

Electronic Green Journal
Volume 1, Issue 43

Review: Solar Power: Innovation, Sustainability, and Environmental Justice

By Dustin Mulvaney

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Mulvaney, Dustin. *Solar Power: Innovation, Sustainability, and Environmental Justice*. Oakland, California, USA: University of California Press, 2019; 344 pp. ISBN: 9780520288171, paper, US\$29.95.

Solar power is often seen as one of the saviors for the modern lifestyle and power needs in the face of climate change. However, what is the long-term viability, sustainability, and impacts of this power source? In *Solar Power: Innovation, Sustainability, and Environmental Justice* Dustin Mulvaney explores these questions bringing to light the negatives and positives of both process and policy. From the introduction, "When solar power is measured in terawatts, hundreds of times annual production today, it will make inroads as a major source of electricity."

Using solar energy is not new in the grand scheme, but solar panels as we now know them and see on structures are more recent. While using solar panels is a green and sustainable way to collect and use energy, producing those panels has not been a sustainable process, or always used sustainable materials. Some of the aspects Mulvaney discusses are the chemicals and minerals needed to produce panels, the effect of those on workers building the panels, and the lifespan and disposal of panels. The evolution of solar panels from the early models that are now at the end of their lifecycle to the more efficient modern panels is also examined. The look at end of life process in regard to panels is particularly interesting in the context of long term sustainability.

Policy is a more complicated topic to cover in an unbiased manner. With each new executive administration in the United States government comes change. Many of the policies discussed in the text come prior to the current administration. Examples include the American Recovery and Reinvestment act of 2009 which provided incentives to the solar industry and the Bureau of Land Management's policies on public land use for

solar and other renewable energy measures. The energy policy act of 2005 encouraged this use for non-hydroelectric power by 2015. There is a fine balance between preserving these lands and efficient use of them though, and Mulvaney explores that line and the back and forth of the policies that determine where that line is.

The even keel of the tone and content of this text are necessary to “argue[s] that photovoltaics as ethical, green products are not subject to enough critical examination.” (p.39). This book is that examination. Just a few years ago this deep look at the positives and negatives would not have been possible. Bringing criticism and open review to policies and process gives the industry the information needed to move forward, and to eventually make it to the terawatts measurements needed to show real change in the United States energy market. While there are issues with sustainability, environmental justice and innovation with solar power, the end of this text brings hope and shows a road forward. The organization of this text is a more linear organization than this review has portrayed. Starting off with the past and working toward newer developments and solutions, the book ends on an upbeat note.

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Electronic Green Journal, Issue 43, 2020, ISSN: 1076-7975