

Olivia Woolley, *Renewable Energy Law*. Hart Publishing/Bloomsbury Publishing, 2023. 254 pages. ISBN: 9781509967810 (hardback): 9781509936472 (paperback).

Renewable energy plays a significant role in the fight against climate change. Renewable energy, energy derived from natural sources that replenish at a higher rate than they are consumed, has a much lower impact on the environment. Most governments worldwide have already increased the use of renewables while, simultaneously, reducing reliance on carbon emitting sources, such as coal, oil, and natural gas in order to accelerate their transition to the net zero energy economy. The importance of legal frameworks and policies as the key drivers for this transformation is undeniable. Yet, the literature in this area is rather scarce, most likely due to constant developments of renewable energy law and related aspects.

Therefore, Olivia Woolley's textbook *Renewable Energy Law* is very timely. It fills a much-needed gap in the literature aiming to provide a clear understanding of the law's role in promoting the global growth of renewable energy production and consumption. It rightly argues that laws are needed at all levels (i.e. international, regional, national and sub-national or local). The book sets out three main aims: i) to provide rationale why legal interventions are often needed to enable the growth of renewable energy; ii) to explain how law is used or could be used to promote renewable energy, including overcoming any barriers; and finally, iii) to embrace a critical approach to laws adopted to address occurring problems faced by the renewable energy sector, while also ensuring that legal responses for achieving the intended aims can be assessed. The author quite rightly points out the complexity of the aspects pertaining to renewable energy which are scattered across different legal sub-disciplines (i.e. energy law, environmental law, climate law, public international law, the law of the sea, and trade law) and non-legal sub-disciplines, such as economics, politics, sociology, engineering, and natural sciences. Therefore, it is understandable that by embracing broad interdisciplinary research, the author explains renewable energy law's role in chosen settings. While the book employs examples predominantly from the UK and the EU, it also draws on experiences from other jurisdictions.

This textbook is built on Olivia Woolley's 10 years' experience of developing and teaching researched courses on renewable energy law at Durham University and previously at the University of Aberdeen. The book presents complex issues in an understandable manner, where each chapter is followed by classroom questions, a problem type scenario as well as a list for further reading (including policy documents) to enhance the readers' knowledge and understanding of the subject.

Specifically, the book consists of nine chapters. The first chapter, apart from providing the book's objectives, scope and employed approach as noted above, also introduces the readers to the notion of 'renewable energy', including renewable energy sources and their characteristics, defined by intermittency, location and scale. While nuclear power is often associated with 'clean' energy due to its low emission, the book quite rightly excludes nuclear power from the renewable energy scope, especially given other complexities, such as negative effects in the event of radioactive releases etc. This chapter also discusses the drivers for renewable energy development as well as the obstacles to renewable energy development with useful indications, where further discussions are provided throughout the book. This chapter also introduces the challenges faced by the developing world.

As more countries worldwide pledge to achieve carbon neutrality by 2050, understandably, chapter 2 places the emphasis on international climate change law and renewable energy. It is dedicated to international agreements created to tackle global environmental problems whilst also

acknowledging the new opportunities opened in attempts to address these problems. It employs a historical approach noting the following key international developments, such as the UN Framework Convention on Climate Change, the Kyoto Protocol, the Doha Amendment to the Protocol, and the Paris Climate Change Agreement.

In this context the chapter further explores the states' obligations to support renewable energy development. The author quite rightly points out that these international instruments have been too weak to deter consumers away from fossil fuels. For instance, the chapter identifies the weakness of the Nationally Determined Contributions (NDCs) under the Paris Agreement emphasising the lack of the NDCs enforceability with further critique being placed on the market mechanism for emissions reduction. The chapter further stresses the importance of climate finance – investment in low and zero carbon development, noting unfairness in relation to developing countries and further agreements made during the recent COPs ('Conference of the Parties'). Finally, the chapter also discusses the issues of technology transfer replacing fossil fuel technologies with renewable energy technologies and the challenges faced by developing countries, whilst also expressing that ambiguities remain in relation to capacity building, which should be more effectively utilised.

Chapter 3 continues the discussion of public international law's contribution to the growth (or a lack of it) of renewable energy beyond climate change, with the focus being placed on sustainable development. This chapter argues that states are reluctant to make legally binding agreements to make sustainability a reality. Instead, much of the international endorsement for renewable energy related to sustainable development has been achieved through soft law instruments, including Agenda 21, the Johannesburg Declaration on Sustainable Development and the Plan of Implementation, the Sustainable Energy for All initiative and the adoption of the Sustainable Development Goal 7 (affordable and clean energy). This chapter also introduces the reader to the international institutions for renewable energy with the most effective being IRENA (International Renewable Energy Agency). The final part of this chapter is devoted to the main binding international agreement concerning the energy sector – the ECT (the Energy Charter Treaty) and its most recent reform. This section is surprisingly brief, considering that the ECT, which is energy-agnostic, is often blamed for creating obstacles to renewable energy development due to its protection of fossil fuel investments. Recent withdrawals by numerous countries highlight the ECT's imperfections. The sections of this chapter propose some instruments on how international law on renewable energy could be strengthened.

