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BOOK REVIEW

Green transition fallacies and hurdles

Brett Christophers, *The Price is Wrong: Why Capitalism Won't Save the Planet*, Verso, 2024.
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'Solar panels have become so cheap that they are being used to build garden fences', reported a *Financial Times* article (Chu et al., 2024). In his latest book, *The Price is Wrong*, Brett Christophers demonstrates that this form of information serves as an inadequate gauge for the success of renewable energies, which hinges not on their price but on their expected profitability, which is 'the measure according to which investment decisions are made' (194–5). Moreover, he emphasizes that such information contributes to a political discourse that risks eroding state support for transitioning away from fossil fuels, thereby undermining the transition as a whole. Although this argument has been articulated in prior years (Christophers, 2022), the book provides a considerably more intricate yet comprehensive elucidation of these arguments. Christophers' argument rests more precisely on its demonstration of two key points. First, the reasons why renewables – solar and wind – are not profitable investments. Second, why policymakers, academics, commentators, and the general public have often privileged prices over profits when making predictions about the green transition. Although the latter could have been better elucidated, the end result is a tour de force.

Christophers delves into the economic and technical intricacies of the electricity transition to address the first point. He sheds light on the unseen challenges that renewables encounter when adapting to infrastructures originally designed for fossil fuels, and when confronted with electricity markets that often hinder the success of new entrants. The crux of the issue lies in the fact that 'fossil-fuel-based plants and renewable plants are entirely different economic phenomena' (77). Christophers provides extensive details on the disparities between the two. One notable aspect pertains to location. Historically, electricity production facilities have been erected near urban centers to align with consumption. This is seldom the case for renewables, primarily because one of their primary initial costs is land, the price of which decreases notably further from economic hubs, where they are eventually developed. Consequently, new renewable energy projects have to take into account the cost of building new grid infrastructure, a factor that often proves prohibitive in investment decision-making processes, and which is nowhere to be seen when the low price of renewable energy is highlighted.

Nor do the electricity prices frequently highlighted in public debates take into account the structure of the markets, which, once again, puts renewable energies in an unfavorable position. While electricity markets can take many forms and configurations with significant variations around the world, as Christophers ably illustrates, a key development since the 1990s in many Western countries, in complement to privatization and competition, has been increased marketization: the idea that electricity prices should be fixed without any 'government interference', but rather reflect a theoretical 'unfettered exchange between market actors' (59). One significant aspect of this is the emergence of

the 'spot market', where electricity is traded for next-day delivery and where 'generators bid the amount of electricity they expect to be able to supply' (61–62). Not only do renewable energies face challenges in predicting their electricity production levels, but this market mechanism also entails that the highest-cost generator sets the selling price for all participants. The recent surge in gas prices has effectively positioned this type of generator as the de facto price-setter. Consequently, electricity prices in such markets have exhibited high volatility, mirroring the fluctuating prices of gas as a primary raw material. Through other comparable examples, Christophers demonstrates that while the costs of a renewable plant may be reasonably anticipated in advance, the expected profitability of the plant represents an entirely distinct consideration. Without the ability to accurately evaluate expected profitability, the financiers responsible for funding energy plants – especially renewables, which are predominantly financed through debt – are disinclined to invest. This issue is less prevalent for fossil fuels, many of which were established prior to the marketization of the electricity sector and leverage existing grid infrastructures.

The two points raised above underline the more general issue of uncertainty facing decision-makers in times of ecological crisis (Maechler and Graz, 2024). Christophers' account challenges the prevailing current narrative that depicts fossil fuels as vulnerable to 'transition risks' (Carney, 2015; Christophers, 2017). Although not explicitly emphasized in the book, the obstacles encountered by renewable energies suggest that these risks – or, more accurately, uncertainties – are currently borne primarily by renewable energy sources rather than fossil fuels. Solutions aimed at addressing such uncertainty and transforming it into predictable risk – or shifting the burden of uncertainty onto fossil-fuel generators – do exist. However, according to Christophers, most of them are highly inadequate, with some even perpetuating the status quo by providing misleading arguments in favor of a market-led transition.

