



# The Palgrave Handbook of Managing Fossil Fuels and Energy Transitions

*Edited by*  
Geoffrey Wood · Keith Baker

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*To Neil Taylor, for always being there and being able to help me resolve any problems with a few clear words. RIP my friend (Dr. Geoffrey Wood).*  
*To Sue Roaf, for being a friend, a colleague, and an inspiration*  
*(Dr. Keith Baker).*

# Foreword

When the Paris Agreement on climate change was adopted on 12 December 2015, the newspaper *The Guardian* dramatically heralded the “*end of [the] fossil fuel era*”. It may perhaps have seemed like that at the time. After all, the agreement’s goal of keeping global warming well below 2°C and its even more ambitious aspirational goal of avoiding 1.5°C require a drastic reduction in the production and consumption of fossil fuels—the burning of which is still the single largest driver of human-induced climate change.

But while the Paris Agreement may have given a strong and clear signal that the decarbonisation of our energy systems is inevitable, a true decline of fossil fuels has yet to commence. Notwithstanding the increasing availability and rapidly falling costs of renewable energy sources, global fossil fuel consumption continues to grow, and fossil fuels have retained their high share in global electricity production. Even coal—arguably the dirtiest fossil fuel—is witnessing a resurgence due to growing demand in Asia. Fossil fuel production also shows no signs of abatement, and investment in fossil fuels continues to be stable. All over the world, governments support the production and consumption of fossil fuels, through licensing and permitting, as well as tax breaks and other subsidies. We are currently locked into fossil fuels, through existing infrastructure, institutions, and individual behaviour. Any transition away from them, therefore, will face considerable hurdles.

If we are to avert the climate crisis, however, such a transition is a must. We thus find ourselves at a critical juncture, about to embark on a very daunting journey. The good news is that, perhaps for the first time in the history of large-scale transitions, we have something of a compass. We can actually *plan* for this transition. This is why the present volume’s focus on ‘managing the decline’ of fossil fuels is so important.

The climate imperative offers broad guidance on where our journey is headed. We know that meeting the Paris Agreement's temperature goals means we cannot afford to burn all fossil fuels, and that a major part of fossil fuels needs to be left in the ground. We also know that we need to significantly scale up the deployment of renewable energy sources, and that this requires sustained support from the public and private sectors. But we further know that not everyone can or should follow the same energy transition pathway. Countries have been unevenly endowed with resources (both fossil fuels and renewables), are not all equally responsible for causing the problem of climate change and have varying levels of economic development. So, while we may applaud countries like Costa Rica or Sweden for their ambition to become 'fossil free' nations, the challenge for countries like Angola or Indonesia will be much greater. We also see these disparities within countries. Some regions, communities, and workers dependent on fossil fuels will be disproportionately affected by the low-carbon energy transition. These international, national, and subnational equity and fairness dimensions underscore the necessity of a *just* transition, and more broadly the need to view energy transitions through the lens of energy justice.

Along with my colleagues at the Stockholm Environment Institute (SEI), and in collaboration with a range of think tanks, civil society organisations, and academics, I have sought in the past years to put these challenges, as well as possible responses, on the radar of climate and energy policy researchers and practitioners. Through SEI's initiative on Fossil Fuels and Climate Change, we have drawn attention to the importance of tackling fossil fuel supply alongside more traditional climate policy measures such as carbon pricing and energy efficiency standards. We have done so by organising workshops and conferences, producing academic publications, blogs, opinion pieces, and engaging with policymakers. From this work, it has become clear to me that while the evidence base for managing the decline of fossil fuels is expanding, concerted efforts are needed to diversify and consolidate the research connecting the dots between fossil fuels and climate change.

It is here where one of the present volume's main strengths lies. The book brings together perspectives from authors with a variety of disciplinary backgrounds, covering various key jurisdictions, and employing a range of approaches. Reflecting the multifarious challenge of the energy transition, insights from various disciplines—engineering, economics, political science, ethics, law, and more—are needed to better understand the underlying causes of our present carbon lock-in, and to sketch the possible ways to overcome this. With respect to jurisdictions, it is important to look both at countries where lessons on energy transitions are already emerging—as is the case, for

instance, with the German *Energiewende*—as well as countries that still have a long way to go in moving away from fossil fuels, such as Australia and Russia. In terms of approaches, contributions should be looking at the drivers of continued fossil fuel supply, countervailing forces seeking to increase the share of renewables in the energy system, and interactions between them. Australian economists Fergus Green and Richard Denniss refer to this as “*cutting with both arms of the scissors*”: we should not just be considering approaches that aim to reduce the demand of fossil fuels, but also determine how such approaches could work hand-in-hand with policies and actions restricting fossil fuel supply.

It remains to be seen whether the transition away from fossil fuels resemble what the editors term a ‘long goodbye’ or whether it will rather be more akin to falling off a cliff-edge. The latter—that is, an unmanaged decline—may lead to the stranding of assets, as well as the stranding of communities and countries dependent on the production and export of fossil fuels. The former requires, at a minimum, a recognition among governments, industries, and investors that we need to stop expanding our fossil fuel infrastructure, a shared vision of a post-carbon future, and a transparent and participatory planning process to achieve that future. The longer we fail to fully embrace the long goodbye, however, the more likely it is that the cliff-edge scenario will become a reality.

Throughout, we should also remain aware of the real possibility of a fossil fuel *renaissance*. This could happen, for instance, through the introduction of new technologies such as carbon capture and underground storage or the switching from higher-carbon to lower-carbon (but still fossil-based) fuels, such as from coal to natural gas. In addition, what German economist Hans-Werner Sinn dubbed the ‘green paradox’ may materialise: in such a scenario, increased production of fossil fuels takes place *because of* increasing carbon constraints.

These possibilities suggest that, unlike what *The Guardian* claimed in 2015, the era of fossil fuels is not over yet. As this book makes abundantly clear, however, its time has certainly come.

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## Notes on Contributors

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**Rick Bosman’s** work focusses on the energy transition, both in the Netherlands and abroad. He is especially interested in processes of regime destabilization, and how this creates the necessary space for transitions to occur. He combines his academic work with advisory projects, publishing for popular media, and is a frequently invited speaker and lecturer. He is currently coordinating a research program into the cooperation between

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