Chapter 4 focuses on the role of targets to enable renewable energy growth. The chapter starts with the greenhouse gas emissions targets, followed by the targets to promoting renewable energy production or consumption. While listing the advantages of the use of the targets to promote renewable energy growth, the chapter also calls for a critical evaluation of their effectiveness in practice by providing a tool with set key questions directed at the target, actors' accountability, and investors' confidence. It then draws its findings based on the EU case study. The chapter provides a detailed historical evaluation of the directives related to renewable energy and their ever-increasing targets, simultaneously, criticising the collective EU-level binding target for renewables, as accountability for the failures of individual Member States to meet their national targets can be challenging. The chapter also notes that the Member States vary significantly in terms of their national contributions.

Chapter 5 is devoted to investment in renewable energy and support provided by governments, which are classified into two main categories: i) investment support; and ii) operational support. In terms of the former category, public financial support may be needed to research and develop innovative renewable technologies, trialling of pre-commercial prototypes which quite often are

associated with high risks. Yet, the chapter predominantly focuses on the more controversial – second category, which, inter alia, directly distorts market competition. Further discussion of this chapter is placed on feed-in tariffs, feed-in premiums, obligation/certificate schemes, and support provided by tenders or auctions. The final part of the chapter is dedicated to three national case studies, which demonstrate how risks associated with some of these schemes have occurred in practice. While discussing the case studies, which are the feed-in tariff in Germany and both obligation/certificate, and premium and competitive allocation (the Contracts for Difference schemes) in the United Kingdom, the author provides useful lessons learnt from each example, including sometimes neglected systemic ability and public willingness to accept the change, or not reducing sufficiently the risk associated with covering development cost, especially in terms of the projects using newer technologies, embracing new market entrants, or smaller-scale businesses.

The focus of chapter 6 is on electricity transmission, notably, on the problems encountered and anticipated with the integration of renewable electricity into existing networks. The chapter also explains complex electricity networks, consisting of transmission, distribution systems, interconnectors and system operators. Among the challenges discussed in access to networks are the capacity constraints, consumer (specifically, ‘prosumer’) participation, issues related to intermittency and currently limited electricity storage options, connection costs and regulatory barriers. The final part of the chapter explores potential legal solutions to these challenges with some examples from good practices employed by the EU and beyond.

The construction and occasionally the operation of renewable energy generating plants require special authorisations, which are discussed in chapter 7. Planning and permitting processes (including environmental impact assessment) as well as public participation are essential in this process. The chapter also places a particular emphasis on public opposition in terms of both the development itself (for instance, such as NIMBY – ‘not in my backyard’ attitudes) and the quality of the decision-making process. The chapter’s scope is limited to onshore wind farms. Building on good practices employed in other jurisdictions (i.e. Denmark, UK), the author also provides legal responses to these challenges, such as involving the public in pre-application process, and/or providing financial incentives (i.e. shared ownership, compensation and community benefits).

Chapter 8 discusses offshore renewables with the first section of the chapter being devoted to technical intricacies of offshore wind technologies and ocean energy technologies and their network developments. The chapter then explores the applicability of the international law of the sea rules (i.e., the United Nations Convention on the Law of the Sea) in order to establish the states’ rights to exploit and transmit electricity from, for instance, offshore wind and to exercise jurisdiction over these activities. The author notes that a more holistic approach is needed for the planning of offshore renewable energy developments. It further deliberates on environmental effects that offshore wind farms may have. Finally, the chapter also proposes some solutions on how states can make their offshore renewable energy developments compatible with other sea uses, as well as with obligations to prevent harm to marine environments.

The final chapter 9 scrutinises the transport sector, specially, road transport due to its high greenhouse gas emissions. After identifying the challenges faced in an attempt to decarbonise road transport, this chapter further expands on how legal interventions at several levels embracing different actors (i.e., national legislation; vehicle manufacturers; fuel producers; fuel providers; and most certainly, consumers and their behaviour change) can address these hurdles. The final section is dedicated to biofuels and issues associated with ‘sustainability’ criteria. As with the previous chapters, this chapter also provides very useful illustrative examples from the EU (including setting the targets) and beyond.

Overall, the book is a great contribution to the field of renewable energy law exemplifying its complex nature dispersed across different legal sub-disciplines.

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