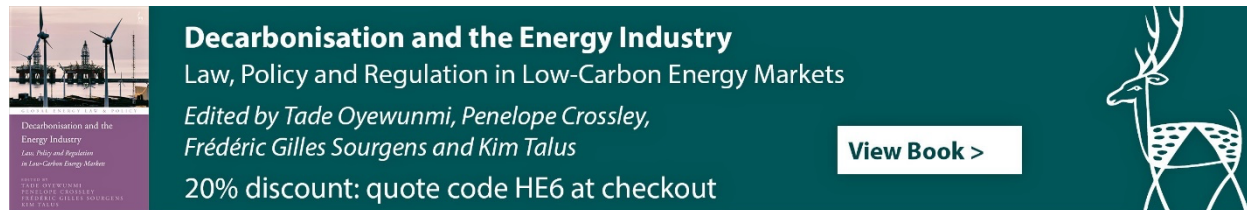


## **A handbook on “Decarbonisation and the Energy Industry: Law, Policy and Regulation in Low-Carbon Energy Markets”**

**Tade Oyewunmi,<sup>1</sup> Penelope Crossley,<sup>2</sup> Frédéric G. Sourgens,<sup>3</sup> Kim Talus,<sup>4</sup> (Hart Publishing, November 2020)**



This handbook comprises essays that examine identified legal and regulatory issues arising in the context of transitional energy markets and decarbonization. It explores the relevant topics by considering the applicable energy law and policy frameworks in both: (i) highly industrialized and major economies such as the US, EU, China, and Australia; and (ii) resource-rich developing countries such as Nigeria and regions like Southern Africa.

In sixteen chapters, the book delves into the tradeoffs and regulatory complexities of carbon-constraints in conventional energy supply systems, which also need to be secure, reliable, and sustainably decarbonized. It highlights the importance of ensuring affordable access to energy services in developing economies as the energy transitions unfold and explore the potentials of emerging technologies such as hydrogen networks, power-to-gas, and Carbon Capture and Storage. Additionally, the book also considers the international investment law implications of energy decarbonization.<sup>5</sup>

### **A Brief Exposition of Conclusions and Lessons Learnt**

*We need to accept that trade-offs will need to be made throughout the decarbonization process:* In chapter one, David Spence discussed the need for tradeoffs between affordability, security and environmental performance to be made in public policies seeking to decarbonize the energy sector in the United States.<sup>6</sup> For example, one of the key challenges posed by the energy transition is that the low wholesale prices associated with large volumes of intermittent renewable energy generation entering the grid may make it difficult to secure sufficient dispatchable capacity for back-up generation for those periods when renewable energy sources may not be available. This is because absent government intervention in the form of some kind of regulatory and financial support, the market may not send the appropriate signals to procure sufficient investment in the mix of generation sources needed to provide a well-balanced, stable, secure, and reliable electricity transmission and distribution network. However, such a decision will involve trade-offs, because if additional dispatchable capacity is procured to enhance the security of supply, additional

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<sup>5</sup> For further background and introduction see Tade Oyewunmi et al., ‘Decarbonization and the Energy Industry: An Introduction to the Legal and Policy Issues’ *Tulane Public Law Research Paper No. 20-9*, (March 4, 2020) Available at SSRN: <https://ssrn.com/abstract=3548837> or <http://dx.doi.org/10.2139/ssrn.3548837>.

<sup>6</sup> For more on this, see David B. Spence, ‘Paradoxes of Decarbonization’, 82 *Brooklyn Law Review* 447-484 (2017).

costs will potentially be imposed on end-users and this may also have environmental impacts. Thus, Spence identified that each trade-off would have winners and losers, which will need to be carefully managed through sensible debate to ensure that the costs and benefits are distributed fairly. If done well, this process could serve as an important tool to educate the public and reduce the likelihood of political conflict. However, if this process is done poorly or not at all, the creation of winners and losers may only serve to further polarise both public and political opinion around the energy transition and may make the transition more fraught.

