction, refining, transportation and combustion of fossil fuels also impact every SDG.



TIME FOR A NEW APPROACH: A FAIR, FAST AND GLOBAL FOSSIL FUEL PHASE OUT

The fate of Earth's climate and the SDGs are inextricably linked. Failing to tackle climate change and prevent the current crisis from intensifying will mean the aims and ambitions of all seventeen SDGs will slip further out of reach with some goals becoming impossible endeavours.

Limiting global temperatures to 1.5°C implies that fossil fuel production must be tightly constrained and ultimately phased out, rapidly and equitably. Such action, in the words of the IPCC, is “fundamental” to limiting global heating.³⁸ Put simply, humanity cannot tackle climate change, biodiversity loss, pollution or prevent irreparable climate-induced loss and damage around the world without ending the use of fossil fuels or leaving reserves safely in the ground.

A new approach is required that aligns efforts and initiatives to achieve all 17 of the SDGs with a fair and fast fossil fuel phase out. In order to navigate these challenges and capture the benefits, there are a number of principles that a global fossil fuel phase out must prioritise:

1. Fairness

The deeply unjust nature of climate change means that fairness must be at the heart of phasing out fossil fuels.³⁹ This means wealthy nations take responsibility for historical emissions, lead by example in phasing out fossil fuels and scale up support for renewable energy, economic diversification away from fossil fuels and a just transition for workers and communities.

2. Speed

Wealthy nations must use their financial resources and technical capacity to move fast in phasing out fossil fuels first. According to the International Energy Agency, there can be no new fossil fuel projects licensed if warming is to be limited to 1.5°C given the climate pollution they would lock in. Not cutting emissions as quickly as possible creates vast risks.⁴⁰ The pace at which humanity addresses these three intertwined crises will determine how many human and non-human lives are saved and how much suffering is prevented.

3. Global

The principles of fairness and speed can only be met with adequate global coordination, cooperation and governance. The cumulative nature of greenhouse gas emissions and distribution of fossil fuels through global markets pose a complex and multilateral challenge that requires international collaboration to set a coordinated timeline for an equitable phase out that reflects the capacity and resources of each state, preventing economic shocks and safeguarding workers.

A FRAMEWORK FOR A FAIR AND FAST GLOBAL ENERGY TRANSITION

Current international climate agreements primarily focus on emissions reductions and make no mention of fossil fuels. What is required is an international framework with binding commitments that constrain fossil fuel production globally to sit alongside the *Paris Agreement* and complement existing pledges to cut emissions, reverse biodiversity loss and curtail pollution.

The international framework required to align efforts to achieve the SDGs with ending the era of fossil fuels could take the form of a Fossil Fuel Non-Proliferation Treaty, which has garnered support in cities around the world and amongst leading parliamentarians, scientists, academics and faith leaders. The Treaty would take a three-pronged approach to the root cause of the climate crisis:

- 1. Non-proliferation.** End new exploration and production by issuing a worldwide moratorium on the extraction of new fossil fuel reserves.
- 2. Equitable Phase Down.** Commit countries to phase down production in existing projects, in line with equity and the 1.5°C global temperature goal.
- 3. Accelerate a Fair Transition.** Provide finance and technological assistance to aid those most dependent on fossil fuel production to climate change to diversify their economies and move away from fossil fuels, scale up access to renewable energy and ensure a just transition for all.

The international framework required to align efforts to achieve the SDGs with ending the era of fossil fuels could take the form of a Fossil Fuel Non-Proliferation Treaty.

SUMMARY



Efforts and initiatives to achieve all 17 SDGs must be aligned with a fast and fair fossil fuel phase out. Tackling fossil fuel production will help achieve the SDGs by removing the main driver of global emissions causing climate change. Phasing out fossil fuels will prevent the infrastructure causing permanent damage to natural and human systems, while significantly reducing lethal levels of pollution. A rapid deployment of renewable sources of energy will create inclusive jobs for all, boost energy access, free up government revenues for other purposes such as the pandemic response and education and improve the health and wellbeing of people, communities and nature.

It's time to acknowledge reality. Coal, oil, and gas are fuelling the failure of the SDGs and the UN system must respond. If humanity is to achieve these goals and improve the lives of billions, the fossil fuel era must be brought to an end.

