



# **The Future of the Global Solar Industry**

**Dr Varun Sivaram  
Philip D. Reed Fellow  
Council on Foreign Relations**

**Monday, 20 November 2017  
3.00 pm to 4.30pm  
ESI Conference Room  
29 Heng Mui Keng Terrace  
Block A, #10-01, Singapore 119620**

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## **Synopsis**

Solar PV, once a niche application for a limited market, has become the cheapest and fastest-growing power source on earth. But there are early warning signs that its growth could stall. This talk will review the literature on value deflation--the reduction in the value of PV-generated electricity as a function of increasing deployment--as well as the increasing strain on power grids as PV penetration rises, considering case studies in Europe and North America. It will then discuss prospects for surmounting these challenges through innovation. Technological innovation can reduce the cost of PV as well as improve the feasibility of other solar technologies including concentrated solar power and solar fuel production. And innovative systems--for example interconnected, smart power grids equipped with storage and connected to adjacent sectors such as transportation and heating--can accommodate a rising share of intermittent PV electricity. The talk will conclude with a discussion of what it will take for the global solar industry to pursue the innovation needed to sustain solar's momentum through mid-century, touching on opportunities for the Singaporean solar industry to thrive.

## About the Speaker



Dr. Varun Sivaram is the Philip D. Reed fellow for science and technology at the Council on Foreign Relations. He is also an adjunct professor at the Georgetown University School of Foreign Service, a non-resident fellow at the Columbia University Centre for Global Energy Policy, and a member of the advisory boards for the Stanford University Woods Institute for the Environment and Precourt Institute for Energy. Forbes named him one of the 30 under 30 in Law and Policy, Grist selected him as one of the top 50 leaders in sustainability, and Klout ranked him as one of the top 5 global thought leaders on solar energy. He is the author of the book, "Taming the Sun: Innovations to Harness Solar Energy and Power the Planet" (MIT University Press, March 2018).

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He also serves as strategic advisor to the office of New York Governor Andrew Cuomo on Reforming the Energy Vision, and he was formerly a consultant at McKinsey & Company, where he counselled Fortune 500 companies on adapting to the modern competitive landscape in energy. Prior to this role, he served as senior advisor for energy and water policy to the mayor of Los Angeles, Antonio Villaraigosa, and oversaw the city's Department of Water and Power.

Dr. Sivaram's work has appeared in the New York Times, the Wall Street Journal, the Financial Times, Foreign Affairs, the Journal of Applied Physics, the Journal of Physical Chemistry, Nature, Nature Energy, Nature Climate Change, Scientific American, and Issues in Science and Technology. He has also given talks around the world, including at the Aspen Ideas Festival and World Economic Forum. A Truman and a Rhodes scholar, he holds degrees from Stanford University in engineering physics and international relations, with honours in international security. He holds a PhD in condensed matter physics from St. John's College, Oxford University, where he developed third-generation solar photovoltaic coatings for building-integrated applications. He lives in Washington, DC.