*Regulatory institutions will play an important role in addressing climate change within the energy sector but they must provide regulatory and policy coherence and work with all stakeholders to reduce emissions:* In chapter two, Tade Oyewunmi examined how carbon dioxide and methane emissions are being controlled along the natural gas production and supply chain in the United States, with inferences to developments in countries such as the UK and Nigeria. Oyewunmi argued that a range of international and domestic regulatory institutions such as the United Nations Framework Convention on Climate Change (UNFCCC), the US Environmental Protection Agency (EPA), and the Bureau of Land Management has sought to play a role in curtailing emissions from the energy sector. He argued that the ideal scenario would allow for a reduction of information asymmetries between the regulatory institutions and industry, and also protect institutions from being captured by special/sectoral groups with vested interests that would be inconsistent with the fundamental objectives of energy law and policy. Oyewunmi argued that operators, stakeholders, and institutions will need to work together to reduce the emissions attributable to the gas production and supply chain to as low as is reasonably practicable.

*There is a need for regulatory and policy solutions that enhances the full range of benefits that emerging technologies can provide and support innovation:* Tade Oyewunmi considered the potential role of renewable natural gas (RNG) and power to gas (P2G) in the decarbonization of the gas and power supply networks in chapter three. He argued that the current scope of Renewable Portfolio Standards (RPS) in the US states and Federal regulatory provisions available that could support such technologies is currently too narrow. Such provisions should be amended to reflect the benefits that RNG and P2G offer in terms of decarbonization, energy reliability and storage potentials, and integrating intermittent renewables with existing networks.<sup>7</sup> This chapter also discussed carbon capture and storage technologies and negative emissions technologies and the need for innovative regulatory solutions to ensure their potential is fully realized.

*In the context of natural gas flaring, a longer-term view is needed concerning economic gains, and greater attention must be paid to climate considerations:* In chapter four, Kim Talus discussed how the position of the Texas Railroad Commission in permitting increased volumes of natural gas flaring in Texas has led to the economic wastage of a valuable commodity. He further established that the relaxation of the applicable environmental standards will lead to increased emissions. Talus argued that a longer-term view is needed for economic gains and that in balancing economic gains and the potential risk of climate change, greater attention must be paid to the climate considerations, which have historically been subject to lax regulatory oversight in Texas.

*The governance of decarbonization will rely on interacting governance networks made up of multiple actors:* In chapter five, Frédéric Gilles Sourgens outlined the process that makes up the global governance of climate change and energy investment. He argued that decarbonization is a continuous process made up

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<sup>7</sup> See Tade Oyewunmi, *Power-to-Gas, Hydrogen, and a Spotlight on New York's Emerging Climate and Energy Policy* (October 1, 2020). Pace Environmental Law Review Forthcoming, Spring 2021. The working paper for this article is available on <https://ssrn.com/author=1426493>.

of multiple actors with differing stakes in the regulatory enterprise. Sourgens noted that this process is not linear but reflects the competing interests of different stakeholders and international institutions operating within the space. In particular, he noted the importance not just of state actors' in formal climate negotiations but also non-state responses which are reliant on self-regulation and private sources of regulation to affect their aims. As a result, networked decision-making around converging interests will play a critical role in supporting decarbonization.

*International investment law and decarbonization of energy systems:* In chapter six, Diane Desierto and Frederic G Sourgens expound on a new outlook to international investment law frameworks as a means of guaranteeing and supporting needed international investments in renewable and low-carbon sources and energy systems such as large-scale solar and wind developments and nuclear. Such developments are springing up in several countries such as in the UK, EU, Africa, and Asia. Some are regions considered to have a stable and investor-friendly regulatory climate, while some countries are perceived to have a high regulatory and political risk profile. Regardless, recent history gathered from renewable energy-related investment dispute cases in Spain and Portugal shows that international investment protection has a relevant and important role to play in channeling and securing 'green' finance and investments. Desierto and Sourgens conclude among other things that investment law as a whole could be both helpful and harmful to the quest for decarbonization, even though the extent of investment law's problematic effects are not due to investment law processes themselves; rather due to the underlying policy decisions preceding an investment claim.