ENDNOTES

- 1 IPCC, 2021, 'Sixth Assessment Report', <https://www.ipcc.ch/assessmentreport/ar6/>
- 2 IPCC, 'Sixth Assessment Report: Working Group III: Climate Change 2022: Mitigation of Climate Change', (2022), <https://www.ipcc.ch/report/ar6/wg3/>
- 3 UNICEF, 'The Climate Crisis Is a Child Rights Crisis: Introducing the Children's Climate Risk Index', (2021), <https://www.unicef.org/reports/climate-crisis-child-rights-crisis>
- 4 McMichael et al., 'Climate change and human health: present and future risks', *The Lancet*, (2006), [https://doi.org/10.1016/S0140-6736\(06\)68079-3](https://doi.org/10.1016/S0140-6736(06)68079-3)
- 5 Stern, 'The Economics of Climate Change: The Stern Review', Cambridge University Press, (2006).
- 6 King & Harrington, 'The Inequality of Climate Change From 1.5 to 2°C of Global Warming', *Geophysical Research Letters*, (2018), <https://doi.org/10.1029/2018GL078430>
- 7 Janssens et al., 'Global hunger and climate change adaptation through international trade', *Nature Climate Change*, (2020), <https://doi.org/10.1038/s41558-020-0847-4>
- 8 Podesta, 'The climate crisis, migration, and refugees', (2020), <https://www.brookings.edu/research/the-climate-crisis-migration-and-refugees>
- 9 Sultana et al., 'Risk of biodiversity collapse under climate change in the Afro-Arabian region', *Scientific Reports*, (2019), <https://doi.org/10.1038/s41598-018-37851-6>
- 10 Salimi & Al-Ghamdi, 'Climate change impacts on critical urban infrastructure and urban resiliency strategies for the Middle East', *Sustainable Cities and Society*, (2020), <https://doi.org/10.1016/j.scs.2019.101948>
- 11 Climate Impact Map, Impact Map, <https://impactlab.org/map/#usmeas=change-from-hist&usyear=2020-2039&gmeas=change-from-hist&gyear=2040-2059&usvar=mortality&tab=global&gvar=ta-smax-over-95F&grcp=rcp45>; Roser & Ortiz-Ospina, 'Global Extreme Poverty', *Our World In Data*, (2019), <https://ourworldindata.org/extreme-poverty>
- 12 Karn Vohra et al., 'Global Mortality from Outdoor Fine Particle Pollution Generated by Fossil Fuel Combustion: Results from GEOS-Chem', *Environmental Research* 195 (April 2021): 110754, <https://doi.org/10.1016/j.envres.2021.110754>
- 13 Lelieveld et al., 2019, 'Effects of fossil fuel and total anthropogenic emission removal on public health and climate', *Earth, Atmosphere and Planetary Sciences*, <https://doi.org/10.1073/pnas.1819989116>
- 14 CREA, 'Quantifying the Economic Costs of Air Pollution from Fossil Fuels', (2020), <https://energyandcleanair.org/wp/wp-content/uploads/2020/02/Cost-of-fossil-fuels-briefing.pdf>
- 15 Welsby et al., 'Unextractable fossil fuels in a 1.5 °C world', *Nature*, (2021), <https://www.nature.com/articles/s41586-021-03821-8>
- 16 Trout et al., 'Existing fossil fuel extraction would warm the world beyond 1.5 °C', *Environmental Research Letters*, (2022), <https://doi.org/10.1088/1748-9326/ac6228>
- 17 SEI, IISD, ODI, E3G and UNEP, 2021, 'The Production Gap Report 2021', <http://productiongap.org/2021report>
- 18 Daley, 'The Fossil Fuelled 5: Comparing rhetoric with reality on fossil fuels and climate change', (2021), <https://fossilfuel treaty.org/fossil-fuel-5>
- 19 Oxfam, 'Confronting Carbon Inequality', (2020), <https://www.oxfam.org/en/research/confronting-carbon-inequality>
- 20 'Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change' (Cambridge University Press, In Press),
- 21 'UNDP: More Spent on Fossil Fuel Subsidies than Fighting Poverty', *Africa Renewal*, 29 October 2021, <https://www.un.org/africarenewal/magazine/november-2021/undp-more-spent-fossil-fuel-subsidies-fighting-poverty>
- 22 Ian Parry, Simon Black, and Nate Vernon, 'Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies', SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 1 September 2021), <https://papers.ssrn.com/abstract=4026438>
- 23 'IPCC Clarion Call Puts Spotlight on Fossil Fuel Industry's Hypocrisy', *Global Witness*, accessed 19 April 2022, <https://en/campaigns/fossil-gas/ipcc-clarion-call-puts-spotlight-on-fossil-fuel-industrys-hypocrisy/>
- 24 Karn Vohra et al., 'Global Mortality from Outdoor Fine Particle Pollution Generated by Fossil Fuel Combustion: Results from GEOS-Chem', *Environmental Research* 195 (April 2021): 110754, <https://doi.org/10.1016/j.envres.2021.110754>
- 25 WHO, 'Air Pollution Levels Rising in Many of the World's Poorest Cities', (2016), <https://www.who.int/news/item/12-05-2016-air-pollution-levels-rising-in-many-of-the-world-s-poorest-cities>
- 26 Wim Thiery et al., 'Intergenerational Inequities in Exposure to Climate Extremes', *Science* 374, no. 6564 (8 October 2021): 158–60, <https://doi.org/10.1126/science.abi7339>
- 27 Timor-Leste Economic Survey: The End of Petroleum Income', *Asia & the Pacific Policy Studies* 8, no. 2 (2021): 253–79, <https://doi.org/10.1002/app5.333>
- 28 International Energy Agency, 'The Future of Petrochemicals: Towards More Sustainable Plastics and Fertilisers', (2018), https://iea.blob.core.windows.net/assets/bee4ef3a-8876-4566-98cf-7a130c013805/The_Future_of_Petrochemicals.pdf
- 29 Ian Parry, Simon Black, and Nate Vernon, 'Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies', SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 1 September 2021), <https://papers.ssrn.com/abstract=4026438>
- 30 International Energy Agency, 'World Energy Outlook 2021', (2021).
- 31 International Bank for Reconstruction and Development, 'Tracking SDG7: The Energy Progress Report 2021', (2021), https://trackingsdg7.esmap.org/data/files/download-documents/2021_tracking_sdg7_report.pdf
- 32 Ian Parry, Simon Black, and Nate Vernon, 'Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies', SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 1 September 2021), <https://papers.ssrn.com/abstract=4026438>
- 33 ILO, 'Working on a warmer planet: The effect of heat stress on productivity and decent work', (2019), https://www.ilo.org/global/publications/books/WCMS_711919/lang-en/index.htm
- 34 ILO, 'Working on a warmer planet: The effect of heat stress on productivity and decent work', (2019), https://www.ilo.org/global/publications/books/WCMS_711919/lang-en/index.htm
- 35 ILO, 'World Employment and Social Outlook 2018: Greening with jobs', (2018), https://www.ilo.org/global/publications/books/WCMS_628654/lang-en/index.htm