Tax credits, the solution traditionally used in the United States, including in the most recent Inflation Reduction Act, only partially offset the considerable volatility of market prices. Another increasingly popular – and, according to Christophers, dangerous – solution is 'power purchase agreements', long-term contracts between electricity generators and consumers that Big Tech companies are increasingly inclined to adopt, notably for public image issues. However, despite its growing popularity, this arrangement poses numerous challenges, the primary one being the excessively low negotiated price, making it hardly attractive for investors in the first place. Christophers suggests that this 'imperfect solution for effective government support instruments' (263) is increasingly used to justify reduced government intervention, as the market is portrayed as capable of finding its own solutions. In the same vein, he meticulously details how numerous projects, spanning from Germany, China, or Zambia, have been touted as 'subsidy-free' when they are, in fact, not, thereby legitimizing the market logic. By extensively advertising such projects as subsidy-free, it undermines future initiatives (298ff.).

The second key point of the book explores the origins of exactly these sorts of powerful yet fallacious narratives – focusing in particular on narratives that emphasize the importance of price over profit. Christophers revisits the origins of 'explanatory orthodoxy' (101), tracing it back to reports commissioned by the United Kingdom (UK) government in the early 1990s. Initially, these reports depicted renewables as more expensive than existing fossil-fuel sources of electricity, which was seen as the reason why they were not yet competitive. A metric developed and popularized to assess the relative prices of different electricity generation sources was LCOE (for 'levelized cost of electricity'), which became the 'lingua franca for discussing the economics of the energy transition' in the 2010s (101). Against this backdrop, the moment when renewables became relatively cheaper than fossil fuels, in the mid-2010s, justified the plea for a reduction in public support. However, as previously explained, the crux of the issue with renewables

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lies in their failure to be profitable and therefore 'bankable' in the first place, a factor for which LCOE is not a comprehensive measure. Nevertheless, Christophers suggests that 'the relative-prices framing has a seductive logic to it; it 'feels' right, which is part of the reason why it enjoys such dominance' (139).

The dominance of the price framing and its seductive logic extends far beyond the electricity transition and encompasses numerous environmental challenges. In this context, Christophers' account falls short in providing sufficient insight into whether the emphasis on price in the electricity transition has evolved independently from similar solutions proposed for other environmental issues. I would conjecture that it has not. For instance, Christophers underscores the influence of Oxford economist and UK government advisor Dieter Helm in directing political and public discourse toward the low price of renewables, advocating for reduced state support and increased market mechanisms. However, this is not Helm's sole contribution to political debates. During his tenure as Chair of the UK Natural Capital Committee, he also advocated for 'putting a price on nature' to address biodiversity loss (Helm, 2015: 116), asserting that the market is the solution rather than the problem. My point here is that the pervasive focus on price and its policy implications in the specific context of the electricity transition is closely intertwined with a broader trend in environmental policy discourse. Further research could explore these links to better understand the political economy dynamics at play.

In addition, Christophers' account does not offer enough insight into his own proposed path forward for the transition, beyond the point that a market-led transition can only fail. At the very end of the book he provides a concrete example of the way the New York Power Authority, through a new bill, would be able to build and own renewable generation utilities, recognizing that private actors are reluctant to invest because of the lack of expected profits (375–77). This is the model to which Christophers' argument leads us: a model where States would directly invest in, develop, own, and control renewable utilities. Elsewhere, other scholars have promoted a similar model to avoid the specific threat of the privatization of profits and socialization of risks (Gabor, 2021). Christophers' argument, by contrast, suggests that such a model is necessary for quite the opposite reason: the profits aren't attractive enough to attract private investment. This narrow and 'relatively atypical rationale for public infrastructure ownership' might suggest that state intervention is not permissible when there are profitable opportunities for private actors – say in fossil fuels (377). In other words, his reasoning gives us reason to support state interventions in some cases, but not others.

In sum, *The Price is Wrong* offers some explanation for the stark contrast between sustainability being touted as an enticing prospect for investors for well over a decade, and the observable lack of investment in practice. Similar observations have been made regarding investments in biodiversity conservation (e.g., Dempsey and Suarez, 2016), where capital was supposed to flow given the great value – or price – of nature (Maechler and Boisvert, 2024). Therefore, the book will not only be of great interest to those specifically interested in the political economy dynamics of electricity markets and renewables. Christophers' logic is likely to resonate widely, as it can help think through many other policy areas, including the tensions and inconsistencies of a variety of 'environmental markets', the political economy sources and implications of uncertainty in the age of ecological crisis, or the way seductive – but largely mistaken – economic ideas take hold.

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