*Civic shares could provide a valuable mechanism to unlock the potential of shale gas within the African region and thereby support sustainable energy for all and increase access to energy:* Emeka Durugibo analyzed the role of private mineral rights in the context of the development of Africa's shale gas resources in chapter seven. He argued that while the use of private mineral rights has worked in the United States, an alternative approach may be needed within African nations that do not permit the private ownership of mineral rights. He proposed the use of civic shares in shale gas projects as an effective strategy to overcome opposition to projects, which in turn could then benefit local communities through enhancing energy access and reducing energy poverty.

*International oil and gas operators will increasingly be required to consider decarbonization strategies to reduce the climate impacts of their operations:* In chapter eight, Peter Oniemola examined the impact of climate change and decarbonization on the oil and gas sector, with a particular focus on exploration and production activities. He noted that many of the oil-rich countries are least developed and often have lax enforcement of environmental laws and regulations. Oniemola also noted that these same countries which are trying to discover petroleum resources are at the same time seeking to exploit their indigenous renewable energy sources and reduce their greenhouse gas emissions following their commitments under the Paris Agreement.

*The Carbon Tax Conundrum:* In chapter nine, Frederic G Sourgens and Lori A McMillan examine carbon taxation as a tool of regulation and means of realizing energy-related decarbonization policy objectives. The chapter highlights the ingenuity of a tax approach to internalizing the cost of emissions and spurring an efficient switch towards decarbonized technologies and energy systems. However, the authors contend that carbon taxation has significant difficulties in accounting for the deep disruptions that pricing carbon through taxation brings with it. They argue that carbon taxation on its own is not currently an effective policy tool to support the decarbonization effort.

*In a political environment where Federal Government support for decarbonization in the United States is waning, there are still significant gains being achieved at state and local levels:* Troy A Rule analyzed the

impact of the US energy and decarbonization policies in chapter ten. He stated that despite waning Federal Government support, and perceptions of a growing conflict with some conventional fossil fuel producers, there are continuing efforts to decarbonize the American economy. These efforts to reduce greenhouse gas emissions and increase the deployment of renewable energy are particularly notable at state and local levels, as well as through the corporate procurement of renewable energy.

*The European Union has adopted significant legislative reforms to support the integration of renewable energy and decentralized energy resources, as well as increase the system flexibility of the grid:* In chapter eleven, Sirja-Leena Penttinen and Leonie Reins shifted attention to the European Union, considering how the EU has sought to increase power sector flexibility and better integrate large volumes of renewable energy into the transmission and distribution grid. This chapter provided a comprehensive overview of the eight legislative instruments contained in the Clean Energy for all European packages, which were designed to help EU Member States meet the revised EU renewable energy target of 32 percent by 2030.

*China has become the undisputed world leader in clean energy industries through a combination of the strategic use of industrial and energy policies:* Philip Andrews-Speed analyzed how the political, legal, and economic dimensions of energy governance in China have facilitated the remarkable growth of the renewable energy sector in chapter twelve, particularly in the areas of wind and solar generation and changes to improve energy efficiency. He stated that many of these achievements were made possible by the pragmatic approach adopted by the organs of the Chinese Government through their energy laws and policies towards achieving security of supply, energy self-sufficiency, and abating pollution. In particular, Andrews-Speed noted the ability of the Chinese Government to rapidly learn from their policy successes and failures.<sup>8</sup>