- 36 Bloomberg News, 'Putin May Collect \$321 Billion Windfall If Oil and Gas Keep Flowing', *Bloomberg.Com*, 1 April 2022, <https://www.bloomberg.com/news/articles/2022-04-01/putin-may-collect-321-billion-windfall-if-oil-gas-keep-flowing>.
- 37 Market Forces, 'Do You Pay More Tax than the Big Fossil Fuel Companies?', Market Forces, accessed 4 May 2022, <https://www.marketforces.org.au/campaigns/subsidies/taxes/taxavoidance/>.
- 38 IPCC, 'Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change', (2022), doi:10.1017/9781009157926
- 39 Daley, 'The *Fossil Fuelled 5*: Comparing rhetoric with reality on fossil fuels and climate change', (2021), <https://fossilfuel treaty.org/fossil-fuel-5>
- 40 IPCC, 'Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change', (2022), doi:10.1017/9781009157926

IMAGE CREDITS

- Cover:** Image by Brook Mitchell from Getty
Image by Анатолий Стафичук from Pixabay
Image by PublicDomainPictures from Pixabay
Image by kevin-harris from Unsplash
Image by Naja Bertolt Jensen from Unsplash
Image by Marcelo Perez del Carpio from Climate Visuals Countdown
- Inside cover:** Image by JuergenPM from Pixabay
- Page 3:** Image by United Nations Photo on Flickr (CC BY-NC-ND 2.0)
- Page 4:** Image by Daniel Jukes/ActionAid
- Page 10:** Image by American Public Power Association on Unsplash



fossilfuel treaty.org