*The energy transition will prove particularly challenging in resource-rich developing nations and thus any approach to decarbonizing the economy will need to be fair, just, affordable and pragmatic:* In chapter thirteen, Ivie Ehanmo and Tade Oyewunmi discussed how the regulatory framework governing the electricity supply industry in Nigeria is adapting in the aftermath of the privatization and liberalization process, while efforts to support off-grid renewable generation developments is gaining tractions. They note the recent emphasis on ensuring reliable access to modern energy services and electricity, as well as peculiarities of a developing but ‘major African’ economy with significant its oil and gas resources. Overcoming the regulatory, economic, and institutional barriers to off-grid technologies and providing access to modern energy services for rural communities will be essential going forward.<sup>9</sup>

*Countries must integrate their energy and climate laws and policies to enable the decarbonization of their economies and support the energy transition:* Penelope Crossley began chapter fourteen by noting the inherent conflict between Australia’s traditional role as the world’s largest exporter of coal and liquefied natural gas (LNG), and a significant exporter of uranium and the strong growth of its domestic renewable energy sector. In particular, Crossley argued that many of the problems associated with the Australian energy sector stem from the importance of the fossil fuel sector to the economy; Australia’s low population, geography, and relative isolation; and the Constitutional settlement for energy. These factors have made the establishment of a truly National Electricity Market impossible and have long hampered efforts to the

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<sup>8</sup> For more on China see Philip Andrews-Speed, *The Governance of Energy in China. Transition to a Low-Carbon Economy*, (Palgrave Macmillan, August 22, 2012); Philip Andrews-Speed and Sufang Zhang, *China as a Global Clean Energy Champion Lifting the Veil: Goals and Achievements*, in *China as a Global Clean Energy Champion*. Palgrave Series in Asia and Pacific Studies. Palgrave Macmillan, [https://doi.org/10.1007/978-981-13-3492-4\\_2](https://doi.org/10.1007/978-981-13-3492-4_2).

<sup>9</sup> Tade Oyewunmi and Ivie Ehanmo, ‘Emerging Trends in Resource-Rich Sub-Saharan Africa and a Spotlight on the Nigerian Transitional Energy Market’ (August 23, 2020). *Tulane Journal of International & Comparative Law*, Vol. 29, 2020-2021 (forthcoming).

adoption of a national approach to decarbonization. Crossley argued that conflict had been exacerbated by the ongoing failure of the Commonwealth Government to integrate Australia's energy and climate laws. However, she also suggested that in light of the worst bushfires and drought in Australia's history in 2019/2020, this may force government action at all levels to support decarbonization and the energy transition.

*Crises of legitimacy can undermine public confidence in key approval processes within the energy sector, which in turn may hamper global efforts to transition to low-carbon fuels:* In chapter 15, Rudiger Tscherning focused attention on the Canadian LNG industry and the challenges faced in achieving project approval, including environmental concerns and Indigenous relations. He argued that the increasingly contentious nature of project approvals and delays have hampered Canada in fully realizing its ambitions as an LNG exporter to Asia. In particular, Tscherning noted that both foreign and domestic project companies are struggling to transport their product to ports for export due to the difficulties experienced by pipeline projects in gaining approvals. This is the result of both a legitimacy crisis and the impact of proxy wars for broader environmental issues such as climate change and social issues such as the rights of Indigenous people.

*While the energy transition and decarbonization present serious challenges for developing countries, it also presents new opportunities, particularly for access to energy for all, tackling climate change, and improved regional cooperation:* In chapter sixteen, Victoria Nalule and Smith Azubuike examined the challenges and opportunities arising for the 15 countries that make up the South African Development Community (SADC) in the transition to a low carbon economy. They noted the regional and national initiatives driving the shift from coal and traditional biomass to oil, gas, and renewable energy sources. These decarbonization efforts in the context of the 'just transition' literature could be used to further energy justice and thereby reduce inequality. They conclude by noting that developed and developing nations are at different stages of the energy transition and that it is important that developing countries can still achieve their economic development goals while decarbonizing their economies.